# Managing water resources equitably, efficiently and sustainably: guiding principles

Chapter 2

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# 2

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## Introduction

The centrepiece of these Guidelines is a '**strategic approach for the equitable, efficient and sustainable management of water resources**'. The strategic approach proposed is based on internationally agreed core principles concerning the need to protect the aquatic eco-system, and to extend the health-giving and productive properties of freshwater resources equitably and efficiently among humankind, with special emphasis on poorer and underserved people.

The guiding principles elaborated here should be seen as a next level of principles based on the core principles already established by international consensus. Their most authoritative expression is encapsulated in the four over-arching principles agreed at the International Conference on Water and the Environment in Dublin in January 1992. More recent expanded expressions of these core principles – as outlined in Chapter 1 – can be seen as reinforcements and further elaborations of a shared vision.

While the core principles provide an underpinning basis for water-related policy, they are relatively remote from practitioner realities and offer little guidance for resolving the dilemmas and difficulties contained in their practical implementation. Therefore, as part of the development of a strategic approach, and to aid intellectual management of the new dimensions of water-related policy, these Guidelines present sub-sets of policy principles applicable at the programming and project level. These are as follows:

- institutional and management principles;
- social principles;
- economic and financial principles;
- environmental principles;
- information, education and communications principles;
- technological principles.

These headings reflect the wider range of issues now considered essential for effective water resources management. However, many of the principles and categories are inter-related and interlinked.

The sets of principles broaden the framework within which water-related policy can be addressed in an organised fashion. As emphasised throughout these Guidelines, water is a renewable natural resource whose sound management affects developmental activity in many economic, productive, infrastructural and social sectors. The new thinking brings into play a very broad range of issues, with implications for project formulation and funding mechanisms. Reference to concerns outside the immediate programming and project environment – such as sustainability of the resource over the long term, protection of water-dependent ecosystems, sustainability of service management, and enhancement of the wider urban or rural environment – need to be taken into account.

The implications of adopting a much broader strategic approach to water

cannot be underestimated. Few governments have addressed the whole range of practical changes required to respond satisfactorily to the core principles of the new consensus. Activities at the macro-level (integrated water resources management, water policies, legislation, institutional change) and at the micro-level (user group participation, community-level operation and maintenance, subsidiarity,) are given more weight proportionately than in the past. Technological issues and construction, which previously dominated programme formats, while remaining critical are now regarded as one set of considerations among many.

Although grouped, the principles are cross-cutting and universal, applicable to all types and aspects of water-related activities – from surveys, to human resources development, to construction of installations – whatever their physical, social or economic setting. Such principles should be seen as the bedrock of the strategic approach. Their application is supposed to aid clear thinking about objectives and actions; an effort has been made not to overload users with criteria for programme formulation in such a way as to impede rather than aid their work.

## Institutional and management principles

### 1 Roles of government and official bodies at all levels should be clearly defined and areas of responsibility officially established

Management and service delivery functions need to be clearly identified and institutional responsibilities demarcated. The role of government at all levels and in all contexts may need to be reviewed. Where they have not already done so, governments should work towards providing a sound legal and policy framework for water resources management and becoming the facilitators of service extension and provision, and reduce their role as direct provider of services and builder of public works.

Government is also responsible for establishing regulatory bodies; it is important that these be independently operated, transparent, accountable, and empowered to enforce regulations. All the different uses of water, and the roles of different institutions involved in providing services, need to be enshrined in law *(see Part III, Glossary)*. Service criteria need to be similarly established, preferably by consensus among the various stakeholders.

At national level, governments have a responsibility to develop an integrated water policy, meeting the rational needs of the various users within the limits of available resources, financial and environmental. In any such national policy, geographical and hydrological scales need to be taken into account; catchment areas can be proposed as a useful basis for overall water resources management. Care should be taken that the water policy is co-ordinated with other policies with implications for water use – such as those for agriculture, industry, energy and urban development. To this end, a system of co-ordination among those responsible in the different sectors at national level is needed. An effective co-ordinating body will enable competition between water uses to be resolved, in accordance with the national policy and agreed

water resources development plan.

While many countries have water codes or water legislation these are rarely comprehensive and often outdated. They often do not take account of water resources management and conservation, nor have they been established through a participatory process. New laws and enforcement procedures may be needed. As far as possible, they should be formulated permissively rather than restrictively to enable the regime to be enforceable without undue cost and administrative burden. However, common references and standards are needed in relation to water quality and items manufactured by the local water-related industries.

In allocating roles and responsibilities, the need to decentralise the various types of decision-taking to the lowest, most appropriate, administrative tier should be respected.

## 2 The structures and systems of management should be designed in such a way as to facilitate involvement by the responsible authorities at different levels

Participation by all stakeholders is essential for successful water management and usage. *(See Part III, Glossary.)* Structures and practices of the responsible authorities therefore need to be designed to facilitate participation of the various categories of users: water companies, industries, farmers, domestic consumers, energy utilities, fisheries, and nature conservation departments.

Responsibilities for water-related services and resource management need to be decentralised to the lowest appropriate administrative level according to the concept of subsidiarity; this allows the contributions of the various parties to be maximised. However, the necessary tools, training and funds must first be allocated so that the resources are available for responsibilities to be fulfilled. Currently, many of the responsible bodies have centralised and hierarchical command structures inadequately geared to consultation and interaction with other stakeholders, especially users. In such cases, organisational transformation may be necessary. On the one hand, functional responsibilities are best devolved to officials and bodies close to the realities of the situation, including local councils, private companies and organisations able to facilitate consultation with users. On the other hand, the role of the public authority as regulator, facilitator and moderator should develop an organisational culture that is outward-looking, to facilitate communication with all stakeholders.

## 3 Involvement of user organisations and the private sector should be encouraged

Partnerships with the private sector need to be encouraged and facilitated; this is especially relevant as government authorities set out to divest themselves progressively of responsibilities for the provision of services. In this context, the private sector is deemed to include Water User Associations and Farmer Groups.

The role of the private sector will vary according to social, economic, environmental and other circumstances, and needs regulation. A suitable relationship between public and private sectors needs to be found to promote the efficient operation of the facilities and collect user fees. Delivery of services and construction of installations may be organised through service providers which, whether publicly or privately owned and operated, should be autonomous. At the same time, vulnerable populations – the underserved and underprivileged – need to be protected from exploitation by market providers since they have no consumer influence.

Government-run water authorities and utilities companies are also in a position to facilitate the transfer of technology to the private sector, encouraging the development of local water supply, wastewater disposal and irrigation manufacturing and service industries. These industries can be both large- and small-scale, able to cater to the needs both of major publicly-financed schemes and of micro-projects and private consumers, including NGOs and community-based organisations. *(See also Part III)*

## 4 Ongoing capacity building is needed within institutions and for participant groups at all levels

Capacity building, especially the development of human resources, the enhancement of skills, the adoption of up-to-date thinking, and improvement of the knowledge base, are needed in many institutions responsible for water resources management and services. *(See also Part III, )* Capacity building should extend to all levels and concerned groups; the importance of professional training and, where necessary, reorientation cannot be overstated. Where a more active role in service design and implementation is envisaged for users, the capacity of intermediary bodies, such as NGOs and local councils, will also need to be enhanced and training provided in technical and organisational activities.

The new emphasis on 'software', as compared to 'hardware', components of water-related projects means that orientation towards these areas should be built into their design. Interpersonal skills such as communication, negotiation and leadership, as well as knowledge of project management and health education, are as important as functional skills relating to building and managing installations. Engineering staff need encouragement to adopt a partnership approach to service delivery rather than a proprietary attitude towards schemes. Additional technical competencies – hygiene education, soil management, environmental protection, social mobilisation – are likely to be needed.

### 5 Management systems should be transparent and accountable and appropriate management information systems should be established

Given the need to build alliances between stakeholders, the responsible authorities and their partners and users need to feel confidence in management systems and operating procedures. A balance needs to be struck between flexibility and accountability.

All financing and auditing procedures need to be transparent. Systems of financial control need to be rigorous in order to avoid the mismanagement or misapplication of funds sometimes associated with large-scale investments in major construction works.

Management information systems need to be suitable for the organisational level at which the relevant data collection and analysis activities are conducted; inputs and outcomes need to be monitored in such a way that they provide information of value to managers when they require it. This in turn helps to engender a sense of ownership of the system and ensure that it is effectively used. Consideration needs to be given to the level of information technology required for different functions, given cost and human resources constraints. Not all systems have to be based on computer technology, though such technology does offer obvious advantages.

## Social principles

### 6 A sufficient supply of water and an adequate means of sanitation are basic human needs to which everyone should have access

Water is a fundamental social resource since it is basic to the support of human life and health. It is also a fundamental economic resource on which the livelihoods of farming populations (and some other occupational groups) depend, and whose shortage or excess in volatile, drought- or flood-prone environments has profound implications for human well-being. Survival, poverty reduction, quality of life and equity considerations therefore need to be given over-riding importance in the conceptualisation and planning of activities relating to water.

The lack of safe water and sanitation in many poorer parts of the developing world is a cause of continuing concern. It is therefore important to prioritise the extension of basic water and sanitation services to the unserved and underserved poor, especially those most at risk from water-related diseases in both rural and urban areas. The same principle should apply when considering investments in water supply infrastructures related to farming and family well-being.

Sanitation is often neglected, although it is as, or more, important for health impact than access to clean water. Care should therefore be taken to give sanitation, in the form of community or household facilities, equal emphasis with water supplies in service provision.

Definitions of access to water (i.e. distance to the supply) and adequate coverage (i.e. per capita availability) need to take account of the nature of the installations and their use, as well as willingness and ability to pay; this

applies equally to drinking water facilities as to small-scale irrigation works. The ability of households to access water in sufficient quantity for their needs is an important determinant of their capacity to adopt hygienic behaviour and co-operate in measures for the control of water-related disease.

The management of water as a collective good may be an integral part of community life and deeply embedded in social interactions and livelihood strategies. Understanding of attitudes and practice regarding water use, human waste disposal and environmental sanitation by households and communities, both for productive use (e.g. farming, livestock) and domestic use (e.g. drinking, washing, cooking, personal hygiene and cleanliness), is critical to formulation of all activities intended to provide such beneficiaries with sustainable services.

Drinking water supply schemes should also pay attention to the quality of water/water safety at the point of supply (recognising that it may become contaminated between supply and use due to poor environmental sanitation by households and users). Reference can be made to WHO water quality standards *(see Part III)*.

## 7 Users have an important role to play and their involvement should be fostered via a participatory approach

The involvement of users in water management is now recognised as a central principle of the development of water and waste disposal services; this involvement should extend beyond the provision of free community labour in the construction of schemes, to decision-making about siting, collection of tariffs, and operation and maintenance. In low-income areas, this involvement is likely to be through community-based organisations.

The exact extent of community involvement in the management of an irrigation works, water supply or sewerage system will vary with context, technological nature of the installed systems, and the resources available at community level. Both the potential and the limitations of community involvement need to be recognised. Long-term sustainability of facilities in low-income communities, given their typically dispersed nature, cannot be guaranteed without a concerted effort to inculcate a sense of community responsibility and ownership.

Implementing a community-based approach may involve training field and agency staff in participatory techniques and adopting a flexible approach to project implementation. Local knowledge, cultural values, indigenous practices, lifestyles and habits relating to water management and its use need to be respected and, where appropriate, supported. *(See also Part III)*

## 8 Gender implications should be examined and taken into account at all stages of the planning and implementation process

The central role played by women in the provision, management and husbandry of water, primarily in the domestic and household context, has gained widespread recognition in recent years. Gender issues needs special consideration in relation to water management and use.

In rural and seasonally water-short environments, much of women's time and energy is typically spent in water-hauling to the detriment of their own and their children's well-being. Water resources management similarly impacts upon many women in their farming, small livestock management and micro-entrepreneurial roles. Thus, gender implications need to be taken into account at all stages of the planning and implementation of water-related activities, with consideration given to the different social, economic and cultural roles assigned to men and women in a given setting. Not only do gender implications of proposed interventions have to be considered, but ways need to be identified whereby women users and beneficiaries of services can themselves help define those implications and take part in the community consultation process so that their specific voice be heard.

Given existing power structures within families and communities in many parts of the world, a targeted effort will probably be needed to enable women to take a meaningful role in the consultation and decision-making process relating to water and waste disposal. In many traditional cultures, women's only perceived role vis à vis water resources management is haulage and storage of domestic supplies. Thus, issues such as siting and ownership of installations; knowledge of operations and maintenance procedures and relevant skills; and membership of Water Committees or similar bodies are normally confined to men. Absence of women from decision-making vis a vis water resources management and service delivery is both inequitable, and severely hinders the possibility of realising public health, food production and quality of life programme objectives.

Because of their domestic roles, women are also logical key candidates for educational activity concerning water use and hygiene behaviour. However, men will also need to be included since their attitude towards – for example – hygienic disposal of human waste, and their willingness to pay for services or installations, may be decisive within the household and community. *(See also Part III)*

## Economic and financial principles

### 9 Water has an economic value and should be recognised as an economic good

Recognition of freshwater as a finite resource has led to the emergence of the principle that water is an economic good to which a price should be attached; and the application of this principle becomes increasingly critical as water becomes scarcer. However, this principle does not over-ride the social imperative of providing a basic supply of safe water for every human being.

A sense of the economic value of water implies the attachment of different values to different uses of water. These values will vary from setting to setting as decided by the community, although it is invariably the case that survival and public health uses will be high-value uses; whereas recreational uses will be comparatively lower-value. Where water is becoming scarce, it is desirable to discourage low-value uses. The possibility of reallocating water to high-value purposes should be investigated as an alternative to, or in parallel with, developing new sources of supply; in this context the use of water markets can be appropriate. Some estimates of high- and low-value purposes of water may benefit from considering the importance of 'virtual water' (the non-evident water embedded in imported food crops: *see Part III)*.

Allocation of values to water uses helps in the following areas: balancing scarce resources with increasing demand; the reduction of wastage and loss; conservation of the resource; and shifts in consumption towards higher value uses. *(See also Part III)*

### 10 Charging tariffs for water services is an important component of any strategy for sustainability

Charging for water services (water supply, irrigation and wastewater disposal) is essential in order to generate funds for operating, maintaining and investing in systems; ensure that scarce supplies are allocated to essential purposes; and signal to users the real value of the resource. As a matter of principle, a service providing water should not give its product away free even to the poorest customer. However, this principle poses a dilemma: how to provide a basic service to those who are extremely poor and yet ensure cost recovery, especially in areas where the costs of water extraction and delivery are high and/or continually mounting due to pressure on the resource.

This dilemma needs to be resolved. For household consumption, a certain minimum volume necessary for basic needs can be provided at an affordable price, with higher-level volumes subject to higher tariffs. This will ensure that higher levels of consumption are not subsidised. Public subsidies are legitimate to achieve certain benefits (for example, provision of supplies to the underprivileged and underserved). However, these subsidies need to be transparent, targeted, and budgetarily practicable and sustainable (for example, covered by surpluses generated elsewhere in the system).

The weighted average of the tariffs should be high enough to recover, at a minimum, recurrent operations and maintenance costs. Where water charges have been raised to this level, the aim should be to raise them progressively, and with due regard for continuing to meet basic needs, to the full marginal cost (equivalent to the average incremental cost of future supply) in order to generate resources for expanding or modernising the system *(see Part III)*. Industrial water tariffs need to take account of the volume of water extracted, and the volume and quality of water returned to public water bodies.

OECD members have accepted the principle that 'polluters pay': those who dispose carelessly of wastewater should be charged for their actions.

If the tariff structure is progressively higher for higher consumption levels, this provides an incentive to conservation. It also generates extra resources for expanding services, although the practicalities of recovering costs for service installation and extension will depend on conditions (physical and socio-economic) operating in a given setting. The same principles apply to wastewater disposal and management.

## 11 'Demand management' should be used in conjunction with supply provision

Demand management seeks to maximise the usage of a given volume of water, by curbing inessential or low-value uses through price or non-price measures. In water-scarce areas, it is necessary to gain political support for demand management over supply-led solutions (i.e. solutions which are based on indefinite expansion of services and supplies).

A number of demand management measures can be considered, including market-based incentives such as water tariffs, pollution charges, water markets, auctions, water banking; and non-market incentives, such as leakage control, restrictions, quotas, norms, licences and demonstration projects. All options need to be systematically identified and appraised.

In its policies towards key sectors such as industry and agriculture, a government should be discouraged from developing water-intensive industries or agriculture in regions where water is scarce and estimates of different water values (see Chapter 1) suggest that it should be applied to other uses. *(See also Part III.)*

## Environmental principles

### 12 Water-related activity should aim to enhance or to cause least detrimental effect on the natural environment and its health and life-giving properties

Water-related activities need to be planned and implemented with due regard for all their environmental implications. Programmes and projects requiring the disruption of water flows can reduce the productivity of aquatic ecosystems, necessitate resettlement of affected populations, and devastate fisheries and grazing land. Pollution degrades water supplies, increasing the costs of water treatment. In some countries, integrated river basin management may provide a solution for surface waters since it allows all competing interests to be taken into account for one water-defined environment.

The protection of aquifers from pollution and over-exploitation should be afforded particular attention as the effects are not visible and can thus be neglected. The use of fossil groundwater should be avoided.

Water resources management systems will need to take into account the implications of all development activities related to the environment. These include industrial and agricultural development leading to discharges that endanger downstream water quality; changes in land use, such as road construction; settlement and cultivation of floodplains and other riverine environments; and the impacts of freshwater use and pollution on estuaries and coastal zones. Water resources management objectives therefore have to be carefully balanced against other long- and short-term development objectives.

Every effort should be made to capitalise on better knowledge of the water environment derived from recent experience. Working with the environment rather than against it is the desirable strategy. Technical methods using local materials, and biological methods to control weeds and disease vectors, have environmental advantages and build on natural capacities for pollution control and regeneration.

### 13 The allocation and consumption of water for environmental purposes should be recognised and given appropriate emphasis

Programmes and projects for the development, management and use of water mostly entail modifications of the natural environment to improve the quality of human life. However, certain water-related activities, such as flood control and drainage schemes, have as part of their central purpose an environmental objective.

Maintenance of the natural water environment is also important both for its intrinsic value and for supporting life. For example, water has an 'in-stream' value for fish and for the support of aquatic eco-systems. Eco-systems in wetlands and coastal zones depend on a certain volume and quality of water for their sustainability. Rivers and wetlands

also have important functions as wildlife reserves, navigation routes, and areas for recreation. They also help to support natural biodiversity. In order to plan water utilisation priorities, therefore, it must be recognised that areas such as wetlands "consume" large quantities of water through evaporation. All uses, consumptive and non-consumptive, have to be considered and not automatically regarded as inferior to human and economically productive uses.

### 14 Environmental change should be monitored so that improvements can be encouraged and detrimental impacts minimised

Appropriate systems to monitor environmental changes throughout a project cycle and beyond will be needed. Appropriate expertise is needed from the outset to ensure that environmental aspects are properly assessed. Care should be taken to adopt systems that allow flexibility of action since some environmental costs may have to be accepted to gain greater social and economic benefits. *(See Part III.)*

Emphasis on environmental considerations is particularly appropriate in water-stressed areas, where the environmental and other implications of using alternative sources of supply – surface as opposed to groundwater, for example – need to be assessed. The inextricable connections between land and water management need to be recognised; land use and soil quality have a major influence on water flow and water quality, and vice versa. Integrated resource management needs to be the over-riding macro-environmental consideration.

## Information, education and communications principles

### 15 A sound information and knowledge base is needed for effective actions within all water-related activities

Many developing countries lack sufficient data on hydrology, groundwater resources and water quality. Without a full range of scientific information concerning climate and the ecosystem, it is not possible to evaluate the resource, balance its availability against demand, or reach scientifically-informed decisions in key areas of water policy. Thus, the development of a water resources knowledge base is a pre-condition for an effective water policy.

Similarly, government authorities and agencies involved in water-related activity need proper information in order to function effectively. This information includes data on technologies, strategies, approaches, alternative organisational models, and management information of all kinds. Data collection systems need to be established, and integrated with one another, so that activities can be continuously monitored, impacts be assessed and adjustments made.

Surveys and research projects are needed to collect socio-cultural and economic as well as technical data.

Where projects are intended to benefit low-income communities, prior information is needed about attitudes and practices surrounding water supply ownership, access and use, and traditional methods of excreta disposal. Effective hygiene education depends on thorough knowledge of existing water- and human waste-related behaviours and beliefs. Baseline data on prevalence of water-related disease is an important aid to post-intervention monitoring of public health impacts.

## 16 Education is a vital component of water-related schemes if health and life enhancement benefits are to be achieved and sustained

Demand for water in low-income communities is associated with survival interests, convenience and reduction of time and labour spent by men, women and children in water-related tasks. Beneficiary definitions of social well-being relating to water may not coincide with those of donors and programme agencies, whose principal concerns are usually linked to public health (or in schemes for agricultural water use, with crop production). There is also usually a higher demand for water supplies than for environmental sanitation, although sanitation is more essential to disease control. Therefore, education in the linkages between unsafe water, inadequate excreta disposal, and disease should be integral to all schemes for low-income communities.

Education programmes in environmental sanitation and personal hygiene may need to be biased towards women, given their special role in household water management and use. Children can also be targeted by school-based programmes. Education is similarly needed in the environmental implications of water-related activities; in particular, farmers need to learn the value of water and the importance of water saving in irrigation. Without an understanding of the purposes of water resources management, user group participation in management decisions, especially in negotiations over competing user group needs, cannot be obtained; and if obtained, cannot be fruitful.

## 17 Communication and awareness building are essential ingredients in all forms of water resources management

The new thinking surrounding water resources management and the delivery of services requires extensive awareness-building among political leaders, decision-makers regarding water, professionals and academics, donors and NGOs. As yet, the emerging consensus is largely confined to members of the international water-associated community. To put its principles into operation and resolve the many practical dilemmas they raise will require widespread understanding of their implications.

Communications mechanisms, in the form of educational activity and public

information campaigns, are also needed to increase community-level understanding of the linkages between water and health, to increase demand for all kinds of water-related services, and generate motivation and impart skills for service maintenance. Awareness-building among users also helps to create a climate favourable to community management of schemes, strong local participation, and the collection of water dues. *(See Part III).*

## Technological principles

### 18 A balanced approach towards 'hardware' and 'software' components of projects should be adopted

Providing a reliable supply of water for domestic or agricultural purposes requires careful attention to 'hardware', suitably balanced by attention to 'software' aspects. Technological innovation and adaptation are integral to many of the water-saving measures, service extensions and system improvements urgently required. Technical issues largely determine the costs of a given water-related project, and thus remain of paramount importance.

The present water-related project cycle can, in many settings, be characterised as 'build, neglect, rebuild'. Where the technology deployed is remote from the users' capacity to maintain, operate or pay for it, prospects of sustainability of the service are equally remote. Thus the development of water and waste disposal infrastructure and irrigation works needs to take technological considerations, as well as local management capacities and community resources, into account.

Technology itself needs to be provided within an integrated framework. A project designed to provide a new supply of water, for example, should take into account the need to dispose of, or recycle, run-off and used water. Irrigation works should take into account the potential for soil degradation or water-related health hazards, such as the development of mosquito breeding-grounds.

### 19 Choice of technology should be governed by considerations of its efficiency, appropriateness, cost, and suitability for local conditions

Engineering solutions need to be selected according to criteria which include efficiency, appropriateness, cost and their potential for adaptation to the local environment. The desired approach can be summarised by the term 'appropriate modern technology', capturing elements of cost-efficiency and suitability for the purpose *(see Part III).*

There have been numerous examples of poor project outcomes due to the selection of over-costly and inappropriate technology, which has fallen into disrepair because maintenance was too difficult, or which has caused unanticipated environmental damage.

A common problem in many

infrastructure projects has been the importation of technology from industrialised countries unsuited to the physical, economic and social conditions in which the system is located. Highly professional technical advice is required to guide the choice of technology – whether it is to be 'high-tech' or 'low-tech', it should still be 'state of the art'; and the choice of materials should receive careful consideration regarding safety and environmental suitability. As importantly, technical decisions must take into account the social and economic context in which infrastructure will have to be maintained. Long-term affordability and sustainability often hinge upon decisions taken concerning technology including energy sources for pumping. Thus, critical social and economic considerations about the viability of a technology in a given setting should not be ignored. Technologies should not burden operators or tie them into costly and unreliable supply contracts; consideration should also be given to the prospects of technology transfer and local manufacture.

To facilitate cost-effective operation and maintenance, upgrading technologies that permit staged development are desirable, especially in settings where systems and services are being introduced for the first time. These can be developed on the basis of indigenous technologies and local knowledge, and on scaled-down versions of existing systems (in the case of sewerage, for example).

To facilitate effective operation and maintenance, easy availability of spare parts, and convenient training of operatives including local community workers, standardisation of technology needs to be assured. This issue may need to be addressed within the regulatory framework.