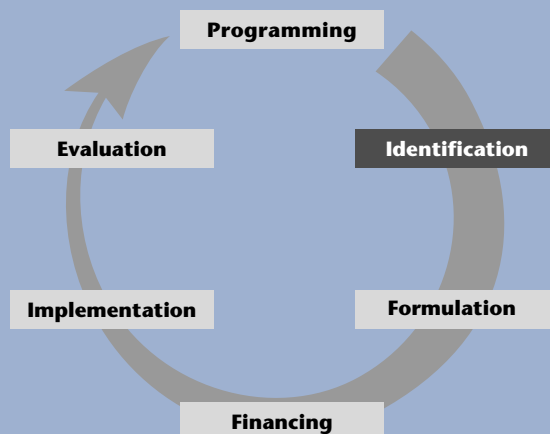


Identification

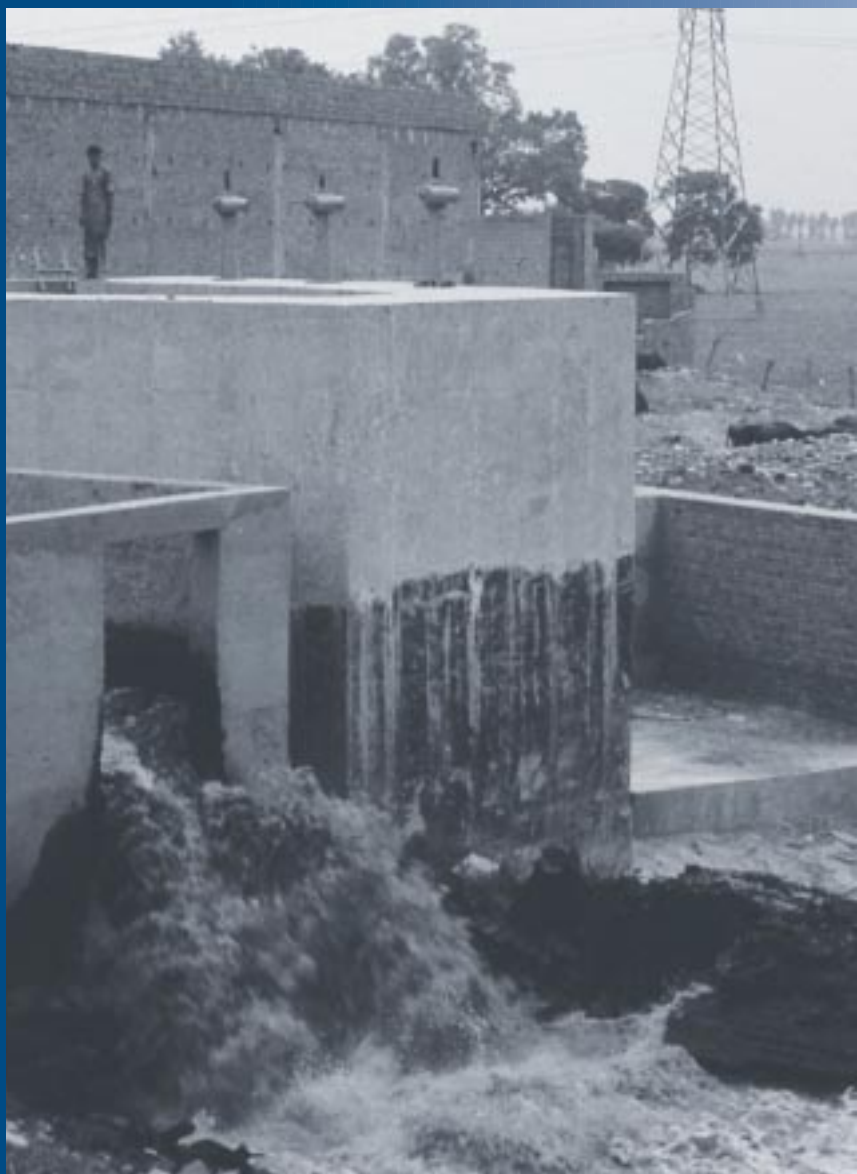
The initial elaboration of project ideas

Chapter 7



7

The purpose of the identification phase is to examine options and identify viable interventions that can address the priorities identified during programming. Identification determines whether it is worth going ahead with a detailed study (feasibility study) to define the project more closely. Pre-feasibility studies are the main outputs of the identification stage and there can be several issue-related studies or one comprehensive study.



For all phases of the project cycle other than programming, checklists have been prepared in the same format, to allow the user of the Guidelines to examine **key issues** likely to arise in the preparation and implementation of projects, alongside **possible responses**. Issues and responses are grouped according to a set of problem statements within the framework of principles established in the strategic

approach, starting with Institutional and Management principles, and proceeding through all categories of principles. In the **Identification** and **Formulation** phases, each programming context is handled separately since issues and responses differ between Focus Areas. In other phases, issues and responses are generic, and the same set of checklists applies in every Focus Area.

WATER RESOURCE ASSESSMENT AND PLANNING

KEY ISSUES

POSSIBLE RESPONSES

Institutional and Management Principles

The lack of an integrated policy environment at the national level can lead to inefficient allocation of water resources and poor investment decisions. Therefore examine:

- **What is the national water development policy environment and water-specific legislative framework?**
 - **What are the priorities for sectors dependent on water (e.g. hydropower, agriculture) and the associated goals for water resource development?**
 - **Does an up-to-date, comprehensive assessment of water resource development and management issues exist?**
- Assess current water policies to determine if they are appropriate in terms of overall national and regional social and economic development priorities.
 - If water policies are inappropriate, consider support for new or revised policy formulation, including priorities.
 - Establish the government's commitment and political will toward establishing integrated water resource management.
 - Consider providing support for a comprehensive water resources assessment and management strategy.

Fragmented planning functions and agency responsibilities lead to sector-based project-by-project development and inter-sectoral conflict. Therefore examine:

- **Which agencies, governmental and professional, are involved in planning and co-ordination at national, regional and local levels?**
 - **What is the potential for conflict among different water-related sectors and users, and what mechanisms exist to resolve such conflicts?**
 - **Would the creation/improvement of river basin organisations benefit assessment and planning?**
- Commission a comprehensive institutional review concerning water resources assessment and planning.
 - Consider establishing or strengthening inter-sectoral co-ordinating bodies at national, regional, river basin and local levels (e.g. inter-ministerial commission, river basin committees etc.).
 - Review lead and support agency functions; identify overlaps, potential conflicts and methods for resolving them.

Transboundary water resource issues are critical to water resource availability in many countries. Therefore examine:

- **What agreements govern the sharing and protection of waters with neighbouring countries?**
- **What are the effects of neighbouring countries' water strategies on water resources development and planning, and vice versa?**
- Consider ways of strengthening international agreements.
- Encourage the establishment of a regional/basin framework to guide water resource planning and management studies.

Neglect of legal aspects during strategy formulation can lead to an untenable legal framework for sound resource management. Therefore examine:

- **What laws govern or regulate the use, development and conservation of water resources, and are they appropriate and up to date?**
- **How effective is the enforcement of water-related laws and regulations?**
- Commission a study on legislation, analyse its consistency, and recommend necessary changes at all levels in the legal hierarchy.
- Consider assistance to the government for re-drafting legislation.
- Review the effectiveness of existing enforcement capabilities.

Disregard for stakeholder participation and too much emphasis on top-down planning tend to produce poor results. Therefore examine:

- **Who are the key stakeholders involved in water resources management and what are their respective interests?**
- **Do the policy framework and planning mechanisms encourage and facilitate stakeholder participation?**
- Ensure adequate awareness of the meaning of stakeholder participation and clarify commitment to it within all policies.
- Undertake a Stakeholder Analysis to identify key stakeholders and their respective interests. (*see Part III*).
- Identify/strengthen mechanisms to enable stakeholders to voice their opinion on water priorities.

Social Principles

National and regional social development goals should be integrated with water resources policies if key objectives are to be achieved. Therefore examine:

- **What are the national and regional social development objectives?**
- **What are the potential social impacts of investments in WRAP?**
- **What are the needs and demands of different social sectors with regard to water?**
- Assess compatibility of social development objectives with water resource policies.
- Determine the impact of the current water situation, including water quality and pollution issues, on various social sectors.
- Conduct a Social Impact Assessment (*see Part III*).
- Support studies to establish water demands of the different social sectors including health, education, housing, leisure, and culture.

Disregard for the social context of water use and a lack of consultation with stakeholders can result in inappropriate interventions. Therefore examine:

- **What mechanisms are in place to ensure adequate participation of beneficiary/user groups in planning?**
- **Which cross-cutting issues (such as gender, poverty alleviation, needs of ethnic minorities) should be addressed?**
- **Which potential user groups are known to be particularly disadvantaged?**
- Work with Local Authorities, NGOs and community groups to establish an appropriate participatory approach (*see Part III*).
- Support measures to involve especially disadvantaged groups in the process of identifying priorities.
- Identify which groups need to be involved during the formulation stage, and a suitable level of participation.

Economic and Financial Principles

A sense of the economic value of water is necessary to balance scarce resources with increasing demand, reduce wastage and encourage conservation. Therefore examine:

- What is the size of water-intensive or water-reliant sectors within the economy?
- What is the economic value of water in its alternative, often competing, uses?
- What are the projected demands for water in all its (competing) uses, including consumptive and non-consumptive uses?
- Estimate sectoral water use within the economy and establish water needs to support development objectives.
- Review water values in its different uses and consider the implications for future supply provision.
- Determine the effects of water shortages in all its competing uses, especially during drought periods.

Policies for allocation of water resources within and among sectors should promote economic efficiency and encourage higher-value uses. Therefore examine:

- What procedures are used for allocating water among its different uses, and are they efficient and flexible enough to respond to changing circumstances?
- What mechanisms exist for re-allocating resources (from low- to high-value uses), and what would be the implications of any re-allocation?
- Review the efficiency and flexibility of current allocation mechanisms (legal and administrative), and investigate alternative allocation measures.
- Investigate the scope for tradable water rights and water markets (*see Part III*).
- Investigate the likely negative economic and social impacts of re-allocation, allowing for events such as drought or floods.

Water is a scarce resource and demand management measures offer a means to augment existing supplies and conserve resources. Hence examine:

- What is the outlook for the future balance between the supply and demand for water?
- What is the potential for economic instruments in the management of water resources?
- What economic incentives/disincentives have a marked impact on water use?
- Analyse water demand projections and compare with supply from various sources, by region, season, and use, taking into account the effect of drought.
- Analyse cost of supplying (or saving) water from different sources, including supply-side and demand management measures.
- Assess impacts of pricing policies and subsidies, and investigate the potential of market-based incentives (water tariffs, pollution charges, water markets *see Part III*).

Environmental Principles

Environmentally sound water resource development and management relies on an integrated policy framework. Therefore examine:

- What is the environmental policy, which government and professional bodies are involved, and how does environmental planning relate to water planning?
- What is the potential for conflict between environmental needs and water-related development objectives?
- What are the potential environmental impacts of different interventions, and what mechanisms exist to reduce potential adverse impacts?
- Undertake initial screening and, if needed, a Preliminary Environmental Assessment to identify potential environmental impacts associated with alternative interventions (*see Part III*).
- Check environmental policy on pollution, health, and aquatic systems, and match with water-related policy.
- Strengthen/help establish an effective environmental agency with links to water resources agencies.

Water is an essential natural resource and should be planned and managed within the context of an overall natural resource management strategy. Therefore examine:

- To what extent is an integrated resource management approach followed?
- To what degree have all potential water sources been considered?
- What provision is required for 'environmental flows', of sufficient quantity and quality?
- Identify land/water interactions and watershed management strategies; where practicable, propose assessment and planning on a river-basin basis.
- Examine the potential for water use efficiency and resource conservation through conjunctive use of surface and groundwater sources.
- Check that the environmental water needs for the conservation of environmental assets have been identified and taken into account, especially for periods of low flow.

A lack of baseline data can make it difficult to assess the potential environmental impact of interventions and may lead to unplanned degradation. Therefore examine:

- What is the level and quality of environmental baseline data, and what additional data is required?
- What knowledge exists on the needs of the aquatic eco-system?
- Identify and assess sources of environmental data and information, and establish additional requirements.
- Include data and information-gathering components in further studies.
- Support research into the water dependence (both quality and quantity) of different aquatic ecologies.

Information, Education and Communication Principles

Water resource assessment and planning is an inter-disciplinary process that relies on a broad knowledge base as a pre-condition for effective planning. Therefore examine:

- **To what extent is the existing state of knowledge a constraint to informed decision-making?**
- **What are the constraints to information exchange and availability?**
- Review current data collection, analysis, storage and dissemination systems.
- Highlight the implications of a restricted knowledge base on levels of risk; give equal emphasis to information on water quality .
- Review mechanisms for information exchange and examine ways of improving information availability.

Communication between government agencies and other stakeholders is necessary if water-related development interventions are to be relevant. Therefore examine:

- **What mechanisms are in place to support communication between government agencies and other stakeholders?**
- **How effectively does the decision-making process incorporate user groups' needs?**
- Investigate existing communication systems for adequacy and frequency of information exchange.
- Review and strengthen user group participation (*see Part III*).

Without an understanding of water resource management issues, important stakeholders are unable to contribute effectively to planning. Therefore examine:

- **To what extent are raising awareness and education programmes seen as a primary function?**
- **What is the level of awareness among key stakeholders?**
- **To what extent are planning processes transparent and information accessible to stakeholders?**
- Identify whether awareness-raising (*see Part III*) is clearly defined within planning agency roles and responsibilities.
- Encourage and support educational programmes through appropriate media.

Technological Principles

Assessment of surface and groundwater resources, their allocation and use is a precondition for planning water resource management. Therefore examine:

- What is the availability of surface and groundwater resources, and how are they distributed between sectors?
- What proportion is governed and controlled by water allocation procedures (e.g. water rights, water permits)?
- What is the reliability of data for all sectoral uses and what demand assumptions are used?
- What is the amount of water unaccounted for at the basin level?
- Establish current water allocation, actual use, and future demands for all sectoral users and the significance of permits or rights.
- If water data collection is inadequate or the data is unreliable, recommend a programme of monitoring to improve data collection, storage and analysis.
- If knowledge of actual resources or resource use is inadequate, recommend a study to strengthen resource assessments.

Effective planning relies on a wide range of tools to enhance the knowledge base and understand linkages between physical and non-physical processes. Therefore examine:

- To what extent is the knowledge base a constraint to application of planning tools and methodologies?
- To what extent do current planning tools and methodologies match the planning scale (spatial and temporal)?
- Review and assess planning tools for compatibility with current knowledge and data availability, and the skills and resources of planning agencies.
- Identify improved planning tools and methodologies and assess training requirements to up-grade planning agency capability.

Hydrological and hydrogeological information form the basis of water resource assessments. High quality data is needed for reliable assessments. Therefore examine:

- To what extent does the existing network adequately match the planning scale?
- To what extent does the location, frequency and quality of data match planning requirements?
- Are the hardware and analysis methods for basic data collection appropriate?
- What mechanisms are in place to cope with events such as drought and flood?
- Review data collection networks, compare with recommended standards (e.g. WMO), and assess compatibility with spatial and temporal planning scales.
- Identify requirements for strengthening of basic data collection networks.
- Verify that technologies match the technical and financial resources of the responsible agencies.
- Help establish a disaster preparedness strategy including data management and early warning systems.

BASIC WATER SUPPLY AND SANITATION SERVICES

KEY ISSUES

POSSIBLE RESPONSES

Institutional and Management Principles

Basic water and sanitation service activities should be consistent with an integrated national water policy, and WHO standards. Therefore examine:

- What are the current national water policies and priorities regarding basic provision of water and sanitation services?
 - What is the current unsatisfied demand for clean water and sanitation, especially among disadvantaged groups?
 - Is the institutional framework equipped centrally and locally to provide efficient and sustainable services?
- Work with government to identify BWSS options consistent with national policies which follow WHO guidelines (*see Part III*).
 - Establish a realistic national minimum standard of service, and estimate the number of people falling below this.
 - Help government to rationalise the institutional structure to ensure effective service delivery and assess risks of any weakness in the framework.

Effective inter-agency and inter-sectoral planning is essential. Therefore examine:

- What other agencies (professional, private and NGO) should be involved in the planning process and what should be their roles?
 - What mechanisms exist for inter-agency or inter-sectoral co-operation and co-ordination?
 - What kind of activities or approaches do the different agencies promote?
- Compile a comprehensive list of all other relevant agencies, and consult with them to identify development options.
 - Recommend procedures to enhance inter-agency co-operation.
 - Bring other key agencies such as health and education into the planning process.
 - Include support for measures to harmonise regional or national approaches.

Maximum stakeholder participation is essential for an effective project, from the earliest possible stage. Therefore examine:

- **To what extent do the institutional structures and ethos of the BWSS agency promote stakeholder participation at the planning stage?**
- **How will the stakeholders be identified and what procedures exist to ensure their understanding of the stakeholder concept and effective participation?**
- **Are planning decisions devolved to the lowest appropriate administrative level?**
- Conduct a Stakeholder Analysis to ensure identification of stakeholders, and find ways of incorporating them into the planning process (*see Part III*).
- Ensure that the concept of stakeholder is not equated with 'beneficiary', but acknowledges ownership of stakeholders within the project.
- Plan for stakeholders to be informed about the principles of stakeholding and their expected role in the project.
- Assess the feasibility of devolving power to regional, district or sub-district level.

A sound legal basis is required for effective delivery of BWSS service, therefore:

- **Does legislation exist to put BWSS policy into practice and are there means to enforce standards?**
- **Is there potential or actual conflict between national BWSS policies and regional or international legislation (*see Part III*)?**
- **Is there an acceptable legal status for the different stakeholders involved, especially user groups?**
- **Is there a legal framework defining the rights and responsibilities of users and service providers?**
- Assist government to strengthen legislation to achieve policy objectives and compliance with relevant standards.
- If the legal basis restricts effective support to BWSS and government is unwilling to change it, consider alternative modes of support (e.g. decentralised co-operation) (*see Part III*).
- Assist the development of legal framework which gives legal status to user groups and defines the rights and responsibilities of users and service providers and permits them to fulfil their duties.

BWSS projects have traditionally focused on design and construction and tended to neglect OSM and management. New policies may seek to transfer responsibility for O&M to the private sector or user groups. If so:

- **Have national implementing agencies been restructured to reflect revised policies on transfer of responsibility of BWSS schemes to user groups?**
- **What are the current structures for O&M and management of BWSS activities?**
- **What scope exists for privatising some part of the delivery/management of BWSS services?**
- Assist government to carry out an institutional review and advise on appropriate restructuring.
- Ensure that pre-feasibility studies identify viable mechanisms for user participation in the O&M and management, of the scheme.
- Commission a review to identify services that may be sold or sub-contracted to private sector or to stakeholder groups and determine cost-effectiveness of service action.

Capacity building for government institutions and user groups is required to support new initiatives. Therefore examine:

- **Do implementing agencies have the necessary human and physical resources required to identify and address national priorities for BWSS services?**
- **Is the concept of 'basic services' in water supply and sanitation clearly understood?**
- **Are appropriate training facilities for management, communication, analytical and technical skills available for staff of the relevant agencies?**
- Review the technical and managerial capacity of all relevant agencies to identify where capacity building is required (*see Part III*).
- Match equipment/infrastructure to the technical and human resources available.
- Ensure that the concept of 'basic services' in water supply and sanitation is clearly defined (*see Part III*) and that their benefits are understood.
- Commission a training needs assessment to be carried out at the pre-feasibility level.

Management information systems in which both users and service providers have confidence are essential for improved operational efficiency. Therefore examine:

- **What management information systems for BWSS schemes are in place at national, regional and project level, and are they appropriate?**
- **What are the resources, financial, technical and human, for continued monitoring and evaluation once donor support ceases?**
- Identify weaknesses in current systems during pre-feasibility studies and make recommendations for improvement.
- Include provision of specialist training to assist staff in the setting up of appropriate monitoring and evaluation systems.
- Include provision for data management that is sustainable in the longer term.

Social Principles

BWSS initiatives should be integrated with social development goals and policies. Therefore examine:

- What are the social development goals and policies in the intended project area?
- What are the potential social impacts of investment in BWSS services?
- To what extent will the project meet the needs of those hitherto unserved by existing water supplies and sanitation facilities?
- Review social development policy and determine its compatibility with possible actions in BWSS services.
- Conduct a preliminary Social Impact Assessment (*see Part III*) in the pre-feasibility study.
- Identify those not served by water and sanitation facilities, and make every effort to incorporate their needs into proposals

BWSS projects can bring great health and convenience benefits to communities, but without careful regard to user norms, they can be underused or even abandoned. Therefore examine:

- Who are the main users and haulers of water?
- What are the current norms for household water use and personal hygiene?
- What is the current level of understanding of the rationale for clean water and personal hygiene?
- What are the current arrangements for the disposal of human waste?
- Verify that Participatory Appraisal methods are used to establish who are the main users of water, and that other cultural, hygiene, health and disposal issues are documented (*see Part III*).
- Include arrangements to educate users on the health and social value of safe disposal of human waste.
- Identify appropriate measures to collect data, including indicators to determine the level of uptake.

A community-based approach helps to ensure a sense of ownership of the project by the stakeholders and user groups. Therefore examine:

- Are users and their existing organisations accurately identified at the earliest stage?
- Are adequate time and resources written into the project to permit stakeholders to be integrally involved?
- Do stakeholders understand the concept of stakeholding?
- Are existing community groups incorporated into the project structure?
- Specify the scope of the Stakeholder Analysis required (*see Part III*).
- Check that the project structure allows time and resources for consultation with all stakeholders, and allow for information programmes to facilitate involvement.
- Include sufficient flexibility in the project structure to permit modification based on stakeholder and user feedback.

Women have a central role in BWSS projects, not only as primary users, but to manage water resources. Their participation at all levels of planning is needed. Therefore examine:

- Does the implementing agency apply the EC Women in Development guidelines?
- Are implementing agencies sensitive to women's role in water collection and use, and recognise the range of women's community roles, including management roles?
- What specific measure are included to increase women's awareness and involvement?
- Verify that agencies responsible for project identification are applying the EC Women in Development Manual, and the Beijing Strategy for Action (*see Part III*).
- Include gender analysis (*see Part III*) and gender planning training in courses for implementing agency staff, and in information packages for stakeholders.
- Ensure that women's groups form a significant proportion of all community consultation and training activities.

Economic and Financial Principles

*The economic value of water is an integral part of BWSS.
Therefore examine:*

- What are the likely long-term economic benefits arising from improved supplies of clean water and sanitation?
- What are the current costs of installing, managing and maintaining water and sanitation services and who pays them by what methods?
- How far are 'basic needs' for water and sanitation (*see Part III*) currently being met?
- Ensure that the economic aspects of water use are estimated and fed into the planning process.
- Clearly identify global and unit cost elements (financial investment, depreciation, O & M) and specify who covers which cost element.
- Advise on measures to ensure that meeting basic needs and access to services for all is embedded in project preparation.

Charging for services is needed to generate funds for future investment and to ensure maintenance. However, the concept of water as a free resource can be difficult to overcome. Therefore examine:

- **Is there a declared national policy on water pricing and cost recovery for BWSS schemes, including O&M and management?**
- **Are charging levels related to ability to pay and how will current income levels affect ability to pay for new schemes?**
- **Is the concept of paying for hitherto free resources and assets understood?**
- **Is there an adequate structure to manage the funds collected and/or credit secured?**
- Encourage government to define a practical policy on cost recovery for BWSS schemes and ensure that there is a system in place.
- Ensure that O&M and depreciation costs are included in cost recovery calculations and ensure adequate provision to cover all costs, either from consumers or providers.
- Commission a willingness-to-pay study (*see Part III*).
- Determine the opportunity costs of women's, men's, and children's time in fetching water.
- Identify a suitable and trustworthy system whereby user groups can hold funds locally.

Where possible, demand management through both market and non-market measures should be incorporated into projects. Therefore examine:

- **What is the likely demand for BWSS services; what are the incentives for stakeholders to use and conserve water; and do these two concepts conflict?**
- **What practical market- and non-market-based incentives may be used to ensure sustainability of BWSS projects?**
- **Will the provision of water lead to an increase in micro-enterprises in the area, and will this lead to higher consumption?**
- Quantify likely demand levels and assist governments to establish a regular review system.
- Commission a study of legal and institutional obstacles to price and non-price instruments for demand management (*see Part III*).
- Ensure that project design uses optimum water conservation technologies.
- Ensure that any likely increase in micro-enterprise is properly assessed and costed.

*Projects must demonstrate financial viability and accountability.
Therefore examine:*

- What is the estimated total project cost?
- How will expenditure be audited, both financially and technically?
- What is the past experience regarding financial contributions from the proposed implementing agency?
- Does the agency have adequate human and financial skills, and how will their activities be audited?
- Prepare cost estimates for each option identified during the identification phase.
- Specify the financial and technical monitoring procedures, including the relevant indicators.
- Assess the ability and commitment of the community or local authority to make required budgetary contributions.
- Provide training and resources for effective financial management within an appropriate institutional framework.

Environmental Principles

Environmental damage may result because insufficient time and money is invested in collection and analysis of baseline data. Therefore examine:

- Have the range and significance of environmental impacts and requirements for further environmental analysis been identified?
- What environmental baseline data are available or required, are they reliable, and do they take into account seasonal variations?
- Have the stakeholders been involved in the collection of data?
- Will the quality of the water supplied meet WHO minimum standards without expensive treatment?
- Undertake Initial Screening, and if needed, Preliminary Environmental Assessment (*see Part III*).
- Include a statement of environmental data availability and requirements in pre-feasibility studies, and specify what further data collection will be required.
- Check what the sources of data are, and indicate where data may be unreliable.
- Ensure that the need for treatment of human wastes created by new sanitation schemes has been taken into account.
- Ensure water quality is adequate.

*BWSS projects often bring changes in water use.
Therefore examine:*

- What changes in water use are anticipated, and in human settlement and grazing?
- Will rainfall and groundwater given seasonal variation be sufficient over time?
- What will be the effects upstream and downstream of the project, especially of sanitation, and what technical measures will be taken to protect natural resources?
- Quantify likely changes in water demand arising as a consequence of the intervention and check that this is compatible with wider river basin plans.
- Commission an assessment of training needs for use of environmental appraisal procedures.

Information, Education and Communication Principles

*The development of a BWSS knowledge base is a pre-condition for development of services.
This requires effective data collection and monitoring procedures. Therefore examine:*

- How satisfactory is the baseline data on water resources?
- What are the sources of the data? Are they accurate and unbiased?
- Are stakeholders' knowledge, attitudes and practice (KAP) included in the sources of data (see Part III)?
- Review current data collection methods, analysis, storage and dissemination systems for BWSS schemes. Make sure the data collected is appropriate and includes water quality and health data.
- Advise on improvement of systems with due regard to resources constraints.
- Ensure that, in addition to conventional statistical methods, participatory methods of data collection are incorporated.

Without an understanding of the principles of BWSS schemes, stakeholder participation is weakened. Therefore examine:

- What is the current understanding of the rationale for clean water and sanitation for health and better living?
- What is the current level of understanding of the concepts of participation and stakeholding?
- What are the linkages with Information, Education and Communications (IEC) activities by health and education agencies?
- Ensure that an appropriate education campaign is developed, particularly for women and on health awareness.
- Include discussions and workshops and other extension activities to disseminate information.
- Identify training needs for information management in the public sector, and to strengthen the role of the NGO sector.

Technological Principles

Appropriate technological solutions should be selected according to criteria that include efficiency, ease of operation, capital and operating costs, and the management capacity of the users. Therefore examine:

- **What indigenous technologies are in use; what appropriate modern technology (imported and local) is in use (see Part III); what is the desirable balance?**
 - **Is the scale of the project realistic and in keeping with available resources, in terms of proposed technologies?**
 - **What is the potential for local manufacture of appropriate technology (imported and indigenous (see Part III)?**
 - **Is conservation of water supplies taken into account in assessment of technologies?**
 - **If NGOs are to be involved, what is their previous experience and technical ability?**
- Assess the likely technologies and their appropriateness for users.
 - Confirm that the scale of the project is realistic in terms of policies, cost, available technology, O&M requirements, and training and information resources.
 - Confirm that appropriate technical training is available and costed into the project.
 - Ensure that technologies suggested are compatible with the understanding of agency staff and users.
 - Ensure that women are consulted about technological options and their suitability.
 - Identify NGOs with suitable experience and/or allow for technical support from government or consultants.

MUNICIPAL WATER AND WASTEWATER SERVICES

KEY ISSUES

POSSIBLE RESPONSES

Institutional and Management Principles

MWSS activities should be consistent with a national integrated water policy, and institutions' functions and responsibilities clearly identified. Therefore examine:

- **What is the government policy for MWWS and what priority does it give projects?**
 - **What is the municipal structure and institutional framework for MWWS?**
 - **What has been the level of success of other projects with a similar scope working with the chosen municipal agencies?**
 - **What level of priority is the proposed project activity accorded in strategic planning goals?**
- If there is no specific policy on MWWS, or it is inadequate, commission a policy review.
 - Advise relevant authority on steps to clarify the role and functions of each level of MWWS.
 - Identify institutional deficiencies and address them. Consider a study to analyse the feasibility of establishing a national water agency.
 - If MWWS are not considered a priority, assess the reasons and identify the implications for co-operation.

Effective inter-agency and inter-sectoral planning is essential. Therefore examine:

- **Which agencies, municipal, inter-municipal, governmental and non-governmental, are involved or have the potential to be involved?**
 - **Have all relevant agencies been involved during identification?**
 - **What is the potential and what policies/plans exist for co-operation between the proposed agencies?**
 - **How do policies address inter-sectoral co-operation between industry, domestic supply and water for agriculture?**
- Ensure that a comprehensive list of agencies is drawn up and that all agencies are consulted.
 - Identify inter-sectoral policy and planning weaknesses and ensure water forms a part of overall urban planning.
 - Identify current agency roles related to the proposed project and consider ways to facilitate co-operation between them.
 - If co-operation is not good, put in place mechanisms to resolve differences or find alternative agencies.

Maximum stakeholder participation is essential for an effective project and should be involved at the earliest possible stage. Therefore examine:

- **How are stakeholders, consumers and operators involved in identifying the future needs of MWWS?**
- **What framework exists for allowing participatory management of MWWS schemes and sharing the benefits?**
- Seek ways to involve users and operators in the process, for example through advisory committees, workshops and discussion groups.
- Carry out a Stakeholder Analysis. (See Part III.)
- Design a consultative mechanism and incorporate within the management system.
- Clarify the broad framework, including legal, for participation and consultation.

MWWS projects have traditionally focused on design and construction aspects and neglected operation, maintenance and management. Therefore examine:

- **What are the institutional provisions for MWWS installation, maintenance and management?**
- **How does MWWS management need to be restructured to improve maintenance?**
- **What are the tasks and responsibilities of each organisation and municipal department responsible for project management and maintenance?**
- Establish a network maintenance plan within an appropriate institutional framework as part of the pre-feasibility study.
- In the pre-feasibility study, assess existing shortcomings and identify improvement measures and costs.
- Consider whether restructuring could be included as special conditions and/or accompanying measures.
- Discuss responsibilities with the municipality and any supporting activities that need to be included in the project.

Participation of the private sector can be important in the efficient delivery of municipal water and wastewater services. Therefore examine:

- What is the most suitable form of private sector participation?
 - What policy support is there at the national level to encourage private sector involvement in projects for MWWS?
 - What is the scope for local private sector involvement in the management and operation of water supply and wastewater services?
 - What scope is there for the introduction of private capital and expertise, including in maintenance and revenue collection?
- Study the range of options for private sector involvement (see Part III), and discuss ways to support the preferred option as part of the pre-feasibility study.
 - Support measures to improve private sector involvement, such as changes to laws, training and structure contracts so as to provide sufficient working capital.
 - Identify any strengthening of policy and regulation necessary to control private partners in the public interest.

Capacity building for government and/or municipality staff and user groups is required to support new initiatives. Therefore examine:

- What is the institutional structure of MWWS administration, and how efficient is it?
 - What managerial and technical skills does the proposed implementing agency have for managing the project?
 - What training programmes and facilities are used for MWWS, from national to the user level?
 - What policies and practices are used to motivate personnel, such as salaries, promotion, training?
- Identify deficiencies and address them through institutional restructuring.
 - Include the provision of local and/or external specialist technical assistance and training in project design.
 - Review training needs in a complementary study, including technical and commercial requirements.
 - Investigate ways of introducing policies and effective practices for staff motivation so that they remain in service.

Management information systems in which both users and service providers have confidence are essential for improved operational efficiency. Therefore examine:

- What management information systems are in place at national and municipal levels?
 - How can appropriate water and wastewater services be incorporated into the planning process?
- In the pre-feasibility study, assess the shortcomings of the existing situation and identify improvement measures together with costs.
 - Include provision of specialist training to assist staff in setting up monitoring and evaluation systems, including process and impact indicators (see Part III).

Social Principles

Municipal water and wastewater services initiatives must be integrated with the social development goals of the municipality. Therefore examine:

- Have the social context and the likely social impacts been duly considered?
- Are any of the social groups involved known to be particularly disadvantaged or poor and how can their interests be safeguarded?
- What will be the short-term and long-term benefits to local people from their perspective?
- Conduct a Social Impact Analysis (see Part III).
- Commission a baseline study.
- Specify quantifiable indicators in the pre-feasibility study or in a separate socio-cultural study.
- Plan to target all groups, especially the unserved and poorest.
- Consider tariff structures/cost recovery to meet the needs of poor consumers (see Part III).

MWWS projects can bring great health and social benefits to urban areas. But without very careful regard to users' norms and needs, projects can be underused. Therefore examine:

- What information exists on the groups of residents and their current problems?
- Have the preferences and needs of all consumer groups been tested (including those in micro-industries, crafts and horticulture)?
- How do townspeople get water? Who, within the family, is in charge of providing water and paying for it?
- Are marginal or peri-urban areas excluded from the municipal authority responsibilities?
- Include a municipal review as part of the pre-feasibility study.
- Prepare terms of reference for a more comprehensive socio-economic study during formulation.
- Conduct surveys of consumers, including ethnic differences, the unserved and the role of women.
- Make a preliminary assessment of their willingness to pay for services or improvements (see Part III).
- Investigate ways of working with informal service providers (see BWSS) to bring poorer urban areas into the remit of the Municipal Authority.

*Community involvement by stakeholders and users is more likely to ensure project success.
Therefore examine:*

- **Have all potential consumers been identified and what mechanisms exist for their involvement in planning?**
- **Will the project cause temporary disruption or require resettlement and how will this be handled?**
- **Are any social groups likely to be significantly disadvantaged (ethnic/ poor/ women) and will micro-enterprises be adversely affected?**
- **Conduct a broad stakeholder analysis and seek ways to involve stakeholders in the planning process.**
- **Examine the likely need for resettlement in the pre-feasibility study and estimate the requirements for compensation.**
- **Identify potential compensatory measures and reject the project idea if these are not satisfactory.**

Economic and Financial Principles

*The economic value of water is an integral part of MWWS.
Therefore examine:*

- **Have the benefits of improved water services been fully investigated and been factored into the investment appraisal?**
- **What are the current costs of water?**
- **Is wastewater collection and treatment properly costed and financed?**
- **What are the economic benefits of the project and to whom?**
- **Identify the main social, economic and health benefits expected from the programme, in monetary terms where feasible (*see Part III*).**
- **Review current water costs and update throughout the identification process; analyse the costs of production, treatment and distribution.**
- **Carry out a preliminary economic analysis in accordance with the EC Manual (*see Part III*).**

Charging for services is necessary to generate funds for future investment and to ensure maintenance and long-term financial viability. Therefore examine:

- What is the municipal policy on water service and sewerage tariffs and cost recovery? How can MWWS be placed on a sound financial footing?
- Do current tariffs reflect historic, current or future costs of supply?
- Are charging levels related to ability to pay?
- What are the institutional provisions for the collection of charges for water supply and wastewater services?
- What has been done to commercialise O&M and management of installations?
- Examine the current level of tariffs and their financial yield. Determine the levels necessary to meet the financial obligations of the authority.
- Draw up a strategy on tariffs and subsidies including a component to cover wastewater charges. (*see Part III*).
- Estimate the marginal cost of increases in present consumption, and design tariffs accordingly. (*see Part III*).
- Commission a willingness to pay study (*see Part III*).
- Investigate ways in which commercialisation could be introduced to improve cost recovery, e.g. in revenue collection.

Demand management through both market and non-market measures should be used in conjunction with supply provision; in water-scarce areas, demand management should take priority over supply-led solutions. Therefore examine:

- What is the likely demand for water services?
- What are the incentives for stakeholders both to use and conserve water?
- Does the project design use optimum water conservation technologies?
- Commission a study of legal and institutional obstacles to price and non-price instruments for demand management.
- Specify the information and extension resources required to make stakeholders aware of possible incentives to use and conserve water.

Projects must demonstrate financial viability and accountability. Therefore examine:

- To what extent is expenditure audited by financially and technically appropriate procedures?
- What is the past experience of other projects with regard to financial contributions from the proposed implementing agency?
- Assist agencies to establish or improve external auditing practices in all expenditures, preferably by involving the independent sector.
- Assess financial management and disbursement capabilities of participating institutions.
- Ensure that the responsible agency is autonomous and committed to making budgetary allocations.

Environmental Principles

Environmental damage may result because insufficient time and money is invested in collection and analysis of baseline data. Therefore examine:

- Have the project's potential environmental impacts, and the need for further environmental analysis, been incorporated?
- What reliable environmental baseline data are available or collectable?
- What environmental guidelines are available to assist project preparation?
- Conduct a preliminary environmental assessment (*see Part III*).
- Include an environmental baseline study early in the project.
- Include preparation of guidelines during formulation or as an early project activity.

Municipal water and wastewater services often have adverse effects on water use, particularly groundwater. Therefore examine:

- Is excessive groundwater withdrawal occurring? How can this be discouraged?
- Is fossil groundwater proposed as the water source?
- What are the dangers of pollution to the groundwater?
- What will be the effects on surface waters and, in particular, downstream users?
- Assess aquifer depletion and its impact on water users and the environment.
- If fossil groundwater is the proposed source, investigate alternative sources.
- Study groundwater quality, the potential for pollution and the need for monitoring.
- Determine likely changes downstream, including impacts on other riparian states.

Information, Education and Communication Principles

The development of a water and wastewater knowledge base is necessary and requires effective data collection and monitoring procedures. Therefore examine:

- How satisfactory is the water resource database as a basis for reaching scientifically informed decisions?
- What baseline data collection and monitoring systems are in place?
- Assess existing databases with respect to hydrology, hydrogeology, water quality and environmental impact.
- Assess suitability of data collection systems for managing the resource and ecosystem; plan improvements.

Education and awareness-raising targeted at municipal staff, stakeholders and users should be used to strengthen stakeholder participation. Therefore examine:

- How willing is the municipality to ensure that stakeholders and public have access to information on proposed MWWS?
- What is the level of awareness and education concerning MWWS among consumers and other stakeholders?
- Determine mechanisms for disseminating information to stakeholders.
- Assess the awareness of the importance of saving water and of environmental impacts in relation to MWWS.
- Prepare an appropriate strategy for health education and awareness raising (*see Part III*).

Technological Principles

MWWS should be technically efficient, using appropriate modern technology that is adapted to suit local physical, economic and social conditions. Therefore examine:

- How appropriate are the proposed technologies in all contexts, including water resource assessment models, tools and methodologies?
- What are the actual and present water uses in the city? Quality, quantity, water pressure, daily distribution of needs, for each category of consumers: domestic, industry, service, agriculture?
- What quantity of storm water is to be disposed of and how will this be done?
- Investigate the most appropriate modern technology and promote the use of clean technology (*see Part III*).
- Evaluate accessibility to appropriate equipment and spare parts.
- Identify the most appropriate scale of intervention. Small-scale pilot projects can later be up-graded.
- Ensure realistic planning and scheduling; plan for whole-cycle solutions from point of extraction to point of disposal.

Technical knowledge forms the basis of all good design. Therefore examine:

- What is the size, growth and historical development of the city?
- What are the main activities of the city and the surrounding area?
- Who is in charge of data collection for water, sanitation, health, flood control, urban planning, etc. and is the data analysed, stored and accessible?
- Commission studies and use key information in the urban planning survey.
- Secure a realistic assessment of human, technical and financial resources.
- Assess data handling and storage methods and decide whether and what data management improvements are needed.

AGRICULTURAL WATER USE AND MANAGEMENT

KEY ISSUES

POSSIBLE RESPONSES

Institutional and Management Principles

AWUM activities must be consistent with an integrated national water policy setting out the legal and policy framework for service provision. Therefore examine:

- What aspects of AWUM are given priority within the national water policy?
 - What types of initiative will find greatest support from government?
 - To what extent do land ownership and customary rights influence the project's potential sustainability?
 - Is there potential or actual conflict between national AWUM policy and international agreements?
- Assist government to develop or update its policy for water development.
 - Avoid options that do not address priority needs in irrigation and drainage or where government support is weak.
 - Review customary rights and land ownership and determine if conflicts are likely to arise. If irreconcilable, abandon any intervention.
 - Identify possible areas of conflict and initiate discussion to resolve issues.

Fragmented planning functions and agency responsibilities lead to sector-based, project-by-project development and potential inter-sectoral and inter-agency conflict. Therefore examine:

- Which governmental and NGO agencies are or could be involved in activities relating to AWUM or flood control?
 - How successful are similar activities implemented by the relevant agencies?
 - What mechanisms exist for inter-sectoral co-operation?
 - Do the mandates of agencies influencing irrigation, drainage and flood control foster competition or duplication rather than co-operation?
- Ensure that a comprehensive list of agencies is drawn up and consulted.
 - Review experiences of past projects and recommend improvements.
 - Assist agencies responsible for agricultural sector development to integrate water use planning with other sectors.
 - Recommend procedures to enhance inter-agency collaboration.
 - In pre-feasibility studies, aim to identify possible conflicts between land and water use policies.

Stakeholder participation can help resolve conflicts of interest and promote user ownership of projects. Management and institutional structures should facilitate the participation of all interested parties. Therefore examine:

- Who are the key stakeholders and what are their interests and concerns?
 - What are the concerns of farmers?
 - Does the institutional structure and character of AWUM agencies promote stakeholder participation in planning and design?
 - What procedures exist to ensure effective consultation with stakeholders?
 - Are planning and management decisions devolved to the lowest appropriate level?
- Undertake a Stakeholder Analysis.
 - Make sure that any proposed intervention is fully supported by farmers.
 - Commission a review of the agencies to identify ways of ensuring greater responsiveness to stakeholder wishes.
 - In pre-feasibility studies, determine how potential beneficiaries can gain ownership of the project.
 - Assess the feasibility of devolving power from national to regional and local level institutions (subsidiarity, see Part III).

Agencies have traditionally focused on project design and construction and neglected operation and maintenance. Policy may now be to transfer responsibility for O&M to the users. If so:

- Is there a defined national policy on transfer of systems to user groups such as Water User Associations (see Part III)?
 - Are implementing agencies appropriately structured to implement transfer policies?
 - What are the current structures for O&M and management, and how will transfer improve their function?
 - What scope exists for privatising functions of irrigation and drainage agencies?
 - Does a legal framework define the rights and responsibilities of users and providers?
 - How is future O&M to be funded?
- Assist government to define and promote a practical policy on transfer.
 - Assist government to carry out an institutional review and advise on appropriate re-structuring.
 - Review existing management structures and O&M procedures and identify how transfer of responsibilities will improve efficiency and sustainability.
 - Review service provision and identify those that may be sold or sub-contracted to private sector contractors or farmers/farmer groups.
 - Help define a legal framework giving legal status to water user groups and identify means of group formation.
 - Identify the funding structure for post-project O&M.

Capacity building (see Part III) for government staff and user groups may be required to support new initiatives. *Therefore examine:*

- Do implementing agencies have the human and physical resources required to identify and address national priorities for AWUM?
- Are appropriate training facilities and programmes available for staff?
- Does training include communication, leadership and analytical skills as well as technical skills?
- Review the technical and managerial capacity of all agencies to identify where capacity building is required.
- Commission training needs assessments within principal agencies in the pre-feasibility studies.
- Determine the need for training of trainers and participatory facilitators and their inclusion in project planning.

Management information systems in which both users and service providers have confidence are essential. *Therefore examine:*

- What management information systems are in place at national, regional and project levels?
- How can appropriate management information systems be incorporated into the planning process?
- Do management information systems allow for monitoring performance and levels of service?
- Ensure pre-feasibility studies identify weaknesses in existing systems and suggest improvements.
- Include provision of training to assist staff in setting up appropriate systems including selection of process and impact indicators.
- Ensure that the management information system includes appropriate monitoring systems, agreed indicators and the means to collect and analyse data.

Social Principles

Agricultural water use and management initiatives must be integrated with the social development goals of the region. *Therefore examine:*

- What are the social development objectives for the region in relation to AWUM?
- What are the potential social impacts of investment in AWUM?
- Review social development policy for the region and determine its compatibility with possible actions.
- Conduct preliminary Social Impact Assessment (*see Part III*) in pre-feasibility studies.

A community-based approach is more likely to ensure ownership of the project by the intended beneficiaries. Therefore examine:

- Is community cohesion adequate to permit effective community-based actions?
- Are potential users identified and enabled to participate in project identification at the earliest practical stage?
- Are adequate time and resources written into the identification phase to permit effective stakeholder participation?
- Review past interventions, examine traditional patterns of co-operation and consider practicalities of community-based programmes.
- Ensure potential users are identified and involved in defining priorities.
- Ensure the project structure allows time for meaningful dialogue with all stakeholders and their inclusion in project planning.

In many regions women are responsible for production decisions and contribute significant field labour. Measures are required to ensure women's effective participation in project planning and design. Therefore examine:

- Do implementing agencies fully recognise the contributions and roles of women in AWUM?
- Do implementing agencies use procedures that are sensitive to the needs of women?
- Ensure that agencies are applying the guidelines of the EC Women in Development Manual (see Part III).
- Include gender awareness raising and gender planning training for staff.
- Include gender awareness raising in information packages for stakeholders.

Economic and Financial Principles

The economic value of land and water must be reflected in AWUM actions. Therefore examine:

- What is the opportunity cost of land and water used for irrigation and can this information be used in planning?
- Does government policy towards irrigation distort incentives for efficient farming and resource allocation?
- Estimate values of land and water in different uses and opportunity costs in irrigated agriculture or flood defence.
- Advise on measures to help prioritise water allocation within agriculture and between this and other uses.
- Review overall costs per ha. and carry out a preliminary economic analysis (see Part III).

Charging for services is needed to generate funds for future investment and promote efficient water use. Therefore examine:

- **Is there a declared national policy for AWUM on water pricing and cost recovery?**
- **What is known about ability and willingness to pay O&M costs?**
- **What do cost recovery policies include? Do they include drainage installation or O&M?**
- Encourage government to define a practical and sustainable policy on cost recovery in irrigation.
- Conduct a willingness-to-pay study (see Part III).
- Ensure there is adequate capital provision for drainage infrastructure and that O&M costs are included in cost recovery plans.

Where possible, demand management, through both market and non-market measures, should be incorporated into projects. Therefore examine:

- **What incentives are farmers given to conserve water and maximise the value derived from its use?**
- **What practical market and non-market incentives can be used to ensure sustainable water use in agriculture?**
- Review use of water pricing/subsidies to encourage farmers to save water, invest in water saving technologies, and switch to less water-demanding crops (see Part III).
- Commission a study of legal and institutional obstacles to price/non-price instruments for demand management.

Projects must demonstrate economic benefit and financial viability. Therefore examine:

- **What is the estimated total project cost, and the estimated value of benefits and to whom?**
- **What are the 'with' and 'without' project costs and benefits?**
- **How will expenditure be audited, both financially and technically?**
- **What is the experience regarding financial contributions from the implementing agency?**
- Collect data to allow a first estimate of a predicted flow of benefits.
- Allow for the establishment of financial and technical monitoring procedures.
- Assess the financial management and disbursement capabilities of the agency.
- Ensure that returns to farmers and other relevant economic entities are adequate to ensure their support.

Environmental Principles

Environmental damage may result because insufficient time and money are invested in collection and analysis of baseline data. Therefore examine:

- **Is the range and significance of potential adverse environmental impacts and requirements for further environmental analysis indicated in the project outline?**
 - **What environmental baseline data are available and required before project formulation can proceed?**
 - **Do pre-feasibility reports indicate the accuracy and reliability of data sources?**
- Using the results of Initial Screening, undertake a Preliminary Environmental Assessment (*see Part III*) in accordance with EC Environment Manual.
 - Include a statement of environmental data availability and requirements in pre-feasibility studies and make adequate provision for upgrading data collection.
 - Indicate the source of data and their estimated accuracy and reliability.

AWUM activities often bring major changes in land and water use. Therefore examine:

- **What changes in land and water use are anticipated as a consequence of the project, both locally and in the river basin?**
 - **Is the supply from all sources sufficiently reliable to meet predicted present and future demands?**
 - **Is soil conservation integrated in the irrigation development plan?**
- Ensure that predicted land use changes and changes in water demand are compatible with wider river basin plans.
 - Use Checklist on Irrigation in the EC Environment Manual (*see Part III*) to review potential impact on human health, water quality and soil fertility.
 - Verify that the prediction of supply and demand are based on realistic data.
 - Outline soil conservation plans.

Information, Education and Communication Principles

The development of a broad knowledge base grounded in effective data collection and monitoring procedures is essential for both local and basin-level plans. Therefore examine:

- How satisfactory is the baseline data on water resources as a basis for making informed decisions?
- What improvements or enhancements are needed in AWUM data collection?
- What are the impacts of a location-specific project elsewhere in the basin?
- Review data collection, analysis, storage and dissemination systems (see WRAP Checklists).
- Advise on requirements for additional or improved systems with due regard for institutional and financial resources.
- Examine the overall impacts of this and other planned projects on the water resources of the river basin.

Education and awareness-raising, targeted at agency staff and farmers, are needed to develop user participation in decisions over competing user group needs. Therefore examine:

- What is the level of awareness and education concerning water scarcity and conservation amongst farmers and other stakeholders?
- What are the current levels of understanding of the concepts of participation and stakeholding?
- Is the implementing agency likely to ensure that processes are transparent and that stakeholders have access to information?
- Ensure that an appropriate and realistic educational campaign is developed, using discussion groups and workshops to disseminate information.
- Gauge agencies' commitment to and understanding of participatory methods and stakeholding. Feed conclusions into project formulation.
- Identify training needs for information management in the public sector and to strengthen the role of NGOs.

Technological Principles

Engineering solutions must take account of environment and physical characteristics; needs, resources and skills of users; capital and operating costs and markets. Therefore examine:

- Are land and water suited to the proposed initiative?
- Is a specific soil conservation programme required?
- Have a wide range of technological options been considered, and costs, drawbacks and benefits analysed?
- Initiate outline checks of quality and quantity.
- Identify possible needs for detailed investigations including soil conservation programmes.
- Study existing designs and O&M strategies, and build on past experience.
- Check that the intended project scale is commensurate with human and financial resources for O&M.

The objective should be to use modern but appropriate technology. Therefore examine:

- Is the scale and development frame of the project suited to users and will it be sustainable?
- How well do potential beneficiaries understand irrigation and drainage technology?
- Have water-saving and water-reuse technologies been considered?
- Do proposed irrigation/drainage technologies fit with skills and resources available to farmers and irrigation agencies, including credit availability and farm inputs?
- Have indigenous technologies been identified and evaluated?
- Ensure that project scale complies with policy objectives, and that needs and objectives of farmers are understood.
- Review existing technical practices, consult farmers and identify gaps in knowledge and skills. Ensure that farmers understand and agree with the objectives.
- Review resources, consult with other agencies and select appropriate technologies (*see Part III*). If scarcity is likely to become a problem, reassess project.
- Identify possible mismatches between technology proposed and project context, and the scope for using indigenous techniques (*see Part III*).