





Jeremy Ockelford & Bob Reed -

Participatory planning for integrated rural water supply and sanitation programmes

Participatory planning for integrated rural water supply and sanitation programmes:

Guidelines and Manual

Jeremy Ockelford & Bob Reed

with contributions from Nick Robins, Mimi Khan, Jane Bañez-Ockelford, Henry Gunston and Roger Calow

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Designed and produced at WEDC

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The authors would like to hear from anyone who uses the guidelines in the field with comments on their usefulness and areas which require adaptation or improvement. Please forward comments or suggestions to Bob Reed at WEDC.

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'Every country has its own version of vegetable soup.'

From an unknown training manual on Culture and Development, quoted by Parimal Jha in the Foreword to *Fancy Footwork: Entrapment in and Coping with the Nepali Management Model*, Ivan Gyozo Somlai, 1992, published by Ratna Pustak Bhandar, Kathmandu.

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### Introduction

### Background

The need for an integrated approach to domestic water supply, hygiene and water use education, sanitation, and community organisation and management is now accepted by many people working in the sector. The integration of domestic water supply with other demands on water resources is also now recognised as essential. There is, however, a lack of guidance for professionals on how to achieve this integration. Many of the books that deal with water supply and sanitation concentrate on a particular subject and, although they may refer to related subjects, provide little help on how to combine them in a project.

To provide a solution to this problem, the Water, Engineering & Development Centre (WEDC) at Loughborough University and the British Geological Survey (BGS), with support from the Commonwealth Science Council (CSC) and funding from the British Department for International Development (DFID), have developed these Guidelines and Manual to help governments in the process of planning and designing integrated rural water supply and sanitation programmes.

### The purpose of the Guidelines

The purpose of the Guidelines is to improve the methodology and practice for the development of sustainable rural water supply and sanitation **programmes**. Although the Guidelines and Manual are intended for use for rural programmes, the approach can be adapted for peri-urban programmes.

Organisations such as the FAO, UNDP, and the World Bank have written books and guidelines to support policy and strategy development, and there are several books available on project development. The level that has been neglected is the support of programme development.

### Intended users

The Guidelines are to help planners and managers in national government departments to formulate programmes that organise and co-ordinate the activities of government departments, external support agencies, NGOs, and others working in domestic water supply and sanitation in the programme area. They can also be used by external consultants, and NGOs could adapt them and use the relevant parts for their own programmes.

### Definition of programme

There is much confusion in development circles between what constitutes a 'project' or 'programme', with the words often being used interchangeably. In a study of the literature various different definitions of programme were considered. A number of key words come out of these definitions: coherent, sector, geographical area, co-ordination, approach, activities, time, interrelated, procedure, framework.

The study also revealed the opposing interpretations of the term 'programme'. On one side, a programme is a set of projects (sub-projects), each with its specific area, targets and time limits for control which add up to bigger areas and targets and overall time limits. In other words, a programme is just a bigger more complex type of project, with the emphasis on implementation. On the other side, a programme is a coherent framework or co ordinated approach for activities ranging from specific projects to policy development. The latter definition was considered the more appropriate for these Guidelines.

The Guidelines and Manual should help users to plan and design a programme, defined as:

a coherent framework of procedures and activities for co-ordinating and regulating projects within the water and sanitation sector in a defined geographical area.

### Approach of the Guidelines

### Ownership

It has been realised in the past decade that for successful operation and maintenance of water supply points by communities, the communities themselves have to own them. This concept of ownership has been adapted to apply to the 'product' of the Guidelines and Manual. The Guidelines themselves are only a tool. The resulting product — the programme — must be owned by the people who have used the tool to design it.

To try to achieve this aim of ownership, the approach of the Guidelines is to question. As far as possible, the answers should come from the users. The Guidelines make suggestions as to what sort of information is needed, where to find it and how to use it, but the decisions have to be made by the planners and managers using the Guidelines.

### Integration

Integration of the various components of rural water supply and sanitation is essential. It is one of the fundamental goals of the Guidelines. To provide users with the information that will enable them to achieve integration, relationships between each of the major components is highlighted. A decision in one area is cross-referenced to another area. There are also complex inter-relationships between the components of the programme and the social, health, technical, economic, financial, institutional and environmental information that needs to be considered for each.

The Guidelines and Manual allow the users to take account of social, geographical and hydrogeological differences within the administrative areas by identifying such differences and suggesting location-specific variations for the programme.

### The development of the Guidelines

In June 1995, 36 governments endorsed a proposed project entitled 'Sustainable Rural Water Supply and Sanitation using Integrated Water Resource Management Principles' prepared by the Commonwealth Science Council. This evolved into a research and development project, 'Integrated Framework for Rural Water Supply and Sanitation in Groundwater Dependent Areas', which began in August 1996. The output from the project is these Guidelines and Manual.

### Participation in development

As far as possible, the developers of the Guidelines consulted with potential users. This was done in several ways: workshops, presentations and papers with discussion at international conferences, and pilot studies of the concept and the draft Guidelines with host government departments. The main events were:

- > workshops at conferences
- 22<sup>nd</sup> WEDC Conference in New Delhi, September 1996
- 23rd WEDC Conference in Durban, South Africa, September 1997

- poster presentation at the Community Water Supply & Sanitation Conference, World Bank, May 1998
- > pilot studies of draft Guidelines
- 1<sup>st</sup> Pilot Study to test the concept with the National Co-ordination Unit in Zimbabwe, July and August, 1997
- 2<sup>nd</sup> Pilot Study to field test draft guidelines by observed use by a government team, through the Water Sector Reform Support Unit in Zambia, June, July and August, and November, 1998

The final draft Guidelines were also reviewed by, amongst others, representatives of two international development organisations.

### How to use the Guidelines and Manual

### **Overview of the Programme Planning Process**

The Guidelines are based on a standard programme cycle, as shown in below. They help with Section A: Preparation Phase, and with Section B: Project to Develop Programme, which covers the first three stages of the cycle.



### Section A: Preparation Phase

Section A covers the steps to establish a project to carry out the exercise of preparing a programme. It is assumed that an instruction has been given by central government to undertake the exercise, so the steps start from there. This preparation project may take about six months to complete, depending on the size and complexity of the programme area.

The output of Section A will be a costed proposal for a project to develop a programme.

# Section B: Project to Develop a Programme (Preparation Project)

### Stage 1: Information gathering, consultation and survey

Information gathering is necessary to understand the whole context of the proposed programme. Although the users may be very familiar with their working situation, it can still be very useful for them to step out of their day-to-day work and take a fresh look at the context. The type of information to gather includes social, economic and health, both quantitative and qualitative, as well as the technical issues of water resources and supply and sanitation.

It is essential that the views of people at all levels are taken into account. This includes the beneficiaries' views of their own problems and needs, and their ideas of possible solutions. The information-gathering process addresses this by looking at each different level — central, provincial or regional, district and village. As far as possible, participatory methods should be used.

### Stage 2: Assessment and analysis

The information gathered is then assessed and analysed before being presented in a **participatory planning workshop**. Representatives from the various different levels and areas of expertise should be involved in this workshop, including representatives from community level. The workshop uses participatory methods such as problem identification and problem tree analysis to set objectives and activities in each of the areas, and SWOT analysis to look at the institutions in the sector. The outputs from the planning workshop are then reviewed by the sector professionals to ensure that all the activities necessary to achieve those objectives have been considered.

### Stage 3: Design

This stage covers the preparation of broad objectives, detailed specific objectives, activities, a budget and a timeframe. The Guidelines help in the outline design of activities but stop at that point. Detailed design is assumed to be part of programme implementation.

The design of the Programme in Stage 3 includes not only the specific components of a water and sanitation programme, but also prepares the systems that will be needed for implementation and management in Stage 4 and evaluation in Stage 5.

### Implementation

The actual running of the programme — Stages 4, 5 and 6 — is not part of these Guidelines and Manual.

### Structure and organisation

As implied by the title, this document is arranged in two parts, the Guidelines and a supporting Manual.

### The Guidelines consist of:

- > flowcharts outlining the steps in the process; with
- > introductions to each of the steps highlighting key points; and
- > checklists.

### The Manual:

- > explains how to carry out the steps in the Guidelines;
- provides additional information and details;
- > provides forms and tables for the user to photocopy and use for surveys and analysis of information; and
- > refers to other publications for further guidance.

The Guidelines and the Manual are cross-referenced by a decimal numbering system: the basic numbers shown in the flowcharts are prefixed by G in the Guidelines and M in the Manual. These are summarised in Table 1.

The Guidelines and Manual are presented in a number of levels:

- Sections: There are two sections: A for Preparation Phase and B for the Project to Develop the Programme.
- Stages: Section B is divided into three Stages, based on the first three stages of a standard programme cycle (see Figure 1). These are 1, 2 and 3 in the decimal numbered referencing system.

The stages are divided into the main activities and processes. In the decimal numbered referencing system, these are 1.1, 2.1, 2.2, 2.3, etc.

The activities and processes are further sub-divided into tasks, pieces of information, issues to consider, lists and forms. In the decimal numbered referencing system, these are 2.1.1, 2.1.2, 2.3.1, etc.

Table 1: Cross-referencing system of the Guidelines and Manual

	Section A			Section B	n B	
	Flowchart	Guidelines	Manual	Flowchart	Guidelines	Manual
Cross-reference	A1	GA1	MA1	1	G1	M1
numbering*	A2	GA2	MA2	2	G2	M2
	A3	GA3	MA3	2.1	G2.1	M2.1
					G2.1.1	M2.1.1
	Tables and Forn	Tables and Forms are numbered according to the section and level in which they are located.				

\* There is not always a corresponding reference number in the Manual for a number in the Guidelines: e.g. G1.3.3 does not have a corresponding M1.3.3.

### Flowcharts

The flowcharts are like road maps of the process. They show you where you are, where you want to go, and how to get there. Like maps, the flowcharts have various scales. Some present the overview of a whole stage at small scale, others show the steps and sub-steps within a stage at large scale.

The various shapes used in the flowcharts are based on standard flowchart symbols, which have different meanings. The ones used in the Guidelines are:



The process boxes are numbered with the cross-reference numbering system so that you can easily go to the description of that stage or step in either the Guidelines or the Manual. For example, in the Flowchart of Stage 2 (in Section G2), 2.3 Planning Workshop refers to G2.3 and M2.3 for summary and detailed descriptions respectively.

### Using the Guidelines and Manual

The Guidelines and Manual are designed to assist a team of government staff to plan and design a programme. They provide the team with support, advice and further information about the various subjects and issues involved in the various stages of information gathering, assessment, analysis and design.

The suggested team should be composed of representatives and specialists of the various ministries and departments involved in the water, sanitation and hygiene promotions sector, from district level up through regional level to central government level as appropriate.

The Guidelines and Manual should be photocopied so that each member of the team has his or her own copy. The members of the team should be assigned responsibility for particular steps and substeps according to their discipline, specialist knowledge, skills and competence.

The stages and steps in the Guidelines and Manual are intended to be followed in roughly the order presented. In some of the steps, the sub-steps can be done at the same time by the relevant team members. In other steps, the sub-steps should be done sequentially in the order presented. The context shows whether this is necessary. The order of decision-making can be important. In some places, it will be necessary to make a decision on one step before another can be developed.

The Guidelines and Manual allow for a Briefing Workshop (G1.2 and M1.2) to start the Preparation Project. This is to allow the members of the team to get to know each other, to understand the Guidelines and the assignment, and to provide training on the participatory processes, if necessary. It is also suggested that regular meetings of the Core Team and others should be held to plan the work, assign individual tasks and monitor progress. Guidance on these meetings is not provided, as they are considered to be standard management practice.

### Finally

The most important thing to remember when using these Guidelines and Manual is that they are just that — guidelines. They provide suggestions of what is considered necessary for planning in the opinion of the authors. You, the users, are the ones who have to make decisions and be responsible for the results. You should take or leave what is suggested here, as you think appropriate. You may need to include additional information or take special factors into account. You may have a different way of doing things that can be equally good or probably better. You are the ones who understand your own context and how methods may or may not work.

Be open, however, to alternative ways of doing things that may not be familiar to you. Discuss and debate with your team and with other people with an interest in the rural water supply and sanitation sector. In particular, involve the people with the most interest, the communities, householders, women, children and men who will be using the water and sanitation services and resources and who are directly responsible for their health and hygiene.

Section A: Preparation Phase GUIDELINES

ECTION A: PREPARATION PHA

### Objective of Section A

### To produce:

a proposal for a project to prepare an integrated water and sanitation sector programme for a specific area, including the resources required for the project, a budget, a timetable and a plan

### based on:

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an instruction with terms of reference from the government, and consideration of the programme area.

This section provides guidance on the various steps necessary for a small team of government staff to develop a project (the 'Preparation Project') to plan and design a water supply and sanitation sector programme, including hygiene promotion, water resource management and institutional strengthening, for a particular area. It includes:

- Terms of Reference these may be pre-set by the instructing authority (e.g. a minister or senior government official), or the instructing authority may request draft ToR to be prepared for it to issue. The Guidelines suggest the issues that should be covered by the ToR. Even if the ToR are pre-set, it may be worth considering the range of issues suggested here during the development of the Preparation Project. It may be possible to negotiate changes to the ToR. In any case, use of this step may help to ensure that the Preparation Project has the scope to address the range of issues in the sector.
- The planning level looks at the important decision concerning which administrative level central, regional, or possibly district — should be responsible for organising, managing and undertaking the Preparation Project.
- > The Planning Team suggests the types of skills and experience necessary for the Core Team which will undertake the Preparation Project, and the associated ministries and departments that may be involved. It also suggests other people and skills that may be needed for different parts of the preparation project.
- > Preparation of a timetable provides information on the activities and factors to be considered in estimating the time required for the Preparation Project, and a format for developing a Gant chart (bar chart) for this.
- Estimating resources gives suggestions on the resources required for the Preparation Project (apart from people).
- Estimating costs provides formats for producing a budget based on the people, other resources and time required.
- Proposal for the Preparation Project suggests the format and subjects to be covered in the formal submission requesting authorisation and funding to undertake the Preparation Project.



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### GA1 Instruction to Prepare Programme

The instruction from the government or commissioning ministry should include detailed Terms of Reference to make clear exactly what is required and to guide the Planning Team in its work. The instruction should be something like:

prepare a project, including a plan and budget, for planning and designing a rural water supply and sanitation sector programme proposal, and submit the project plan and budget for approval before proceeding with the programme planning and design. The programme proposal should include the items listed in the Terms of Reference.

### GA2 Terms of Reference

Table GA2.1 gives a suggested list of the items that should be specified in the ToR. There may be others depending on the local circumstances.

Table GA2.1: Items to be specified in the Terms of Reference

Ite	m
Ge	ographical area to be covered
Gro	oups to be covered:
š'	social groups
š'	ethnic groups
š'	settlement sizes
š'	rural
š'	peri-urban
š'	institutions
Pro	gramme components:
š	water supply
ŝ'	water resource management
š	hygiene promotion
ŝ'	sanitation
š	community management
ŝ.	institutional strengthening/capacity building
Tin	ne-scale of programme
De	partment and person responsible
Oth the	ner ministries and departments with responsibilities or involvement in e sector at various administrative levels
Im	plementing agencies:
š'	regional and district government department
ŝ'	NGOs
š'	CBOs
ŝ'	Private sector companies
Co	verage:
ŝ'	targets for water supply - coverage and operation
š'	targets for sanitation
ŝ'	rehabilitation of water supplies
ŝ'	hygiene promotion
Ma	intenance systems for water supply
Arr	angements for cost sharing:
š	capital costs
ŝ'	recurrent operation and maintenance costs

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### GA3 Planning level

It is important to make the right decision about which administrative level will be responsible for the Preparation Project for planning and designing the programme. The administrative level is the level at which the Core Team is managed and to which it is responsible. Should the Preparation Project be organised and managed centrally or regionally?

This is probably one of the first decisions that will have to be made, but it needs careful consideration because it is likely to have far-reaching consequences. It may even affect the subsequent success or failure of the programme.

Usually there are two possible levels, central or regional. In some places, a third possible level to consider may be the district. A combination of these levels is also possible, and may represent the best way to benefit from the advantages of each. The advantages and disadvantages of each level are shown in Table GA3.1.

Table GA3.1: Advantages and disadvantages of different administrative levels

Level	Ac	Ivantages	Di	sadvantages
Central	š	specialist skills and knowledge may be readily available	š	may be out of touch with problems and issues in the programme area
	š	staff are likely to have access to offices, information and data at central level		
Regional	š	promotes a sense of ownership of the programme by the people who will be implementing it	š	may lack authority for planning programme
	š	should know of the problems and issues in the programme area		
District	š	detailed knowledge of the area	š	may lack authority for planning programme
			š	may lack the skills and experience necessary for programme planning and design

The methodology proposed in these Guidelines is for staff from all the levels to work together. A Core Team of staff with appropriate skills and experience from the various levels can be assembled to implement the Preparation Project (MA6). The skills and experience of this team may need to be supplemented by the use of consultants.

### GA4 Ministries to be involved in programme

A number of different ministries and departments may be involved in the sector, either directly with explicit responsibilities, or indirectly where they are carrying out a particular role. The ministries could include:

- > Planning
- > Water resources
- > Finance
- Local government
- Women's affairs
- > Rural development
- > Agriculture
- > Power and energy
- > Public works
- Health
- > Education

The various possible roles and activities are given in the Manual (MA4), with suggestions as to which ministry or department may be undertaking them. It is important to identify all those involved in the sector to see how they can contribute to the planning and design of the programme.

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### GA6 Staffing of the Preparation Project team

To carry out the programme Preparation Project, it is necessary to form a Planning Team. This team should be formed at the level appropriate to the programme, i.e. it may be at central, regional or district level. A special consideration is:

> Do the necessary skills and expertise exist at the level chosen, or will it be necessary to bring expertise in from a different level?

It may also be necessary to have people of the same professional discipline from more than one level. For example, a planner working at central level may have a very different perspective than a planner working at regional or district level, so it may be worth having planners from both levels on the team.

As far as possible the team should consist of people who will be implementing and managing the operation stage of the programme. The Manual suggests people who should be considered to participate in the planning and design of the programme (MA6). Three degrees of participation are possible:

- > member of the Core Team, leading and responsible for the Preparation Project;
- co-opted for specific assignments during the Preparation Project where additional skills are required (e.g. specialised government staff, consultants, staff from other organisations such as NGOs); and
- > consulted during the process of the preparation project.

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### GA7 Estimating time

The time needed for most activities will depend on the resources — especially people — that are available. Some activities will need a certain period of time irrespective of the number of people, e.g. the planning workshop. Others will depend on various factors. In particular, the time needed for the village-level consultations and surveys will vary according to the number of villages that should be surveyed to be representative of the area. If the area is more complex socially, ethnically or geographically then more villages will have to be covered.

The factors to consider for estimating the time needed for each activity are given in Table MA7.1 in the Manual (MA7).

### GA7.1 Preparation of timetable

To be able to plan, budget for and monitor the project it is necessary to prepare a timetable. This is best done in the form of a bar chart or Gant chart. A form for this, with the activities listed, is given in the Manual (Form MA7.1).

### GA8 Planning activities for Preparation Project: Summary

The Manual (MA8) provides forms for summarising the detailed planning of the various activities. This summary should help in estimating the budget needed for the Preparation Project. The outline of the various activities is given in Flowchart GA5, and fuller explanations are in the Manual.

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### GA9 Estimating other resources

The various items needed to support the Project need to be allowed for and costed. The following lists suggest the items likely to be needed. Some items will be needed for the whole period, others for part of the period.

It may be possible to 'borrow' some things without cost from government departments, but others may have to be paid for. Estimating forms are given in the Manual (MA9 and MA11).

### Office space

It is advisable to have an office especially for the Project Preparation. This will help the team to concentrate and should help in team-building if it is separate from the members' normal workplaces.

The area should be large enough to accommodate the team members, the administrative support staff, additional temporary team members and the storage of documents and information.

A venue for the Planning Workshop, with accommodation for up to 50 people, will also be necessary.

Transport This will be needed for:

- > information gathering at all levels
- > surveys and consultation at central level
- > surveys and consultation at regional level
- > surveys and consultation at district level
- > village level survey and consultation

### Administrative support

- > office administrator
- secretary
- > computer operator
- > driver
- caretaker
- > etc.

Office equipment, consumables and running costs

- furniture
- computers
- printers
- photocopier
- > telephones
- filing cabinets
   office rent
- electricity and telephone charges
- paper
- $\rightarrow$  etc.

### GUIDELINES

CTION A: PREPARATION PHASE

### GA10 Estimating costs

To prepare a budget for the Preparation Project, you will have to estimate the costs of each of the activities in terms of:

> staff salaries and costs

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- > transport and travel allowances
- > equipment and other resources
- > fees for maps, searches, etc.

To assist with this process, example forms (Forms MA10 and MA10.1) giving a method for building up the costs are provided for each of these headings in the Manual (MA10). Your government may have its own procedure for estimating costs, so you should decide whether to follow your government system or to use these estimating sheets.

The objective is to show clearly how costs are estimated, and the costs of each part of the Preparation Project. This should make them easier to justify if there are any questions about the cost of the Preparation Project, or if there is any change to the Project.

### GA11 Proposal for Preparation Project

In order to get approval to proceed with the Preparation Project, it will probably be necessary to submit a proposal, based on the Terms of Reference, explaining the Project and its methodology, plan and cost.

The proposal should show how each of the items in the Terms of Reference will be addressed, adding detail and information, particularly if any variation from the ToR has been found necessary. Thus the proposal should include:

Table GA11.1: Things to be co	overed in the proposa
-------------------------------	-----------------------

Item in ToR	Proposal	Variations from ToR
Geographical area to be covered	Confirm with description (and map)	any additional or reduced area, with justification
Target user groups to be covered: š' social groups š' ethnic groups š' settlement sizes	Confirm with description	any additional groups, or groups to be excluded, with justification
Programme components: \$` water supply \$` water management \$` hygiene education \$` snititation \$` institutional strengthening	Confirm with description	any additional components, or components to be excluded or only partially covered, with justification
Department responsible	Confirm	
Other ministries and departments with responsibilities or involvement in the sector	Confirm ministries and departments	any other departments that should be included, or any specified in the ToR that are not willing to take part in the Preparation Project
Implementing agencies	Confirm implementing agencies	any others that should be included, or any specified in the ToR that are not willing to take part in the Preparation Project
Coverage: \$` targets for water supply \$` targets for sanitation \$` rehabilitation of water supplies \$` hygiene promotion	Confirm	note any proposed changes, with reasons
Maintenance systems for water supply	Confirm	note any proposed changes, with reasons
Arrangements for cost sharing: š <sup>°</sup> capital costs š <sup>°</sup> recurrent maintenance costs	Confirm	note any proposed changes, with reasons
	Methodology for Preparation Project	
	Activities	
	Time-scale for Preparation Project, including bar chart	
	Staffing and resources required	
	Budget	

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### MA2 Terms of Reference

The Terms of Reference form the basis on which the programme proposal is to be prepared. It is important that they cover the whole scope of the envisaged programme. The programme development team is likely to be held accountable for producing a programme proposal in line with the ToR.

The ToR may be drafted on behalf of the senior government department or ministry that will actually give the instruction to develop a programme proposal. Table MA2 provides guidance on the possible issues to be addressed by the ToR. Alternatively, if the ToR have already been written, then the points in the Table may be used for negotiating changes. If this is not possible, it may still be useful to refer to the Table and unofficially incorporate the points into the proposal for the Preparation Project.

### Table MA2: Possible issues to be addressed by the Terms of Reference

Item	Notes				
Geographical area to be covered	This will usually be an administrative area such as a province or region. It may be the whole country if the country is small or the government wants to develop a national programme.				
	Another possibility is a river basin (with the watersheds as the boundaries), or hydrological catchment area, but this may cause problems in terms of departmental responsibilities if the river basin or catchment covers different administrative areas.				
	S' Is a focus needed on particular areas or districts within the programme area (because of remoteness or lack of development in the past, or other reasons)?				
Groups to be covered:	To clearly define whether particular groups of people within the geographic				
š' social groups	area need special attention.				
š' ethnic groups	For example:				
š' settlement sizes	š should the programme be specifically addressed at the needs of the poorer				
š' rural	sections of the community, or particular social or ethnic groups?				
š' peri-urban	farmers?				
š' institutions	lamoio.				
Programme components:	Reference may be made to specific government policies, plans, regulations and procedures for the water and sanitation sector and its components, including primary health care and environmental health.				
š' water supply	It is now generally accepted that to obtain the full benefits of a project or				
š' hygiene promotion	programme, water supply, sanitation, and hygiene promotion need to be				
š' sanitation	addressed in an integrated way.				
š <sup>°</sup> community management	Experience also shows that sustainability of the water supply, sanitation, and changes in hygiene practices is improved if communities are fully involved in planning, designing and managing projects.				
	š' Have communities been involved in this way in the past?				
	$\check{s}^{\cdot}$ Should this possibility be considered in the preparation of a new programme?				
š` water management	Many projects and programmes for domestic water supply abstract groundwater without considering either whether the resource is sustainable, or the potential for pollution of the groundwater by wastewater or the sanitation system.				
	$\check{s}^{\cdot}$ Are there problems of over-exploitation or pollution of the water resources in the programme area?				
	š' Are there any issues of water rights and other uses of water (for agriculture/irrigation, industry, urban supply, etc.)?				

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Item

š' institutional strengthening

š programme management

Timescale of programme

Department or person responsible

Other ministries and departments

with responsibilities or involvement in

Implementing agencies

Other support agencies

the sector

The programme is likely to be implemented by the government department responsible for water supply and/or sanitation, usually in co-ordination and co-operation with other relevant department and agencies, including the private sector. A new programme may involve changes in the way things are

š Do all the organisations involved have the capability and capacity to

The programme may be managed within existing government organisations and systems, or these may have to be modified. Alternatively, a separate programme management unit may be established. At this stage, it may be better to explore the alternatives, rather than committing to a particular

Programmes generally run for longer periods than projects. The period can be chosen to fit with government targets or existing planning periods, or to achieve international development targets set for a particular date, or it could

This should be the lead ministry and department for the sector. It may be that different departments are responsible for different components, so an overall co-ordination and management responsibility may be assigned to a specific

The ToR should specify whether these should be involved in the development

The ToR should specify whether these should be involved in development of the programme through participation in the process or through consultation.

Other support agencies such as multi-lateral or bi-lateral funding agencies may need to be consulted during the process of developing the programme

be indefinite but with target dates for certain achievements.

of the programme through participation in the process or through

Table MA2 continued

done, with new systems and procedures.

undertake the programme?

Notes

system.

government officer.

š' rural development š' agriculture

š' health š' education

š planning š finance

š' central š' regional or provincial š' district

š' NGOs

They may include:

consultation. They may include: s water resources or water affairs

at the various levels of administration:

š' government departments at various levels

š community-based organisations (CBOs)
 š private sector companies

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### Table MA2 continued

Item	Notes
Coverage: \$" targets for water supply \$" targets for sanitation \$" rehabilitation of water supplies \$" operation of water supplies \$" hygiene promotion	These may be specified according to current government policies and plans, and/or related to existing strategies. Targets are not necessarily numerical — qualitative targets and standards may also be relevant. For sanitation, targets for use of latrines and other aspects of environmental sanitation are generally more important than numbers of latrines constructed.
Maintenance systems for water supply	There are several different possible systems for maintaining rural water supplies. The common ones are: 5' centralised maintenance (three-tier); 5' area-based mechanics; and 5' village level operation and maintenance (VLOM); although the exact definition is not important at this stage. 5' A review of the existing system, exploration of alternatives, and recommendations for the programme is worth including as part of the Preparation Project.
Arrangements for <b>cost sharing:</b> š <sup>-</sup> capital costs š <sup>-</sup> recurrent maintenance costs	It is becoming generally accepted that users should pay for the operation and maintenance of their water supplies, and make some contribution in cash or kind to the capital cost of construction. S <sup>-</sup> A review of the existing system, exploration of alternatives and recommendations for the programme is worth including as part of the Preparation Project. S <sup>-</sup> Subsidies for sanitation are often provided, but are these affordable on a regional and/or national scale?

The Terms of Reference should also specify the period for the Preparation Project, and final and interim (if any) reporting requirements.

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### MA4 Ministries to be involved in programme

A number of different ministries and departments may be involved in the sector, either directly with explicit responsibilities, or indirectly where they are carrying out a particular role. The various possible roles and activities are given in Table MA4, with suggestions as to which ministry or department may be undertaking them. It is important to identify all those involved in the sector to see how they can contribute to the planning and design of the programme.

Table MA4: Possible roles and activities of ministries and departments

Role or activity	Ministry or department				
	Suggestions	write in Actual			
Sector planning	š' Planning				
	š' Finance				
	š' Water resources				
	š' Local government				
Water resources	š' Water resources				
management	š' Hydrology				
	š' Agriculture				
	š' Power and energy				
Construction of water	š' Water resources				
supplies	š' Public works				
	š' Rural development				
	š Local government				
Maintenance of water	š' Water resources				
supplies	š Local government				
	š Provincial administration				
	š District administration				
	š' Public works				
Promotion of sanitation	š' Health				
	š' Education				
	š' Water resources				
Construction of sanitation	š' Health				
facilities	š' Water resources				
Health and hygiene education	š' Health				
	š' Education				
Community development	š' Community development				
	š' Rural development				
	š Local government				
Gender	š' Women's affairs				
Finance	š' Finance				
Donor co-ordination	š' Water resources				
	š' Finance				
	š' Planning				
Co-ordination of sector	š' designated ministry				

# MA6 Staffing of the Preparation Project team

Form MA6 lists suggestions for the various types of person required with their roles and responsibilities. This form can be copied and the columns on the right can be completed for planning the Preparation Project.

The Form also has column to indicate the degrees of participation:

- member of the Core Team, leading and responsible for the Preparation Project;
- co-opted for specific assignments during the Preparation Project where additional skills are required (e.g. specialised government staff, consultants, staff from other organisations such as NGOs); and
- > consulted during the process of the preparation project.

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### Form MA6: Formation of the Planning Team

Person	Role/responsibilities	Degree of partic	pation		Admini	strative I	evel
		Core Team	co-opt or employ for part of process	consultation	Central	regional	district
Senior manager from the department responsible for the sector at the appropriate level	Team Leader for the Preparation Project						
Rural water supply and sanitation engineer	survey, consultation, and analysis of technology choices, construction methods and safety, operation and maintenance; design of water supply component and sanitation technology choices						
Rural sanitation specialist	survey, consultation, and analysis of technology choices, design of sanitation promotion component						
Hydrogeologist	survey, consultation, analysis and advice on groundwater resources – availability/yield, water resource management issues; design of water resource management component of programme						
Planning department representative	consultation and advice on planning issues, government planning processes, and guidance of programme proposal through government procedures leading to adoption						
Health department representative	survey, consultation, analysis of health and hygiene issues and behaviour, health statistics and data, design of hygiene promotion component of programme						
Rural development representative	survey, consultation, and analysis of community organisation and development, and PRA techniques; design of social and community organisation component						

### Form MA6: Formation of the Planning Team continued

Person	Role/responsibilities	Degree of participati	ion		Administrative level				
		Core Team	co-opt or employ for part of process	consultation	central	regional	district		
Education department representative	consultation on and design of hygiene education in schools, consultation on water supply and sanitation services in schools								
NGO representatives	providing a community perspective on issues								
Community leader	providing a community perspective on issues								
Extension workers, community development workers	village survey work, PRA								
Sociologist	advice on community management aspects and social issues								
Socio-economist	analysis and advice on socio-economic issues								
Gender specialist	analysis and advice on gender issues								
Environmental specialist	analysis of environmental issues and preparation of environmental impact assessments								
Facilitator	Facilitation of the Planning Workshop Facilitation of the village needs assessment workshops								

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### Form MA7: Estimating time for Preparation Project

Activity	Factors to consider	Suggested time	Estimated time
Stage 1			
Briefing Workshop and training	5° experience and skills of available personnel	At least 3 days, plus additional days for any necessary training	
Information gathering:			
Background information Data collection	<ul> <li>S is information readily available?</li> <li>S Are data and statistics published or do they have to be specially compiled?</li> <li>S Are requisitions needed to obtain data and information from government offices?</li> <li>S Has information already been collected for past reports and project documents?</li> <li>S Do you need to cross-check and verify data and information?</li> <li>S Will information be ready on return from field work?</li> </ul>	Depending on the answers, it is probably sensible to allow at least: - 1 week at central level - several days at regional level - 1 day per district.	
Consultations and surveys: š <sup>°</sup> Central level š <sup>°</sup> Provincial/regional level š <sup>°</sup> District level	<ul> <li>S How many ministries and departments are involved at each level?</li> <li>S Are the people you need to consult and interview normally easily accessible?</li> <li>S Is there good co-ordination at each level to facilitate the arrangements?</li> <li>S How many districts are there to visit?</li> <li>S Is in the cessary to visit each one or only representative ones?</li> <li>S How log does it take to travel from centre to region to district and between districts?</li> </ul>	Central level: up to 1 week     Provincial level: 2 days to 1 week     Districts: at least 1 day for meetings and 1 day to prepare joint work in villages	
Village level š' survey and consultation	<ul> <li>S' Criteria to determine how many villages and communities may need to be included in sample survey include:</li> <li>How many ethnic groups are there in the area? - it may be necessary to make sample surveys of each one.</li> <li>How uniform is the population in socio- economic terms? - a range of different conditions would need to be surveyed.</li> <li>How geographically diverse is the region?</li> <li>- the ethnic and social samples may need to be repeated for each distinct geographical area within the region.</li> <li>How many different types of water source do people rely on?</li> <li>(alternative: do people rely on groundwater or surface water?) - the ethnic and social samples may need to be repeated for each type.</li> <li>Villages already provided with improved water supplies and villages without (to assess QAM issues and changes in hygiene behaviour).</li> <li>Other complicating factors, e.g. remoteness</li> </ul>	At least 2 days for each community to be visited, plus travel time.	
š' Village Needs Assessment Workshops	š One workshop in each district	1 day, plus 1 or 2 days preparation	

### MA7 Estimating time

The amount of time needed for most activities will depend on the resources, usually people, that are available. Some activities will need a certain amount of time irrespective of the number of people available, e.g. the Planning Workshop. Suggested times are given in Table MA7, together with other factors to consider to estimate the time needed for each activity. Space is provided to fill in the estimated time.

After it has been decided how much time is required for each activity, it may be helpful to show the results in the form of a Gant or bar chart. A blank bar chart, Form MA7.1, is provided for photocopying. To fill it in, decide when the activity can be done, then fill in the appropriate week, extending the fill-in to show the number of weeks required if necessary.

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Activity

Suggested time

Estimated

### Form MA7: Estimating time for Preparation Project continued

Factors to consider

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	1		1		
				/	

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			time
Stage 2			
Assessment and analysis:	š quality of the information	between 2 weeks	
	š the number of sample surveys	and 1 month	
	š the complexity of the area		
	š the number of people available to do it		
	š etc.		
Data processing	Š' Is data generally available already processed (e.g. by the Statistical Office) or will it be raw figures? The latter will need more time to process.		
Information and data analysis	š' How diverse is the area?		
Preparation of presentations for workshop	š One for each component or aspect of the programme, by relevant specialist		
Planning Workshop:	š Are there already a number of difficult issues to address?	At least one week of 5 or 6 days, plus preparation time	
Workshop review and report	š' How complex is the area?	1 or 2 weeks	
	$\check{s}^{\cdot}$ How many people are available to write the		
	report?		
Stage 3			
Draft programme design:			
Components	$\check{s}^{\cdot}$ the scale and complexity of the programme	up to 1 month	
š' water supply	š the number of staff assigned to the Core		
š' water management	Team		
š' sanitation			
š' hygiene education			
š institutional strengthening			
Programme management			
Additional information gathering and assessment as required			
Budget		about 1 week	
Review workshop		2 - 3 days plus preparation time	
Revise and prepare final draft		up to1 month	

Additional time may be needed for preparing interim progress reports.

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Week no. Duration and surveys formation gathering, consultations and background information and data col central level provincial/regional level village level survey illage Needs Assessment Workshops of prop

Form MA7.1: Preparation Project bar chart 13 17 Ħ 영

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### MA8 Planning activities for Preparation Project: Summary

Forms MA8.1, MA8.2 and MA8.3 are intended for summarising the detailed planning of the various activities. They can be adapted or copied and the information and tick boxes completed as necessary. Space is provided for writing in specific personnel requirements. The outline of the various activities is given in the flowchart at GA5, and fuller explanations are in the Manual.

	Form M/	A8.1: Planning Stage 1: Inform	ation gath	nering, co	nsultation	and survey		
Activity	Manual reference	Personnel required	Level	No. of people	Time	Availability	Other resources	
Briefing Workshop and training	M1.2	Y facilitator Y trainer Y Core Team members Y others as necessary Y						
Information gathering:								
Background Information, data collection, consultations and surveys: š: central level š: provincial/regional level š: district level	M1.3 M1.4 M1.5 M1.5	Y manager Y water supplysanitation engineer P health specialist P rural development specialist Y hydrogeologist/hydrologist Y Y Y Y						
Village-level survey	M1.6	Y manager Y water supply engineer Y health professional Y rural decopment specialist Y development field worker Y reveant district staff						
Village Needs Assessment Workshops	M1.7	Y facilitator Y rural development specialist Y development field worker						



### Form MA8.2: Planning Stage 2: Assessment and analysis

Activity	Manual reference	Personnel required	Level	No. of people	Time	Availability	Other resources
Assessment and analysis:		Ÿ manager					
Data processing	M2.1	Ý water supply/sanitation engineer       Ý health professional       Ý rural development specialist       Ý       Ý       Ý       Ý					
Information and data analysis	M2.2	Ŷ water supply engineer       Ŷ health professional       Ŷ rural development specialist       Ŷ hydrogeologist/hydrologist       Ŷ       Ŷ					
Planning Workshop:	M2.3	Ŷ       facilitator         Ŷ       manager         Ŷ       water supply engineer         Ŷ       health specialist         Ŷ       rural development specialist         Ŷ       hydrogeologist         Ŷ       various staff representatives from village, district and provincial level departments         Ŷ       representatives of communities Ŷ         Ŷ       representatives from NGOS Ŷ					
Workshop review and report	M2.4	Y manager     Y other Core Team members					

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### Form MA8.3: Planning Stage 3: Programme design

Activity	Manual reference	Personnel required	Level	No. of people	Time	Availability	Other resources
Programme design:	M3.1	Ÿ manager					
	M3.2						
Components							
š' water supply	M3.2.1	Ÿ water supply/sanitation engineer					
š' water management	M3.2.2	Ÿ hydrogeologist/hydrologist					
š' sanitation	M3.2.3	Ÿ health specialist					
š' hygiene education	M3.2.4	Ÿ rural development specialist					
š institutional strengthening	M3.2.5	Ÿ institutional development specialist					
Programme management	M3.3	Ÿ manager     Ÿ institutional development specialist					
Additional information Gathering and assessment as required		Ÿ Ÿ					
Budget		Ÿ manager					
		Ÿ individual specialists					
		Ÿ financial analyst					
Programme design report	G3.5	Ÿ manager					
		Ý individual specialists V plapper					
Review workshop	M3.6	ÿ facilitator					
		Ÿ manager					
		Ÿ water supply engineer					
		Ÿ health specialist					
		Ÿ rural development specialist					
		Ÿ hydrogeologist					
		Ÿ various staff representatives from village, district and provincial level departments					
		Ÿ representatives of communities					
		Ÿ representatives from NGOs					

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MA10 Estimating costs

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This sheet can be copied and then one completed for each activity.

Form MA10: Cost estimate

Activity:

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Completed by:

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				Activity Total		
				Total Vehic	les and transport	
Fuel/oil		Distance (km)	Fuel/oil consumption (l/km)	Total consumption (I)	Rate	Cost
venicies:			Duration	Hate		cost
venicies and transport			Duration	Boto		Cost
Vahielas and transmost						
				Iotal Offic	e and Equipment	
consumatives (paper, toner etc)				F-4-1		
rumiture:						
fum human						
teleshence						
nhotoconier						
nintern						
omos menodili fille						
office hire/mom hire		Humber	Purativil	Nate	cump odli	0001
Office and Equipment		Number	Duration	Rate	Lump sum	Cost
				1014	personalei coata	
				Tota	nersonnel costs	
Secretaries/administrators						
Drivers						
Support staff:						
Consultants:						
Workshon facilitator						
Other specialists:						
Socio-economist						
oner departmentar representatives.						
Other departmental representatives:						
Education representative						
Planner						
Hydrogeologist						
Health/hydiene.education specialist						
Rural development specialist						
Water supply engineer						

# MA10.1 Summary of cost estimate

# Form MA10.1: Summary of cost estimate

	Activity		Cos	its	
		Personnel	Offices and equipment	Vehicles and transport	Totals
	Stage 1				
Ŧ	Briefing Workshop and training				
2	Information and data collection, consultations and surveys				
e	Village Needs Assessment Workshops				
	Stage 2				
4	Assessment and analysis				
ъ	Planning Workshop:				
6	Workshop review and report				
	Stage 3				
7	Programme design				
	Additional information gathering and assessment as required				
8	Review Workshop				
6	Revision and preparation of proposal				
	Totals				

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SECTION A: PREPARATION PHASE

Section B: Project to develop programme

B



Guidelines

B

Stage 1: Information gathering, consultations and surveys

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### Objective of Stage 1

To gather information and understand the issues, challenges and problems in the water supply and sanitation sector in the programme area from the viewpoint of both government staff at various levels and communities themselves, so that the planning is based on the real context of the area.

### Introduction

Information gathering is necessary to understand the whole context of the proposed programme. The members of the Planning Team may be very familiar with their working situations, but it can still be very useful for them to step out of the day-to-day work and take a fresh look at the context. Information needs to be gathered on social, economic and health issues, as well as the technical aspects of water resources and supply and sanitation.

It is essential that views at all levels are taken into account. This includes the beneficiaries' views of their own problems and needs. The information-gathering process addresses this by looking at each different level — central, provincial or regional, and district — and by carrying out sample surveys in villages. Background information and statistical data should also be collected at each level. As far as possible, participatory methods should be used. The village surveys are consolidated in Village Needs Assessment Workshops with village representatives in each district.

As shown in the Flowchart of Stage 1, Stage 1 starts with a Briefing Workshop for the Planning Team. This has two parts. The first is an introduction to the Guidelines and Manual and the proposed planning process. The second part is for training on the methods and techniques to be used. For some members of the Team, this should be a useful refresher in participatory methods, for others it may be an introduction to the techniques. Overall, it should build confidence in the Team so that they are better able to undertake consultations and surveys.

The Consultation and surveys cover the three levels of government administration, central, regional or provincial, and district, with Statistical data and Background information being collected at each level.

For the Village surveys and consultations the Team should work together with appropriate staff from the district administration who may be more familiar with village work. Then the village surveys are consolidated for each district by holding a Village Needs Assessment Workshop with representatives from each of the communities visited in the district. This is the villagers' chance to analyse their own situation and to define their needs and expectation of the programme, which is intended to be for them.

### Definitions

Background information:	information about the context in which the water supply and sanitation sector works
Statistical data:	statistics from official reports and other documents
Survey:	systematic collection of information
Consultation:	meetings and discussions with people to understand the issues and problems in the sector



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### GUIDELINES: STAGE 1

### ECTION B: PROJECT TO DEVELOP PROGRAN

### G1.1 Mobilisation for Preparation Project

### Formation of Planning Team

The Preparation Phase in Section A describes the points to consider and the type of people required for a Planning Team (GA3, MA4 and MA6). The actual people now have to be selected and appointed, and/or seconded from other ministries and department.

To ensure a cohesive and effective Team, it is important to select staff with the appropriate seniority and experience. The Team should be compatible in terms of government grading. Based on the pilot study in Zambia, the grading of a Team Leader as a professional manager with 15 years of experience or more would be appropriate. The other members of the Team should be from a similar or lower grade for a technical specialist. It is important not to appoint people who are too senior. They are likely to have many other calls on their time, so may not be able to concentrate full-time on the Preparation Project. Tensions between Team members may be caused if specialists have a much higher grading than the Team Leader. All Team members should have substantial experience in their professional field, probably not less than 10 years.

The appointment of suitable administrative support staff will also have to be arranged.

### Consultants

One of the original concepts behind the Guidelines was that governments should be able to design their own programmes without the need for external consultants. The experience from the pilot study in Zambia shows that this may be too optimistic. The Zambian team clearly had the ability to plan and design a programme — what they lacked was the experience and confidence. Consultants may still be needed, but their role should very different to the traditional one of leading and managing the process. Consultants should be used in a technical advisory capacity, supporting and advising the national Team and providing training where required. Management and control of the process should be the responsibility of the national Team.

Defining the need for consultancy services, writing terms of reference, and selecting and appointing consultants requires special care and attention. The development banks and other organisations may be able to provide guidance on this. The Asian Development Bank has published *Guidelines on the Use of Consultants by Asian Development Bank and its Borrowers*. The International Labour Office has another useful book, *How to select and use consultants: A client's guide* (1993).

### Office facilities, equipment and transport

The office accommodation, equipment, transport, etc., as described in Section A (GA9) will have to be arranged in time for the Team to start work.

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## G1.2 Briefing Workshop

Making a good start to the Preparation Project is obviously essential, because it will influence how the rest of the relatively short project will proceed and succeed. It is also important to have a clear start to the project. To help with this, it is recommended that a Briefing Workshop be held for the Core Planning Team and other people who will join the Team for parts of the process. The objectives for this workshop are:

- > to enable the Planning Team to get to know each other and start team building;
- > to enable the Planning Team to understand the Guidelines and the assignment;
- to help the Planning Team understand the approaches to be used, which may be different to their normal procedures;
- > to promote a common understanding of and commitment to the process; and
- > to refresh the Team's participatory assessment skills.

This meeting may need to last for three days, including training in participatory methodologies. Full session plans for the Briefing Workshop are given in the Manual (M1.2).

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## GRAMME GUIDELINES: STAGE 1

# G1.3 Background information and statistical data

G1.3.1 Maps of the programme area

Various types of map will be useful for setting the context for planning and programme design and for understanding aspects of the programme areas. Table G1.3.1 gives a checklist of possible types of map.

Table G1.3.1: Types of map

Type of map	Check
Topographic	Ϋ́·
Administrative boundaries	Ÿ
Roads	Ÿ
Geological	Ÿ
Hydrogeological	Ÿ
Rainfall	Ÿ
Settlement patterns	Ÿ
Population density	Ÿ
Land use	Ÿ
Aerial photographs	Ÿ
Satellite imagery	Ÿ

More detail on maps is provided in the Manual (M1.3.1).

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Information gathering, consultations and surveys 57

### G1.3.2 Institutional arrangements

Information on the institutional arrangements should be collected during the consultations and surveys at each level.

#### Organisations

It is important to identify all the organisations working in and/or contributing to the sector. These may be broadly classified as follows:

#### government >

> donor

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- > international organisations and NGOs (operational)
- > local NGOs
- > private sector

Table M1.3.2, in the Manual (M1.3.2), can be used to compile a list of relevant organisations and show their areas of responsibility or skills. During the consultations and surveys organisations can be added to the table as they are identified.

#### Co-ordination, policy-making and regulation/control

The present responsibility for co-ordination in the sector should be defined and the mechanism recorded. An assessment of whether the system is working will form part of the survey and consultation at the different levels.

Roles and responsibilities in policy-making and regulation and control should be defined. Table M1.3.2 can be used to list these.

#### Types of implementation and activities

The different specialist areas of implementation and activities should be identified, by organisation. This will help to show up areas where there is limited capacity or coverage, and any complete gaps in coverage. Table M1.3.2 should help in this process.

G1.3.3 Government legislation, policies and plans Copies of any legislation and policies relevant to the sector should be obtained, including copies of drafts if in process. Table G1.3.3a suggests some of the possibilities.

#### Table G1.3.3a: Legislation and policies relevant to the sector

	Check
water resources	Ÿ
rural water supply	Ÿ
sanitation	Ÿ
health	Ÿ
gender	Ÿ
rural development	Ÿ
NGOs	Ÿ
agricultural water use	Ÿ
industrial water use	Ÿ
	Ÿ
	Ÿ

Similarly, copies of government plans and donors' plans should be obtained and any parts dealing with the above areas highlighted. Table 1.3.3b shows relevant types of plans.

### Table G1.3.3b: Plans relevant to the programme

	Check
Five-year plans (or other planning period)	Ÿ
rolling plans	Ÿ
sector plans and reviews	Ÿ
donors' plans	Ÿ
NGOs' plans	Ÿ
	Ÿ
	Ÿ

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### GUIDELINES: STAGE 1

### G1.3.4 Population

Population growth rates are needed to estimate the number of people to be served in the future, in accordance with the time horizon for the programme.

More detailed information on aspects such as:

- > urban and rural populations;
- > populations in each district or sub-division of the area;
- settlement patterns;
- populations densities; and
- > migration, etc.

will help to refine the programme design and enable particular groups to be identified and targeted.

Wherever possible, this statistical data should be dis-aggregated by gender and age, that is, the figures for men, for women and for children should be given separately, as well as the totals. This is to analyse whether women's needs and men's needs and contexts are the same or different. Dis-aggregated statistics can also be used for monitoring to ensure that different gender needs are being met.

There may be various sources for such data, at the different administrative levels — central, regional and district. An important document would be the most recent census from the government statistics office. The following list suggests this and other possible sources:

census

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- > other government documents
- statistics office
- other government departments
- local knowledge
- surveys
- > other programmes and project data

More detail on population data is provided in the Manual (M1.3.4).

#### G1.3.5 Socio-economic information

People are the reason for any development programme or project. Thus it is essential to understand the social, cultural and economic characteristics of the people in the programme area in order to develop a programme that fits their needs, aspirations and circumstances. This understanding must include the dynamics of gender — the roles of women and men, girls and boys, and the relationships between them. If these are ignored or not understood, the prospects for the success of the programme may be adversely affected.

More detailed information on aspects such as:

- ethnic and religious sub-groups;
- occupations of people;
- sources of income;
- assets and income;
- types of economic systems;
- > literacy rates:
- women-headed households; and
- disabled people; etc.

Again, wherever possible, this information should be dis-aggregated by gender and age. There may be various sources for such data, at the different administrative levels — central, regional and district. An important document would be the most recent census from the government statistics office. The following list suggests this and other possible sources:

- > census
- > other government documents
- → statistics office
- > other government departments
- local knowledge
- surveys
- > other programmes and project data

More detail on socio-economic data is provided in the Manual (M1.3.5).

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### G1.3.6 Water resources

All water supply programmes require a proper understanding of all the available resources, their quantity and sustainability, quality, and the location and accessibility of water resources. There are three broad areas of enquiry:

- > Climate: rainfall, evaporation, trends, major zones
- Geography: topography, drainage basins, geomorphological zones, land use and soils
- Geology: rock type, rock distribution, nature and depth of weathered zone, and the degree of aquifer confinement

Much of the data for the programme area is likely to be available at central level sufficient to make a broad assessment of the water resource potential. The form of the data may vary but typically could include that shown in Table G1.3.6.

#### Table G1.3.6: Water resources data

Form of data	Comments
Rainfall distribution map	scales from 1:50 000 down to 1:500 000.
Evaporation records	from climate data collected at meteorological stations or from evaporation pans
Distribution of evaporation	zoned ranges of evaporation, regionally and according to elevation. May need to extrapolate for programme area.
Long-term rainfall records	monthly rainfall returns for some stations, perhaps up to 25-year record. May need to extrapolate for programme area.
River and stream water-level and flow records	either from fixed flow gauging stations or from current meter gaugings at other sites
Surface water flow hydrographs	
Inventories of hand-dug wells and drilled wells	Rural water supply programmes may hold inventories of waterpoints. Drilling records and borehole logs may be kept centrally by the appropriate department.
Topographical maps	at scales between 1:50 000 and 1:500 000, with streams, rivers, and lakes and catchment divides
Geomorphology	can be derived for the programme but may exist as national or provincial syntheses
Land use and soil distribution maps	may be available for some areas, perhaps not all. Aerial photographs or satellite images enable a rapid assessment to be made of land use. Soil type may be derived from the geological map if otherwise not available.
Geological maps	at a scale of 1:50 000 and less are available for many areas. These portray the type and distribution of particular rock types. Information on weathering and the availability of confined water-bearing strata not apparent from the maps may only be forthcoming from earlier project reports and studies. These data may not be fully available at the beginning of the water resources assessment.

The process of bringing the data together, identifying shortfalls in the data holdings, and providing a meaningful assessment of the water resources potential of the programme area are described in a series of assessment analyses in the Manual (M2.2.5).

More detail about understanding and assessing water resources is provided in the Manual (M1.3.6).

### G1.3.7 Water supply and waste disposal

A major part of this data-gathering and assessment exercise is to find out what water supply and waste disposal facilities already exist in the programme area. Data gathering falls broadly into three areas:

- water supply coverage
- water usage
- domestic
- agricultural
- urban
- industrial
- recreation
- latrine coverage
- latrine usage
- > solid waste disposal facilities
- > pollution from waste disposal

#### This should provide a number of pieces of basic information:

- > existing coverage with improved water facilities
- > use of traditional water sources
- > existing patterns and trends
- > existing coverage with improved sanitation facilities
- traditional methods for disposal of excreta
- > information on existing technical choices
- > yield and quantity of water facilities
- particular problems and problem areas

These data can then be used for the hydrogeological and hydrological assessments (M2.2.5) and to provide additional information regarding existing use of the available water resource and the stress placed on the resource from waste disposal.

Much of the data required to carry out the water supply and waste disposal assessments are likely to be available at government and project level. In this case, however, the programme will need to validate the existing situation during the village consultations and surveys. These surveys should identify failures of waterpoints, disuse of waterpoints in favour of traditional sources, and identify problems (mechanical, hydrogeological, institutional or other) that have occurred with waterpoints. These data are fundamental to the programme design and enable the planners to draw on past experience.

More detail on water supply and sanitation coverage and targets is provided in the Manual (M1.3.7).

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Information gathering, consultations and surveys 63

### G1.3.8 Hygiene promotion

Hygiene promotion is a process which aims to promote the conditions, attitudes and practices that help to prevent water- and sanitation-related diseases. It is an important component of water supply and sanitation programmes for two reasons: to maximise the potential benefits of improved water supply and sanitation facilities, and to help users to appreciate the need for their proper operation and maintenance to create willingness to contribute to their costs (Boot, 1991). Hygiene education is a part of hygiene promotion.

To prevent water- and sanitation-related diseases and to improve living conditions, facilities have to be used, continuously, by everybody and in a safe way. This requires an interest from both communities and officials. Integrating hygiene promotion with other aspects of water supply and sanitation programmes requires skilful planning and management (*ibid.*). The starting point for this planning is to understand what is currently being done, and what priority is given to hygiene promotion.

Information is needed on a number of different aspects of hygiene promotion, as shown in Table G1.3.8. Detailed questions to obtain this information and forms for compiling it are given in the Manual (M1.3.8, M1.3.9).

#### Table G1.3.8: Aspects of hygiene promotion

Aspect	Detail
Funding	<ul> <li>government departments and organisations providing funding for hygiene promotion</li> </ul>
	š budget allocations
	š clarity of budget lines
Organisations	<ul> <li>š place of hygiene promotion in organisation of water and sanitation sector</li> <li>š organisations implementing hygiene promotion</li> </ul>
	š other organisations undertaking or supporting aspects of hygiene promotion
	$\check{s}^{\cdot}$ collaboration and co-ordination amongst government departments, donors and NGOs in hygiene promotion
	š the role of schools in hygiene education and promotion
Implementing capacity	š human resources for implementation
	š supporting resources
Health services and facilities	š planned and actual health care service provision
Health statistics	š top ten diseases (morbidity) for adults and children
	š incidence of water- and sanitation-related diseases
	š infant mortality rate
Health policy and planning	š health policies of the various organisations
	š health plans of the various organisations
	š health planning procedures of the various organisations
	š international initiatives on hygiene promotion

### G1.3.9 Health statistics

It is important to collect data on the incidence of the most common diseases (morbidity) to see whether these include water- and sanitation-related diseases. This is needed for advocacy and to justify the water and sanitation programme and the place of hygiene promotion within it.

The diseases and the ranking of their occurrence may be different at the national, regional and district levels. It is important to remember that health statistics are usually based on cases that are referred to the health care systems (at village health posts, clinics and hospitals). The many cases where people are ill but do not get treatment or go to traditional healers are unlikely to be included. Thus, the official statistics may grossly under-represent the true incidence of infectious diseases. Official and unofficial statistics should, therefore, be collected at each level.

A classification system based on transmission routes of infectious water- and sanitation-related diseases has been developed (Cairncross and Feachem, 1993). This is very useful because it helps to show where interventions can be made to reduce the incidence of these diseases. Form M1.3.9 is structured using this classification system. The infant mortality rate (IMR) (0 to 1-year-old) is a sensitive barometer to assess the health of a population. It can differ by area and circumstances, so it can be used to compare the health of different populations in, for example, different geographical areas or different population groups. It is also very important to understand the occurrence of diseases caused by the chemical quality of groundwater, especially arsenic and fluoride.

Form M1.3.9 in the Manual (M1.3.9) can be used to compile the statistics from the various organisations and sources during the consultations and surveys. Possible sources of health statistics are listed in the manual.

### G1.3.10 Funding

As part of the consultation and survey at the different levels, data should be gathered on the funds allocated to the sector by each organisation. This should include both past expenditure and future budgeted or planned spending. To enable a complete picture to be made of the past expenditure, it is probably best to collect the information for the last complete year, with the same year for each organisation. When gathering information from donors and implementers, care should be taken to ensure that funding is not double-counted.

Form M1.3.10 in the Manual (M1.3.10) is provided for collecting funding information from each organisation.

G1.4 Consultations and surveys - central, regional and district

#### G1.4.1 Interviewing

Virtually all the consultations are based on the Team interviewing officials and staff of government departments and organisations. Some of these people may be very senior, others may be much more junior than the person doing the interviewing. Interviewing successfully, which means obtaining the information that is wanted, is a skill that may come naturally to some people, but needs developing in others. The Manual (M1.4.1) provides some points to help in developing these skills. Practice in interviewing is provided as part of the Briefing Workshop (M1.2, Session 6).

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### G1.4.2 Central-level consultation and survey

The purpose of the consultation and survey exercise at central level is to understand the policies, views and practices, and the strengths and weaknesses of the government departments and other organisations that will manage, implement and be involved in the programme. This knowledge will be analysed in the Planning Workshop so that objectives and activities can be planned to strengthen the organisations for their roles.

The various organisations should already have been identified as part of the background information collection (G1.3.2 and M1.3.2). The list will probably include the organisations shown in Table G1.4.2.

The consultation on views and practices should include the following:

- sector policies
- understanding
- application and practice
- > organisation's roles and responsibilities
- organisation's activities
- plans
- programmes
- projects
- processes
- > organisation's future plans and developments
- > capability of organisation
- > capacity of organisation
- > funding

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- > co-ordination
- > perceived issues, challenges, constraints and problems in the sector and facing the organisation

These are described more fully in the Manual (M1.4.2) with suggestions for basic questions to start discussions.

Subject-specific information (e.g. water resources, hygiene education) is covered separately as part of Background information (M1.3) and Survey information (M1.5). Background information and data, as described previously, should also be collected from each organisation as appropriate.

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#### Table G1.4.2: Organisations at central level

government ministries and departments	Water Resources
	Health
	Rural Development
	Planning
	Public Works
	Agriculture
	Education
donors: multilateral	World Bank
	Asian Development Bank
	African Development Bank
	European Union
	etc.
donors: bilateral	SIDA
	DANIDA
	DEID
	GTZ
	USAID
	FINNIDA
	NORAD
	CIDA
	JICA
	etc.
international organisations and NGOs (operational)	UNICEF
	UNDP
	World Health Organisation
	WaterAid
	Plan International
	ActionAid
	Oxfam
	CARE
	etc.
local NGOs	
private sector	national drilling companies
	consultants
	contractors
	manufacturere
	training aggregations
	training organisations
	1

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### G1.4.3 Regional-level consultation and survey

The purpose of the consultation and survey exercise at regional level is to understand the policies, views and practices, and the strengths and weaknesses of the government departments and other organisations that will manage, implement and be involved in the programme. This knowledge will be analysed in the Planning Workshop so that objectives and activities can be planned to strengthen the organisations for their roles.

The various organisations should already have been identified as part of the background information collection (G1.3.2 and M1.3.2). The list of organisations to consult will probably include some of those shown in Table G1.4.4.

The consultation on the views and practices of the organisations should include the following:

- sector policies
- understanding
- application and practice
- > organisation's roles and responsibilities
- organisation's activities
- plans
- programmes
- projects
- processes
- > organisation's future plans and developments
- capability of organisation
- > capacity of organisation
- > funding

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- co-ordination
- perceived issues, challenges, constraints and problems in the sector and facing the organisation

These are described more fully in the Manual (M1.4.3) with suggestions for basic questions to start discussions. Subject-specific information (e.g. water resources, health education, O&M) is covered separately (M1.3 and M1.5).

Background information and data, as described previously, should also be collected from each organisation as appropriate.

#### Table G1.4.3: Organisations at regional level

government departments	regional government	planning
	water resources	public works
	health	agriculture
	rural development	education
international	UNICEF	ActionAid
organisations	WHO	Oxfam
and NGOs (operational)	WaterAid	CARE
	Plan International	etc.
local NGOs	Community-based organisations (CBOs)	
private sector	drilling companies	
	contractors	

### G1.4.4 District-level consultation and surveys

The purpose of the consultation and surveys at this level is similar to that at regional level, i.e. to obtain the views and practices of the organisations and agencies involved in the sector. See G1.4.3 for the overview and the Manual (M1.4.4, M1.3 and M1.5) for details.

There is, however likely to be a crucial difference in approach at this level, particularly if members of the Core Team are from central level. The intention at district level is not to find out what the formal policies and procedures are, it is to discover the district staff's own understanding and interpretation of these policies. They are the ones who are actually implementing them. They are the ones who are best placed to understand the problems and difficulties of applying the policies.

The interviews with district staff may be especially sensitive if members of the Core Team are associated with making policy at central level. The district staff may be reluctant to discuss the practical realities and problems if they are seen to be criticising policies made by the interviewers. It may also generate a reaction of defensiveness in the interviewers, leading to denial of facts. It is important to establish confidence and trust so that a frank, open expression of views is possible. A demonstrable willingness to learn by the interviewers will help in this. If it works, the results can provide a valuable lesson for everyone.

## G1.5 Survey information gathering

### G1.5.1 Water resources and uses

Knowledge of how water from the various resources is allocated for different uses is important for later assessment of the demand on each resource. It is also important to understand if there is any conflicting demands for the water between the different uses and users, and whether there are any water rights issues in the area.

Form M1.5.1 in the Manual (M1.5.1) can be used as a basis for discussion with local officials responsible for water supplies.

### G1.5.2 Rural water supplies — Summary

The Manual gives forms to help in summarising the information gathered at regional and district levels on water resources and the technologies currently used to abstract the water (M1.5.2).

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#### G1.5.3 Operation and maintenance of rural water supplies

Obviously, it is essential that handpumps and other types of water supply facilities continue to function after they have been constructed. Some form of operation and maintenance (O&M) system should have been established to enable this to happen. As part of the exercise of information gathering and analysis, it is necessary to assess how well the O&M system is working. If no formal system was established, information on the informal maintenance arrangements should be gathered. The methodology proposed (M1.5.3) is based on and adapted from Cotton *et al.* (1994).

The method is divided into two parts. During the fieldwork, information needs to be collected on various aspects of the O&M system at regional, district and village levels. A number of forms are provided for recording this information is a systematic way. This will be assessed in the Analysis section to establish a number of performance indicators for the O&M system.

#### 0&M management systems

Firstly, it is necessary to categorise the type of operation and maintenance system which is in place. There are a number of ways of organising O&M management. The essential differences relate to the degree of involvement of the user community, the role of the public institutions and levels of government, and the role of the private sector. For practical purposes, systems can be classified into three categories, although in practice systems may be anywhere in a range between them:

VLOM: Village Level Operation and Maintenance (and Management):

All routine inspections and minor repairs are carried out by trained people from the community, often known as caretakers or village maintenance workers. There is a mechanism for support, and the reporting of and repair of major faults. There is minimum intervention by external agencies.

#### Area-mechanic maintenance:

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A trained, locally based mechanic carries out repairs, involving the community to a greater or lesser extent.

#### Centralised maintenance:

A team of trained technicians travel out from a depot to inspect and repair facilities. Communities have little if any input apart from sending requests for repairs to be done. It is most common for the public sector to provide this service, although the private sector may be involved.

What type of O&M system is in place?

VLOM	Ÿ
Area-mechanic maintenance	Ÿ
Centralised maintenance	Ÿ
No formal system	Ÿ
Other arrangement	

#### Performance indicators

To enable the performance of the operation and maintenance system to be monitored and managed, a number of indicators have been developed. These have been adapted for this manual so that an assessment of the current performance of the operation and maintenance system can be made and any problems identified. The performance and problems will later be analysed in the Planning Workshop to improve any deficiencies in the O&M system.

The performance indicators (PI) are divided into groups:

- service
- > financial
- > personnel
- > materials
- > work order control

More explanation of each of these PIs is given in Information and data analysis (G2.2.4 and M2.2.4)

Forms for collecting the information and data that will be used to calculate these PIs are given in the Manual (M1.5.3). These should be copied and one completed for each district, and then collated for the region. It is important to check and verify the information given by district offices during the sample survey of villages.

#### G1.5.4 Community pumps: The users' views

It is important to understand how pumps and pump technology work from the users' point of view. Issues to be explored during the Village consultation and surveys include:

- > ownership
- > how they operate and maintain the pump
- > how they get support and assistance if required
- > sources and availability of spare parts
- > how much it costs them to run the pump
- > if a motorised pump, how they obtain and pay for fuel/electricity and lubricants

For each individual village with a pump, the villagers and pump users should be asked for this information. Forms to collect this information in each village are given in the Manual (Forms M1.5.3A and B and Form M1.6.6).

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Information gathering, consultations and surveys

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### G1.6 Village consultation and survey

It has been widely recognised in the past decade or so that users themselves should be fully involved in any projects which affect them. There may be limitations on how much they can be involved in designing a programme, but to inform the planning and design process it is essential to gather at village level as much information about the conditions that the beneficiaries themselves face in their lives. They should be enabled to voice their ideas, opinions and problems, and what they themselves define as their needs.

#### G1.6.1 Selection of villages

Obviously it is impossible to visit every village and community in the area, so it will be necessary to choose a representative sample. The actual number of villages to select depends on a number of factors. If the programme area is complex socially, ethnically or geographically, then more villages will have to be covered than if the area is fairly uniform. This has already been considered in outline in the Preparation Phase (MA7) in order to plan the overall time needed to carry out the Preparation Project. Now it is necessary to consider this in more detail and to adjust the original estimate if necessary.

The Manual provides a way of calculating the number of villages that need to be included in the sample survey for each district (M1.6.1). This takes into account the social and geographic complexity of the area, including factors such as the number of ethnic groups, the topography, use of surface water or groundwater, and use of improved or traditional water supplies.

The actual selection of villages is best done in consultation with district officials during the District-level consultation and surveys. If it has to be done in advance in order to give time to inform villagers of the intended visit, criteria for selection can be drawn up and sent to the districts for them to make the selection.

#### Time required

At least two days in each village should be allowed to carry out the consultation and survey. Time to travel to and from the each village should be added. If it is feasible, the survey team staying overnight in the village would help to build confidence with the villagers, which could result in better information and understanding.

### Team for survey

The team to carry out the village consultation and surveys should include local staff from the district concerned. Possible staff include:

- > community worker or extension agent
- > water and sanitation engineer or hydrogeologist
- > health worker
- > teacher
- agricultural extension agent

Information gathering, consultations and surveys

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### G1.6.2 Participatory process and methods

There are a number of subjects that need to be understood from the communities' points of view for the programme planning and design. To enable communities to be fully involved in their own development, the concept of Participatory Rural Appraisal (PRA) has evolved as one possible approach. A number of exercises and methodologies have been designed for this, some of which will be appropriate for obtaining the views of a sample of villages. These include:

- > Semi-structured interviewing
- > Key informant interviews
- > Group interviews
- > Focus group discussions
- Mapping
- > Seasonal calendars
- > Pocket charts
- > Observation
- > Environmental tours

An explanation of participatory processes and details of the relevant methods are given in the Manual (M1.6.2).

### G1.6.3 Village survey issues and methods

Table G1.6.3 shows the subject areas, with key points for each subject, and possible methods to use to obtain this information. The application of these is shown in the Manual (M1.6.3), together with fuller explanations and forms for recording the information gathered, as follows:

- M1.6.4 General background information on village
- M1.6.5 Village water supplies
- M1.6.6 Community pumps
- M1.6.7 Village sanitation
- M1.6.8 Community participation
- M1.6.9 Health and hygiene beliefs and behaviour
- M1.6.10 Group discussions
- M1.6.11 Community health and beliefs
- M1.6.12 Hygiene behaviour

Table 1.6.3: Subject areas to understand from communities' point of view

Subject	Key points	Methods
Water resources	š sources of water	š interviews with key informants
	š management of water in community and area	š observation
	š' water rights	š' environmental tour
	š types of water technology in village	š' mapping
	š floods and droughts	š' seasonal calendar of water
	š' seasonal	source availability and use
Water use	š uses of water	š focus group discussions
	š quantities of water	š observations
	š allocation for different uses and priorities	š' questionnaire
	š future plans for water exploitation	
Maintenance	š' system of maintenance	š interviews with key informants
	š' water and sanitation committees	š questionnaire
	š' who carries out maintenance and repairs	
	š cost sharing/recovery	
	š reliability of water point	
Health, hygiene and	š' community health	š focus group discussions
diseases	š community beliefs about health and disease	š checklists
	š hygiene behaviours	š' observation
	š' domestic environment	š interviews with key informants
	š' use of water	š seasonal calendar of diseases
Sanitation	š understanding of sanitation	š focus group discussion
	š present practice regarding defecation	š' observation
	š number and type of latrines in village	š' environmental tour
	š use of latrines, condition	š interviews with key informants
	š' solid waste	š' manning
		š' three nile sorting
Socio-economics	š number of people (disaggregated by gender age	š' focus group discussions
	social grouping)	š' interviews with key informants
	š number of households	
	š occupations, incomes and assets	
	š social organisations and groups, leadership	
	š gender issues	
	š educational levels	
	š clinic or health post	
	š primary and/or secondary school	
Environment	š deforestation	š focus group discussion
	š soil condition, soil erosion	š environmental tour with
	š wastewater drainage	community members
	š pollution of water resources and sources	
	š land use	
Community-defined needs		š focus group discussions
and problems		
Interest in water and	š priority in list of needs/problems	š focus group discussions
sanitation programme	<ul> <li>s willingness to manage planning and implementation of village project</li> </ul>	
	š willingness to contribute to construction (time, labour, materials, money)	
	š willingness to pay for O&M	
Community participation	š previous village projects	š focus group discussions
(experience and potential)	š future development plans	š observation of previous
		projects

## G1.7 Village needs assessment workshops

The purpose of these workshops is to enable the views of communities, including their own perceptions of issues and problems and solutions, to be prepared for inclusion in the Planning Workshop.

The participants of the workshops should be representatives from each of the villages that are visited during the village survey and consultation. Each village should send two or three representatives, including at least one woman. In case any representatives are unable to read easily, it may be necessary to provide helpers to assist with the written material in the workshop.

The workshop itself takes one day, with one or two days for preparation in advance. It is suggested that one workshop is held in each district.

A methodology for organising and running these workshops is provided in the Manual (M1.7).

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Stage 2: Assessment and analysis

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#### SECTION B: PROJECT TO DEVELOP PROGRAMM

## Objective of Stage 2

To produce a draft outline programme based on a thorough assessment, analysis and understanding of the programme area and the issues and challenges in the water supply, sanitation and hygiene promotion sector.

### Introduction

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The information and data that has been gathered has to be processed and analysed. There are several parts to this, as shown in the Flowchart of Stage 2.

**Data processing (2.1 on Flowchart)** is the numerical analysis of statistical information. The processed data may summarised for presentation during the Planning Workshop.

**Information and data analysis (2.2)** is the assembly and comparison of data and information from different sources, in order to understand particular issues and identify potential problems. The information, data and analysis is summarised for presentation and recorded for use in the various reports that will be prepared as part of the Preparation Project.

The summaries are prepared for presentation in the **Planning Workshop** (2.3). This participatory workshop is the core of the whole planning process. Representatives from the various different levels (including villages) and various areas of expertise should be invited to this workshop. The workshop uses participatory methods such as problem identification and problem tree analysis to set objectives in each of the areas, and SWOT analysis to look at the institutions in the sector.

The output from the workshop is then **reviewed (2.4)** and compared with the original Terms of Reference for the Preparation Project. A **report** should be prepared for submission to the relevant authority for a decision on whether or not to continue to Stage 3: Programme Design.



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## G2.1 Data processing

G2.1.1 Population data

The basic source of information should be the most recent census. Important things to draw out of the data are the statistics for:

- > total population
- > population by district
- > population by gender and age
- urban and rural populations
- population densities
- > households
- > female-headed households

To be able to compare data from different sources it will be necessary to bring them to a common date. The most important comparison will be present population with present coverage of water supply and sanitation. It is likely that the latter figures will be the most recent, so population data will have to be increased by the growth rate with any significant changes such as migration or refugee influxes. It will then be necessary to project figures forward for planning purposes.

Thus two sets of calculations will be needed. Spreadsheets for these calculations are given in the Manual (Forms M2.1.1A and B). These can either be photocopied and used to make the calculations manually, or they can entered into a computerised spreadsheet programme such as Excel or Lotus 1-2-3 with the formulæ for automatic calculation.

These will be crude calculations that do not take account of factors such as changes in disease patterns, for example reduction in mortality rates as a result of improved water supply and sanitation. For present planning purposes, however, they are probably adequate.

### G2.1.2 Finance

One way of checking whether or not a programme is integrated is to look at the allocation of budgets from all the agencies involved in the sector, including the community contributions in terms of cash, labour and materials, and the private sector. If it is possible from the data collected, it is useful to classify the total amounts of money allocated to and dispersed to the following categories:

- > Water supply
- new construction
- rehabilitation
- operation and maintenance
- > Sanitation
- promotion
- construction of latrines
- solid waste
- > Community organisation, mobilisation and training
- > Hygiene promotion
- Water resource management

There may be other categories if the information is already organised in that way. For example, training, transport capital costs and transport running costs may be shown separately, but it is more useful if these can be assigned to the particular component in the main list.

The source of the funding may also be important. It is useful to distinguish between funds generated from the community, funds from local and national sources, and international donor funding. This can indicate the reliance on, and possible vulnerability to, one funder.

Forms for compiling and analysing this information are provided in the Manual (M2.1.2).

### G2.1.3 Coverage of water supply and sanitation

The processing of this data will depend on the way the different organisations define and present their figures. If there is wide variation in the figures and they cannot be reconciled — or if figures are not easily available — it may be necessary to present these variations. These cases could be highlighted as problems for the Planning Workshop to consider.

The easiest way to present this sort of information is to tabulate it. It is useful to present figures as both actual numbers and as percentages of the total number of people or households. It may also be important to distinguish between systems that are operational and systems that have broken down or are in need of rehabilitation.

Possible categories to distinguish levels of coverage could be:

- > types of water supply improved and traditional unprotected sources
- > distance to source
- > types of latrine

Figures for coverage should be updated to include construction since the figures were produced. This can be done simply by adding the construction or implementation figures for each year to the official figure. Care should be taken that these are *actual* construction, not what was planned.

An example of the presentation of water supply coverage taken from the First Pilot Study of these Guidelines in Zimbabwe is in the Manual (M2.1.3).



### G2.1.4 Disease statistics

Disease statistics gathered from central, regional and district offices and from village health posts is best tabulated so that patterns can be seen and interpretations made. Tables for this are provided in the Manual (M2.1.4). Data gathered from the communities in villages is not statistically valid and should be processed and analysed in a different way. Forms are provided in Manual (M2.1.5).

Important points to bring out of the data include:

- > the number of the top ten diseases of adults listed that are water- and sanitation-related;
- > the number of the top ten diseases of children listed that are water- and sanitation-related;
- > infant and under-5 mortality rates;
- > any variations between national and regional figures, between regional and district, and between districts; and
- > any variations in percentage terms between village health posts and district figures.

Care should to be taken with data and statistics for several reasons:

- > The data for adults and children may not be disaggregated but lumped together.
- > It is likely that health data collected from institutions, e.g. health clinics and hospitals, underestimate the true disease incidence, as these figures only record the cases which have attended clinics and hospitals.
- > Health data issued by governments and other organisations may differ and a range of figures may be available, e.g. it is common to see different estimates of infant mortality rates for the same population.
- Health data may be available as actual numbers of cases rather than in the form of rates.

### GUIDELINES: STAGE 2

### G2.2 Information and data analysis

A number of issues need to be considered when planning a rural water supply, sanitation and hygiene promotion programme. These issues are inter-related — solutions to one cannot be developed without considering the others. The complexity of these inter-relationships is shown as a matrix in Table G2.2.

The inter-relationships of these issues emphasise the need for integrating the planning and implementation of rural water supply and sanitation programmes. This is not easy to achieve. A number of different professional disciplines are involved. They are not disciplines that naturally relate to or understand each other — especially technicians (engineers and hydrogeologist/ hydrologists) with social development people. The separation of responsibilities into different government ministries also complicates the process.

Information and data analysis involves assembling and comparing data and information from different sources, by different specialists, in order to understand particular issues and identify potential problems.

There are three phases to understanding a complex subject1:

- simplistic when everything seems obvious
- > complex as the implications sink in
- » simple again when insight tames the complications

Guidance on some of the relationships shown in Table G2.2 is given in the rest of this section and the corresponding section in the Manual. Other relationships, for which guidance is not provided, are indicated for the user to think about.

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<sup>1</sup> paraphrased from Chambers, 1993

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### GUIDELINES: STAGE 2

G2.2.1 Policies, plans and procedure	G2.2.1	s, plans and procedur
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The various policies, plans and procedures should be read and analysed to understand the implications of anything that may be relevant to the water and sanitation sector.

### Questions to help analysis:

- > What is the implication of the policies, plans and procedures for the sector?
- > Will any roles, procedures or implementation arrangements have to be changed?
- Are there any limitations or restrictions on the way things can be done?
- Do the policies, plans and procedures reflect the current thinking in the sector internationally on things like the integration of components, community management and cost recovery? Some of these are discussed in G2.4.7.

### Policies

From the various policies that have been gathered, abstract anything relevant to the water and sanitation sector. Particular things to note are:

- water resources
- water supply
- sanitation
- > health which is relevant to water or sanitation diseases
- health or hygiene education
- social development
- > economics related to the sector
- > NGOs' roles in the sector and generally

#### Plans

Plans can be classified as general government plans covering all sectors (e.g. a five-year plan, rolling plans) or as sector-specific.

The **general plans** should be analysed in the same way as policies, abstracting the parts relevant to the sector by using the same list as above.

#### For sector-specific plans, abstract:

- the goals;
- objectives;
- > targets and coverage figures; and
- > definitions and any other information which is relevant or important to consider for the planning of the new programme.

#### Procedures

These should be analysed in the same way as policies, abstracting and summarising the procedures relevant to the sector by using the same list as above. Note anything which creates an enabling environment, or will be restrictive.

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				S	ocial Ec	onomic		Wat	er supl	ly I	Water r	sources	Sanit	ation	Hygi	ene	org	gnisati
The shaded boxes show relationships where a decision on an output requires analysis of a variety of types of information and data. <b>Output</b>	Plans	Policies	Procedures	noiteluqon	wealth/poverty	community organisations, structures, committees	community organisation/ development methodologies	୧୦୦୧୮ସହିତ	operation and maintenance status	technologies	hydrology data	groundwater data	୧୦୦୦ୋଟିକ	seigolonntoet	knowledge, attitudes and practice (KAPs)	h/h education implementation	types	seeralist areas
Social economic																		
wealth/poverty																		
community organisation and development methodologies																		
Water supply																		
coverage and targets																		
water demand																		
operation and maintenance																		
technology choices																		
Water resources																		
groundwater potential/limitations																		
surface water potential/limitations																		
Sanitation																		
coverage and targets																		
technology choices												_						
Health/hygiene																		
h/h education effectiveness/needs																		
Organisations																		
implementation capacity																		
finance																		

ECTION B: PROJECT TO DEVELOP PROGRAMME

G2.2.2 Interviews<sup>2</sup>

The consultations and surveys at the various levels involved a number of different types of interview. These included:

- > individual interviews
- > key informant interviews
- > group interviews and discussions
- focus group discussions

Analysis of these can be difficult, because of the wide variety of answers, the different points raised by different people, and the length of some of the answers.

A way to analyse the responses is to summarise each interview into the main points raised. From these it may be possible to make a limited number of categories of response that will help to summarise common views and show dissenting views.

It is worth reporting any particularly interesting responses word for word. Any responses raising problems or issues within the water and sanitation sector should be highlighted and written on 'problems cards' for use in the Planning Workshop (see M2.3, Session 4).

### G2.2.3 Coverage, targets and implementation capacity

The purpose of this analysis is to establish whether the targets that have been set in the government plans or the Terms of Reference for this programme are realistic and achievable in terms of institutional capacity and finance.

The basic steps to do this are:

- 1. Compare the present coverage of water supplies sanitation facilities with the target coverage to establish how much work needs to be done.
- Compare the work that needs to be done with the actual present implementation capacity, for software as well as hardware, of the various organisations working in the sector.
- 3. Compare the cost of the work that needs to be done with the finance available.

The detailed steps to carry out this analysis are given in the Manual (M2.2.3).

<sup>2</sup> This is based substantially on part of Tool 1 in Gosling, L., and Edwards, M. (1995)

#### G2.2.4 Operation and maintenance performance indicators<sup>3</sup>

#### **O&M** management systems

First, it is necessary to categorise the type of operation and maintenance system that is in place. If there is no system, then the informal arrangements for maintenance should be reviewed. There are a number of ways of organising O&M management. The essential differences relate to the degree of involvement of the user community, the role of the public institutions and tiers of government, and the role of the private sector. For practical purposes, systems can be classified into three categories, although in practice systems may be anywhere in a range between the extremes.

#### VLOM: Village Level Operation and Maintenance (and Management)

All routine inspections and minor repairs are carried out by trained people from the community, often known as caretakers or village maintenance workers. There is a mechanism for support, and for the reporting of and repair of major faults. There is minimum intervention from external agencies.

Area-mechanic maintenance: a trained locally based mechanic carries out repairs, involving the community to a greater or lesser extent.

**Centralised maintenance:** a team of trained technicians travel out from a depot to inspect and repair facilities. Communities have little if any input. It is most common for the public sector to provide this service, although the private sector may be involved.

#### O&M performance indicators

To enable the performance of the operation and maintenance system to be monitored and managed, a number of indicators have been developed. These indicators can be used for analysing the current status of the operation and maintenance system to inform the Planning Workshop and prepare the programme design.

During the assessment you should have gathered information which will assist in the calculation and analysis of performance indicators (PIs). The PIs are divided into groups, as shown in Table G2.2.4, with an abbreviation that is used in the survey form (Form M1.5.3A).

Table G2.2.4: Performance indicators for operation and maintenance

š' service	S	Functioning water points	number in working order
			total number
	S	Reliability	functioning time
			total elapsed time
š financial	F	Cost	average 0&M cost per user
	F	Revenue	operating revenue
			population served
	F	Cost recovery	average user payments
			average O&M cost per user
	F	Subsidy	O&M budget allocation
			O&M cost
š personnel	Р		
š' materials	М		

### The method for calculating the PIs is given in the Manual (M2.2.4).

<sup>3</sup> This part is based on and adapted from Cotton et al., (1994), Tools for the Assessment of Operation and Maintenance Status of Water Supplies, World Health Organisation, Geneva.

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G2.2.5 Water resources assessment

For readers not familiar with groundwater, an introduction to the subject with a glossary of terms is provided in Appendix A of the Manual.

During the information-gathering process, various pieces of information and data on the water resources in the area should have been collected. To produce an overall assessment of the water resources, water demand and pollution from waste disposal, a number of individual analyses are proposed. These are summarised in Table G2.2.5. Issues to be considered for the individual assessments are given in the Manual (M2.2.5).

Assessments Nos.1 to 6 are to identify the amounts of water available to recharge groundwater in a given area, the amount of runoff and groundwater base-flow available to sustain surface waters, and the variation in likely available volumes and the return periods of extreme conditions of drought and flood. In addition the geographical and geological constraints to the overall water resources potential should be identified.

Assessments Nos.7 and 8 are to identify the levels of existing and projected future demand for water for various uses, and Assessment No.9 is to identify actual and potential pollution from disposal of wastes.

Table G2.2.5: Water resources assessment

To derive a     Basic understanding of the hydrological cycle enables the water n     conceptual model of     the hydrological cycle     of water abstraction facility. The assessment resumonses available	esource potential to be regard to density and type
and should be used to provide input to the water resources asses	ssment.
2. To estimate drought and flood return frequency Annual variation of rainfall in low rainfall areas may be large; it is the likely range and the frequency of extreme conditions, as well trends. This appreciation is used to enable a sustainable water su planned that will be capable of withstanding the extremes of clim	necessary to appreciate as current climatic upply system to be ate.
3. To evaluate the geographical features affect both hydrology and hydrogeology. Th these features will identify constraints on surface water and grour constraints evaluation is used for the hydrogeological assessment (Assessme	orough evaluation of ndwater resources. This ent No.5).
4. To evaluate the geological constraints are the nature and distribution of the v geological constraints the degree and depth of weathering. The information is used to for hydrogeological map depicting permeable and impermeable strate of one rock type against another for storing and producing grounce	arious rock types, and orm the basis of a a and the relative value twater.
5. To bring data together as a hydrogeological geology can be brought together to form an integrated summary water and groundwater resources. This summary is used as the design and will inform possible coverage as well as technical choi information on where groundwater development is easy and wher relatively difficult.	nate, geography and of the available surface asis for programme ice. It also provides e it is likely to be
<ol> <li>To identify shortfalls in data</li> <li>The data used for the hydrogeological assessment may contain g gaps that limit the sensible evaluation of the water resource pote identified in order to promote future data collection to safeguard supply system.</li> </ol>	eographical or technical ntial. These should be the proposed water
<ol> <li>To investigate water supply coverage</li> <li>This identifies the existing patterns and trends in use. It is used to experience and to identify coverage targets.</li> </ol>	o draw on past
<ol> <li>To assess water abstraction and water use</li> <li>This assessment attempts to quantify water use in terms of the o to understand existing patterns of use and trends that are taking</li> </ol>	verall resource. It is used place.
9. To evaluate the risk posed by waste disposal to the water resource. It is used to asfeguards are necessary to protect the resource.	e material generated and o see if additional

### GUIDELINES: STAGE 2

#### G2.2.6 Assessment summaries

Each member of the planning team who has been carrying out the consultations, surveys and analysis should write a summary of the information gathered and its analysis. This has two purposes:

- > to prepare a presentation for the Planning Workshop to give the participants a broad picture of the area and the issues and problems they are dealing with; and
- > to make a written record for various reports and programme documents that will be produced.

In addition, each team member should write problem cards for specific problems that they have identified during the consultations, surveys and information analysis.

Table G2.2.6 is a checklist of the information that should be included in the summaries. The summaries should:

- focus on the key points only;
- > explain the issues and realities in the programme area;
- > bring out important discoveries from the consultation and surveys;
- be presented on flip-chart paper so that the group can refer to them during the course of the workshop; and
- be prepared as handouts for the participants' later reference.

#### Table G2.2.6: Checklist for assessment summaries

Ϋ́	a map of the area, showing features such as rivers and lakes, small towns, mountains, roads, and any important geographical information
Ÿ	existing coverage of the rural population with water supply facilities
Ÿ	maintenance status of existing water supplies
Ÿ	types of traditional source
Ÿ	types of improved source and method of abstraction
Ÿ	traditional methods of disposing of faeces
Ÿ	existing coverage of improved sanitation facilities
Ÿ	types of improved latrine
Ÿ	diseases
Ÿ	official disease statistics
Ÿ	disease patterns in communities
Ÿ	people's understanding of the causes of diseases
Ÿ	key hygiene behaviours and practices
Ÿ	water resources information
Ÿ	major uses and allocation of water
Ÿ	community allocation and use of water
Ÿ	water rights problems
Ÿ	total population of area
Ÿ	rural population of area
Ÿ	population by gender
Ÿ	institutions and organisations in sector
Ÿ	organisational problems and issues
Ÿ	implementation capacity in each component
Ÿ	summaries from each Village Needs Assessment Workshop
Ÿ	successes in past and current projects and programmes
Ÿ	problems and issues mentioned during the consultation and survey, and arising from the analysis

### G2.3 The Planning Workshop

The Planning Workshop is the most important part of the process of developing a programme. It enables representatives of all those involved in the programme to work together to explore the issues and problems and to develop solutions. It provides the basis for the detailed programme design. The Planning Workshop should create ownership of the programme by the people who will be responsible for its implementation.

### Objective of the Planning Workshop

To produce a draft outline programme including a goal with the broad objectives, specific objectives and activities necessary for its achievement, by representatives of the organisations and institutions that will be involved in implementing the programme and representatives of the beneficiary communities, based on a thorough understanding of the context in which the programme will operate.

#### Process

The process is based on various participatory methods to enable all the participants to contribute. These are outlined in Flowchart 2.3, and each session is described in detail in the Manual (M2.3). Successful conduct of the process depends on having a good facilitator. This person should obviously be experienced in participatory techniques for planning, but should also have some knowledge of the sector and the region.

It may be best to do the workshop in a location away from any of the offices concerned, so that everybody can concentrate on the workshop and not be distracted by other work.

#### Time

At least five full days are needed for the workshop, and it may be wise to allow for six days in case extra time is needed. Exercises such as problem tree analysis take considerable time and should not be rushed if the full value of the process is to be realised.

#### Participants

Having the right people to participate in the workshop is the key to its success and the success of the resulting programme. Participants should include people involved in the day-to-day issues and problems in the sector, people with detailed knowledge of the issues on the ground, people with specialist and technical expertise, and, most importantly, people whose lives will be affected by the results of the programme — the communities themselves. Thus, representatives should be drawn from:

- > communities in each district (selected through the Village Needs Assessment Workshops)
- > people who will actually implement the programme that is developed
- > district government staff involved in the sector (probably two from each district)
- > regional government staff from each concerned department
- central and regional government specialist staff from each concerned department (some of these people may also be from the Core Team)
- > the Core Team which has carried out the assessment and analysis part of Stage 2
- decision-makers from key positions within the government system (if they cannot be present, they should be kept fully informed of process and outcomes)
- > other specialists involved in the study
- > representatives from other organisations involved in the sector, such as NGOs

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### GUIDELINES: STAGE 2



### G2.4 Planning Workshop Review and Report

The outputs from the Planning Workshop are solutions to the problems and issues that face the people working in the sector and the communities living in the area. The solutions, in the form of objectives and activities, have been developed by these people. To maintain the participants' ownership of the programme, it is essential to carry these through to the programme design. The format in which they have been presented, however, may make this difficult. Each objective tree is likely to be a mixture of both specific objectives and activities, and they may not be expressed very clearly. The outputs may not cover all the activities and objectives that may be necessary to achieve the broad objective for that component. The Planning Workshop may not have discussed some of the major policy questions facing the sector. This section is to address these issues, leading to the production of a report on which the responsible authority can make a decision to proceed to detailed design of the programme.

### Objective of the Planning Workshop Review and Report

To obtain a decision to proceed to Stage 3: Programme Design based on a report defining a comprehensive outline programme that addresses all the issues, needs and problems in the sector.

#### Process

The steps to achieve this are outlined in **Flowchart 2.4**. Master Lists of specific objectives and activities ( $G_2.4.2/3/4/5/6$ ) are the basis of this whole section, and are used at several points. The intention is to capture and maintain the integrity of the outputs from the Planning Workshop but also to ensure that everything that is necessary is included. The sequence of steps is therefore important.

The **outputs** from the Planning Workshop are first **reviewed against the Master Lists** (2.4.1) to record all the points identified by the workshop participants, and to sort them into specific objectives and activities. The sector specialists should then add others from the Master Lists that they consider necessary to achieve the broad objectives in each component.

Decisions have to be made on some **key questions for programme policy** (2.4.7). These are major issues that are currently being discussed in the sector internationally. Based on the results of the decisions, some additional items from the Master Lists may be required, so it is necessary to refer to the lists again.

It is helpful to arrange all the required specific objectives and activities into **objective trees**, showing the hierarchy and relationships between each (2.4.8). These can then be adapted easily to the logical framework format that is required by some donors.

At this stage, a **check back to the original Terms of Reference** for the Preparation Project (2.4.9) will help to ensure that the project is still going in the right direction and achieving what was requested. If it is, a **report of the results of the Preparation Project** (2.4.10) so far should be prepared for the commissioning authority. If the outputs and findings differ from the ToR, it will be necessary to prepare a report to explain why, and propose changes to the ToR if necessary. A decision may then be needed from the commissioning authority on whether or not to accept the proposed changes and proceed to the Programme Design.

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Flowchart 2.4: Planning Workshop Review and Report

#### G2.4.1 Planning Workshop review

The objective trees from the Planning Workshop are likely to contain a mixture of specific objectives and activities, with no clear distinction between them. In addition, they may not be clearly expressed. The first step is to organise this mixture into a structure for the programme design. Master Lists for each component are provided to assist with this organisation:

- G2.4.2 Water supply facilities
- G2.4.3 Hygiene promotion
- G2.4.4 Sanitation
- G2.4.5 Water resource management
- G2.4.6 Institution building/strengthening

The next step is to combine these workshop outputs with the professional specialist's own views of the specific objectives and activities needed to achieve each component. This process should be carried out with some care. The output from the workshop is in a sense 'owned' by the participants. Based on their own knowledge, experience and hard work, they have produced what they consider to be the solutions to their problems and the basis for a programme. If done sensitively, it will probably be acceptable to add new material to the output, but not to delete anything or dismiss ideas.

#### The job of each team specialist is:

- > to review the output
- > to allocate the output into specific objectives and activities, assisted by the Master List
- > to organise the specific objectives and activities so that any gaps can be seen
- > to add additional specific objectives and activities, from the Master List and other relevant information or experience, that are considered necessary

Support on the individual steps is provided in the Manual (M2.4.1).

The following pages contain the Master Lists of specific objectives and activities for each broad objective. The broad objectives, specific objectives and activities are deliberately written in the Lists in a brief summary form. This is so that the users can express these in their own way to suit their programme. A fuller description of all the items in the lists is given in the Manual in Stage 3: Programme Design: Programme components (M3.2).

## G2.4.2 Master List: Water supply facilities

### Broad objective: access to safe, adequate and sustainable water supplies

Spec	ific objectives	Activities	
WS1	community management of	WS1.1	awareness building
	construction of water supply	WS1.2	community organisation
	lacinacis	WS1.3	establishment of management committee
		WS1.4	training for management
		WS1.5	training for financial/accounting practice
		WS1.6	training for technical skills
		WS1.7	scheme selection/prioritisation
		WS1.8	technology choice
		WS1.9	guidelines for explaining technical/design/financial/procedural matters
WS2	construction of water supply	WS2.1	technical choices
	facilities	WS2.2	standardisation
		WS2.3	support organisations (NGOs, private sector)
		WS2.4	contracting regulations
		WS2.5	quality control
		WS2.6	technical support/advice
		WS2.7	materials and equipment procurement/provision
		WS2.8	finance (including community contribution)
		WS2.9	survey
		WS2.10	design
		WS2.11	accounting/audit
		WS2.12	monitoring coverage
WS3	33 rehabilitation of existing water supply facilities	WS3.1	technical choices
		WS3.2	standardisation
		W\$3.3	support organisations (NGOs, private sector)
		WS3.4	contracting regulations
		WS3.5	quality control
		WS3.6	technical support/advice
		WS3.7	materials and equipment procurement/provision
		WS3.8	finance (including community contribution)
		WS3.9	survey
		WS3.10	design
		WS3.11	accounting/audit
		WS3.12	monitoring coverage
WS4	system for O&M of water supply facilities	WS4.1	design maintenance system
	iuoniuos	WS4.2	implement maintenance system
		WS4.3	replacement parts supply system
		WS4.4	financing
		WS4.5	monitoring
WS5	community management of O&M of water supply facilities for	WS5.1	establishment of water user committees
	water supply facilities for sustainability	WS5.2	village maintenance workers
		WS5.3	training for management
		WS5.4	training for financial management
		WS5.5	training for technical maintenance skills
		WS5.6	operate maintenance system
		WS5.7	financing
		WS5.8	monitoring
		WS5.9	follow-up support to communities

## G2.4.3 Master List: Hygiene promotion

# Broad objective: increased knowledge and improved practices of hygiene and water use behaviour of community, family and individual

Specific objectives		Activities		
HP1	hygiene promotion strategy	HP1.1	review national hygiene education/promotion strategy	
		HP1.2	review hygiene education strategies of other countries, NGOs, etc.	
		HP1.3	collect information on appropriate approaches for strategy	
		HP1.4	design/redesign regional strategy	
		HP1.5	increase political commitment to hygiene education at all levels	
HP2	hygiene promotion	HP2.1	write guidelines for working practices and training	
		HP2.2	develop materials for hygiene promotion	
		HP2.3	develop selection criteria and recruit village promoters	
		HP2.4	train/retrain village promoters/educators	
		HP2.5	monitor performance and impact of training	
		HP2.6	community profiles	
		HP2.7	baseline KAP surveys and analyses	
		HP2.8	identify and prioritise hygiene behaviours for programme to address	
		HP2.9	compile village hygiene promotion plan	
		HP2.10	hygiene promotion programme implementation	

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### G2.4.4 Master List: Sanitation

### Broad objective: access to and use of sanitation facilities

Specific objectives		Activities		
SA1	awareness and understanding of need	SA1.1	survey of existing practices and understanding	
	for sanitation by communities	SA1.2	development of promotional material, marketing information	
		SA1.3	publicity campaigns	
		SA1.4	village-level training, workshops, etc.	
		SA1.5	demonstration latrines and solid waste disposal	
SA2	construction of sanitation facilities	SA2.1	design and standardisation of technologies/ types/costs to offer choice	
		SA2.2	regulations for siting of latrines	
		SA2.3	subsidies	
		SA2.4	manufacture of components (e.g. latrine slabs)	
		SA2.5	training of artisans	
		SA2.6	construction of household latrines by individuals/families	
		SA2.7	construction of institutional latrines (schools, health posts, clinics, etc.)	
		SA2.8	solid waste disposal facilities	
		SA2.9	environmental impact assessment	
		SA2.10	monitoring of construction numbers	
SA3	use of facilities	SA3.1	monitoring of use	
		SA3.2	follow-up campaigns	

## G2.4.5 Master List: Water resource management

### Broad objective: management of water resources for sustainability

Specific objectives	Activitie	s
WR1 data collection and monitoring	WR1.1	identification of data needs
	WR1.2	design and construction of data management system
	WR1.3	collection of baseline data
	WR1.4	collection of historical data
	WR1.5	maintenance of data management system
WR2 existing and future demand for wate	r WR2.1	evaluate existing water use and waste disposal patterns
and waste disposal	WR2.2	establish trends
	WR2.3	identify causes of water source failure
WR3 capacity of water resources	WR3.1	assessment of groundwater recharge and surface run-off
	WR3.2	assessment of surface and groundwater distribution and availability
	WR3.3	evaluation of water quality and pollution vulnerability
	WR3.4	evaluation of resource sustainability
	WR3.5	identify development potential
WR4 sustainable and equitable use of wa	ter WR4.1	establishment of criteria and regulations for abstraction of water
resources	WR4.2	raising awareness of water resource management with communities, government and other organisations
	WR4.3	allocation of water for various uses
	WR4.4	regulation of water abstraction
	WR4.5	monitoring abstraction and use of water
	WR4.6	management of catchments/recharge zones
	WR4.7	control of pollution
	WR4.8	water rights

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### G2.4.6 Master List: Institution building/strengthening

Broad objective:	the various organisations (government departments, implementing agencies
	and community organisations) capable of managing and implementing the
	programme and its projects

Specific objectives		Activities			
IS1 policies and procedures		IS1.1	develop policy, procedures and methodologies for:		
			š' village selection procedures/criteria		
			<ul> <li>š community management of water supplies (including participation in decision-making)</li> </ul>		
			š cost recovery and subsidies		
			š' latrine promotion		
			š maintenance (VLOM, private sector or 2/3 tier)		
			š' regulation of NGOs		
			s regulation of private sector		
		104.0	s responsibility for co-ordination and roles in sector		
		151.2	Implement policies and procedures		
152	management and personnel capabilities	152.1	contirm/redefine/define responsibilities of organisation		
		IS2.2	confirm/redefine/define organisational structure		
		IS2.3	review and revise job descriptions		
		IS2.4	training needs assessment		
		IS2.5	source and provide appropriate training		
		IS2.6	review/revise staff conditions of service		
IS3 sta liai	staff development for community liaison/development/management, hygiene promotion	IS3.1	employment of social/community development/hygiene education staff		
		IS3.2	source or develop orientation and training courses		
		IS3.3	training in community organisation, PRA methods, hygiene behaviour and education, etc.		
IS4	capacity of organisation for implementation/facilitation	IS4.1	assess implementing/facilitating capacity of organisations (personnel, resources)		
		IS4.2	assess needs and targets		
		IS4.3	recruit staff		
		IS4.4	provide resources		
		IS4.5	plan workloads		
IS5	monitoring and evaluation	IS5.1	establish monitoring system		
		IS5.2	establish monitoring criteria		
		IS5.3	establish evaluation criteria		
		IS5.4	carry out M&E and use results		
		IS5.5	database of existing water supply systems		
IS6	co-ordination and co-operation	IS6.1	identification of partner groups (including donors)		
		IS6.2	define/confirm lead agency		
		156.3	registration of implementing agencies		
		156.4	establishment of co-ordination systems		

### GUIDELINES: STAGE 2

### G2.4.7 Programme policy decisions

A number of key decisions on programme policy should be considered at this stage. These are needed to inform the rest of the programme planning and design. The issues are discussed in the rest of this section, and support for making the decision is provided in the Manual (M2.4.7).

After making decisions on each of these issues, additional specific objectives and activities may become necessary. To assist with this, review the Master Lists and pick any additional specific objectives and activities considered necessary to fulfil the key policy decisions.

#### Ownership

The complex concept of ownership is fundamental to a number of other key decisions.

It is now generally accepted that communities should own their own facilities to ensure maintenance and sustainability. This is partly because governments in many places have realised that they cannot afford to maintain facilities themselves and so have 'transferred' ownership to the users. It is also assumed that if people own something they are more likely to look after it properly.

Experience has shown, however, that asking the community to contribute labour and local materials and then 'handing over' the facilities to them after construction does not in itself achieve this ownership. Perceptions of ownership by the various parties are often quite different, even opposite. Government authorities, NGOs and other agencies assume that if a community requests a water supply system and provides 'community participation' for its construction, the community will consider it to be theirs. In practice, because the planning, decisions, technology, finance and materials have been made or provided by outsiders, people still believe that the facility belongs to the outsider. The external agency is still the official owner, despite handover ceremonies and training courses. Cash contributions to capital costs may help to by creating 'financial' ownership, but questions of affordability and exclusion through poverty need to be considered.

These issues are factors in several of the programme policy decisions, but the starting point is the definition of legal ownership. Do the present government regulations allow communities to legally own the water supply systems, or is legal ownership retained by the state? This will affect the way the programme is designed so a key decision for programme policy has to be made on this point.

#### Implementation strategy

Traditionally, water supply and sanitation projects within water supply and sanitation programmes have been implemented by government agencies, private sector contractors, or NGOs, with varying degrees of community participation. Generally, these have not proved to be sustainable, because the concept of community ownership has not been established. A 'handover' to the community at the end of construction is not enough. To promote the concept of ownership, people have to be in control of the decisions affecting their lives.

To solve this problem, the trend has been to pass more responsibility to communities for participation in construction. The ultimate stage in this is for communities to manage the construction for themselves, either by doing the construction work themselves or by supervising a contractor. Increasingly, it is recognised that the development agency, whether government or NGO, should be a facilitator in this process. They should be enabling communities to manage the planning, construction, and operation and maintenance of the facilities. This is much more than participation, which traditionally has meant communities participating in the development agencies' projects. This has significant implications for the design of the programme. Thus a key programme policy decision has to be made.

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#### Maintenance system

Operation and maintenance is fundamental for sustainability. The large number of broken down water supplies in many countries is evidence that maintenance has not worked. The maintenance system needs to be considered right from the start of the planning process, not added as an afterthought. Issues such as the affordability for villagers to pay for the O&M, and hence the correct choice of technology, are essential. The current maintenance system should already have been assessed during the consultation, survey and analysis stage and analysed during the Planning Workshop. This should indicate whether the current system is working adequately and is affordable. If the maintenance system, whether centralised, three-tier, two-tier or VLOM, is found to be working inadequately, a key programme policy decision will be needed to consider the alternatives.

#### Cost sharing

The term 'cost recovery' is often used to mean contributions by communities for water supply and sanitation facilities. The expression 'cost sharing' is used here as a more accurate representation of what is actually meant.

It is now generally accepted that projects should respond to requests from communities for improved services, and that communities should contribute to the capital costs by providing local materials and labour and, increasingly, a cash contribution. (It is also generally accepted that communities should pay the whole cost of operation and maintenance.) Recently, the 'demand responsive approach' has extended this concept of request and community contribution so that communities can choose their preferred level of service from a range of options, but have to pay the additional capital cost of a higher level of service. Underlying this is the principle that water is an economic as well as a social good. A useful source of information on this is the recent Mpumalanga Statement: *Financing of Community Water and Sanitation Services* (Mpumalanga Workshop, 1999).

A risk in this approach is that with the emphasis on the economic aspects, the poorest people will be further marginalised — projects will tend to go to richer communities that can afford to pay for them. Richer communities tend to be able to vocalise their demands better. It may be necessary to facilitate the demand from poorer or marginalised groups in society. The approach is also based on the assumption that there is sufficient water to allow choice. In many countries, water for all uses is becoming increasingly scarce. The choice of higher levels of service for one community that can afford to pay for it may mean insufficient water for another poorer community.

The approach advocated in Vision 21: A Shared Vision for Hygiene, Sanitation and Water Supply is that a dialogue must be started with users and communities at the initial stages of projects, on levels of service, tariffs, revenue collection and administration of services. If decision-making is placed close to the community, the resulting costs of water, sanitation and hygiene services can be significantly reduced. This will result in figures far lower than those assumed so far. Leveraging community resources will reduce direct costs, distribute costs among many partners, reduce costs of centrally managed systems, and discourage corruption (Water Supply & Sanitation Collaborative Council, 2000).

Discussion of willingness to pay should distinguish between needs and demands. Equitable financing and cost sharing are essential to enable services for the unserved, and particularly for the poor. Considerations of equity must be balanced with those of financial viability. Neither old dogmas about providing water and sanitation for free, or new dogmas about always charging full cost pricing, are adequate. Charges must be in line with the capacity of people to pay, especially of the poor. Options of payment in kind or in cash need to be considered (*ibid.*).

A key programme policy decision should be made on the process and means to enable all people to have access to a sufficient and affordable water supply.

#### Subsidies

A key programme policy decision has to be made on the levels of subsidies for water supply construction and for latrine construction. The subsidy for water supply is tied to the other aspects of cost sharing discussed earlier. Subsidy for latrines is a difficult issue. It is now generally accepted that if subsidies are to be provided, they should only be for the substructure (the latrine slab and the pit lining if required), and that families should provide their own superstructure or housing. If the cost of latrines to the individual family is too expensive, people will not construct them. If the level of subsidy is too high, governments and donors cannot afford to provide it for the numbers of latrines required (ideally one per family for the total number of families in the area).

#### Responsibilities of agencies

Responsibility for the various components of programmes is often not clear. For some components, more than one government department claims responsibility, while other components fall in between departments, with none having the responsibility assigned. In the latter case, sanitation promotion is frequently the casualty. A programme policy decision should be made, clearly assigning responsibility for the various components of the programme.

#### Co-ordination

Along with clear responsibility for each component, co-ordination to make sure the various components work together is essential. A programme policy decision has to be made to define the lead agency to take on this co-ordination role at each administrative level.

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### G2.4.8 Objective trees

Now that all the objectives and activities necessary for the programme have been identified, they can be assembled into objective trees to show the hierarchy and relationships between them.

The trees provided in the Manual (M2.4.8) can be used as a guide for this. The trees should show:

- > how the sets of activities together lead to the achievement of the specific objectives; and
- > how the specific objectives in turn combine to achieve the broad objectives.

Check to see that the objective/activity set at one level is sufficient to achieve the objective/ activity at the next higher level (working upwards on the tree), so that 'doing *this* will lead to achievement of *that*'.

These trees should form part of the Workshop Review Report.

If logical frameworks are used for planning, as required by some donors (including DFID), these objectives trees can easily be converted to that format.

#### G2.4.9 Review of Terms of Reference

Before proceeding into the Programme Design of Stage 3, it may be important to obtain approval for the scope and scale of the outline programme that has been developed so far. Such approval is likely to be based on how well the Terms of Reference for the Preparation Project are being met. Therefore a review of the outline design against the Terms of Reference is probably necessary.

There are two basic interrelated questions to ask in this review:

- > How well does the programme match the ToR?
- > Are the ToR relevant to the conditions in the programme area?

If the answer to the first question is that there is a major variance, then the answer to the second question will have to show why these variances are necessary. The ToR would have been written with a limited knowledge of the programme area; the outline programme should be based on the realities in the programme area. It may be necessary to convince the senior decision-makers and politicians of these realities in order to obtain approval of the outline programme and a decision to proceed to Programme Design.

A format for reviewing the ToR against the outline programme is provided in the Manual (M2.4.9).

### G2.4.10 Planning Workshop Review Report

At this stage it will probably be necessary to prepare a report for the commissioning authorities. The purpose of this is to provide information on the progress of the Preparation Project, and to record the outputs so far, including the information assessment and analysis, the outputs from the Planning Workshop and the outline programme from the Planning Workshop Review.

Based on the review of the outline programme design against the Terms of Reference for the Preparation Project (G2.4.9), the report may take one of two forms. It will depend on whether the outline programme conforms to the ToR, or if there is a major variance. Suggested structures for both are provided in the Manual (M2.4.10).

Stage 3: Programme Design

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B

B

Assessment and analysis

## Objective of Stage 3

To produce the design for a rural water supply, hygiene promotion and sanitation programme, incorporating water resources management, of the specified area.

### Introduction

The Planning Workshop and the Planning Workshop Review should have produced an outline design for the programme. This outline now has to be filled out, including defining the various objectives and activities that have been identified as necessary. The steps for this are shown in the Flowchart of Stage 3.

The **specific objectives need to be formulated** (3.1.3) in SMART terms with indicators for measuring progress and achievement. The **activities for each specific objective need to be designed** (3.1.3) in outline, with an estimate of the resources required for each. Support is provided for both of these in the Programme components (3.2).

The **Programme Management (3.3)** system has to be designed. A Master List is provided for this.

A **budget** for the programme has to be prepared.

The whole programme then needs to be described in the **Programme Design Report (3.5)** for submission to the commissioning authorities for approval.



#### SECTION B: PROJECT TO DEVELOP PROGRAM

### G3.1 Design of programme components

The method described in these Guidelines is for the development of broad strategies for a sector programme, not detailed decisions about specific projects or interventions. This is important to bear in mind during development of the programme design. Options should be selected in terms of overall parameters, mechanisms, systems, processes, criteria, collaborative arrangements, etc., while also narrowing the range of options to ones that are appropriate and based on sound programming principles.

In fact, the need is to plan for flexibility, for enabling the use of a variety of approaches for implementing the programme and projects within it. Each community is unique, and your decisions must help create the means by which communities will be able to make decisions and gather the will, interest and resources to create and sustain a healthier environment. Similarly, regarding the institutional arrangements involved, there are no absolute answers. In some cases it will be necessary to proceed by trial and error, and/or specify what further study is needed to resolve a need or problem that hinders efforts in the water and sanitation sector in the region or country (Environmental Health Project, 1997).

#### Process

In the Planning Workshop and the Planning Workshop Review, only the broad objectives have been fully defined in specific, measurable, achievable and time-bound (SMART) terms (see M3.1.1 for detailed explanation). When objectives are clear, it is possible to clarify all the activities of the programme. Clear objectives also enable progress to achievement to be monitored. Indicators for monitoring are an essential part of this. A detailed description of these is given in the Manual (M3.1.3).

The programme design team now has to develop the specific objectives in SMART terms and the activities necessary to achieve those specific objectives. The process is explained in the Manual, with Forms M3.1.1 and M3.1.2 provided to help the design team in this task (M3.1.1 and M3.1.2). To assist with this process, the programme components are described in some detail (M3.2).

### Time planning

A time plan in the form of a Gant Chart (or bar chart) should be prepared in broad terms for the programme period. It should show the main activities under each broad and specific objective. Some guidance on the time and timing for activities is given in Programme components (M3.2).

The time scale is probably best to the nearest quarter — monthly planning at this stage may be too detailed. It may be helpful to show additional information such as seasons, and periods when communities are busy with farming or have time available for projects.

Rate of implementation should be governed by the process needing the most time, usually the social development and development of community capacity to manage. Rates of implementation should also be based on the analysis of capacity of each organisation.

#### SECTION B: PROJECT TO DEVELOP PROGRAM

## G3.2 Programme components

To assist in the development of the specific objectives and activities of each component of the programme, some of the principles and issues to consider are provided in the Manual (M3.2). These cover:

- Water supply (M3.2.1)
- Hygiene promotion (M3.2.2)
- > Sanitation (M3.2.3)
- > Water resource management (M3.2.4)
- > Institutional strengthening (M3.2.5)

The structure follows the pattern of specific objective and activity. After a discussion of issues at specific objective level, the points to consider for each activity under that specific objective are described. These should be referred to during formulation of the objectives and activities. For some of them, it may also be useful to refer back to the Programme policy decisions (G2.4.7). References are also given for further information on the particular subject.

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#### SECTION B: PROJECT TO DEVELOP PROGRAM

## G3.3 Programme management

One definition of management is getting things done through other people. This is useful for programme management, considering the scope of the programme that is being developed. The definition of programme taken for these Guidelines is:

a coherent framework of procedures and activities for co-ordinating and regulating projects within the water and sanitation sector in a defined geographical area.

One department or organisation is unlikely to be able to undertake all the activities for improved water supply and sanitation itself. A number of different organisations and different types of organisations have to work together to do it. Thus programme management is getting the activities of the programme done through the various organisations, communities and projects. It involves planning, organising, checking and co-ordinating to ensure that all the organisations work together on the various components to achieve improved, sustainable accessibility to water supply and sanitation facilities for people, leading to the programme goal.

### G3.3.1 Master List: Programme management

Broad objective: Efficient and effective management of the programme to achieve the goal

Outputs	Activities
PM1 integration and coverage of components	PM1.1 planning
	PM1.2 projects
	PM1.3 co-ordination
PM2 regulation of procedures, standards, etc.	PM2.1 implement policies and procedures
PM3 management of resources	PM3.2 funding — donors, government budgets
	PM3.2 implementing agencies
	PM3.3 materials
PM4 management structure and organisation	PM4.1 define programme structure and organisation
	PM4.2 manage staffing
	PM4.3 plan workloads
PM5 reports	PM5.1 preparation of reports
PM6 monitoring and evaluation	PM6.1 M&E of policies, procedures, projects, organisations
	PM6.2 use results to improve projects, procedures
	PM6.3 advocacy

#### SECTION B: PROJECT TO DEVELOP PROGRAM

## G3.4 Budget

Budgeting is as much about planning as it is about finance. Without careful plans, it is impossible to budget; but without budgets, plans cannot be realised and costed effectively. In other words, budgets translate plans and activities into financial terms (Eade and Williams, 1995).

Preparing a budget for a programme over a five- or ten-year time-scale covering a region may not be possible using standard government budget formats. It will probably be easiest to use a 'broad brush' approach, rather than detailed costing of every component.

With the scope and scale of the programme, and the variety and uncertainty of sources and potential sources of funding, it may be worth dividing the budget into two parts<sup>4</sup>:

- > a guaranteed budget for the expenditures which it is anticipated will be covered, for example, by the annual government budget allocation; and
- > a complementary budget for additional expenditures which depend on funding which is not yet guaranteed, but which is planned as part of the programme.

Budgets are also generally divided into:

- > capital: tangible and lasting items such as buildings and equipment; and
- revenue: recurrent costs such as payments to staff and suppliers for services and consumable goods.

The government ministries may already have prescribed systems and formats for budgeting, so it is probably best to use these. If they are for annual budgeting, however, they may require too much detail. An alternative may be to look at the system used for things such as rolling plans (e.g. national five-year plans).

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4 adapted from Eade and Williams (1995)
### GUIDELINES: STAGE 3

### SECTION B: PROJECT TO DEVELOP PROGRAM

### G3.5 Programme Design Report

Until the programme is implemented, the Programme Design Report is the primary product of the Preparation Project. As such it is a very important document. Apart from being used for the implementation, it will be circulated at senior levels in government and to potential donors and other external agencies. Therefore it should be comprehensive but still clear and accessible.

The following is a suggestion for the format and contents of the Programme Report. As far as possible, detailed information and background data should be assigned to Appendices, with only a summary discussion of the pertinent facts in the main body of the report.

Suggested table of contents

Summary

### Abbreviations

- 1. Introduction
  - > Origin of programme
  - > Process of developing programme
- 2. Programme area
  - Geography
  - > Demography/population
  - > Economy
  - Sources of income
     Poverty/wealth
  - > Gender
  - Gender
- 3. Water and sanitation sector analysis
  - > Water
    - water resources
    - policies and regulations
  - allocation by sector
  - types of abstraction
  - coverage of water supply facilities
     operation and maintenance system
  - operation and maintenance system
  - costs
  - > Health/hygiene promotion
  - common diseases
  - morbidity/mortality
  - people's understanding
  - policies and regulations
  - > Sanitation
  - policies and regulations
  - types of latrine
  - costs
  - coverage
  - people's understanding and use
  - solid waste disposal
  - wastewater drainage

Programme design

G3

### GUIDELINES: STAGE 3

### SECTION B: PROJECT TO DEVELOP PROGRAMM

### UIDELINES: STAGE 3

- > Institutional arrangements
  - national
  - regional
  - district
  - community
  - organisations
  - government
  - donors
  - national NGOs
  - international NGOs
  - private sector
  - planning and co-ordination
  - finance
  - budget allocations
  - donor funds
  - existing programmes and projects
  - existing programmes and project
  - plans

4. Programme goal, objectives

- > Goal
- > Broad objectives
- > Specific objectives
- Activities (summary)
- 5. Scope
  - > Procedures and regulation
  - > Water supply construction
  - > Rehabilitation
  - > Operation and maintenance
- > Sanitation
  - Hygiene promotion
     Training
  - Institutional strengthening
  - > Implementation assistance
- 1
- 6. Finance
  - > Summary estimates
  - Financing plan
  - > Community contribution/cost sharing
  - > Subsidies
- 7. Implementation arrangements
  - > Institutional arrangements
  - Programme management
  - Lead agency
  - > Co-ordination
  - > Roles and responsibilities
  - > Regulations and procedures
  - > Implementation schedule (bar/Gant chart)
  - > Operation and maintenance system
  - Reporting
  - > Monitoring
  - > Evaluation
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> Minimisation

> Environmental impact assessment

Environmental issues

### Appendices

8.

9.

1. Project Preparation study team

> Identification

2. Terms of Reference

Risks

- 3. References
- 4. Environmental evaluation
- 5. Cost estimates basis of estimates (unit costs)
- 6. Objective trees
- 7. Activity sheets
- ... other detailed information

G3

G3

### GUIDELINES: STAGE 3

### G3.6 Review Workshop

To ensure that the ownership of the programme is maintained, a second workshop involving all the participants from the Planning Workshop is advised. This is to give these people, who will be implementing and benefiting from the programme, an opportunity to review and discuss how the programme has evolved since their first outline design. It is a chance for them and the programme designers to check that the draft programme is still relevant to address the problems and issues that they face in the sector, which were analysed in the Planning Workshop.

The draft Programme Design Report should be sent to all the participants well in advance of the Review Workshop. This should give them a chance to understand the report and discuss it with colleagues and other stakeholders.

The Review Workshop itself should be planned to take two or three days. A suggested timetable is provided in the Manual (M3.6)

After the Review Workshop, it may be necessary to revise the draft Programme Design Report to take account of changes proposed by the participants, before submitting it to the commissioning authority.

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G3



G3

Manual

В

Stage 1: Information gathering, consultations and surveys

В

MI



### SECTION B: PROJECT TO DEVELOP PROGRAM

### MANUAL: STAGE

### M1.2 Briefing Workshop for Core Planning Team

The purpose of this workshop is to enable the Core Planning Team to understand the Guidelines and Manual and to refresh or introduce participatory assessment skills so that they can conduct the consultations and surveys.

Participants: The Preparation Project manager, members of the Core Team, and other personnel who will be assigned to support the Preparation Project, possibly up to 12 participants in total

Duration: Three days

- **Objectives:** At the end of the workshop, the participants would:
  - 1. be able to carry out the planning process using the Guidelines;
  - 2. be able to use various participatory techniques in facilitating village needs assessment and planning; and
  - 3. have discussed and agreed the plan for carrying out the Preparation Project.

The methodology provided in the following pages is a suggestion only. It should be adapted where necessary to suit local circumstances.

### M1.2.1 Suggested timetable for Briefing Workshop

The times suggested in Table M1.2.1 exclude breaks for tea and coffee and lunch. The numbers in the second column refer to the session numbers (M1.2.2).

### Table M1.2.1: Timetable for briefing workshop

Day 1	1	Introductions and expectation setting	30 minutes
		Overview of the planning process:	
	2	What is planning, why plan?	45 minutes
	3	Stages of the planning process	1 hour
	4	Using the Guidelines and Manual	Up to 5 hours
Day 2		Practical exercises in participatory processes:	
	5	Participant observation	45 minutes
	6	Interviews	1 hour
	7	Facilitation and brainstorming	2 hours
	8	Focus group discussion	1 hour
Day 3		Planning the implementation of the Preparation Project	1 day



Information gathering, consultations and surveys

### Handout for Session 1

List of characteristics of a person<sup>5</sup>

The person I am:

Gentle	Clever	Shy
Polite	Hardworking	Tall
Short	Dumb	Inquisitive
Active	Naive	Kind
Selfish	Thin	Thoughtfu
Clumsy	Friendly	Fat
Self-centred	Angry	Quiet
Patient	Tries hard	Daring
Lazy	Irritable	Brave
Jokes a lot	Noisy	Terrible
Not so friendly	Smiling all the time	

M1.2.2 Briefing Workshop Sessions

Session 1: Introductions and expectation setting

Objectives:	At the end of the session, the participants should have: 1. introduced themselves to each other; and 2. identified what they expect to achieve at the end of the work shop.
Duration:	30 minutes
Methodology:	Exercise
Materials needed:	<ul> <li>markers or coloured pens</li> <li>'List of characteristics of a person' (handout)</li> <li>flip charts</li> <li>cards</li> </ul>

Steps

- 1. Give each participant a copy of the list of characteristics and a coloured pen. Give the following instructions:
- > Read and reflect on each characteristic on the list.
- > Circle each characteristic that you think describes you best.
- > Put your name on your copy.
- 2. Ask the participants to form two circles, an outer circle and an inner circle. Have them walk around in their circles, showing their lists to each other. They should try to remember each person's name and the characteristics they circled.
- 3. Ask participants to share:
  - > What they felt while looking at the list
  - > What they learned about themselves
- > What they learned about each other
- > How they think they can use this knowledge of each other in their future planning sessions
- > Other insights they had during the exercise
- 4. Ask participants to write at least two things they expect of the workshop. Give them five minutes.
- 5. Ask one participant to read out the first expectation in his/her list and write it on the flip chart. Ask the next person to do the same, but not to repeat something that has already been recorded. Repeat this with other participants in turn, then start a second round and third round asnecessary, until all the expectations have been covered. You will end up with a summary of expectations from all the participants.

5 from Bañez-Ockleford (1995)

Information gathering, consultations and surveys

Information gathering, consultations and surveys

### The planning process

Objectives:	<ul><li>At the end of the day, the participants should have:</li><li>identified and described the various stages of the planning process: and</li><li>familiarised themselves with the use of the guidelines in each of the stages.</li></ul>
Duration:	One day
Method:	Group discussion, practical exercises
Materials needed:	<ul> <li>the Guidelines and Manual</li> <li>flip charts</li> <li>marker pens</li> <li>A5 size cards (approximately 21 by 15 cm)</li> <li>apped a containing the various stages in the planning process (one)</li> </ul>

cards containing the various stages in the planning process (one stage per card, i.e. situational analysis, village needs assessment, etc.)

### Session 2: What is planning, why plan?

Objectives:	At the end of the session, the participants should be able to define 'planning' and be able to explain the reasons why planning is needed.
Duration:	45 minutes
Method:	Card writing, group discussion
Materials needed:	<ul> <li>&gt; flip charts</li> <li>&gt; cards</li> <li>&gt; marker pens</li> </ul>

### Steps

- 1. Give every participant some cards and ask them to write on their cards ideas about the concept and purpose of planning. Write only one idea per card.
- 2. Ask participants to read their cards one at a time, and ask the group if their ideas are clear or not. If not, have someone else in the group write another card that says how the group understands the idea on the original card.
- 3. Post the cards on the board and group the cards that express similar ideas.
- 4. Discuss the ideas and agree on what planning and plans are.
- 5. Ask them why they think rural water supply and sanitation programmes need to be planned.

### Session 3: Stages of the planning process

Objectives:	At the end of the session, the participants should understand the different stages of planning
Duration:	One hour
Methodology:	Card writing, group discussion
Materials needed:	<ul> <li>&gt; flip charts</li> <li>&gt; cards of the various stages in the planning process</li> <li>&gt; marker pens</li> </ul>

### Steps

- 1. Give each participant eight A5 size cards. Ask them to think, based on their experiences, what steps need to be followed when they do programme planning. Ask each participant to write the steps in the cards (one step per card).
- 2. Ask the group to post their cards on the board and to arrange them in sequence according to what step they think should come first, etc.
- 3. Share with the group the steps in the planning process using the cards you have prepared and compare them to the cards arranged by the participants. Acknowledge similarities and explain differences.
- 4. Describe each step and encourage the participants to share their experiences in undergoing each step.

### Session 4: Using the Guidelines and Manual

Objectives:	At the end of the session, the participants should be familiar with the Guidelines and Manual and the way the two work together.
Duration:	Five hours (remainder of first day)
Methodology:	Presentation, discussion, question and answer
Materials needed:	<ul> <li>the Guidelines and Manual (preferably distributed to participants before the workshop, to give them time to read it)</li> </ul>

### Steps

1. Go through the different sections of the Manual.

2. In each section, identify critical points or processes you want to discuss in detail and/or to practice.

3. Ask participants to identify areas or processes they do not understand or want clarified.

Facilitate group discussions on these points until things are clear.

4. Summarise the key stages and methods of the planning and design process.

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Information gathering,

### Practical exercises in participatory processes

### Session 5: Participant observation

Objectives:	At the end of the session, the participants should be able to: 1. describe participant observation as a technique for participatory needs assessment; and 2. use the technique in assessing needs.
Duration:	45 minutes
Methodology:	Role play
Materials needed:	<ul> <li>cards containing written roles for volunteers to act in a role play</li> <li>three buckets, one with a rope attached to it</li> </ul>

Steps

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1. Ask for three volunteers to do a role play. Assign the following roles:

- village boy collecting water
- > village woman/girl collecting water
- > member of the Core Planning Team as participant observer
- 2. Give each volunteer the assigned role card (without showing the card to anyone else) and ask them to act out the following:
  - > Situation: The setting is around an open well in a village on a typical morning
  - > Roles:
    - > Village boy:
    - He carries a bucket, arrives at the well to collect water.
    - He lowers the communal bucket into the well, fills it, lifts it out, and pours the water into his own bucket.
    - He finishes by carrying his full bucket away.
    - > Village girl:
    - The village girl, carrying a bucket, arrives at the well as the boy is leaving.
    - She lowers the communal bucket into the well, fills it, lifts it out, and uses the water to quickly rinse the inside and outside of her own bucket, and then throws the rest of the water away.
    - She again lowers the communal bucket into the well, fills it, lifts it out, and pours the water into her own bucket.
    - She finishes by carrying her full bucket away.
    - > Participant Observer:
    - S/he sits around the well from the start of the morning and observes the activities that happen around it. S/he notes the following:
    - Who goes to the well (what gender, what age range)
    - Various actions/behaviour by the water collector before, during and after collection of water
    - Environment around the well (water drainage, etc.)
- 3. Ask the rest of the participants to observe the role play and give them the same instructions you gave the participant observer.

- CTION B: PROJECT TO DEVELOP PROGRA
- MANUAL: STAGE
- 4. When the role play has been completed, ask the participant observer to report to the group what s/he observed. Ask the participants if they agree with the observations. Ask if anyone noticed anything different.
- 5. If nobody noticed that the woman/girl washed her container, ask the people who played the roles of water collectors to read out their instruction. Discuss the differences in behaviour of the water collectors.
- 6. Based on the role play, describe how participant observation is done. Facilitate discussion on the advantages and disadvantages of the method.
- 7. Summarise the session.

Session 6: Interviews

Objectives:	At the end of the session, the participants should be able to: 1. desribe the interview technique; 2. discuss the adantages and disadvantages of interviews; and 3. use the technique in assessing needs.
Duration:	One hour
Methodology:	Practice in pairs, discussion
Materials needed:	<ul> <li>&gt; list of interview questions/guidelines</li> <li>&gt; handout: copies of M1.4.1 Consultation and Survey - Interviewing from the Manual.</li> </ul>

### Steps

- 1. Explain the objective of the session.
- 2. Group participants into pairs.
- Ask each participant to write any three questions s/he wants to ask her/his partner about her/ his job.
- Ask each pair to ask their own questions of each other, including supplementary questions to get a good understanding of the other person's job. Give each partner up to 10 minutes each to complete his or her questions.
- 5. Gather into the big group and based on their exercise, discuss the following:
  - > What is an interview
  - > When to use an interview
  - > How to prepare for an interview
- > What are the important things to remember in interviewing
- > What are the advantages and disadvantages of interviewing
- 6. Summarise

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### Session 7: Facilitation and brainstorming

Objectives:	<ul> <li>At the end of the session, the participants should be able to:</li> <li>explain what facilitating means and its importance in the planning process;</li> <li>identify the tasks of facilitator;</li> <li>discuss the qualities of a good facilitator; and</li> <li>use basic facilitating skills in their planning process.</li> </ul>
Duration:	Two hours
Methodology:	Group discussion
Materials needed:	<ul> <li>small pieces of paper</li> <li>flip charts</li> <li>marker pens</li> </ul>

Steps

### Facilitating

- Give each participant two small pieces of paper. Give the following instructions one at a time and wait for them to finish one step before going to the next:
  - On the two pieces of paper, write the two words that you think of when you hear the word 'facilitating' (write only one word per piece of paper).
  - Get into groups of three. In your group, place all your papers together and look at all the words written on them. Using these words, form one concept of the word 'facilitating'.
  - > Write your concepts on a flip chart for presentation to the big group.
- Put all the flip charts on the board or wall. Discuss all the concepts and agree on what facilitating is.
- 3. Distribute and discuss the handouts on 'Facilitating is...', 'Tasks of a facilitator' and 'Qualities of a good facilitator'

### Brainstorming

- 4. Ask for five or six volunteers to do a role play. Assign the following situation and roles. Allow five minutes for them to prepare.
  - > **Situation:** a brainstorming session on the topic 'what do we do to make the people attend a village meeting?

### > Roles:

- > Community Development Officer as facilitator:
  - You and your team are planning for a village meeting for the next week. You have had problems in getting many villagers to attend these meetings. You are the facilitator during the planning session and you want your team to think of as many ideas as possible on how to solve this problem. Facilitate the brainstorming session in 20 minutes by following these steps:
  - Ask each member of your team to write all her/his ideas on paper.
  - Once finished, ask each one to read out the first idea s/he has written.
  - Write this on the flip chart.
- Ask the next member to read out the first idea in her/his list, not repeating what has already been read out.
- Once everyone has exhausted their list, review the ideas on the flip chart.
- Summarise the session.

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- MANUAL: STAGE
- > Four to five members of the Community Development Project Team
- You are all asked to give as many ideas as possible on how to make the villagers attend your village meeting. Think hard and try your best. You only have 20 minutes to do this brainstorming session.
- 5. Ask the group to present the role play, with the rest of the participants observing.
- 6. Discuss the presentation. Ask the participants the following questions:
  - > Did the facilitator ask everyone in the team to share ideas? If yes, how did s/he do it? If not, what suggestions do you have?
  - > Was the facilitator listening to each idea being shared? Did s/he accept all the ideas shared or did s/he ignore some? What would you have done?
  - > Did the team members contribute their ideas to the session?
- 7. Discuss 'Brainstorming' as a method, its uses and advantages.

### Note:

Brainstorming is a technique or method of generating as many ideas as possible about a subject. The participants continuously express their ideas without discussion or judgement on whether they are good or bad. All the ideas are written down on a flip chart or cards. The group can then select which ideas they find useful and want to pursue for their own purpose. There are two options for brainstorming:

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- People call out their ideas and the facilitator writes up each idea on the flip chart (similar to what was done in the role play).
- Each member of the group writes down a series of issues, topics or questions on small pieces of paper or card. These are then fed back by sticking them to the board or wall.
- 8. Summarise the session.

### SECTION B: PROJECT TO DEVELOP PROGRAM

### MANUAL: STAGE 1

Handout 1 for Session 76

Facilitating is...

- 1. making the process easy and smooth
- 2. giving guidance to participants throughout the process
- 3. encouraging participants to share ideas and experiences with each other
- 4. helping the group stay in focus on the subject being discussed
- 5. helping each other give and receive feedback about the activities and management
- 6. assisting in solving problems or conflict situations
- 7. summarising ideas or reports at the end of the session or the day
- 8. sharing new ideas and other information related to the subject being discussed
- 9. assisting the group to arrive at decisions that are needed to be made
- 10. sustaining the interest or motivation of the group in the activities
- 11. maintaining group order and good feelings within the group
- 12 . initiating, or posing ideas/questions that stimulate the participants to talk and discuss among themselves
- 13. clarifying unclear messages or questions
- 14. providing direction to the discussions and activities
- 15. monitoring time and process
- 16. responding to needs expressed by or observed among the participants

Tasks of facilitator

### For process, a facilitator...

- creates a good learning environment (makes sure that there are no physical, emotional or psychological disturbances) and makes everyone feel comfortable
- > monitors reactions or feelings of participants throughout the activity
- > asks leading questions that will make the participants share their own ideas
- makes sure the methodologies or techniques are effective in helping the participants express views and participate
- > clarifies issues or messages that need to be further explained or understood
- > ensures that everybody is included in the process and nobody is left out or is deliberately opting out
- > checks the time schedule
- manages difficult situations like conflicts, interruptions or deviations, doubts between or among participants and facilitators
- > initiates and provides direction in giving and receiving feedback
- > makes necessary adjustments or modifications to the process as required
- > leads in group evaluation of activities and management

### For content, a facilitator...

### Before session

- > prepares the process design and session plans
- > prepares the materials, equipment and forms needed for the sessions

### During session

- > reviews the previous session
- > explains the tasks, steps and time allowed for the process
- > answers or clarifies questions as required
- > guides the discussion and keeps it focused on the issue being discussed
- > gives a summary of the discussion
- > takes notes if there is no one assigned as documentor

### After session

- > initiates and leads the evaluation of the session
- monitors performance of the process in the field
- writes up output of process
- > initiates modification or revision of the process as required
- evaluates impact

6 adapted from Bañez-Ockleford (1995)

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Information gathering, consultations and surveys 7 adapted from Bañez-Ockleford (1995)

Information gathering, consultations and surveys

Handout 3 for Session 78

Qualities of a good facilitator

### A good facilitator is one who...

- > trusts other people and their abilities
- > respects other people's ideas and experiences
- > is willing to listen and has good listening skills
- > has confidence in herself/himself and is humble
- > is interested in people and their development, friendly and sensitive to their needs and feelings
- > flexible and dynamic
- > is open to feedback and willing to adjust or change accordingly
- > is aware of themselves, their strengths and weaknesses, and willing to learn more
- > is alive, active and has a good sense of humour
- > gets things done
- > is organised, mentally and physically, and has as a sense of order and system
- > believes in participatory processes and understands the principles of community development
- > works well with a team or group
- > is creative and has skill in drawing and handwriting
- > speaks clearly and uses simple words and short sentences

Session 8: Focus group discussion

Objectives:	At the end of the session, the participants should be able to: 1. desribe what a focus group discussion is; and 2. facilitate a focus group discussion.
Duration:	One hour
Methodology:	Practice focus group discussion group discussion
Materials needed:	> Handout on Focus group discussions

### Steps

1. Divide the participants into two groups and ask each group to discuss the following questions: Assign a facilitator in each group and allow 20 minutes for the discussion.

Group 1:

- > What are the various reasons why villagers do not drink well water?
- What will you do to address this problem?

Group 2:

- > Why do women seldom participate in village discussions?
- > What will you do to address this problem?
- 2. In the big group, ask each facilitator to report on the following:
  - > Did the discussion flow well? If yes, what were the factors that helped facilitate the discussion? If no, what were the factors that hindered the discussion?
  - What are the advantages in doing a focus group discussion?
- 3. Open the discussion on the points in Step 2 to the whole group.
- 4. Summarise the session by distributing and discussing the handout on Focus group discussions.

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<sup>8</sup> adapted from Bañez-Ockleford (1995)

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Information gathering, consultations and surveys Information gathering, consultations and surveys

### DEVELOP PROGRAMME

Handout for Session 8

Focus groups9

### Purpose

Focus groups are fairly small discussion groups (10 to 15 people) led by a researcher or facilitator. They enable outsiders to understand and describe better the range of perspectives in a community or local organisation through small group discussions. Focus groups can be single or mixed gender. They are very useful for single gender groups in cultures where women are not comfortable speaking in large assemblies or with men. Even when women do participate in mixed gender groups, they may speak more freely or cover more risky topics in groups of only women. The same is true for members of some class, age, caste, religious, and ethnic groups who may hesitate to speak out in a mixed group.

Focus groups can be used for any number of purposes — consciousness raising, information gathering, analysis and, in general, any step in a development process. In the US and Europe these group sessions are now used along with public opinion polls for everything from elections to product development and marketing. They have also been used to generate community time lines and trend lines on resource use, to explore sexuality and reproductive rights issues, and in research/action to encourage analysis of oppression. Focus group discussions can be useful to show:

- > priorities for community action based on gender, class, ethnicity and other markers of identity;
- > the level and nature of resource awareness and environmental interests of both men and women;
- » women's and men's perceptions of institutional effectiveness.

The objectives of a focus group are to:

- > cover a maximum range of relevant topics;
- provide information that is as specific as possible so as to direct the discussion towards concrete and detailed accounts of the participants' experiences;
- > foster interaction that explores the participants' feelings and opinions in some depth;
- > take into account the personal context that participants use in generating responses.

### Materials

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Prepare the questions you want to ask ahead of time. Paper and markers (cassette recorder or video camera optional).

### Process

Step 1 Plan and write questions before the meeting. For an unstructured discussion, two broadly stated topic questions will usually suffice. For a structured discussion, facilitators often use four or five

### topic questions with more specific points under each major topic.

Step 2

In some focus groups, each participant makes an individual, uninterrupted statement about herself or himself at the start of the session.

<sup>9</sup> This handout is taken from Slocum et al. (1995) (adapted by Slocum R. et al. from Thomas-Slayter B. et al., 1993, and Morgan D.L., 1988.

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Information gathering, consultations and surveys Handout for Session 8 continued.../Focus group discussions

### Suggestions for low facilitator involvement

- > Present initial topic followed by unstructured group discussion.
- > Introduce second topic, based largely on points that have already been raised.
- Allow discussion to come to an end on its own, perhaps with a subtle cue from the facilitator.

Suggestions for high facilitator involvement

- > Apply an outline throughout the discussion; maintain clear and consistent order.
- > Begin the structured discussion with a general question not intending to get a full answer, but to set up an agenda of topics within the limits of the outline.
- Hold off comments that do not quite fit in a particular stage of the discussion, but reintroduce them at a logical point, for example 'I recall that some of you mentioned something a little different earlier and I wonder how that fits into what we are discussing now.'
- > End session with final summary statements from participants.



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### MARIONE.

Planning the implementation of the Preparation Project

Objectives:	<ul> <li>At the end of the day, the participants should have:</li> <li>1. an agreed plan for undertaking the Preparation Project;</li> <li>2. assigned tasks and responsibilities for the various activities; and</li> <li>3. a clear logistical plan for carrying out the Preparation Project.</li> </ul>
Duration:	One day
Methodology:	Group discussion
Materials needed:	> Photocopies of relevant information from Proposal for Prepara- tion Project made in Phase A (e.g. Tables MA6, MA7, MA7.1, Forms MA8.1, MA8.2, MA8.3, etc.)

Steps

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1. Review, revise and agree the plan for the Preparation Project.

2. Agree tasks and responsibilities for the various Stages and activities.

3. Plan the logistical arrangements for undertaking the Preparation Project.

Note: It may be helpful for the project support staff (office administrators, drivers, etc.) to attend this day, so that everyone involved in the project has a clear understanding of the process and arrangements.

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### SECTION B: PROJECT TO DEVELOP PROGRAM

### MANUAL: STAGE

# M1.3 Background information and statistical data

### M1.3.1 Maps of the programme area

Maps can provide much information in a concise way that can be easily interpreted and used. There are many different types of maps — the ones described in Table M1.3.1 may be useful for the programme design process. Some of them will also be useful for planning the fieldwork of the Preparation Project.

The scales of maps vary. Topographic and road maps may be available at different scales; the most useful ones the region in reasonable detail. Specialist maps, such as geological or land use, are often only available at one scale, and may cover the whole country.

### Table M1.3.1: Maps for the programme design process

Type of map	Type of information	Use		
Topographic	physical geography of region — mountains, hills, plains, streams, rivers, lakes, water catchment divides, coastline, cities, towns, villages, etc. 8' scales between 1:50 000 and 1:500 000.	Š' to see if there are distinct differences within the area S' to be able to classify or divide the area by feature in case different approaches are needed in different areas		
Administrative boundaries		<ul> <li>s to clearly define the area of the programme so that there is a common understanding</li> <li>s to ensure that all parts of an area are included</li> </ul>		
Communications	major and minor means of communications, railways, roads, canals, rivers	in the analysis \$` distances and communications have a direct influence on time and resources needed for the programme to cover each community \$` to plan the village consultations and surveys (G1.6)		
Geological	types and distribution of particular rock types $\ddot{s}^{\cdot}$ scale of 1:50 000 and less	\$ to be able to classify or divide the area by feature in case different approaches are needed in different areas \$ combined with the hydrogeological information can indicate the method of drilling		
Hydrogeological	general availability of groundwater types of aquifer	<ul> <li>S<sup>*</sup> to classify or divide the area by feature in case different approaches are needed in different areas</li> <li>Shows the potential availability or non- availability of groundwater</li> </ul>		
Rainfall distribution	annual and possibly monthly or seasonal rainfall density \$` scales from 1:50 000 down to 1:500 000.	<ul> <li>s' for overall water resources assessment and management</li> </ul>		
Settlement patterns	locations and sizes of towns, villages and hamlets	<ul> <li>may indicate that different approaches are necessary in different areas</li> <li>to plan the village consultations and surveys</li> </ul>		
Population density		š may indicate that different approaches are necessary in different areas		
Land use	agriculture, forests, national parks	š there may be implications for the allocation and protection of water for domestic use		
Soil use		<ul> <li>Š' for overall water resources assessment and management</li> <li>Š' shows the potential availability or non- availability of groundwater</li> </ul>		

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Information gathering, consultations and surveys

# M1.3.2 Organisations in the RWSS sector

Information on organisations working in water supply, water resources, sanitation, hygiene and health should be collected during the consultations and surveys at each level, and entered in Form M1.3.2. The name of the organisation should be entered in the left column, and then the relevant boxes for that organisation ticked or blocked in.

After completion, empty columns in Form M1.3.2 can help to detect any gaps in coverage of areas of implementation, and possibly in areas of responsibility.

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### MANUAL: STAGE 1

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### M1.3.4 Population statistical data

Table M1.3.4 gives a list of the data needed. Information obtained at one level should be checked against information available at other levels. Any discrepancies should be discussed with the officials involved.

### Table M1.3.4: Population data need for analysis

	Data needed	Reasons
1.	Total number of people	For analysis of coverage
2.	Number of people by district or sub-division of the area	
3.	Numbers of people in urban and in rural areas	
4.	Number of people disaggregated by gender (i.e. the number of males and of females separately for each of the above)	For data analysis, to see if women's and men's needs and contexts are the same or different, and for monitoring
5.	Settlement patterns e.g. established villages, dispersed in small hamlets, nomadic, etc.	These may affect: š' the possible types of water supply system s' the number of separate supply points required
6.	Population density i.e. numbers of people per settlement	$\ddot{s}^{*}$ the operation and maintenance system $\ddot{s}^{*}$ etc.
7.	Growth rate of the population	For analysis of coverage and to estimate and plan for future demand
8.	Any significant migrations of people in the area. e.g. rural to urban, seasonal migration for work, refugees	To plan for future demand To understand labour needs

Possible sources of population data:

- > census
- > other government documents
- > statistics office
- other government departments
- local knowledge
- > surveys
- > other programmes and project data

### MANUAL: STAGE '

### M1.3.5 Socio-economic information

Table M1.3.5 gives a list of the information needed. Information obtained at one level should be checked against information available at other levels. You should try to resolve any discrepancies by discussion with the officials involved.

### Table M1.3.5: Socio-economic information needed for analysis

	Information needed	Re	easons
1.	Major ethnic or religious sub-groups which would require different approaches to social development and community management	š	To be able to classify or divide the area by sub- group in case different approaches or languages are needed for different sub-groups
		š	For planning the sample surveys of villages in the Preparation Project
2.	Main occupations of women and men	š	To understand the skills and knowledge of people
	(by season if appropriate)	š	To understand the types of communities and their economy
З.	Main sources of income	š	To understand the local economy
4.	Asset and income levels of women and men	š	To determine which technologies may be affordable
		š	To plan the O&M system
5.	Type(s) of economic system that operate e.g. cash, barter	š	To understand the local economy
		š	To plan the O&M system
6.	Literacy rates for women and men	š	To assess the educational levels
		š	They may affect the way O&M is planned, and training is carried out for hygiene promotion
7.	Significant numbers of women-headed households	š	To understand any problems in participation in a programme
		š	For targeting of any subsidies in the programme
8.	Significant numbers of people with disabilities, and the nature of the disabilities	š	to understand specific needs of disabled people that should be addressed

Possible sources of socio-economic information:

- census data
- other government documents
   statistics office
- other government departments
- local knowledge
- > surveys
- > other programmes and project data
- local organisations (NGOs, CBOs, religious groups)

Information gathering, consultations and surveys

### M1.3.6 Water resources

All water supply programmes require a proper understanding of the available resources, their quantity and sustainability, quality, the location and accessibility of water resources, and the management of these resources.

### Water resources assessment

Hydrological and hydrogeological assessments at a suitable scale may have already been done at central level, and possibly at regional and district levels. If not, then it will be necessary to gather the raw climatological, geographical and geological information and data shown in Table M1.3.6a and the water resources usage information and data shown in Table M1.3.6b.

Table M1.3.6a: Water resources assessment

Information needed	Reason
Climate: š' rainfall - intensity, reliability, distribution š' evaporation š' trends s' major zones	S Climate affects groundwater recharge and surface run-off. S <sup>C</sup> Groundwater recharge is an important determinant of aquifer susceptibility to water level decline, and therefore drought vulnerability.
Geography: š' topography ŝ' drainage basins geomorphological zones ŝ' land use (including zones, trends) ŝ' solis (major zones?)	<ul> <li>Broad geographical features affect groundwater recharge and surface run-off, and the location and accessibility of groundwater reserves.</li> <li>Groundwater recharge is an important determinant of aquifer susceptibility to water level decline, and therefore drought vulnerability.</li> </ul>
Geology: š' rock type s' rock distribution s' nature and depth of weathered zone s' degree of aquifer confinement	S Affects groundwater recharge and surface run-off, but more particularly, determines groundwater storage and aquifer permeability. Rock distribution and weathered zone features affect location and accessibility. S Groundwater storage is a key determinant of safe yields of aquifers. Aquifer permeability affects both susceptibility and vulnerability to pollution. Aquifer confinement is a key determinant of vulnerability.

Possible sources of water resources information:

- > Sufficient data for the programme area may be available at central level to make a broad assessment of the water resource potential.
- > The sources could be hydrogeological assessments (often compiled by external consultants), or primary data (raw climate, geographical and geological information).
- > The form of the data (from paper copy to sophisticated GIS) is important.
- Data may be fragmented within and between government departments, and between ESAs, NGOs, private consultants, drilling contractors and universities. Data may also be fragmented between different levels (central, regional, district), project level and also lodged with consultants.
- Communities are unlikely to have formal data holdings, but their knowledge and experience of water resources are valuable.
- > Thematic maps, reports, and GIS systems presenting interpretative borehole data may be available in some countries, and for some areas (e.g. groundwater harvest potential maps).

### Table M1.3.6b: Water resources usage

Int	formation needed	Reason
Us	age/abstraction:	To understand existing patterns and levels of use and trends.
š	Uses:	
	- domestic	
	- agricultural	
	- urban	
	- industrial	
	- recreation	
	- environmental/ecological	
	- recreation	
š	Demand for each use:	
š	waterpoint location	
š	waterpoint density	
š	quantity source and resource	
š	average yields	
š	trends	
š	particular problem areas, and evidence of systemic crisis	
Wa	ater quality	To assess suitability for drinking, health threats
š	microbiological	
š	chemical	Pollution types and loads, over time and space, to understand
š	potential pollution threats to resources	the threat to the water resources
	- sanitation/waste disposal	
	<ul> <li>waste type, quantities and densities;</li> </ul>	
	- disposal patterns (e.g. distance from waterpoints)	
	- urban	
	- industrial	
	- trends	

This documented information will need to be supplemented by and cross-checked with observation and information obtained during the consultations and surveys at regional, district and village levels. Particular points of interest at field level include the causes of source failure, trends in usage, access to and use of alternative sources.

Possible sources of water usage and water quality information

- Data may be fragmented within and between government departments (e.g. Ministries of Agriculture, Health and Water), and between ESAs, NGOs and private consultants. Data may also be fragmented between different levels (central, regional and district), and lodged with private consultants and projects.
- yield data from hydrogeological assessments and thematic maps (if this data is not available, the information given in Table M2.2.5c can be used for an approximation)
- project reports (e.g. by NGOs);
- discussions with key informants (e.g. maintenance engineers);
- village surveys

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### Water resources management

Types of information needed on specific arrangements for water resources management are listed in Table M1.3.6c. General questions covering the institutional arrangements are also provided in the sections on central, regional and district consultation and surveys (M1.4.2/3/4).

### Table M1.3.6c: Water resources management

Information needed	Reason
Institutional arrangements:	To find out whether the resource is managed, how it is
š broad institutional framework for water resources management	managed, by whom and for whom
<ul> <li>organisations involved in water resource management or with an interest in water resources</li> </ul>	(In many situations sources are managed, but the resource is
<ul> <li>responsibilities and jurisdictions of different organisations</li> </ul>	capacity (for developing, monitoring and enforcing controls); insufficient knowledge of resource base and pressures; and
š water rights and the legal framework	unresolved tensions between decentralisation and 'top down'
<ul> <li>ėconomic and mandatory controls on resource access and use</li> </ul>	management).
š groundwater protection policy	
$\check{s}^{\cdot}$ administration and enforcement of controls	
š staff capacity/capability	
Data management	To understand how data is managed
š' types of data	
<ul> <li>quantitative versus qualitative</li> </ul>	Resource management demands information on aquifer
- source versus resource	conditions and trends. We need to know whether this is
<ul> <li>raw versus interpreted</li> </ul>	available, reliable, comprehensive, and timely and whether
- abstraction and baseline demand projections	and now data concellor is inned to decision making.
- infrastructure status	Demand projections are potentially useful, but with many
<ul> <li>š supply of data — availability; historical records; coverage; collectors</li> </ul>	reservations.
š demand for data	
<ul> <li>why is data collected?</li> </ul>	
- who uses it?	
- who 'owns' it?	
š technologies used and processing	
š reliability of data	

### **Possible sources of information on arrangements for water resources management** Institutional arrangements:

- data holdings concentrated at centre, but need to ask the same questions at regional and district levels
- » government policy documents, sector reports, ESA evaluations, key informants
- internal government papers, sector reviews, policy papers, etc., which are held by government ESAs and NGOs

Hydrological and hydrogeological data management:

- > principally at central level but also at regional and district levels
- data typically fragmented between institutions and levels; hydrometric monitoring networks run down or non-existent
- > field (village level) data may be needed to draw up demand projections

SECTION B: PROJECT TO DEVELOP PROGRAM

### MANUAL: STAGE

### M1.3.7 Water supply and sanitation coverage and targets

Figures for existing coverage and present targets should be collected from all possible sources at the various levels during this information gathering exercise. The questions should be asked during the consultations with government departments and organisations at central, regional and district levels. If possible, the data should be checked during visits to villages.

The figures from different sources may vary or contradict each other, but at this stage the important thing is to get as much information as possible. It may be useful to discuss any discrepancies with the officials concerned, but the main analysis will be done later.

Some caution is necessary in interpreting figures because of the way they are produced:

- > There may be overlaps in the populations covered, by a waterpoint and by agencies working in the same area, so counting the same communities twice.
- Some agencies design waterpoints for, say, 200 people, and assume that 200 people will use each one without checking the actual number of people served.
- > It is often assumed that the functional status of completed systems is 100%, even though some have completely broken down.

### Table M1.3.7: Water supply and sanitation coverage and targets

	Information needed	Reasons
	Water supply	·
1.	Water supply coverage	To design realistic goal and objectives
	<ul> <li>š by area (e.g. district/region)</li> <li>š by technology type (e.g. surface water, rainwater, shallow wells, boreholes)</li> </ul>	This data can be combined with water resources availability data (Table M1.3.6A) to define development potential
2.	The definitions of coverage	To interpret the coverage figures
3.	Any assumptions made in the coverage figures or definitions	For comparison between figures from different sources and for interpretation and analysis
4.	Any variation within the area in these coverage figures	To understand the scale of the programme needed
5.	Implementation rates by each organisation (since the date of the most recent coverage figures)	To update coverage figures and for analysis of feasibility of targets
6.	The government's target for coverage of water supply (% of population, dates)	
7.	The current operational status of water supply systems	
	(% functioning) (including causes of source failure)	
	Sanitation	
1.	Household sanitation facilities coverage	To design realistic goal and objectives
2.	Coverage of schools and other institutions with sanitation facilities	
з.	The definition of coverage	To interpret the coverage figures
4.	Any variation by area in this coverage	
5.	Implementation rates by each organisation since the date of the most recent coverage figures	To update coverage figures and for analysis of feasibility of targets
6.	Any assumptions made in the coverage figures or definitions	
7.	The government's target for coverage of sanitation	
	(% of population, dates)	

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### Possible sources of coverage data:

- > government figures from central, regional and district departments responsible
- other implementing organisations (private sector and NGOs)
- > census information
- > UNICEF in country
- > the biennial Water Supply and Sanitation Sector Monitoring Report, published by WHO/ UNICEF
- village surveys

### M1.3.8 Hygiene and health

The consultations and surveys at central, regional and district levels cover policies, plans, roles, responsibilities, capacity, funding, co-ordination, etc. (M1.4.2/3/4). Hygiene promotion tends to be a relatively new component in water and sanitation programmes and planning, however, so the general questions may need to be supplemented with more specific and detailed questions on some aspects, as given in Table M1.3.8. In addition, information on health in general is needed in order to provide the context for hygiene promotion, and to show its importance.

### Table M1.3.8: Hygiene promotion

Aspect	Questions	Reasons and comments				
Organisations	S: Which government department(s) is responsible for hygiene promotion or education?	Ministry of Health š <sup>•</sup> Environmental Health Department š <sup>•</sup> Health Education Department š <sup>•</sup> Control of Diarrhoeal Diseases				
	S <sup>•</sup> Which other government departments undertake parts of hygiene promotion or education, and what are their roles?	Ministry of Health \$` Health education \$` Mother and Child Health \$` Epidemiology \$` Expanded programme of immunisation \$` Control of Diarrhoeal Diseases \$` Emergency health care — is it undertaken during emergencies? Ministry of Education				
	S Which other organisations are undertaking or supporting hygiene promotion or education, and what are their roles?	S     International agencies e.g. UNICEF, WHO     S     Local, national and international NGOs				
	Š <sup>•</sup> What is the role of schools in the provision of hygiene education?	<ul> <li>S Is hygiene education included in the formal school curriculum?</li> <li>S Is it undertaken in extra-curricular activities e.g. school health clubs, competitions, campaigns?</li> <li>S Are there any child-to-child activities</li> <li>S Have teachers received training and information on child-to-child activities</li> </ul>				
Health services and facilities	S <sup>*</sup> What is the health service provision and facilities by the government (planned and actual)?					
	S <sup>-</sup> Which other organisations or individuals provide health services?	<ul> <li>Š Private sector</li> <li>Š Traditional healers</li> <li>Š NGOs</li> <li>Š Religious organisations</li> </ul>				
	S What is the health service coverage of the different providers (coverage may be by geographical area or specific target populations)?					
	š How does the organisation's health service provision relate to hygiene promotion or education?					

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Information gathering, consultations and surveys Information gathering, consultations and surveys

### Table M1.3.8: Hygiene promotion continued

Health policy and planning	$\tilde{s}^{\cdot}$ What are the objectives of each organisation? $\tilde{s}^{\cdot}$ What is the approach of each organisation?	<ul> <li>Frimary health care policy and approach</li> <li>Participatory or traditional didactic</li> <li>Hygiene behaviours are targeted</li> <li>How is hygiene behaviour monitored and are the indicators used integrated in the current health management information system?</li> <li>Is a participatory approach used in the planning, implementation and monitoring of the programme?</li> </ul>
	<ul> <li>š Have any studies been made?</li> <li>e.g. knowledge, attitudes, practice (KAP) studies</li> </ul>	To provide insights into the issues and problems to be addressed by the programme
	<ul> <li>Š<sup>*</sup> Are there any international initiatives on hygiene education?</li> <li>Š<sup>*</sup> Is there any collaboration between governments?</li> </ul>	
Funding	š <sup>-</sup> Are hygiene promotion/education budget lines clear?	Items for hygiene education may be included in the budgets of other departments in the sector. Items may overlap with other lines, e.g. community mobilisation.
	S Does the budget cover all the costs of hygiene promotion/education?     S e.g. workshops, health materials     Production (including artist's fees)     Transport, food, staff salary costs     Allowances for volunteer health promoters     Are budget items for hygiene education also	Often the budget is inadequate, either because not all the activities have been included, or because hygiene promotion/education is not seen as important compared with other water related activities.
	and budget items for hygerie education also included in the budgets of other departments of the sector and do they overlap, e.g. budget for community mobilisation?	often be unclear and may overlap with budgets from other departments.

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### M1.3.9 Health statistics

It is important to collect data on the incidence of the most common diseases (morbidity) to see whether these include water- and sanitation-related diseases. Form M1.3.9 can be used to compile the statistics from the various organisations and sources during the consultations and surveys.

Form M1.3.9 is arranged using a classification system based on transmission routes of infectious water- and sanitation-related diseases developed by Cairncross and Feachem (1993). The Form also includes the infant mortality rate (IMR) (0 to 1-year-old) which can be used to compare the health of different populations in, for example, different geographical areas or different population groups. If the IMR is not available it can be calculated from the number of infant deaths and the number of live births. One section of the Form is for collecting information on diseases related to the chemical quality of groundwater.

### Possible sources of health statistics

- > Ministry of Health
  - national headquarters (departments may include epidemiology, communicable disease control, health statistics, etc.)
  - provincial offices
- district offices
- > census office
- > government publications office
- > WHO
- > UNICEF
- > national and international NGOs
- > private health providers

### Data types and reports

- census health statistics for national, regional and district levels (census may be out of date but may be only source of data available)
- > government departmental annual reports at national, regional and district levels
- » government annual and quarterly reports health statistics
- demographic and health surveys
- monitoring and evaluation reports
- > reports of donors, organisations and agencies including
- annual reports
- strategies and planning documents
- health data
- project evaluation reports

Steps for completing Form M1.3.9: Water- and sanitation-related diseases 1. Enter in the table the number of cases of each disease in the area.

- Add up the number of cases of diseases in each category to give a sub-total.
- Calculate the number of cases of assesses in each category to give a sub-total.
   Calculate the number of cases of each disease as a percentage of the category sub-total.
- 4. Copy the sub-total in each category to the box in the Sub-totals column.
- Add all the sub-totals to give the total number of cases of water- and sanitation-related
- diseases.
- 6. Calculate each category sub-total as a percentage of the total number of cases.
- 7. Do not enter any figures in the shaded boxes.
- 8. The other tables can be completed in a similar way.

Information gathering, consultations and surveys Information gathering, consultations and surveys



### Form M1.3.9: Disease statistics

Area covered by data:	
Population of area:	
Source of data:	
Time period covered by data:	
Date of completing form:	

Water and sanitation-related diseases	No. of cases	% of sub- total cases	Subtotals	% of total cases
Faecal-oral (water-borne and water-washed)				
Diarrhoeas and dysentery:				
amoebic dysentery				
cholera				
E.coli diarrhoea				
giardiasis				
rotavirus diarrhoea				
salmonellosis				
shigellosis (bacillary dysentery)				
enteric fevers: typhoid				
paratyphoid				
poliomyelitis				
hepatitis A				
leptospirosis				
Subtotal		100		
Strictly water-washed				
scabies				
ringworm				
yaws				
conjunctivitis				
trachoma				
louse-borne typhus and relapsing fever				
Subtotal		100		
Water-based				
schistosomiasis (bilharzia)				
guinea worm				
other ingested worms				
Subtotal		100		
Water- and excreta-related insect vector				
bancroftian filariasis				
malaria				
river blindness				
yellow fever				
dengue				
other				
Subtotal		100		
Soil-transmitted helminths				
ascariasis (roundworm)				
trichutiasis (whipworm)				
hookworm				
Subtotal		100		
	1	1		
Total water and s		100		

### Form M1.3.9: Disease statistics continued

Diseases related to water chemistry	No. of cases	% of total cases
Arsenic		
š skin problems (keratosis, pigmentation disorders)		
š' skin cancer		
š internal cancers		
Fluoride		
š dental fluorosis (mottling of teeth)		
š skeletal deformities		
Nitrate		
š methaemoglobinaemia in infants (blue-baby syndrome)		
Total		100

All diseases	No. of cases	% of total cases
Water and sanitation-related diseases		
Diseases related to water chemistry		
Other common diseases:		
Total		100

### Mortality rates

Infant mortality rate (IMR)	
(death between birth and one year of age, expressed per 1,000 live births)	
Under-five mortality rate (U-5 MR)	
(death between birth and five years of age, expressed per 1,000 live births)	

Alternatively, if the IMR and U-5MR are not directly available

Number of live births	
Number of deaths of infants less than one year of age	
Number of deaths of children less than 5 years of age	

IMR or U5MR = number of deaths x 1000

number of births

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Information gathering, consultations and surveys

Information gathering, consultations and surveys

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### M1.3.10 Funding

As part of the consultation and survey at the different levels, data should be gathered on the past and future funds allocated to the sector by each organisation.

Form M1.3.10 can copied and used to organise this information. One copy for each year should be completed for each organisation, both government and NGO, in the sector. To enable a complete picture to be made, it is probably best to collect the information for the last complete year, with the same year for each organisation, plus forecast spending for as many years as relevant.

The available information may not be broken down into the detailed categories shown in the form. If so, enter the total for each component.

Note that if this form is completed for donors and implementers, care should be taken to ensure that funding is not double-counted.



### Form M1.3.10: Funding

Organisation:	
District/province:	
Financial year:	
Currency:	

Component	Amounts			
	Capital	Revenue (running costs)	Allocated	Received
Community mobilisation				
staff				
training				
transport				
other				
Subtotal				
Water supply				
staff				
construction				
rehabilitation				
operation and maintenance				
training				
transport				
other				
Subtotal				
Hugiona promotion/advection				
staff				
survey				
training				
transport				
other				
Subtotal				
Sanitation				
staff				
promotion				
training				
construction				
other				
Subtotal				
MISCEIIaneous				
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Subtotal				
iotais				

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Information gathering, consultations and surveys

### SECTION B: PROJECT TO DEVELOP PROGR

### MANUAL: STAGE 1

### M1.4.1 Interviewing

It is important to approach the consultation and surveys at the various levels without assumptions and in a sensitive manner. The following points are offered to help develop skills for interviewing people.

It may be worth practising interviewing during the Briefing Workshop and Training. Team members can interview each other using the questions for one of the levels of consultation, and then discuss how it felt to interview and to be interviewed. Using the questions would also help to familiarise the team with the consultation process.

- 1. The objective of interviews is to gather information and to understand things from the interviewee's point of view.
- If you are already working in the sector, you may know more about it than the people you will be interviewing, but what you want to find out is what *they know and understand*, not what you know! An incorrect understanding or knowledge can be as revealing as the correct one.
- Make it clear that the person's own experience, knowledge, views and constraints are important to the development of the programme.
- 4. Adapt questions to suit the person being interviewed, taking into account his/her role and level of responsibility, and what s/he should be expected to know at that level. Understand the role and responsibility of the person and adapt the phrasing of the question accordingly.
- 5. Try to put the person at ease and draw him/her out. With junior government staff, leave out issues and subjects for which they have no responsibility or involvement. Try to understand and be sympathetic to the person's own position and constraints. This should help to put the person at ease and give the underlying reasons for things.
- 6. Avoid making the person appear or feel stupid if s/he does not know something.
- Divide the team up to interview people separately according to the specialist area of the team, rather than hold a series of panel interviews, which may be intimidating.
- The Manual is a guide only rephrase the questions suggested in a way that suits both you and the person being consulted. Use your own words or style of talking.
- It may be necessary set the context for a particular question. Give examples but be careful not to ask leading questions (that is questions that the person may answer with the response s/he thinks is wanted).
- 10.Explore around the questions suggested in each section, if necessary. The questions suggested may be only a starting point for a discussion.
- 11. When necessary, adapt questions to take account of answers the person may already have given.
- 12.Avoid aggressive questions these are unlikely to yield useful information, and will probably make the person reluctant to give any useful information.
- 13.Do not contradict answers unless they are clearly wrong. Accept what is given and rephrase the question in a different way to get the information you want.
- 14. Explore the reasons behind answers. This may reveal the real issues and problems facing the sector.

Information gathering, consultations and surveys

### M1.4.2 Central-level consultation and surveys

The purpose of this consultation and survey exercise at central level is to obtain the views and practices of the organisations and agencies involved in the sector.

It is important to approach this without assumptions and in a sensitive manner. If you are already working in the sector, you may know much more about it than the people you will be interviewing, but what you want to find out is what **they** know and understand, **not** what you know! An incorrect understanding or knowledge can be as revealing as the correct one.

The questions in Tables M1.4.2a/b/c should be used as a basis for discussion with each of the organisations consulted. They may need to be adapted for each organisation.

Remember also to ask for any relevant statistical data, information, documents and reports as described previously.

### Table M1.4.2a: Sector policies at central level

Subject	Questions	Reasons
General	<ul> <li>Š What are the relevant national policies and what do they cover?</li> <li>Š What are the relevant organisational policies and what do they cover?</li> <li>Š Are there any limitations in the policies?</li> <li>Š Are any new policies being prepared?</li> </ul>	To understand the policies within which the programmes should be planned
Water resources	What are the priorities for water allocation?     S How is water allocated in practice?	To know how water supply fits into the overall policy for water resources
Rural water supply Sanitation Health Hygiene promotion Rural development	<ul> <li>Š' How is each policy applied in practice?</li> <li>Š' Does each policy impose any constraints on the way a programme is designed?</li> <li>Š' Is each policy up to date compared with the way current projects and programmes are designed and implemented?</li> </ul>	To understand the use and limitations of the policies from the central point of view
NGOs	š What is the role and responsibilities of NGOs generally and in the sector?	
Cost recovery/sharing	š What is the policy on cost sharing of capital and running costs of water and sanitation provision?	

### SECTION B: PROJECT TO DEVELOP PROGRA

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### Table M1.4.2b: Organisation at central level

Subject	Questions	Reasons
Role	$\tilde{s}^{\cdot}$ . What is the organisation's role in the sector?	To see where the organisation fits within the overall structure of the sector
Responsibilities	š For which specific components of the sector does the organisation have responsibility?	To see how the organisation's responsibilities fit within the overall structure of the sector
Activities:		
plans	$\check{s}^{\cdot}$ What plans does the organisation have for work in the sector?	
programmes	š <sup>-</sup> What programmes does the organisation have in the sector?	
projects	š What projects does the organisation have in the sector?	
processes	$\check{s}^{\cdot}$ What processes does the organisation have for work in the sector?	
Methods of working	<ul> <li>Š What is the methodology used for water supply, sanitation and hygiene education?</li> <li>the process</li> </ul>	To understand the various methodologies used, and for analysis of what is effective and
	- order of activities	not so effective
	- timing and pace of activities	
Capability	š What is the area of competence of the organisation?	
	š' What are the skills and abilities of the staff?	
	$\check{s}^{\cdot}$ . What other strengths does the organisation have?	
Capacity	For water supply, sanitation and hygiene education agencies and departments:	To assess the implementing capacity in the sector
	š What is the implementation rate, that is the number of communities covered each year?	
	š Is this implementation rate based on the technical capacity or the rate at which the social and community components can be run?	
	š What is the maintenance capacity (if applicable)?	
Funding	s' What is the annual budget allocation?	To know the total resources
	<ul> <li>S Are budget lines clearly defined?</li> <li>Š How is this divided between capital and operational costs?</li> </ul>	specific allocation to the various components.
	š' How much is allocated to each component (water supply, sanitation, hygiene education, water resource management)?	
	š For water supply: How much is allocated to operation and maintenance?	
	š' How much of each allocation is actually dispersed each year?	
Co-ordination	š Which organisation or person is responsible for co- ordination of the agencies involved in the sector?	
	š How does this organisation fit in with this co- ordination system?	
	š Does the co-ordination system work?	

Table M1.4.2c: Perceived issues, challenges and problems in the sector and facing the organisation, central level

Subject	Questions	Reasons
In the sector	What are the successes, issues, challenges, problems and failures in the sector?     What are the views of the organisation on management by communities?	To gather the issues from all perspectives, analyse them and design ways to overcome them in the programme
For the organisation	S What are the successes, issues, challenges, problems and failures for this organisation?	To gather the issues from all perspectives, analyse them and design ways to overcome them in the programme

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### M1.4.3 Regional-level consultation and surveys

The purpose of this consultation and survey exercise at regional level is to obtain the views and practices of the organisations and agencies involved in the sector. The organisations and people at regional level are closer to the realities of running programmes and are likely to have insights and understanding which can contribute to the design of the new programme.

It is important to approach this without assumptions and in a sensitive manner. If you are already working in the sector, you may know much more about it than the people you will be interviewing, but what you want to find out is what they know and understand, not what you know! An incorrect understanding or knowledge can be as revealing as the correct one.

The questions in the Tables M1.4.3a/b/c are general and applicable to all agencies. They should be used as a basis for discussion with each of the organisations consulted. The questions may need to be adapted for each organisation. Specialist areas such as water resources management, water technology, health and hygiene issues and O&M are discussed separately (M1.3 and M1.5).

Remember also to ask for any relevant statistical data, information, documents and reports as described previously.

### Table M1.4.3a: Sector policies at regional level

Subject	Questions	Reasons
General	<ul> <li>What are the policies relevant to the organisation at regional level, and what do they cover?</li> <li>What is the experience of the policy as applied at regional level?</li> </ul>	To understand the policies within which the programmes should be planned
	š Are there any opportunities and/or limitations in the policies?	To understand how the policies are interpreted at regional level
Water resources	What are the priorities for water allocation in the region?     How is water allocated in practice?	To know how water supply fits into the overall policy for water resources
	<ul> <li>s Are there any water rights disputes?</li> <li>š' What are the actual or potential pollution risks of the water resources?</li> </ul>	To understand how the policies are interpreted at regional level
Rural water supply Sanitation Health	<ul> <li>Boes each policy applied in practice?</li> <li>Does each policy impose any constraints on the way a programme is designed?</li> <li>Is each policy up to date compared with the way</li> </ul>	To understand how the policies are interpreted at regional level
Hygiene promotion Rural development	current projects and programmes are designed and implemented in the region?	limitations of the policies from the regional point of view
NGOs	š' What is the role and responsibilities of NGOs generally and in the sector?	
Cost recovery/sharing	<ul> <li>Š What is the policy on cost sharing of capital and running costs of water and sanitation provision?</li> <li>Š How is it applied in practice?</li> </ul>	To understand how the policy is interpreted at regional level
Regulation and control	S     What are the regulations and control procedures at regional level for NGOs and the private sector?     S     How are these applied in practice?	To understand how each sees the regulatory function of regional government

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### Table M1.4.3b: Organisation at regional level

Subject	Questions	Reasons	
Role	š What is the organisation's role(s) in the sector?	To see where the organisation	
	š What collaboration is there with other organisations	fits within the overall structure of	
	in the sector?	the sector	
Responsibilities	š For which specific components of the sector is the organization reasonable?	To see how the organisation's	
	To who or what is the organisation responsible?	responsibilities fit within the	
A . 15 101	s To who or what is the organisation responsible?	overall structure of the sector	
Activities:	Y Miller des des de services la la complete de la complete		
plans	s What plans does the organisation have for work in the sector?		
programmes	š What programmes does the organisation have in the sector?		
projects	š What projects does the organisation have in the sector?		
processes	š. What processes does the organisation have for work in the sector?		
Methods of working	š What is the methodology used for water supply,	To understand the various	
0	sanitation and hygiene education?	methodologies used, and for	
	- the process	analysis of what is effective and	
	- order of activities	not so effective	
	- timing and pace of activities		
Capability	š What is the area of competence of the organisation?		
	š What are the skills and abilities of the staff?		
	š What are the other strengths of the organisation?		
Capacity	For water supply and sanitation and hygiene education agencies and departments:	To assess the implementing capacity in the sector	
	š What is the organisational structure and the number of staff?		
	š' What is the implementation rate, that is number of communities covered per year?		
	š Is the implementation rate based on technical capacity or the rate at which the social and community components can be run?		
	š What is the maintenance capacity (if applicable)?		
Funding	š What is the annual budget allocation?	To know the total resources	
0	š Are budget lines clearly defined?	available in the sector, and the	
	š How is this divided between capital and operational costs?	specific allocation to the various components	
	š <sup>*</sup> How much is allocated to each component (water supply, sanitation, hygiene education, water resource management, community organisation)?		
	š For water supply: How much is allocated to operation and maintenance?		
	š How much of the budget is actually received?		
Co-ordination	š Which organisation or person is responsible for co- ordination of the agencies in the sector at regional level?		
	š How is co-ordination with central level and with district level organised?		
	š How does this organisation fit in with this co- ordination system?		
	š. Does the co-ordination system work?		

# Table M1.4.3c: Perceived issues, challenges and problems in the sector and facing the organisation, regional level

Subject	Questions	Reasons
In the sector	<ul> <li>S<sup>•</sup> What are the sectoral issues, challenges and problems in the region?</li> <li>S<sup>•</sup> What are the views of the organisation on management by communities?</li> </ul>	To gather the issues from all perspectives, analyse them and design ways to overcome them in the programme
For the organisation	Š <sup>•</sup> What are the successes, issues, challenges and problems for this organisation?	To gather the issues from all perspectives, analyse them and design ways to overcome them in the programme

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### M1.4.4 District-level consultation and surveys

The purpose of this consultation and survey exercise at district level is to obtain the view and practices of the organisations and agencies involved in the sector. The people at district level are closest to the communities, with the day-to-day responsibility and problems of running a programme. They probably have the best experience and knowledge of the reality of what the programme should be designed to overcome and achieve, and they will be the ones implementing the new programme.

It is important to approach this without assumptions and in a sensitive manner. If you are already working in the sector, you may know more about it than the people you will be interviewing, but what you want to find out is what they know and understand, not what you know! An incorrect understanding or knowledge can be as revealing as the correct one. For help see section M1.4.1 of the Manual on Interviewing.

The questions in the Tables M1.4.4a/b/c are general and applicable to all agencies. The questions should be used as a basis for discussion with each of the organisations consulted. They may need to be adapted for each organisation. Specialist areas such as water resources management, water technology, health and hygiene issues and O&M are discussed separately (M1.3 and M1.5).

Remember also to ask for any relevant statistical data, information, documents, reports and plans as described previously.

Table M1.4.4a:	Sector	policies	at	district	level
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Subject	Questions	Reasons
General	<ul> <li>S<sup>*</sup> What are the policies relevant to the organisation and what do they cover?</li> <li>S<sup>*</sup> What is the experience of the policy as applied at district level?</li> <li>S<sup>*</sup> Are there any opportunities and/or limitations in the policies at district level?</li> </ul>	To understand the policies within which the programmes should be planned, their relevance to the district, and how they are applied in practice at this level
Water resources	<ul> <li>S<sup>*</sup> What are the priorities for water allocation in the district?</li> <li>S<sup>*</sup> How is water allocated in practice?</li> <li>S<sup>*</sup> Are there any water rights disputes?</li> <li>S<sup>*</sup> What are the actual or potential pollution risks of the water resources</li> </ul>	To understand water resources allocation in practice To understand how the policies are interpreted and applied at district level
Rural water supply Sanitation Health Hygiene promotion Rural development	<ul> <li>S<sup>*</sup> How is the policy applied in practice at this level?</li> <li>S<sup>*</sup> Does each policy impose any constraints on the way a programme or project is designed or implemented?</li> <li>S<sup>*</sup> Is the policy up to date compared with the way current projects and programmes are designed and implemented in the district?</li> </ul>	To understand the use and limitations of the policies from the district point of view
NGOs	š' What is the role and responsibilities of NGOs in the district and in the sector?	
Cost recovery/sharing	<ul> <li>Š What is the policy of on cost sharing of capital and running costs of water and sanitation provision?</li> <li>Š How is it applied in practice?</li> </ul>	to understand how the policy is interpreted at district level.
Regulation and control	S     What are the regulations and control procedures at district level for NGOs and private sector?     S     How are these applied in practice?	to understand how each sees the regulatory function of distict government.

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### Table M1.4.4b: Organisation at district level

Subject	Questions	Reasons
Role	<ul> <li>š What is the organisation's role(s) in the sector?</li> <li>š What collaboration is there with other organisations in the sector?</li> </ul>	To see where the organisation fits within the overall structure of the sector
Responsibilities	S     For which specific components of the sector does the organisation have responsibility?     S     To who or to what is the organisation responsible?	To see how the organisation's responsibilities fit within the overall structure of the sector
Activities:		
plans	š <sup>•</sup> What plans does the organisation have for work in the sector?	
programmes	$\tilde{s}^{\cdot}$ What programmes does the organisation have in the sector?	
projects	š <sup>-</sup> What projects does the organisation have in the sector?	
processes	š <sup>-</sup> What processes does the organisation have for work in the sector?	
Methods of working	<ul> <li>S<sup>*</sup> What is the methodology used for water supply, sanitation and hygiene education:</li> <li>the process</li> </ul>	To understand the various methodologies used, and for analysis of what is effective and not so effective
	- order of activities	
	- timing and pace of activities	
Capability	<ul> <li>S What is the area of competence of the organisation?</li> <li>S What are the skills and abilities of the staff?</li> </ul>	To assess the contribution of the organisation to the sector, and its implementing capacity
	š What are the other strengths of the organisation?	
Capacity	For water supply and sanitation and hygiene education agencies and departments: š' What is the organisational structure and the number of staff?	To assess the implementing capacity in the sector
	š' What is the implementation rate, that is the number of communities covered each year?	
	š Is this implementation rate based on the technical capacity or the rate at which the social and community components can be run?	
	š Is the number of staff sufficient?	
	š What other resources are available (vehicles, plant and equipment, educational materials, etc.)?	
Funding	š What is the annual budget allocation?	To know the total resources
	š Are budget lines clearly defined?	available in the sector, and the
	s' How is this divided between capital and operational costs?	components
	S How much is allocated to each component (water supply, sanitation, hygiene education, water resource management community organisation)?	
	<ul> <li>For water supply: How much is allocated to operation and maintenance?</li> </ul>	
	š <sup>-</sup> How much of the budget is actually received each year?	
Co-ordination	š' Which organisation or person is responsible for co- ordination of the agencies in the sector at district level?	
	š How is co-ordination between district level and the regional level organised?	
	š How does this organisation fit in with this co- ordination system?	
	š Does the co-ordination system work?	

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Table M1.4.4c: Perceived issues, challenges and problems in the sector and facing the organisation, district level

Subject	Questions	Reasons
In the sector	<ul> <li>S What are the sectoral issues, challenges and problems in the district?</li> <li>S What are the views of the organisation on management by communities?</li> </ul>	To gather the issues from all perspectives, analyse them and design ways to overcome them in the programme
For the organisation	§ What are the successes, issues, challenges and problems for this organisation?	To gather the issues from all perspectives, analyse them and design ways to overcome them in the programme

SECTION B: PROJECT TO DEVELOP PROGRAM

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# M1.5 Survey information gathering

M1.5.1 Water resources and uses

An analysis of the use of the various resources (as opposed to the source — the well or pump) is useful for seeing the demand on each resource. Form M1.5.1 can be used for discussion with local officials responsible for water supplies. The form can be photocopied and a separate sheet completed for each district or sub-area in the region.

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### M1.5.2 Rural water supplies — Summary

Forms M1.5.2a/b/c can be copied and used to summarise the information gathered at regional and district levels on water resources and the technologies currently used to abstract the water:

- > Use one copy for each sub-division of the area such as a district.
- > Use one copy for the overall area by adding together the summaries for each sub-division.

These summaries can be used for the presentation to the Planning Workshop.

Form M1.5.2a: Water resources

### Region or District:

### Date:

> What are the water sources available to communities for domestic water supply?

Source		Availability		% of people in region/district using
	Yes	All year	Seasonal	
Surface water				
š' rainwater				
š' lakes				
š' ponds				
š' rivers				
š' streams				
š' reservoirs				
š' other				
Groundwater				
š' springs				
š shallow groundwater				
(<7m deep)				
š deep groundwater				
š' (>7m deep)				
š' other				

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> Are there any records or memories of floods or droughts? If so, make a summary of these.

# Form M1.5.1: Water resources and uses

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		Estimai (to tf	Uses of source the proportion of the nearest 5% if possi	ne use ible)		Any competition or conflict between uses?	Any major water rights issues? Describe separately
Main sources of water	Rural domestic	Irrigation and agriculture	Urban supply	Industry	Tourism and recreation		
Groundwater							
Springs:	Ŷ						
Shallow aquifer (<7m depth)	Ý						
Deep aquifer (>7m depth)	Ý						
Other	Ŷ						
Surface water							
rainwater	Ŷ						
lakes	Ý						
bonds	Å.						
rivers	λ						
streams	۸ ا						
reservoirs	Ý						
Other	Ŷ						

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Form M1.5.2b: Water abstraction and delivery technologies

- > What technologies are used in the programme area for abstracting and delivering water to users? (Tick all that apply in the table).
- > Of the technologies in use, approximately what is the proportion of each technology?

### Region or District:

### Date:

Technology	Yes	Proportion (%)
Abstraction		
š Hand dug well (lined)		
š Unlined, unimproved wells		
š Borehole or tubewell		
š Unprotected spring		
š Protected spring		
š Infiltration gallery		
š Stream intake dam		
š Rainwater catchment off roofs		
š Rainwater catchment off ground		
š Scoop holes		
š Other traditional abstraction methods — specify:		
š		
š		
š Other:		
š		
š		
Delivery		
š Borehole with motor pump (diesel/electric)		
š Pipe distribution system to standposts		
š Pipe distribution system with house connections		
š Gravity flow piped system from spring or stream source		
š Borehole/tubewell with handpump (if yes, see below)		
š Community initiated improved technology		
š Other:		
š		
š		
š		

### Form M1.5.2c: Handpumps

The type or make of handpumps and the number of each type has a direct influence on the maintenance system which is established. The greater the number of different types of pump there is, the more complex the system will be to manage and run. It will affect the supply of replacement parts and the training of pump maintenance workers.

> If handpumps are installed in the area, what are the makes/designs/types of pumps?

> How many of each type are installed, or what is the proportion of the total number?

### Region or District:

### Date:

Make or type of pump	Number installed	% of total
Information not available:		

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### M1.5.3 Operation and maintenance of rural water supplies

Information and data forms

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To enable the performance of the operation and maintenance system to be monitored and managed, a number of indicators have been developed. The performance indicators (PI) are divided into four groups, denoted by a one-letter abbreviation that is used in Form M1.5.3a:

- service
- > financial F
- > personnel P
- > materials M

The questions in Forms M1.5.3a and M1.5.3a should provide the information and data to calculate the PIs, which can then be used to assess the performance of the O&M system. This is explained in the data analysis section (M2.2.4). It may be helpful to read that section to understand the way the information is going to be used before undertaking this part of the consultation and survey.

The forms should be copied and completed for each district and then collated as a summary for the region. You should verify information given by district offices by discussing the questions with villagers during the village-level consultations and surveys. It may also be useful to complete a form independently using data available at regional to see if there are any discrepancies in the views of how well the O&M system is functioning.

Form M1.5.3a: Operation and maintenance information and data

Region or District:

Date:

	PI	Question	District information	Village information
Q1	S F	What is the total number of waterpoints in the district/region?		
Q2	F	How many waterpoints are planned to be installed?		
Q3	S	Are the number of functioning points monitored at regional/district level?		
а	S	If yes, how many waterpoints are reported to be broken down at present?		
b	s	If no, how is the maintenance status of waterpoints monitored at regional level?		
Q4	s	Is the response time for repairs monitored at regional/district level?		
а	S	If yes, how long does it take from the date a waterpoint is reported as out of order to the date a repair is made?		
b	S	If no, how is the maintenance status of waterpoints monitored at regional/district level?		
Q5	F	What should be the organisational structure and how many staff should be needed for the system to function? (note: this should be the number needed in theory, not the actual number assigned)		

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Form M1.5.3a Operation and maintenance information and data continued

	Ы	Question	District information	Village information
Q6	F	How much office space, stores, vehicles, computers, tools and other equipment should be required (i.e. the numbers needed in theory, not the actual number allocated)?		
Q7	F	What would be the annual cost of these staff, vehicles, equipment and overheads?		
Q8	F	What is the running cost per waterpoint for replacement parts per year?		
Q9	F	If a VLOM system is in place, how much are village caretakers paid by the community?		
Q10	F	Are there any other costs for running the O&M system?		
Q11	F	How much is allocated to O&M from the government budget, from central, regional or district level?		
Q12	F	How much money, on average, do communities contribute to O&M? This may be in payment to caretakers, for replacement parts, or to maintenance funds.		
Q13	F	If there is any other regular and reliable source of income for O&M, how much does this amount to?		
Q14	Ρ	What is the total number of trained maintenance teams?		
Q15	Ρ	What is the total number of vehicles?		
Q16	Ρ	What is the actual number of functioning vehicles?		
Q17	Ρ	Is fuel available?		
Q18	Ρ	How many systems have functioning management committees?		
Q19	Р	For a VLOM system, what is the total number of trained and active people in each of these categories:		
а	Р	village caretakers (male)?		
b	Ρ	village caretakers (female)?		
С	Ρ	local support staff?		
Q20	М	What is the average time to obtain identified spare parts for fitting to a broken water point?		
Q21	М	How many outstanding repairs are there due to lack of parts?		
Q22	М	How many spare part requisitions are made per year, or how many spare parts are sold per year?		
Q23	М	How are parts obtained by a local mechanic or village caretaker?	Complete Form M1.5.3B	Complete Form M1.5.3B
Q24	М	How long does it take?	Complete Form M1.5.3B	Complete Form M1.5.3B

For village-level systems or for systems maintained by local area mechanics, it is essential that replacement parts are available and accessible. This information can be recorded in Form M1.5.3b for each village or system, and then compiled in other copies of the form for each district and the whole region.

### Form M1.5.3b: Parts availability

### Region or District:

Date:

	Location:			
Average time to obtain:	Village market/shop	Town shop or store	District store	Other:
Immediate				
Within 2 days				
Within 1 week				
More than 1 week				
Not available				

### SECTION B: PROJECT TO DEVELOP PROGRAM

### MANUAL: STAGE '

### M1.6 Village consultation and survey

### M1.6.1 Selection of villages

The questions in Table M1.6.1 should help to determine how many villages and communities need to be included in sample survey for each district. The last column can be used to enter the result from each question.

### Table M1.6.1: Calculating the number of villages to be surveyed

	Question	Comment	Calculation
A	How many ethnic groups are there in the area?	It may be necessary to make sample surveys of each one.	Enter number of distinct groups.
	How different are these culturally?		
В	How uniform is the population in socio-economic terms?	A range of different conditions would need to be surveyed.	Enter 1, 2, or 3 for the range: uniform to wide diversity.
С	How geographically diverse is the region?	The ethnic and social samples may need to be repeated for each distinct geographical area within the region.	Enter number of distinct areas.
D	Do people rely on groundwater, surface water, or both?	The ethnic and social samples may need to be repeated for each type.	Enter 1 for either surface water or groundwater, or 2 if both surface water and groundwater are relied on by the same or different communities in the area.
E	Do some villages already have improved water supplies while others do not?	To assess the operation and maintenance issues, and the changes in hygiene behaviour, it may be necessary to survey villages with both improved and unimproved supplies.	Enter 1 if only unimproved or only improved; enter 2 if both unimproved and proved are present.
F	Are there any other complicating factors?		Enter 1 for no, 2 for yes.

Calculation to decide number of villages to visit

### Number of villages = A x B x C x D x E x F

- > The minimum number of villages should be three for each district.
- > The maximum number should be as per the calculation, but it may need to be reduced to be realistic and feasible within budget and time constraints.

### Supplementary questions

The number of villages may need to be adjusted after considering the following questions:

- > Do the different ethnic groups live in particular geographic areas? If so, ensure that the sample covers all the different groups adequately.
- > Do ethnic groups live separately or are they mixed and integrated with other groups in a community? If they are separated, more time may need to be allowed per village.

### Time required

At least two days in each village should be allowed to carry out the consultation and survey. Time to travel to and from the each village should be added.

Information gathering, consultations and surveys

Information gathering, consultations and surveys

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### M1.6.2 Participatory process and methods<sup>10</sup>

### What are participatory processes?

Participatory Rural Appraisal (PRA) is an approach to engaging communities in development through interactive and participatory processes. It is a particular form of qualitative research used to gain an in-depth understanding of a community or a situation. PRA is a form of assessment based on the participation of a range of different people including people from the communities who will be affected by the programme. The aim is for people to analyse their own situation, rather than have it analysed by outsiders. PRA is both a philosophy, that OUTSIDERS need to learn about situations from the INSIDERS and that insiders can analyse their own problems, and a series of methods for carrying out participatory and qualitative research.

With **Rapid Rural Appraisal (RRA)**, a multi-disciplinary team carries out research together on a community. The combination of their skills and experience enable them to build an understanding of the community workings as a whole. It is called 'rapid' because it aims to get an in-depth view of the community in a short time, compared with an anthropologist who may take a year. RRA uses a similar approach and techniques to those of PRA. However, while community members may be included in the research and analysis of information, this is not always the case, whereas in PRA they are always included.

The process proposed in the Guidelines and Manual for this stage of the planning is based on and adapted from both PRA and RRA. Ideally it should be fully PRA, but there may be limits on the extent to which communities can be fully involved in a government process of planning for a whole region. Ways to get communities involved, or at least represented, in the process include:

- > use of PRA methods in villages;
- one-day workshops of community representatives in each district on needs analysis and solutions; and
- participation of representatives from communities (or community-based organisations (CBOs) or non-governmental organisations (NGOs)) in the main Planning Workshop.

It is envisaged that in actual implementation of the programme, PRA would be used extensively for the planning and management of projects and schemes of individual communities.

### Why use a participatory process?

The reason for using a participatory approach is that it enables communities to be involved in analysing their own situation, problems and issues, and to start thinking about their own solutions and actions. It enables the external planners to better understand the issues and problems facing communities, leading (hopefully) to the planning and design of a programme that is based on reality rather than assumptions and outside views. Working together, communities and planners may be able to achieve the elusive goal of sustainability of water supply and sanitation facilities, safer hygiene practices and, ultimately, better health and living conditions.

### The approach

The multi-disciplinary team established for the Preparation Project should be supplemented by district-level staff from appropriate departments for the village consultations and surveys. These people, with their different skills and experience and different points of view, will look for and find different things, so that the team as a whole will be able to reach new and deeper insights.

Several methods for gathering information are suggested below. Using these different methods should give greater depth to the information provided and allow information to be cross-checked. The methods are semi-structured and can be revised and adapted as the fieldwork proceeds to allow team members to follow up any unexpected findings. Unnecessary accuracy and detail should be avoided. The team should ask itself what kind of information is needed, for what purpose, and how precise it has to be.

The team should be aware of its own biases. The members may have knowledge on a particular issues from their own level, experience and point of view, but the reality in a village may be completely different. For example, a team member may have worked on a government policy with a specific purpose, but that policy may have produced very different results for villagers. Team members should be prepared to recognise this.

The team should also be aware of the effect that it may have on the community and individuals within the community. The team represents authority from central, regional and district government. People may say what they think the team wants to hear, rather than what they really believe. The team should avoid making value judgements about others.

The team should seek the views of a cross-section of the community. The team members should try to meet the least assertive individuals and groups with the community. These may include the poorest, people with disabilities, women, children, ethnic minorities and the uneducated. They should seek alternative views to those of the most educated and articulate (usually male) members of the community who are likely to try to dominate the proceedings.

<sup>10</sup> This section is extensively based on Gosling L., and Edwards, W. M. (1995), with some additional material from Slocum R., *et al.* (1995). Quotations have been freely borrowed.

Information gathering, consultations and surveys

### The methods

### Semi-structured interviewing

This is the basis of interviews with key informants and group discussions, including focus groups. For this, the interviewer uses a check-list of questions related to the topic of interest, rather than a formal questionnaire. Some of these questions, for particular topics, are provided in the Manual. Questions can be added or omitted as necessary. The following brief guidelines are suggested (adapted from Gosling (1995)).

- > The interviewing team should consist of between 2 and 4 people from different disciplines.
- ` Begin with a traditional greeting and state that the team is here to learn.
- > Begin the questioning by referring to someone or something visible.
- Conduct the interview informally and mix questions with discussion. >
- Be open-minded and objective. >
- > Let each team member finish their line of questioning (do not interrupt).
- > Lead up carefully to sensitive questions.
- > One person should take notes.
- > Be aware of non-verbal signals.
- > Avoid leading questions (ones which suggest the expected answer).
- > Avoid closed questions that can be answered 'yes' or 'no', unless you are confirming your understanding of something already discussed.
- > Avoid value judgements.

### Common mistakes in interviewing include:

- > failing to listen closely
- > helping the interviewee to give an answer
- asking vague or insensitive questions ×
- failing to cross-check a topic >
- failing to judge answers (believing everything) >
- asking leading questions

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- asking closed questions (ones that can only be answered with 'yes' or 'no')
- relying too much on information from the richer members of the community, the educated, and men
- giving too much weight to answers with quantitative data

### Key informant interviews

These are interviews with people such as school teachers and health workers who are specialists in the particular topic of interest. If the person is from outside the community, such as a teacher who has been posted there, s/he may be able to give a more objective view.

### Group interviews and focus group discussions

Groups interviews should be not larger than 20 to 25 people, although it may not be possible to control this. Interviewing a group of people together provides access to the knowledge and views of several people at once, with cross-checking by others in the group. It may not be good for revealing sensitive information, and answers may be distorted by the expectations from the group for some sort of service as a result. The facilitator should encourage alternative views and opinions.

Focus group discussions are small groups of 10 to 15 people with specialist knowledge or interest in a particular topic, led by a facilitator. They can be used to enable people who cannot or are less likely to speak at larger meetings to have their say. They are very useful for single gender groups in cultures where women are inhibited from speaking in front of men, or the topics are sensitive. Focus group discussions should:

- > be held in a comfortable place with no interruptions;
- > have an informal atmosphere:
- > establish an equality and trust between the participants and the facilitator;
- > establish an understanding and agreement on the purpose of the discussion;
- > respect the right of all participants to speak and be listened to;
- > try to direct the discussion towards detailed accounts of the participants' experiences; and

> try to foster interaction that explores the participants' feelings and opinions in some depth. Within group interviews and focus group discussions, various methods can be used to establish particular information. These are described under the relevant topic.

Focus group discussions are preferable to group discussions. It is likely, however, that because of the limited time for each village visit, the large number of people involved will mean that group interviews are more likely.

### Mapping

Maps are a very useful way of bringing out information. Maps drawn by different groups can show the different perspective of the group — for example, women may show water resources in a different way to men. Maps showing features and places can be drawn by the group participants on large sheets of paper provided by the team, or on the ground using local materials such as pebbles and leaves to indicate the different features. If the latter method is used, the map should be copied onto paper by the team.

Seasonal calendars

These can be used to show different events, activities or features during a year, such as:

- > occurrence of diseases:
- workloads and activities such as planting, harvesting, etc., which should be shown separately for each gender:
- > periods of debt and surplus;
- > periods when water sources dry up; and
- migration of people and animals.

These can be plotted on an annual calendar, or on the seasonal cycle.

Information gathering. consultations and surveys Information gathering. consultations and surveys

### repeating questions

### Pocket charts

Pocket charts are a way to find out information that may be sensitive for people to reveal openly in public. They are also useful for enabling people who may not be able to express their views in community meetings to vote for their preferences.

A pocket chart consists of rows of paper or cloth pockets, usually four to six horizontally and six to ten vertically. A set of pictures is attached above the top row of pockets. These pictures represent areas in which data are needed, such as different places where people defecate. Each of these pictures is placed at the head of a vertical column. If desired, pictures can also be attached down the left-hand side to indicate other variables, such as men, women, and children. To avoid confusion, however, the facilitators should use only one variable on a column at a time. People can express their preferences by placing pebbles, slips of paper, seeds or leaves in the appropriate pocket.<sup>11</sup>

### Observation

Observation of various activities and features can provide information. Checklists are provided for some topics.

### Environmental tours

These are tours around the village and area accompanied by members of the community. They combine observation of environmental features with discussion about the significance of the features.

### Conclusion of participatory processes

The conclusion of the village consultation and survey is a process to enable representatives of the communities to participate in the next stage of the planning. During the group discussions, each community should be asked to select two or three people, including at least one woman, to participate in the district Village Needs Assessment Workshop (M1.7).

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Information gathering, consultations and surveys

M1.6.3 Village survey issues and methods In Table M1.6.3, subject areas and key points under each are classified according to the methodologies for gathering the information required. The reference indicates where support can be found in the Manual. The check-boxes can be used to tick off each item as it is covered.

	L			ľ	
Methods		Subject	Ref.		Key points
Data collection		Health	M1.3.10	Ϋ́	Disease statistics
		Socio-economics	M1.6.4	ÿ	Population, disaggregated by gender and age
				>:	Literacy
				Y	School attendance
Interviews with key	Ч	Water resources	M1.6.5	Ŷ	Sources of water
informants				÷~	Management of water in community and area
				÷~:	Water rights
				Y	Types of water technology in village
		Maintenance	M1.6.6	Ŷ	System of maintenance
				¥	Water and sanitation committees
				;>-:	Who carries out maintenance and repairs
				2:	Cost sharing/recovery
				$\succ$	Reliability of waterpoint
	2	Health	Form M1.6.12e/f	Ÿ	Community health
				7:	Community beliefs about health and disease
				Y	Hygiene behaviours
		Sanitation	Form M1.6.12b, M1.6.7	Ŷ	Understanding of sanitation
				≻	Present practice regarding defecation
				;>-:	Number and type of latrines in village
				Y	Use of latrines
				×	Solid waste
	m	Socio-economics	M1.6.4	ÿ	number of people (disaggregated by gender, age,
					and social grouping if appropriate)
				≻	number of households
				≻	occupations, incomes and assets
				>:	social organisations and groups, leadership
				Y	gender issues
				>-:	educational levels
				≻⊹	clinic or health post
				>	

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Table M1.6.3: Village survey methods, subjects and key points continued

Methods		Subject	Ref.		Key points	People to involve
Group discussions	1	Water use	Form M1.6.12a, M1.6.5	Ÿ	Uses of water	Groups of women
				I V	Quantities of water	Groups of men
				I V	Allocation for different uses	
				I	Future plans for water exploitation	-
		Environment	M1.6.5	Y	Deforestation	
				Y	Soil condition, soil erosion	
				Y	Pollution of water resources and sources	
				Y	Land use	
	2	Health	M1.6.11	Ÿ	Community health	Groups of women
				Ÿ	Community beliefs about health and disease	
				Ÿ	Hygiene behaviours	
		Sanitation	Form M1.6.12b	Ÿ	Understanding of sanitation	Groups of women
				Ÿ	Present practice regarding defecation	Groups of men
				Ÿ	Number and type of latrines in village	
				Ÿ	Use and condition of latrines	
				Ÿ	Solid waste	
	3	Socio-economics	M1.6.4	Ÿ	occupations, incomes and assets	Groups of men
				Ÿ	social organisations and groups, leadership	Groups of women
				Ÿ	gender issues	
				Ÿ	educational levels	
		Community defined needs and problems		Ÿ		
		Interest in water and sanitation		Ÿ	Priority in list of needs/problems	
		programme		Ÿ	Willingness to manage planning and	
					implementation of village project	
				Ÿ	Willingness to contribute to construction (time,	
					labour, materials, money)	
				Ÿ	Willingness to pay for O&M	
		Community participation	M1.6.8	Ÿ	Previous village projects	
				Ÿ	Future development plans	
Checklists for		Health	M1.6.11	Ÿ	Community health	
discussion group				Ÿ	Community beliefs about health and disease	
facilitator				Ÿ	Hygiene behaviours	
Mapping		Water resources	M1.6.5	Ÿ	Sources of water	Groups of women
by discussion				Ÿ	Water rights	Groups of men
groups	1		1	Ÿ	Types of water technology in village	

Information gathering, consultations and surveys

	Tab
Methods	Subject
Seasonal calendars by focus groups	Water resources Health Socio-economics
Observation	Water resources Water use Health Sanitation

ble M1.6.3: Village survey methods, subjects and key points continued

Methods	Subject			Key points	People to involve
Seasonal calendars	Water resources	M1.6.5	Ÿ	Water source availability and use, seasonal variation	Village leader
by focus groups	Health	M1.6.11	Ÿ	Seasonal patterns of health and disease	]
	Socio-economics	M1.6.4	Ÿ	Agricultural seasons	Groups of women
			Ÿ	Migration for work, etc.	Groups of men
			Ÿ	Climatic seasons	
Observation	Water resources	M1.6.5	Ÿ	Sources of water	
			Ÿ	Types of water technology in village	
	Water use	Form M1.6.12d	Ÿ	Uses of water	]
			Ÿ	Who collects or uses water?	
	Health	Form M1.6.12c	Ÿ	Hygiene behaviours	1
			Ÿ	Domestic environment	
	Sanitation	M1.6.7	Ÿ	Present practice regarding defecation	1
			Ÿ	Number and type of latrines in village	
			Ÿ	Use and condition of latrines	
			Ŷ	Solid waste	
	Community participation	M1.6.8	Ÿ	Previous village projects	1
			Ÿ	Future development plans	
Environmental tour	Water resources	M1.6.5	Ÿ	Sources of water	Village committee
			Ÿ	Management of water in community and area	Interested women
			Ÿ	Water rights	Interested men
			Ŷ	Types of water technology in village	
	Sanitation	M1.6.7	Ÿ	Present practice regarding defecation	1
			Ÿ	Number and type of latrines in village	
			Ŷ	Use of latrines	
			Ŷ	Solid waste	
	Environment	M1.6.5	Ÿ	Deforestation	]
			Ŷ	Soil condition, soil erosion	
			Ý	Wastewater drainage	
			Y	Pollution of water resources and sources	
			Y	Land use	

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# M1.6.4 General background information on village Form M1.6.4 can be copied and used to summarise the general information for each village surveyed.

# Form M1.6.4: General background information on village

		-			0	
Survey	team:				Date:	
1.	2.	3	3.			
4.	5.	(	6.			
1.	District:					
2.	Village:					
3.	Permanent or migratory					
4.	Construction of houses					
5.	Geographical features of area					
6.	Access to/from village (roads, bu	ses				
7.	Population		Total			
а			Male			
b			Female			
С			Children			
8.	Number of households					
а	Number of female-headed house	holds				
9.	Ethnic groups					
10.	Main occupation of residents		List			
11.	Literacy rates		Male			
а			Female			
12.	Main sources of income		List			
13.	Schools		Primary	Ÿ		
а		Se	econdary	Ÿ		
14.	Health facilities		Clinic	Ÿ		
а		he	alth post	Ÿ		
b		healt	th worker	Ÿ		
15.	Other community-based develop	ment workers				
16.	Village development committee			Ÿ		
17.	Village water and sanitation com	mittee		Ÿ		

# M1.6.5 Village water supplies

Information on various aspects of what sources of water villagers use, and how they use them, are needed to inform the planning process. The information should be gathered using focus group discussions, interviews with key informants, seasonal calendars, and observation. This information can be recorded in Form M1.6.5a, which should be copied and completed for each village visited during the survey. The information from each village can then be summarised on the similar Form M1.6.5b to give a picture of the water supplies and water use in each district.

Table M1.6.5 provides an explanation of the terms used in Forms M1.6.5a/b, together with questions to guide the judgement on some of the survey points.

	Table M1.6.5:	Terms	used	to	describe	village	water	sources
--	---------------	-------	------	----	----------	---------	-------	---------

Term	Explanation and questions						
Traditional	Source with indigenous technology or no technology for abstracting water						
Improved	External technology used to protect source and/or change method of abstraction						
Construction quality	Concerned with the original design and construction of the waterpoint, and its present condition due the adequacy of these, not due to any lack of maintenance.						
	Questions to help determine quality include:						
	š' Was the design to a set standard?						
	š' Was the standard design appropriate and adequate for the purpose?						
	š' Was the construction in accordance with the standard?						
	š' Was the quality of the materials used in accordance with the standard?						
Maintenance condition	Present condition of water point:						
	$\check{s}^{\cdot}$ Are there any faults that should have been put right by maintenance and repair?						
Environmental cleanliness	The condition of the source, the waterpoint and its surroundings:						
	š' Is the water source and waterpoint protected by a fence?						
	š' Is the water source clean?						
	š' Is the waterpoint clean?						
	š' Are there any actual or potential contamination risks?						
	š Is the condition of the waterpoint a risk for contamination of the water (e.g. cracked pump or well apron/surround, gaps/cracks between well rings)?						
Local pollution threat	The threat to the source from local points of contamination (rather than general threats to the water resource).						
	Threats include:						
	š latrines, depending on ground conditions, depth to water table						
	š animal wastes from farmyards or concentration of animals at waterpoints						
Quality of water	This should be the opinion of the surveyor — the users' perception of the quality is considered separately. These questions can be used to determine whether the water is potable or non-potable:						
	š Does the water have any taste or smell?						
	š' Is the water coloured or turbid?						
	š' Is the source properly protected?						
	š Are there any potential or actual sources of contamination?						
Availability of water	š Does the source dry up for part of the year?						
Water rights	š Who has the traditional or legal right to use the water source?						
	$\check{s}^-$ Do people downstream have rights over the flow of water? If so, record what they are on an additional sheet and attach it to the survey.						
	š Are there any conflicts over the use of the water? If so, record what they are on an						
	additional aboat and attach it to the current						

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# Form M1.6.5a: Village water supply Sheet 1 of 2

Use this sheet to gather information in a village.
 Complete a separate sheet for each village.
 The data for each village on these forms should be compiled together in Form M1.6.5B: Summary of village water supplies

Name of Village:

District:

Date: Surveyor:

					1				1			
		seo.	Type of al	ostraction		Condition o	of source		Availability of water			
Main sources of water		No. of sour	Traditional	Improved	Construction quality	Maintenance condition	Environmental cleanliness	Local pollution threat	Distance to source (time or metres)	All year	Part of year (months)	Water rights disputes
	Groundwater:											
1	spring											
2	protected spring											
3	traditional open well (hand-dug)											
4	improved open well (hand-dug)		n/a									
5	handpump (on drilled tube-well)		n/a									
6	infiltration gallery on river or lake											
7	well beside surface source											
	Surface water:											
8	rainwater											
9	stream											
10	river											
11	lake											
12	pond											

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### Form M1.6.5a: Village water supply Sheet 2 of 2 Name of village: District: Domestic uses of wate Quantity of water per person per day Quality of water year Estimated consumptior Shortage for part of (per person or per household) Watering gardens Washing clothes year (months) Shortage for whole Non-potable Drinking Bathing Sufficient Cooking Animals Potable Main sources of water Groundwater: 1 spring 2 protected spring 3 traditional open well (hand-dug) 4 improved open well (hand-dug) 5 handpump (on drilled tube-well) 6 infiltration gallery on river or lake well beside surface source Surface water: 8 rainwater 9 stream 10 river 11 lake 12 pond









Date:

Form M1.6.5b: Summary of village water supplies Sheet 1 of 2

- > Use this sheet to summarise the individual village sheets, and other sources of information.
   > Complete a separate form for each sub-area.
   > Enter the information in each box as a proportion of the total number of villages survey; e.g. 4/6.
   > For the 'Distance to source', the average and the range should be entered.

District:

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		ş	Type of abstraction		Condition of source				Availability of water				
	Main sources of water	No. of source	Traditional	Improved	Construction quality	Maintenance condition	Environmental cleanliness	Local pollution threats	Distance to source (range and average)	All year	Part of year (months)	Water rights disputes	
	Groundwater:												
1	spring												
2	protected spring												
3	traditional open well (hand-dug)												
4	improved open well (hand-dug)		n/a										
5	handpump (on drilled tube-well)		n/a										
6	infiltration gallery on river or lake												
7	well beside surface source												
	Surface water:												
8	rainwater												
9	stream												
10	river												
11	lake												
12	pond												

District

# Form M1.6.5b: Summary of village water supplies Sheet 2 of 2

			Do	mestic u	ses of wa	ater		Quantit	y of wate	r per perso	on per day	Quality	of water
	Main sources of water	Drinking	Cooking	Bathing	Washing clothes	Animals	Watering gardens	Estimated average consumption (per person or per household)	Sufficient	Shortage for part of Year (months)	Shortage for whole year	Potable	Non-potable
	Groundwater:												
1	spring												
2	protected spring												
3	traditional open well (hand-dug)												
4	improved open well (hand-dug)												
5	handpump (on drilled tube-well)												
6	infiltration gallery on river or lake												
7	well beside surface source												
	Surface water:												
8	rainwater												
9	stream												
10	river												
11	lake												
12	pond												

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# M1.6.6 Community pumps

Form M1.6.6 should be completed for each pump seen in a village. The questions should be discussed with the village water and sanitation committee if one exists, or with users of the pump.

# Form M1.6.6: Community pumps

District:	Date of survey:
Village:	
Pump reference no.:	Date installed:
Which organisation or project installed the pump?:	

		Check boxes and notes
1	Ownership	
	In the users' views, who owns the pump?:	
	individual in village	Ϋ́.
	community	Ÿ
	government department	Ÿ
	project implementer	Ÿ
	Other	Ÿ
	don't know	Ÿ
2	Type of pump	
а	handpump	Ÿ
b	motorised pump	Ÿ
с	make/manufacturer of pump:	
3	Status	
а	Is the pump:	
	working	Ÿ
	broken down	Ϋ́
b	If broken down, what is the type of breakdown?:	
	foot valve	Ÿ
	piston valve	Ÿ
	piston washer/seal	Ÿ
	pump rod	Ÿ
	rising main	Ÿ
	bearings	Ÿ
	handle	Ÿ
	borehole problem	Ÿ
	other	Ÿ
с	How long since it broke down?	
	days	
	weeks	
	months	
d	Describe actions taken by users to get it repaired?	
е	How frequently does the pump break down per:	
	week	
	month	
	year	
f	How long does it usually take to be repaired?	
	days	
	weeks	
	months	
	year	

# Form M1.6.6: Community pump continued

4	Operation	
а	Who is responsible for operation of the pump?	
b	What is the source of the fuel and lubricants?	
с	How much do fuel and lubricants cost per week	
d	How are fuel and lubricants paid for?	
	regular fixed payment	Ϋ́.
	tariff on water used	Ÿ
	other	Ÿ
5	Maintenance	
a	What routine maintenance is done by villagers?	
ŭ		
h	What routine maintenance is done by others?	
~	and who does it?	
ρ	In the event of breakdown what do users do?	
0	renair it themselves	Ÿ
	contact local mechanic	Ÿ
	contact local mechanic	Ÿ
	contact water department	ů V
	liotillig dan't know	i V
f	Where do users obtain replacement parts?:	1
1	where do users obtain replacement parts ?.	ÿ
	village shop	Î V
	local market (distance)	Î V
	riearest town (distance)	Î V
	district office (distance)	Î V
	other	Î V
	don't know	Ĭ
g	where do users obtain support for maintenance?	ÿ
	district office	Î V
	area mecnanic	Î V
	otner	I V
	don't know	I
n	Do users pay for replacement parts?	Ŷ
	yes	Y V
	no	Y
	If yes, how much?	
J	Do users pay for maintenance support?	<u>Ů</u>
	yes	Y
	no	Y
	if yes, how much?	
k	How do users raise money for maintenance?	25
	regular payment to 0&M fund	Y
	pay when needed	Ŷ
	don't know	Y
	other	Y
6	Any other issues or problems mentioned by users:	
1		

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# M1.6.7 Village sanitation

An understanding of various aspects of sanitation in villages is needed to inform the planning process. These aspects include villagers' perceptions of sanitation and their present practices. If the villagers have latrines, appropriateness of the type and design and whether people like them, together with the quality, condition and usage need to be considered. The information should be gathered during focus group discussions and observation.

This information can be recorded on Form M1.6.7a, which should be copied and completed for each village visited during the survey. The information from each village can then be summarised on a similar Form M1.6.7b to give a picture of the sanitation situation in each district.

Form M1.6.7a: Village sanitation

Name of village:

District:

Surveyor:

Date:

Defecation practices				
Where do men, women, and children generally defecate?: Note: it may be easiest to obtain this information by using techniques such as pocket charts during focus				
group discussions	Men	Women	Children	
fields	Y	Y	Y	
bush, jungle or forest	Ŷ	Ŷ	Ŷ	
behind house	Ÿ	Ÿ	Ÿ	
own latrine	Ÿ	Ÿ	Ÿ	
communal latrine	Ÿ	Ÿ	Ÿ	
other places (describe)	Ÿ	Ÿ	Ÿ	
Previous sanitation promotion				
Has sanitation promotion been carried out in the village in the past, or have people been encouraged to construct latrines?	Yes Ÿ	No Ÿ		
If yes:			-	
How many families and what proportion of families in the village constructed latrines as a result of the promotion?	Number:	Prop	ortion:	
What proportion of people changed to using latrines?		Prop	ortion	
What other impacts resulted from the sanitation promotion?				
	Defecation practices           Where do men, women, and children generally defecate?:           Note: it may be easiest to obtain this information by using techniques such as pocket charts during focus group discussions           fields           bush, jungle or forest           behind house           own latrine           communal latrine           other places (describe)           Previous sanitation promotion           Has sanitation promotion been carried out in the village in the past, or have people been encouraged to construct latrines?           If yes:           How many families and what proportion of families in the village constructed latrines as a result of the promotion?           What torber impacts resulted from the sanitation promotion?	Defecation practices         Image: Constraint of the properties of th	Defecation practices       Image: Construct of the promotion of the promotion of promotion?         Where do men, women, and children generally defecate?:       Mote: it may be easiest to obtain this information by using techniques such as pocket charts during focus group discussions       Men       Women         Image: Note: it may be easiest to obtain this information by using techniques such as pocket charts during focus group discussions       Men       Women         Image: Note: it may be easiest to obtain this information by using techniques such as pocket charts during focus group discussions       Men       Women         Image: Note: it may be easiest to obtain this information by using techniques such as pocket charts during focus group discussions       Men       Women         Image: Ima	Defecation practices       Mere       Mere         Where do men, women, and children generally defecate?:       Men       Women       Children         Note: it may be easiest to obtain this information by using techniques such as pocket charts during focus group discussions       Men       Women       Children         ising techniques       fields       Ŷ       Ŷ       Ŷ         bush, jungle or forest       Ŷ       Ŷ       Ŷ         own latrine       Ŷ       Ŷ       Ŷ         communal latrine       Ŷ       Ŷ       Ŷ         other places (describe)       Ŷ       Ŷ       Ŷ         other places (describe)       Ŷ       Ŷ       Ŷ         other places (describe)       Yes       Ŷ       Ŷ         Has sanitation promotion       Hes       Hes       Hes       Hes         How many families and what proportion of families in the village constructed latrines as a result of the promotion?       Number:       Proportion:         What proportion of people changed to using latrines?       Proportion       What other impacts resulted from the sanitation promotion?       Proportion

# Form M1.6.7a: Village sanitation continued

Name of village:

3	Household latrine coverage and ownership						
	How many and what proportion of families have individual/private household latrines?	Nu	mber:	F	Proport	ion of	village:
	How many and what proportion of families share or have communal household latrines?	Nu	mber:	F	Proport	ion of	village:
	Are there cultural reasons for families to have more than one latrine?	Ϋ́	Yes	Ϋ́Ι	No		
	If yes, describe.						
	If people do not have latrines, what are the reasons?						
4	Types of latrines, condition, use and satisfaction of users	Yes	s Co (G,	nditior /F/P)	ı	Used (Y/N)	I Satisfaction (Y/N)
	simple pit	Ÿ	Ÿ			Ϋ́	Ϋ́
	twin pits	Ÿ	Ÿ			Ϋ́	Ϋ́
	VIP	Ÿ	Ÿ			Ϋ́	Ϋ́
	pour flush	Ÿ	Ÿ			Ϋ́	Ϋ́
	composting	Ÿ	Ÿ			Ϋ́	Ϋ́
	septic tanks	Ÿ	Ÿ			Ϋ́	Ϋ́
	others (specify)	Ÿ	Ÿ			Ϋ́	Ϋ́
	village appropriate for the conditions (ground conditions, depth to water table, liability to flooding, cultural preferences, etc.)? Describe:						
5	Institutional and public latrines						
	Does the school have latrines?: for boys? for girls?	Ϋ́· Ϋ́·	Yes	Ϋ́Γ Ϋ́Γ	No No		
	Are the school latrines used?	Ϋ́	Yes	Ϋ́Ι	No		
	How clean are they kept?	Ϋ́	Good	Ϋ́́	air	Ϋ́F	Poor
	What is the quality of design and construction?	Ϋ́	Good	Ϋ́́	air	Ϋ́F	Poor
	Does the health post/clinic have latrines?	Ϋ́	Yes	Ϋ́Ι	No		
	Are the health post/clinic latrines used?	Ϋ́	Yes	Ϋ́Ι	No		
	How clean are they kept?	Ϋ́	Good	Ϋ́́	air	Ϋ́F	Poor
	What is the quality of design and construction?	Ϋ́	Good	Ϋ́F	air	Ϋ́F	Poor
	Are there any other public latrines	Ϋ́	Yes	Ϋ́Ι	No		
	(e.g. at market place, at bus stop)?						
	Describe:						
	How clean are they kent	ÿ.	Good	ÿ•r	air	Ϋ́ · r	Poor
	What is the quality of design and construction	Ϋ́·	Good	i i Ÿ · F	air	ι I Ÿ·I	Poor
	makes are quality of design and construction		2000		- Call		

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# Form M1.6.7a: Village sanitation continued

# Name of village:

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6	Solid waste	
	How do people dispose of solid waste?	
	throw anywhere	Ÿ
	bury	Ÿ
	burn	Ÿ
	disposal pit	Ÿ
	other (describe)	Ÿ
	If facilities exist, are they liked used appropriate, and in	1 The d $\hat{\mathbf{Y}}_{\mathbf{x}}$ . The d $\hat{\mathbf{Y}}_{\mathbf{x}}$ . As a set of the $\hat{\mathbf{Y}}_{\mathbf{x}}$
	good condition?	Liked I Used I Appropriate I
		Condition: Good Ÿ · · · Fair Ÿ · · Poor Ÿ
7	Other issues	
	What are the major problems or issues concerning sanitation for the village or community?	

# MANUAL: STAGE 1

Village sanitation summary

# Form M1.6.7b: Village sanitation summary

Date:

# District:

1	Defecation practices				
	Where do men, women, and children generally defecate?:				
		Men	Women	Children	
	fields	Ÿ	Ÿ	Ÿ	
	bush, jungle or forest	Ÿ	Ÿ	Ÿ	
	behind house	Ÿ	Ÿ	Ÿ	
	own latrine	Ÿ	Ÿ	Ÿ	
	communal latrine	Ÿ	Ÿ	Ÿ	
	other places (describe)	Ÿ	Ÿ	Ÿ	
2	Previous sanitation promotion				
	Has promotion of sanitation or encouragement for people to construct latrines been carried out in the district in the past?	Ϋ́Yes	ΫNo		
	If yes:				
	How many families and what proportion of families in villages constructed latrines as a result of the promotion?	Number:	Prop	portion:	
	What proportion of people changed to using latrines?		Prop	portion	
	What other impacts resulted from the sanitation promotion?				
3	Household latrine coverage and ownership				
	How many and what proportion of families have individual/private household latrines?	Number:	Prop	portion of village:	
	How many and what proportion of families share or have communal household latrines?	Number:	Prop	portion of village:	
	Are there cultural reasons for families to have more than one latrine?	Ϋ́ Yes	Ϋ́No		
	If yes, describe.				
	If people do not have latrines, what are the reasons?				

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# Form M1.6.7b: Village sanitation summary continued

Name of district:

4	Types of latrines, condition, use and satisfaction		Cor	ndition	Used	Satisfaction
			(G/	F/P)	(Y/N)	(Y/N)
	simple pit	Ÿ	Ÿ		Ϋ́··	Ÿ
	twin pits	Ÿ	Ÿ		Ϋ́··	Ÿ
	VIP	Ÿ	Ÿ		Ϋ́··	Ÿ
	pour flush	Ÿ	Ÿ		Ϋ́··	Ÿ
	composting	Ÿ	Ÿ		Ϋ́··	Ÿ
	septic tanks	Ÿ	Ÿ		Ϋ́··	Ÿ
	others (specify)	Ÿ	Ÿ		Ϋ́	Ÿ
	In the surveyor's opinion, are the types of latrine in the villages appropriate for the conditions (ground conditions, depth to water table, liability to flooding, cultural preferences, etc.)? Describe:					
5	Institutional and public latrines					
	Do the schools have latrines? Give For boys?	Ϋ́Υe	es	Ϋ́No		
	numbers as proportion visited. For girls?	Ϋ́Υe	es	Ϋ́No		
	Are the school latrines used?	Ϋ́Υe	es	Ϋ́No		
	How clean are they kept?	Ϋ́G	ood .	Ÿ Fair	Ϋ́Ρο	or
	What is the quality of design and construction?	Ϋ́G	ood <sup>·</sup>	Ϋ́ Fair	Ϋ́Рс	or
	Do health posts/clinics have latrines?	Ϋ́Υe	es	Ϋ́No		
	Are the health post/clinic latrines used?	Ϋ́Υe	es	Ϋ́No		
	How clean are they kept?	Ϋ́G	ood	Ÿ Fair	Ϋ́Ρο	or
	What is the quality of design and construction?	Ϋ́G	ood .	Ÿ Fair	Ϋ́Ρο	or
	Are there any other public latrines	Ϋ́Υe	es	Ϋ́No		
	(e.g. at market place, at bus stop)?					
	Describe:					
	How clean are they kept?	Ϋ́G	ood	Ÿ Fair	Ϋ́Ρο	or
	What is the quality of design and construction?	Ϋ́G	ood	Ÿ Fair	Ϋ́Ρα	or
6	Solid waste					
	How do people dispose of solid waste?					
	throw anywhere	Ÿ				
	bury	Ÿ				
	burn	Ÿ				
	disposal pit	Ÿ				
	other (describe)	Ÿ				
	If facilities exist, are they liked, used, appropriate, and in good condition?	Liked	Ÿ	Used Ÿ	Approp	oriate Ÿ
		Condition: Good Ÿ Fair Ÿ Poor Ÿ				

# Form M1.6.7b: Village sanitation summary continued

Name of district:

7	Other issues
	What are the major problems or issues concerning sanitation for villages or communities visited in this
	uistict?

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### SECTION B: PROJECT TO DEVELOP PROGRAM

# MANUAL: STAGE 1

# M1.6.8 Community participation

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Checklist for focus group discussion<sup>12</sup>

- 1. What are the traditional rights and beliefs concerning water?
- > What are ownership rights (riparian, flowage, etc.)?
- > Who can hold water rights (men only, both women and men, particular families, all community)?
- > Who has access to water (stream, spring, well, etc.)?
- > Are there rights for specific purposes (human consumption, animals, land)?
- 2. What existing services have involved community participation and what can be learned from them?
- > water
- > sanitation
- primary health care
- > schools
- > co-operatives
- > roads
- > agriculture
- 3. What are the financial resources of the community?
- agriculture (% subsistence farming, % cash crops)
- > industries/crafts
- wage labour (local, migratory)
- family land holdings
- > animal stocks
- land tenure
- > income/expenditure in cash and kind
- 4. When is cash available during year?
- > months

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- > seasons (dry/wet, agricultural, etc.)
- 5. What is the community's willingness to pay and what is the likelihood of it fulfilling its commitment?
- amount and reliability of income
- > cash/kind proportions
- > seasonal variation
- > household variation
- > payment for other services
- > attitudes to paying for water
- other cash purchases and expenses
- > possibility of paying in ways other than cash (barter, assistance in maintenance, etc.)
- 6. What projects or plans does the community have for the future?
- > whose idea or initiative?
- > arrangements for implementation

# M1.6.9 Health and hygiene beliefs and behaviour

One of the main objectives of undertaking a village survey is to understand the community's own perceptions of their health and hygiene practices and behaviour. These include the main health problems of children and adults, beliefs regarding the causes of water- and sanitation-related diseases, and hygiene behaviours including those relating to excrete disposal, water sources, water uses and domestic and environmental practices.

The main method for understanding the perceptions of community members is focus group discussions, with specific exercises conducted during the discussion. Separate focus groups should be conducted for women only and men only, and possibly for other special interest groups. The information from focus groups can be validated to a limited extent (given the short time available) by observation to see if people actually practice those hygiene behaviours which they claim. This includes observing hygiene behaviour at the water source and in people's homes. In addition, information can be gathered from discussions with local health workers and school teachers. For details of the methods, see M1.6.2.

The particular aspects on which information is needed to develop this understanding is given in Table M1.6.9, together with the suggested method for obtaining it and an estimate of the time needed.



# Table M1.6.9: Information needed about health and hygiene beliefs and behaviour

Information	Method	Participants	Time suggested
Community health and beliefs			
š perceptions of the main health problems of children under 5 years of age	Group discussion	Women only	1½ hours
$\tilde{s}^{\cdot}$ perceptions of the main health problems of adults over 15 years of age	Group discussion	separate groups of women only and men only	1½ hours
$\check{s}^{\cdot}$ beliefs on the causes of diseases due to dirty water	Group discussion	separate groups for women only and men only	1½ hours
Hygiene behaviour of community			
\$'         water sources           \$'         water uses           \$'         excreta disposal           \$'         domestic and environmental           \$'         personal hygiene	Group discussions	separate groups of women only and men only	Two focus groups of 1½ hours each
Activities at the water source	Observation	n/a	1 hour
Household activities	Observation	n/a	1 hour
Interview with health worker	Key participant interview	village health worker(s)	1 hour
Interview with school teacher	Key participant interview	school teacher(s)	1 hour

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# M1.6.10 Group discussions

In each of the group discussions in Table M1.6.9, a good way for the facilitator to enable and encourage people to talk about the topics is through exercises. For each information area the following exercises are suggested. Summary forms are provided for recording the information provided by the exercise. Notes should also be kept of the discussion to record any special insights.

M1.6.11 Community health and beliefs

Health problems in children under 5

### **Objectives of exercise:**

At the end of the exercise, the community should have:

 identified the five most important diseases or health problems in their children under 5 years old.

The results of this exercise can be used as a basis for discussion of what they think are the causes of these diseases, why they are important, and whether there have been any changes in frequency over time.

# Method:

# Brainstorming and Matrix exercise

Group participants will identify common diseases affecting their children and make a drawing representing each disease on cards. Using a matrix and beans as indicators, they will show how common and how serious they think each disease is, and combine the result to decide the most important diseases.<sup>13</sup>

# Materials needed:

- cards
- marker pens
- flipchart paper (optional)
- > a bag of beans (beans commonly available for cooking)

# Instructions for facilitator

- 1. Explain the objectives of the exercise.
- 2. Ask the participants to identify all the diseases or any significant health problem among their children under 5 years old.
- 3. Give the participants a set of cards and ask them to draw a representation of this disease or problem (one disease, one card). The drawing may be a symbol, e.g. a drawing of a mosquito may represent malaria. Place the card on the ground for all the participants to see.
- 4. Draw a copy of the framework of the Sample matrix (Table M1.6.11) on the ground or on the flipchart paper. It should be a grid with four columns.
- Ask the participants to put all the cards down the first column of the Matrix, one after the other in a vertical line.
- 6. Give each participant a handful of 'beans'. Ask each one to think of the five diseases that they believe are the 'most common'. '*Common' means the frequency of the disease that is, how often it occurs.*
- 7. Ask each participant in turn to place their beans on the second column of the matrix against the diseases that they think are most common. The more common they think the disease is, the more beans they should place; if less common, they should place fewer beans.

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- Give each participant another handful of 'beans'. This time ask each one to think of the five diseases that they believe are the 'most serious'. 'Serious' means life threatening, with the most serious often resulting in death of the victim.
- 9. Ask each participant in turn to place their beans on the third column of the matrix against the diseases they think are most serious. Again, the more serious they think the disease is, the more beans they should place; if less serious, they should place fewer beans.

Note: It is not intended that the beans will represent an exact number of cases in the village, but rather a rough estimate of people's perception. The total number of beans in the handful does not necessarily need to be placed on the matrix.

- 10. After everyone has completed Step 9 (and the number of beans has been recorded), ask the whole group to put together all the beans from columns two and three and transfer them to the fourth ('most important') column. This is done for each disease in turn.
- 11.Ask the participants to identify the five diseases with most beans, which should represent the most important diseases. Ask them to discuss the results and come to an agreement.

# Table M1.6.11: Sample matrix of diseases

Diseases	Common	Serious	Important
Card with drawing of mosquito to represent malaria	XXXX	XXXXXX	
	XXXXX	XXXXXXX	
		XXXXXXX	
Card with drawing of child squatting to represent	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	
diarrhoea	XXXXXXXXXX	XXXX	
	XXXXXXXXX		
Card with drawing of an eye to represent eye	XXXXXXXX	хх	
infections	XXXXXX		
Card with drawing of child scratching to represent	XXXXXXXX		
skin infection	XXXXXX		
Card with child coughing to represent respiratory			
Infection			
Card with drawing of worms			
	1	1	1

 Facilitate the group in a discussion of what they perceive as the causes of the most important diseases.

Note: The intention is to obtain the community's knowledge and understanding, not to educate them in the real causes.

The results of the matrix and discussion can be recorded in Form M1.6.11a

<sup>&</sup>lt;sup>13</sup> (adapted from Werner and Bower, 1982)

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Diarrhoea: Its spread, prevention and management in young children

# **Objectives of exercise:**

At the end of the exercise, the community should have:

> explained their knowledge of the causes and their practice in the control of diarrhoea.

# Method

A discussion can be facilitated among participants by participants each adding their own sketch onto a large drawing on a single large sheet of paper. Onto a large brown sheet of paper a mouth and diarrhoea stool is drawn at opposite ends. Participants are individually asked to draw what they consider the routes of spread of diarrhoea to be, for example one may draw a fly in between the mouth and stool and the next may draw a dirty hand. The facilitator may add arrows between the mouth and stool and fly.

### Materials needed:

- > large sheet of paper prepared with drawing of a mouth and a stool (excreta)
- > marker pens

Health problems in adults over 15

# **Objectives of exercise:**

At the end of the exercise, the community should have:

> identified the five most important diseases or health problems in adults over 15 years of age.

The results of this exercise can be used as a basis for discussion of what they think are the causes of these diseases, why they are important, and whether there have been any changes in frequency over time.

# Method and materials needed

The same method as for 'Children under 5' can be used. If (preferably) the groups are single gender, then women should consider diseases affecting women, and men consider diseases affecting men.

The results of the discussion can be recorded in Form M1.6.11b

n under five	Date:	Facilitator:	Note taker:						
oblems in childre				Causes					
y of health pro	ants			Ranking of importance					
.11a: Summary	umber of particip	ender of group:		Ranking of seriousness					
Form M1.6	Ż	Ū		Ranking of how common					
	District:	Village:		Diseases					

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11	11.	
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# Form M1.6.11b: Summary of health problems in adults over 15

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Village:

Date:	Facilitator:
Number of participants	Gender of group:

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Note taker:						
	Causes					
	Ranking of importance					
	Ranking of seriousness					
	Ranking of how common					
	Diseases					

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SECTION B: PROJECT TO DEVELOP PROGRAM

# MANUAL: STAGE 1

# M1.6.12 Hygiene behaviour

For the four categories of hygiene behaviour, it is probably best to hold two separate group discussions, one with women and one with men.

Check lists for focus group discussion

Forms M1.6.12a/b/c/d/e/f can be photocopied and used as checklists for collecting the answers to the questions during discussions and observations. Additional notes of the discussion should also be kept in case any significant information or insights are raised.

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Village:	Gender of grou	r unto	Duter
village:	Gender of grou		E. alliante au
		p:	Facilitator:
			Note taker:
Water collection		Check box and i	notes
Type of container			
	bucket	Ϋ́·	
	pot	Ÿ	
	jerry can	Y	
	other	Y	
Who collects water:			
	women	Ŷ	
	rielo	Ÿ	
	giris	Ÿ	
	age of youngest?	-	
Any special procedures at the w	vater source?		
(e.g. washing container, hand c	contact with water in		
container?)			
Are containers covered during t	ransport to home?		
	Yes	Ÿ	
	No	Ÿ	
If so, what is used?			
	lid	Ÿ	
	leaves or twigs	Ÿ	
	other	Ÿ	
Do fingers of hands come in co	ntact with the inside of the		
container while being carried?			
	Yes	Y	
	No	Y	
Additional notes:			
continue on a separate sneet			

# Form M1.6.12a: Water collection and use continued

Water use	Check box and notes
Who handles water in the home?	
women	Ÿ
men	Ÿ ·
children	Ÿ
ages, especially of youngest:	Ÿ
How is water stored in the home?	
type of containers	
are they covered?	
Yes	Ÿ
No	Ÿ
Is drinking water separate from other water? Yes	Ÿ
No	Y
Is water for drinking treated? Yes	Ÿ
No	Y
If yes, how?	
Is water reused in the home? Yes	Ÿ
No	Y
If yes, how?	
How is wastewater disposed of?	
Hand washing:	
When do people wash their hands?	
after using latrine	Y
after help children to defecate	Y V
before preparing food	Î V
after preparing food	Î Ÿ
before feeding children	Ŷ
other times	Ŷ
Are hand washing facilities available? Yes	I V
	1
affordable?	
Are hands washed with anything?	Ÿ
ash	Ÿ
other	Ÿ
Bathing.	
How often are children's faces washed? (Does this depend on	
age of child?)	
How often are children bathed?	
(Does this depend on age of child?)	
How often are family clothes washed?	
Where are clothes washed? at waterpoint	Ÿ
at home	Y
other	Y
Additional notes:	
(e.g. water use by animals, water for productive use)	
Continue on a separate sheet	

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District:

Village:

Date:

Facilitator:

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	Note taker:
Excreta disposal	Notes
see also the sheet for Village Sanitation (M1.6.7)	
If people have latrines, why do they have them?	
Who cleans latrine? men	Ý
women	Ÿ
children	Ÿ
Frequency of cleaning?	
How and where are young children's faeces disposed of?	
Anal cleansing:	
What materials are used?	
How are the materials disposed of?	
Additional notes:	
Continue on a separate sheet	
Domestic and environmental	
How often is the inside of the house swept?	
How often is the compound swept?	
Animals and domestic hygiene:	
Where are cattle, pigs, chickens, and dogs allowed to wander?	
inside the house	Ϋ́·
within the housing compound	Ÿ
away from house	Y
kept in pens	Ŷ
Additional notes:	
Continue on a separate sheet	

Form M1.6.12b: Environmental sanitation

Number of participants

Gender of group:

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Form M1.6.12c: Observation of hygiene practices in households

This form can be used to record observations of hygiene practices in households visited as part of the survey.

Surveyor:

Date:

District: Village:

Information gathering,

consultations and surveys

# H9 Н8 Ħ 9Н Household £ Ŧ £ 圮 Ŧ Are drinking water pots kept covered? .⊆ separately in site? clean? handlers р Is water reused in the kitchen? special in/near sp Are the floors of courtyards water Are the floors of househ placed in a s Are food pots covered? kept : Points animals present main Is drinking water I home? Observation F

Who are the r the home?

Is garbage

le i

MANUAL: STAGE 1

B

M1



Form M1.6.12d: Observation of activities of people at water source

This form can be used to record observations of hygiene practices of people using the water source.

Type of water source:	I ocation:
istrict:	11 a.a.

Date: Time: Surveyor:

MANUAL: STAGE 1

A period of one hour is suggested for observation.

Water collection	Person 1	Person 2	Person 3	Person 4	Person 5	Person 6	Person 7	Person 8	Person 9	Person 10
Activities:										
š' collecting water										
š' washing clothes										
š' washing dishes										
š' washing body										
š' others										
Who collects water?										
š' girl (0-10 years)										
š' boy(0-10 years)										
š girl(11-18 years)										
š' boy (11-18 years)										
š' woman										
š <sup>-</sup> man										
Container type?										
Practices of filling container:										
š Are hands cleaned before?										
š Are containers washed?										
Carrying container to home:										
š Are containers covered?										
š' Do fingers touch inside of container?										

Information gathering, consultations and surveys

CTION B: PROJECT TO DEVELOP PROGRAM

MANUAL: STAGE 1

Form M1.6.12e:	Key participant i	interview: School tea	acher
	Name:	Date:	

District:	Name:	Date:
Village:	Position in school:	Interviewer:
		Note taker:

These questions can be used as a starting point for discussion in semi-structured interviews

Questions	Notes
Number of children attending the school: boys	Ÿ
girls	Ϋ́.
Are serve of abildress at the ashead	
Age range of children at the school: boys	
giis	
Number of children <b>not</b> attending the school: boys	Ÿ
girls	Ϋ́·
-	
Are water and sanitation related diseases common amongst the children?	<i>1</i> 2
Yes	Y V .
No	1
If yes, which of these diseases: diarrhoea	Ÿ
dysentery	Ÿ
roundworms	Ÿ
guinea worm	Ÿ
scables, ringworm	Ÿ
eve diseases	Ÿ
malaria	Ÿ
other	
What hygiene facilities are available at the school?:	
water supply	Ÿ
latrines	Ÿ
hand washing facilities	Ϋ́ ·
none of these	Ϋ́.
What is the hydiana behaviour of the children?	
what is the hygiene behaviour of the children:	Ÿ
wash hands after using latrines	Ÿ
use scan for hand washing	Ϋ́ ·
Is hygiene education part of the formal school curriculum? Yes	Ÿ
No	Y.
If ves, subjects in which it is included: biology	Ÿ
science	Ÿ
hygiene	Ϋ́·
Are there any other hygiene education activities:	ŵ.
informally outside school hours	I V
during school clubs	ů V
clean-up campaigns	Ϋ́.
other	
	•

Information gathering, consultations and surveys

B

M1

# Form M1.6.12e: Key participant interview: School teacher continued

Are child-to-child teaching methods used?	
Yes	Ÿ
No	Ÿ
Have teachers had any training in child-to-child methods?	
Yes	Ÿ
No	Ÿ
Other questions:	

B

Additional notes:

Additional notes

### ECTION B: PROJECT TO DEVELOP PROGRAM

Form M1.6.12f: Key participant interview: Village health worker

District:	Name:	Date:
Village:	Position:	Interviewer:
		Note taker:

These questions can be used as a starting point for discussion in semi-structured interviews. In addition, disease statistics should be collected for the village using Form M1.3.10.

Questions	Notes
What are the ten most significant diseases of the population served	
by the health centre in the past year?	
from health post records	
separate data for adults and children under 5	
Which of these are water- and sanitation-related diseases?	
What was the infant mortality rate in the past year (under 1 year of age)?	
What was the under 5 mortality rate in the past year?	
Is health and hygiene education provided to the community? Yes	Ÿ
No	Ÿ
Who provides health and hygiene education?	
government health staff (nurses, environmental health workers,	Ϋ́ specify:
community health workers)	
health staff employed by other organisations	Y
health promoters in the community (voluntary or paid)	Y V
no-one	I
What health and hygiene education is undertaken?	
How often is it undertaken?	
Is hygiene education provided as part of health education or separately?	
as part of health	Ÿ
separately	Ÿ
Which hygiene behaviours are targeted, and why are they important?	
What methods are used for health/hygiene education?	
traditional didactic approach	Ÿ
participatory approaches (which ones?)	Ÿ

B

M1

### Form M1.6.12f: Key participant interview: Village health worker continued

What are the main problems of hygiene education and why?	
staff shortage	Ÿ
staff covering too many villages	Ϋ́.
staff lack of skills	Ÿ
not seen as a priority	Ÿ
Are any specific population groups targeted?	
women	Ÿ
men	Ÿ
mothers	Ϋ́.
young school children	ÿ
adolescents	1 Ÿ ·
water and sanitation committees	Ϋ́.
others	Y V
no specific targeting	Ĭ
What is the most difficult hygiene behaviour to influence?	
Other questions	

# Additional notes:

# M1.7 Village Needs Assessment Workshops

The purpose of these workshops in each district is to enable the views of communities, including their own perceptions of issues and problems and solutions, to be prepared for inclusion in the Planning Workshop.

The participants of the district workshops should be representatives from the villages in the district that are visited during the village survey and consultation. Each village should send two or three representatives, including at least one woman. In case any representatives are unable to read easily, it may be necessary to provide helpers to assist with the written material in the workshop.

The workshop itself takes one day, with one or two days for preparation in advance. It is suggested that one workshop is held in each district. A summary and suggested timetable for the workshops is given in Table M1.7

Objectives of a Village Needs Assessment Workshop At the end of the workshop, the participants should have:

- 1. Produced a summary of all the issues and problems identified in their respective village survey and consultation
- Identified possible solutions to the problems and how the communities could be involved in planning and implementing these solutions
- Agreed on the common priority issues and problems and corresponding solutions to be recommended to the Planning Workshop
- 4. Selected representatives to attend the Planning Workshop

### Table M1.7: Summary and timetable for Village Needs Assessment Workshops

Act	tivity	Description	Approximate timing
	Preparation	<ul> <li>š preparation of summary reports</li> <li>š identification of problems</li> </ul>	One or two days, before the workshop
1	Introductions and expectation setting		30 minutes
2	Presentation of village survey summaries	š' discussion of Village Needs Assessment summaries in teams of 2 or 3 per component	2 hours
		š production of a district-wide summary per component	
		š agreement on the final summary of each component	
3	Identifying possible solutions to problems	<ul> <li>š' group discussion on possible solutions to the key problems identified</li> </ul>	2 hours
		š presentation of results of the group discussion	
		š agreement of priority solutions	
4	Finalisation of recommendations to the Planning Workshop	<ul> <li>ś<sup>·</sup> finalisation of recommendations to the Planning Workshop</li> </ul>	1 hour
		š' selection of representative/s to the Planning Workshop	

Information gathering, consultations and surveys Information gathering, consultations and surveys

The district staff involved in the village consultations and surveys should (with support from the Core Team as necessary):

- 1. Provide a briefing to the representatives from each village on the purpose and objectives of the Village Needs Assessment Workshop and expectations from the representative/s
- 2. Help the representative/s from each village to:
- > prepare a report on the summary of the results of the village survey. This should include a brief summary of the various aspects of the surveys:
  - water resources water use maintenance health and hygiene sanitation socio-economic environment interest in water and sanitation programmes community participation
- > write each key problem identified during the consultation and survey on a card

M1.7.2 Village Needs Assessment Workshop activities

Activity 1: Introductions and expectation setting

Activity objectives: By the end of the activity, the participants and facilitators should have:

- > introduced themselves to each other
- > identified their expectations of the Workshop
- > agreed on the programme of the day
- 30 minutes
- Method: Ball of string exercise
- Materials needed: Ball of string or straw rope

Steps

Time:

- 1. Explain the purpose of the exercise to the participants.
- 2. Ask the participants to stand and form a circle. Join in the circle.
- Give the ball of string to one participant and ask him/her to introduce himself/herself to the group (name, village s/he comes from) and to identify what s/he expects to achieve during the day.
- 4. Ask the same participant to hold on to the beginning of the string and pass the ball to another participant, preferably to the person opposite in the circle. Ask this person with the ball to introduce himself/herself in the same way.
- Ask the second participant to hold on to the string and pass the ball to another participant. Repeat steps 4 and 5 until all participants have introduced themselves.
- 6. Without disengaging from the circle, give a summary of the expectations expressed by the participants. Point out how all the participants are connected to each other by the string. End up by saying something about how this symbolises what the workshop hopes to achieve, that is, to arrive at common problems and solutions that connect all the communities they represent.
- 7. Ask all participants to go back to their seats and then discuss the workshop objectives and the programme of the day.

Activity 2: Pre	esentation of Village Needs Assessment summaries	Activity 3: Iden	ntifying possible solutions to problems
Activity objective	s: At the end of the activity, the participants should have:	Activity objectives	: At the end of the activity, the participants should have:
	<ul> <li>presented the results of their Village Needs Assessment Survey to small teams</li> <li>produced a district-wide summary of problems and needs in each of the main components of the proposed programme (water supply, hygiene.</li> </ul>		<ul> <li>defined the desired situation to overcome the common problems</li> <li>identified actions to achieve these situations</li> <li>identified which organisations can take these actions</li> </ul>
	sanitation, and water resources management)	Time:	Approximately 2 hours
Time:	Approximately 2 hours	Method:	Group discussion
Method: Materials needed:	<ul> <li>Group discussion</li> <li>cards on which the title of each component of the survey is written (i.e. water supply, sanitation, etc.)</li> <li>cards on which the village problems and issues have been written</li> </ul>	Materials needed:	<ul> <li>A5 size cards (approximately 21x15cm)</li> <li>flip charts</li> <li>pens and papers</li> <li>glue</li> </ul>
	<ul> <li>flip charts</li> <li>pens and papers</li> </ul>	Steps 1. Ask the particip	pants to go back into the same groups as in Activity 2.
Steps 1. Explain the obj	jectives of the session.	2. Give each group session.	p all the cards containing the district-wide problems as agreed in the previous
2. Place the comp	ponent title cards on the floor or another large surface.	3. Give each group	p a set of A5 cards, three sheets of flipchart paper, glue (or adhesive tak) and
3. Ask the represe under the appro	entatives of each village to place their prepared problem cards (from M1.7.1) opriate component title card.	4. Ask each group For each cluster	to look at their problem cards and group those that are similar into one cluster. r of problems, ask them to describe the situation they would like to see in the
4. Divide the part	icipants into four groups, one for each programme component:	future (say abou	at 5-10 years time?).
<ul> <li>Water suppl</li> <li>Health and I</li> <li>Sanitation</li> <li>Water rescu</li> </ul>	ly Hygiene	5. Ask them to wr 6. Ask them to dis group should id	ite or draw the desired situation on the A5 card (one situation per card). cuss what possible actions could be taken to achieve the desired situations. The entify which organisations or people could do these actions, such as:
5 Give all the 'pr	roblem cards' collected in step 3 to the respective group	> the villages a	and communities
<ol> <li>6. Ask each group each set of card</li> </ol>	p to look at all the 'problem cards' and sort them into sets that are similar. For ds, ask them to:	<ul> <li>the appropria</li> <li>NGOs in the</li> <li>the appropria</li> </ul>	ate government department in the district e district ate government department at provincial and/or central level
<ul> <li>&gt; discuss the p</li> <li>&gt; select one o</li> <li>card for the</li> </ul>	problems identified r two cards that encapsulate each set of problems. Alternatively, write a new summary.	> other govern Note: The gy deciding spe	iment agencies or departments roups could refer to the individual problem cards in the cluster as a basis for recific actions that could be done.
Note: These	summaries should represent problems common to all villages within the district	7 As a summary a	ask each group to paste the problem cards on the first flipchart sheet, the actions
<ul> <li>arrange the relationship</li> </ul>	problems according to their priorities (possibly identifying cause and effect as – see M2.3.4, Session 5)	on the second fi should show the	lipchart and the future situations in the third flipchart. All three flipcharts e sequence of current situation, actions that need to be taken to lead to the investion
<ol><li>Gather all the p summary cards</li></ol>	participants together again in the big group and ask each group to present their s.	8. Gather all the p	nuation. articipants together again in the big group and ask each group to present its
<ol> <li>Facilitate discu each componer</li> </ol>	issions and agreement on the problems that represent a district-wide picture for nt. Also note any significant variations.	9. Facilitate discus	ssion and agreement on the possible solutions towards the desirable future.

9. Facilitate discussion and agreement on the possible solutions towards the desirable future.

B

MV

Information gathering, consultations and surveys B

MV

Activity 4: Finalising of recommendations to the Planning Workshop

Activity objectives: At the end of the activity, the participants should have:

- identified and agreed on their final recommendations to the Planning Workshop
- agreed on the responsibilities of community representatives to the Planning Workshop
- selected their representatives to the Planning Workshop
- Time: 1 hour
- Method: Plenary session, brainstorming
- Materials needed: board, paper and pens

# Steps

- Review the summary of problems, actions and future situations. Ask the group to discuss and identify priorities for recommendations.
- 2. Explain the purpose and the process of the Planning Workshop (G2.3, M2.3).
- 3. Explain that each district Village Needs Assessment Workshop will select one person to represent the communities in that district at the Planning Workshop.
- 4. Give each participant a piece of paper. Ask each one to write a list of what s/he believes should be the responsibilities of the person who will represent the communities (other communities as well as his or her own community) at the Planning Workshop.
- 5. Ask one participant to read out one responsibility from her/his list and write it on the board. Call another participant to read out another responsibility (not repeating the one that has already been given) from her/his list. Repeat this with other participants until all the responsibilities identified have been listed.
- 6. From this list, get an agreement on what the group sees as the primary responsibilities of the representatives.
- 7. Ask the group to select their representative to the Planning Workshop

### Outputs

The outputs from Activity 4 should be kept and used for presentation to the Planning Workshop by the selected representative.

Stage 2: Assessment and analysis

M2

B

# M2.1 Data Processing

M2.1.1 Population data

Forms M2.1.1a and M2.1.1b can be used twice:

- > to estimate the present population data from the most recent census data, and to bring out other aspects about the population of the area that are important to understand for planning; and
- > to project population growth forward to the end of the planning period.

These are described in the Guidelines (G2.1.1).

The distinction between urban and rural populations should be based on national definitions, if these exist. The census data may be divided in this way. Otherwise, it may be necessary to make a judgement on this, possibly by deducting the populations of known urban centres.

The forms use the following symbols:

- P total population at date of census or source data
- r population growth rate
- RP percentage of rural population at date of census or source data
- FP percentage of female population at date of census or source data
- MP percentage of male population at date of census or source data
- CP percentage of children under 5 in population at date of census or source data
- D rural population density (persons per sq.km)
- n number of years between date of census and present, or the end of the planning period
- P present or future population
- H number of households
- RH percentage of rural households
- WH percentage of rural households headed by women

The simplest way to use the forms is to enter them into a computer using a speadsheet programme such as Excel or Lotus 1-2-3, with the formulae for automatic calculation. Otherwise they can be photocopied and calculated manually.

The results obtained from the calculations in the forms may need to be adjusted for other changes, such as rural to urban migration, if this is not accounted for in the population growth rate, and migration of refugees.

B

Population data
-
<u>.                                    </u>
N.
Σ
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L
Ĕ

Date: By:

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	Original data	•	rear:					Estimated pre	esent/future	figures			
	Total number of people	Growth rate	% of rural	% of female	% of male	% of children under 5	Rural population density	Total number of people	Total number of rural people	Rural population density	Number of rural females	Number of rural males	Number of rural children under 5
etter	Ь	L	RP	FP	MP	СР	D	PN					
la							P*RP/A	$P_n(1+r)^{**n}$	PN*RP	PN*RP/A	PN*RP*FP	PN*MP*MP	PN*RP*CP
nce total													
ots:													

Assessment and analysis

# Form M2.1.1b: Household data

Region: Based on data from: By: Date:

	Original data	ye	ear:			Estimated pres numbers*	ent/future
	Total number of people	Population growth rate	Total number of households	% rural	% of rural households headed by women	Number of rural households	Number of households headed by women
		(%)					
Code letter	Р	r	н	RH	WH		
Province total							
Districts:							

\*Note: These are approximate calculations that assume that the number of households increases in line with the population growth rate. More accurate estimates may be available.

Assumptions:

B

Prepared by:

Form M2.1.2a: Funding summary

Currency:

Date:

Miscellaned

Sanitation

Capital

education

Hygiene e

api

Recurr

Capita

munity mobilisation Recurrent

**Comr** Capital

ponent

Water

Received

Allocated Received

Received

Received

Received

betsoollA

Received

Allocated

Received

Allocated

**Beceived** 

betsoollA

Received Allocated Received

betsoollA

Organisatio

SECTION B: PROJECT TO DEVELOP PROGRAMI

# MANUAL: STAGE 2

# Form M2.1.2b: Funding analysis: Capital

	Allo	cated		Received	
Component	Amount	% of total	Amount	% of total	% of
					allocation
Community mobilisation					
Water supply					
š' New construction					
š Rehabilitation					
š Operation and maintenance					
Hygiene education					
Sanitation					
š Promotion					
š Construction of latrines					
š Solid waste					
Water resource management					
Miscellaneous					
Totals					

M2

# Form M2.1.2c: Funding analysis: Recurrent

	Alloc	ated		Received	
Component	Amount	% of total	Amount	% of total	% of
Component					allocation
Community mobilisation					
Water supply					
š' New construction					
š' Rehabilitation					
š Operation and maintenance					
Hygiene education					
Sanitation					
š Promotion					
š Construction of latrines					
š' Solid waste					
Water resource management					
Miscellaneous					
Totals					

Area: Financial year:

M2.1.2 Finance

Assessment and analysis

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Component	Budget received and spent	Number of schemes completed in year	Average cost per scheme
Community mobilisation			
Water supply			
š New construction			
š Rehabilitation			
š Operation and maintenance			
Hygiene education			
Sanitation			
š <sup>.</sup> Promotion			
š Construction of latrines			
š Solid waste			
Water resource management			
Miscellaneous			

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M2.1.3 Coverage of rural water supplies

M2

Table M2.1.3: Example of water supply coverage from the Pilot Study in Zimbabwe

# Rural water supplies in Manicaland (July 1997)

						Distance	to source			
Source	No. of households	% of households	On pro	emises	<5	00m	500 to	1000m	>10	000m
			%	No.	%	No.	%	No.	%	No.
Piped water inside	5,769	2.1	100	5,769	0	-	0	-	0	-
Piped water outside	25,830	9.3	28.87	7,457	60.63	15,661	8.63	2,229	1.86	480
Communal tap	28,627	10.3	3.72	1,065	67.38	19,289	25.02	7,162	3.87	1,108
Borehole/well - protected	120,692	43.6	5.28	6,373	35.73	43,123	41.27	49,810	17.71	21,375
Well — unprotected	62,061	22.4	3.6	2,234	42.59	26,432	41.2	25,569	12.59	7,813
River/stream/dam	33,204	12.0	0	-	37.69	12,515	38.01	12,621	24.29	8,065
Other	881	0.3	22.47	198	32.35	285	35.75	315	9.42	83
Total	277,064			23,096		117,304		97,706		38,925
Safe	180918	65.3	7.5	20,664	28.2	78,073	21.4	59,201	8.3	22,963
Unsafe	96146	34.7	0.9	2,432	14.2	39,231	13.9	38,505	5.8	15,962

Safe water supply Key: Unsafe water supply

Source of data: Central Statistical Office, Census 1992 — Provincial Profile Manicaland, Harare, Zimbabwe

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- Note: The classification into safe and unsafe sources was made in the Census. Recent research shows that traditional sources can be as safe as improved sources. Conversely, improved sources can be as polluted as traditional sources (Mbewe and Sutton, 1999).

M2

 $\square$ 

# M2.1.4 Disease statistics

# Official statistics

Forms M2.1.4a and M2.1.4b are for summarising the official statistics and statistics from other organisations gathered during the consultations and surveys and recorded in Form M1.3.10. The forms should be copied and completed separately for each level.

Form M2.1.4a: Diseases of adults

Area covered by data	
Sources of data	
Period covered by data	
Population of area	
Date of completing form	

Disease	Number of	% of all	Rank	Water and sa	nitation related
	cases	cases	order	Yes/No	% of all cases
Total				Total	

Other relevant information:

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Summaries of official statistics

Form M2.1.4b: Diseases of children under 5

Area covered by data	
Sources of data	
Period covered by data	
Population of area	
Date of completing form	

Disease	Number of	% of all	Rank	Water and sa	nitation related
	cases	cases	order	Yes/No	% of all cases
Total				Total	

Infant (0-1) mortality rate	
Under 5 mortality rate	

# Other relevant information:

B

M2.1.5 Summaries of village disease information

Forms M2.1.5a, M2.1.5b, M2.1.5c and M2.1.5d on the following pages are for summarising the information that was gathered during the focus group discussion (M1.6.11) in each village and recorded on Forms M1.6.11a and M1.6.11b.

With Forms M2.1.5a and c, the information from each village should be entered along one row.

With Forms M2.1.5b and d, all the reported causes of diseases should be entered. Attribution to particular villages is not important.

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# Assessment and analysis

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# Summaries of village disease data 248

Form M2.1.5b: Village disease data: Perceived causes of diseases of children under 5

Diseases				
Causes				

Assessment and analysis

Comments:

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Summaries	of Village D	) isease Data	1								
	-		Form M2.	1.5c: Villa	ige diseas	se data: [	Diseases	of adults			
			Importance ranking by villagers								
District	Village	Diseases:									
			-								
											-
											-
		12.5									

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M2



Comments:

Assessment and analysis

### ECTION B: PROJECT TO DEVELOP PROGRAMM

# MANUAL: STAGE 2

M2.2:	Information	and	data	analy	/sis

M2.2.3 Coverage, targets and implementation capacity

# Water supply coverage and targets

Table M2.2.3. gives the steps to be followed for this analysis. If more than one type of technology is widely used in the area, it may be necessary to subdivide the area and carry out the exercise for each area, using the different implementation and coverage rates. For example, although hand-dug and drilled wells may be considered together, gravity flow piped systems are very different and should be analysed separately.

Table M2 2 3	Number	of	water	points	to	be	construc	ted
	NUTIDO	01	water	points	ιU	NC.	construc	ιcu

Step	p	Formula	Data source and notes
1	What will be the population in the target year (Pt)? i.e. the total number of people in the target year?		Population forecast figures (from the analysis in Form M2.1.1A)
	If forecast figures are not available you will have to calculate the figure yourself:	$Pt = P(1\!+\!r)^n$	P: Base year population r: Population growth rate Pt: Population for planning purposes n: number of years plus adjustments for significant movements/migrations of people
2	Calculate the number of people to be covered by the target year (Nt)	$Nt = Pt^*Ct$	Ct: Target coverage (as a %) from government plans
3	Calculate the number of people to be covered (Nc) between now and the target year: deduct the adjusted present number of people covered (Np) from the target coverage number	Nc = Nt - Np	Present coverage figures adjusted for broken down facilities needing rehabilitation (from operation and maintenance status figures)
4	Calculate the number of waterpoints to be constructed and rehabilitated (WP): divide the number of people to be supplied by the specified number of people per waterpoint (a)	WP = Nc/a	Specified number of people per waterpoint (a) from government policies, procedures, norms, local regulations, etc.

It may be necessary to adjust the number of waterpoints required because of settlement sizes, number of villages, etc.

- > Do the settlement sizes generally correspond to the specified number of people per waterpoint?
- > If the answer is yes, move on to analyse implementation capacity.
- > If the answer is no, then the number of waterpoints required will have to be increased:
- Where settlements are smaller, more waterpoints will be needed to cover the population.
  - If the number of smaller villages is known, adjust the number of waterpoints required by allowing one for each settlement.
  - If the number is not known, make an estimate of the additional number of waterpoints required.
- Where settlements are bigger, more than one waterpoint will be required in each settlement, (although the actual number of users will be less than the specified number of people per waterpoint).
- If the number of larger villages is known, adjust the number of waterpoints required.
- If the number is not known, make an estimate of the additional number of waterpoints required.

The targets for community organising should be the same as the targets for water supply coverage.

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M2

Summaries of village disease data

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# Sanitation coverage and targets

A similar, but simpler calculation can be done for latrine coverage, using the numbers of households from the data analysis in Form M2.1.1b. The existing number of household latrines may have to be estimated as a percentage of the population covered, if accurate figures are not available. The exercise can be repeated for institutional latrine coverage.

### Implementation capacity

To calculate the present implementing capacity of each organisation for each of the components of a programme, use the following steps to fill in Form M2.2.3a:

- 1. Make copies of Form M2.2.3a and complete one for each organisation.
- 2. List the main activities for each component, according to the way they are implemented now in the field, or in accordance with the policy or standard procedures of the organisation.
- For each activity write in the appropriate column the number of days that the activity takes, including travel time, and the number of staff required to do it.
- 4. Multiply the number of days by the number of staff to calculate the number of staff-days required for each activity.
- 5. Add up the number of staff-days for each component.
- 6. During the consultation and surveys at district level, the total number of field staff in each organisation assigned to the various components for all the districts in the area should have been obtained. Enter these in the column for actual number of staff available.
- Estimate the number of days available for fieldwork, taking into account the length of the working season (excluding the rainy season if it is not possible to carry out that type of work), a five- or six-day working week, meetings, office work, staff training, staff leave, public holidays, etc.
- Multiply the actual number of staff by the number of days per year available for fieldwork, to
  estimate the actual number of staff-days per year.
- Divide the actual number of staff-days per year by the staff-days required per scheme. The
  result is the actual number of schemes that can be implemented by the organisation each year
  with the current staff.
- 10. Transfer these totals for each organisation to the Summary of organisational capacity in Form 2.2.3b, and add together each organisation's capacity to find the overall number of schemes in each component.

An important issue may come out of this analysis:

> Are the implementation capacities for each component similar, or are there major differences?

If there are major differences, these need to be presented as a problem for discussion in the Planning Workshop.

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	Time in days	Number of	Staff-days	Actual number	Number of	Actual staff-	Number of
Components and procedures	ber scheme	naun Lednien	scheme	or starr available	available	uays per year	year
formula:	Т	S	T*S	А	D	A*D	(A*D)/(T*S)
Community organising							
T							
2							
3							
		Sub-total					
Hygiene promotion and education							
1							
2							
3							
		Sub-total					
Sanitation promotion							
Τ							
2							
3							
		Sub-total					
Water supply construction and rehabilitation							
Τ							
2							
3							
		Sub-total					
Establishment of operation and maintenance							
1							
2							
3							
		Sub-total					

Assessment and analysis



# Form 2.2.3b: Summary of organisational capacity

	Number of schemes per year	Notes
Organisations		
Community organising		
1		
2		
3		
4		
5		
6		
total capacity		
Hygiene education		
1		
2		
3		
4		
5		
6		
total capacity		
Sanitation promotion		
1		
2		
3		
4		
5		
6		
total capacity		
Water supply construction		
1		
2		
3		
4		
5		
6		
Establishment of operation and maintenance		
2		
3		
4		
5		
6		
- total canacity		1
total capacity	I	

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Comparison of target with capacity This comparison can be made in two ways:

- By dividing the number of waterpoints required by the implementation capacity for each component in turn, the number of years required to reach the target coverage for each component will be produced. This can be compared with the actual number of years to the target date.
  - > If one or more of the results are greater than the actual number of years available, this is a problem that should be presented for discussion at the Planning Workshop.

or

- By dividing the number of waterpoints required by the number of years to the target date, the required rate of implementation will be produced. This can be compared with the current rate of implementation of each component.
- If the required rate/s of implementation are higher than any of the present capacities, this is a problem that should be presented for discussion at the Planning Workshop.

# Comparison of target with finance

This comparison can be made using the current average cost per scheme from the completed Form M2.1.2d.

- Multiply the average cost per scheme by the number of schemes required per year to meet the target to produce the annual budget required for new and rehabilitated schemes.
- Compare this figure with the present allocated funding in the sector, and more importantly, with the funding actually received.
  - > If this is more than the funding currently available or received, this is a problem that should be presented for discussion at the Planning Workshop.

Note that the funding required may well increase because of improved methodologies and standards which may be developed as part of this programme.

Another useful financial calculation is the total cost of all the schemes required to achieve the target. Again this should be presented for discussion and the Planning Workshop.

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M2.2.4 Operation and maintenance performance indicators<sup>14</sup> During the consultation and surveys, information should have been gathered (M1.5.3 and M1.6.6) that will be used to calculate and analyse the performance indicators (PI). The PIs are divided into four groups, each with a one-letter abbreviation (Form M1.5.3a).

- > service
- > financial F
- personnel P

S

> materials M

In the following formulae for calculating the PIs, the 'Q' numbers refer to the question numbers in the survey form. For example, in the formula for calculating the Service PI, Functioning waterpoints, Q3a refers to the figure obtained in Question 3a in Form M1.5.3a.

### Service PIs

Service performance indicators give an overall measure of how well the operation and maintenance system is functioning. There are two service PIs: functioning waterpoints, and reliability.

For the calculations, it may be necessary and/or useful to calculate these PIs in two ways — once using official data, and again using survey data collected from villages, and then comparing the results. For the calculation using survey data, the total number will be the number of the waterpoints seen during the survey.

### Functioning waterpoints:

A simple count of the proportion of waterpoints which are not delivering water is a direct indication of the O&M status.

Functioning waterpoints:	Number in working order x 100	_	1 - Q3a x 100	_	%
	Total number	-	Q1	-	70

- > Ideally, this percentage should be close to 100.
- A figure of around 80% is reasonably good.
- Figures lower than this indicate that there are problems with the functioning of waterpoints; the lower the percentage, the more serious the problems.
- If there is a major discrepancy between the figures collected from official sources and figures gathered during the village surveys, this indicates a problem in monitoring waterpoints.

# Reliability

A common measure of the reliability of the mechanical system is the length of time that a system can be expected to operate before it breaks down together with the length of time that is required to rectify the problems that have caused the system to break down. It reflects the average period that a system will be out of service when it does break down.

Reliability:	Functioning time (days) x 100	_	average (1 – Q4a)	_	9/
	one year	-	365	-	70

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 Again, if there is a major discrepancy between the calculation using official figures and those gathered during the survey, it indicates a problem in the official monitoring system. The figures gathered from villagers are likely to be more reliable because they have first-hand knowledge of the way their waterpoint performs.

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- Ideally this PI should be close to 100%
- > A pump that breaks down every month but can be repaired within a day or two may be more reliable than a pump which breaks down once per year but takes one month to repair.
- > It may be useful to make separate calculations for different types of pumps for comparison.

In the presentation to the Planning Workshop, include supporting information such as:

- > whether the data was available from the district or province or had to be collected from sampling in villages; and
- > whether the data from different sources correlated.

### Financial PIs

Lack of finance is one of the major reasons for failure of the traditional, centralised management of O&M. Cost recovery from rural water supplies is often poor or non-existent, and public subsidies are often too low and too unreliable to permit centralised systems to be effective. More appropriate VLOM models have tried to overcome this by developing a system that depends on the involvement of and control by the user community for the user community.



Calculation and analysis of financial PIs should reveal whether the maintenance system in use is affordable and sustainable. To be genuinely sustainable, O&M costs should include an element for the capital cost of replacing the waterpoint and/or its major components when they reach the end of their working life.

In general financial information for rural water supplies is difficult to find, so the financial indicators may be difficult to apply. If the O&M system is centralised, the necessary information on costs should be obtainable. However, it may be difficult to extract information on levels of subsidy in order to calculate meaningful indicators for O&M performance. A VLOM system may or may not pay the village caretakers, but a maintenance fund will normally be required in order to purchase replacement parts.

There are four financial PIs: cost, revenue, cost recovery and subsidy. For comparisons, it is easiest to calculate all the financial PIs as averages per user.

# Cost

This should be the real average O&M cost per user. It should be based on the real cost of maintaining the system sustainably. This may not be the same as the actual budget allocation for maintenance. This average O&M cost per user is used in calculating the other Financial PIs.

Average cost:	Total annual running costs	_	Q7+((Q8+Q9)xQ1)+Q10	_
	number of users	-	number of users	

> It may be useful to compare this cost to the socio-economic information to assess whether the maintenance system is affordable by communities on their own, or whether it will have to rely on continuing subsidy from central or regional government.

14 This part is extensively based on and adapted from Cotton, A., et al, 1994.

## Revenue

This is the actual amount of money raised from users, government budgets and other sources for O&M, averaged by the number of users.

Revenue:	Actual income from all sources	_	Q11 + (Q12xQ1) + Q13	_
	number of users	-	number of users	=

- For sustainability of the waterpoints, the average revenue should be equal to or greater than the average real cost of O&M.
- > If it is less, then the waterpoints are likely to be deteriorating, and the investment in previous, current and future water projects will be wasted.

### Cost recovery

The cost recovery figure should show whether the O&M system is financially self-sufficient and sustainable in the long term.

Cost recovery:	Average user payments x 100	_	Q12 x 100	_	9/
	Average O&M cost per user	=	Average cost / user		70

- > If cost recovery is less than 100%, then the O&M system is dependent on subsidy, either from recurrent government budgets or other sources. Neither of these can be considered reliable or sustainable in the long term.
- If cost recovery is equal to or greater than 100%, then the O&M system is healthy and should be sustainable.

### Subsidy

The amount required in addition to the cost recovery from users to ensure that the maintenance required can be funded. The amount needed may be different from the actual amount allocated and dispersed.

Subsidy:	Average O&M budget allocation / user	_	Q11 x 100/number of users	_	0/
	Average O&M cost / user	-	Average cost per user		70

- > The level of subsidy must be sustainable in the long term.
- > If it is likely to be unsustainable, then an issue to consider is whether the maintenance system and/or the technology being used is affordable for communities.

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### Personnel PIs

The availability and deployment of human resources are a key component in O&M management. The personnel requirements will be substantially different for the VLOM and the centralised systems, so there are two alternative PIs.

# VLOM Committees

For a VLOM system, it is crucial that there is a functioning committee for each water supply system. The number of functioning committees should be obtained during the survey from the regional or provincial offices. The reliability of these numbers will depend on the effectiveness of the official monitoring, so figures should be verified during the village survey and consultation.

VLOM committees:	Number of systems with functioning committees x 100	_	Q18 x 100	_	۵/
	Total number of systems	-	Q1 or total number of systems	-	70

For point sources of water such as wells and handpumps, one committee may be responsible for several waterpoints. The way the information is requested in Question 18 in Form M1.5.3A takes account of this.

> Ideally, this PI should be 100%.

VLOM caretakers:	Number of trained and active caretakers x 100	_	(Q19a + Q19b) x 100	_	0/
	Total number of systems	-	Q1 or total number of systems	-	70

If the system has area mechanics, or if communities use private mechanics, this calculation can be adapted by increasing the number of caretakers by the number of systems for which each is responsible. For example, if one caretaker or mechanic looks after three systems, add 3 to (Q19a + Q19b).

> Ideally, this PI should be 100%.

# Centrally managed systems

### Maintenance teams

PIs for centrally or regionally managed systems depend on the size and complexity of the individual systems, and the geographical distribution of all the systems.

Maintenance teams	Number of systems	_	Q1	
	Number of trained and equipped maintenance teams	=	Q14 =	

A judgement will have to be made as to whether the resulting proportion is realistic for the area, considering the distances covered, the type of water supplies, and the complexity and size of the systems.

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## Team mobility

To be effective, it is essential that the maintenance teams are mobile. The number of serviceable vehicles on the road gives an indication of this. Serviceability should include the availability of fuel to run the vehicles.

Maintenance team mobility	lity Number of maintenance vehicles on road x 100		(Q16 + Q17) x 100	_	0/	1
Total number of maintenance vehicles			Q15	-	70	l

> Ideally, this figure should be close to 100%.

### Materials PIs

The availability and use of parts is an integral component of any O&M system, whether it be VLOM or centralised.

# Parts accessibility (centralised system)

For a centralised system, accessibility is largely dependent on the stores procedures.

Parts accessibility	Average time needed to obtain identified spare parts to fit to a broken waterpoint?			Q20	=	
Parts accessibility	Number of outstanding repairs due to lack of spare parts $x \ 100$	_	Q21 ×	100		٥/
	Number of outstanding repairs	-	Q3	la	-	70

- > Ideally, both these figures should be zero or very low.
- > It may be useful to make separate calculations for different types of pumps for comparison of different parts supply systems.

# Parts accessibility (VLOM System)

The success of a VLOM system is dependent on how easily and quickly the village caretaker can obtain replacement parts. The time should start from the caretaker diagnosing the need for the part, and will include time taken to travel to the nearest supplier and returning with the part. If it is not immediately available, the time spent waiting for it to arrive plus a second journey should be included.

Parts accessibility	Location					
	Village market/shop	Town shop or store	Regional store			
Average time to obtain:						
immediate						
within 2 days						
within 1 week						
more than 1 week						
not available						

> A judgement has to be made on whether these figures are reasonable.

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### Spare parts

For both centralised and VLOM systems, if very few replacement wearing parts are used, it suggests that O&M is not being carried out to the extent that is required. This calculation can be made for one type of part, or for groups of parts.

Spare parts (centralised system)	Number of spare part requisitions per year		Q22	
	Number of systems	=	Q1	=
Spare parts (VLOM system)	Number of spare parts sold per year		Q22	

> Both these should be reasonable numbers, considering the life of wearing parts such as pump washers and bearings. For example, if the life of a washer is expected to be six months, then an average of two per pump per year is reasonable.

# M2.2.5 Water resources assessment

The following assessments are intended as a guide to the specialist hydrogeologist to some of the issues concerned. For others in the team, in particular the team leader, they indicate the sort of outputs to be expected from the water resources assessment. They are not intended as step-by-step guides. These are available in standard text books and references (see Appendix A).

Further basic information, including a glossary of terms used in the assessments, is given in Appendix A of the Manual: Introduction to technical aspects of groundwater development for rural water supply.

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Assessment No.1: To derive a conceptual model of the hydrological cycle

A basic understanding of the hydrological cycle should enable the water resource potential to be identified in broad terms. It should also facilitate technical choice with regard to density and type of water abstraction facility. The assessment pre-supposes the availability of basic climatic data, which should be used to provide input to the water resources assessment. Evaluation can be done at any scale, but clearly the more detail the more useful the results. The basic unit of area is a catchment (see Assessment No.6).

In broad terms the conceptual model of the hydrological cycle needs to establish numbers to fit the basic water balance model:

Rainfall = evapotranspiration + runoff + infiltration to groundwater

Examples of catchment gains and losses and the way changes in storage occur are shown in Table M2.2.5a.

# Table M2.2.5a: Catchment gains, losses and changes in storage

§:       precipitation (rainfall, snow, etc.)       §:       evaporation and transpiration from plant (collectively evapotranspiration)       §:       soil moisture change (collectively evapotranspiration)         §:       surface runoff into area       §:       evaporation from open waters       §:       change in contents inpounding reservoir         §:       irrigation returns       §:       surface runoff out of area       §:       goulderstring goulderstring reservoir         §:       imports by water distribution system       §:       infugation abstractions       §:       industrial evaporative losses	Catchment gains	Catchment losses	Change in storage		
š industrial evaporative losses	precipitation (rainfall, snow, etc.)     surface runoff into area     groundwater flow into area     irrigation returns     wavage and industrial effluent returns     imports by water distribution system     canal transfers and leakages into area	S evaporation and transpiration from plant (collectively evapotranspiration)     evaporation from open waters     surface runoff out of area     for groundwater flow out of area     irrigation abstractions     water supplies taken to other areas	soil moisture changes     change in contents of     impounding reservoirs     s     aquifer storage     changes		
		š industrial evaporative losses			

A water balance can be carried out over a variety of time-scales but the first calculations are usually done on an annual basis. The balance provides a broad estimate of annual recharge to groundwater and runoff to surface water. Using only estimates of the amount and distribution of annual rainfall and evapotranspiration data, it may not be possible to split runoff and infiltration at this stage. If surface water flow data are not available the split can be derived by extrapolation from other better-understood areas. Examples of these are given in Table M2.2.5b.

The value of rainfall minus evapotranspiration is called effective rainfall. A contour map of effective rainfall is a valuable means of depicting areas where a surplus is available for recharge and stream flow, and areas where evapotranspiration exceeds rainfall and little surplus is likely. The latter areas cannot be written off completely, however, as recharge may occur in some years when a storm event or series of storm events allows it to take place. In the Kalahari, for example, active recharge to the Kalahari Beds and the underlying Karoo sandstones may occur only once in perhaps ten years, but it is sufficient to maintain a modest population of some 500 small villages and the important cattle industry in Botswana. In areas where there are distinct annual wet and dry seasons, the effective rainfall should also be estimated separately for each season.

Working at a catchment scale, with instrumented data collection for rainfall, evapotranspiration, surface water flow, and groundwater level change, it is possible to model the local hydrological cycle. This level of work will identify additional parameters including change in groundwater storage and groundwater baseflow to surface water, and may even consider soil moisture profiles.

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More detailed appraisals can be carried out as data allow. A number of simple models are available, such as soil moisture deficit analysis. Some knowledge of the amount of water that the soil profile can store is very useful. This is usually expressed as the equivalent depth of rainfall that can be stored in a stated depth of soil. Once this store of soil moisture has been used up during a dry season, there is not much point in continuing effective rainfall calculations until the next wet season starts.

It is important to consult local people to obtain their views on the water balance of their area. Their replies may not be quantifiable in terms of precise numbers, but they will help outsiders to understand the local water resources scene.

Table M2.2.5b: Typical rainfall and loss values for selected countries

Country	Location	Catchment cover	Annual rainfall (mm)	Annual loss (mm)	Marked seasonal variation
Nigeria	Ibadan	rain forest	2500	2350	no
Iraq	Kirkuk	irrigated pasture	400	1800	yes
Malaysia	Kuantan	forest	2950	1450	no
Sri Lanka	Kirindi Oya	mixed forest	1650	1230	yes
Malaysia	Kuala Lumpa	forest	2410	1210	yes
Sierra Leone	Freetown	forest	5795	1145	yes
Democratic Republic of Congo	Fimi	rain forest	1700	1040	no
South Africa	Gauteng	mixed grass/forest	870	760	yes
Kenya	Tana	forest/savanah	1100	730	yes
India	Bombay	rain forest	2550	700	yes
Lesotho	Maseru	grassland	600	530	yes
Algeria	Hamman Grouz	scrub	420	400	yes
South Korea	Han basin	forest	1180	320	yes
Oman	Oman	rock	160	130	yes
Iran	Khantunabad	bare ground	550	200	yes

Assessment No.2: To estimate drought and flood return frequency

Annual variation of rainfall in low rainfall areas may be large; it is necessary to appreciate the likely range and the frequency of extreme conditions, as well as current climatic trends. This appreciation is used to enable a sustainable water supply system to be envisaged which will be capable of withstanding the extremes of climate.

As well as the variations between (calendar) years in annual rainfall totals, the variation and timing of annual wet and dry seasons within years must be accounted for in regions where those seasons occur. Examples are the seasonal monsoons in southern Asia (as in Bangladesh, India, Pakistan and Sri Lanka) and the long and short rains in East Africa.

Droughts are common in some parts of Africa and elsewhere. Water supply planning must take this into account and must recognise climatic trends, perhaps related to the frequency of the El Niño phenomenon and 'climate change'. The patterns of droughts can be assessed by the inspection of historical rainfall records such as long-term rainfall returns for isolated stations.

An estimation of the variability from the mean annual rainfall, and the frequency at which extreme conditions occur, can be carried out in a number of ways. There are a variety of statistical approaches that can be adopted provided the length of rainfall record allows.

Rainfall records covering less than ten years will not produce accurate indications of flood and drought frequency in regions where annual or seasonal rainfall totals normally vary significantly from year to year. Extrapolation using longer records from neighbouring regions with similar climates will then be necessary, with caution.

It is essential to consult local people on their memories of the times and intensities of past floods and droughts in the area. Their qualitative memories can then be compared with any available historical data on climate, rainfall, flow in streams and the levels of water tables in wells and boreholes.

Assessment No.3: To evaluate the geographical constraints

Geographical features affect both hydrology and hydrogeology. A thorough evaluation of these features will identify constraints on surface water and groundwater resources. This evaluation is used for the hydrogeological assessment (Assessment No.5).

There are five major geographical controls on surface and groundwater. They are:

- topography
- > geometry of the drainage basins
- geomorphologic zones
- land use
- > soils

**Topography** influences outcrop areas of rock strata as well as the recharge potential to waterbearing strata. It can readily be zoned into upland and lowland and can be further subdivided to suit need.

The **geometry of drainage basins** provides areal units comprising groups of catchments that can form a basis for hydrological assessment. It is commonly assumed that the divide between two catchments, the watershed, forms a no-flow boundary for both a surface and groundwater.

Land **zonation** according to **geomorphologic** units allows insight into the types of aquifer or surface water that may be present in a given zone. Along the Rift Valley of Africa, for example, division between the high plateau, the escarpment, and the alluvial plains of the rift valley are clearly seen in Malawi. Here the plateau offers typical weathered basement aquifer characteristics with borehole and well yields providing up to 0.5 litres per second from areas where the weathered regolith is deepest. The escarpment is relatively steep sided and most of the weathering products have been removed: well and borehole yields are very small and there are many dry boreholes. Beneath the escarpment on the thick alluvial deposits of the Shire Valley, groundwater is abundant although water levels fall at times of drought, and shallow wells and boreholes are liable to dry up. Other geomorphologic units that could usefully be mapped include coastal plains, *wadi* deposits, deltas, lake margins, etc.

Land use and soil type have a direct influence on groundwater recharge and surface water runoff. Based on information on current and future trends in land use, and a broad knowledge of the soil types, the area can be zoned according to high evapotranspiration and low evapotranspiration vegetation types, and permeable and granular soil types as opposed to more clayey and less permeable soils. This helps to identify areas where shallow water table conditions may promote evapotranspiration through deep-rooted vegetation such as eucalyptus trees. Assessment No.4: To evaluate the geological constraints

Geological constraints include the nature and distribution of the various rock types, and the degree and depth of weathering. This information is used to form the basis of a hydrogeological map depicting permeable and impermeable strata and the relative value of one rock type against another for storing and producing groundwater.

The range in hydraulic properties of different rock types is shown in Table M2.2.5c. Knowledge of the distribution of such rock types clearly indicates the likely aquifers and the likely non-aquifers. For example, it is difficult to site and locate producing boreholes in the weakly permeable shales of Nigeria and Ghana, consequently few people are able to live on the outcrop of the shales. Conversely, unconsolidated sediments (alluvial sands and gravels) are often granular and sufficiently coarse-grained to offer useful borehole supplies for subsistence farming. Yields from the weathered basement aquifers of Africa depend very much on the degree and depth of weathering. Groundwater collects in the deeper weathered zones (known as regoliths), or may occur in fractures in the less weathered rock beneath the regolith.

Some knowledge of the formation of a particular rock type can provide valuable insight to its water-bearing properties. *Wadi* deposits are fine-grained at top and bottom, so consequently the greatest yields are available from within the central portion of the deposit. Fracture orientation in crystalline rock is dictated by past regional stresses — knowledge of their orientation is valuable for borehole siting.

Confined aquifers are those which are concealed by an overlying non-aquifer. They may have an outcrop area through which recharge can take place. Deep drilling into a confined aquifer may result in a productive borehole.

An area relying on a shallow aquifer may be more at risk at times of drought, especially where deeper boreholes are not possible. Careful borehole design and siting are aids towards the more sustainable sources in such strata.

The geological constraints also heavily influence the vulnerability of an aquifer to pollution. A shallow permeable aquifer is clearly vulnerable to contamination from pit latrines and other sources of pollution, whereas a confined aquifer is more secure from surface pollution.

Provided that a working geological map is available for the programme area, then the legend can be re-annotated to form the basis of a hydrogeological map. Weakly permeable strata are labelled as non-aquifers, whereas more permeable strata become aquifers. In addition the rocks can be described as having either inter-granular hydraulic properties or fracture permeability. Likely borehole yields can be assigned to given rock types from inspection of available borehole records, either government or former project records. A great deal can be learned from inspection of technical reports and papers from previous drilling programmes, and by comparison to similar rock types elsewhere.

If geological or hydrogeological maps are not available, this should be raised as a major problem for programme planning. A primary survey of the area will then be required to support programme planning for the water resource component. Additional time will be needed for the survey and assessment stages.

# Table M2.2.5c: Hydraulic properties of aquifers and non-aquifers<sup>15</sup>

Hydraulic conductivity (m/sec)	Porosity	Storativity	Comments
10 <sup>-2</sup> - 10 <sup>-1</sup>	0.20 - 0.30	0.10 - 0.25	
10 <sup>-4</sup> - 10 <sup>-3</sup>	0.25 - 0.40	0.10 - 0.25	
<10 <sup>.5</sup>	0.35 - 0.45	0.05 - 0.10	
10 <sup>-5</sup> - 10 <sup>-4</sup>	0.20 - 0.40	<0.10	
<10.4	<0.25	<0.20	partly fissure flow
10 <sup>-5</sup> - 10 <sup>-3</sup>	0.05 - 0.30	<0.10	mainly fissure flow
10 <sup>-2</sup> - 10 <sup>-1</sup>	<0.35	<0.15	channel flow
>10 <sup>.4</sup>	<0.10	0.05 - 0.10	fissure flow
<10 <sup>-4</sup>	<0.02	<0.01	fissure flow
	$\begin{array}{c} \mbox{Hydraulic} \\ \mbox{conductivity} \\ \mbox{(m/sec)} \\ \mbox{10}^2 \cdot 10^4 \\ \mbox{10}^5 \cdot 10^3 \\ \mbox{<} 10^5 \cdot 10^4 \\ \mbox{<} 10^4 \\ \mbox{10}^5 \cdot 10^3 \\ \mbox{10}^2 \cdot 10^3 \\ \mbox{10}^2 \cdot 10^1 \\ \mbox{>} 10^4 \\ \mbox{<} 10^4 \\ \mbox{<} 10^4 \end{array}$	$\begin{array}{c c} \mbox{Hydraulic} \\ \mbox{conductivity} \\ \mbox{(m/sec)} \\ \mbox{10}^2 \cdot 10^4 & 0.20 \cdot 0.30 \\ \mbox{10}^4 \cdot 10^3 & 0.25 \cdot 0.40 \\ \mbox{<10}^5 & 0.35 \cdot 0.45 \\ \mbox{10}^5 \cdot 10^4 & 0.20 \cdot 0.40 \\ \mbox{<10}^4 & < 0.25 \\ \mbox{10}^4 & < 0.25 \\ \mbox{10}^5 \cdot 10^3 & 0.05 \cdot 0.30 \\ \mbox{10}^2 \cdot 10^4 & < 0.35 \\ \mbox{>10}^4 & < 0.10 \\ \mbox{<10}^4 & < 0.02 \\ \end{tabular}$	$\begin{array}{ c c c c c } \hline Hydraulic \\ conductivity \\ (m/sec) \\ \hline 10^2 \cdot 10^4 & 0.20 \cdot 0.30 & 0.10 \cdot 0.25 \\ \hline 10^4 \cdot 10^3 & 0.25 \cdot 0.40 & 0.10 \cdot 0.25 \\ <10^5 & 0.35 \cdot 0.45 & 0.05 \cdot 0.10 \\ \hline 10^5 \cdot 10^4 & 0.20 \cdot 0.40 & <0.10 \\ <10^4 & <0.25 & <0.20 \\ \hline 10^5 \cdot 10^3 & 0.05 \cdot 0.30 & <0.10 \\ \hline 10^2 \cdot 10^1 & <0.35 & <0.15 \\ >10^4 & <0.10 & 0.05 \cdot 0.10 \\ \hline 10^2 \cdot 10^4 & <0.02 & <0.11 \\ \hline 10^2 \cdot 10^4 & <0.02 & <0.01 \\ \hline 10^2 \cdot 10^4 & <0.02 & <0.01 \\ \hline \end{array}$

\* e.g. basalt

\*\* e.g. granite

Assessment No.5: To bring data together as a hydrogeological assessment

Data assessments that have been created in Assessments 1 to 4 include:

Climate:	effective rainfall contour map or effective rainfall zones
	water balance estimates for catchments or basins
	rainfall records indicating variability, supported by regional trends
Geography:	topographical zones
	location of drainage basins and divides
	geomorphologic zones
	land use and soil distribution maps
Geology:	rock types and distribution
	hydraulic properties of rock types including likely sustainable yields
	aquifer thickness and location of confined aquifers

These can be brought together to form an integrated summary of the available surface water and groundwater resources that can be used as the basis for programme design to inform likely coverage as well as technical choice. It also provides information on where groundwater development is easy and where it is likely to be relatively difficult. An ideal way to combine the data assessments is to use a Geographical Information System (GIS). If this is not available the data can be brought together by hand. The purpose is to create a summary statement on the availability of water resources.

The means of bringing the data together may take a number of different forms, depending on emphasis. Commonly a hydrogeological map is used as the basis for depicting the data. This may already have inset maps showing effective rainfall, groundwater quality, soil and land use, geomorphologic zones, etc., which can be annotated according to hydrogeological properties. Alternatively, these may be available as separate maps. There may be detailed hydrogeological notes in the margins of the map, and geological cross-sections may provide valuable support to these notes.

When complete, the assessment should show the availability of sustainable potable water. For this it has drawn on a number of activities:

- > assessment of groundwater recharge and surface run-off
- > assessment of surface and groundwater distribution and availability
- > evaluation of water quality and pollution vulnerability
- > evaluation of resource sustainability

A number of thematic maps can also be created to draw out specific information. These include:

- > aquifer pollution vulnerability maps
- > groundwater harvest potential maps as used, for example, in South Africa

Maps are valuable means of presenting water resource information to non-technical people. Having brought the data assessments together, the summary map and notes should be designed with a non-technical reader in mind. They should be clear and concise so that the surface and groundwater resources potential of the chosen area is apparent. They should also highlight problematic areas, e.g. where there are few suitable aquifers, or where the effective rainfall is normally negative, or where there are inadequate data. The data and maps will be the basis for designing the technical aspects of the programme, and will determine what is feasible in terms of resources and what is a feasible goal.

15 Source: Wilson, E.M. (1990)

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#### Assessment No.6: To identify shortfalls in data

The data used for the hydrogeological assessment may contain geographical or technical gaps which hinder the sensible evaluation of the water resource potential. These should be identified in order to promote future data collection to safeguard the proposed water supply system.

Water supply and sanitation programmes require basic climatic knowledge, without which the water resources assessment cannot satisfactorily proceed. This includes the basic input and output volumes to a catchment or a region of catchments, for which some knowledge of the quantity, distribution and likely ranges and trends in rainfall and evapotranspiration are needed.

If a useable water balance cannot be made for the area with confidence (see Assessment No.1), a recommendation for data collection should be made. This could include additional rain gauges, stream gauging sites, weather stations, etc. Recommended rain gauge and weather station density are provided in the references; as a rule of thumb, one rain gauge to 250 waterpoints is a reasonable target.

Coverage of geographical data is usually adequate for water resource potential assessment. Stream and river flow data maybe missing, however, and return periods of dry rivers may be unclear. It may also be apparent that additional data on land use and soils may be of value to the overall assessment. All of these areas should be addressed at an early stage of the Preparation Project, so that a refined water resource evaluation can be achieved in readiness for the Programme Planning Workshop.

The importance of monitoring cannot be over stressed. The identification of trends for use as early warning of change is a valuable means of water resource management. The assessment should identify current monitoring facilities and systems, and determine whether these are adequate for water resource management in the area. These include:

- Monitoring boreholes that are representative of the groundwater for a particular area or zone

   these can be used to monitor groundwater level and groundwater chemistry, and perhaps specific electrical conductance, if not all or some of the major ions.
- Monitoring data collated and stored in an accessible form electronic storage is ideal, as this facilitates data manipulation, but paper records and time-based graphs are adequate until a computerised version can be prepared.
- The status of the waterpoints themselves including identification of reasons for failure these
  may be technical or institutional problems with the handpump or borehole (poor engineering
  design, lack of mechanical skills for repairs, lack of spare parts, lack of management by village
  water committee), or problems with the water resource (inadequate groundwater storage,
  declining water levels, over-exploitation or increase in demand).
- Borehole failure statistics the reasons behind the statistics offer valuable early warning information.

Assessment No.7: To investigate water supply coverage

This assessment identifies the existing patterns and trends in use. It is used to draw on past experience and to identify coverage targets.

Much of the necessary data are likely to be available at central level or from former projects. If data are not forthcoming, a major field appraisal of the existing situation will be required. In the first instance an inventory of waterpoints or of a representative sample of waterpoints should be drawn up.

Great care must be exercised when employing regional data and regional statistics. It is common for implementing organisations and donors to put a gloss on both coverage data and the operational status of rural waterpoints, particularly at central level.

An inventory of water supply coverage, if available, or the information gathering and survey (M1.3.7, M1.5.1 and M1.5.2), should include geographical location, responsible agency or organisation, type of source, type of abstraction system, reliability, operational status, and cause of failure if out of use. This information should give the coverage and types of water source for the whole area. The information can be reduced to characteristic zones such as 'dominantly spring supplies' or 'dominantly borehole supplies', as well as zones about reliability, status and yield. In this way a picture of the existing water source types can be drawn up and the problems that it has created can be identified.

The favoured technical options for particular zones should be noted and taken forward to the Planning Workshop. Note should also be made of the least-favoured options in terms of failure and reasons why they are not liked.

Comparison of water resource availability information with coverage normally shows a correlation, assuming that population distribution is water dependent. If there are areas of non-correlation, i.e. poor coverage but good water resources, then these could become target areas.

This assessment attempts to quantify water use in terms of the overall resource. It is used to tell us about existing patterns of use and trends that are taking place. It is concerned with the quantity of water used, its quality, the distribution of waterpoints, trends and associated problems. It is carried out at two levels. It:

- > continues the desk-level assessment of waterpoints started in Assessment No.7 with data collected at central and regional level as well as from NGOs, etc.; and
- > validates a sample of the collected data from village survey.

The data may be sorted into zones of relatively high yielding (e.g. >1 litre per second) and relatively low yielding sources (<1 litre per second), areas of distinctive water quality, or areas in which water sources are prone to a particular difficulty.

In addition, the existing consumptive uses of the water resource (rural domestic, irrigation and agriculture, urban supply, industry, tourism and recreation) must be taken away from the water balance (Assessment No.1), less any part that is believed to return to the water resource. For example, spray irrigation systems may return as much as 30% of the water to the water table in some areas.

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Assessment No.9: To evaluate the risk posed by waste disposal to the water resource

This assessment is to identify the types and volumes of waste material generated and the risk posed by their disposal to the water resource. It is used to see if additional safeguards are necessary to protect the resource.

The main wastes to be considered are:

- > human excreta, either from open defecation or from latrines
- > animal wastes
- > local industrial wastes (abattoirs, tanneries, etc.)
- > solid waste

Important considerations include the type of latrine system, the depth to the water table, the soil type, the aquifer type and the distance of latrines from waterpoints. An important point to bear in mind is that all types of sanitation pose a pollution threat of some kind. This assessment should consider the relative risks associated with pollution from pit latrines with other forms of sanitation system, which usually means open defecation in rural areas (Saywell, 1999).

### M2.3 Planning Workshop

### **Objective of Planning Workshop**

### The objective of the Planning Workshop is:

#### The production of a draft outline programme

- that includes a programme goal with the broad objectives, specific objectives and activities necessary to achieve the goal;
- created by representatives of the organisations and institutions, including repre sentatives of the beneficiary communities, which will be involved in implementing the programme; and
- is based on a thorough understanding of the context in which the programme will operate.

The process is based on various participatory methods to enable all the participants to contribute. These are outlined in the Flowchart G2.3, and described in detail in the Manual (M2.3.4).

It may be best to do the workshop in a location away from any of the offices concerned, so that everybody can concentrate on the workshop and not be distracted by other work.

M2.3.1 Organisation of the Planning Workshop

### The Workshop participants

The Planning Workshop should be attended by a variety of people with an interest in the water and sanitation sector and the resulting programme. These people should represent different perspectives of the programme, so should include:

- the Core Team which has carried out the survey in Stage 1 and the Assessment and analysis part of Stage 2;
- 2. central government specialist staff from each concerned department;
- 3. other specialists involved in the survey, assessment and analysis;
- 4. people who will actually implement the programme that is developed:
  - > district government staff involved in the sector (probably two from each district);
- > regional government staff from each concerned department;
- representatives from the intended beneficiary groups selected through the Village Needs Assessment Workshops;
- decision-makers from key positions within the government system (if they cannot be present, they should be kept fully informed of process and outcomes); and
- 7. representatives from other organisations involved in the sector, such as NGOs.

This diversity ensures that a wide variety of ideas and issues will be considered during the process. Consensus on issues that arise may not be easily achieved, but when it is, the result should be a much stronger programme and more effective implementation.

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### The process

The process is intended to be fully participatory. Some of the methods proposed for identifying and analysing the problems and issues leading to the setting of programme goal, broad objectives and specific objectives are based on Goal Oriented Project Planning (GOPP).<sup>16</sup> The objective is to solve or alleviate problems by tackling them at their roots, or causes. Therefore the methodology analyses problems and their causes and effects, so feasible objectives can be set to overcome both the problems and their causes. Problems do not exist in isolation, but are intimately linked with people, groups and organisations. For implementation it is necessary to have a comprehensive picture of and insight into the interest groups, individuals and institutions involved.

It may be worth establishing workshop rules with the participants. These could include:

- (in this group of people from diverse backgrounds) everybody's ideas and contributions are equally valid, and each idea should be considered and treated on merit;
- everybody has the right to be heard without interruption;
- people should be punctual; and >
- > other rules suggested by the participants.

The workshop should be conducted in a language that is acceptable to all the participants. If this is not possible, interpretation should be provided and the time allocated to the workshop will need to be extended.

Depending on the number of participants, it may be necessary to divide the group for some of the steps proposed for the whole group, and combine the results later.

#### Conducting the process: The facilitator

The members of the Planning Team should all give their attention to the discussions and decisionmaking within the planning process, rather than be concerned about the management of the process itself. Therefore an experienced facilitator, who does not have any vested interest in the result, should manage and guide the process. This person will perform a number of important functions during the planning process:

manage the overall process:

W.M., 1995. 276

- create and maintain a positive working atmosphere;
- ensure that all members of the group are able to participate actively;
- introduce the planning concepts;
- > explain and guide the group through the sequence of steps:
- stimulate the group to explore the issues by using appropriate questions;
- visualise the inputs required at each step;
- help the group to check the logical relationship of ideas that develop in the process; and
- ensure that the process and outputs are properly documented.

These functions cannot be adequately performed by a person who is also attempting to participate as a member of the group. With a good facilitator, the participants of the planning workshop should be free to concentrate on the challenging task of developing the programme. It may be necessary to hire an experienced facilitator for the workshop.

16 These are adapted from the process described in Hamilton, D., and Gaertner, U. (1991), and Gosling, L. and Edwards,

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#### Time

At least five full days are needed for the workshop, and it may be wise to allow for six in case extra time is needed. Exercises such as problem tree analysis take considerable time and should not be rushed if the full value of the process is to be realised.

Given the length and intensity of the workshop, it may be worth considering a break part way through, even though there is a risk of losing momentum and concentration.

### Adequate advance preparation

To make the most productive use of the planning session, the information-gathering exercise and the analysis given in Stage 2: Assessment should be completed. All the information described should be readily available, and summaries prepared for presentation. It would also be useful to prepare these presentations as handouts for the participants to refer to and keep. These can also be used in the Workshop Report (M2.3.5), and as background information for the programme document.

### Materials required

Materials needed for the workshop include:

- > cards measuring approximately 10 by 20cm in five colours: white, pink, blue, green and vellow, or suitable alternatives. (At least five of each colour are needed per participant.)
- marker pens of various colours at least one per participant
- > flipcharts
- large sheets of plain paper (brown) for sticking cards onto
- glue for paper
- adhesive tak (Blutak)
- sticking tape
- drawing pins
- notepads and pens, etc. for each participant

### Facilities for workshop

Accommodation and equipment needed for the workshop include:

- > a room big enough to accommodate the whole group (up to 40 or 50 people)
- > four or five smaller rooms or spaces for small group work
- > wall space in all the rooms that allows for sticking up flipcharts, etc.
- blackboards or white boards
- > catering facilities
- sleeping accommodation for all the participants
- > flipchart stands
- > (overhead projector)
- photocopying service

### M2.3.2 Suggested timetable

The timings in Table M2.3.2 are based on the experience of running a Planning Workshop as part of the pilot testing of the guidelines in Zambia. These times exclude breaks for tea and coffee and lunch. The numbers in the second column refer to the session numbers (M2.3.4).

### Table M2.3.2: Timetable for Planning Workshop

Day 1		Registration	
		Formal opening of Workshop	15 mins
		Introduction to Planning Workshop	15 mins
		Introduction of participants	1 hour
		Expectations of participants	30 mins
		Objectives of Planning Workshop	15 mins
	1	Setting the context:	2 to 3 hours
		Presentation of Assessment Summaries	
	2	Setting Draft Programme Goal	2 hours
Day 2	3	Identification of successes	2 hours
	4	Problem identification	2 hours
	5	Problem tree analysis	3 hours
		Presentations of problem trees	2 hours
Day 3	6	Development of specific objectives and activities	3 hours
		Presentations of specific objectives and activities	1 hour 30 mins
	7	SWOT analysis of organisations	2 hours
		Presentations of SWOT analyses	1 hour 30 mins
Day 4	8	Listing of organisational issues and problems	30 mins
		Problem tree analysis of organisations	2 hours 30 mins
		Presentation of organisational problem trees	1 hour 30 mins
		Development of organisational objectives and activities	2 hours
		Presentation of organisational objectives and activities	1 hour 30 mins
Day 5	9	Formulation of broad objectives	2 hours
		Presentation of broad objectives	1 hour
	10	Review of objectives and activities against draft goal	1 hour
		Review of Workshop	1 hour
		Evaluation of Workshop	One hour

It is important to allow the timetable to be flexible. Some discussions may take more time than planned, particularly if there are difficult issues to resolve. Others may take less time.

### M2.3.3 Definitions17

The goal and broad objectives to help guide the work of the programme will be set by the Planning Workshop. Under these, specific objectives and activities are defined. The activities are designed to work together to achieve the specific objectives, which in turn combine together to achieve the broad objectives. The programme structure is shown in Figure M2.3.3.

### Programme

The programme to be developed is defined as:

a coherent framework of procedures and activities for co-ordinating and regulating projects within the water and sanitation sector in a defined geographical area.

Thus, it is more than implementation. It should be setting the procedures, regulations and standards for work within the sector, as well as managing the project and agencies which are working in the sector.

### Goal

The goal is the broad long-term aim set for the programme. It is an overarching statement that encompasses and synthesises the set of circumstances that the programme should contribute to achieving. The goal should be based on:

- > the overall purpose of the water and sanitation sector;
- > the goals and objectives of the government, communities and other agencies involved;
- > the sector agencies' policies, principles and values; and
- > what the sector agencies can realistically hope to achieve in addressing the problem.

### Broad objectives

The broad objectives are clear statements of what is to be achieved in each component of the programme. They should also describe the desired impact of the programme in that component. They should be specific, time-bound and measurable, and contribute to achieving the goal.

### Specific objectives

These divide the broad objectives into the outputs necessary to achieve the broad objective. They are the result of carrying out activities, so should be defined in terms of product rather than action. The term 'specific objective' is used rather than 'output' to avoid confusion with other outputs of the planning process.

### Activities

These are the actions that are carried out to produce the specific objectives. In terms of this programme, they can include projects for implementation. (Such projects would have their own goal, objectives and activities).

<sup>17</sup> This is adapted from Gosling, L. and Edwards, M. (1995), and Gajanayake, S. and Gajanayake, J. (1993).



### Defining and using objectives

To be useful for programme planning, development, management and evaluation, objectives should be **SMART**:

S pecific	What is the intended outcome?
M easurable	By how much, or how many? (quality and/or quantity)
A chievable	Is it feasible, possible with the resources and organisations?
R elevant	Is it compatible with the overall goal, the needs expressed?
T ime-bound	By when will it be accomplished?

The success of the programme depends on how well the goal and objectives are formulated. When objectives are clear, it is possible to clarify the ultimate purpose of all the activities of a programme. Progress can be checked to see whether the programme is achieving its goal or being effective. In practice, the process of clarifying objectives can be difficult because there are often different levels of objectives, from the specific to the more general.

Objectives may need to be modified over time if they are to remain relevant in changing circumstances. Sometimes during the course of a programme it becomes clear that the original objectives are no longer relevant. Lessons learned from programme experience can show what the new objectives should be. Full records should be kept justifying the reasons for any changes to the original objectives.

### Assumptions

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Assumptions are external factors that may be necessary for the achievement of the programme goal, but over which the programme has no control. If the factor is within the control of the programme, then it should not be assumed.



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### M2.3.4 Planning Workshop sessions

#### Opening and introductions

For any workshop, there are usually a few preliminary sessions for opening, introductions and expectations.

### Formal opening

Since the workshop is part of an official process, it may be necessary and useful to have a senior government official, such as a minister or regional governor, to make a few introductory remarks and formally open the workshop. This helps to give official recognition to the Planning Workshop.

#### Introduction to the Workshop

The facilitator should introduce the workshop and welcome the participants. This can include an outline of the process of the workshop.

#### Introduction of the participants

It is essential for all the participants to get to know each other as soon as possible. Since they are going to be working together closely in the following days, the introductions should extend beyond the formal 'name and job title'. There are a number of games and exercises for this in training manuals, so the facilitator may already have one that works well. Alternatively, one that worked well in the pilot test in Zambia was as follows:

Everybody (participants, facilitators, observers) should have a sheet of paper (A4 size, 21 by 30cm) and a marker pen.

- 1. Divide the paper into four rectangles with a fifth rectangle in the middle of the paper, as shown in the diagram below.
- 2. In the middle rectangle write your name.
- 3. In the top left rectangle, draw a picture of your family.
- In the top right rectangle, draw a picture representing your feelings at this moment (e.g. excited, anxious, happy).
- 5. In the bottom left rectangle, draw a picture representing your job or work.
- 6. In the bottom right rectangle, draw a picture of one of your interests.
- 7. Ask each person in turn to introduce himself/herself by describing the drawings on his/her sheet.



Expectations of participants

Objectives of the Workshop The facilitator should explain the purpose and objectives of the workshop.

### Session 1: Assessment summary

It is important that everybody at the workshop starts by sharing a common understanding of the context in which the programme will operate. The knowledge and analysis of this context has been assembled during the information gathering, consultations, surveys, data processing and analysis. This needs to be shared with the participants in order to give all of them the broad picture of the area, an understanding of the subjects outside their own discipline or responsibility, and the issues and problems with which they are dealing.

### Preparation

- Each member of the Planning Team who has been carrying out the overview assessment should prepare a summary presentation of the information gathered. The summaries should:
  - > focus on the key points only
  - > explain the issues and realities in the programme area;
- be presented on flipchart paper so that the group can refer to them during the course of the workshop; and
- > be prepared as handouts for the participants' later reference.
- 2. One representative from the Village Needs Assessment Workshop in each district should already have a presentation prepared from that Workshop. This should be three sheets of flipchart paper showing the sequence of the current situation, the actions that need to be done leading to the desired future situation:
  - > the common problem cards on the first sheet;
  - > the actions on the second sheet;
- > and the future situations in the third sheet.

### Process

- 1. Explain the purpose of the session.
- Ask each member of the Planning Team to present on flipcharts his/her summary of the information and analyses in his her specialist area.
- 3. Explain the purpose and process of the Village Needs Assessment Workshop.
- Ask each village representative to make his/her presentation of the common issues from the community's point of view for his/her district.
- 5. As a whole group, discuss the information presented:
- > Is the information clear?
- > Are there any important pieces of information not provided? If so, add them.
- Does the information provide a picture of the sector that can be used for the overall planning? (Remember that this is only to set the background for subsequent discussions. If more detailed information is needed for a particular issue, it can be added later).
- 6. When points have been clarified and information added as necessary, stick the flipcharts around the room for reference during subsequent discussions.

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### Session 2: Setting a draft programme goal

The goals for the water and sanitation sector are often set by central government, in policies, fiveyear plans or other statements. These can be in outline form or very generalised. In order to create a sense of 'ownership' of the programme to be designed, it is important to formulate the programme's own goal, within the terms set by the government's general aims.

#### Preparation

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- 1. Make copies of Figure M2.3.3 as handouts and reproduce it on a flipchart.
- Write the sentence: 'In [programme period, e.g. 5 or 10] years time, I would expect to see ...' on a flipchart.
- 3. Write out this list of key words on a flipchart. Add any additional words that may be considered important in the context of the programme region.

### Overall goal: Key words

Target group	š	Sustainable
Location	š	Reliable
Access	š	Benefits (economic, social, institutional)
Health (hygiene)	š	Affordable
Water supply	š	Equitable
Sanitation	š	Living conditions

4. From the information gathering and analysis of Policies, plans and procedures (G1.3.3, G2.2.1), write on a flipchart the overall development goal for rural areas and the relevant goal statements covering the water and sanitation sector. Also include the relevant part of the Terms of Reference for designing this Programme Preparation Project.

### Process

- Explain the concept and definitions of Goal, Broad objective, Specific objective and Activity. Using the flipchart of Figure M2.3.3, explain the hierarchy, and how activities together achieve the specific objective, specific objectives combine together to achieve the broad objective, and broad objectives together lead to achievement of the goal. Emphasise that this session is to make a draft goal.
- 2. Ask the participants to review the flipcharts with the assessment summaries from Session 1 and the general situation of the water and sanitation sector in the region.
- M2
- 3. Divide the participants into groups of five or six people each. Considering the current situation, ask each group to discuss what changes they would expect to see at the end of the programme period. Describe these changes by completing the sentence:

In [programme period, e.g. 5 or 10] years time, we would expect to see .....

They should write this on a white card. The description of changes should be expressed both qualitatively and quantitatively.

- 4. Bring all the groups together again. Stick the statements up:
- > Clarify any misunderstandings of the statements.
- > Place similar statements together.

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- 5. Put up the goal statements from the government policies and plans and the Terms of Reference (from Preparation Step 4). Ask the whole group to examine and discuss each of the statements:
  - > Is each of the statements clear?
  - > Can they be interpreted in different ways?
  - > Are the statements consistent with each other?
  - > Do the statements seem appropriate for the programme region?
- Compare the official policy and goal statements with the planning team's own expected changes as a result of the programme:
  - > Do the statements reflect the expected changes that the participants have just described?
  - > What are the common themes between them?
  - > What are the differences?
- 7. Display the list of key words (from Preparation Step 3). Explain that these are key words which are usually incorporated in a goal for a water and sanitation sector programme. Ask the participants if there are any other words that could be added to the list. If so, add them.
- 8. Discuss the key words in relation to the policy and goal statements:
- Are any of the key words contained in the goal statements and their own expected changes, or could they be interpreted in the statements? If so, highlight them.
- > Should any of the key words be used in defining a goal for the programme?
- 9. Based on the policy statements and goals, and using the key words and team members' own contributions as appropriate, formulate a draft programme goal. Note, this is the first draft. It can be changed later after more detailed analysis of the sector, so do not spend too much time making it perfect now.
- 10. Write the draft goal on a flipchart and display it during the remainder of the planning workshop.

### Session 3: Identification of successes

It is easy to become too preoccupied with problems and failures in past and ongoing projects, with the result that successes and things that work are overlooked. These successes need to be identified for incorporation into the new programme.

### Preparation

Write as a heading on a flipchart: 'Successes'

### Process

- 1. Explain the purpose of the exercise.
- 2. Form small groups of 5 to 10 people each. The groups should bring together people from the same level or background, e.g. groups of district staff, groups of provincial staff, groups of village representatives.
- Ask each group to review past and ongoing projects and work and identify activities and outputs that have worked well and proved to be successful. The group should write these success on flipcharts.
- 4. Reform into the whole group. Ask each sub-group in turn to present its flipchart of successes.
- 5. Review all the successes and highlight any common themes. Ask the whole group if there are any other successes that may have been missed.
- 6. Put the flipcharts on the wall for display during the rest of the workshop

### Note to facilitator:

It may be useful later, if people become depressed by the problem identification and analysis sessions, to refer back to these successes.

### Session 4: Problem identification18

From the information-gathering exercise and the Village Needs Assessment Workshops, a number of different problems will have been identified. There may also be a number of other problems that the participants know from their experience of working in the sector. The first stage of the analysis is a method for identifying, recording and organising all the possible problems and issues.

The method asks people to write individual problems on cards. This means that everybody has the chance to participate on an equal basis. When analysing the cards, each should be treated equally — every problem card, and the way the problem is expressed, is valid. No cards should be rejected or ignored.

### Preparation

- 1. Write out a list of card colours and subject areas on a flipchart. Suggestions for these are:
  - water resource green
- water supply
   blue
- > hygiene/health yellow
- > sanitation pink
- 2. Write out the bullet points in Process Step 3 on a flipchart, with examples.

### Process

- 1. Explain the purpose of the exercise.
- Issue the cards measuring about 10 by 20cm, with different colours for different subject areas. Explain the subject areas, in particular the difference between *water resource* and *water supply*:

water resource is concerned with the source of the water — the groundwater, the rivers, streams and lakes:

*water supply* is concerned with the abstraction and delivery of water from the source — the wells, pumps, pipes, tanks, dams.

- 3. Ask participants, working individually, to write problems they know on the cards (one problem per card to allow it to be moved and adjusted to show possible relationships with other problems). Participants can define problems in any component area, not just their specialist subject area.
- > Write only one problem or issue on each card.
- > Write in large block letters, and write only three lines on a card (so that everyone in the group can read it from a distance).
- > Problems should be written on the appropriate card colour.
- Problems should be expressed in a negative form, e.g. Public information campaigns are not effective.
- Summarise the problem in a brief statement on a card. (It will be discussed by the whole group, so the brief statement should capture the main idea).
- > Specify in the problem statement, if applicable, the people, group or organisation affected or concerned by the problem.
- 4. When everybody has finished, collect the cards and group them by colour/subject area.



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- 5. Ask the whole group to review the list of problems in each category:
- > Take each problem card in turn and pin or stick it to boards or the walls. As each card is put up, ensure that everybody understands the problem or issue it addresses. If not, ask the person who wrote the card to clarify what s/he meant, and modify the card to express this.
- > If more than one problem is expressed on one card, separate them and write new cards.
- > Determine if there are other main problems that have not been identified. Add these as necessary.

### Session 5: Problem tree analysis<sup>19</sup>

The purpose of this session is to define the cause and effect relationships between all the problems by building a problem tree. This process may take some time, at least half a day and maybe a full day, depending on the number of problems and the complexity of the analysis. An example of a problem tree from the Pilot Study in Zambia is given in Figure M2.3.4. Note that some of the problems in the example are not expressed very clearly.

### Preparation

- 1. Write the bullet points in Process Step 4 on a flipchart.
- 2. Draw a diagram of a problem tree on a flipchart.
- 3. Write out some examples of cause-and-effect relationships on a flipchart.

### Process

- Explain problem tree analysis and cause-effect relationships, using appropriate examples as necessary.
- 2. Ask participants to divide into four groups according to interest in each subject area.
- 3. Put cards which address the same or similar problems together. Discuss these common cards together to make sure that they are looking at the same problem they may be expressing the problem slightly differently, or the problem itself may be slightly different. When all the cards have been clarified and similar problems placed together, go to the next step.
- 4. Work out the 'cause' and 'effect' relationships between the problems. A problem can be both a cause and an effect, depending on its relationship to other problems:
  - Which problem is a cause of another problem?
  - > Which problem is the result (effect) of another problem?
  - > Some problems may have more than one cause.
  - > Some problems may result in more than one effect.
  - A problem may be caused by another problem, and in turn result in a third problem, i.e. there may be a chain of causes and effects.

Move the cards to show these relationships working upwards, so that an effect is located above a cause.

- 5. Try to define the core problem the single problem into which several causes flow, and out of which a number of effects flow. The resulting arrangement should form a 'tree', with several 'roots' (causes), a 'trunk' (the core problem), and several 'branches' (effects).
- 6. Add new cards with additional problems if the one written has underlying causes that have not been expressed. Use the 'but why' technique to explore problems to help with this process. (Ask the question 'but why' of the problem to reveal the underlying problem, write this on a new card and add it to the analysis. If the new problem does not expose the real issue ask 'but why' of the new problem, adding the answer as before. Repeat until the problem is fully explored).
- When all the trees have been completed, reform the whole group. Each subject group should present its problem tree to the whole group.

<sup>19</sup> This session is adapted from the process described in Hamilton, D. and Gaertner, U. (1991).



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- 8. Identify any cross-cutting problems, or problems which link to other subject areas.
- Are there problems common to all or some of the subjects?
- Write any such problems or linkages on white cards, in the same way as before, and add them to the trees.
- 9. Review the problem analysis and decide whether sufficient information has been generated. Does the analysis get to the heart of the problems in the water and sanitation sector?
  - > If yes, go on to the next step.
  - If no, reconsider the areas that are weak, or do not adequately cover the problems (see Step 5) and add cards if necessary.
- 10. When the analysis has been completed, glue the cards onto a large sheet of paper to make a permanent record for display during the rest of the workshop.
- Make a note of any institutional problems for later use during the SWOT analysis of the organisations.

Note: From experience, the analysis of the water supply component is easier if 'coverage and new construction' is analysed separately from 'operation and maintenance'. At the beginning of the analysis, the water supply cards should be sorted into these two categories, and two problem trees created.



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Session 6: Conversion of problems to objectives and activities<sup>20</sup> In this session the process of developing solutions to the problems starts. The hierarchy or tree of problems is transformed into a new hierarchy or tree of objectives and activities. Then these objectives and activities and their relationships are analysed to ensure they fit together.

### Preparation

- 1. Write out the instructions in Process Steps 2, 3, 4 and 6 on flipchart paper, or as a handout.
- 2. Write some examples of changes on the flipchart.

### Process

- 1. Explain the purpose of the session and the following instructions.
- Working in the same groups as Session 5, rewrite the problems in the problem trees to make them into objectives or activities:
- > Write new cards and make a new tree, but following the relationships in the problem tree.
- Problems, which were written as negative conditions, are rephrased to become objectives/ activities — positive statements of a desired future condition to be achieved or action to achieve a desired future condition.
- If possible, write each objective/activity so that it is SMART (M2.3.3) (Note to facilitator: this is not essential — the objectives and activities will be made SMART as part of the subsequent design process.)
- > Start at the top of the tree and work downwards.
- > The core problem is transformed into an objective/activity like the others and no longer emphasised.
- 3. When rewording the problems into objectives/activities check:
  - Any difficulty in rewording may show that the problem has not been sufficiently analysed. Discuss the problem again to decide how it can be most clearly stated.
  - If rewording leads to impractical or ethically questionable statements, write a replacement objective that is realistic.
  - > If it is not possible to write an objective/activity for a problem, highlight the problem and transfer it to the objective/activity tree unchanged.
- 4. Ensure that 'cause-effect' relationships are now 'means-end' relationships:
  - > If in the problem tree, Problem 'A' causes Effect 'B', then in the objective tree, Means 'A' is required in order to achieve End 'B'.
  - Every cause-effect relationship does not automatically become a mean-end relationship. It may be necessary to add additional objectives/activities to make a clear relationship.
  - > Check to see that the objective/activity set at one level is sufficient to achieve the objective/ activity at the next higher level (working upwards on the tree), so that 'by doing this you will achieve that'.
- From Session 3 'Identification of successes', write cards for successful activities and add them to the trees where appropriate.

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- 6. Revisit each of the problems that was difficult to express as an objective or activity:
  - > Does it get to the root of the problem?
- > How does it fit into the objectives tree (causes-effect relationships)?
- > Is it covered by another objective/activity?
- > Is it a combination of several activities that are covered by another objective?
- > Try again to formulate it as an objective/activity.
- 7. When the objectives/activities have been formulated and the relationships between them established (the objectives 'tree'), each group should present its objectives tree to the whole group. Make any adjustments that may be necessary.

8. Glue the cards onto the large sheet of paper so that there is a permanent record.

<sup>20</sup> This section is adapted from the process described in Hamilton, D., and Gaertner, U. (1991).

Session 7: SWOT analysis of organisations<sup>21</sup>

This session is an analysis of the organisations and the context in which they work. It is based on the SWOT analysis method, which is a tool for self-assessment by the people in the organisation. The acronym that SWOT stands for is shown in Table M2.3.4a.

### Table M2.3.4a: SWOT abreviation

S trengths	Internal to organisation	
W eaknesses		
0 pportunities	External to organisation	
T hreats		

This analysis should establish the capacity of each organisation in the sector, and the areas where strengthening is needed, together with the possible courses of action which are available or can be created. It should lead to the objectives for strengthening the various organisations to enable them to achieve the objectives made in Step 3.

Preparation 1. Write out Table M2.3.4a and Table M2.3.4b on a flipchart.

### Table M2.3.4b: SWOT analysis

5	Strengths	š	things which the organisation is good at
		š	skills and competencies of the organisation
		š	achievements that the organisation can be proud of - projects, activities
		š	institutional structures and policies
		š	things that contributed to the achievement of the successes defined in Session 3
5	Weaknesses	š	things which the organisation is poor at
		š'	areas where the organisation is not competent or does not have the skills and/or capacity
		š	activities or projects which have not worked
		š	institutional structures and policies that inhibit the organisation in responding to challenges and needs
		š	things that will make it difficult to achieve the objectives defined in Session 6.
5.	Opportunities	š	ideas on how to overcome weaknesses and build on strengths
		š	events or circumstances outside the organisation which could be used to advantage
		š	political, social and financial possibilities
		š'	external factors positively affecting the environment in which the organisation is working
5	Threats	š	constraints that exist which reduce the range of opportunities for change
		š'	constraints on achieving a programme goal
		š	external risks, e.g. natural events, political risks, economic risks, etc.
		š	events or circumstances outside the organisation which could handicap or prevent change
		š	external factors negatively affecting the environment in which the organisation is working

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#### Process

- List all the organisations involved in the sector (the government departments, NGOs, donors, community organisations, etc.)(from M1.3.2).
- 2. Divide into smaller groups to address each organisation or set of organisations. The groups should be composed of the people who have the best knowledge of the organisation. Carry out the following steps for each organisation (or groups of organisations that have common purposes, e.g. NGOs, private sector) in turn, and for the communities by the community representatives.
- Brainstorm under each of the headings. For each heading the group should define, discuss and record as many factors as possible.
- 4. All the groups come back together again, and each group presents its analysis. Additional points can be added by the whole group.
- 5. Divide into small groups again. Explore the relationships between and within the various organisations, both horizontally and vertically, i.e. between organisations at the same level and organisations at central, regional, district and village levels. List any issues or problems of co-ordination or collaboration.
- 6. All the groups come back together again, and each group presents its list to the whole group for comments and discussion. Make any adjustments necessary.
- 7. Record all the analyses.

<sup>21</sup> This session is based on the process outlined in Gosling, L. and Edwards, W.M., 1995

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Session 8: Setting objectives for institutional strengthening The SWOT analyses are likely to have revealed various issues and problems within and possibly between the organisations in the sector. These will need to be addressed in order to strengthen the various organisations so they can manage and implement the programme successfully. Problems that are outside the scope of the programme should be separated and recorded as risks.

#### Preparation

1. Prepare white cards.

### Process

- 1. Ask the participants to work in the same groups that produced each SWOT analysis.
- 2. From the SWOT analyses that each group carried out, ask the same groups to write on cards the issues and problems that need to be tackled for each organisation (or set of organisations) to achieve the objectives set in Session 6. Include any organisational or institutional problems relevant to the organisation/s identified in Sessions 4 and 5.
- 3. Prepare a problem tree analysis as described in Session 5.
- 4. Bring the groups together and ask each group to present its problem trees. As a whole group, review the problem trees.
- Are there any other problems that have not been identified, or problems between organisations, such as co-ordination? If so, add these to the problem trees in the appropriate place.
- Are there any problems that are outside the scope of the organisation to influence or control? If so, separate them and record them as risks to the programme.
- 5. In small groups again, convert the problems into objectives and activities, as described in Session 6.
- 6. Bring the groups together and again, ask each group to present its objectives trees. As a whole group, review the output of each group.
- 7. Record the outputs.

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### Session 9: Formulating the broad objectives

For each of the programme areas or components, the participants have developed objectives trees. Now they should formulate a broad objective for each of these components. This should address and sum up all the detailed objectives from Sessions 6 and 8 (which were transformed from the problems and SWOT analysis). A broad objective may already have been expressed as the objective at the top of the objectives tree in each subject area. The wording should now be reformulated to provide a clear and precise objective that contributes to the achievement of the goal. It should be SMART as described in Definitions (M2.3.3)

It is worth introducing or reminding the participants of the concept of SMART at this stage because the programme that they will be implementing will have SMART objectives.

### Preparation

- 1. Prepare an explanation of SMART objectives on a flipchart, as given in Handout for Session 9.
- 2. The Handout for Session 9 also provides a list of questions that may be helpful with the reformulation. These can be written out on flipcharts for explanation, as well as making copies of the Handout for participants to refer to during group work.
- 3. Write out some examples of broad objectives on flipcharts.

### Process

- 1. Explain the concept of SMART objectives and the process using the questions in the table.
- Divide into the subject groups which prepared the problem trees and the objectives trees. An
  additional group should be formed to formulate a broad objective for institutional
  strengthening.
- Ask each group to formulate a broad objective for the component of the programme on which it is working. This should be done by using the questions in the Handout.
- 4. When each broad objective has been formulated and written on a flipchart, reform the whole group. Ask each subject group to present its broad objective to the whole group for comments and discussion. Make any adjustments in the formulation if considered necessary.

### Notes<sup>22</sup>

The size, shape and meaning of an objectives tree can vary enormously. There are three possible levels:

- > At the top of each tree will be the overall statement of the objectives. This sums up the values and intent of the programme in the component. This is the **broad objective**.
- At the bottom of the tree, and probably greatest in number, are the activities.
- In between are the objectives that express the various streams of thinking contained within the broad objective. These are the **specific objectives**. They express the common theme that binds together the activities.
- > The trees produced in Session 6 come together to form one overall tree, at the top of which is the **overall goal**.

22 These notes are adapted fromGosling, L. and Edwards, W.M., 1995

### Handout for Session 9

Formulating the broad objectives

To be useful for programme planning, development, management and evaluation, the broad objectives should be made SMART:

S pecific	What is the intended outcome?
M easurable	By how much, or how many? (quality and/or quantity)
A chievable	Is it feasible, possible with the resources and organisations?
R elevant	Is it compatible with the overall goal, the needs expressed?
T ime-bound	By when will it be accomplished?

To help with the formulation of broad objectives for each subject area of the programme (water supply, water resources management, hygiene education, sanitation, institutional strengthening) the questions in following table may be helpful.

	Que	stions	Information needed			To make objective:	
1.	š	What is the programme trying to	š	provision, promotion or facilitation?	š	Specific	
		achieve? What are the benefits?	š	procedures, regulations, control			
2.	š	Who are the facilities or other outputs of the component for?	š	population figures, including breakdown by poverty/wealth, and particular ethnic groups, particular target groups	š	Specific	
З.	š	How many facilities are to be	š	coverage figures for water supply and sanitation	š	Measurable	
		provided?		facilities (latrines)	š	Relevant	
	š	What is the coverage target?	š	demand from population of area			
	š	Can the outputs be quantified?					
4.	š	Where are the facilities to be	š	area to be covered - whole region or specific	š	Specific	
		located?		part?	š	Relevant	
	š	What area do the outputs cover?					
5.	š	Who will facilitate and/or	š	government departments	š	Specific	
		implement the programme components?	š	community groups	š	Achievable	
	š'	Who will manage/control/	š	NGOs			
		supervise the programme?	š	private sector			
6.	š	What resources are needed?	š	budget allocations	š	Achievable	
	š	What resources are available?	š	staffing			
			š	vehicles and equipment			
7.	š	How long will it take?	š	the planning period	š	Time-bound	
			š	government targets			
			š	resources available			

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### Session 10: Review of goal and objectives

Finally, it is necessary to review all the outputs from the workshop to see whether they meet the draft programme goal that was set at the beginning, or whether the draft goal is still appropriate for the needs, problems and objectives which have been identified during the workshop.

### Preparation

- 1. Write out one copy of the draft programme goal on a flipchart for each subject group.
- 2. Write out the two questions posed in Process Step 1.

### Process

- Explain the purpose of the session. Ask the participants to consider these two questions, relating them to each subject area:
  - > Does the broad objective achieve the draft goal?
- Does the broad objective meet the needs, and problems identified during the Planning Workshop and the Village Needs Assessment Workshops?
- Divide into the subject groups to consider these questions in relation to their particular broad objective. They should prepare a brief explanation of their answers to these questions, and recommend whether to adopt the goal and broad objective or to make some adjustments to the draft goal or objectives.
- 3. Reform the whole group. Ask each group in turn to present its explanation and recommendations, followed by comments and discussion from the whole group.
- 4. Ask the whole group to consider whether, taken together, the broad objectives will achieve the programme goal. Are there any other things that need to be done to achieve the goal? Is anything missing?
- Ask the whole group to endorse the recommendations or make adjustments as necessary. Confirm the programme goal and broad objectives.

Session 11: Workshop Review and Evaluation In the final session of the workshop, there are a number of points to cover:

- > a summary review of the workshop process and outputs
- > an explanation about the planning process after the workshop:
- Planning Workshop Review and Report (G2.4 and M2.4)
- Stage 3: Programme Design
- > an evaluation of the workshop by the participants
- > if required, a formal closing by a government official

### Preparation

- 1. Prepare a summary of the previous sessions covering:
- The overall process
- Outputs and agreements
- > Recommendations of the programme
- 2. Prepare a presentation on the subsequent activities of the Preparation Project, referring to Flowchart 2.4: Planning Workshop Review and Report (G2.4), and Flowchart of Stage 3: Programme Design (G3).
- Prepare a suitable evaluation tool for the workshop, such as the participatory method for groupwork described on the next page. To supplement this, individual participants can be asked to complete a written form.
- Decide on the closing arrangements, and arrange for an appropriate government official, if required.

#### Process

- 1. Present the summary of the Planning Workshop.
- 2. Present and explain the remaining stages in the planning process.
- 3. Conduct an evaluation of the workshop.
- 4. Conduct the closing arrangements.

#### SECTION B: PROJECT TO DEVELOP PROGRAMN

#### Group Evaluation Method

- Prepare a flipchart as shown in Figure M2.3.6 for each group that worked on the programme components.
- Ask each group to write in three things they considered good about the Planning Workshop, three things they thought were bad, and three recommendations for changes. Ask them to concentrate on the process and content of the workshop.
- Ask each member of the group to tick whether they agree or disagree with each point in the appropriate column.
- 4. The participants should then look at each of the other groups' flipcharts and add their ticks to the 'agree' or 'disagree' column on each point.

Figure M2.3.6B: Group evaluation of the Planning Workshop

	Agree	Disagree
Three things that were good about the workshop:		
1.		
2.		
3.		
Three things that were bad about the workshop:		
1.		
2.		
3.		
Three recommendations for changes:		
1.		
0		
2.		
3		
Other comments:		

M2.3.5 Workshop Report A Report of the Planning Workshop should be prepared as a record of the process and outputs of the Workshop. The contents of this report should include:

1. Opening remarks

- 2. Introduction and background to the Planning Workshop
- 3. Context for the programme
- > written reports of presentations by Core Team
- 4. The Programme Goal
- 5. Success identified
- 6. The problem trees
- 7. Specific objectives and activities
- 8. SWOT analyses of the organisations

9. Organisational problem trees

10.Organisational specific objectives and activities trees

11.Broad objectives

12. Appendices

- > Timetable of workshop process
- > List of participants
- > Evaluation of workshop

This report is different from the Planning Workshop Review and Report in the next section. It is simply a record of the proceedings of the Planning Workshop.

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### M2.4 Planning Workshop Review and Report

#### M2.4.1 Workshop Review Process

The next step is to combine the workshop outputs, which are based on the practical problems and issues in the programme area as analysed by the people of the area, with the professional specialist's views of the needs for each component.

This process should be carried out with some care. The output from the workshop is in a sense 'owned' by the participants. Based on their own knowledge, experience and hard work, they have produced what they consider to be the solutions to their problems and the basis for a programme. If done sensitively, it will probably be acceptable to add new material to the output, but not to delete anything or dismiss ideas.

There is no clear way to do this process. It needs a combination of knowledge, experience and intuition. It can be approached from either end: starting from the workshop outputs and seeing what needs to be added; or starting afresh and deciding what is needed, and then comparing this with the workshop output and adapting the result to accommodate both. The steps suggested here take the former approach.

Each specialist on the team should carry out the following steps for her/his subject areas. Some people should also carry out these steps for the institutional outputs.

### 1. Review the output

- Look at the objectives/activities tree.
- > Are each of the objectives/activities clearly expressed?
- > If no, what is the objective/activity meant to be? To help with this, look back to the problem tree to see the problem that the workshop participants were trying to address.
- > If necessary, rephrase the objective/activity, but try to remain sensitive to the original.

#### 2. Allocate the output to specific objectives and activities

- $\rightarrow$  Refer to the Master Lists (G2.4.2/3/4/5/6).
- Try to fit each objective/activity to a specific objective or activity in the relevant Master List.
- > Use the coding from the Master List to provide a reference for the objective/activity.

### 3. Analyse the Programme policy decisions (G2.4.7 and M2.4.7)

- Analyse the programme policy decisions using discussion of the issues provided in the Guidelines (G2.4.7) and the key questions provided in the Manual (M2.4.7).
- > Make a policy decision on the issue.
- Refer to the specific objectives and activities and the appropriate Master List to see if additional activities are necessary as a result of the decision, and add these if necessary.

### 4. Organise the specific objectives and activities

- > Refer to the Objectives trees in the Manual (M2.4.8).
- Arrange the complete list of selected specific objectives and activities in the same layout as the Manual objectives trees.

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### 5. Add other specific objectives and activities

- Compare specific objectives and activities in this tree with all the specific objectives and activities in the Manual objectives tree.
- Are there any gaps?

Ø

- > From the Master List, the Manual objectives tree, and other relevant information or
- experience, add other specific objectives and/or activities that are considered necessary for the programme area.

M2.4.7 Key questions for programme policy decisions

Ownership

Table M2.4.7a: Key questions for programme policy on ownership

Programme policy decision:	Should the programme allow communities to legally own the water supply systems				
Reasons why decision is needed	š for the legal agreements with villages				
	<ul> <li>š the way the community participation process is planned may need to take into account the legal status of water supplies</li> </ul>				
	$\tilde{s}^{'}$ the way the operation and maintenance system is planned will need to take into account the legal status of water supplies				
Who should make and/or be	š government's legal affairs department				
involved in decision?	š Programme Manager				
	š Programme Team				
	š national government				
	š regional government				
	š ministry responsible for water resources				
Factors to consider	Legal ownership is a key issue that has implications for many aspects of the water supply and sanitation programme. If people genuinely own their own water supply system and know this from the planning stage, they are more likely to look after it properly.				
Other decisions affected	š implementation strategy				
	š maintenance system				
	<ul> <li>s selection criteria and community agreements</li> </ul>				

Questions to assist decision	Reasons for question/information	Information needed for decision		
Do the present government regulations allow communities to legally own the water supply systems?	<ul> <li>š' to clarify and understand the current legal status</li> </ul>	š' relevant laws		
Is legal ownership retained by the state?	<ul> <li>š to clarify and understand the current legal status</li> </ul>	š' relevant laws		
What are the legal rights over the water resource or source?	š water rights may be different from ownership of the water supply infrastructure	š' water rights law š' local by-laws š' traditional water rights		
As part of the programme, is it possible to advocate for change to allow legal ownership to be	š If legal ownership is currently retained by the state, is this open to change in the interests of the long-term	<ul> <li>s opinions of senior government officials</li> <li>and opinions of district, regional and</li> </ul>		
vested in communities?	sustainability of rural water supplies nationally?	<ul> <li>s opinions of district, regional and national politicians</li> <li>s community demand for ownership</li> </ul>		

### Implementation strategy

Table M2.4.7b: Key questions for programme policy on implementation strategy

Programme policy decision:	Should communities manage the construct	ction of their water supply facilities?			
Reasons why decision is needed	$\check{s}^{\cdot}$ Community management of construction has significant benefits for sustainability and other development projects.				
	S This decision has major implications for delegation of decision-making to the con pace of implementation and staff resour	the way the programme is set up, with mmunity, training and capacity building, the rces.			
Who should make and/or be	š government officials at appropriate level	s			
involved in decision?	š Programme Manager				
	š Programme Team				
	š community Representatives				
Factors to consider	Community management is significantly more materials. Community management should e and strengthen people's commitment and ab maintenance of the water systems. It also pr community development projects. To achieve serious commitment from the government of village management committees.	than the provision of free labour and loca nhance people's 'ownership' of the project ility to manage the operation and ovides good experience for managing other real community management requires a fices, including delegation of authority to			
Other decisions affected	š construction targets				
	s' pace of implementation				
	š' staff resources				
	š' staff abilities and training				
	š' training for communities				
	š type of maintenance system				
Questions to assist decision	Reasons for question/information	Information needed for decision			
Do communities have the potential to manage their own	š To assess whether, given suitable training and support, the communities can manage projects.	š existing community structures and leadership			
projects?		<ul> <li>š traditional community activities and skills</li> </ul>			
		<ul> <li>š management of existing water resources</li> </ul>			
		š' any communities with experience of project management in other sectors (forestry, primary health care, agriculture, etc.)			
		<ul> <li>š other skills (e.g. accounting, construction)</li> </ul>			
Do government regulations allow delegation of management	<ul> <li>š to know what aspects of management can be delegated</li> </ul>	š government regulations			
decisions to communities, including financial management?	$\tilde{s}^{\prime}$ to advocate for change in regulations				

### Maintenance

Table M2.4.7c: Key questions for programme policy on maintenance

Programme policy decision:	What type of maintenance system should be established by the programme?
Reasons why decision is needed	S An effective, efficient and affordable maintenance system is essential for the long- term sustainability of water supply systems.
	S Maintenance is essential to protect the major investment in infrastructure and maximise the benefits.
	S External agencies – such as donors and NGOs, are often more interested in achieving construction targets, and then leave the government with the problem of maintenance.
Who should make and/or be	š officials from government departments with responsibility in the sector
involved in decision?	š finance ministry
	š Programme Manager
	š Programme Team
	š community Representatives
Factors to consider	<ul> <li>The most appropriate maintenance system depends on a range of factors (Davis and Brikke, 1995):</li> </ul>
	<ul> <li>š technology (complexity, familiarity, standardisation, spares availability, skills required)</li> </ul>
	š demography (scattered or dense population; numbers of people served)
	$\check{s}^{\cdot}$ environment (effect on water source; effect on materials and equipment)
	š accessibility (road system; remote villages)
	š cost (total cost of O&M cost per individual user; affordability; willingness to pay)
	š management (level of community organisation and cohesion; existing management structures and skills; efficiency of support agency management)
	š' general economy and level of development (inflation; stability of prices; fluctuation in incomes; availability of skills, tools and services)
	š' government policy and legal framework (government 0&M strategies; legal ownership; accountability and allocation of responsibilities)
Other decisions affected	š implementation strategy
	š community management of construction
	š community ownership
	š choices of technology and standardisation
	š training of communities and caretakers

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Table M2.4.7c: Key questions for programme policy on maintenance continued

Questions to assist decision	Reasons for question/information	Information needed for decision	
Does the existing maintenance system work?         š <sup>:</sup> This is the starting point for the whole consideration of the maintenance		š Stage 1: Survey and Stage 2: Assessment and analysis	
	system.	<ul> <li>š' problem tree analysis from Planning Workshop</li> </ul>	
Is the existing system affordable for the communities?	<ul> <li>š I people cannot afford to pay for the system, it will not be sustainable.</li> </ul>	š' socio-economic data	
Is government finance for S: If the system relies on substantial subsidy from central government or		<ul> <li>š' past and present budget allocations and receipts</li> </ul>	
maintenance system adequate and reliable?	donors, it may not be sustainable.	š forecasts of national economy	
Can the existing system be made to work or should alternatives be considered?*	š' *	š' *	
What alternative maintenance systems are feasible?*	<ul> <li>š to see if other systems could be more appropriate and affordable</li> </ul>	š' This may need a separate exercise to determine the best system*.	

\* Determination of the best maintenance system is a major exercise in its own right. Guidance on this is beyond the scope of this manual. References to support such an exercise are:

- > Colin, J., (1999)
- > Davis, J., and Brikke, F. (1995)
- > Evans, P. (1992)
- › Noppen, D. (1996)
- » Roark, P. et al. (1993)

### Cost sharing

Table M2.4.7d: Key questions for programme policy on cost sharing

Programme policy decision:	How should the programme enable all people to have access to sufficient affordable safe water supply?	
Reasons why decision is needed	š to ensure impact of programme in terms of health is maximised	
	š contributes to sustainability of programme impact	
	š to support equitable access to and distribution of resources	
Who should make and/or be	š Programme Manager	
involved in decision?	š Programme Team	
	š community Representatives	
Factors to consider	Cost sharing means the proportion of the capital cost of construction of the water supply that should be provided by the community. Generally this includes contributions in kind (provision of unskilled labour and local materials) as well as a financial contribution. If the community manages the construction of the water supply this could also be included.	
	If the level of contribution is set too high, particularly the financial contribution but also the level of labour if people do not have time to spare, then poorer communities may be excluded.	
	It may be important to achieve consistency between different support agencies.	
	For a 'demand-responsive approach', the subsidy should be set for the basic level of service. Communities wanting higher levels of service are expected to pay the full additional cost.	
Other decisions affected	š' implementation strategy	
	š ownership	
	š scheme selection criteria	
	š choices of technology	

Questions to assist decision	<b>Reasons for question/information</b>	Information needed for decision
What level of contribution can communities afford?	<ul> <li>š to ensure the poorest communities are not excluded</li> </ul>	<ul> <li>š socio-economic data</li> <li>š willingness to pay studies</li> </ul>
Does communities' ability to contribute both financially and in labour vary according to the season?	S It may be easier to raise contributions after the harvest, or during the dry season when people are not working so much in agriculture.	<ul> <li>š socio-economic data</li> <li>š seasonal calendars (from village surveys)</li> </ul>
Are local financing mechanisms available, such as micro-credit or social investment funds?	<ul> <li>Easy access to such funds may encourage the poor to demand services.</li> </ul>	<ul> <li>s existence and types of funding mechanisms available</li> </ul>

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### Subsidies

### Table M2.4.7e: Key questions for programme policy on subsidies

Programme policy decision: Should the construction cost of family latrines be subsidised? Reasons why decision is needed š' to ensure impact of programme in terms of health is maximised š' to ensure the most effective use of limited funding Who should make and/or be š' Programme Manager involved in decision? š Programme Team š' community Representatives š' representative of Ministry of Finance š policy makers from central government š' donors  $\check{s}^{\,\prime}$  . The principle of whether to subsidise or not is a difficult issue, and it needs the Factors to consider consensus of all the agencies working in sanitation - government, donors, NGOs and communities. š' The possibility of introducing innovative credit arrangements as an alternative to subsidies should be considered. š' The kind of financing strategy that will respond to consumer demand, strengthen partnerships, ensure accountability to the consumer, promote equity and fairness. š If the poorest are to be helped, the use of subsidies may be unavoidable. A number of lessons from experience are given by Environmental Health Project, 1997) to help design a subsidy strategy. š If subsidies are considered necessary, it is generally accepted that only the 'below the feet' part of latrines (i.e. the pit and the slab) should be subsidised - people are now expected to construct their own housing. The level of subsidy needs to be a balance between enabling the poorest people to afford latrines, and being affordable by government and donors. Other decisions affected š choices of technology š' implementation strategy š' hygiene promotion strategy

Questions to assist decision	Reasons for question/information	Information needed for decision	
Who is the programme trying to assist?	Š' to ensure that the decision on subsidies considers the intended beneficiaries and whether they need to be subsidised	<ul> <li>š socio-economic data</li> <li>š analysis of population in programme area</li> </ul>	
What are the preliminary costs and budgets for latrines for the individual household and as a total for the whole programme area?	<ul> <li>š' to understand the gap between costs and affordability of latrines</li> <li>s' to assess the cost implications of subsidising the total number of latrines required</li> </ul>	Š'     costs of latrine options       Š'     socio-economic data       Š'     number of households	
Are communities willing to pay for improvements?	<ul> <li>š' to understand the gap between costs and affordability of latrines</li> </ul>	š'       costs of latrine options         š'       socio-economic data         š'       willingness to pay studies	
Are local financing mechanisms, such as micro-credit or social investment funds available?	<ul> <li>easy access to such funds may encourage the poor to demand services</li> </ul>	<ul> <li>s' existence and types of funding mechanisms available</li> </ul>	

### A reference to support such an exercise is:

> Environmental Health Project (1997)

### Responsibilities of agencies

### Table M2.4.7f: Key questions for programme policy on responsibilities of agencies

Programme policy decision:	Which government departments are responsible for which components of the programme?	
Reasons why decision is needed	$\tilde{s}^{\prime}$ to ensure clear management lines for the programme $\tilde{s}^{\prime}$ to provide accountability	
Who should make and/or be involved in decision?	<ul> <li>s' relevant government officials</li> <li>s' Programme Manager</li> <li>s' Programme Team</li> </ul>	
Factors to consider	Clearly defined responsibility for the different parts of the programme is essential for efficient management of the programme. If more than one agency claims responsibility for a part, there is liable to be conflict and waste of resources. Conversely, if no agency is responsible for part of the programme, that part is unlikely to receive proper attention, to the detriment of the programme as a whole. § co-ordination	
Other decisions affected		

Questions to assist decision	Reasons for question/information	Information needed for decision	
Which government departments currently have responsibility for	<ul> <li>š to establish current responsibilities and actual or potential conflicts</li> </ul>	<ul> <li>š policies and plans of each government department</li> </ul>	
the main parts of the programme?		<ul> <li>š budget allocations of each department</li> </ul>	
Are any there any overlaps in responsibilities?	š to eradicate any inefficiencies	<ul> <li>š policies and plans of each government department</li> </ul>	
		<ul> <li>š budget allocations of each department</li> </ul>	
		<ul> <li>š working procedures of each department</li> </ul>	

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### Co-ordination

### Table M2.4.7g: Key questions for programme policy on co-ordination

Programme policy decision:	Which government department is responsible for co-ordinating the various agencies involved in the sector?	
Reasons why decision is needed	š to ensure proper and efficient organisation of the sector	
	$\check{s}^{\cdot}$ $\;$ to avoid overlaps between agencies and thus waste of resources	
	š to provide clear accountability	
	š to provide clear decision-making	
Who should make and/or be involved in decision?	$\tilde{s}^{\cdot}$ senior representatives of the government departments in the water and sanitation sector	
	š Programme Manager	
	š Programme Team	
Factors to consider	š co-ordination is essential for efficient running of the programme.	
	$\tilde{s}^{ \prime}$ co-ordination should be based on mutual respect of all the parties involved in the sector.	
Other decisions affected	š responsibilities of agencies	

Questions to assist decision	Reasons for question/information	Information needed for decision	
Is any agency currently defined as lead agency for the sector?	<ul> <li>š to establish if the role is already assigned</li> </ul>	š government policies	
Is the current co-ordinator accepted by all the agencies involved?	$\tilde{s}^{\cdot}$ to see whether there are any conflicts	š views of the different agencies at all levels — national, regional, district	
Does the defined agency have the skills and resources necessary to act as co- ordinator?	š' to ensure that the defined agency is capable of acting as co-ordinator	staff     budget allocation     communication equipment     vehicles	

### M2.4.8: Objectives trees

The objective trees in Figures M2.4.8a – e represent the Master Lists (G2.4.2-6) arranged into a hierarchy of the specific objectives leading to the broad objective for each component. They are shown in this way to assist in the ordering and logic of the planning, similar to the objective trees prepared during the Planning Workshop (M2.3 Session 6).

Starting at the bottom of the tree, the specific objectives (in solid rectangles) and their associated activities (in broken rectangles) are shown in the order in which they should be undertaken and achieved. The specific objectives higher up the tree depend on the lower ones being started first.

In some cases, specific objectives are at an equal level, showing that they are not dependent on each other in the same way. In some of the trees, there may not be a clear hierarchy, so this is shown by return arrows.

Broken arrow lines indicate a relationship between the two specific objective (and some of their activities) rather than a dependency relationship.









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Assessment and analysis

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#### SECTION B: PROJECT TO DEVELOP PROGRAMME

MANUAL: STAGE 2



The format in Table M2.4.9 can be used for making the review of the outline programme against the Terms of Reference set for the Preparation Project.

### Table M2.4.9: Review of Terms of Reference

Item	Requirement in ToR	Outline programme	Variations from ToR
Geographical area to be covered			
Tarriat drauga ta ba aguaradu			
Target groups to be covered.			
s social groups			
s etrinic groups			
s setuement sizes			
Programme components:			
s water supply			
s water management			
š' hygiene education			
š' sanitation			
š institutional strengthening			
Department responsible			
Other ministries and departments with responsibilities or involvement in the sector			
Implementing agencies			
Coverage:			
š' targets for water supply			
š' targets for sanitation			
š rehabilitation of water supplies			
Maintenance systems for water supply			
Arrangements for cost sharing:			
š' capital costs			
š' recurrent maintenance costs			
Other:			
š programme policy decisions			

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Figure M2.4.8e: Objectives tree - Institution building/strengthening and IS5.1 IS5.2 IS5.2 IS5.2 IS5 IS6.1 IS6.2 IS6.3 IS6.4 IS6 BROAD OBJECTIVE IS4.2 IS4.3 IS4.5 IS4.5 IS4.1 gar IS2.2 IS1.1 IS2.1 IS2.2 IS2.5 IS2.5 IS2.5 and IS1 Policies procedu and

Assessment and analysis

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M2.4.10 Planning Workshop Review Report

The structure of this report will depend on the outcome of the Review of the Terms of Reference (G2.4.9, M2.4.9). Most of the report can have a common format and common contents list. These would cover:

- > the process and progress of the Preparation Project
- > the outline programme design from the Planning Workshop as modified by the Workshop Review
- > the analysis of key policy decisions
- > appendices containing the written Assessment Summaries (G2.2.6)
- an appendix with the Planning Workshop Report (M2.3.5)

Then, if the Review of the ToR shows that the outline programme is in accordance with the ToR, the report would provide:

» a workplan for the Stage 3: Programme Design of the Preparation Project.

If the Review of the ToR shows a major variance between the findings and outputs of the Preparation Project and the original ToR, the report should:

- > describe and analyse the reasons for this variance; and
- > propose a change to the ToR.

Stage 3: Programme Design

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M3

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#### SECTION B: PROJECT TO DEVELOP PROGRAMN

### MANUAL: STAGE 3

### M3.1 Design of programme components

### M3.1.1 Formulation of specific objectives

**Objectives** are specific, time-bound and measurable pieces of work that contribute to achieving the goal. To be useful for programme planning, development, management and evaluation, objectives should be **SMART**:

Specific	What is the intended outcome?	
Measurable By how much, or how many? (quality and/or quantity)		
Achievable	Is it feasible, possible with the resources and organisations?	
Relevant	Is it compatible with the overall goal, the needs expressed?	
Time-bound	When will it be accomplished by?	

When objectives are clear, it is possible to clarify the ultimate purpose of all the activities of a programme. Clear objectives also enable progress to achievement to be monitored. Indicators for monitoring are an essential part of this. These are described in M3.1.3. In practice, the process of clarifying objectives can be difficult because there are often different levels of objectives, from the specific to the more general.

Objectives need to be modified if they are to remain relevant in changing circumstances. Sometimes during the course of a programme it becomes clear that the original objectives are no longer relevant. Lessons learned from programme experience can show what the new objectives should be. Full records should be kept justifying the reasons for any changes to the original objectives.

### Process

In the Planning Workshop and the Planning Workshop Review, only the broad objectives have been fully defined in SMART terms. The programme design team now has to develop the specific objectives in SMART terms.

Form M3.1.1 is intended to help with formulating the objectives. Answering the questions what, who, how much, how many and when, posed in the form should provide the information necessary to formulate the specific objective in SMART terms. The feasibility and relevance of the objective should then be checked by thinking about the questions at the bottom of the form.

To assist with this process, some of the principles and issues to consider for each programme component are described in some detail in M3.2.

### Form M3.1.1: Formulation of specific objective

	Prepared by:	
	Date:	
Component:		
Code No.:		
Title of specific objective:		

What is the intended outcome?	
Who will benefit or change?	
By how much or by how many?	
When will it be done?	

Based on the answers above, formulate the specific objective in SMART terms:

Check the specific objective statement by asking:

#### How will achievement of the specific objective be checked?

š	What are the impact indicators?	

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## M3.1.2 Design of activities

In Stage 2, a number of activities have been identified under each specific objective. Form M3.1.2 is intended to help with developing each activity in outline terms. To assist with this process, some of the principles and issues to consider for each programme component are described in some detail in M3.2.

Answering the questions posed in the form should help to clarify what the activity is about and provide enough information to prepare an outline time bar chart and an indication of resources requirements so that an outline budget can be prepared. It should not be necessary to go into detail – a summary is all that is required at this stage. The detailed planning of each activity should be developed as part of programme implementation.

A crucial question to consider is how the output of the activity will help to achieve the specific objective. This is to test the relevance and necessity of the activity. It is also useful to think about whether there are any risks associated with undertaking the activity, or whether any assumptions are being made. If risks or assumptions are identified, will it be necessary to design other activities to overcome them? Are they serious enough to call into question the feasibility of the activity, and hence the specific objective?

For the question about relationships with other activities, this should be considered for activities within the specific objective, and with activities in the other specific objectives in the same component and in other components. The intention is to identify linkages between the different parts of the programme in order to improve the integration. These linkages will also help when preparing the time bar chart.

Programme design

### Form M3.1.2: Design of activity

Component:			
Specific objective:			
Title of activity:			
Code No.:			

What activity will be undertaken?	
Who will be responsible for it?	
How long (time) will it take?	
By when does it need to be done? (relationships and dependency on other activities)	
What resources or inputs are required?	
What is the intended result or output?	
What other activities are related to this?	
How will the output help to achieve the specific objective?	
What are the process indicators?	

### M3.1.3 Indicators<sup>23</sup>

### Process indicators

Process indicators show whether the activities that were planned are actually being carried out, and carried out effectively. They are intended to show the volume, efficiency and quality of work. They need to show what is being done, and *how* it is being done. Indicators of change in external circumstances (political, economic, seasonal, etc.) that could affect the activities may also be needed.

### Impact indicators

Impact indicators are needed to assess what progress is being made towards reaching the objectives, and what impact the work has had on the different groups of people affected by the work. The impact can be positive or negative. The indicators should be able to demonstrate *changes* that reflect the impact of the piece of work in relation to its objectives. Any evaluation will rely on the impact indicators to see whether or not the programme objectives are being achieved.

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<sup>23</sup> Gosling, L., and Edwards, W. M. (1995)

#### SECTION B: PROJECT TO DEVELOP PROGRAMM

#### MANUAL: STAGE 3

### M3.2 Programme components

To assist in designing the specific objectives and activities of each component of the programme, some of the principles and issues to consider are described in M3.2.1 - M3.2.5.

The coding and numbering of the specific objectives and activities are the same as the coding in the Master Lists in G2.4.2 to G2.4.6 and the Objectives Trees in M2.4.8. After a discussion of issues at specific objective level, the points to consider for each activity under that specific objective are described.

These can be used during formulation of the objectives and activities using the Forms 3.1.3 and 3.1.4. For some of them, it may also be useful to refer back to the Programme policy decisions (G2.4.7 and M2.4.7). References are also given for further information on the particular subject.

M3.2.1 Water supply

Specific objective WS1

Community management of construction of water supply facilities This specific objective will be needed if the key programme policy decision on Implementation strategy (G2.4.7, M2.4.7) is positive.

The intention of this specific objective is that communities should be enabled to manage the construction of their own water supply facilities. The actual construction may be carried out by the community itself, by a private contractor, by a government agency, or by an NGO, but the important thing is that the community manages the process for itself.

Even if communities are not allowed to manage all parts of the process, it is important that the processes are fully transparent. In some countries government regulations may not allow project funds to be handled by a community management committee. In that case, community representatives should be allowed to observe the financial decision-making, especially procurement decisions, to establish a relationship of trust between the community and the project agency.

The separate activities to achieve this specific objective are described in WS1.1 to WS1.9.

Enabling communities to manage the construction of their own facilities means that the promoting agencies should be facilitators, rather than implementers. This may involve a major shift in the way an organisation carries out its work, a shift that may not be easy to achieve. To help with this, a process that the principal author and a colleague adopted for a project in Nepal may be useful. Each step of the process of implementing water and sanitation schemes was analysed in terms of how an implementer would do it, how a facilitator would work with communities to achieve it, and the changes needed in the organisation to move from one position to the other. A conference paper *Implementor or Facilitator?*, which includes a table defining each step in these terms, is given in Appendix B.

The time needed for the process may also be very different from previous implementation arrangements. Community processes may be slower, and the timing of activities is likely to depend on other things, particularly the seasonal nature of agriculture. The promoting agency must accept this, and allow sufficient time to enable communities to progress at their own pace.

#### SECTION B: PROJECT TO DEVELOP PROGRAM

### MANUAL: STAGE 3

#### WS1.1 Awareness building

People need to be informed of the possibility of managing the construction of their own water supply system, especially if this is a new policy. They will also need to be encouraged and given the confidence that they can do it for themselves.

This activity should include a publicity campaign about the policy. People will need to be informed about the procedures and regulations for managing construction — developing these is generally the first task of each of the activities under this specific objective.

To encourage people, the awareness-building campaign should be based on a participatory approach. Discussions should be held with a broad range of people in communities, drawing out their own interests, practices and concerns. Staff may need orientation and training in the use of participatory approaches, with a clear methodology for conducting campaign meetings.

### WS1.2 Community organisation

Community organisation for water supply is now a fairly well established procedure in most projects and programmes, but it is often unrealistically assumed that staff are competent to do this. The training of engineers and technicians is generally inadequate. Thus, this activity may need to include the development of procedures and orientation and training of staff, as well as actually organising communities.

It may be that this activity will be undertaken by many other agencies. The role of the government agency responsible for water supply may be the regulation and control of this activity. The starting point is to develop minimum standards that any organisation (NGO, private sector, or government department) must achieve when undertaking community organisation.

Above all, it is essential that this activity should not be rushed. Working with communities means working at their pace, not at the pace of the promoting organisation. Community organisation must not be cut short because of the pace at which technical construction can run.

### WS1.3 Establishment of management committee

The establishment of committees for the management of operation and maintenance is a wellestablished procedure. Committees for the management of construction are also becoming more common. These committees should also be involved in the planning and design of the community's water supply facility.

Setting up new committees may not be necessary in every community. There may already be committees for other development projects, and there are often traditional structures. It is important, however, to ensure that the latter are representative of all members of a community, and in particular that they represent the views of women.

One of the tasks within this activity is to develop the procedures for establishing committees. For this, an outline framework may be useful to enable the communities themselves to develop their own procedures.

#### WS1.4 Training for management

- WS1.5 Training for financial and accounting systems
- WS1.6 Training for technical skills

The scale of the training activities should be considered as a whole. Three courses may be needed for each of the community water systems to be constructed. Generally these courses are better if conducted on site, particularly if women are involved. It is much more difficult for them to leave family responsibilities behind in order to travel to a training course, and it may result in their exclusion from the very thing in which they should be fully involved.

### Possible options for training are:

- > to establish a special training unit within a government agency or other organisation;
- > to contract training out to a private sector organisation; and
- > to arrange for a NGO to be responsible for training.

Other tasks within these activities include designing the courses and methods of training, and providing funding and other resources.

### WS1.7 Scheme selection/prioritisation

Transparency is the key word when selecting and prioritising requests for water supply facilities. Clear procedures and rules need to be developed and publicised to all communities in languages and ways that they can understand, so that everyone is aware. This may help to avoid political interference in the process.

The procedures of selection and prioritisation then need to be conducted in a transparent way.

#### WS1.8 Technology choice

One of the decisions for communities to make is the choice of technology. Clearly the possible choices will depend on what is feasible, and that generally has to be determined by the appropriate professional as part of Activity WS2.1.

The basis of the 'demand responsive approach', which is currently being widely promoted, is that communities should choose their preferred level of service from a range of options, but would have to pay the additional capital cost for higher levels of service over a basic level of service. Underlying this is the principle that water is an economic as well as a social good (Sara *et al.*, 1998). The approach assumes that there is sufficient water to allow choice. In many countries, however, water for all uses is becoming increasingly scarce, and the choice of higher levels of service for one community that can afford to pay for it may mean insufficient water for another poorer community. If this is likely to be a problem in the area, it should be considered as part of Water Resources Management (M3.2.4).

The range of possibilities should be discussed with communities, with full information on the advantages and disadvantages of each, including details of capital and running costs, and the implications for allocation of the water resource. The people can then choose which is best for them in terms of level of service and affordability.

WS1.9 Guidelines for explaining technical, design, financial and procedural matters

All the foregoing activities involve a lot of discussion with communities, in which various things have to be explained in ways that they can understand. It may be helpful for the staff concerned to have clear guidelines, information and supporting material on how to go about this.

This will involve developing the guidelines, followed by the training of staff on how to use them.

### Specific objective WS2

Construction of water supply facilities

This specific objective covers the physical construction of the water supply facilities. At the programme level, the role of the government department responsible for rural water supplies is to ensure that water supplies are constructed according to the standards and quality required. The actual construction can be implemented by different organisations: the community itself, private contractors, NGOs or by a government department or agency (including the responsible department). It can be done in different ways: community self-help, direct labour, or contract.

The important thing about this specific objective is that the various activities are co-ordinated to achieve the coverage targets set for the programme. The activities also need to be co-ordinated with other aspects of the programme, especially the community organisation. Special care is needed, both in planning and implementation, to make this specific objective work together with the other objectives, particularly the community organisation, hygiene promotion and institutional strengthening. Each has different rates of implementation and different types of indicators, the easiest to measure being the construction targets for provision of water supplies. Since these are the easiest to measure, and usually account for most of the expenditure, there is a tendency and pressure by both project implementors and donors to concentrate on these at the expense of other objectives which are more difficult to achieve (Ockelford, 1996).

It is very easy for construction activities to dictate the pace of a project, especially if the costeffective use of expensive drilling machines and teams of technicians are involved. Therefore, it may be necessary to deliberately slow down the pace of construction to keep pace with other activities. This may mean that construction equipment, particularly drilling rigs, and construction teams may not be used to the maximum economic efficiency. A project should proceed according to the pace of its social components to ensure sustainability (*ibid*). This point should be clearly understood by all those involved in the sector, and especially by the national authorities and the politicians.

### WS2.1 Technical choices

One of the key decisions to be made is the choice of technology — it is central to achieving sustainable systems. Clearly the possible choices will depend on what is feasible socially, economically, technically and for the availability of the water resource. This generally has to be determined by the appropriate professionals working together. To develop the range of technical options, it may be necessary to undertake a survey of the area. This should include discussions with local people, and particularly with women, to understand their current technologies, their ideas for upgrading, what they can afford, and other social and cultural factors.

Essential points to consider include24:

- > The technology must be understandable and physically within the capability of the people responsible for operation and maintenance.
- > Spare parts and equipment need to be easily obtainable, preferably in-country.
- > The technology must be affordable to operate and maintain for the people bearing these costs.
- > The technology or level of service provided must be attractive and culturally acceptable to the users.

The range of technologies will depend on the sources available. Some of the possibilities are shown in Table M3.2.1.

24 Adapted from WELL for DFID (1998)

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### Table M3.2.1: Types of source and potential technologies

Rainwater		Roofwater catchment and storage
		Ground-level catchment and storage
Surface water:	š ponds	Infiltration galleries
	š' lakes	Small dams and reservoirs
	š streams	Sub-surface dams
	š rivers	Gravity-flow transmission and distribution systems
Groundwater:	š' springs	Spring box (with or without gravity-flow distribution systems)
	š' shallow aquifers	Hand-dug wells
	š deep aquifers	Tubewells with handpumps

The option of making minor improvements to people's traditional sources should not be ignored. A current research project in Zambia is showing that traditional sources are not necessarily as polluted as is often assumed, and often less than 'improved' sources. Moreover, people may have to wait for many years before a programme can provide the resources for an improved supply, so interim upgrading of traditional sources may be a very cost-effective option (Mbewe and Sutton, 1999).

Thus, the programme should develop the range of possible technologies for the area and be flexible enough to accommodate the choice of people. The range of possibilities should be offered to and explained to the communities, with full information on the advantages and disadvantages of each, including details of capital and running costs. The people can then choose whichever is best for them in terms of level of service, operation and maintenance obligations, and affordability.

#### References

Several standard and technology specific textbooks describe the detailed technical options. These include:

### Water supply technologies:

- > Cairncross and Feachem (1986)
- Cairncross and Feachem (1993)
- › Morgan, P. (1990)

### Rainwater catchment:

Gould, J. and Nissen-Petersen, E. (1999)

### Gravity flow water supplies:

Jordan, T. (1984)

### Water wells and boreholes:

- Watt S.B. and Wood W.E. (1979)
- › Clark, L (1988)

### WS2.2 Standardisation

There are many benefits in adopting a standard for each technology within each of the range of options developed in Activity WS2.1. Design is simpler, technicians can become more competent and confident with familiar techniques and technology, the limited range of replacement parts increases the quantity of each item required, making marketing and local manufacture more feasible, and training requirements for operation and maintenance are simpler, etc. (WELL for DFID, 1998).

#### SECTION B: PROJECT TO DEVELOP PROGRAMM

The process of achieving standardisation is important to the effective acceptance and adoption of the standards selected. This is particularly true for handpumps, where different agencies may already be installing many different types. One process that has been used successfully in Cambodia is to hold a regional or national meeting over two or three days involving all the agencies working in the sector. In this meeting they can analyse the various options for a particular technology such as a handpump and reach a consensus of the standard for each water supply option (Kjellerup and Ockelford, 1993). Standards for quality of construction can also be developed.

### WS2.3 Support organisations

To manage the sector effectively, it is essential to know who is doing what and where. There may already be a number of organisations, such as government departments, NGOs, and private contractors, working in the sector. Some of these will have been identified during the assessment stage.

As part of the regulation of the sector, it may be necessary to establish some form of registration system. This could include details of each organisation's abilities and capacity, and the areas where it works. This would also form the basis for co-ordination.

### WS2.4 Contracting regulations

If private contractors are to be used to construction water supply systems, it is essential for public confidence and accountability that clear, transparent procedures and rules are established. These should cover tendering procedures, contract award and contract management.

If contractors are to be managed by and accountable to communities, these procedures may need to be specially developed in terms that are clear and understandable by ordinary people rather than lawyers and accountants.

Part of this activity should also be the administration and management of contracts.

### WS2.5 Quality control

An essential component of sustainability is the quality of construction. Unless water systems and latrines are built to the specified quality, it will be difficult if not impossible for villagers to maintain them. Standardisation can significantly help in promoting quality work, but control of quality at site is the most important factor. With projects covering many sites over wide areas this is not always an easy task, particularly in remote rural areas with unsupervised, or even supervised, contractors.

The development of systems for quality control needs careful thought. These systems can work two ways. Usually quality control is carried out by the responsible government agency. This is often done by occasional visits to site by an inspector, which is not very effective for obvious reasons.

An alternative is for villagers themselves to monitor the quality of workmanship. Clear, simple processes and designs that people can understand and apply can be developed. Examples are: checklists for the number of bags of cement in a structure; a standard measuring stick for checking the depth of pipe trenches; a standard cube for checking the thickness of a concrete well apron. Villagers will need to be trained to use these methods (Ockelford, 1996).

WS2.6 Technical support and advice

If communities are undertaking the construction of their own water supply systems, they will need technical support and advice.

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### WS2.7 Materials and equipment procurement and provision

This activity is for the procurement of construction materials and construction equipment. Current procedures for procurement may need to be reviewed to make them clear and transparent, including the possible representation of communities on procurement committees. Procedures may also need to be revised to allow communities to procure materials and equipment for themselves.

### WS2.8 Finance

Obtaining finance for construction of water supplies is obviously an essential activity. There are various components to it, including:

- preparating annual budgets;
- > allocating and disbursing annual budgets;
- soliciting donors to support the sector; and
- sharing the capital cost with communities (cash and/or provision of management, labour and materials).

### WS2.9 Survey

This activity is for the survey of villages and water sources for water supply schemes. It should include user demand and socio-cultural, economic, and health aspects as well as technical ones. With the results of the physical survey, it should be possible to decide which of the standard water supply options, developed in Activities WS2.1 and WS2.2, are feasible for the community. These options need to be fully explained to the community, including the capital and operation and maintenance costs, and the advantages and disadvantages of the alternatives, so that they can make a decision. The survey may need to be extended over several visits to allow this decision-making process to go at a pace acceptable to the community.

#### WS2.10 Design

Based on the results of the survey and the community's decision, and using the standards developed in Activity WS2.2, detailed designs can be prepared. These should be presented in a form that the communities can understand.

#### WS2.11 Accounting and audit

The standard government procedures for accounting and audit are usually obligatory. These may need to be reviewed to provide accountability and transparency to the communities.

### WS2.12 Monitoring coverage

It is essential to check on how many communities and people have actually been covered, both before the programme starts and during implementation. Thus there are two parts to this — an inventory of existing coverage, and an ongoing monitoring and recording system.

Coverage figures can be extremely confusing for a number of reasons:

- > Some systems may have failed completely so people are no longer covered.
- > Some agencies may not report their construction of systems to a central recording authority.
- The number of people covered may be double counted because different agencies construct their facilities near to each other and claim the same people as covered.
- The assumption and reporting of standard design figures as coverage instead of actual coverage, e.g. if handpumps are designed to serve 200 people, each pump is assumed to serve 200 people, whereas in a small village a pump may actually only serve 100 people.

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### Specific objective WS3

### Rehabilitation of existing water supply facilities

This specific objective covers the physical reconstruction of existing water supply facilities. These may be completely broken-down, or running but in need of major maintenance. Facilities that are running but in need of minor maintenance would not generally be classified as needing rehabilitation.

There may be several reasons for the complete or partial failure of a water supply facility. It is important to establish the reasons for failure of each system in order to avoid the same problems and a repeated failure. Possible reasons may include:

- > lack of demand for the water supply facility by the community;
- > the community could not afford to keep the facility running;
- lack of involvement of women in the original decision-making, so the facility did not suit them as the main users;
- poor quality design and/or construction;
- inappropriate technology; and
- > failure of the source of the water.

Other aspects of this specific objective and its associated activities are similar to WS2 Construction of new water supply facilities.

### WS3.1 Technical choices

To understand the range of technologies that have been constructed in the past that will need to be rehabilitated, it may be necessary to undertake a survey of the area. This should include discussions with local people, and particularly with women, to understand the reasons why the facilities have failed, and what their ideas are for the possible rehabilitation of the systems.

For other aspects of technical choices, see WS2.1.

One technical choice for rehabilitation that should be considered on a case-by-case basis is the abandonment of the existing failed system and construction of a new system in accordance with WS2.

### WS3.2 Standardisation

If the old systems were constructed as part of a project, they may be similar, with similar reasons for failure. In this case it may be possible to develop a set of standard solutions for rehabilitation related to the deterioration of the system.

WS3.3 Support organisations See WS2.3

WS3.4 Contracting regulations See WS2.4

WS3.5 Quality control See WS2.5

WS3.6 Technical support and advice See WS2.6

WS3.7 Materials and equipment procurement and provision See WS2.7

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### WS3.8 Finance

Existing water supply facilities that have fallen into disrepair represent a considerable investment in many countries. They should not be written off as a complete economic loss without some thought, as it may make sense to raise funds for their rehabilitation.

See also WS2.8

WS3.9 Survey See WS2.9

In addition to the aspects covered in WS2.9, the survey for rehabilitation should establish the actual reasons for failure of each facility that is to be rehabilitated. This should include both a technical examination of the infrastructure, and discussions with as many of the past users as possible, especially the women who were probably the main users.

WS3.10 Design See WS2.10

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WS3.11 Accounting and audit See WS2.11

WS3.12 Monitoring coverage See WS2.12

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### Specific Objective WS4

System for operation and maintenance of water supply facilities

The programme policy decision in Stage 2 (G2.4.7, M2.4.7) raises a number of questions about the most suitable maintenance system to establish. It may not have been feasible to fully explore those at the time and to reach a firm decision, so part of this Specific objective is to explore the options.

The other parts, covering establishing and running the system that is selected, will be required irrespective of whether a community-managed system is chosen. This is because any form of maintenance system requires some sort of administration and support from the responsible government department or another delegated agency.

#### References

Descriptions of the details of maintenance systems are beyond the scope of this manual. For these reference should be made to the following sources:

- → Colin (1999)
- Davis and Brikke (1995)
- > Evans (1992)
- > Noppen (1996).
- > Roark et al. (1993).

WS4.1 Design maintenance system

The starting point for this activity depends on whether or not the programme policy decision has been made as part of the Planning Workshop Review in Stage 2 (G2.4.7, M2.4.7).

If the decision has **not** been made, then a thorough review of the existing maintenance system and analysis of possible alternatives should be undertaken. The problems identified in the Planning Workshop and outputs proposed should be included in this review and analysis. This should result in a decision on which type of maintenance system is required, and any variations from the models suggested in the literature to accommodate local circumstances.

After the programme policy decision has been made, the maintenance system will need to be designed in detail. Guidance for this can be found in the references mentioned, but the models suggested in these may need considerable adaptation to suit the local circumstances.

### WS4.2 Operate maintenance system

This is an on-going activity to manage and run the maintenance system that is established by Activity WS4.1. It is needed whatever system is adopted, although the actual way the system is managed will vary according to the type of system. For example, even if the system is run wholly or in part by the private sector, management and regulation by the responsible government department is still necessary.

### WS4.3 Replacement parts supply system

A reliable, accessible and affordable supply of replacement parts is essential for the sustainability of rural water supply services that depend on mechanised pumping. This can be done through some form of government distribution system, but the disadvantage is that government stores are usually located in a district centre, so that travel costs from a remote village cost more than the replacement part itself. Parts supply is probably best run through the private sector, so that local markets or villages shops carry supplies of fast-moving parts. Standardisation of handpumps may help with this, so that the number of pumps in an area makes the supply of these parts viable for a shopkeeper.

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The World Bank is currently doing some work on supply chains for replacement parts. It should be consulted for the latest ideas on this (www.wsp.org/english/pubs/pubs.asp).

### WS4.4 Financing

Communities are now generally expected to pay the full costs of maintaining their water supply facilities. These costs are usually limited to running the system itself, however, including the cost of replacement parts, the salary of the maintenance worker, fuel for pumps, etc. The cpairal cost of the eventual replacement of the hardware has not been considered in the past, but is now becoming important.

The cost of managing and regulating the maintenance system, including supporting the community-based system, usually needs some form of external support. Thus, it should be included in the recurrent budgets of the government department responsible and any agency that is delegated the practical running of the maintenance system.

#### WS4.5 Monitoring

Monitoring is an essential activity to ensure that the investment in new water supply facilities is not wasted, as has happened so often in the past. It is needed to check whether the maintenance system is functioning as planned, and to make adjustments to it if necessary.

A number of indicators for maintenance performance are described in Stage 2: Survey information (M1.5.3) and Stage 2: Assessment and analysis (G2.2.4, M2.2.4). These can be used as the basis for a monitoring information system. Monitoring should also include indicators to record both the ability of communities to manage and maintain their water supply facilities, and any support that has to be provided.

Thus, this activity consists of several parts:

- design of the monitoring system;
- routine collection of monitoring information;
- > management and maintenance of the information system; and
- > use of the monitoring system to alert managers to the need to take action on problems discovered by the monitoring.

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### Specific objective WS5

Community management of operation and maintenance of water supply facilities for sustainability

Successful community management of O&M still depends on a number of inputs by support agencies. These include facilitation of various community processes, training on various aspects of management for O&M, and back-up support. These will be much easier to achieve if the community has already managed the construction of its own water supply facilities.

#### WS5.1 Establishment of water user committees

This is a joint activity for each support agency (government department or NGO) involved in the construction of rural water supply facilities and the user community. Each agency should be responsible for ensuring that adequate provision is made for maintenance by the communities of the water schemes. An important part of this is to facilitate the establishment within the community of some form of organisation to manage the maintenance. There are various possibilities for this, including adapting existing village institutions.

If the community has already managed the construction of the water supply, then it may be possible to adapt the committee that managed that process. It should be recognised, however, that the ongoing maintenance may involve different people. It is important to ensure adequate representation of all users, particularly women, who are generally the main users and managers of water in the home.

#### WS5.2 Village maintenance workers

This activity is for each community to arrange for maintenance workers to carry out routine maintenance and repairs. Possible options include:

- the selection of one or two members of the community these people may have no previous experience so will need training under activity WS5.5;
- > arrangements with a local area-mechanic to cover the community's water supply facility; and
- > making a contract with a local private sector company.

### WS5.3 Training for management

The water user committees that are appointed by each community may need training to undertake their role. This activity involves the support agency in developing and running suitable training courses for the committees on how to manage the O&M of their system. Apart from management and leadership skills, such courses may also need to cover conflict resolution.

These courses should be held in circumstances that allow people to attend them easily. This is especially important for women, whose domestic roles mean that they may not be able to travel far or stay away overnight. The courses should also be held at a time of year when the communities have time available, e.g. at a time when seasonal agricultural activity is at a minimum.

### WS5.4 Training for financial management

Community-based maintenance systems generally involve money. The design of the maintenance system should include simple and transparent accounting procedures for villagers to manage the money or barter involved. The water user committees will probably need training on how to run this accounting system. Therefore this activity is for the support agency to develop and run suitable financial management training courses for villagers.

### WS5.5 Training for technical maintenance skills

The village maintenance workers appointed under Activity WS5.2 will probably need training in how to carry out routine maintenance and repairs of the water supply technology. This activity is

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for the support agency to develop a suitable course and provide this training. Again, if women are appointed as maintenance workers, the courses should be held at times and places to suit them, not the support agency.

#### WS5.6 Operate maintenance system

This is an on-going activity by each community to manage and run a community-based maintenance system that has been designed in Activity WS4.1. The activity runs in parallel to Activity WS4.2 of the department or agency responsible for rural water supplies.

#### WS5.7 Financing

This is an activity for each community to raise the money or other in-kind barter necessary for operating and maintaining the water supply facility. It is now generally expected that communities have to pay all the cost of running their systems, so this should cover payments to the maintenance workers and the cost of replacement parts.

There are a number of different ways of charging users for the use of the water supply facilities. Evans (1992) provides guidance on the various ways of raising this finance.

#### WS5.8 Monitoring

It is essential to know whether the community-based maintenance system is working as designed and intended, or if any adjustments have to be made. The support agency should also be concerned about whether the training courses provided under Activities WS5.3, 5.4 and 5.5 are effective. Thus monitoring by the support agency is necessary for some time after the community assumes the management of the facility.

This activity should include development of the monitoring system, including devising suitable indicators for successful management of O&M, and implementation of the system. The frequency of monitoring will vary over time — more frequent at the beginning while the community is building confidence, then at occasional regular intervals.

Monitoring should also cover the technical performance of the water supply facility and the sustainability of the water resource.

WS5.9 Follow-up support to communities There are several parts to follow-up support:

- Refresher training on various aspects of management of O&M will probably be necessary. These may need to be held on annually to start with, and then less frequently as the communities prove themselves competent. The actual content of courses may be based on the findings of the monitoring in Activity WS5.8.
- Occasional visits by the support agency to see how the community is getting on can do much for developing the confidence of water user committees and maintenance workers.
- > Back-up support for major repairs or failures of the technology will always be necessary.

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#### M3.2.2 Hygiene promotion

Specific objective HP1

Hygiene promotion strategy

HP1.1 Review national hygiene promotion strategy The Information Gathering exercise in Stage 2 should have established whether a national hygiene promotion or education strategy exists. This activity is to review the strategy.

If a national strategy does not exist, then it may be necessary to formulate one. This would probably have to be done at national level in collaboration with all the regions.

When reviewing or formulating a strategy the following points should be considered:

- An appropriate strategy is one where water and sanitation behaviour change is promoted at both the level of the individual as well as that of the community.
- It is useful to focus on different beneficiary target groups to promote behaviour change (e.g. mothers with young children, children when attending school, key community persons, men when they are gathered together, etc.).
- An appropriate approach for hygiene promotion is participatory rather than traditional:
- A traditional approach involves a top-down approach to planning, implementation and monitoring, where the planners decide which hygiene behaviours to focus on.
- A participatory approach is one where the community has been involved in all stages, including identifying the hygiene behaviours that they consider need to be targeted for change, and the key monitoring indicators for these changes.

#### References

- → Boot (1991)
- Listorti (1990)

HP1.2 Review hygiene promotion strategies of other countries, NGOS Examples of other good hygiene promotion or hygiene education strategies can be drawn upon when drafting a new hygiene promotion strategy. These may include strategies of other governments or organisations such as UNICEF, and local and international NGOs such as WaterAid, CARE, etc. It is helpful if all implementing agencies adopt similar progressive strategies and approaches.

Obtaining examples of these strategies may prove difficult. Existing regional initiatives and collaborative efforts (facilitated by UNICEF or WHO) may be more accessible, or it may be possible to obtain documents through the Internet.

HP1.3 Collect information on appropriate approaches for strategy

A participatory approach using PRA methods (participatory rapid appraisal) is appropriate for the planning, implementation and monitoring of hygiene education programmes. This approach can be defined as one where the community is involved at every stage of the way including:

- planning Community surveys can be undertaken to find out the existing hygiene behaviours and identify the ones that need to be targeted, and to ascertain the community's perception of their own health and hygiene practices.
- > implementation of hygiene education programme Participatory tools can be used to help the community identify and solve their problems.

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 monitoring — The community themselves can identify key indicators for hygiene behaviour change and take responsibility for monitoring.

Identifying the sources and collecting the relevant information to design the strategy for such an approach may take approximately two weeks. Examples of other national hygiene education programmes may also be useful to draw upon but may take a while to obtain.

HP1.4 Design regional strategy

To review and improve an existing strategy the following questions may be used:

- What educational programme is in place?
- What are the objectives of the programme, i.e. desired behavioural changes?
- What are the messages of the current programme?
- What are the methods for distributing messages in the current programme?
- How are the methods evaluated as to their effectiveness? Is their any pre-testing?
- > Who are the target groups in the current programme?
- > Do the methods fit the target groups?
- > Are any target groups left out that should be included?
- > Are the current methods top-down or bottom-up?
- How is behavioural change measured in the current programme?
- > What changes have come about?
  - > What changes have not come about? Why not?
  - > Do communities receive any recognition or other rewards for change?

HP1.5 Increase political commitment to hygiene promotion at all levels The role and importance of hygiene promotion and education in water and sanitation programmes is often not understood or is underestimated by politicians and staff of other government departments at the central, regional and district levels. It is therefore important to promote its importance as the software of an integrated programme.

Possible ways to increase commitment could include:

- > carrying out an initial assessment to find out opinions regarding hygiene education;
- writing a policy/background document on the importance of hygiene education to inform other relevant government departments at all levels;
- > hold orientation meetings for politicians, key decision-makers and other programme managers in the water and sanitation sector, donors; and
- > use more integrated planning procedures.

The various options for this activity are likely to continue throughout the programme period.

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#### Specific objective HP2

Hygiene promotion

HP2.1 Write guidelines for working practices and training

The Information Gathering in Stage 2 should have established whether guidelines already exist. The analysis of the guidelines should have established whether these are satisfactory. Thus the existing guidelines may need to be revised or new ones written.

Working practices to promote hygiene that may be usefully included in guidelines include:

- job descriptions for hygiene education promoters (these need to be realistic so that promoters do not have too many other work tasks which make it difficult to effectively undertake hygiene education);
- job descriptions for hygiene promotion managers;
- > job descriptions for community-based workers;
- defined ways for health and development workers from different sectoral departments to collaborate at village and district level;
- > regular and adequate supervision of promoters (visits at least every six months);
- systems to ensure promoters have adequate transport allowances;
- > systems to ensure promoters have enough funds to cover all work related costs; and
- > regular review of salaries.

Training practices that may be usefully included in the guidelines include:

- > frequency of training/refresher courses for promoters;
- expectations on promoters attending training courses; and
- > allowances for training.

#### HP2.2 Develop materials for hygiene promotion

Hygiene promotion and education materials can be developed for the various programme stages including assessment, implementation and monitoring. Ideally these should be participatory materials suitable for people who may not be literate. Materials can be developed by examining and adapting examples of other participatory materials, or by developing new ones suitable for local communities. It is essential to field-test any materials to see whether they are effective before producing them for wide-scale use.

#### References

- Linney (1995)
- Narayan and Srinivasan (1994)
- Werner and Bower (1982)

HP2.3 Develop selection criteria and recruit promoters Suggested selection criteria for promoters:

- > age (an upper age limit could be set, e.g. 18-40 years)
- gender (women promoters may be most suitable when holding discussions with young mothers and children)
- > members of the community who are not likely to move
- > members of the community who are respected
- > members of the community who have time available
- > members of the community who are literate
- > promoters who are willing to work where the position is voluntary without remuneration

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 promoters who have previous experience of work in the community including community mobilisation skills (where possible)

Suggested criteria for recruitment of promoters:

- > clear guidelines of who is responsible for the recruitment of promoters
- » working conditions of promoters, e.g. whether or not remuneration is made

HP2.4 Train/retrain village promoters/educators

Village promoters/educators can be trained in assessment, implementation and monitoring of hygiene education programmes.

The content of the training may include:

- > importance of hygiene education in water and sanitation programmes
- important hygiene behaviours for water and sanitation including (excreta disposal, water collection and transportation, water use, environmental behaviours)
- > the use of participatory methodologies including facilitation skills and the use of PRA techniques and materials at community level, including mapping, seasonal calendars, problem identification using pictures, pocket charts, three-pile sorting
- community mobilisation skills

A training of trainers course may be useful so that promoters can train different levels of committees and user groups. It may include the training cycle, needs identification, setting objectives, design/planning of training, implementation /facilitation of training and evaluation and follow-up of training.

Initial training may take the form of two 14-day workshops in addition to follow-up refresher workshops of one week each.

#### References

- Frelick and Fry (1990)
- Werner and Bower (1982)

#### HP2.6 Community profiles

Before starting the implementation of a hygiene education programme it is useful to build up a picture or profile of the community. Suggestions for gathering this type of information at the level of the village may also be included in other sections of the guidelines.

Information about the community may include:

- M3
- > number of female-headed households
- occupation of residents
- > different ethnic groups

number of households

population size

- > leadership structure within community
- > geographical features of the area
- > accessibility of the area
- climatic conditions (including rainy and dry season)
- > main agricultural patterns (including crops grown, time of sowing and harvesting)
- > diseases and times of epidemics and socio-economic data where available
- > presence of school and health facilities and distance from village

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- > presence of latrines and water supply
- > presence of community/health/extension workers
- > presence of water committees/water caretakers

#### Reference

• WASH (1987)

HP2.7 Baseline KAP (knowledge, attitude and practices) surveys for hygiene behaviour and analyses

It is essential to measure the impact of a hygiene education programme to assess if it is effective and appropriate in order to decide later whether it needs to be modified. A baseline survey to assess the hygiene knowledge, attitude and behaviours of the community, known as a KAP survey, should be undertaken before projects are implemented and repeated after implementation to assess if change has occurred.

There are many hygiene behaviours that carry some risk but there are a few key behaviours which are more risky than others. The survey should focus on those with the highest health risk, including practices related to defecation and contamination of drinking water. Information can be gathered from the community survey, community leaders, community groups (water/health committees), health workers, and other community extension workers.

#### Reference

> Almedom *et al.* (1997)

HP2.8 Identify and prioritise hygiene behaviours for programme to address From the results from the KAP survey it should be possible to identify which are the risky behaviours which may lead to a high incidence of water- and sanitation-related diseases. The next activity is to decide which ones to target first in the hygiene education programme. This planning should be done as a participatory process in collaboration between the community and programme implementers.

To be practical, not more than 10 hygiene behaviours should be targeted in the hygiene education programme. These should be hygiene behaviours which are associated with the highest health risk, those related to excrete disposal and drinking safe, clean water.

HP2.9 Compile action plan for village hygiene promotion The village hygiene education plan should include:

- > goals and objectives of hygiene education programme
- hygiene behaviours which need to be targeted including both individual and community behaviours
- activities planned including community entry procedures
- beneficiary groups to target with highest incidence of water- and sanitation-related diseases, e.g. women and schoolchildren
- > community groups through whom to work, e.g. village health committee, village water committee, water user groups, water point committees
- approaches/methods to be used for each hygiene behaviour
- > human resources needed
- > time frame of action plan
- indicators for achievement
- monitoring and evaluation procedures (including who is responsible and when it needs to be done)

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#### M3.2.3 Sanitation

New approaches to sanitation focus more on stimulating demand and support for producers and consumers than on supplying latrines. A critical part of this new approach is to help consumers and communities to make informed and well-considered choices regarding both waste disposal and hygiene practices. These choices should be based on factors such as safety, operation and maintenance, costs and benefits (to individual, families and the community as a whole), privacy, convenience and environmental protection.

For this new approach, the use of innovative, participatory strategies and methods is essential. The key to making the approach succeed is flexibility and understanding in the implementation of the sanitation programme. It needs to be based on respect for community values, perceptions, understanding and practices. It needs to allow decision-making and technology choice at the most appropriate local level.<sup>25</sup>

The Water Supply and Sanitation Collaborative Council's Working Group on the Promotion of Sanitation produced 'Guiding Principles of Better Sanitation Programmes'. These provide a useful background for developing the specific objectives and activities of sanitation component of the programme. The Principles are reproduced in Box M3.2.3. The original bullet points have been changed to numbers for easy cross-referencing to the description of activities.

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Box M3.2.3: The guiding principles of better sanitation programmes<sup>26</sup>

- From an epidemiological point of view, sanitation is the first barrier to many faecally transmitted diseases, and its effectiveness improves when integrated with improved water supply and behaviour change. However, improvement in hygiene behaviours alone can result in disease reduction and serve as a valid programme objective.
- Sanitation comprises both behaviours and facilities, which should be promoted together to maximise health and socio-economic benefits.
- 3. From an implementation point of view, sanitation should be treated as a priority issue in its own right and not simply as an add-on to more attractive water supply programmes. Sanitation requires its own resources and its own time frame to achieve optimal results.
- For sanitation programmes to be effective, political will at all levels is necessary. Communities are more motivated to change when they know political will exists.
- 5. Communities are biocultural systems. A sanitary environment is a successful interaction of the key parts of that system: the waste; the natural environment with its unique physical, chemical and biological processes; local cultural beliefs and practices; a sanitation technology; and the management practices applied to the technology.
- 6. Sanitation programmes should be based upon generating demand, with all its implications for educa tion and participation, rather than on provision of free or subsidised infrastructure. Government should be responsible for the protection of public health. Government sanitation policy should be one of creating demand for services; facilitating and enhancing partnership among the private sector, NGOs, community-based organisations, and local authorities; and removing obstacles in the paths of each of these and of the households in the achievement of improved sanitation.
- 7. Sanitation programmes should equally address the needs, preferences, and behaviours of children, women and men. Programmes should take a gender-sensitive approach but, learning from the mis takes of other sectors, should guard against directing messages only to women or placing the burden for improved sanitation primarily on women.
- Sanitation programmes should be approached incrementally, based on local beliefs and practices and working toward small lasting improvements that are sustainable at each step, rather than the whole sale introduction of new systems.
- User ownership of sanitation decisions is vital to sustainability. Empowerment is often a necessary step toward achieving a sense of ownership and responsibility for sanitation improvements.
- 10. Good methods of public health education and participation, especially social marketing, social mobilisation, and promotion through schools and children, exist to promote and sustain sanitation improvements.
- 11. Sanitation services should be prioritised for high-risk, under-served groups in countries where universal coverage seems unlikely in the foreseeable future. Hygiene promotion should be targeted to all.
- 12. Latrines are consumer products; their design and promotion should follow good marketing principles — including a range of options and designs attractive to consumers and therefore based on consumer preferences, affordability, and suitability for local environmental conditions. Basic marketing research and participation in design will likely be necessary to good programmes. Market forces are best understood by the private sector.
- 13.As in all other public health programmes aimed at preventing disease, the promotion of sanitation should be a continuous activity. This continuous promotion is necessary to sustain past achievements and to ensure that future generations do not become complacent as diseases decrease.

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<sup>&</sup>lt;sup>25</sup> Adapted from Environmental Health Project (1997).

<sup>&</sup>lt;sup>26</sup> Source: Working Group on the Promotion of Sanitation, Water Supply and Sanitation Collaborative Council (1995), quoted in Environmental Health Project, (1997).

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#### Specific objective SA1

Awareness and understanding of need for sanitation by communities The intention of this specific objective is to create a demand for latrines and solid waste facilities by individuals, households and communities (as in Guiding principle No.6, Box M3.2.3).

The successful promotion of sanitation that encourages people to demand and construct their own latrines has to be based on a good understanding of people's current knowledge, attitudes and practices (Guiding Principles Nos. 7 and 12, Box M3.2.3). It is then possible to plan and design promotional campaigns and hygiene education training courses that are relevant to the programme area to stimulate demand (Guiding Principle No.2, Box M3.2.3).

The separate activities to achieve this specific objective are described in SA1.1 to SA1.5.

#### SA1.1 Survey of existing practices and understanding

Sanitation programmes have often failed because attempts to find simple universal solutions ignore the diversity of needs and context. This activity is to carry out a survey to understand the needs and context as a basis for developing a promotional campaign. Aspects to study include:

- background data
- > existing personal, domestic and community hygiene and sanitation practices
- > cultural and attitudinal factors, including gender needs and difference
- knowledge of existing sanitation facilities
- > health

The survey will need to be more extensive than that undertaken in Stage 2. It will need to explore both geographic and cultural differences within the programme area.

It may be sensible to combine this with the survey in Activity 2.1 into sanitation technologies and the physical constraints on technology options.

#### Reference

Environmental Health Project (1997)

SA1.2 Development of promotional material, marketing information 'Social marketing' for sanitation promotion is different from commercial marketing — the marketer is concerned with correct use and sustainability, rather than just selling a product (Pickford, 1995). This activity develops and designs promotional materials for creating demand for sanitation, based on a thorough understanding of the beliefs and practices of the people in the programme area. It should include the marketing of options for latrines as defined by Activity 2.1.

All the available media should be considered, including:

posters

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- › radio
- > travelling theatre
- > hygiene education and training in communities
- group discussions and activities
- television and video
- › school curricula

Promotional material should always be pilot tested to ensure that people understand the messages as they were intended.

#### SA1.3 Publicity campaigns

This activity is to run publicity campaigns based on the materials developed in Activity SA1.2. The various media identified in SA1.2 should be used as appropriate to reach the different audiences. Monitoring the effectiveness of the publicity is essential to ensure that the messages are getting through as intended.

A system for villages and communities to respond to the campaign should be established. When there is an expression of interest, arrangements should be made for the next activity (SA1.4) to be undertaken in that village.

#### SA1.4 Village-level trainings, workshops, etc.

The publicity campaigns should be supplemented by sanitation training and workshops in individual villages. These should be undertaken in villages which have registered an interest in learning more about sanitation as a result of the publicity campaign. These can also be linked to the water supply component and the hygiene promotion component. Villages which have expressed an interest in having an improved water supply can be selected for training.

The curricula and materials for the training and workshops needs to be developed with the intended participants in mind. With a sensitive subject like sanitation, separate workshops for women and men may be sensible.

#### SA1.5 Demonstration latrines and solid waste disposal

People like to be able to see what they are getting before they make a decision to buy it. Demonstration latrines and waste disposal facilities should be constructed in places which are easily accessible for people in the villages. This may mean constructing samples in each village. This is especially important for women who, with their commitments to family and workload in the home, may not be able to travel far to see a demonstration.

The various options identified in Activity SA2.1 should all be constructed for demonstration. People can then see the differences, and make their choice based on their own needs, including affordability.

#### SA1.6 Building political will

Building political will is crucial to obtain the necessary support for sanitation promotion and to raise the priority of sanitation in the national or regional agenda.

Designing a strategy to build political will requires a detailed understanding of the issues, current situation, constraints, and promising strategies. Preparation of the rest of the sanitation components will already have generated a body of knowledge that makes good advocacy at the policy level possible. The process of developing the component can help to build awareness among key practitioners and policy makers.

Some key points to consider and options to explore about building support are:

- > identify high-level allies
- hold effective national or regional meetings to legitimise programming work and to hold policy discussions
- > use training events that include staff of various authority levels and agencies
- link sanitation to existing public health priorities and to positive behavioural patterns and religious beliefs
- use community media
- >> design, prepare and conduct consultations among NGOs, government and the private sector
- >> use the results of pilots and demonstration projects to advocate new approaches

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**Reference** The points for this activity are taken from:

> Environmental Health Project (1997)

#### Specific objective SA2

Construction of sanitation facilities

The intention of this specific objective is the construction of latrines and solid waste disposal facilities by individuals, households and communities. It builds on existing demand and the demand created by Specific objective SA1.

The specific objective concentrates on creating the conditions to enable people to build their own individual and family latrines and solid waste facilities in a controlled way that avoids damaging impacts on the environment. These conditions include having a range of affordable and attractive options suitable for the local environmental conditions (Guiding Principle No.12, Box 3.2.3), the skills and capacity for construction, and the availability of manufactured components. Latrines and waste disposal facilities should be constructed in a way that minimises the impact of excreta and waste disposal on the environment, including groundwater. Therefore regulations to protect and monitor the environment are also part of the specific objective.

The separate activities to achieve this specific objective are described in SA2.1 to SA2.10.

SA2.1 Design and standardisation of technologies, types and costs to offer choice To give people choices of latrine types and waste disposal facilities, it will be necessary to develop a range of standard options. These must be suitable for the different physical conditions in the area, taking into account things such as groundwater levels, soil type and permeability, and whether the area is prone to flooding, etc. The range should offer people choices in cost, so they can pay for the facility which best meets their needs at the cost they can afford. Designs should also be based on the local cultural sensitivities around defecation and what people are already accustomed to.

It may also be necessary to develop a range of standard latrines suitable for the various types of institution in the area — schools, health posts, clinics, hospitals, etc. The range would need to take account of any variation in the physical conditions in the area.

Thus, information is needed on physical, socio-economic and social conditions. This may involve carrying out a survey to understand these things in sufficient detail, before developing the standard designs. This could be combined with the survey in Activity SA1.1. Prototype designs should be tested to ensure that they are acceptable before mass promotion.

This activity should be carried out at the start of the programme, before the publicity materials are developed and the campaign started, but it may need to be reviewed periodically as the programme progresses.

#### SA2.2 Regulations for siting of latrines

There is potential for all sanitation technologies and systems to cause pollution of groundwater, whether directly by seepage from field defecation or on-site latrines or from leaky sewers or effluent discharge points. For rural areas, the usual risk is seepage from pit latrines to the groundwater, which is then abstracted at a nearby well. This has led people to set 'safe' distances between wells or handpumps and latrines, but there is no single safe distance.

Several factors will affect what can be considered a safe distance:

- > type of ground (sand, silt, loam, rock type, etc.)
- > depth to groundwater level (which will also vary according to season)
- > direction of flow of groundwater

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These factors are likely to vary in the programme are, particularly if the topography and geology vary.

In order to develop regulations for siting latrines in relation to water sources, based on the different soil conditions and groundwater conditions in the programme area, information on these factors should be gathered as part of the surveys in Activities SA1.1 and SA2.1. For guidance on setting safe distances, a useful reference is Pickford (1995). An issue of *Waterlines* magazine (Volume 17 No.4, April 1999) discusses the issues and risks of on-site sanitation and groundwater quality.

The regulations should developed at the start of the programme, before the publicity materials are developed and the campaign started.

#### SA2.3 Subsidies

Whether or not to provide subsidies is a key Programme Policy Decision (G2.4.7, M2.4.7) that should have been considered during the Planning Workshop Review (2.4). Provision of subsidies and the levels of subsidies depend on several factors:

- > national policy on sanitation and subsidies
- budget availability and allocation
- socio-economic conditions of communities
- > people's willingness to pay for latrines
- > technology and affordability of latrines
- > patterns of disease and hygiene practices

The issues of subsidies are discussed in DFID (1998). Pickford (1995) provides some guidance on the issues and practicalities.

If it is decided to provide subsidies, there are two stages to this activity:

- > setting the policy and scale of subsidies; and
- implementing the policy and provision of subsidies.

The first of these needs to be established at the start of the programme.

#### SA2.4 Manufacture of components

It may be possible to pre-fabricate some of the components for the standard designs of latrines that are developed under Activity SA2.1. These are likely to include squatting slabs (san-plats), and rings, blocks or bricks for lining pits. To do this, local production plants should be established to manufacture these components. The setting up and running of such plants is probably best done by the private sector, but this may need some encouragement by the government department responsible. There may also be a role for government in quality control of the components. The scale of manufacturing will depend on demand, both the existing and the potential as a result of the sanitation promotion activities.

This activity needs to be co-ordinated with the publicity campaign (Activity SA1.3), the village training (Activity SA1.4), and the demonstration latrines (Activity SA1.5), so that the components are available when the demand has been created.

SA2.5 Training of artisans

Depending on the skills available in the programme area, it may be necessary to train local people in the construction of latrines. This may mean developing and running training courses for artisans on:

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- > the manufacture of latrine components;
- > the construction of household latrines; and
- > guiding householders in the construction of their own latrines.

This activity needs to be co-ordinated with the publicity campaign (Activity SA1.3), the village training (Activity SA1.4), and the demonstration latrines (Activity SA1.5), so that artisans are available when the demand has been created.

SA2.6 Construction of household latrines by individuals and/or families Following the promotional campaign, community training, manufacture of components and training of artisans, this is an activity for householders and individuals. They can either construct latrines for themselves, or employ artisans to construct latrines for them.

Some monitoring of this activity is probably necessary to ensure that the various training courses are resulting in correctly constructed latrines to the required standard and quality.

#### SA2.7 Construction of institutional latrines

Institutional latrines may be required at schools, health posts, clinics, hospitals, etc. These may be constructed by the communities themselves, local private sector artisans, or workers from the government departments responsible for the institution. It will probably require a budget allocation for materials and labour.

#### SA2.8 Construction of solid waste disposal facilities

Solid waste is often not included in sanitation planning in rural areas. Solid waste disposal has not been considered a problem in the past because most of the waste produced in rural areas is biodegradable. This is changing with the increasing use of plastics and consumer goods.

A basic decision for communities is whether to have a communal waste disposal facility or individual household facilities. Special facilities may need to be constructed at health posts, clinics and hospitals to deal with medical wastes.

#### SA2.9 Environmental impact assessment

The environmental impact assessment (EIA) of the sanitation systems should be assessed at two levels:

- > in villages where sanitation facilities are to be promoted; and
- > for the whole programme area, or parts of it if there are different river basins or hydrogeological areas.

There are likely to be several tasks in this activity, including:

- > developing a standard system for EIA
- training district staff on EIA
- carrying out EIA in villages
- > carrying out EIA for the whole programme area
- > analysing results
- > taking action to mitigate environmental impacts, if necessary

The impact should be assessed before construction, and then monitored on an occasional basis to verify if the original assessment was valid.

The impact assessments should also consider the 'do nothing' alternative to improving sanitation. Current practices, especially indiscriminate defecation, are also having an impact on the environment.

#### References

There are various guides to help in carrying out environmental impact assessment. Your own country may have developed its own guide. Alternatively, the following may be useful:

- African Development Bank, (1990)
- Asian Development Bank (1997)
- Department for International Development (1999)

#### SA2.10 Monitoring of construction numbers

The number of sanitation facilities actually constructed needs to be monitored and records maintained in order to know what proportion of the people in the programme area have been covered. These figures can be used to gauge the success of the sanitation promotion activities, and to make adjustments to the promotion if necessary.

Monitoring figures need to be sent regularly to the appropriate central authority for compiling the national sanitation coverage figures.

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#### Specific objective SA3

#### Use of sanitation facilities

Persuading people to construct sanitation facilities is only the first part of the story. To achieve the broad objective it is essential that people use, and continue to use, the latrines and other facilities they have constructed. Thus, it is necessary to check whether latrines are constructed and being used, and to use the information to see if the sanitation promotion and hygiene promotion campaigns have been effective.

The separate activities to achieve this specific objective are described in SA3.1 and SA3.2

#### SA3.1 Monitoring of use

There are likely to be a number of tasks involved in this activity, including the following:

- > Develop indicators for latrine use.
- > Develop a system for monitoring.
- Monitoring surveys of villages where campaigns, training and construction of latrines has been carried out.
- > Compile and analyse results.
- > Maintain the information.

The monitoring surveys may need to be repeated at intervals some time after the initial promotion and construction activities, to see whether the initial enthusiasm for sanitation has lasted. These monitoring surveys can be combined with the monitoring and evaluation of hygiene promotion in Activity HP2.8.

#### SA3.2 Follow-up campaigns

It will probably be necessary to mount follow-up sanitation promotion campaigns to ensure that the original messages have been effective in persuading people to construct and use sanitation facilities. These can be developed by a similar process to Specific objective SA1, based on the results of the monitoring of Activity SA3.1

The sanitation follow-up campaigns could be combined with further hygiene promotion work.

#### M3.2.4 Water resources management

#### Indicators for water resources management

Process indicators in the form of measurement of the results of activities can be put in place simply by applying target numbers or lengths or volumes against the appropriate checklist of activities. In contrast, indicators for the water resources assessment cannot sensibly be put in place because the nature of hydrogeological investigation. There are three phases to proving the success or otherwise of the assessment:

- > the water resources survey itself, complete with process activity target, number of villages covered, identification of optimum development locations, optimum borehole design, etc.
- > the drilling programme, complete with process targets, yields per source under prevailing geological conditions, yield per village, distance of source from village, etc.
- Sustainability, which requires a revisit to the programme five years on in order to evaluate the source sustainability. If all sources are still producing the same post-drilling test yield, then the water resources survey can be counted a complete success; if only 50 per cent of the sources continue to perform adequately the water resources survey was only partially successful; and so on.

There are a number of cautionary notes. First, the development objectives must be attainable the water resources survey cannot produce water where there is none. Secondly, borehole success rate is not a useful indicator: 5% success in Nigerian shales may reflect a more successful resource evaluation than 95% success in granular alluvium adjacent to a flowing river.

Indicators that only come into effect five or even ten years after the work has been completed are, nevertheless, an effective quality assurance tool for the programme. Although process indicators can be given, water resource assessment indicators cannot be measured during the planning and implementation stage of the programme. The ranges of the many complex and diverse parameters that are considered in the resource assessment can only partially be evaluated in numerate form and the hydrogeologist also has to consider qualitative information in the assessment of the available resource.

In order to place water resources assessment indicators into the scheme we need to extend the programme into a handover period of at least five years. For example, an international NGO is talking about a handover of 10 years in one of its current village water supply programmes, but this extended handover and monitoring period is expensive and anticipates the stability of the government or NGO. It also allows pumping regimes to be adjusted in the light of monitoring information gained during the handover period. That being so, the indicator for water resources assessment is the sustainability at five years and ten years on. This is derived from comparison of the original test yields and projections for the (then) newly completed wells and boreholes with yields after five years.

#### Specific objective WR1

#### Data collection and monitoring

Information on water resources, both historic and current, is essential for management of the resource. Without it, planning and implementation of sustainable programmes for the use of the water resource will not be possible. Well conceived and targeted monitoring of freshwater resources can ensure more efficient use of scarce resources through improved decision-making. It can provide the necessary information for priority setting, planning, and impact evaluation, enabling corrective action to be taken.

Hydrometric networks and information services are needed to inform this planning and implementation. Hydrological and hydrogeological monitoring and assessment are essential activities for providing the information, so an efficient water resources information system is vital.

It is important not to consider water data in isolation. Socio-economic activities impacting on water quality, institutional and legal settings, surrounding ecosystems, climatological and geomorphological conditions, land-use practices, etc., all have to be considered. Water information services have to work along a broad range of parameters, measuring frequencies, monitoring locations, etc., to meet the needs of the different users.

Data collection for its own sake is of no value. The starting point for a successful monitoring and assessment programme is to define its purpose.

#### References

- > Sharma (1996)
- → Gunston (1998)

#### WR1.1 Identification of data needs

The data needs are likely to be similar to those that were required in Stage 2, with the addition of the data needed for the assessment activities under Specific objective WR3 (Capacity of water resources). This activity is an opportunity to review whether those needs were adequate for planning, and what additional data is required to build up an overall picture of the water resources of the area.

As already mentioned, data collection for its own sake is of no value, so the reasons for collecting the various types of data need to be considered and justified.

WR1.2 Design and construction of data management system

The data management system should cover the whole range, from collection through to access to the data. It should include:

- recording in the field
- > collection and transmission to the water management office
- verification and data quality monitoring
- compiling and entering into the record system (probably a computer based system, but manual records of raw data may also need to be kept)
- > retrieval for use of the data

WR1.3 Baseline data collection

This should be a continuous activity for the routine and regular recording of data in the field, as defined in Activity WR1.1, and its transmission to the water management office.

#### WR1.4 Historical data collection

This is likely to be a one-off activity to search out and collect all the past records and information on water resources in the area. It will probably produce a mix of raw data and processed information and analysis.

#### WR1.5 Maintenance of data management system

Maintenance in this context is the process of recording the regular data from the field in the management system to keep it up to date.

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#### Specific objective WR2

Existing and future demand for water and waste disposal Since water is becoming an increasingly scarce resource in many countries, it is now generally accepted that demand for water has to be managed. Therefore it is essential to know how much water is currently being used and how much water will be required in the future.

For this, it is necessary to know the demand from all users, even though domestic water demand is only a small proportion of that total demand. The various demands on the water resource may include:

- irrigation and agriculture
- > rural domestic water supply
- urban water supply
- > industrial water supply
- > water for nature and the environment
- > tourism and recreation

Gender is an important aspect when assessing demand for water. Men and women in different socio-economic classes and societies have different demands for different water uses (Wijk-Sijbesma, 1998).

#### Reference

Wijk-Sijbesma (1998)

WR2.1 Evaluate existing water use and waste disposal patterns This activity is to make a study of existing water use and waste disposal. Some of this information may already have been collected as part of the survey in Stage 2, but it may be necessary to go into more detail using information that is gathered as part of Activities WR1.3 and WR1.4.

WR2.2 Establish trends Predictions of future water requirements should be based on various factors, including:

- > population growth
- migration patterns
- industrial development forecasts
- economic forecasts
- national and regional plans

This activity should be conducted at the start of the programme, and then reviewed regularly, say biennially, to check whether the predictions were correct or need adjustment.

#### WR2.3 Identify causes of water source failure

The failure of handpumps, wells or springs needs to be carefully investigated to determine whether the cause is the water resource drying up, or a mechanical or design fault in the abstraction and collection system. If it is the former, further investigation may be needed under water resource management, with the result being used in activities under Specific objective WR3.

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#### Specific objective WR3

#### Capacity of water resources

An understanding of the capacity and safe yield of the available water resources is essential for making decisions on allocation to ensure sustainability. Assessing the capacity and safe yield is an iterative process, based on the best knowledge and data available at the time. As more data becomes available through Activities WR1.2, WR1.3 and WR1.5, accuracy and understanding will improve, allowing better informed allocation decisions to be made under Activity WR4.3.

#### References

Useful references for the assessments under this Specific objective are:

- > Economic and Social Commission for Asia and the Pacific (ESCAP) (1989)
- Miloradov and Marjanovic (1994)

WR3.1 Assessment of groundwater recharge and surface run-off Recharge to an aquifer cannot be measured directly, but has to be deduced from other measurements. Groundwater is part of the hydrological cycle, so measurements of other components of the cycle can be used to assess the groundwater recharge. This is done by using a calculation called the water balance. In this, it is assumed that all the water entering an area is equal to all the water leaving the area plus or minus any change in the quantity of water stored in the area.

Sum of Inflows	=	Sum of Outflows	±	change in aquifer storage
+ rainfall		+ abstraction		
+ recharge from surface water		+ spring flow		
+ sea-water intrusion		+ base flow in rivers		
+ Inflow from other aquifers		+ discharge to sea		
+ leakage		+ flows to other aquifers		
+ artificial recharge		+ evapotranspiration		

(Brassington, 1988)

Miloradov and Marjanovic (1998) provide useful data collection and analysis forms for making a water balance.

Clearly, calculating this water balance is a major exercise, so sufficient resources and time should be allocated to this activity. The exercise will be more complicated if there is more than one catchment system within the programme area, and if the political boundaries are not the same as the watershed boundaries or the aquifer boundaries.

#### Reference

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> Brassington (1988)

WR3.2 Assessment of surface and groundwater distribution and availability This activity is to assess the actual capacity and location of the surface and groundwater. Whether the surface water and, particularly, the groundwater can be accessed as a resource also needs to be considered. For example, clay may contain plenty of water but it cannot be abstracted because of extremely low permeability.

Again, making this assessment is a major exercise, so sufficient resources and time should be allocated. Commercial computer software may be available to assist with this analysis.

WR3.3 Evaluation of water quality and pollution vulnerability Assessment of water quality should include both the natural quality of the water and the quality due to pollution. Potential sources of pollution also need to be identified.

Although in the rural areas of developing countries the great majority of water-quality problems are related to bacteriological or other biological contamination, a significant number of very serious problems may occur as a result of chemical contamination of water resources. Such contamination may arise from certain industries, such as mining and smelting, or from agricultural practices and malpractices (e.g., the use and misuse of nitrates as fertilisers), or from natural sources (e.g., iron, fluoride, arsenic). In order to establish whether such problems exist, a selected number of physicochemical parameters may need to be measured. Particularly in the case of rural water supplies in developing countries, however, it could be both very costly and physically impractical to cover a large number of parameters (World Health Organisation, 1985).

Miloradov and Marjanovic (1998) provide data sheets for collecting information on non-point sources of pollution, including agriculture, solid waste landfills, seepage from septic tanks and urban wastewater and drainage.

#### Reference

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World Health Organisation (1985)

WR3.4 Evaluation of resource sustainability

Based on the water balance from WR3.1 and the distribution and availability of surface and groundwater from WR3.2, an evaluation of the safe yield and sustainability of the overall water resources in the area has to be made. This is necessary in order to balbe to allocate water for various uses, including water for nature and the environment, in Activity WR4.3. This evaluation should take account of current use of water so that areas of overexploitation can be identified.

#### WR3.5 Identify development potential

The foregoing assessments and evaluation may reveal areas where the water resources are underused. These areas can be considered for further development. Obviously care must be taken so that the resources do not become over-exploited, and the way that the water resource currently supports the natural environment should not be under-estimated.

#### Specific objective WR4

#### Sustainable and equitable use of water resources

The capacity and safe yield of the water should have been established under Specific objective WR3, based on data obtained under Specific objective WR1 and current and future demand under Specific objective WR2. This Specific objective is to use that information as the basis of decisions and systems to allocate, regulate and control the use of the water resource in a sustainable way.

The decisions made under this Specific objective should be based on the best information available at the time. As more data is collected and analysed, a better picture of the water resource will emerge. It may then become necessary to review some the decisions, particularly on allocation of the resource.

Resource allocation depends on securing sufficient and sustainable volume from the resource to satisfy local demand, and ensuring that the allocation falls to the most accessible and sustainable component of the resource. In simple terms, Precambrian shales may not be forthcoming in groundwater in some areas of West Africa, so reliance has to be made on available surface water even though much is ephemeral. Elsewhere on the basement aquifer, ephemeral streams and rivers are not used for rural community supply as more reliable supplies can be obtained from traditional shallow wells. Rivers capable of sustaining small dams to sustain supply in the dry season need consideration in areas where groundwater is hard to find.

WR4.1 Establishment of criteria and regulations for abstraction of water This activity is to develop the procedures for abstraction of water. It could include the eligibility criteria, regulations and licensing system for commercial use of water for agriculture or industry, the registration system for domestic tubewells and hand-dug wells by organisations, etc.

WR4.2 Raising awareness of water resource management with communities, government and other organisations

The importance of wise management of water resources for a country's economy is often not understood by political decision-makers, with the result that inadequate resources are allocated to it. It is the responsibility of sector professionals to raise awareness of issues involved at regional and national level.

At community level, people are often well aware of its importance, but feel powerless to engage in it. Local actions, such as micro-catchment management, local re-forestration, and artificial recharge, can achieve results. Communities can be facilitated to carry out such activities themselves.

Organisations such as NGOs and the private sector may be unaware of the contribution they can make, such as providing drilling logs for new wells, and the responsibilities they have to conform to in abstraction regulations.

Thus, this activity covers a range of information, campaigning and facilitation actions at various levels for various audiences.

#### WR4.3 Allocation of water for various uses

One of the functions of the department responsible for water resources is to allocate its use to various demands on it. These demands can include:

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- > domestic
- > urban
- > industrial
- irrigation and agriculture
- > fisheries
- > hydropower
- $\rightarrow \quad \text{inland navigation} \quad$
- > recreation

An essential use to remember, but which may not feature as a demand, is water for nature and the environment.

Deciding between these competing demands is not easy. Economic valuation of water has been proposed as one way of deciding between uses, as stated in one of *The Dublin Principles* (Dublin, 1992):

Water has an economic value in all its competing uses and should be recognised as an economic good.

Within this principle, it is vital to recognise first the basic right of all human beings to have access to clean water and sanitation at an affordable price. Past failure to recognise the economic value of water has led to wasteful and environmentally damaging uses of the resource. Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources.

There is a risk that with the emphasis on the economic aspects, the poorest people will be further marginalised — water resources will tend to go to users that can afford to pay for them. Richer communities, urban municipalities and industry tend to be able to vocalise their demands better. In many countries, water for all uses is becoming increasingly scarce. The choice of higher levels of service for one community that can afford to pay for it may mean insufficient water for another poorer community. It may be necessary to facilitate the demand from poorer or marginalised groups in society.

#### WR4.4 Regulation of water abstraction

After allocation, it is essential to check that the actual abstraction conforms to the quantities actually allowed. Thus, this will be an ongoing activity to inspect the various users to ensure that they are abiding by the terms of their licenses. The intensity of the activity in terms of resources required will depend on the number of licenses issued and the area of the programme.

WR4.5 Monitoring abstraction and use of water As part of the regulation, it is important to monitor the quantities of water being used to feed back

into Activities WR1.5, WR2.1 and WR3.4.

#### WR4.6 Management of catchments and recharge zones

This is a continuous activity for the conservation and improvement of the catchment area and recharge zones of aquifers. It may include actions such as reforestation and prevention of soil erosion, and will probably need to be done in co-ordination with the forestry and agricultural departments.

#### WR4.7 Control of pollution

This is a continuous activity to ensure that pollution of the water resources is avoided. It may involve identification of potential pollution risks, such as industries and agriculture, followed by monitoring to check that pollution does not happen, and enforcement of regulations if it does.

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#### WR4.8 Water rights

An activity may be required to administer water rights. In many places people may have traditional rights to water, which can be a cause of conflict in itself, but also may be in conflict with legislated rights to water. Thus, some form of conflict resolution service may be needed.

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M3.2.5 Institutional strengthening

#### Specific objective IS1

#### Policies and procedures

To enable transparent, accountable management of the water and sanitation sector, it is essential to have transparent, easily understood policies, procedures and methods for various aspects of the sector. These policies and procedures should be established and widely publicised so that everybody (government staff, NGOs, private sector, and communities) is aware of them and can understand them. This should help to avoid political interference in the process of managing the sector, and reduce the opportunities for corruption.

The aspects that policies and procedures should address include:

- > village selection procedures/criteria
- > community management of water supplies (including participation in decision-making)
- cost recovery
- > latrine promotion and subsidy
- > maintenance (VLOM, private sector or two/three tier)
- regulation of NGOs
- > regulation of private sector
- > responsibility for co-ordination and
- > roles in sector

There may be other aspects in addition to these that have been identified during the course of the Planning Workshop and the Workshop Review.

IS1.1 Develop policy, procedures and methodologies

Some of the issues may already have been explored as Programme Policy Decisions (G2.4.7, M2.4.7). Now the detail of the policy and procedures needs to be added.

The process of developing policies and procedures can contribute to transparency. The participatory methods of the Planning Workshop can be continued by holding workshops to develop some of the items in the list.

Whatever process is used, it is important to allow sufficient time and resources for this activity. These policies and procedures will be a major factor in making the programme easy to manage and implement, and in the overall success of the programme.

IS1.2 Implement policies and procedures

This will be a continuous activity for the application and use of the policies and procedures during the course of the programme. It may be considered to be part of Programme Management.

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#### Specific objective IS2

#### Management and personnel capabilities

The intention of this Specific objective is that each government organisation involved in the water and sanitation sector has the structure and staff with clear roles and responsibilities and the capabilities to achieve the needs sector. The activities should be carried out by each of the organisations involved in the sector. It may also be helpful for the private sector, NGOs and other external support agencies to review their organisation in the same way.

It may be helpful to engage an institutional development specialist to facilitate these activities with the staff of these organisations.

#### Reference

> WELL for DFID (1998)

IS2.1 Confirm/redefine/define responsibilities of organisation The Planning Workshop may have revealed overlaps and confusion as to who is responsible for what in the sector. In particular, responsibility is often dispersed amongst several departments. The Planning Workshop and Workshop Review may also have revealed and defined additional responsibilities that need to be allocated and undertaken. Even if the responsibilities of an organisation are clear, it is helpful to review and confirm the responsibilities so that everybody knows who is responsible for what.

#### Reference

> Edwards et al. (1992)

#### IS2.2 Confirm/redefine/define organisational structure

Having clearly defined the responsibilities of each organisation in Activity IS2.1, the next step is to review the organisational structure and staffing needs to undertake the responsibilities of each organisation.

"'Structure' includes the allocation of formal responsibilities [within the organisation], the typical organisation chart. It also covers the linking mechanisms between the roles, the co-ordinating structures of the organisation, if any are needed. The basic forms make up what might be called the skeleton of the organisation. They need to be joined by muscles, nerves and flesh if they are going to work, but the decision on the underlying bone structure is a first priority" (Handy, 1993).

The effective organisation is that which has an appropriate structure and culture. 'Appropriate' would be determined by a variety of forces, the technology, the market, the size of the organisation, its people. The problem now is to make this conceptual doctrine of 'appropriateness' operational in designing an organisation's structure. In pursuing an optimal structure, it is useful to remember the saying: 'As simple as you can, as complex as you must' (*ibid.*).

#### IS2.3 Review and revise job descriptions

Based on the definition of responsibilities for the organisation and a reviewed organisational structure, job descriptions should be assessed to see how they contribute to the achievement of the responsibilities. The job descriptions should be analysed both within themselves and together to ensure that they combine to cover all that is necessary. This exercise may reveal gaps, which either need to be assigned to existing staff job descriptions or new staff positions may need to be created.

#### IS2.4 Training needs assessment

Training needs assessment is a standard process in training, and is probably best carried out by a specialist trainer. This step in the training process identifies aims to establish the current levels of knowledge, skills and attitudes among staff, and compares them with the requirements of their jobs. The gaps between the two represent the training needs.

Training needs in social and community development, community organisation and hygiene promotion may need to be further analysed under Activity IS3.2. Training needs in monitoring and evaluation may need special attention (see Specific objective IS5).

#### IS2.5 Source and provide appropriate training

Some indication of training needs may have become evident through the Stage 2 Assessment and Stage 3 Analysis. However, it may be difficult to predict how much and what type of training is required at the design stage. The training needs assessment should define in more detail the scope and scale of training needed, so some flexibility should be allowed for this activity.

#### IS2.6 Review/revise staff conditions of service

A major contribution to the morale and enthusiasm of staff in achieving the aims of the water and sanitation sector and the programme will be their conditions of service. These may well be regulated by government rules, but it may be helpful to review conditions of service to see if any improvements can be made. Such a review may also reveal anomalies which can be removed.



#### Specific objective IS3

Staff development for community liaison/development/ management, and hygiene promotion

An area that may need special attention in institutional strengthening, particularly for technically oriented organisations, is the social and community aspect of water supply and sanitation and hygiene promotion. Some technical staff may already know about the concepts, but may not know or have much confidence in the application and how to work with communities in such ways. For others, the concepts may be completely new. Therefore, it is may be worth having a specific objective especially to develop and strengthen each organisation's capacity to work with communities.

Approaches to this can include training existing staff, recruiting new staff to provide the expertise, or a combination of both.

#### IS3.1 Employment of social/CD/hygiene promotion staff

The advantage of employing specialist staff is that they can be effective in bringing about change in existing staff by always being there to demonstrate new practices and challenge traditional ways of working. They reinforce occasional training courses.

This activity includes the usual steps of defining the posts, writing job descriptions, advertising and recruiting staff, followed by continuous employment.

#### IS3.2 Source or develop orientation and training courses

The training needs assessment in Activity IS2.4 should identify which staff need training, what type of training they may need, and how much training they need. However, the needs may need to be further analysed with specialists in social and community development and hygiene promotion to define the types of training needed. Appropriate courses then need to be either found or developed with specialist training organisations or developed in-house. This type of training should be based on participatory principles.

IS3.3 Training in community organisation, PRA methods, hygiene behaviour and education, etc.

Basic training, advanced training and refresher training need to be provided on a planned schedule. Apart from training, it may also be useful to hold regular workshops to enable staff to share experiences of these new ways of working.

#### Programme design

MANUAL: STAGE 3

#### Specific objective IS4

Capacity of organisation for implementation/facilitation

This specific objective is to ensure that total human and physical resources of the various organisations are adequate to achieve the planned targets.

#### IS4.1 Assess implementing/facilitating capacity of organisations

The analysis of organisational capacity in the various programme components in Stage 2 (M2.2.3) should have revealed in overall terms whether the existing capacity of the organisations in the sector are adequate to achieve the planned targets, or if there are limitations in capacity. This activity is to make a more detailed analysis of the implementing and facilitating capacity, in terms of both human resources and other resources such as offices, equipment and vehicles. It may help to make the analysis for each district or sub-area of the programme, to see if there are places where special attention will be required.

#### IS4.2 Assess needs and targets

As in IS4.1, this activity is to analyse the needs and planning targets in more detail. Activity WS2.12 for monitoring coverage will help to define the actual coverage needs.

#### IS4.3 Recruit staff

Base on the analysis and comparison between existing capacity and the needs in Activities IS4.1 and IS4.2, it should be possible to identify any shortages of staff. To fill these gaps, this activity includes the usual steps of defining the posts, writing job descriptions, advertising and recruiting staff, followed by employment, either on a continuous basis or on fixed-term contracts to cover the periods of need. An alternative may be to arrange for the private sector to cover any gaps, if the required expertise is available and affordable.

#### IS4.4 Provide resources

This activity is to cover the provision of other resources, such as construction equipment, office space and equipment, transport, etc.

#### IS4.5 Plan workloads

Planning sensible staff workloads is crucial for the successful achievement of the programme. Various methods for doing this are described in books on planning. Alternatively the project planning used in the preparation of the project can provided a basis for this (MA8). Working at this detailed level of planning may show that the analysis of capacity in Activity 4.1 was unrealistic, so it may be necessary to review the other Activities under this specific objective.

#### Specific objective IS5

#### Monitoring and evaluation

**Monitoring** is the systematic and continuous assessment of the progress of a piece of work over time. It is a basic and universal management tool for identifying strengths and weaknesses in a programme. Its purpose is to help all the people involved make appropriate and timely decisions that will improve the quality of the work. Monitoring covers a wide variety of techniques and methods and applies to the management of finance, personnel, vehicles and buildings, as well as to the progress of programme activities and the way the activities are carried out (Gosling and Edwards, 1995).

An **evaluation** is the assessment at one point in time of the impact of a piece of work and the extent to which stated objectives have been achieved (*ibid.*).

Monitoring should be an established function in each organisation involved in the programme. Evaluation may also be conducted by each department concerned on the components for which it is responsible, but it may be more effective to evaluate the integrated programme as part of Programme Management.

#### IS5.1 Establish monitoring system

A monitoring system is a system for collecting and using information about the progress of a piece of work. Its purpose is to help all the people involved in the work take appropriate decisions. It is not simply a means of collecting information, however. It must also be a *communication system*, in which information flows in different directions between all the people involved.

The essential components of a monitoring system are the:

selection of indicators for each activity;

- > collection of data concerning the indicators;
- analysis of the data;
- > presentation of information in an appropriate way; and
- > the use of this information to improve the work.

(*ibid*.).

Monitoring can be considered for three different aspects of the programme:

- > management/administration
- > finance
- > programme implementation

Monitoring systems should include both process and impact monitoring.

**Process monitoring** includes information about the use of resources, the progress of activities, and the way these are carried out. Process monitoring is a means for:

- > reviewing and planning work on a regular basis;
- assessing whether activities are carried out as planned (for example, according to standard criteria of quality);
- > identifying and dealing with problems as they come up;
- > building on strengths and taking advantage of opportunities as they arise;
- > assessing whether the style of work and management is the best way to achieve the development objectives of the work (capacity building, changing power relationships, etc); and
- > monitoring changes in the target population and in the external environment that are relevant to the work.

#### SECTION B: PROJECT TO DEVELOP PROGRAMI

**Impact monitoring** provides information on progress towards achieving objectives, and on the impact the programme is having in relation to these objectives. Impact monitoring is the means by which:

- the work can be related to its overall purpose on a continuous basis, in order to provide a measure of progress;
- the work can be modified in response to changing circumstances without losing its overall direction;
- the need to change objectives can be identified;
- > the need for further information or research can he identified; and
- > the assumption that the activities will help achieve the stated objectives can be verified.

Impact monitoring is a form of continuous self-evaluation. If it is done well, formal evaluations will be needed less often. And if a formal evaluation is carried out, the programme staff will already be familiar with their work in relation to their objectives. They will be able to participate more fully in the evaluation, and find it less threatening.

(*ibid*.).

#### IS5.2 Establish monitoring criteria

Monitoring criteria should be set for each specific objective and activity in the programme. Gosling and Edwards (1995) provide guidance on the information to be collected, the sources of the information, and the use of the information for the three different aspects, management/ administration, finance, and programme implementation.

#### IS5.3 Establish evaluation criteria

Although evaluation may be carried out for the programme overall through the programme management, key indicators need to be set that can show what progress has been made towards achieving the objectives.

#### IS5.4 Carry out monitoring and use results

This activity is for the regular monitoring and use of the results to modify the activities and objectives if required.

#### IS5.5 Database of existing water supply systems

An essential monitoring tool is to establish and maintain a database of all the waterpoints in the programme area.



#### Specific objective IS6

#### Co-ordination and co-operation

Poor co-ordination of the sector is often identified as a serious weakness, and many people and organisations complain about it. The responsibility for poor co-ordination is not usually attributable to any one organisation. The unwillingness to be co-ordinated, because of rivalries between government departments or NGOs' reluctance to work with government, is as detrimental as the failure of one department to take the lead in co-ordination.

The achievement of good co-ordination justifies a specific objective with fully resources activities. It should be founded on a willingness to co-operate, and a mutual respect and trust between all the agencies working in the sector. These can only come from agencies knowing and communicating with each other.

#### IS6.1 Identification of partner groups (including donors)

This should build on the assessment exercise in Stage 1 (M1.3.2). It involves listing all the organisations already working in the sector, and identifying agencies outside the sector but with the skills to contribute. These could include health education, community development and facilitation, and training. It may also cover existing and potential donors to the sector.

#### IS6.2 Define/confirm lead agency

For effective management of the sector, one agency should have overall responsibility for leading the sector. Under this overall lead, other agencies may lead on the various components, such as hygiene promotion or water resource management, as part of Activity IS2.1. To reach agreement on which department should take this lead may take considerable discussion and negotiation.

#### IS6.3 Registration of implementing agencies

One of the regulatory functions to be assigned to a government department is the registration of all the organisations working in the sector. Maintaining the register would be a minor ongoing activity.

#### IS6.4 Establishment of co-ordination systems

The design of co-ordination systems needs careful thought and discussion and agreement between all the agencies working in the sector in order to generate the willingness to be co-ordinated. Co-ordination systems can include regular meetings to share experience and learn from each other, routine reporting of coverage, conforming to standards and quality control, uniformity of subsidies etc.

After establishing the co-ordination systems, effort is required from all parties to make them work.

#### SECTION B: PROJECT TO DEVELOP PROGRAMM

#### MANUAL: STAGE 3

#### M3.3 Programme management

#### Specific objective PM1

#### Integration and coverage of components

With various different organisations involved in providing one, some or all of the components in parts or all of the programme area, planning and organisation is obviously vital. If an organisation can only provide one component, such as water supply, another organisation may be needed for hygiene promotion and sanitation. One of the main objectives for management of the programme is to ensure that the components of water supply, management of the water resources, hygiene promotion and sanitation are fitted together, and that the whole programme area is covered according to the targets set.

#### PM1.1 Planning

The planning and designing described in these Guidelines and Manual is for the overall framework of the programme. This activity is for the regular shorter term planning of detailed activities within the overall framework. It may be done for different periods at different levels, such as annually, quarterly, monthly and weekly.

Plans should not be regarded as binding straitjackets. They are organised intentions based on existing information and predictions of what will happen. If circumstances change, or monitoring information shows that something is not working as planned, then the plan needs to change.

#### PM1.2 Projects

The programme is a framework in which a number of separate, but hopefully integrated, projects should be organised to achieve the targets set. This activity is for soliciting organisations to undertake projects, and arranging and managing the projects. It includes ensuring that all the components are covered either within one project, or by complementary projects.

#### PM1.3 Co-ordination

Co-ordination is necessary to ensure that all the organisations and all the projects work together to achieve the integration. As an activity, it is the practice of the systems that should be established under Specific objective IS6.

#### Specific objective PM2

#### Regulation of procedures, standards, etc.

Regulation of policies, procedures and standards may be considered as a responsibility for each organisation concerned. There may also be a need for an overview role by Programme Management to ensure consistency in both development and application of policies, procedures and standards.

#### PM2.1 Regulate policies and procedures

The development of policies and procedures is described as part of institution building and strengthening under Specific objective IS1. Water supply includes the development of standards in Activities WS1.2 and WS3.2, contracting regulations in WS2.4 and WS3.4 and quality control in WSWS2.5 and WS3.5. In sanitation, standardisation is covered under Activity SA2.1 and regulations for siting latrines in SA2.2.

Application of the various procedures, regulations and standards should be the responsibility of the individual organisation concerned. The role of Programme Management in this should be to regulate this development and application. It should be to ensure that the procedures, regulations and standards are consistent with each other and are applied and enforced consistently and fairly.

#### MANUAL: STAGE 3

#### Specific objective PM3

Management of resources

Various resources, including finance, people, equipment and materials, need to be mobilised and co-ordinated in order to achieve the programme goal.

PM3.1 Funding: donors, government budgets Funding for the programme may be raised from various sources, including:

- > government, as part of its annual budget allocation
- donors (multi-lateral and bilateral), as grants or loans
- development banks, usually as loans
- > NGOs, usually as projects rather than cash
- > the communities themselves, as cash or through provision of labour and/or local materials
- > the private sector, through investment in projects

Fund-raising is increasingly competitive and is likely to be an ongoing task. This programme should be a good basis on which to solicit funds from the various donors.

The activity should also include the allocation, accounting and audit of the funding. Accountability to all the parties involved, communities, donors, government, NGOs and private sector, is essential to build the trust and mutual respect that is vital for the co-operative spirit to achieve the programme goal.

#### PM3.2 Implementing agencies

This activity is for organising implementing agencies to undertake the various components of the programme. These agencies can include government departments, NGOs, contractors and consultants. This may mean inviting and encouraging organisations to work in the area, and ensuring that all the components are covered either by one organisation or by organisations working together to complement each others work.

#### PM3.3 Materials

The actual supply of materials may be done through multi-lateral or bilateral agencies, donors, NGOs or the private sector. This activity is to ensure that the materials are procured and available for projects and programme activities. It may also cover provision of local materials by communities.

M3

#### Specific objective PM4

Management structure and organisation A basic decision has to be made on the management structure and organisation for programme management. The alternatives are:

- assign programme management to the existing management system in an appropriate government department; or
- > establish a special separate programme management unit.

The advantages and disadvantages of each should be assessed in the context of the existing system. The immediate objective is to have the most effective management system for the programme, but it may also be worth considering the longer-term sustainability of the system when making this decision.

The activities to achieve this specific objective are self-explanatory.

PM4.1 Define programme structure and organisation

- PM4.2 Manage staffing
- PM4.3 Plan workloads

#### MANUAL: STAGE 3

#### Specific objective PM5

PM5.1 Preparation of reports

Production of progress and financial reports is a normal part of programme management. They are certainly a requirement of all donors and usually of government systems.

If there are several donors funding the programme, it may be worth developing a standard reporting format with all the donors that satisfies their various requirements. Otherwise, much time will be spent reorganising information into individual reporting requirements.

B

M3

#### Specific objective PM6

#### Monitoring and evaluation

Detailed monitoring should be the responsibility of the individual organisations, as described in Specific objective IS5. Monitoring at programme management level should be more of an overview of the programme.

Evaluation of the overall programme is important because of its integrated nature. Individual projects may also be evaluated, and may be a standard requirement of donors and standard practice of organisations, particularly NGOs.

The dividing line between evaluation and monitoring is not always clear cut. Indeed, information from monitoring normally makes a major contribution to evaluation studies and often provides the warning signal that indicates the need for a detailed evaluation.

An evaluation may take many forms. It may concentrate upon macro or sector problems (e.g. the planning process, the resource allocation mechanism); upon programme and project organisation (e.g. preparation, construction, operation, integration); upon specific problems (cost overruns, delays in construction, operation, and maintenance failures); or upon particular policy issues (hygiene promotion, community management of construction) (Cairncross *et al.*, 1980).

It is important to be clear about the objectives of an evaluation. Major objectives may be:

- 1. To assess the degree of service of completed water supplies
- 2. To find out how this might be increased by improvements in operation and maintenance
- 3. To provide feedback on the validity of the original planning assumptions, particularly regarding benefits
- 4. To provide feedback on the appropriateness of the current strategy for the programme in terms of resource allocation, village selection, choice of technology, community management, etc., in the light of its current objectives and observed benefits
- 5. To justify the efforts being made, with a view to attracting further resources

The emphasis should always be on evaluation as a learning process, a way of examining a piece of work to see how it can be made more effective. Any evaluation should be 'critical', in that it looks carefully at the performance of a piece of work to see how it can be improved. It should not be seen as critical in a negative sense, and it should not be a threatening exercise for programme staff, since this will make it unlikely that the results will be accepted and used. In practice, people always feel threatened by an evaluation. The anxieties may be lessened if the various organisations and their staff are involved in discussions about the purpose and design of the exercise from the beginning, and can participate in the evaluation process (Gosling and Edwards, 1995).

Some donor agencies, for example the Asian Development Bank, have requirements and procedures for 'benefit monitoring and evaluation'. The design of the monitoring and evaluation system may need to take these into account.

PM6.1 M&E of policies, procedures, projects, organisations

To maintain or improve programme performance, information should be obtained from the regular *monitoring* of programme performance as a routine activity of the project management system (Cairncross *et al.*, 1980). The activities for this are described in Specific objective IS5.

The timing, purpose and method of evaluation should be planned. It may be conducted as an interim or mid-term evaluation, and/or as an ex-post evaluation, after the end of the programme period. For a major programme like this, it is probably useful to have interim evaluations every two or three years, depending on the time-scale of the programme, and an ex-post evaluation.

M3

#### SECTION B: PROJECT TO DEVELOP PROGRAMM

There are several ways of conducting an evaluation:

- > an external evaluation by a team of evaluators who are independent of the programme
- a participatory evaluation involving staff and communities in the programme, possibly facilitated by an external consultant
- a combination of independent specialists together with staff and community representatives

Terms of Reference should always be prepared for evaluations, with the various organisations in the sector involved in drafting them. The ToR should cover the following points:

#### 1. Purpose and aim

- > Why is it necessary?
- 2. Who is it for?
  - > How will the results be used?
- 3. Objectives and key questions
  - > What are the objectives of the review or evaluation?
  - > What specific questions should it address?
- 4. Information collection and analysis
  - > What information is needed to answer these questions?
- Where will the information come from?
- > What indicators can be used to measure impact and progress of the work?
- > How should information be collected, analysed and presented?

#### 5. Presenting the results

- > What are the conclusions and recommendations?
- > How will the findings be recorded and presented to different users?
- > What feedback will there be about the findings and about the process to people involved in the work?
- > How should the findings be stored for future use?

#### 6. Organisation

- How will it be directed and managed?
- > Who should be involved, what are their tasks and responsibilities?
- → What is the timescale?
- > What resources will be needed?

#### PM6.2 Use results to improve projects, procedures

The purpose of the regular activity of monitoring is to improve the quality of work. Thus, the use of monitoring results should be a regular part of programme management to improve the procedures, regulations and projects in the programme.

Interim evaluations should be used to revise the overall programme plan, if the results show it to be necessary. Holding workshops similar to the Planning Workshop may be an effective way to do this. The results of end of project evaluations should be used to plan future programmes.

Evaluations can also be used to share experiences and lessons with organisations and people in other areas, and other countries.

#### MANUAL: STAGE

#### PM6.3 Advocacy

The results of evaluations and other experiences of running the programme may be used to advocate for policy changes at national and international level. To be effective, advocacy needs to be planned in the same way as any other objective. The strategy should include a clear definition of the changes required, people and organisations to be influenced, and methods to achieve the influence.

### M3.6 Review Workshop

#### Table M3.6: Draft Timetable for Programme Review Workshop

Day 1	08.30	09.00	Registration	
	09.00	09.15	Introduction to Review Workshop	
	09.15	09.30	Introduction of participants	
	09.30	10.00	Expectations of participants	
	10.00	10.15	BREAK	
	10.15	11.00	Presentation of draft programme	
	11.00	12.30	Review of programme components (small groups)	
			š hygiene education	
			š' water supply	
			š' sanitation	
			š' water resource management	
12.30 13.00 Presentations of sma		13.00	Presentations of small groups:	
			discussions, adjustments and confirmation	
	13.00	14.00	LUNCH	
14.00 15.30 Pr dis 15.30 16.00 BF		15.30	Presentations of small groups (continued):	
			discussions, adjustments and confirmation	
		16.00	BREAK	
	16.00	17.00	Prioritising specific objectives and activities	
Day 2	08.30	09.30	Presentations of priorities	
	09.30	10.00	Review of institutional component of programme (small groups)	
	10.00	10.30	BREAK	
	10.30	11.30	Review of institutional component of programme (small groups)	
	11.30	13.00	Presentations of small groups:	
			discussions, adjustments and confirmation	
	13.00	14.00	LUNCH	
	14.00	15.30	Review of Programme Goal	
	15.30	16.00	BREAK	
	16.00	17.00	Overview/general discussion of programme	
	17.00		Close of workshop	

It may be necessary to spread this timetable over three days.

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Appendices

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### Appendix A: Introduction to technical aspects of groundwater development for rural water supply

Groundwater development requires input from many disciplines: economists, sociologists, planners and administrators as well as specialists to address the technical aspects of resource evaluation, water supply design and resources management.

Groundwater development is different in nature to many engineering projects. Data are always incomplete and progress must be cautious and controlled. This Appendix describes the processes involved in developing a groundwater resource and how knowledge of the behaviour of a groundwater system can be improved through sensible management. It is intended to provide only sufficient information for the non-specialist to be able to appreciate the technical input of the hydrogeologist within the Preparation Project. Good groundwater development measures include:

- good, careful management;
- > good practices for design and management of work;
- monitoring and databasing; and
  - > maintenance.

#### The stages of development

During the early stages of development, groundwater is frequently used in an *ad hoc* way. Depending on location and need, holes are dug in the ground, springs are exploited, even horizontal drains (used for many centuries by the Arabs, Romans and South American Indians) as well as manually drilled boreholes (as in China and India) may be constructed.

As needs expand, a more detailed investigation or feasibility study of the groundwater system is required before further development can sensibly take place. Estimates are made of the rate at which the aquifer system is replenished by rainfall, and further drilling, perhaps controlled centrally, then proceeds. In due course further development may place the level of extraction close to the replenishable limit of the aquifer and shallower more vulnerable sources may start to dry up seasonally. Artificial recharge, perhaps from rivers, may help alleviate the situation, but this respite may only be temporary. At this stage degradation of the aquifer may progressively occur. Unless extreme care is taken, over-exploitation, often accompanied by deteriorating water quality and pollution of the resource, will begin to take place.

A main objective of the Programme is to avoid placing the available water resources in jeopardy and to avoid degradation of the resource. This will assist the likelihood of developing a sustainable rural water supply system. It can be accomplished through careful planning and assessment.

#### Some hydrogeological concepts

Aquifers are reservoirs, and can act as buffers to variations in rainfall and recharge from rainfall, so they are capable of maintaining supply through prolonged dry periods. Groundwater moves through pore spaces or fissures within the saturated part of the aquifer. The aquifer can thus act as a filter to solid material such as waste, but water is also a solvent and it can take some material into solution. A hydrogeologist is able to quantify some of these characteristics. A glossary of technical terms is provided to help in understanding.

#### Groundwater hydraulics

Groundwater derives from recharge by rainfall percolating vertically downwards under gravity through the soil zone to reach the water table. In this state the groundwater is unconfined, and once it has reached the water table it may flow laterally according to the prevailing head difference or hydraulic gradient on the water table. It may flow down the hydraulic gradient beneath an impermeable cover, at which point the aquifer becomes confined.

What happens at any one point in a groundwater system may affect what happens at other points. Whether these need to be considered in the ultimate management of the aquifer depend on the distances and time scales involved. If a distance is fixed, such as that between two village wells, then it is the time for a significant effect to propagate across that distance which is important. Conversely if the time scale is fixed, such as the duration of a drought, then the distance that is affected by pumping a source or group of sources becomes significant.

#### Groundwater chemistry

Groundwater chemistry is controlled by atmospheric inputs within the rainfall, biological activity mainly within the soil zone, water-rock interaction and human impacts.

Rain is a source of a number of solutes in small quantities and is also a weak acid. Acidity is enhanced in the soil zone where microbial activity promotes production of carbon dioxide (CO<sub>2</sub>). This acidity in turn drives the weathering and dissolution process at the base of the soil where water and rock interaction and ion exchange are greatest. The presence of carbonate minerals such as calcite either as a sandstone cement, fracture infill or as limestone cause hard, carbonate rich groundwater, whereas silica rich rocks such as granite and silica cemented sandstones cause relatively soft and sometimes slightly acid groundwater.

The percolating groundwater may take only a few hours to pass down a fissure to the water table or it may proceed at a rate of up to 1 metre per year in a porous stratum such as alluvium. Once at the water table it can flow down the hydraulic gradient towards a natural point of discharge (a spring or baseflow discharge to a river or a stream). Depending on the distances, hydraulic gradient and transmissivities involved, this may take between a few tens of years to many thousands of years. The older the groundwater the greater the opportunity for it to reach chemical stability with the solid rock and generally this also means the more mineralised or more saline it can become. Older waters may be zoned with increasing depth, and it is not uncommon to find younger fresher groundwater over older saline (and, therefore, more dense) water.

The presence of oxygen in an unconfined aquifer, or reducing anoxic conditions which may be generated in an unconfined aquifer, dictate the chemical process that may occur within a given rock type. Extreme reducing conditions promote the uptake of metals in solution. These are commonly manifested as ochreous iron-stained deposits derived from the water once it is pumped up and left in contact with the air. Other metals may also be present, notably manganese, and sometimes lead and zinc. World Health Organisation suggests maximum desirable potable levels for various elements in *Guidelines for drinking-water quality: Volume 1 Recommendations* (WHO, 1993).

The main factor affecting transport of pollution through aquifers is the flow rate, which depends on the transmissivity and thickness of the aquifer, and the hydraulic gradient. Other factors to pollutant transport are adsorption on to the mineral grains and biological activity in the soil zone. Some organic pollutants also tend to break down through a process known as biodegradation, and with time change into new, sometimes less harmful products, in terms of water potability. Pollutant transport also affects dilution according to diffusivity within the aquifer. All these factors tend to produce an overestimation of groundwater pollution from point sources. Nevertheless protection of groundwater sources from contamination, particularly from nearby waste disposal facilities, is an important design consideration particularly for shallow and vulnerable unconfined aquifers.

adsorption	the process by which a thin layer of a substance accumulates on the surface of a solid substance
aerobic	in the presence of the atmosphere and free oxygen.
aquifer	a rock formation which is sufficiently permeable to yield a usable quantity of water to a borehole, well or spring
baseflow	the sustained flow of a stream, provided from stored sources (principally groundwater). The flow is unrelated to a specific rainfall event
biodegradation	microbial breakdown of a compound
bedrock	the unweathered rock beneath the saprolite, regolith and/or alluvium
confined aquifer	an aquifer overlain by less permeable strata in which groundwater is under pressure
crystalline basement	non-sedimentary rocks which yield water from the regolith or aquifer weathered surface and fractures at depth
drawdown	the difference between the rest water level (or piezometric head) and the water level caused by pumping a borehole
electrical resistivity depth sounding	a geophysical survey technique by which an electrical current is passed through the ground between electrodes, and measured via another pair of electrodes. Electrode separation reflects the depth of observation. Interpretation is by mean of analogue
evapotranspiration	water returned from plants to the atmosphere
fissures / fractures	the preferential storage and transport of groundwater in fresh bedrock may best occur in dilated cracks or joints. Water may be fed to the fractures from the granular regolith above, provided that the saprolite is saturated
gravel pack	rounded granular material (typically 1 to 3mm in diameter) placed in the annulus behind slotted borehole casing or screen. It acts as a borehole stabiliser and as a means of promoting water flow into the borehole
groundwater system	qualitative description of the flow of groundwater in an aquifer and how it is affected by the prevailing geology
head	the height to which water rises above a set datum (often sea level) in a well or borehole
hydraulic gradient	the prevailing inclination of the water table which provides the driving force to transmit groundwater through an aquifer
igneous	rocks formed by solidification from a molten state; includes intrusive (e.g. granites) and extrusive rocks (e.g. lavas)
ion exchange	the exchange of ions between different colloids
lithology	a term referring to the general characteristics of a sedimentary rock
metamorphic	a rock derived from a pre-existing rock by mineralogical, chemical or structural change (e.g. pressure, heat), the process being sufficiently complete to form a well-defined new rock type
permeability	the ability of a material (e.g. rock) to allow fluid to pass through it under the pressure of a hydraulic gradient
piezometric level	the level to which water will rise in a borehole which penetrates groundwater confined in a fracture or beneath a confining layer such as clay $% \left( {{{\rm{ch}}_{\rm{c}}}} \right)$
porosity	the ratio of the volume of the voids in a rock to the total volume of the rock
precipitation	rainfall or snowfall
recovery	the process which occurs when a pump is stopped and the water level in the borehole is allowed to rise back towards its static pre-pumping level. Incomplete recovery at an elapsed time greater than the total duration of the pumping phase may indicate over pumping
regolith	the weathering product that may be present over crystalline basement rocks. It may have a clay-rich upper part which inhibits downward percolation of rainwater, and is generally granular, progressing to blocky with depth. It may be a few metres to a few tens of metres thick
salinity	the concentration of salts and chemicals within water
sedimentary	a rock that has been laid down under the action of water, wind or ice from the detritus of existing rock material $% \left( {\left[ {n_{\rm ex} - n_{\rm ex} + n_{\rm e$
storativity	the volume of water that can be removed under gravity from a saturated rock mass
specific capacity	the yield of a borehole divided by the respective drawdown. For inter-borehole comparison the pumping elapsed time should always be the same (e.g. $240$ minutes)

specific electrical conductivity	the unit electrical conductivity of a fluid, which in the case of groundwater reflects the salinity of the water
storativity	the volume of water that can be released from or taken into storage per unit surface area of the aquifer for each unit change of head
transmissivity	a measure of the ability of an aquifer to transmit groundwater, being the product of aquifer thickness and aquifer hydraulic conductivity
unconfined aquifer	an aquifer in which the saturated zone meets the unsaturated zone at the water table, the latter maintained at atmospheric pressure

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## Appendix B: Implementor or Facilitator? Achieving Community Management in Nepal<sup>27</sup>

#### Jeremy Ockelford and Vijaya Shrestha

In a paper written for WHO, IRC states that 'governments have a vital *facilitating* role to play in fostering local management and control of community water sources and supplies' [emphasis added]. It goes on to emphasise partnership with local communities, and the type of decisions communities should be making with support of government agencies (IRC International Water & Sanitation Centre, 1995). But how are government agencies to achieve this? In many places government departments implement projects and programmes with community participation, but this can mean many different things.

The transformation from implementor to facilitator is much more difficult. This paper looks at a case in Nepal where His Majesty's Government's Department of Water Supply & Sewerage (DWSS) is making major efforts to achieve this transformation. The start of the process of changing this technical department to undertake the social and community components of rural water supply and sanitation were described by Shrestha and Pyakural (1996).

During the preparation of a major rural water supply and sanitation sector loan project with DWSS and the Asian Development Bank in early 1996, there was a debate in the water and sanitation sector about the respective roles of implementor and facilitator. These terms were not clearly defined but there was an assumption that the DWSS was an implementor, which was a bad thing, and that other groups, particularly NGOs, were facilitators, which was a good thing. Implementor and facilitator were seen in black and white terms, with an organisation being either one or the other. In fact, further discussion revealed that in many cases, NGOs had taken over the role of implementor instead of facilitating communities to manage the construction, operation and maintenance of their own water supply systems (Asian Development Bank and Department of Water Supply and Sewerage 1996).

This view of implementor and facilitator is rather simplistic and limiting. There are many steps in a project and in any one of these an agency may be an implementor or a facilitator, or part way between the extremes. To assist the DWSS in its efforts to change its way of working the team of consultants and staff preparing the project developed a table of the extreme definitions for implementor and facilitator in each step of the project, together with the changes needed to move from one to the other. A modified version of this is shown in Table 1 (Asian Development Bank and Department of Water Supply and Sewerage 1996).

The Table does not define the position of any particular agency, but it can be applied to any agency, including NGOs. An agency can be located anywhere at or between the extremes, so it may be a facilitator in some activities and an implementor in others. The DWSS itself was already a facilitator in several of the steps of a project, and was making progress in other steps.

27 Paper reproduced from Ockelford and Shrestha (1998) in Pickford (1998)

Table 1: Definitions of Facilitator and Implementor

	Activity	Implementor	Facilitator	Changes needed
1	Community Water Supply and Sanitation Awareness Campaign	š <sup>*</sup> Telling people about water supply and sanitation	<ul> <li>Participatory discussion, with broad range of people in communities, about water supplies, hygiene and sanitation, drawing out people's own interests, practices and concerns.</li> <li>Explanation of how people will be involved with and make decisions in sub-projects.</li> </ul>	<ul> <li>Staff orientation</li> <li>Training in PRA techniques</li> <li>Clear methodology for campaign meetings</li> </ul>
2	Request from community	<ul> <li>Request from small group only</li> <li>Political requests</li> </ul>	<ul> <li>Broad based request from many (majority) members of community</li> </ul>	š Orientation to DDC Council and Assembly
3	VDC and DDC Request Approval	<ul> <li>Decisions made without information, transparency or accountability</li> </ul>	S <sup>·</sup> Formal approval by VDCs <sup>•</sup> Prioritisation by DDCs in accordance with published criteria <sup>•</sup> Communities informed of prioritisation	<ul> <li>S<sup>*</sup> Criteria published</li> <li>S<sup>*</sup> Priority criteria explained to communities</li> <li>S<sup>*</sup> Transparent decision making</li> </ul>
4	Pre-feasibility study	S Study directed by overseer with support of community	<ul> <li>S Use of PRA techniques</li> <li>S Mass meetings to provide orientation on project activities and procedures</li> <li>S Verifications of need for water and interest of communities</li> <li>S Data gathering by and with community members</li> <li>S Water source identification</li> <li>S Preliminary layout of system by community with technical explanation and advice by overseer</li> </ul>	<ul> <li>S Training in PRA and community approaches</li> <li>S Training in facilitation of meetings</li> <li>S Adequate time for processes</li> </ul>
5	DDC and DWSS prioritisation	<ul> <li>Decisions made without information, transparency or accountability</li> </ul>	<ul> <li>Prioritisation by DDC/DWSO in accordance with published guidelines and criteria</li> <li>Communities informed of prioritisation and decision</li> </ul>	<ul> <li>S<sup>*</sup> Clear simple guidelines and criteria openly available</li> <li>S<sup>*</sup> Transparent decision making</li> </ul>
6	User need survey & feasibility study – socio-cultural, economic, health, technical	<ul> <li>Survey staff carry out survey asking community for information</li> <li>Technical survey by technician/overseer with help from villagers</li> </ul>	S     Mass meetings to discuss feasibility study and explain techniques     Use of PRA techniques     Data gathering by community members     Perliminary layout of system by community with technical explanation and advice by overseer     S	<ul> <li>S Training in PRA</li> <li>S Survey methodology based on PRA</li> <li>S Development of methods and teaching materials to explain technology</li> <li>Change in attitude of technical staff to share and explain engineering knowledge</li> <li>Sufficient time for process to be conducted at villagers' pace</li> </ul>
7	Appraisal of Feasibility Study Report	š Appraisal by agency	š Appraisal by agency and community	š' Sufficient time š' Feasibility report in Nepali and English

	Activity	Implementor	Facilitator	Changes needed
8	Social preparation process Agreement signed	S     Communities told about processes and processes imposed S     Takes place between WUSC Chair and DE at DWSO, or at Agency's	S     The following conducted using participatory methodologies:     WUSC formed     WUSC formed     Health workers and teachers identified     VMW appointed     VMW appointed     Volunteers selected     VAM systems discussed and developed, including payment to VMW and 0&M fund     Mass meeting to explain details of agreement     Provision for modification of	Sufficient time     Technicians and overseers     with community     development skills     Participatory     methodologies for WUSC     formation, VMW     appointment, volunteer     selection, etc.     Linkage with and support     to health posts     Flexibility in terms of     Agreement
	WUGU - Agency	office	<ul> <li>Fromstor for induncation of the terms of the Agreement</li> <li>S' Agreement signed in the community at a mass meeting</li> </ul>	
10	Preparation of detailed design, materials requirement, cost estimate	S Done by Agency staff (or consultants) in office using standard procedures	<ul> <li>Design according to standards, but with drawings and explanation that can be understood by community</li> <li>Transparent materials estimation</li> <li>Transparent costs estimation</li> </ul>	<ul> <li>Methods for presenting engineering design concepts in simple terms</li> <li>Transparent materials and costs estimating formats</li> </ul>
11	Presentation of designs and cost estimates to communities	5 Not done	<ul> <li>S<sup>-</sup> Presented, explained and discussed</li> <li>S<sup>-</sup> Adjustments made by community</li> <li>S<sup>-</sup> Copy of design, materials quantities and cost estimates given to community</li> </ul>	<ul> <li>Ådditional step</li> <li>Ådange in attitude of technical staff to share and explain engineering knowledge</li> <li>Ådequate time</li> </ul>
12	Training to WUSC in management of construction	š Not done (Agency manages construction)	š Management training given to all members of WUSC on site	š Participatory training techniques
13	Procurement of materials	Š <sup>*</sup> Central or regional procurement	<ul> <li>Procurement as close as possible to point of use</li> <li>WUSC involved in tender appraisal</li> <li>Purchase accounts open to community</li> </ul>	S <sup>·</sup> Decentralised procurement     S <sup>·</sup> Procedures to allow WUSC to appraise tenders     S <sup>·</sup> Transparent accounting
14	Construction	S: By contractor supervised by Agency staff	Š By community with technical guidance and support from technical facilitator (WST)	<ul> <li>Åbolition of contracting system</li> <li>Materials and financial advances to community for construction materials</li> <li>Training in management of construction WST full- time on site</li> </ul>
15	Hygiene and water use education	<ul> <li>Eccturing style of teaching</li> <li>Limited target group (WUSC only)</li> </ul>	<ul> <li>Participatory teaching materials and training methods</li> <li>Targeting effective motivators in village (village health volunteers, women's groups, youth volunteers, WUSC, etc.)</li> <li>Follow-up trainings</li> </ul>	S     Participatory training materials and methods     S     Trained trainers     Adequate time

	Activity	Implementor	Facilitator	Changes needed	
16	Sanitation	<ul> <li>Insisting that people (WUSC members) build latrines</li> </ul>	<ul> <li>č Latrines built as a result of genuine understanding and demand</li> </ul>	<ul> <li>Š Hygiene and water use education</li> <li>Š Latrines not used as only</li> </ul>	
				targets and indicators of hygiene and sanitation coverage	
17	Training of VMW	š Lecturing style of teaching	š Participatory training	š Participatory training materials and methods	
18	Training of WUSC for management of O&M	<ul> <li>š Lecturing style of teaching</li> </ul>	š Participatory training	š Participatory training materials and methods	
19	Completion ceremony	š <sup>-</sup> 'Hand-over' of scheme to users	<ul> <li>Š Celebration of community's achievement in constructing their own system</li> </ul>	š Reorientation of concept of 'ownership'	
20	O&M monitoring and follow-up support	Š <sup>·</sup> By DWSO     Š       Š <sup>·</sup> Not done until repair required	š Regular visits by MST to ensure that WUSC and VMW are confident and functioning	š Application of 1993 0&M	
				š Budget allocation and staff	

#### Abbreviations

#### Abbreviations:

- DDC District Development Committee (appointed by elected District Assembly)
- DE District Engineer (employed by DWSO)
- DWSS Department of Water Supply & Sewerage
- DWS0 District Water Supply Office (responsible to DWSS)
- MST Maintenance & Sanitation Technician (employed by DWSO)
- O&M Operation and maintenance
- PRA Participatory rural appraisal
- VMW Village Maintenance Worker (responsible to WUSC)
- WST Water & Sanitation Technician (employed by DWSO)
- WUSC Water User & Sanitation Committee (elected by community)

#### Progress

The Fourth Loan Project was agreed between the ADB and the Government of Nepal in November 1996, and work started in January 1997. The project is due for completion by mid-2001, with a mid-term review scheduled for the end of 1998.

Progress in the transition by the DWSS from implementor to facilitator includes the appointment of sociologists, the training of technical staff (engineers, overseers and technicians) in PRA methodologies and social preparation, and development of new procedures with information sheets in Nepali for distribution in villages. In addition DWSS has issued a directive that construction cannot be started until the preparation phase is completed. About four months is allowed for this phase, covered by Activities 8 to 12 in Table 1. DWSS has developed a strong support and monitoring programme to ensure that the facilitation process is followed. For the first time a budget allocation for social preparation work is included in the new Ninth Five Year Plan of His Majesty's Government of Nepal.

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