The central lesson learned from too many WS&S interventions of the last twenty years is that simply *building* new facilities does little to help the poor. Projects that end with the construction phase inevitably fall into disrepair and disuse.

Experience has proved that benefits are only achieved when hardware installation is fully integrated with properly planned and implemented arrangements for the long-term operation, maintenance and financing of an improved *service*.

A successful programme, therefore, requires the active participation of a number of agencies from the public and probably the private sector, as well as professional input from a range of disciplines. Above all it requires that these many partners to a programme be properly co-ordinated, with clearly identified roles and responsibilities. Achieving this is difficult in a country where there is no strong institutional framework; deficiencies in this area are at the root of many past WS&S failures.

For rural projects a multi-layered, centrally-controlled management hierarchy is not helpful. Devolving management responsibility

2.6 Institutional perspectives

Introduction

If we are to maximize the impact and the prospects for sustainability of WS&S programmes, institutional aspects need to be addressed comprehensively, as part of a collaborative approach with project partners. Key professionals working in the sector therefore need to understand institutional issues and their implications.

In this section we consider why support for institutional development is important, and look at the key issues and opportunities in the context of a poverty-focused approach and typical constraints in the sector. Under the heading of *Practices*, we examine what is entailed in Institutional and Sector Appraisals and Institutional Development, and learn how to support these. To put the discussion in context, we look briefly first at management options that are in use and worthy of further consideration in the rural and urban sectors.

A glossary follows this section with definitions of some common institutional terms.

2.6.1 Why support institutional development in the WS&S sector?

Rapid population growth and the inadequacy of water supply and sanitation services led to a strong emphasis in the 1980s and 90s on the construction of new facilities. Considerably less attention was paid to the sustainable management of services. Among examples of poorly managed services are the high percentage of handpumps that are not working in rural areas and the high leakage rates in urban water distribution systems. Host governments and donors usually advocate sustainability, but in practice they have often withdrawn support soon after the facilities have been constructed and then handed these facilities over to local institutions.

Poorly managed facilities lead to declining service levels. This in turn reduces the chances of good cost recovery in terms of both willingness-to-charge and willingness-to-pay. One consequence is that investment in the sector cannot keep pace with demand. It is clear that in many developing countries scarce resources such as water are allocated unfairly, with preference given to those who have power and influence, and the poor further marginalized.

Institutional Development (ID) work that leads to improved and more transparent management practices results in more effective and equitable use of resources, which is central to DFID's main aim of eliminating poverty in poorer countries.

2.6.2 Institutional options for rural WS&S

Management models for rural WS&S facilities vary from centralized government systems to localized community management, with several models between these extremes (see Figure 2.6.1). Some countries have central, state, district, and village administration involvement in the sector, amounting to four tiers. The activity-

to the community via partnership arrangements with key agencies is more effective. It allows for appropriate skills inputs, particularly important for the up-front promotion programmes generally needed to engender demand for sanitation works.

responsibility matrix for South Africa's rural water sector (Table 2.6.1) demonstrates the overlapping or fragmentation of responsibilities, which is also common elsewhere.

Centralized management often contributes to operation and maintenance (O&M) failure because of:

- over-dependence on limited government resources;
- user expectations that government provides everything;
- user non-payment of water charges; and
- a lack of user involvement in decisions concerning their water supplies and sanitation.

(Davis and Brikke, 1995)

Under such circumstances, adapting centralized management by just incorporating community participation is unlikely to be successful.

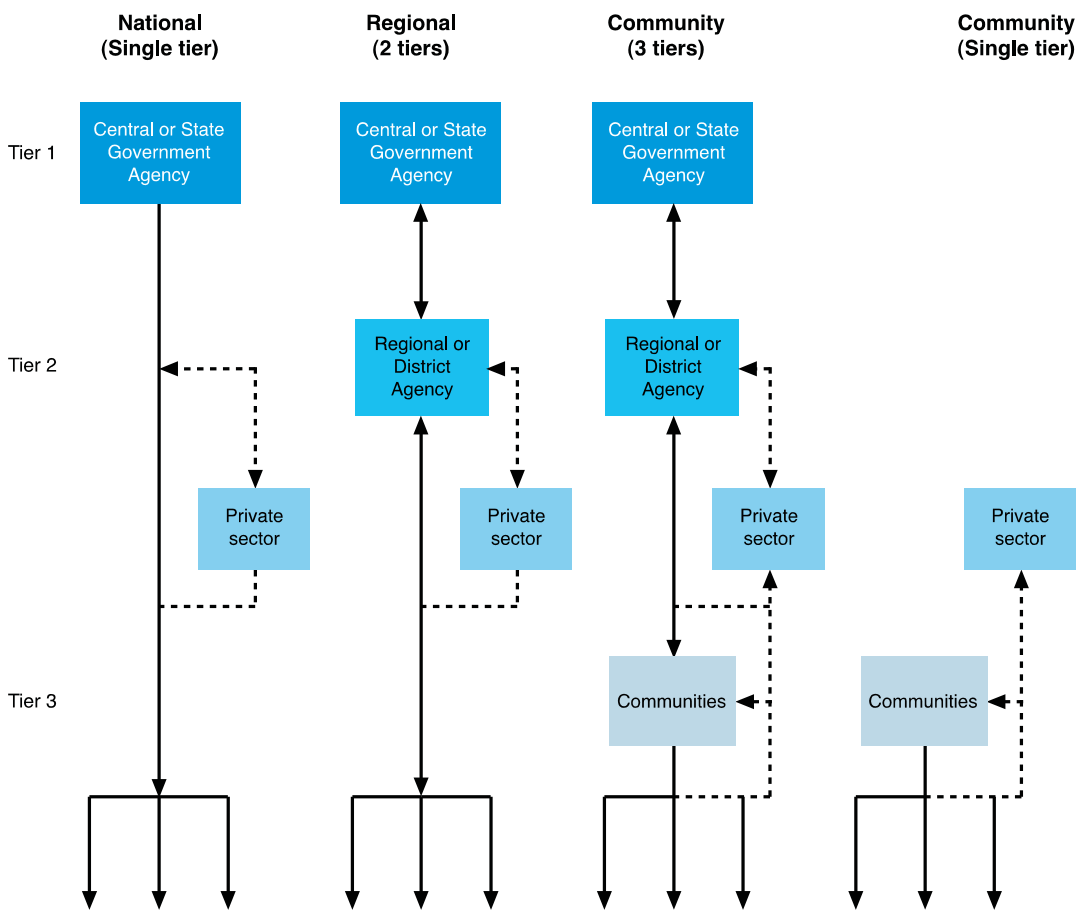


Figure 2.6.1. Rural operation and maintenance models and tiers of responsibility

A fundamental change towards community management using a partnership approach involving the community and the key agencies offers a more effective solution (see Section 2.6.7).

Rural sanitation

This sector presents a particular challenge because of the general lack of facilities, combined with limited initial demand for sanitation services, that is experienced in many areas. A comprehensive social marketing approach is advocated and explained in Section 2.8, as an effective means to promote sanitation and its use.

What are appropriate means of managing sanitation programmes from an institutional point of view? Collaboration between the various departments and stakeholders is possible for specific integrated projects, but long-term co-ordination is difficult to achieve.

Where such institutional problems exist, issues such as clarification or reallocation of responsibilities, options for an integrated approach, and HRD requirements should be addressed during the process of project development. A partnership approach involving NGOs and the private sector will also enable the introduction of much-needed skills to sanitation promotion and implementation.

The *devolving down* principle of management responsibility is equally applicable to urban programmes, as is the reduction of overlapping responsibilities to ensure accountability. The proviso is that the more complex nature of WS&S systems in large towns and cities, possibly including treatment works, and other major engineering elements, lends itself to and may benefit from an unbundling of management functions. Bulk supply of water and the associated river intakes and well fields may, for example, be regionally managed, while a municipality is responsible for the distribution network.

One clear advantage of municipal management at the end-user level is the potential for integrating the expertise of other municipal departments, such as health or education, into the programme.

2.6.3 Institutional options for urban WS&S

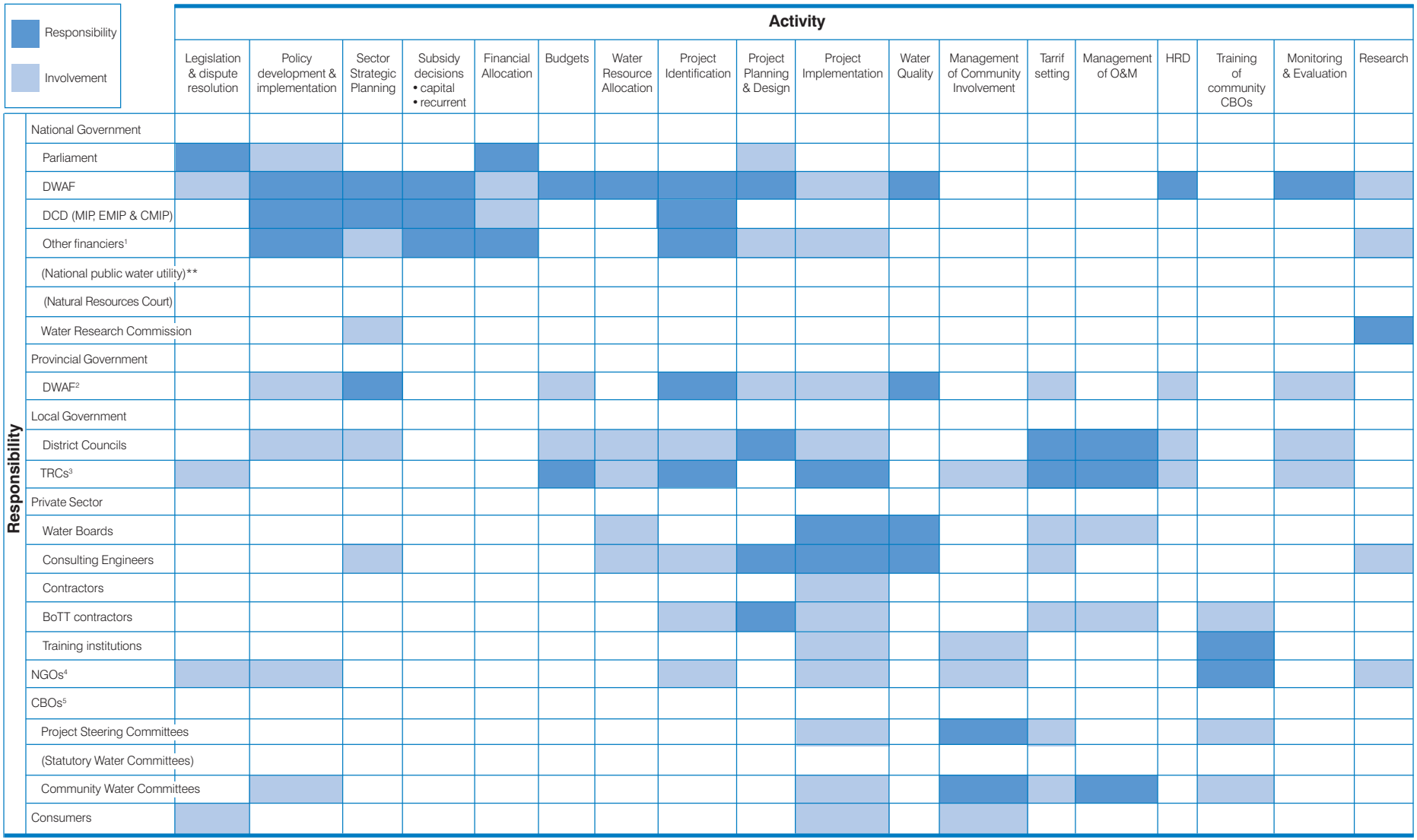
Six basic management models of urban water supply are set out in Table 2.6.2. Models 1 and 2 can present problems associated with a lack of organizational autonomy, with substantial government involvement in matters that are often best left to competent managers. There are variations on these models in some developing countries. For example, in some states in India there is a combination of Model 1 and Model 2, where both municipal and state government are involved in the management of water supply and sanitation. Such overlapping responsibilities can often create problems of accountability. In South Africa there are combinations of Model 1 and Model 3, where municipal departments are partially corporatized or commercialized — this may offer a suitable route for development for other countries. Some countries 'unbundle' functions such as bulk supply and water distribution for reasons of economies of scale and to maximize the use of available expertise. Models 1 to 4 may also have varying levels of private sector participation as a means of introducing more incentives for effective service provision.

Models 5 and 6 include ownership by private shareholders and may raise concerns of equity where a high percentage of the population is poor. Model 4 — a public owned/public limited company with staff recruited from the private sector can offer an acceptably balanced arrangement — such models are used successfully in the Netherlands, the Philippines, and Chile.

Municipal management

While the management of WS&S services by a municipality (Model 1) can present problems such as a lack of organizational autonomy for

Table 2.6.1 Indicative activity/responsibility matrix for the South African rural water sector (in a Transitional Policy Environment).



** Proposed institutions in parenthesis

[1] e.g. DBSA, IDT. international funders

[2] Catchment Management Agencies

[3] Transitional Rural Councils

[4] Non-Government Organizations

[5] Community-based Organizations

Table 2.6.2 Six basic management models of urban water supply organizations

Organizational model	Who owns the infrastructure?	Who operates infrastructure?	Legal status of operator	Who owns the shares?
1. Direct public/ local (e.g. Kenya)	Local (municipal) government	Municipal administration	Municipal department	Not applicable
2. Direct public/ supra-local (e.g. India)	National or state government	National or state government administration	National or state government department	Not applicable
3. Corporatized utility (corporation/ authority/board) (e.g. Ghana)	Government or utility	Corporatized utility	Parastatal, usually defined by special law	Not applicable
4. Government-owned public limited company (PLC) (e.g. Netherlands)	Government or PLC	A PLC as permanent concessionaire	Public limited company	Local/provincial government
5. Delegated private (e.g. France)	Any combination of government agencies	Government and temporary concessionaire	Public limited company	private shareholders
6. Direct private (e.g. UK)	Private agents	Private company	Public limited company	Private shareholders

Source: adapted from EUREAU (1992)

effective management, it also offers a number of advantages. For example, local municipal management with potentially better accountability to consumers is a key reason for the growing trend of decentralization of powers to municipalities. If this is to lead to substantial improvements in service levels, however, it requires politicians and key staff to be prepared to make difficult decisions regarding aspects such as cost recovery and efficiency improvements.

Another advantage of municipal management of WS&S is the good potential for collaboration with other concerned departments in the same municipality, such as the Health, Public Works, Planning, and Slum Improvement Departments, where they exist. Unfortunately, such potential is not always exploited.

Close collaboration is particularly advantageous when considering sanitation improvement programmes. A box in Section 2.6.6 (page 128) discusses the management of sanitation programmes in urban local government as well as the ‘strategic approach to sanitation’.

This approach differs from the existing supply-driven agenda through two underlying principles: it is demand based, and incentive driven (with appropriate rules, referees, and rewards). (See the box on the strategic sanitation approach in Section 1.5.)

The approach, as described in Cotton and Saywell (1998a), involves:

- **Wider choices concerning technologies and service levels** Comprehensive information about technologies must be made available, support provided in determining appropriate levels of service, and flexibility shown in applying appropriate technologies and service levels within the wider context of municipal sanitation programmes.
- **Step by step actions** Levels of service need to be disaggregated, or 'unbundled' both vertically and horizontally (see page 17). This implies that sector delivery systems are broken down into separate but technically integrated systems and the most efficient solutions are designed at the most appropriate level (household, community, city).
- **Financial sustainability** Key to the Strategic Sanitation Approach (SSA) is the full recovery of investment, operations, and maintenance costs, including financing and transaction costs.
- **Responsive institutional arrangements** Links between departments and institutions need to be developed to allow users to participate in the decision-making process and management of services within the context of the overall municipal sanitation programme.

Small towns

A general problem for rural and small town projects, and one which will test the strength of institutional links, is establishing sustainable mechanisms for drawing on the professional expertise which tends to be concentrated in regional and large municipal organizations. In many developing countries the full spectrum of necessary skills is not available at central government level or in lower level agencies.

WS&S for small towns can present its own particular problems. Often towns require more sophisticated forms of water supply systems than villages, including distribution networks, reservoir intakes, and treatment plants. Many small towns, however, do not have sufficient capacity to manage all aspects of such WS&S services. Larger towns and cities attract the more able management expertise in the sector, so the skills shortages become most apparent in small towns.

Some countries have a system of national or state water authorities — Models 2 and 3 in Table 2.6.2 — which serve some or all of the towns and cities in their defined region. These models are a means of maximizing the use of expertise in the sector. However, in resource-scarce countries, such national/state boards or authorities have often been unable to achieve the outreach to provide customer-orientated services, particularly to low-income groups. Fragmentation of responsibilities exacerbates this situation. Again, unbundling may offer a solution. Then the municipality (with support in capacity building) can manage the distribution system and collect charges itself or contract it out to the private sector. The bulk supply may then be managed by a regional water authority, or they too may seek private sector participation. Decisions need to be made where bulk supply costs are high, as to whether there will be cross subsidies or an average bulk supply cost applied across a region.

Principles

2.6.4 Constraints to effective service provision

Experiences vary both between and within countries, but WS&S institutions typically have to contend with a multitude of constraints which have varying degrees of severity, including:

- fragmented and overlapping responsibilities between different organizations and stakeholders;
- a lack of clear direction and vision;
- poorly defined financial and physical objectives/indicators;
- a lack of capable trained staff at all levels and particularly in decentralized agencies taking on responsibility for WS&S operations;
- inadequate management information systems — a lack of transparency;
- no comprehensive O&M procedures;
- bureaucratic controls that inhibit effective management;
- ineffective staffing policy and job definition;
- lack of resources;
- political management and interferences and lack of willingness to charge higher water and sanitation tariffs; and
- a lack of incentives to make improvements.

Participatory approaches are undoubtedly vital in WS&S programme development and implementation. The problem is that they require new skills and experience. Few WS&S agencies have ready access to the social scientists and other specialists needed. In addition resource constraints are widespread and there is an ever-present risk of political interference to obstruct movement towards cost-reflective charging.

In the case of rural and peri-urban WS&S, many government institutions have not been able to provide adequate services to these widespread communities. Some form of community-based approach has been adopted in most developing countries with varying degrees of success. Problems arise when institutions have limited awareness and capacity to elicit people's real demand for service improvements, based on their willingness-to-pay, and then to support community management. The social mobilization and participatory approaches described in Section 2.2, the hygiene promotion recommended in Sections 2.3 and 2.8, and the willingness-to-pay studies outlined in Section 2.5 all require skilled staff with specialist knowledge. These people are rare in most developing countries. Even central government agencies have limited outreach and lack the capacity to implement programmes in distant communities.

2.6.5 Key institutional issues

Progression towards pricing structures that allow full cost recovery must be the central focus of institutional reform. The end objective of a sustainable water and sanitation service can come only within the framework of an integrated water resources management strategy in which tariff structures are formulated to cover the full costs of maintaining existing systems and financing planned expansions.

The institutional framework for WS&S has to meet major challenges in achieving both sustainable and equitable service provision. Central is the improvement of cost recovery to generate the resources for maintaining and improving services, to meet both existing and future demand. This requires a sustained effort and long-term commitment to addressing key issues that require greater emphasis, such as:

- water resources allocation and management;
- improved integration of water supply, sanitation and hygiene promotion;
- a commercial orientation including improved financial management, investment planning, and tariff setting;
- improved organizational autonomy, transparency, and accountability as well as decentralization and delegation to the lowest appropriate level;
- improved equity and gender perspectives through dialogue with low-income communities and well-targeted subsidies, seeking to minimize perverse subsidies;

Good finance and resource information is a basic necessity; establishing adequate management strengths in this area is an ideal starting point for reform. Subsequent capacity building should encompass moves towards the decentralization of decision-making and downward devolvement of management responsibilities. It should lead to an integrated institutional structure responsive to and focused on user demand.

- demand responsive approaches including participatory methods and the provision of appropriate marketing and customer services;
- private sector participation and regulation with appropriate incentives;
- management of operation and maintenance (O&M); and
- human resources development (HRD) and management development that supports improved capability in all these aspects.

An institutional set-up capable of addressing these issues in an integrated and comprehensive way improves the prospect for adequate and sustainable services. *Institutional Appraisal and Development* as described in the remainder of Section 2.6 provides a framework for assessing how such a set-up may be achieved.

WS&S institutions in developing countries are usually orientated towards constructing new infrastructure and the crisis management of existing facilities. They need support in developing their institutions to bring about improvements in the key aspects identified above. A common starting point is improving management information and transparency in the management of physical and financial resources.

In recent years, many countries have begun the process of decentralizing sector activities and some are making efforts to follow the principle of devolving management to the lowest appropriate level. This is a challenging process, particularly as it has to be combined with the other key principles of involving all stakeholders in decision-making processes and adopting an integrated approach to water resources management.

WS&S strategies and interventions should seek to have a positive impact on policy in the host country.

Opportunities for institutional development can exist at all levels in national management and organizational structures and should be sought around the starting point of a viable poverty-focused WS&S programme.

2.6.6 Opportunities and strategies

Past projects of DFID and other agencies offer lessons for developing new water sector programmes and projects, and reinforcing current policy guidelines. All strategies and interventions should seek to have a positive impact on policy in the host country. Opportunities and appropriate strategies for institutional development need to be placed in the context of potentially viable poverty-focused water and sanitation programmes. The elements of such programmes are:

- **Integrated water supply, sanitation, and hygiene promotion programmes** aimed at maximizing health benefits at the local level, using a demand-responsive and a process approach (DFID Technical Note No. 4, 1992), and targeting poor communities in rural and peri-urban areas. All projects are likely to involve some form of institutional development, particularly in the areas of Human Resource Development (HRD), information systems, and improving linkages among stakeholder institutions.
- **Programmes in rural areas supporting management at the lowest appropriate level** will usually entail some form of community management. Even where Village Level Operation and Maintenance Management (VLOM) is achievable, the institutional responsibilities between community organizations, local

At a very basic level sustainability of small community-managed projects can be impaired by the lack of a reliable system for obtaining spare parts or technical assistance for occasional repairs. The problem may be solved by developing links between community managers and relevant public or private

partner agencies.
At a quite different level appropriate specialist input might be used to strengthen national or regional resource management planning or to develop a water allocation policy.

government, and the private sector, will need to be agreed and the necessary support provided to achieve sustainable service provision. Ensuring the availability of spares is often a key issue, as is technical backup for major repairs. No less important is institutional backup to fragile new local institutions.

- **Addressing local water resource management (WRM) issues** offers substantial potential benefits, particularly in areas where there are water scarcity and water allocation problems between different users. Any significant improvements to WRM will involve some institutional development or strengthening. Support could be in terms of building policy frameworks, including assessment and modelling, legislation on water rights, and appropriate environmental standards (ODA, 1995d). Water allocation can be a sensitive issue and can generally only be addressed where there is a clear willingness to collaborate by the host government. Experience shows that properly informed communities will themselves become the best caretakers of local water resources, providing they are given the rights and the means to do so.

Cairo Wastewater: Support to deprived areas

DFID's support to the Cairo Wastewater project (since 1978) has primarily concentrated on the construction of trunk sewer tunnels and large pumping stations on the East Bank of the Nile. While the large investment in these works has clear benefits for the city drainage system as a whole, it is more difficult to identify targeted benefits particularly in relation to low-income groups in the city.

With the major part of the trunk infrastructure complete, the logical way of addressing this issue is to extend sewerage to deprived areas which fall within the catchment of the new trunk sewerage. The cost is marginal compared with the cost of the trunk infrastructure already provided.

An additional project has subsequently been formulated which provides an opportunity to develop participatory planning of local improvements with communities, extending services to 60,000 people. The procurement and contracting process will be structured so that labour-intensive methods can be used for income generation within the local economy.

There are complementary projects offering institutional development support to the responsible city authority.

There are also lessons here about the timing and planning of investments in relation to trunk and local neighbourhood infrastructure.

Firstly, it is clear from the framework of the 1997 DFID White Paper that the potential benefits to the urban poor can and should be appraised at the outset, with clearly targeted interventions as opposed to 'trickle down' assumptions of benefits.

Secondly, such clearly targeted interventions cannot be made in isolation from the city-wide infrastructure context. The benefits of the Cairo deprived areas project are only realizable because the trunk infrastructure exists. In the effort to demonstrate the direct impact on the poor, it is important not to lose sight of the wider picture.



WEDC/Keith Pugh

Programmes with a primary focus on the urban poor can derive positive benefit from parallel institutional strengthening of the utility service provider. An improved or expanded service to target groups might, for instance, be better assured by improving the management of billing and charge collection and thereby the overall financial position of the utility.

Capacity building within the utility should concentrate on the human resource element rather than on financial aid which might be misdirected. Improved engineering expertise, for example, might save money by identifying areas for strategic infrastructure repairs as an alternative to major renewals.

Private sector management of urban systems has proved its worth but must be regulated to protect and ensure attention to the interests of poor communities.

Where WS&S improvements are only one element of an integrated poverty alleviation project a management system has to be developed around the municipality and CBOs. Technical support to strengthen WS&S institutions at the higher, policy formation, level must be well targeted and depends on a degree of

- **Working in poor areas allied with support to urban water utility management** offers the opportunity of a clear poverty focus together with collaboration on improving the effective and equitable management of water and sanitation services, without which the long-term service provision to the poor is threatened. By addressing service provision to poor areas as well as utility management, there is potential for synergy in terms of project effectiveness. For example, improved services to poor areas can be indicators of better utility management. Institutional development interventions need to be well targeted and enabling in nature, to avoid expensive overall development of the water supply organization (new offices, vehicles, computers, etc). The possibility of providing funding for the provision of strategic infrastructure to remove 'bottlenecks', as well as provision of support on leakage control, should be considered where appropriate. Projects that are dominated by the provision of substantial trunk infrastructure can create difficulties in achieving a poverty or sustainability focus, as has been experienced on DFID's Lucknow project in India (see box in Section 1.6). Provision of trunk infrastructure, however, can facilitate development of secondary and tertiary infrastructure for poorer areas, as the box on the DFID Cairo Wastewater project (left) illustrates.
- **Privatization** in its many forms raises special issues of concern in relation to services for the urban poor. Unless there is protective legislation or regulation, the commercial approach can mean that resources are focused on those who can afford to pay for high-cost services, at the expense of the poor. These issues are discussed later in Section 2.6.21 on Private sector participation.
- **Working with urban slum communities in developing integrated infrastructure provision,** including roads, community halls, lighting, etc., in addition to water and sanitation services, has been found to be successful in DFID urban poverty projects in India, where slum communities are able to express their relative demand for each type of infrastructure service. Close collaboration is required with municipalities and community organizations, particularly in developing appropriate institutional arrangements for operation and maintenance.
- **Institutional development of WS&S institutions** requires well-targeted technical assistance programmes such as the DFID projects in Swaziland (where a Corporate Planner and Finance Expert were provided). In South Africa DFID is supporting the development and implementation of new rural WS&S policies (see box in Section 2.6.13). Such programmes generally require good capacity and commitment to institutional issues within the host organization. The impact on equity or poverty needs to be demonstrated in each case. Institutional support seeks to foster the participatory approach and real involvement of stakeholders. The right gender perspective is also important. The increased

current capacity and commitment to key institutional issues in the host organization.

Urban sanitation programmes for the poor can demand a singular management approach, working through local government bodies which are typically responsible for non-sewered sanitation while a specialist utility manages piped infrastructure services. Small local community projects may be led or supported by NGOs. Opportunities for institutional strengthening include capacity building in the local government organizations and in NGOs, and the development of stronger links between the two. Project sustainability is best achieved by establishing robust links between the community and local government.

involvement and influence of women in sector institutions is one of the key principles guiding the WS&S sector (see also Section 2.2.4).

- **Sanitation and hygiene promotion programmes or sub-programmes** offer the advantage of providing sufficient focus on sanitation issues without the preoccupation with water supply.

  However, sewerage programmes should only be considered where potential water supply problems will not adversely affect the operation of the sanitation facilities. Institutional considerations in such programmes include: optimizing subsidies and incentives in a demand-responsive approach, roles for formal and informal institutions, and capacity building as part of a Strategic Sanitation Approach (see box in Section 1.5).

- **Programmes led by international and local NGOs** that work with local communities also require institutional inputs in terms of encouraging local government collaboration, capacity building,

Sanitation programmes in urban local government

While large-scale urban water supplies, and to a lesser extent sewerage, are increasingly managed by specialized utilities, the provision of unsewered sanitation, which will cater for the majority of urban poor in the foreseeable future, is frequently the responsibility of urban local government. It requires a careful understanding of the role, functioning, and constraints of local government.

One of the most important institutional problems in urban sanitation is that there may be several different pro-poor sanitation programmes instigated at national, state/district, and city levels, and these may be channelled through different departments within local government. This leads to widespread confusion; the underlying question is who should be responsible for overall planning at the city level, and how can this be achieved?

While the strategic approach to sanitation (in Section 1.5) envisages 'unbundling' of responsibilities as a key issue, there may also exist situations in municipal government where the need is to set up an effective co-ordinating group of the various concerned line departments to promote convergence among the different sanitation programmes. The need for this is illustrated by the situation in Cochin, India.

The different skills for sanitation implementation are: health-related promotion and education; community development and negotiation; and technical issues around construction. In Cochin, India, these skills lie respectively in the Health Department, the Poverty Alleviation cell, and the Engineering Department. Different programmes of the state and central governments come through these departments. The problem is lack of communication between departments with a lack of convergence as different programmes are implemented in different ways.

DFID work on a strategic approach to urban sanitation is currently underway with the aim of developing an adaptable strategic macro-framework which sketches out the overall direction for sanitation service provision in a project area. It is clear that in small towns, it is necessary to put in place some directional role from the higher level state or district institutions, as well as internal co-ordination.

and developing longer term support to community organizations. This form of project is particularly advantageous in developing approaches and systems for working with local communities, and tends to be more suitable for smaller projects. The development of NGO capacity should also be considered.

- **Demand-responsive projects working through government institutions** that maximize the use of local skills in government and in the private sector is the preferred approach for sustainability reasons, with support provided from NGOs and consultants as appropriate. Strategic technical assistance needs to be carefully planned and to begin sufficiently early in the project development cycle to influence the direction of the programme.

Encouraging host countries towards an institutional structure capable of supporting an expansion in WS&S provision for the poor can be effectively advanced by co-operation, collaboration, and dialogue. Learning is a two-way process.

- **Collaboration with project partners to influence policies** needs to be carefully planned too, and to take advantage of opportunities as they arise. This can be done through such measures as: promoting DFID approaches to project development; developing national water, sanitation, and hygiene promotion policies and guidelines; encouraging governments to use development projects as pilots for replication elsewhere; introducing institutional development project components; promoting and supporting civil society institutions; supporting HRD institutions; holding policy review workshops; disseminating examples of best practice from elsewhere; arranging study tours, strategic consultancy inputs, and the well-designed dissemination of lessons, manuals, and successful systems; working with other donors; ensuring appropriate project conditions; and participating in an ongoing dialogue. Opportunities for collaboration on policy are often easier to develop with larger projects, where the donor is seen as a more important stakeholder. It has to be remembered too, that 'influence' is a sensitive topic and learning is a two-way process. DFID staff need to see themselves as supporters of national policies and programmes (the compatibility of such policies with the agreed principles will be established in the very early project phases).

Where major institutional reform is called for support may be directed towards one or more specific aspects of sector organizational policy such as mechanisms for private sector participation. A possible alternative, used in other sectors, is to support general development across the sector. It is an approach that is subject to some important pre-conditions and one that might not be applicable in the water sector.

- **Promotion of substantial institutional reform** may be appropriate in many cases and could include providing support to a variety of initiatives in the WS&S sector, such as:
  - decentralizing;
  - commercializing or corporatizing of institutions;
  - unbundling or rebundling of functions;
  - organizational restructuring;
  - changing roles of government from service provider to regulator and facilitator;
  - appropriate forms of public private sector partnerships; and
  - instituting agreeing targets performance between different organizations or levels of government.

  Substantial reforms are usually led by the host governments and would often benefit from the support of the major donors in the sector. DFID's involvement in such reforms needs to be carefully

assessed in terms of the likely size of the DFID programme in the sector and the perceived risks.

- **The Sector-Wide Approach** (see Section 1.5) is a promising alternative way to support development in the sector that avoids the problem of a project being 'an island of success in a sea of failure'. The aim of this approach is to develop **Sector Investment Programmes (SIP)** that cover *all* sector expenditure, both recurrent and capital, as described in Section 1.5. An SIP has to be based on a clear sector strategy and policy framework, and local stakeholders such as government, direct beneficiaries, and private sector representatives have to be clearly in charge. All main donors must sign on to the approach and participate in its financing. There are specific macroeconomic pre-conditions for SIPs to be considered (Harrold and Associates, 1995). To date this approach has mainly been used in the health and roads sectors. Opportunities should be explored in the WS&S sector, although where there is a high degree of decentralization or significant institutional complexity, it may prove difficult.

2.6.7 Partnership approach: Sharing responsibilities

The balance of responsibilities and powers between project partners must be capable of change as capacities are developed. The balance will initially be governed by the technical complexity of the installed facilities and by the relative capabilities and finances of the partner bodies. Both may change; skills development in the community might allow a transfer of O&M responsibilities — it should then bring a corresponding transfer of powers for charge collection and service financing.

A partnership involving rural or peri-urban communities and government agencies should be seen as a flexible and evolving process requiring continual dialogue. NGOs and the private sector should normally also be part of such partnerships, with NGOs commonly having a facilitatory role. The sharing of costs and responsibilities within a partnership will vary according to a variety of factors, including the:

- choice of existing or proposed technologies;
- capacities of the various stakeholders; and
- type and stage of development of the partnership.

More complicated technologies such as multi-village regional piped water schemes require more substantial government agency inputs. Simpler technologies such as handpumps are likely to require only back-up support from agencies. Work is continuing world-wide on the development of VLOM (Village Level Operation and Maintenance Management) pumps and systems that need minimal external inputs. As partnerships develop, management agreements between the various key parties should be considered as a means of clearly allocating responsibilities. Such agreements have been used on DFID-supported multi-village piped water schemes in Maharashtra, India. Further guidance on community-based operation and maintenance is set out in a box in Section 2.6.8.

If a village institution such as a Village Water Committee is expected to take on a key role of managing O&M, it is preferable that it also collects water charges and manages O&M finances. Such an arrangement balances accountability with empowerment, although capacity-building requirements need to be addressed.

The private sector could have a key role to play, particularly in corrective maintenance and the supply of materials and spares. If it can provide the flexible responses required, an enabling environment is established. The box below describes how project partners in Karonga, Malawi supported the long-term supply of handpump spares to communities by local wholesalers and village shops.

Practices

2.6.8 Scoping proposed sector and institutional appraisals

An appraisal of host country institutional structures and of individual institutions in the water sector is a necessary preliminary to DFID involvement at programme and project level.

Determining the scope of Institutional Appraisals is an iterative exercise which depends on the realistic potential for achieving DFID's objectives and the likely size of the country programme in the water sector. The DFID Institutional Adviser dealing with the concerned region should be consulted at an early stage. Institutional Appraisal is essentially a two-fold process. The first stage entails considering the whole sector— that is the broader institutional arrangements in which services are planned and delivered — while the second stage examines the internal environment and functioning of individual organizations. Before moving to the project identification stage there should be a well-documented institutional appraisal of the WS&S sector and a broad understanding of the institutional arrangements in typical WS&S institutions, as well as the external environment within the country concerned.

VLOM: Karonga, Malawi: Facilitating the provision of Afridev handpump spares by the private sector

The Danida-supported Karonga integrated groundwater supply project on the northern shores of Lake Malawi evolved from having a construction target focus to being a project where priority was given to setting up a sustainable operation and maintenance system.

In 1992 arrangements were agreed with 15 existing village shops in the project area. This entailed the project supplying fast-moving spares such as o-rings and u-seals to the village shops, who received a 10 per cent commission on sales. An agreement was then reached in 1993 with two wholesale stores, who received a year's supply of pump spares (initially on commission). It was agreed that in future the stores would obtain the spares from local producers.

With the introduction of the wholesale link, shopowners were required to purchase their supply of pump spares from the wholesalers. Realizing that the shopowners could not afford to invest in stock, the project delivered an equal amount of fast-moving spares to all 15 shops. This functioned as start-up capital or a revolving fund.

Handpump committees are generally satisfied with the new system, apart from having to travel to the wholesalers for the slow-moving spares. The village shopowners felt that stocking the spare parts is mainly a community service because of the small profit margins, but all expressed a willingness to continue to stock the fast-moving spares.

D. Noppen, 1996

Table 2.6.3 identifies a range of key focus areas to consider in conducting appraisals under four main categories:

- Water and sanitation sector
- External environment
- Appraisal of water and sanitation institutions/municipalities
- Appraisal of community organizations

Institutional Appraisal extends to an overview of the general conditions and structures in the country. It is an ongoing, continuous exercise, in which detail is added at succeeding stages of a project but the initial complexity and scope is defined by the size of the intended programme and the complexity of existing institutional structures.

In many countries, good information may already be available from the government, other donors, and academic institutions. It can be advantageous to conduct appraisals in conjunction with other donors and host governments. Decisions will need to be made on the focus areas to be included in an appraisal. For example, should the complex issue of water resource allocation and management be examined? More detailed appraisals of WS&S institutions and of community organizations that are intended to participate in a programme are more likely to be required at the project preparation and appraisal stages, but '*Institutional Appraisal should never stop. Implementation is a*

Sustaining community-based operation and maintenance

Implications for practice

- Participatory methods of working are centrally important, and not simply participatory contributions of labour and money in response to agency instruction, but continual processes of shared decision-making between the agency and primary stakeholders at all stages of the project cycle, with the aim of developing the community members' sense of responsibility for and control over the local operation, maintenance, and management system.
- Increase as far as possible the room for manoeuvre that community members have in relation to aspects of the service design — choice and location of service, and operation, maintenance, and management of the system.
- Where community management is required, capacity building should be a project output, especially the development of skills in management, planning, analysis, decision-making, and problem solving. The time scales for construction work and capacity building are different. Capacity building requires separate resources of time, resources, and personnel.
- Provision for the transfer of responsibility should be built in from the beginning of the project, with clear recognition that this is a process not an event.
- Recognition that tackling the problem of non-payment of recurrent costs is not simply a matter of adjusting payment levels, but addressing all aspects of effective community management, including institutional and technical.
- As far as possible, make change pay, that is by creating paid jobs in service operation and management wherever possible and reducing or eliminating reliance on volunteer labour.
- Keep technology very simple to maintain and repair, where possible, with a reliable supply of spare parts and technical assistance available locally.

Derbyshire & Vickers, 1997

Table 2.6.3 Focus areas for institutional and sector appraisal

Appraisal categories	Focus areas
1. Water and sanitation sector	• Regional allocation of water between user groups • Water pricing and subsidy distribution • Allocation of responsibilities between WS&S institutions • Government policies, strategies, and regulation in the sector • Actual service levels, particularly for the poor • Sector performance against key indicators • Cost recovery, transparency, and lending terms • HRD for the sector • Private sector participation (PSP) in water and sanitation • Climate for change and change champions
2. External environment	• Social, technical, economic, and political environment • Government policies and progress on reform • Employee conditions of service and recruitment policy • Opportunities and constraints for PSP • Formal and informal structures • Absorbtive capacity • Consumer and media pressures
3. Appraisal of water supply and sanitation institutions	• Organizational performance against key indicators • Actual service levels, particularly for the poor • Organizational autonomy • Leadership • Commercial orientation • Consumer orientation • Management and administration • Technical capability • Developing and maintaining staff including training needs • Organizational culture, formal and informal structures • Interactions with key institutions/departments • Availability of financial resources • Priority areas for improvement often include: Management of O&M, cost recovery, customer services, demand assessment, and investment planning
4. Community organizations	• Demand for improved water and sanitation services • Capacity/willingness to manage service provision and recover costs • Representation of different community groups in the community organization • Social cohesion within the community • Linkages with government/water utility/NGOs, etc. • Training needs

The key stages in appraisal, applying equally to national structures/policies and to those of individual sector organizations are:

- establish current policies, objectives, and programmes;
- evaluate actual progress against programmes; and
- assess policies/plans against 'fitness for purpose' and against best or recommended practice.

A more detailed understanding of national policies and their effectiveness/equity can be obtained by examining subsidies and their outcomes and by clarifying the functions and responsibilities of sector organizations from national to local level.

Within individual organizations existing service and financial performance is measured against key indicators, allowing comparisons between similar organizations.
SWOT and STEP techniques are useful analytical tools.

further opportunity for learning — the project cycle should not be a linear process' (DFID Technical Note No.14, 1995).

2.6.9 Tools for appraisal

For Sector Institutional Appraisals, the government's policies, plans, and progress against those plans provide a useful starting point. It is important to consult widely using participative techniques such as semi-structured interviews, workshops, stakeholder analyses (DFID Technical Note No.13, 1995), and problem tree analyses to develop a common understanding of the interlinkages of problems and potential solutions. After developing a good understanding of the existing situation, a key question is: *are the current or proposed institutional arrangements appropriate?* Some of the key institutional appraisal techniques and considerations are summarized below with a brief discussion of their applicability.

Activity/Responsibility matrices are a particularly useful tool in the water sector for establishing the actual allocation and fragmentation of responsibilities between the various institutions. An example matrix is shown in Table 2.6.1.

Assessment of apparent and hidden subsidies is a means of determining if there are perverse incentives that could distort demand and equity on any proposed projects. Hidden subsidies can be in the form of capital grants, inter-sector subsidies, electricity subsidies, etc. 'Single-entry' accounting, which is common in some government departments, does not reveal hidden subsidies as well as commercial 'double entry' accounting. (For more detail on subsidy analysis, see Section 2.5.)

SWOT analysis is a technique for diagnosing key institutional issues by looking at S(trengths), W(eaknesses), O(pportunites), and T(hreats). Although it can be used by DFID staff for their own analysis, it also lends itself to a workshop approach, facilitating self-diagnosis by the institution concerned. It encourages not only diagnosis of internal issues but also of the external environment (DFID Technical Note No.14, 1995).

Key performance objectives and indicators are the quantitative means of assessing how an organization is managing its service provision. A number of widely applicable indicators for a water utility are summarized in Table 2.6.4, under categories of water production and delivery, efficiency, water consumption, sanitation, and productivity. Indicators generally have three distinct levels: process and performance indicators within water sector organizations and impact indicators in the external environment. There are risks that some indicators can be misinterpreted, for example 'coverage' implies the percentage of people receiving water, but in India, for example, it is the percentage of people within the water distribution command area. In the project context, it may be worth confirming some data by surveys, such as the consumption of water per capita in poor areas, particularly in the dry season.

Other organizations, such as an agency responsible for hygiene and sanitation promotion, would have different indicators, mainly related to behavioural change (see Section 2.8).

Financial objectives and indicators are a key means of determining an institution's priorities and capacity. Typical financial objectives could be: to meet O&M costs, to break even, to make a profit, to achieve a specified percentage return on fixed assets, marginal cost pricing, to achieve social equity, or to achieve a combination of these. Some selected financial indicators for the urban water sector are shown under the bottom five headings of Table 2.6.4. Progress achieved against such indicators can be used as comparators among similar institutions.

STEP analysis can be used to assess the external environment by examining the S(ocial), T(echnical), E(conomic), and P(olitical) environment that an institution or sector has to operate within. These factors can then be considered in terms of the potential threats and opportunities for the institution/sector concerned.

Assessment of organizational structures

Different situations call for different organizational forms and this is generally true for urban and rural water supplies in developing countries. Some of the key factors to consider when examining an organizational structure are:

- organizational levels
- chain of command
- grouping of functions and objectives of those groups
- responsibility and authority limits
- job descriptions
- formal and informal structures

Analysis will include a focus on the structure of the organization, with a view to determining the extent to which its formal processes and systems are actually followed in practice, and how the informal culture of the organization exerts a dominating influence on actual practice.

Assessment of roles, policies, and strategies

As part of the Sector Appraisal, the roles, mission, policies, and strategies of key stakeholder institutions should be assessed. DFID Technical Note No.14 (1995) provides a checklist for assessing these aspects.

A good overall assessment of an institution's strengths and weaknesses can be gauged by looking at nine critical aspects of its management philosophy and operational capacity. The method is described in literature of USAID's Water and Sanitation for Health (WASH) programme.

2.6.10 Assessment of critical success factors in water institution performance

A methodology for diagnosing institutional deficiencies in the water sector emerged from the WASH (Water and Sanitation for Health) project that was funded by USAID. The methodology is described in *Guidelines for Institutional Assessment for Water and Wastewater Institutions,* Cullivan et al., (1986). Other documents in the WASH series provide useful further reading. The methodology involves making rating assessments against a number of indicators within each

Table 2.6.4 Performance indicators for typical urban water supply institutions

		Formulae	S Asia	E Asia	SE Asia
Water production	Quantity of water produced		270mld	128.7mld	1,189mld
	Quantity of water			75%	na
	Energy/Chems% Op Costs		35.4%		
Water delivery	Target population		2,800,000	1,079,000	3,057,000
	Connections		190,000	32,064	799,049
	Service coverage		90%	34%	100%
	Connections/ Standposts		55%	70%	100%
	Service timing		1-4 hrs	12-24 hrs	24 hrs
	Population density		165.7/ha	varies	48.3/ha
Efficiency	Unaccounted for water		40%	35%	8%
Water consumption	Quantity water consumed (av.)		45lpcd		168lpcd
	Water consumed in slum areas				
	Metered consumption			26%	100%
	Quality of water delivered			na	100%
Sanitation	Service coverage				100%
	Treatment		10%	50%	100%
Effectiveness	Water related diseases	per thousand population	4.2	na	na
	Customer surveys		na	na	na
Productivity	Connections/ employee		55	5 - 24	417
	Population/employee		720	325 - 536	1,566
	Percentage staff costs		51.7%		na
Marketing ($US)	Socio-economic GNP pc		$330	$170	$14,210
	WTP to vendors		$0.5	$2 - $8	na
Financial sustainability ($US)	Average domestic tariff		$0.09	$0.2 - $0.3	$0.44
	Community tariff				$0.68
	Sewerage sustainability		20%	100%	22%
Profitability	Operating ratio	$\frac{\text{total cost}}{\text{total revenue}}$	96.4%	84%	43%
	Return on fixed assets	$\frac{\text{profit after depreciation}}{\text{net fix assets}}$	0.16%	2.42%	
Liquidity	Current ratio	$\frac{\text{current assets}}{\text{current liabilities}}$	na	6.7	
Credit-worthiness	Debt equity ratio	$\frac{\text{long-term loans}}{\text{equity}}$	na	0	
Financial efficiency	Days receivable ratio	$\frac{365 \times \text{accounts receivable}}{\text{annual billed revenue}}$	286 days	242 days	33 days
	Bill collection efficiency	% of bills collected	na	55%	na

of the nine Critical Success Factor or Performance Categories listed below. The relevance of these factors have been found to be high in many ID projects in the water sector.

- **Organizational autonomy** is critical in terms of an organization's ability to manage and respond to its customers' needs. Municipal water departments, for example, which are not able to hire staff or raise tariffs to meet their projected costs, have insufficient autonomy to manage effectively. Effective organizational autonomy can be categorized as the authority to make decisions about budgets, tariffs, revenues, hiring levels, pay and incentives, control of personnel, institutional policies and systems, planning of projects, and organizational goals. There are also regulatory functions that need to be performed by governments, such as setting and monitoring objectives and targets, to balance the autonomy provided.
- **Leadership** is the capability to inspire key stakeholders to develop and understand the institution's mission/objectives, to commit themselves to that mission, and to work towards its fulfilment. Effective leaders/change agents serve as positive role models and are required at all levels of an organization. Leaders are essential for agreeing and implementing institutional change programmes, but over-reliance on one leader in development projects can be a problem, particularly if they are then transferred, as happened at the DFID Water Authority Assistance Project in Lesotho. It is generally better to have 'Core Groups' plus a Steering Committee, if the long process of change is to be sustainable.
- **Effective management and administration** is demonstrated by the capacity to get the most out of the resources available (human and other) in a deliberate or planned manner. Good managers have a clear sense of objectives and priorities; they know who to rely on to get a job done and how to delegate to them the means to do it. An effective management climate is characterized by team-work, co-operation, and good communication among staff. To enable managers to perform effectively an efficient administrative system is required. This includes the policies and procedures which regulate, guide, and facilitate the actions of managers. A mature organization has effective sub-systems such as personnel, budgeting, accounting, financial management, procurement, contracting out, and management information.
- **Commercial orientation** is the degree to which actions in an institution are driven by cost effectiveness and operating efficiency. The performance should be guided and disciplined by a strategy to achieve financial self-sufficiency at an appropriate stage of growth. Commercial orientation can be viewed at both operational and policy levels. At the policy level, commercially oriented institutions structure and stage investments, expenditures, and revenues to achieve financial equilibrium annually. At the operational level, everyday activities are guided by quality

standards and by constant attention to cost. The institution strives to establish a reputation as a financially well-run business in the eyes of its consumers (to promote the payment of tariffs) and in the financial and political community in order to obtain financial support for growth and to maximize financial and operating autonomy.

- **Customer orientation** is organizing and directing the services and output of the organization towards the demands and desires of the customer. Staff of a successful WS&S institution see serving consumers as their primary function. All work, including all programmes, and projects, are directed towards greater efficiency, effectiveness, and equality of service to all consumers. Every effort is made to inform and educate customers about the role of the institution and the means it is using to achieve its (and the customers') objectives. The marketing of differentiated services to poorer communities can lead to reliable service provision at affordable prices.
- **Technical capability** is the measure of the institution's competence in conducting the technical work required to carry out the responsibilities of the institution. Most of the technical work is performed directly by skilled, qualified employees, as well as outside specialists supervised by the institution's own staff**.**
- **Human resources development** includes an assessment of training needs and the capacity to meet those needs, as well as employee incentives and motivation. DFID Technical Note No.14 (1995) provides brief checklists for Human Resources Management and Human Resource Issues. There will usually be HRD requirements at all levels of sector institutions.
- **Organizational culture** is the set of values and norms which inform and guide everyday actions. An unhealthy organizational culture is likely to be highly resistant to change, and will protect narrow interests (such as graft or petty bureaucratic authority). A more positive culture has a clear sense of mission and identity. In the water sector, the institutional culture is often bureaucratic and supply driven. The box opposite briefly describes how Hyderabad Metro Water Supply and Sewerage Board is changing to a more consumer and commercially orientated working culture. An organization's culture can be assessed by means such as an 'Attitude Analysis' (refer to DFID Technical Note No.14 (1995) for a checklist) and an appraisal of the level of transparency. Corruption has a deleterious, sometimes devastating effect on administrative performance, although a distinction should be made between 'speed money' taken by very low paid staff and substantial misappropriations. Klitgaard considers that:

  Corruption = Monopoly + Discretion - Accountability - Transparency

  There are various anti-corruption measures that can be undertaken by host governments, including professionalizing staff and improving transparency and hence accountability.

Hyderabad Metro Water Board's changing organizational culture in India

The Hyderabad Metropolitan Water Supply and Sewerage Board was constituted in 1989 as an autonomous institution to serve the city of Hyderabad, with a population of 4.3 million in 1991, that is expected to rise to 6.2 million in 2001. Successive managing directors have provided a continuity of leadership in change management away from the previous supply-driven engineering culture, towards a more commercial and customer orientation. This has been achieved through measures such as:

- agreeing a corporate plan and an HRD plan;
- redesignating engineers as managers, encouraging then to be multi-disciplinary, revising the staff structure with increased delegation and agreeing new job descriptions;
- increasing accountability by making area managers responsible for O&M of water and sewerage, billing, and customer service, within a distribution zone. Targets are then set and monitored for improvements in cost recovery. This provides the incentive for improving services to customers;
- improved communication with customers and community groups, particularly with the 'single window' local Customer Service Offices;
- HRD and management development in collaboration with a local university as part of an institutional strengthening programme; and

Despite all the improvements, much work remains to be done in Hyderabad, particularly in developing new water sources and increasing tariffs.

- **Interactions with key external institutions** are judged by the capacity to influence positively and strategically those institutions which affect its financial, political, and legal ability to perform effectively. An adequate legal and regulatory framework (both on the statute and in practice) is an enabling factor in this respect. The multiplicity of institutions in the water sector means that positive interaction and the influencing of external institutions, such as state and national government departments, is generally a priority for a water institution's managers.

2.6.11 Institutional development

The aim of institution building is to create the skills, working environment, and systems for self-sustaining development. The appraisal process may identify weaknesses in one element of institutional structure but changes there will impact to varying degrees on the remaining five key elements. Strengthening must therefore be an integrated and continuing process with adjustments made as implemented changes are evaluated. The six key elements are described in Sections 2.6.13 to 2.6.18.

The aim of institution building is to create the skills, working environment, and systems for self-sustaining development.
The basic strategy for achieving sustainability is a twofold process of improving institutional performance (showing results) and training at the same time (Edwards, 1988). Performance against objectively verifiable indicators should improve over the life of a project. Promoting the ideas of ID should preferably be a natural process arising out of analyses by key stakeholders, supported by facilitators and experts as appropriate.

Institutional Development (ID) is a learning process, both for the individual and for the organization. The figure below shows the learning cycle used by the National Irrigation Administration in the

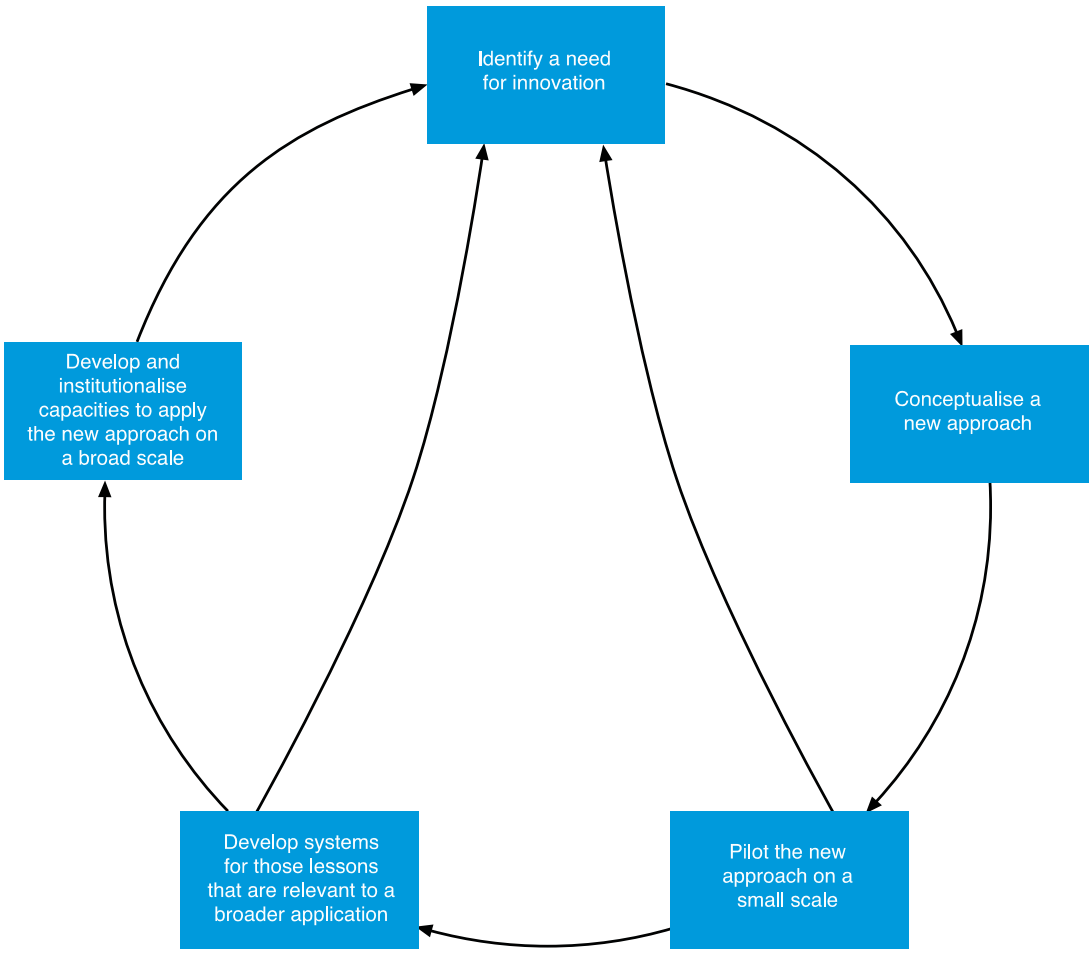


Figure 2.6.2. Organizational learning process cycle
(Korten and Siy, 1988)

Philippines as part of an ID programme that enabled them to become a more participative and effective institution (Korten & Siy, 1988). The feedback loops within the cycle are as important as each step. The overall process was managed by a working group.

2.6.12 Key elements of institutional development

Building on the Institutional Appraisal (where are we now?) options for ID can achieve sector/organizational objectives, using best practice locally and elsewhere (where do we want to be?). The agreed Institutional Development/Strengthening Programme should evolve from discussions with key stakeholders, including staff at all levels. There are six key elements of ID that need to be comprehensively integrated:

- Sector policy development and regulation
- Structural and organizational adjustment

Transformational and transactional analysis

The Burke-Litwin Model distinguishes between two categories of institutional change factors: transformational and transactional change. Transformational factors operate at a more strategic level, providing the environment within which the institution operates a strategic direction and impulsion for change. They include the External Environment, Leadership, Mission, and Culture. Any fundamental change has to be associated with change in them.

Transactional factors may be equally important in particular circumstances but are more operational and incremental. They include structure, management practices, systems, work-unit climate, task requirement, individual needs and values, and motivation. For change at the transactional level to be effective and sustainable, it needs to be consistent with the transformational factors. In turn, however, energy at the transformational level needs to have an impact at the transactional level to overcome specific problems, such as systems or motivation.

based on DFID (1995a) Technical Note No.14

- Human resources development
- Management development
- Systems and procedures development
- Physical and financial resources

Previous experience has shown that ID programmes need to be comprehensive; deficiencies in one area can subvert the best efforts to improve one sub-system alone. Emphasis on each element would depend on the programme objectives and priority areas identified. Further discussion of each element is set out below.

In contemplating support of ID work, the transformational factors (for example external environment and organizational culture) that are described in the box above, need to be borne in mind. Transformational change is difficult to bring about, so there is a need to be opportunistic in detecting a 'climate for change' in the state, country, and institution being considered.

2.6.13 Sector policy development and regulation

The objective is an enabling framework of policies and an encompassing regulatory regime. Governments need not take an active role in service provision but may beneficially play a part in aiding capacity building in service provider organizations. For effective regulation the regulatory body must be fully informed in all spheres of service provider activities.

Governments need to develop and implement agreed water, sanitation, and hygiene promotion sector policies and legislation that provide an enabling framework for adequate and sustainable service provision. There are opportunities for DFID to support such a process as the box on the next page on experiences in South Africa shows. Some countries have policies that seem worthy but they are not always so in practice. Recent thinking on the role of governments in the water sector has favoured the concept of an 'enabling environment', with governments concentrating on setting up the right legal and institutional framework, and stepping back from actual operation (Winpenny, 1997a).

A clear role for government is *regulation*, which is often neglected due to the preoccupation with service provision. There is a strong

Development of water and sanitation sector policy in South Africa

DFID is supporting policy development and its implementation in rural community WS&S programmes, in conjunction with DWAF (Department for Water Affairs and Forestry). The programme focuses on community management, staff development, institutional frameworks, strategy development, data management, and research. Collaboration occurs through a number of relatively small linked projects including:

1. DWAF capacity building
Project purpose: Institutional framework and capacity to support community WS&S established in two provinces

2. Development of a national sanitation programme
Project purpose: Develop and implement the start-up phase of the national sanitation programme at national, provincial, and local levels

3. Human resource development support
Project purpose: Establishment and development of an HRD service in DWAF

While such projects can have relatively high staff inputs in relation to aid expenditure, they offer potential benefits in terms of widespread sustainable poverty-focused government initiatives. In South Africa good progress has been achieved in terms of developing policy documents, although some problems have occurred in implementing the policies, in terms of capacities at the local level. DFID is now supporting a follow-on project to DWAF Capacity Building, which is aimed at operationalizing the Water Services Act, especially at local government level.

However, there is a genuine risk that efforts to promote community participation can be circumvented by ambitious construction programmes, which is also a common occurrence elsewhere.

Such policy-focused projects are more likely to be successful where there is a shared agenda between the donor and the host government, as in South Africa, as well as good potential capacity for policy development and its implementation.

based on Harvey & Kirk, 1997

argument that regulation should be separated institutionally from service provision. Otherwise regulation will be weak, as shown for example by UK experience before the setting up of the National Rivers Authority.

Key areas which government should consider in customer protection and regulation are:

- responsiveness to customers;
- service standards and service levels achieved;
- water availability, use, and allocation;
- safety net for the poor;
- tariffs, prices, and value for money;
- asset serviceability and efficiency;
- environmental and health standards;

- infrastructure development for future needs; and
- performance-related incentives (particularly for substantial private sector participation).

To regulate effectively requires good management information in these areas. Where there is insufficient organizational autonomy or fragmentation of responsibilities, regulation is more problematical because it is difficult to hold any one institution accountable. In many developing countries, the government also undertakes service-provider functions, particularly in the areas of training, staffing policies, and capital investment. For water supply institutions which need to improve their capacities, the government needs to undertake a facilitatory role using incentives where appropriate. For example, public capital loans can be conditional on water supply institutions addressing cost-recovery issues.

HUDCO in India uses such conditionality on loans to municipalities for water supply projects. Useful references in this area are contained in the further reading section.

The example given in the box opposite highlights some key lessons from DFID policy-focused projects in South Africa.

2.6.14 Structural and organizational development

Beware of seeking change by creating new institutions. Where possible, good institutional development is achieved by patient building around the best of existing capacity.

The answer to the question 'what are the most appropriate institutional arrangements?', may suggest a new organization. The

NWSDB Sri Lanka: Decentralization and ID

Indicators	1984 (before ID project)	1990 (end ID project)
Piped water produced (Mm 3/y)	155	218
Billed connections (000)	79	185
Billed connection to employee ratio	13	26
Billing lag time (days)	180	30
Collections (Rs. million)	56	442
Collection efficiency (% of billings)	25	87

The impressive improvements against these key indicators have been achieved with the assistance of an ID project supported by USAID. The most significant initiative was decentralization or deconcentration within the National Water Supply and Drainage Board (NWSDB). This entailed the development of five Regional Support Centres which became responsible for many of the organization's functions. Regional operational autonomy and delegated financial authority increased significantly, and resulted in both a more responsive service to customers and improved financial performance. Substantial management development and HRD supported this process.

The positive trends against key indicators have continued. Further improvements, however, are considered to be dependent on greater autonomy and role clarity for the NWSDB as service provider, and the government as regulator.

based on Franceys, 1998 and Tillekeratne, 1993

case for the creation of new institutions, whether they are new village water committees or a corporatized water board/company, needs to be carefully assessed in terms of prospects for sustainability. Issues such as the degree of financial and managerial autonomy, legal status, incentives, capacity-building requirements, and pressures from the external environment, need to be weighed against alternative arrangements, including the perceived risks. There is also a danger that new institutions take over all or part of the functions of existing ones, but the old ones remain in being, increasing the bureaucratic complexities of the sector.

An institution need not always reorganize to develop itself, but most institutional development efforts involve adding and dropping functions, moving towards decentralization or amalgamation, or a combination of both (Edwards, 1988). Historically, many institutions are centralized, with power concentrated in the hands of a few. Since no one person can do the job of everyone, this arrangement usually does not work very well.

Structures often need to be set up to delegate authority combined with the development of management skills, in order to respond to consumer needs. This was undertaken at the National Water Supply and Drainage Board in Sri Lanka, where substantial improvements were achieved (see box on previous page). Structural changes take time to implement and require a careful process of developing and communicating new roles and procedures, with adequate training and involvement of those concerned.

2.6.15 Human resources development

Sectoral moves to programmes driven by user demand and to the partnership approach require personnel at all levels and in all agencies to adapt their attitudes and thinking. Building capacity in this area is therefore likely to occur in almost all WS&S interventions. Many staff will need multidisciplinary training to equip them to adopt participatory approaches and to guide communities on economic, social, environmental, and technical issues. Training curricula have to respond to the changing demands.

The development of human resources is likely to be a key intervention in DFID WS&S sector programmes. While there is no standard approach to training design, the training cycle can be considered to be four inter-related activities:

- identification of training needs
- training development/planning
- training implementation
- assessment/evaluation

Refer to the ‘Guide to human resource development and training in developing countries’ (DFID, 1997b), for a discussion of the overall training process and what is entailed in the four stages listed above. As part of a project it may be appropriate to support the development of the capacity of a local training institution. A useful reference in this respect is Edwards and Salt, 1990.

Where project partners are expected to adopt new approaches, training will be required for those concerned. Decisions will need to be made relatively early in the project cycle regarding training needs and specifications, who will be trained, and how, when and where will the training take place. Overseas training may be appropriate for changing

attitudes and developing an open-minded, professional approach, particularly when it is undertaken with a broad range of other international participants.

HRD focus areas

Successful demand-responsive water and sanitation projects require project partners to have the requisite skills and motivation to implement their component of the project and integrate effectively. Much of the guidance given in the other specialist sections of this manual implies a need for new skills and more trained people. HRD programmes need to take into account each of these new demands and to develop appropriate capacity building components covering: hygiene and sanitation promotion; social development; economics; environmental issues; and technical aspects.

HRD focus areas for institutional aspects HRD in this area needs to address the *content* of the various aspects involved in ID work, as well as the *process* of change. Competent facilitators are required to oversee the process. For effective integration of different disciplines, it is preferable to train change managers in the relevant related subjects. For example, senior engineers engaged on improved O&M and cost recovery would benefit from training in subjects such as finance, communication skills, management, customer care, etc.

2.6.16 Management development



WEDC-IHE/Richard Franceys

The objective is to instil in managers the changed attitudes needed to effectively implement new policies. Development programmes should begin with top management and work down to all levels.

A management development programme is not merely a management training course, although management training is an element of it (Edwards, 1988). A well-conceived programme will aim to change managerial behaviour to achieve agreed objectives. This component should coincide with the development of new systems (delegation of financial authority, improved procedures, performance review, etc.).

One approach is to engage managers in proactive problem analysis; this will open minds to solutions and best practice used elsewhere and facilitate the consideration of potential solutions. A *Management Development Strategy* needs to start with the top level of management and should then be developed with staff consultations at all levels. A useful reference is Edwards and Salt, 1989.

An important aspect to consider is the incentive structure for staff in terms of job satisfaction, conditions of service, and working environment. Improvements in incentives are likely to be incremental in nature. Very low salaries in comparison to the private sector are a key constraint and over-staffing in some job categories may be a big problem. DFID is supporting a retrenchment programme in the health sector in Tanzania, as a means of enabling the sector institution to develop.

Staff must work to set procedures, and within established and recognized systems, as a basis for maintaining acceptable standards of performance.

2.6.17 Systems and procedures development

Some initial identification of potential new systems can arise out of the Institutional Appraisal (Section 2.6.8). The objectives of developing systems and procedures are twofold: to develop a needed

Block tariffs to subsidize the poor?

Many urban water utilities use a block system of tariffs for metered households. The principle is that families using less water pay less per cubic metre up to a threshold consumption per month. More affluent households who use more than the threshold pay more per cubic metre of water consumed above that threshold, in accordance with the next tariff 'slab'. This is in recognition of the fact that water is a social as well as an economic good.

Problems can arise in developing countries where a number of poor families use the same metered connection, illegally or otherwise, and they use more than the threshold amount, thus paying more for their water. Under such circumstances poor families can pay more with a block tariff system than if there was a flat tariff per kilolitre consumed. Such disparities can encourage a climate of not paying.

In Santiago, Chile, they have dealt with this problem by not subsidizing the poor through lower water charges like block tariffs, but instead providing separate well-targeted subsidies. Other cities which suffer water shortage problems will wish to retain the block tariff system to send economic signals to consumers to conserve water. In those cases, they will need to carefully design and market service options and tariff levels to ensure equity for multi-family pipe connections. (See also Section 2.5.13.)

Satisfactory development is best achieved from within the organization with maximum design input from staff. Externally designed systems are not recommended.

controllable standard of excellence to carry out the work of the institution; and to train staff to develop and carry out their own procedures. It is tempting to try and 'implant' a system by having outside consultants introduce or impose them. This rarely works. Systems and procedures are most effectively developed by working together with staff. Common systems to be developed in water supply institutions include: management of O&M, billing, financial management, and customer services. Systems for cost recovery, including metering and block tariff design, can present problems in terms of achieving equity as is illustrated in the box above.

Computerization is often seen as a way of solving all sorts of problems in organizations. But it should follow, not precede, the redesigning of business processes. Great caution should be taken in introducing computerized information systems.

Useful reference documents for various systems are included in the further reading section.

2.6.18 Physical and financial resources

New hardware is often a necessary component of institutional strengthening but it is rarely the key component and its priority in the scheme of things should be allocated accordingly. Since long lead times on delivery and commissioning are frequently involved, the

The provision of physical resources (computers, vehicles, maintenance equipment, etc.) is an important part of institutional development, which needs to be clearly related to the objectives of the programme. If there are limitations on the funding of such resources, equipment sufficient for demonstration purposes only may be provided, or a donor who is collaborating (e.g. the World Bank) may offer loans for equipment. Decisions need to be made concerning how critical the equipment is and how critical the timing of its provision. Situations where a whole project is delayed because certain items of equipment have not been provided would hopefully be avoided. It has been observed that as a rule of thumb

need for and timing of critical hardware should be carefully assessed.

it takes twice as long as estimated to procure and commission equipment! A procurement strategy and plan should be drawn up to avoid such problems.

2.6.19 Translating institutional appraisal into project plans

Local conditions and influences external to the WS&S sector in the host country may present major impediments and risks to making significant institutional reforms. The needs identified from an appraisal may therefore not be achievable. A process approach may then offer the better route to effective programme management, obtaining the commitment of local staff and partner agencies by fully participatory processes that allow them to guide the direction and extent of change on the basis of their experiences and knowledge.

An appraisal that has been reasonably participatory should lend itself to a natural development into project plans. However, information is critical to WS&S management, and frequently the information required for more detailed problem analysis and planning is not available without further data collection, which can take considerable time. This is one reason why a *Process Approach*, where project activities are not specified from the start, is appropriate for ID work.

Another reason is that managerial staff working in the sector are often more orientated towards crisis management, and may be reluctant to commit themselves to very specific institutional development plans over a long period. There may also be specific local reasons why things are done in a haphazard manner, and it is worth discovering these reasons before alternatives are suggested. In summary, a process approach allows project partners to apply the lessons *they* have learned, thus gaining confidence and a sense of ownership of the programme.

In order to obtain strong commitment from project partners, the process of developing the logframe and plan needs to be worked out jointly. This is likely to involve the use of independent facilitators with key stakeholders actively participating. Various ways of working together should be considered, including workshops, study tours, dialogue with *change champions*, working groups, etc.

The quality of government in the external environment is a key determinant of institutional performance and the prospect for change. If, for example, politicians expect to exert influence over matters of detail, or corruption is rife, or the project partners do not recognize the need for accountability and good management information, then it will be difficult if not impossible to achieve significant change. InstitutionaI Development is usually risky and requires careful analysis and management of risk. If a project proposal includes ID, the project preparation team must be able to argue convincingly that it can be achieved (DFID, 1995).

2.6.20 Institutional development approaches

Wherever institutional development is proposed as part of a project there are several approaches that are recommended and several that should be avoided.

There are several rights and wrongs in approaches to institutional development, and it is helpful to bear these in mind:

Change management: Approaches to encourage

- Explain and promote Institutional Development where it is a potentially viable objective.
- Promote a programme sequence as if it were a training project, where learning, systems development, and inputs should dovetail and build upon one another. Use pilot projects where appropriate.
- Encourage the collection and use of management information at an early stage — information is power.

- At the start of a project, seek a project area or pilot project where early success can be achieved in order to raise confidence in the approach.
- Encourage the use of local consultants where they have the requisite skills.
- Allow sufficient time for institutional development, including time for stakeholders to make the necessary changes, using a flexible approach. Four to seven years is the minimum time for institutional renewal of a substantial organization.
- Champions of change who proactively support change (e.g. senior government officials) should be identified, while avoiding over-reliance on them.
- Working groups of people committed to change from the various departments/disciplines should be encouraged to plan and manage the implementation of change programmes.
- Support local and South–South networks/study tours for experience sharing.

Change management: Approaches to avoid

- Patching up organizations that are in need of more fundamental reorganization.
- The 'sacred cow' pilot project: where lots of time and resources are devoted to a small project that it would not be possible to replicate elsewhere.
- Flying in a lot of experts for brief visits — fewer consultants, and developing mutual understanding with project partners, is preferable.
- Rushing the formation of working groups and committees to meet targets.
- Adopting the role of a 'diplomat' by using guarded language and avoiding commitments. Effective collaboration on development projects usually involves open, genuine, and polite dialogue, with a willingness to learn.
- Over reliance on voluntary inputs.
- Emphasizing that the project is the responsibility of the local government but then not allowing it to influence the management of the project and its consultants.

2.6.21 Private sector participation (PSP)

There is a strong push, driven powerfully by the World Bank, for city water utilities to privatize, or at least to engage with the private sector in various forms of partnership contracts.

PSP in the water and sanitation sector offers the potential benefits of introducing private sector incentives and management skills, and it can act as a catalyst for change. There is a continuum of different types of contracts that can be used; from basic service contracts through to complicated concession contracts where the management of a whole city's water and sanitation is let to a private operator for 25-30 years. The different types of contract are briefly described below in order of increasing scope and complexity (Sansom and Franceys, 1997). Specific contracts can also be developed with features from two or more types.

Service contracts are the simplest form of PSP. The public authority retains overall responsibility for operation and maintenance of the system, except for the specific system components that are contracted out. The contractor's responsibility is limited to managing its own personnel and services efficiently. Typically, service contracts are used for maintenance in components such as pumping stations and meter reading. Payment is usually on a lump sum or schedule of rates basis. A typical contract duration is one to three years. Similar arrangements may apply on a small scale in community-managed projects. In such cases, the village water committee or other management body enters into contracts with local entrepreneurs for items such as deepwell pump maintenance and repair.

Management contracts are a more comprehensive arrangement, where the public authority transfers responsibility to a private contractor for the management of a range of activities such as the O&M of a water supply distribution system or major sub-system. Terms of remuneration can vary, but the inclusion of appropriate success incentives and penalties for poor performance offer better potential for service improvements. The public authority usually finances working and investment capital and determines cost recovery policies. A typical contract duration is three to five years.

Lease contracts, also known as *affermage*, are used where a private operator or lessor rents the facilities from a public authority and is responsible for operating and maintaining a complete system and collecting the tariffs. The lessor effectively buys the rights to the income stream from the utility's operations and thus assumes a significant share of the commercial risk associated with those operations. The lessor generally provides the working capital and the public authority deals with the capital investment. The duration of a lease contract can be from five to 15 years.

BOT contracts, (build, operate, and transfer) is a form of concession whereby a private firm or consortium agrees to finance, construct, operate, and maintain a facility for a specific period, before transferring the facility to a government or other public body. BOT arrangements are attractive for new plants that require large amounts of finance, such as large water treatment plants, but they are not suitable for water distribution or wastewater collection systems. The contract period is normally greater than 20 years, sufficient for the private contractor to pay off loans and achieve a return on investment. These contracts often require high tariffs and/or subsidies to meet the BOT operators' costs.

Concession contracts are very substantial in scope, where the private sector company takes on full responsibility not only for the O&M of the utility's assets, but also for investments, often for a whole city. Asset ownership remains with the government. Frequently the concessions are awarded according to price — the bidder who proposes to operate the utility and meet the specific investment and performance targets, for the lowest tariff, wins the concession. The

contract, which is usually over a period of 25 to 30 years, sets out: the main performance targets; the mechanism by which prices can be adjusted over time; and arrangements for arbitration of disputes between the project partners. Concessions generally require tariffs to be at a sufficiently high level at the start of the contract to meet the full costs of service provision. There is a danger that such contracts can only be taken on by a small number of experienced international companies, who are only likely to bid on favourable terms to cover the cost and risk of their involvement in a small distant country.

Each type of contract has its own potential benefits and disadvantages, which must be assessed when selecting an appropriate form of contract for a particular situation.

Many lower-middle-income countries are opting for the more comprehensive forms of contracts such as lease, concessions, and BOT contracts. *Toolkits for private participation in water and sanitation* (World Bank, 1997), was produced with DFID support and provides detailed guidance in selecting which type of contract to use and how to develop such forms of contract.

2.6.22 The implications of PSP on poor communities

While there is clear evidence that the commercial approach leads to greater efficiency and reliability of services, concern for the poor is by no means automatic. Concessions need to include enforceable requirements that affordable services will be available to all sections of society.

The lesser forms of private sector participation, service and management contracts, do not generally threaten the poor, because they are limited in scope and duration. BOT contracts are also usually risk-free because they apply on the whole to discreet items of infrastructure. The risks come from long-term, all-encompassing lease and concession contracts where the

A key question is what type of contracts are appropriate for low-income countries (LICs) in the water sector? The World Bank and others advocate substantial PSP in LICs, perhaps using simpler forms of contracts such as management contracts in the interim, before moving on to longer term lease and concession contracts. There is increasing concern about how such long-term PSP contracts will provide water and sanitation services for very poor communities, particularly those communities that are established during the course of a contract.

Many LICs already use service contracts, but in general neither service nor management contracts should pose a threat to the poor. This is because these contracts are usually small, with the contractors taking on only very limited commercial risks, so these contracts can be easily amended to ensure that the poor are not being marginalized. BOT contracts are not likely to have a direct adverse effect on services to the poor because this type of contract is normally for discreet items of infrastructure such as water treatment plants and transmission mains. If, however, the water utility over-commits itself in paying the BOT operator's charges, this could indirectly affect the poor.

There is resistance in some countries to more substantial forms of PSP, such as concession contracts, because the provision of water is seen as primarily a social good and the private sector may be viewed as 'profiteers'. In such circumstances a more incremental approach may be appropriate, particularly where capacity for regulation is low.

The best way of ensuring that the poor do not miss out under a PSP is to monitor in great detail against appropriate indicators the level of

possible private partners are a limited number of international companies with a dominant profit motive and whose thinking is geared to the water supply and sanitation systems of the western world.

If these contracts are to serve the poor they must be formulated accordingly and be closely regulated. Both functions require the strong institutional structures that are often lacking in countries where the needs of the poor are greatest.

service provided to the poor communities, before and during a PSP. Appropriate measures can then be taken to improve their services. Appropriate clauses will need to be included in the contract. The problem is that detailed measurement of service levels in poor areas is rarely undertaken regularly by water utilities and municipalities. This calls into question the capacity of such authorities to regulate long-term PSP contracts.

Standpost supplies may not be effective under a long-term PSP contract, because it is notoriously difficult to collect water charges from standpost users, so the private operator has little incentive to maintain these supplies. Group connections could be a better alternative option. In Buenos Aires, which has a Concession contract, means of reducing connection charges for the poor are being examined. They include allowing the poor to pay in kind through labour in making pipe connections to their houses. Alternatively, if water from standposts is subsidized, the private operator can bill the government for the water consumed in the same way as other large consumers.

Successful PSP is a balanced partnership between the private sector and government/client. The regulatory role is crucial; if the government/utility are not well versed in the practice of the measurement of financial and technical performance in the sector, they are not likely to make good clients/regulators without substantial ID. Well-designed contracts with the right balance of minimum standards with penalties and 'success incentives' are a key factor. Where substantial PSP contracts are being considered in LICs, the regulatory authority will need to focus on services to the low-income areas, because the operator will be inclined to focus on the richer areas to maximize income.

DFID could facilitate increased PSP in the sector by a number of potential interventions, including technical assistance on:

- feasibility studies;
- risk analysis;
- institutional development for generating management information and regulation, particularly for poorer areas;
- contract development;
- enterprise support and restructuring;
- policy and legislative development;
- developing training capacity;
- public/private sector consultations; and
- support to lending institutions.

Further advice on potential means by which DFID can provide assistance is included in DFID Technical Note No.11 (1997) on Private Sector Development.

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Key institutional terms

as used by DFID Government and Institutions Department

Institution

There are two basic interpretations of the term institution:

The first is sociological, and refers to a set of constraints and humanly devized rules which influence and shape the interaction and behaviour among groups and individuals. Institutions are the arrangements which exist in society. They are often referred to as the 'rules of the game'. The second interpretation is a more specific and refers to an individual organization. An *organization* is defined as an individual body with an explicit structure and hierarchy of authority and the formal allocation of tasks and responsibilities.

The terms 'Institution' and 'organization' are used synonymously throughout this manual (although a more strict definition of the second interpretation would require, in addition, the organization to have a collective set of values and interests which define the way it presents itself to the world).

Institutional structure

The institutional structure is the totality of institutional arrangements that exist in an economy in order to undertake particular activities. It encompasses linkages among individual organizations, and the framework of law, policy, convention, ideology and culture in which they operate. This is also sometimes referred to as a country's institutional endowment.

Institutional arrangement

The institutional arrangement refers to the set of behavioural rules that govern and influence behaviour and interaction in a specified domain, such as the legal sector.

(It is worth noting that DFID Technical Note 14 referred to both institutional structure and institutional arrangement as the 'external environment').

Institutional strengthening

Institutional strengthening is designed to improve the capacity of an organization to deliver its existing remit in a more effective and efficient manner, the purpose being to improve the effectiveness of the existing structure, processes, and systems. Institutional strengthening therefore does not admit organizational innovation.

Institutional development

Following on from the two-fold interpretation of the term 'institution', this term can be used to refer to two types of change:

- the creation or development of the capacity of an organization both to reflect upon its role and function in relation to its changing environment, and to plan, implement, and manage its own change programme. Institutional development therefore enables an organization to act reflexively. It encompasses the capacity of an organization to introduce changes in its internal structure, processes, and systems, as well as the process by which they are brought about. It reflects the capacity to introduce change and development in the way the institution is organized in order better to meet its mission; and
- change in the broad institutional arrangements for a particular sector or domain.

Institutional change

A generic term referring to either institutional strengthening or development.

Institutional appraisal

The process of analysing:

- a country's institutional structure;
- the institutional arrangements of specific sector (a sector institutional appraisal); or
- the formal and informal functioning of an individual organization.

Capacity building

Often used loosely and interchangeably with institutional development and institutional strengthening. DFID's 'Glossary of Aid Terms' defines it as 'training, and other actions, that enable personnel in a recipient organization to develop the necessary skills to carry out required tasks'.

Some writers suggest that this term should only be used with regard to the construction of new organizations.

Capacity development

Another term used interchangeably with institutional development, some suggest it should be used to refer only to developing the capacity of existing organizations.

Organizational structure

The distribution and disposition of functions, activities, processes and responsibilities within an organization; where

Function refers to the basic role of the unit or department (marketing, production, financial reporting, policy and planning, etc.);

Activities refer to subsets of functions, i.e. to the individual jobs performed (selling advertising space, preparing budgets etc.);

Processes refer to the ways in which functions and tasks are strung together within the organization; and

Responsibilities refer to the authority vested in individuals to manage and deploy resources, and the lines of accountability that exist in an organization.