

Workshop
on
**Institutional
and
Management
Options**

Water and Sanitation Collaborative Council
&
Ministry of Housing, Spatial Planning and the
Environment

Voorburg (the Netherlands - June, 2 - 4)

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WATER SUPPLY AND SANITATION COLLABORATIVE COUNCIL

**Workshop on Institutional and Management Options,
The Hague (Voorburg Hotel Mövenpick),
The Netherlands 2-4 June 1997**

TENTATIVE AGENDA

- Monday, 2 June**
- 8:30 a.m. **Registration**
9:30 a.m. **Opening**
- . **Representative from the Ministry for Housing, Physical Planning and Environment**
 - . **Executive Secretary, WASSANCO**
 - . **IMO Working Group Coördinator**
- 9:45 a.m. **Workshop objectives and process**
10:15 a.m. **Break**
10:45 a.m. **Institutional and management options: overview and issues**
- 11:15 a.m. **Delegated public management**
12:30 p.m. **Lunch**
13.30 p.m. **Presentation of case studies by participants**
15:00 p.m. **Break**
15:30 p.m. **Continuation case studies by participants**
16:15 p.m. **Advantages and disadvantages of public sector management: working groups**
- 18:00 p.m. **Reception**
19:00 p.m. **Dinner**
- Tuesday, 3 June**
- 9:00 a.m. **Plenary**
9:45 a.m. **Factors wich influence choice of institutional and management options**
- 10:15 a.m. **Break**
10:45 a.m. **Working Groups**
12:00 p.m. **Luncheon**
14:00 p.m. **Visit to DZH**
19:00 p.m. **Dinner**
- Wednesday, 4 June**
- 9:00 a.m. **Plenary**
9:45 a.m. **Building capacity to make informed decisions: working groups**
- 10:30 a.m. **Break**
11:00 a.m. **Plenary: Putting it all together: Conclusion and recommendations**
- 12:35 p.m. **Closing**
13:00 p.m. **Luncheon**

7. INSTITUTIONAL ARRANGEMENTS FOR WATER POLLUTION CONTROL

G.J. Alaerts¹

7.1 Organisations for sustainable development

Water pollution control is typically a responsibility of a government as it aims to protect the environment, a public good. Governments undertake to do this by establishing an appropriate set of organisations and by launching specific programmes. These interventions aim at achieving national, or even regional, objectives that typically include enhanced economic productivity, public health and well-being, all -- ideally -- forming part of a sustainable development strategy. To this end resources are mobilised, notably financial resources (capital from local people, government and the market), physical resources (raw materials and agricultural products), environmental resources (such as water), and human resources (the active time and capabilities of people). Because these resources are scarce and hence come at a cost, the sector needs to be *efficient*, i.e. produce maximal output (highest water quality, for example) at minimal resource input. On the other hand, it is often more important to organise the pollution control sector in such a way that governmental policy is *effectively* implemented: for instance, that wastewater treatment plants are actually built and operated, or that sanitation facilities, once constructed, are actually used and remain maintained. Especially in pollution control, effective implementation often is the most difficult part; in real life, wastewater control always receives the lowest priority, yet its infrastructure is at least as expensive as that for water supply.

Water is an environmental resource with a profound impact on public health, economic activity and environmental (and ecosystem) quality. Therefore, the prerequisite for any sustainable development scenario is that the organisations that are assigned with water management do possess the capacities to carry out this task. A sound arrangements of flexible, dynamic organisations and other related institutions is the best assurance that unpolluted water resources remain available in the future, that the right quantity and quality of water are delivered to the water users (including the ecosystems), and that people can live in a healthy habitat. These organisations, however, can execute these functions only if they dispose of an appropriate financial base to expand and maintain the infrastructure, to attract qualified professionals, and to prepare well for the future.

7.2 The water pollution control sub-sector

The organisational structure and the administrative procedures to implement water pollution control obviously are very much determined by the characteristics of this sub-sector and the functions to be performed. These differ between countries, as well as over time. Over the past decades, industrialised countries have learnt that the water resources, though finite, must keep satisfying a variety of user demands (e.g. water supply, irrigation, amenity, etc.) and need protection (ICWE 1992, World Bank 1993), that the different types of pollution (e.g. domestic versus industrial) demand specific approaches, and that pollution prevention is more cost-effective than the removal of the pollutants by end-of-pipe treatment (see Chapter 1). In addition, water pollution control is intricately linked to the work of other sub-sectors, notably environmental management, water resources management, industrial development, and land use and urban management.

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The sub-sector typically concerns itself with four functions that are relatively distinct and that require specific expertise (see Chapter 3):

- (i) water quality management of water resources such as rivers, lakes and wetlands; this involves setting of operational quality standards of the receiving water as well as of the waste discharged, and integrated planning in order to achieve water quality levels that allow appropriate water use (for the production of drinking water, for fish cultivation, for navigation, etc.)(see Chapters 1 and 2);
- (ii) regulation of general quality standards for health, water and the environment; regulation of the principles for industrial sewage treatment, and stimulation of waste minimisation and pollution prevention instead of conventional 'end-of-pipe' approaches;
- (iii) organisation, construction and management of on-site sanitation in rural and peri-urban areas;
- (iv) collection and off-site centralised treatment of domestic sewage: planning, construction and management.

The physical and socio-economic conditions of a country dictate which functions will be a priority and hence determine the preferred institutional arrangement. Sometimes these functions can best be assumed by two or more separate entities, as each function requires its specific mandate, organisational structure and procedures, and expertise profile.

The first two functions are of a regulatory nature, and the last two are executive. In most countries setting discharge and water quality regulations has proven to be the easier (and cheaper) part of the work. The execution of the much more capital-intensive investment programmes in the cities and towns was much more difficult to achieve or even initiate. Similarly, in many countries much of the new wastewater infrastructure ends up poorly operated and maintained, lowering its effectiveness dramatically. Large and comparatively wealthy industries often were the first to build and operate treatment plants, whereas the majority of smaller industries finds it exceedingly difficult to comply with the standards.

On-site sanitation comprises a set of distinct activities. Much of the work is to be carried out by the house-owners who have to invest in the construction of septic tanks or pit latrines; the maintenance, mainly desludging and disposal/treatment of the sludge, commonly is carried out by private contractors. The sector organisations must ensure that government targets are met by devising adequate building regulations and city ordinances, and through a strong, facilitating role. Again, this is an arduous task in most countries.

7.3 Institutions and organisations

Importantly, the success in implementing a government's policy in water pollution control primarily depends on how right the chosen institutional arrangement is. Other factors obviously are prerequisites as well, such as availability of capital, of technology and of human resources (know-how), but, generally, the maximum benefit from whatever available resources can only be generated by an 'optimal' institutional arrangement that makes the resources to work for the purposes of the sub-sector. What is optimal depends on the sub-sector's characteristics (which differ with those of other water using sub-sectors, such as water supply or hydropower) and the country's requirements. In fact, good arrangements are essential to further liberate and develop resources, e.g. to make available more finances by increasing the willingness of customers/citizens to pay for sewerage services, or to educate and train the professional staff.

However, it is necessary to recognise the function of all institutional factors, which go well beyond the boundaries of the common, typical 'sector organisations'.

Institutions are defined as the 'rules of the game' in any kind of social structure, such as laws, regulations and their enforcement, agreements and procedures (see e.g. Uphoff 1986, Israel 1987, de Capitani and North 1994). *Organisations* are a particular type of institution and are composed of groups of people with a common objective. The organisations can be formalised, such as 'official' sector organisations with operational objectives, finances and professional staff: Water Departments in Ministries, Water Boards, Environmental Protection Agencies, laboratories, consultant companies, etc. They can also be informal and less well described such as 'the public', the 'customers' who purchase (i.e. pay for) a water service, the socio-economic distinct groups in a village or town community, etc.

A sector can only properly prepare and manage its programmes, if all institutions are appropriately involved in the three main phases: planning, implementation (construction), and operation and maintenance linked with cost recovery. This is obvious for the formal organisations such as government departments. But it also true for all other institutions that are indirectly implicated and will affect in one way or another the programme, such as

(i) policies and regulations that determine the tariff setting and taxation: these commonly fall outside the jurisdiction of the pollution control organisations, yet the success of these organisations depends on their financial strength; decision making commonly lies with the Ministry of Finance, in Municipalities or amongst the politicians;

(ii) enforcement of regulations and laws: any pollution control law is as strong as the will and the capability of the law enforcement institutions;

(iii) human resources and development of know-how: as pollution control is technically complicated, education and research institutions must be able to support a national pollution control policy;

(iv) mechanisms to render organisations more responsive to customer demands, flexible and accountable: this generally requires devolution of decision making and financial autonomy to the most appropriate lower levels of administrative government, and may lead to inclusion of private partners. Rules that stifle initiative and good performance should be removed (deregulation) and replaced by different regulation that typically is more based on performance. Again, the required institutional framework is determined outside the environmental or water sector proper;

(v) mechanisms that allow to define the economic value of good water quality to the nation: this requires a sound and integral understanding of the water uses and their significance for the nation's long-term sustainable development.

Similarly, a crucial institution is the group of people that will 'benefit'. Worldwide, numerous water supply and sanitation schemes have failed completely or partially because the designated users (and payers) of the new infrastructure were not consulted whether they valued the initiative and would be willing to contribute for its proper operation. In other words, the poor involvement of the user during the planning has created a situation with a lack of *demand*. Indeed, provision of a service like a clean environment, is not just a question of meeting a presumed demand of customers. Without such articulated demand, the customers are not committed to the infrastructure, they will fail to use it properly or to pay a reasonable compensation for it. The existing demand may be insufficiently developed, for example because the prospective customers don't yet recognise the long term benefits of the service (good public health, or education), or they may prefer purchasing status increasing consumer goods rather than investing in the longer term benefits. Demand needs to be developed.

7.4 Criteria and determinants for institutional arrangements

No fixed, optimal model exists that would suit all countries, at all times. Which organisations would best do the job in a given country in a particular period of its development, is a function of the local characteristics in terms of geohydrology and topography, industrialisation, culture, economy and the natural environment. Because the *institutional environment* around the sub-sector changes so much, the sub-sector's institutional arrangement will have to continuously adjust -- indeed, its arrangement will preferably be such that it prepares for and facilitates continuing change. Inevitably, the institutional arrangements are very case specific; what works for one country in a given period may be detrimental to another. Nevertheless, the experience suggests that good arrangements consist of a number of standard institutional components (organisation types, financial measures, etc.) that perform well in different arrangements. Determinants for arrangements are usually external boundary conditions with which the sub-sector has to be able to work. Criteria are often derived from business and public administration and specify how a successful sector, and performing organisations should be managed.

Priorising functions and setting mandates of organisations

Firstly, the priority issues in the water pollution control for the medium term (with a planning horizon of 10-20 years) need to be determined. Countries with a high density in population and industrial output clearly require a different approach than others which are predominantly rural and less industrialised. In the same way, arid regions may put a high priority on water conservation and re-use. Others may have to cope with the diverse effects of multifarious wastewater constituents that have deleterious effects in the long term and at locations very distant from the discharge point: the nutrients discharged by households in the Rhine River in Switzerland cause algal blooms along the Danish North Sea coast triggering oxygen deficiency and fish kills, and PCBs discharged in Europe may over the years get concentrated in seals' fatty tissue near the North Pole. The institutional arrangement must reflect priority.

Many expect intuitively that water pollution control requires the same institutional arrangements as for water supply. However, often this is not the case. In many countries domestic wastewater collection and treatment are dealt with within the same organisation as water supply, like for example in India, Uganda, China, Brazil (in some regions), Mozambique, Yemen, the Philippines, and England and Wales. In other countries separate organisations have been created, like in Indonesia (for the urban areas), Colombia, Argentina, and most West African and Western European countries. The executive functions for large infrastructure development, and for its management, commonly falls with an engineering-based government department, Board, Authority or enterprise. These can take many forms (see para. 7.5). On the other hand, the executive function of on-site sanitation very often can be better associated with urban management authorities which hold the mandate for land use planning and for housing regulations. Most urban authorities, unfortunately, show little interest in and understanding of water pollution control; also, they feel less accountable to the national goals of environmental management, and would typically limit their interventions to removing the local pollution to the city's border. Similarly, urban planning authorities can force industries and workshops to move out from the inhabited areas into designated industrial zones, they are in theory best equipped to separate and contain domestic and industrial wastewater flows, a condition to adequate control. The function of water quality management often is carried out by a government department, but in many instances it has been or is taken up by the infrastructure organisation if this covers a territory large enough to encompass a whole natural water system (e.g. a river basin). Finally, the regulatory functions are typically a responsibility of a national government Ministry (Health or Environment), but in some cases they are delegated to a full government agency (e.g. Environmental Protection Agency in the U.S. and China, and the Pollution Control Board in India).

A second main consideration concerns the prioritisation of *investment* (construction) or *operation and management (O&M)*. Sustainability is served by institutions that ensure a long active life-time of infrastructure. Well operated and maintained devices minimise resource losses due to spillage,

breakage and leakage. Poor O&M also leads to a poor service to the consumer: clogged drainage and pumps and treatment works that are out of order provide an unreliable and low-level service, severely reducing the consumer/citizen's willingness to pay.

In many countries O&M of the water infrastructure is very weak. This is worrying because it renders many water organisations as yet unable to *recover costs*, including asset depreciation, of their water supply operations, let alone of sewerage operations. Consensus exists that in a healthy sub-sector the water organisations should be able, in the long run, to recover full costs from its consumers. In many developing countries the organisations need to be re-oriented and re-trained to execute this task better (see para. 7.5, Sri Lanka). In particular wastewater infrastructure is an unpopular item on budgets of authorities and citizens alike. As per now, wastewater treatment costs in several European countries are not yet fully recovered from the consumers. O&M is an expensive yet unforgiving item on an enterprise's budget, which goes at the expense of the cost recovery performance as shown in the enterprise's books (Box 1). In many instances, a pronounced construction mandate, typical for many organisations in developing countries, is not well compatible with a cost recovery/O&M mandate. Often, a concentrated investment effort necessitates setting up a devoted organisation for a specific time period (see e.g. Case India in Annex, and the case of Aquafin in Belgium, para. 7.5).

Scale and scope of the organisations, decentralisation

The required sector organisations can be of different scale and scope. The scale reflects the typical size of the area for which the organisation has a mandate. This can range from small (such as city quarter or village) to very large (the size of the country or a state of over 100 million inhabitants within the country [India]). The scope of the organisation defines whether it concentrates on (an aspect of) water pollution control, or also covers other utilities. These can be more or less related to wastewater: water supply, drainage, water quality management, river basin management, power generation and/or distribution, public transportation, environment protection, etc.

Importantly, as much O&M as well as cost recovery are physically associated with fine-mazed reticulated networks and individualised households, decentralisation or devolution of responsibilities to the lowest appropriate administrative level becomes an important guideline (ICWE 1992). Part of the local network or infrastructure can then best be entrusted to a local *water users association*.

Which scale and scope are preferable again depends on the local characteristics of the water sector, the possible synergy with developments in other sectors such as power, and the identified priorities; it also depends on the national policy on state organisation (see Cases below). In many European countries presently a process of concentration (scale increase, sometimes scope broadening) is going on. The rationale behind this development is that wastewater management, as water supply, is increasingly complex with respect to technical know-how and water resources management. To cope with this the organisations need strong and expensive central engineering and laboratory facilities, need to be able to raise large sums of cash, and must be in a position to efficiently coordinate the works in a whole region. Interestingly, within a period of barely 15 years

Box 1 O&M and cost recovery are two sides of the same coin.

The World Bank, when monitoring projects, insists on good accounting and financial procedures. However, financial indicators such as cost recovery ratio and balance of payment can, when monitored over 4 or 5 years, hide structural weaknesses: an organisation can spend most of recovered charges on hiring unqualified staff whilst at the same time postponing essential maintenance; it may as well remain totally unprepared for imminent major problems (like the eutrophication of a lake that should provide millions with good drinking water). The monitoring of key financial indicators has sense only if complemented with data on institutional performance, notably regarding its capacity to improve in the future.

England and Wales changed their organisations' scale and scope twice (see para. 7.5). Figure 1 provides an overview of possible situations.

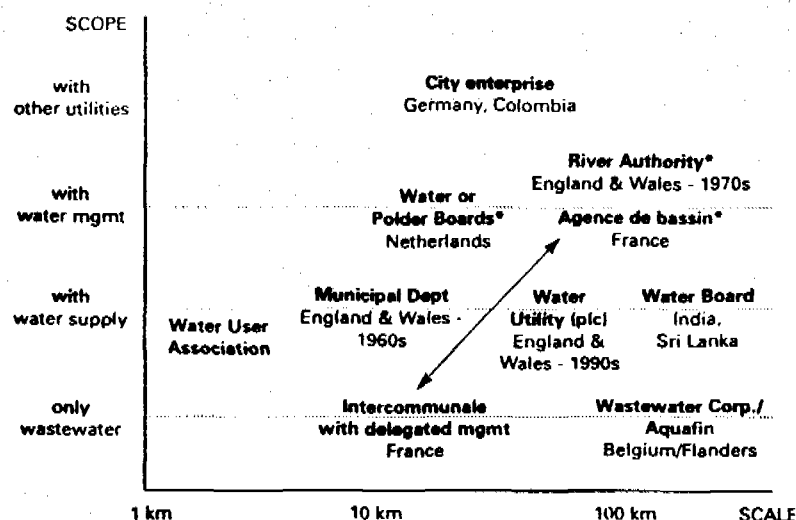


Figure 1 Examples of scale and scope of the organisation responsible for wastewater management. Organisations with a purely regulatory function are excluded. The water quality management function is covered by the organisations marked with an asterisk. The double arrow connects, for France, the two complementary organisations that together cover the sector.

Deregulation and regulation, enterprise autonomy

The institutional architecture should on one hand ensure consistency of policy over the whole territory, and on the other allow for sufficient flexibility, notably to respond well to local issues and demands, and to adapt to changing conditions in the country. The first requirement calls for a centralised, top-down approach, with adequate control from the top. The second, however, tends to put more responsibility at the local levels and calls for more local and sub-sectoral autonomy. Accepting that much of the work needs to be carried out by a variety of organisations at different levels, government tends to keep control by regulations. For example, it defines national health and environmental quality standards, it defines personnel structures in the public service, it decides on the targets for pollution control achievements, it sets price structures and may attribute the market mechanisms a major or minor role, and importantly, it decides on who will take the important decisions. The experience over the past decades has shown that too much regulation is inefficient, creates its own distortions, and stifles initiatives for improvement.

Mechanisms to reduce the level of top-down regulation include:

- decentralisation and devolution of decision making to lower administrative levels, including the right to raise finance (e.g. through tariffs);
- wastewater utilities, and in some cases water quality management organisations, are enabled to operate as autonomous entities, i.e. they can decide on tariff structures and personnel management without explicit interference by the local or central government;
- involve private partners to carry out (part of the) management, bring in finance, or buy the assets (infrastructure, land, the organisation) and operate them as a private company. These alternatives with increasing private sector involvement are called *leasing*, *concession* and *privatisation*;
- identify (waste)water rights and allow their owners to trade them on the basis of their market values;

- avoid introduction of subsidies, taxes, etc., that may distort the price-value ratio of the water as it is perceived by the water users;
- apply financial (dis)incentives rather than inflexible command-and-control regulations to control, for example, waste discharges (see Chapter 6).

However, even though the purpose of deregulation is to allow decision-making outside direct government control, national government does retain an important policy making and monitoring function, and notably is responsible for the functioning of the sectoral organisations. Deregulation, therefore, must be compensated by other types of regulation. Typical regulations include:

- installing mutual control amongst the organisations, by creating open competition, e.g. by tendering out all government contracts to private as well as semi-governmental enterprises;
- installing mutual control amongst the organisations, by creating watchdog organisations and balancing the power of one organisation with that of another, e.g. by putting a powerful, objective regulatory agency in place (as in England and Wales after privatisation, see para. 7.5); in any case, it should be prevented that an executive organisation is also empowered to regulate itself (as was the situation with the Water Authorities in England and Wales in the 1970s, see para. 7.5), as this creates internal conflicts of interest;
- ensuring that utilities which benefit from a higher degree of autonomy are also more accountable: to their clients, their shareholders (commonly local government) and the national government with respect to their support for achieving national goals;
- preventing monopoly and cartel formation; recent European Union legislation forbids cartel formation and attempts to break up monopolies -- also that of water services.

The degree of desired autonomy for an organisation is related to the 'maturity' of the market, i.e. the willingness of the consumers to pay for the service. Figure 2 charts the position of a number of institutional arrangements as a function of the degree of autonomy the waste(water) sector organisation enjoys, and the maturity of the market. A proportionality emerges: the more the market is mature and demand developed, the more autonomous the local organisations are. England and Wales arguably have the highest autonomy degree, as their organisations are privatised and operate as independent firms. The relationship, however, is not causal. It is likely that maturity and autonomy must be developed in a coordinated fashion, and mutually reinforce each other: an organisation which suddenly is cut off from regular subsidies has no way-out other than educating its consumers.

Autonomy is measured by the absence of political interference in the organisation, not by the name of the arrangement: City Departments in Western Europe are allowed more true managerial autonomy than governmental enterprises in developing countries.

Capable organisations

The sector organisations can only perform well if, in addition, they are properly managed, led and staffed. This implies notably

- leadership by the management, to ensure that the organisation and its staff have a clear and shared view of their purpose and how this will be achieved;
- an adequate staff with the right expertise profile;
- dynamic personnel management stimulating *esprit de corps* and minimising operational cost.

Instruments to further this include career development and salary measures to motivate staff to improve on their performance, education and training (see Case Sri Lanka below), and management consultancy. In France, it is argued that the system of *delegated management* (see Case France) allows municipal governments to concentrate on policy making and essential tasks; the technical management is left to private organisations that are more expert and better equipped for this task.

Sustainable institutions, in addition, possess built-in capacity to critically monitor the overall contribution of the sub-sector to achieving the nation's goals, and to influence these for the better (e.g. by introducing the economic replacement value of water and environmental quality in national economic planning, and by demonstrating the economic value of water for sustainable economic

development). Such institutions dispose of the internal mechanisms that makes them capable to review the management performance and effectiveness of the separate organisations and institutional measures. Ideally, an organisation is allowed to operate in such an institutional environment that, without government interference, it

- gives maximum performance under its present mandate,
- learns from errors and improves on its weaknesses,
- is able to identify the sector's future requirements and propose the new concomitant institutional arrangements -- even if that means abolishing the organisation and replacing it with another.

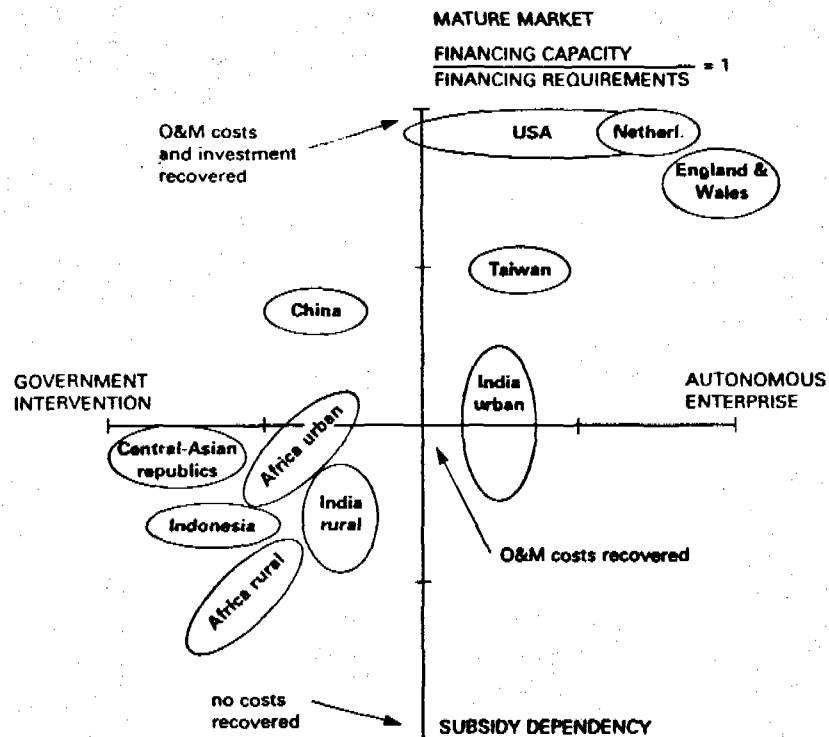


Figure 2 Position of water sector organisations as a function of their autonomy and the development of the water services 'market'. A 'mature' market implies that the willingness to pay of the consumers balances the financing requirements.

7.5 Examples of institutional arrangements

England and Wales

England and Wales recently have gone through four phases of institutional arrangements:

before 1972 Water pollution control infrastructure was under responsibility of, and owned by local government departments, often combined with the water supply sub-sector. This led to dramatic inefficiencies as each municipality had its own small treatment plant, and no critical mass for technical expertise and financing. Regulation and water quality management rested with Inspectorates and the River Authorities (one for each of the nine major river basins).

- 1972-1982 To increase the scale of the organisations, and to bring all water management in one hand, nine Water Authorities were created transferring all infrastructure (with the exception of local sewerage) to the River Authorities. This led to a merger of many sub-sectors (including drainage, river management, etc.) and brought the regulatory function under the same roof as the executive (scope broadening)(for more detail, see Okun 1977). The Authorities were under supervision mainly of local government. However, the organisations proved too large and unfocused, struggling with internal conflicts of interest, and unable to generate sufficient investment volume to meet increasing environmental quality standards.
- 1982-1989 The Authorities were made more business oriented in order to increase their efficiency as well as effectiveness. They became under supervision primarily of the national Environment Ministry. Privatisation was prepared.
- after 1989 Government sold the water supply and wastewater infrastructure of the Authorities to the public and private investors. These private enterprises remain operating in the same river basins. A main task is to generate finance for the overdue expansion and modernization of the water and wastewater infrastructure in order to meet the strict European Community environmental directives -- and to raise tariffs accordingly. The regulatory and water quality management functions were taken over by the National River Authority (NRA), which is also responsible for river management, and by the Inspectorates of the Environment and of Health. Because the enterprises are allowed to operate as monopolies in their region, the new Office of Water (Ofwat) became the financial regulator under the Ministry of Environment to ensure that the companies meet government policy, and do not take extra benefit from their monopolistic position at the expense of the citizen or nation. Whether this arrangement is considered successful is a matter of continuing debate.

It has been suggested recently to merge the water quality regulatory function of the NRA with air and soil quality regulatory functions from the Inspectorates to create an American-style Environmental Protection Agency.

France

In 1982 the French state structure was fundamentally altered by the decentralisation law that devolved a substantial part of the central government to local government. France traditionally had been strongly centralised, but the municipalities were now attributed more responsibilities with regard to infrastructure planning and financing. In addition, economic development and water management required a new approach at the scale of a region and in a more integrated cross-sectoral fashion. The new law now allowed municipalities and *Départements* (counties) to develop such institutions.

Wastewater collection and treatment is the responsibility of municipalities, which commonly make joint-ventures (intercommunales) to execute this task. However, in most cases the actual management (operation, maintenance and cost recovery) is delegated to private enterprises. Some five such companies operate in France; they compete with each other during the frequent public tendering of these contracts all over the country. Such contract is very specific; it stipulates what the municipality wants the contractor to achieve in a given period of time (5 to 20 years) and as measured by certain performance parameters. A water price is agreed upon, from which the contractor has to recover his costs, and pay a lease fee to the municipality. The contractor can carry out management tasks on the infrastructure owned by the municipality (*lease*), or it can also provide financing for investment which reverts after a suitable period to municipal ownership (*concession*)(Lorrain 1995). The water quality management and regulation is notably done by the *Agences de bassin* (river basin boards) which carry out planning, collect fees for abstraction and pollution of the water resources, and also provide subsidy to local government for notably wastewater infrastructure (Chéret 1993). Quality standards are developed by the Ministry of Environment.

Germany

Wastewater management is the responsibility of the municipalities, which form *Verbände* (inter-municipal joint-venture autonomous enterprises) if they are too small to address the financial and technical complexity of this task, or, in the case of cities, they amalgamate the various utilities into one *Stadtwerke* (City Enterprise) encompassing water supply, power distribution, district heating, (often) sewerage and wastewater treatment, and, importantly, public transportation. The shares of such municipal enterprise are in the hand of the municipality. The management has a large degree of autonomy, though critical decisions need approval by the Board in which the representatives of the municipal have a majority. The enterprise is subject to taxation of any profits made; power distribution and water supply commonly yield a benefit, but as public transportation and sewerage typically lose money, the net profit is zero and taxation avoided.

Depending on the local topography and pollution load, in certain areas joint-ventures are created per river basin to manage water and wastewater, including the operation of treatment works. The *Emscher Genossenschaft* (Treatment Association for the Ems River) in the industrial heartland of the Ruhr region, has a deviating arrangement, insofar that local municipalities (proportional to their population), industries and other partners form a fully autonomous 'water parliament' that undertakes to collect all domestic and part of industrial sewage in the basin, and, after pre-treatment, to treat it centrally near the mouth of the Ems in the Rhine. This arrangement has operated for almost one century, but currently environmental quality is considered better served by providing more specialised decentralised treatment. The regulation and part of the water quality management is in the hands of the *Land's* (State) Environment Department, and in the Federal Ministry of Environment.

The Netherlands

The Netherlands historically has been very much influenced by safeguarding its low-lying lands from floods from the sea or the large rivers crossing its territory (Rhine, Meuse and Scheldt). Seventy percent of the territory needs infrastructure to protect against floods, and the large tracts of polders necessitate continuous drainage and meticulous water management. Since the 12th century Polder Boards have been operational. They were peculiar in the sense that they represented a separate line of local government: the Council of the Board was, and still is, composed of representatives elected by ballot by all those with a commercial or residential interest within the confines of the polder area. In return, all these pay a substantial contribution for dike maintenance and water management. Since the fifties, the task of water quality management and wastewater management, with a few exceptions, automatically became a new mandate of the newly named Water Boards, the local sewerage remaining responsibility of municipalities' technical departments. The Boards cover an area of half to one province, with typically a half million inhabitants. A move towards scale increase (mergers) recently started, to better pool technical know-how and financial strength, and to allow a more integrated approach of complete water systems (interrelated canals, lakes, etc.).

The Water Boards thus are not owned by local or national government, but they have built up their own financial resources and institutional position. All polluting units in the country, households, industries and farms, pay a wastewater conveyance and treatment contribution which is added to the water supply bill, to allow full cost recovery of all wastewater infrastructure. The Boards also act as water quality manager and as such report to the Ministry of transportation and Water Management. Regulations are issued by this Ministry as well as by the Ministry of Environment.

Belgium - Flanders

Since the 1986 Belgium is a federal country of which Flanders is the northern Region; Flanders counts 5 provinces with approximately 5 million inhabitants. In the early fifties a comprehensive pollution control law was adopted investing the municipalities with the responsibility to treat sewage. However, though most industries gradually installed treatment works, reduced their

pollution production, or closed down, most domestic wastewater remained untreated due to lack of institutional mechanisms to make municipalities cooperate, and due to lack of financial means and political will. In the seventies two regional governmental agencies were set up by national and provincial authorities to combine water quality management and wastewater management. However, again this attempt failed to produce more than a few parts of the badly needed investments, partly because the country as a whole was in a state of re-organisation (with devolution of power to the Regions), and partly because the government agencies could not generate the required finance. In 1989 the two agencies were split into one 'mixed' autonomous investment organisation, Aquafin, in which the Regional government (for 51%) and a private partner cooperate, and one Regional Wastewater Corporation (after 1992 Flemish Environmental Agency) for water quality management and operation of infrastructure. The private partner is one of the English private water companies. The private partner contributes technical know-how and substantial finance for which it is compensated through tariffs.

National and Regional Ministries of Environment are responsible for regulation.

India

India must simultaneously address the deficient sanitary conditions in the poor rural areas and urban squatter zones, and in the industrialised and urbanised regions. Institutional analysis shows an allocation of mandates as described in Table 1.

Regulation and standard setting have progressed much and can be considered well organised. Already in the sixties the Central and the State Pollution Control Boards were functional. In the seventies a basic comprehensive water quality standards system (Minimal National Standards) was established which i.a. specifies quality standards depending on the use that is to be made of the water, and sets discharge standards that are specific for each industrial sector. These Boards also regulate air and soil quality, and monitor quality trends. The Boards have been instrumental in forcing large factories to install primary or more advanced treatment. They rightly decline to take any responsibility for the execution of the treatment programmes. Their effectiveness is partly to be attributed to their clear, simple focus and well demarcated tasks, and to the relatively small size and high degree of professionalism which facilitate their management.

	REGULATION	INTEGRATED PLANNING	CONSTRUCTION	OPERATION of COST RECOVERY
RURAL & PERI-URBAN	-	-	State Water Corp. / Board	State Water Corp. / Board; Local Govt.
URBAN	State PCB; CPCB	Min. Urb. Constr.; Min. Water Res.; State Water Corp. / Board	State Water Corp. / Board	Local Govt.
INDUSTRIAL	State PCB; CPCB	-	Industry	Industry

Table 1 Typical mandate allocation amongst organisations for sanitation and wastewater management in India. The shaded area indicates the fields with comparatively weak effectiveness due to sub-optimal mandate definition and/or inappropriate organisational capacity.

In the large cities such as New Delhi, Bombay, Madras and Calcutta, City Departments or Corporations are responsible for drainage, sewerage, sanitation and sewage treatment. In the rest of the territory this responsibility falls with the State Water Boards or Corporations such as the Jal Nigam in Uttar Pradesh, and the Panchayat Raj Engineering Department in Andhra Pradesh. However, these State organisations are primarily structured and equipped to develop and execute new construction schemes. Water supply and wastewater infrastructure for the larger towns, once built, are to be handed over to local government for O&M; local government is also supposed to take care of cost recovery. In the rural areas these State agencies retain responsibility for O&M. Implementation has proven to be more difficult than regulation. The State Boards and Corporations showed to be effective in planning and construction of water supply and drainage, but in two areas progress has been below expectation: collecting and treating the urban sewage, and providing sustainable water supply and sanitation to rural communities. A key reason for the first deficiency is the very weak technological and managerial capacity at the level of the local government, especially their capacity to recover the (high) costs from the city population. Local water supply and sewerage corporations have a weak financial basis, poor personnel management, and suffer from continuing political interference. In most cities and towns they resort to continuous crisis management. In the rural areas, these Boards and Corporations are ill equipped to communicate with the local communities, decide on the service level for which these communities are willing to pay, involve them in the planning of the scheme, and, importantly, organise and train them to assume responsibility for part of the local management and fee collection. Some State Boards are now experimenting with schemes to delegate more power to the District level.

The Indian Government has followed an alternative path to by-pass the institutional weaknesses. In 1986 the then Prime Minister Rajiv Gandhi launched a separate, high-profile and devoted programme to 'clean up the Holy River Ganges' which would involve the construction of numerous municipal and industrial sewage treatment plants in the basin. In the wake of the programme several integrated urban environmental sanitation programmes were developed comprising sewerage infrastructure but also water supply and industrial counselling. This Ganga Action Plan (GAP) has a limited-time mandate and is centrally financed and guided by a special Project Directorate in the Ministry of Environment and Forests, but it is executed by the State and local authorities. One of its components, focusing on one of India's largest and most polluted cities, Kanpur, includes substantial institutional development. The success of GAP has led to the development in 1993 of the Yamuna and Gomti Action Plans, and will be expanded into a National Rivers Action Plan (see Case Study Ganga Action Plan). O&M cost recovery is claimed to be complete, but these figures often hide underestimation of the true costs (e.g. for major repairs, warehouse stocks, and for qualified and well paid staff). Plans are being elaborated for improving cost recovery whilst at the same time spending more funds on better O&M (Box 2).

The on-site sanitation, in the mean time, retains low priority in the Urban Development Departments. Understanding of water management and, on the other side, of community management remains poor. Nonetheless, several promising initiatives are being taken, notably those involving the local urban communities in the planning and operational phases. Also, relatively good experiences are being obtained with tendering *concessions* to private companies and NGOs for the installation and operation of blocks with lavatories and bathing facilities.

South Korea: towards institutions for sustainable management

South Korea went through rapid changes in its institutional arrangement between 1985 and 1995. This was spurred by the country's rapid economic development and consequent pollution pressure; in addition, the country is comparatively poorly endowed with freshwater resources which are all intensively utilised. The process led to increasing scale and scope for the water pollution control organisations, and necessitated integration in an integral water management concept.

In 1985 urban wastewater collection and treatment were exclusively mandated to the municipalities. These were faced with the need for major investments. The typical sub-sectoral approach, with limited vision on long-term sustainability, taken at that time is illustrated by e.g. the

Box 2. Cost recovery and O&M.

Weak organisations may recover part of the costs but may be too politicised to resist the temptation to use the funds for other purposes. The only escape from the 'poor O&M - poor cost recovery' trap is to incrementally improve on service by improving O&M in part of the network thus delivering better service and earning more income, that is to be re-invested exclusively in further O&M improvement. To ensure institutional sustainability of the planned large sewage infrastructure of the city of Kanpur (Uttar Pradesh), a step-wise programme with milestones was devised (Anon. 1993). At present the infrastructure suffers from poor -- if any -- maintenance and low technical standards; because of the low service levels and frequent breakdowns consumers are dissatisfied and unwilling to pay fees. The city corporation lacks professional capacity despite being overstaffed, and is heavily politicised. The programme comprises 5 steps to gradually improve the operational efficiency, consumer satisfaction and hence cost recovery; the increased financial means allow further quality improvement:

1	Sub-standard O&M with poor service delivery for basic services. Partial cost recovery of O&M and substantial State subsidies. State pays for investment and O&M of sewage treatment.	Present
2	Sub-standard O&M but with marginally improved service delivery (water supply and sewerage) to a target area. Full cost recovery for O&M. State pays for sewage treatment.	Feasible on short term: 3-5 years
3	Systematically improved O&M with better service delivery of basic services. Full O&M cost recovery. State pays for sewage treatment.	Feasible on medium term: 4-10 years
4	Ditto. Assets partially to completely depreciated, and debt for investment serviced. State pays for sewage treatment.	Feasible on longer term: 8-15 years
5	Ditto. Complete depreciation of all assets, and debt servicing, including for major expenditure on pumping stations and wastewater treatment.	Not feasible in foreseeable future; to remain centrally subsidised

The fact that full local cost recovery of wastewater treatment may not be feasible in the foreseeable future should not surprise: also in some rich West European countries this expensive part of the infrastructure is still subsidised from central funds.

hydraulic design guidelines for sewers and sewage works. These were based on a projected linear increase of water consumption from 100 to 440 l/cap.day; yet, it was not recognised that the available water resources would not be able to sustain this in the long run. Similarly, the ensuing large works would be so costly that maximally secondary sewage treatment would be possible, to be followed by a discharge in the coastal waters, as most cities lie close to the coast. However, the coastal ecosystems supporting sea kelp harvesting, an important economic activity, would be badly affected by the still nutrient-rich effluents.

To better integrate water and wastewater planning and management, in 1990 a National Water Improvement Program was developed at national level. In 1992 region-specific Catchment Water

Quality Master Plans were drafted by the Ministry of Public Works and in coordination with other Ministries, attempting to avoid resource losses and minimize expenditure. This regional planning and co-financing of infrastructure works is put in the hands of Catchment Authorities, which direct and complement municipal initiatives. As a consequence, per 1994 the cities of Kwangju and Seoul envisage application of more modest hydraulic design guidelines, full sewage re-use in nearby agriculture, avoidance of any nutrient disposal in the coastal waters, and much lower investments in wastewater infrastructure.

Sri Lanka: Turning an organisation around

Between 1985 and 1991 USAID assisted a major institutional development (ID) programme with the Water Supply and Drainage Board (NWSDB) (Edwards 1988, Wickremage 1991). NWSDB was functioning reasonably well in terms of construction of new schemes, but performance was less than satisfactory in operation and financial viability. In 1983, for example, collections covered only 12% of O&M costs. The basic problem with NWSDB was that it had not been able to come to grips with the significant shift occasioned by its change from a government department to a public corporation. The new role demanded that its attention be changed from capital projects to O&M and the consumers. Deficiencies included minimal commitment to financial viability, negligible budget discipline, lack of corporate planning, little attention to communities/users, and over-sensitivity to political pressures. These deficiencies could not be overcome without a change in staff attitude supported by new staff skills and organisation procedures.

Major objectives of the ID were decentralisation of management to regional offices to put it closer to the consumers, change of organisational structure and attitudes to make O&M NWSDB's most important mission, and close cooperation with Ministry of Health, NGOs and communities to provide coordinated support to public health programmes.

The process consisted of the consultancy, hands-on and formal training sessions, organisational analysis, and changes in the administrative organisation and procedures. By doing so, a large degree of 'ownership' of the staff was created. The changes pertained notably to decentralisation of financial responsibilities (including setting up an accountability and Management Information System), management skill development, corporate planning (including setting up a Corporate Planning Division), financial viability (including tariff reform and collection efficiency improvement), human resources development (especially in basic management and accounting skills, and exposure programmes abroad), and community participation. The incentives structure for the engineers was revised as well.

At a cost of US\$ 14 million the whole organisation was overhauled in 6 years. After the project, NWSDB performed drastically better on all accounts, and it showed a high degree of commitment to the cause of public water and health services. Importantly, its managerial system now ensured 'institutional sustainability'.

7.6 Capacity building (CB)

Capacity building of the water sector is a new concept that starts from three premises: (i) water is a finite resource, for which numerous users compete, notably the waste dischargers (they lower the usefulness of the water), (ii) as water is essential for a healthy economy as well as for the environment, the resource should be managed in a sustainable way, and (iii) institutional rather than technical factors cause the sector's weakness (Alaerts and Hartvelt 1996). CB, therefore, takes a comprehensive look at the sector, analyses its physical and institutional characteristics in detail, defines opportunities and key constraints for sustainable development, then sets a selection of short- and long-term action programmes. Very often the water sector performs poorly because of inappropriate or rigid institutional arrangements; improving on these then removes structural constraints. Because of item (i) it emphasises *demand management* rather than new development, as any additional supply by a new water development soon is fully utilised and leads to more

demand -- which cannot any longer be fulfilled.

Countries need to build 'capacities' to achieve the goal of good sector development, which is effective in service delivery, efficient in resource use and sustainable. Through the Delft Declaration UNDP developed a definition applicable for the water sector (Alaerts et al. 1991):

- (i) creating an enabling environment with appropriate policy and legal frameworks;
- (ii) institutional development, including community participation;
- (iii) human resources development and strengthening of managerial systems.

The experience, especially in developing countries and in economies in transition, shows that the main tasks ahead can be formulated as follows:

- Price setting, cost recovery, and the enforcement of rules, are more difficult to implement than regulation (of water quality, for instance), and strategies to achieve them deserve priority.
- Many inefficiencies can be improved by allocating the right mandates, and reviewing the performance of the arrangement regularly. This will render organisations more alert and target-oriented.
- In rich as well as in poor countries organisations must be oriented to the consumers of their 'environmental services'. In poor countries especially, engineers must be willing and able to cooperate with the community to facilitate O&M and cost recovery.
- Organisations must develop the right expertise profile.

In CB a number of instruments can be applied:

- Technical assistance for sector analysis and programme development. UNDP has since 1992 developed *Water Sector Assessments* which comprehensively analyse national water sectors and develop a priority action programme. Also other agencies, such as The World Bank and the Asian and European Development Banks, engaged in similar exercises. Such analyses need to be performed by an interdisciplinary team.
- Technical assistance for institutional change. The expertise will differ depending on the institution that is under consideration. It may relate to policy, micro- or macro-economic structures, management systems, and administrative arrangements.
- Training for change at different levels: decision-makers, senior staff and engineers with managerial assignments, junior staff and engineers with primarily executive tasks, technicians and operators, and other stakeholders (such as e.g. care-takers and people in local communities who have undertaken to operate or manage community-based systems).
- Education of prospective experts who are to play a role in the sector. This encompasses physical and technological sciences, but also financial and administrative management, and behavioural sciences. The water pollution control sub-sector is so complex and develops so fast that in most developing countries not more than 10% of the required technical expertise (as university graduates) is available -- with many of the graduates insufficiently prepared for the tasks in their country (Alaerts 1991).

7.7 Conclusion

Water pollution control comprises four main functions: water quality management, regulation and standard setting, on-site sanitation, and collection and treatment of domestic and industrial wastewater. Each function needs an appropriate institutional arrangement in order to make the whole sub-sector work effectively. In many instances the regulatory function has proven to be a comparatively easy part of the overall task.

The types of institutional arrangements for water pollution control differ very often, but not always, from those for water supply. The 'optimal' arrangement depends on the political/institutional environment, the economic policy, the roles and values of water in the country, the local topography and geo-hydrology, and the natural environment.

Many arrangement types exist and could fulfil the requirements. No 'ideal' type exists that could be prescribed to any country, at any moment, in the world. A prerequisite is that a good 'fit' exists between the organisational mandates and structures, and the institutional environment. Depending on the local condition, the preferred organisations may have a particular scale and scope. Typically, however, water pollution control requires a relation to water management and hence large scales (10 - 100 km, covering a river or drainage basin, or an agglomeration of municipalities). Usually, single municipalities are unable to generate the required vision, finance and technical know-how. Depending on synergies, mergers with other sub-sectors or utilities may be advisable.

As wastewater infrastructure is so expensive, finance generation is a key consideration: for investment, and for operation and maintenance. Consequently, the institutions must be designed to allow cost recovery. This necessitates devolution of decision making and operation and maintenance to lower administrative levels -- close to the consumer/citizen.

To render the organisations flexible, task and performance oriented, and financially well managed, they require a large degree of autonomy. For this purpose, the conventional command-and-control must be deregulated, and replaced by measures that ensure self-regulation. This may include arrangements for competition (for service contracts, for example), to avoid or control monopolies, or to prevent that executive organisations are allowed to regulate themselves. Delegated management and privatisation may be useful components in a deregulation strategy. However, the institutional environment must be equally developed to ensure adequate control of the private partners and avoid monopoly and cartel formation.

From this discussion it emerges that sound sector management entails more than addressing the questions of financing. The World Development Report (World Bank 1994) describes in detail the financing options, but appears to neglect the other determinants for sustainable institutional development.

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**WATER UTILITY PARTNERSHIP
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INTRODUCTION

1. Background

Why the Water Utility Partnership ?

Expanding access to safe water and sanitation for African fast growing urban population is an essential element of strategies to reduce poverty, to deal with urban environmental problems, and to enhance the productivity of cities and towns. Given the lack of capacity at the municipal level, water utilities will have to play the role of institutional anchors not only for water supply but also for sanitation and environmental management.

Most water utilities are operating at a low level of efficiency with deteriorating quality of services and lagging coverage, particularly for the poor. They have little prospect for improvement unless they engage a broad institutional reform resulting in financial autonomy and increased private sector participation. Utilities will have to be commercially viable if they wish to ensure that the low income clients' demand for services is properly addressed. The better performing utilities illustrate the positive impact of such policies and provide guidance for reform. The reform of water utilities and the strengthening of their capacity is therefore at the heart of the drive to extend water and sanitation services to the poor and to address Africa's mounting urban environmental problems. The Water Utility Partnership will provide an unique opportunity for facilitating reform and promoting ownership, learning and identifying innovative ways for improving the quality of services.

Community-based programmes are a necessary complement to central water and sanitation systems. They have a key role to play in the provision of appropriate sanitation services and in meeting the water needs of periurban settlements by providing a framework for joint action with the central actors which are the utilities. The broad range of programmes now underway that combine community-based approaches with improvement of trunk facilities offer important lessons. The Water Utility Partnership will document emerging best practices and bring key players together at the regional level and in the context of country specific initiatives.

Finally the Water Utility Partnership founded on the record of the Union of African Water Suppliers (UAWS) will strengthen the capacity for knowledge and development and dissemination at the regional level.

Why water utilities matter ?

The nature of the development challenge is changing. The long-standing, fundamental challenges of economic growth and the reduction of poverty take place in a context of changing conditions and perceptions including:

- the massive and ongoing urbanization of the population of the developing world;
- the related shift in the proportions of poor from rural to urban areas;
- the realization that the urban areas are the source of most economic growth in most developing countries and that this growth depends fundamentally on the effective provision of water and other infrastructure services;
- the realization that lack of access to reliable water supplies imposes massive health and economic costs on the urban poor;
- the degradation of the urban environment, the adverse effects of such degradation on the health of the poor, and the primary role of water pollution in that degradation.

As these issues have moved to the front of the development agenda, attention has become focused on the institutions which provide water and sanitation services in urban areas. The reality is sobering. As documented in recent reviews of the World Bank's experience with water and sanitation utilities, most of these utilities have performed poorly by most criteria.

From a technical perspective :

- Performance (as measured by unaccounted for water, reliability of service, and productivity) are unacceptably low in most cases.

From an environmental perspective :

- Inadequate attention has been paid to the management of water resources, both from an economic and environmental perspective;
- Investments in waste water treatment and disposal have been very low, and the operation and maintenance of the existing facilities generally poor.

From an economic perspective :

- The level of internal cash generation is low, whence the utilities (which are virtually always public institutions) require continuous large injections of resources from governments, thus constituting a significant drain on the national budget;
- The unreliability of services imposes significant costs on industries (who have to install expensive back-up systems) and thus on the productivity of the overall urban economy;
- Too little attention has been paid to water conservation and demand management, in agriculture, industry and households.

From a poverty perspective :

- The low level of coverage and inadequate reliability of services impose very large costs on many poor households, who often pay substantial portions of their incomes to purchase water from vendors, and who pay a high price in health because of the inadequate services.

There is now a growing recognition among policy makers that urban water utilities play a vital role in economic growth, poverty reduction and environmental improvement. In the less urbanized parts of the world (such as parts of Sub-Saharan Africa) this is essentially a new recognition; in the more urbanized parts of the developing world (such as Latin America) it is a revisiting of a challenge which was perceived as vital thirty years ago.

Virtually all countries are revisiting, in one form or another, previously unquestioned assumptions about the role of the public sector. Throughout the world, industrialized and developing alike, there is keen interest in new forms of public-private partnerships. Where governance is relatively high, this interest has been dominated by the hope that greater private sector involvement will mean greater efficiency and innovation. Where governance is weak, an additional important motivation has been to secure the autonomy of operation of utilities. Finally, an important catalyst for the increasing interest in private sector participation is the insufficiency of public funds alone to meet the increasing investment needs.

2. Creation

The UNDP and the World Bank initiated the idea of a «partnership for building the capacity of urban water and sanitation utilities» at a workshop held in Brussels, 11-13 May 1992 during which the advice and cooperation of professionals from developing countries including a strong delegation of the UAWS (Union of African Water Suppliers), and external assistance agencies were sought.

This event led to the creation of the Water Utility Partnership for Capacity Building in Africa (W.U.P) programme, with the *Union of African Water Suppliers (UAWS)*, the '*Centre Regional pour l'Eau Potable et l'Assainissement à faible coût*' (CREPA), Ouagadougou and the '*Training, Research and Networking for Development*' (TREND), Kumasi, as key partners. The establishment of this programme became effective in August 1995 with a grant of the World Bank consisting of three annual tranches totaling US\$ 1.5 million over the three-year period FY 96-98, and the commitment of UAWS to mobilize water and sanitation utilities in Africa. The W.U.P programme is endorsed by the Global Water Partnership (GWP).

The W.U.P is headquartered in Abidjan in the premises of UAWS which is the executing agency. However the programme has a working governance structure and its staff composed of two African sector professionals and an assistant, report to a

steering committee composed of representatives of partners of the programme and external support agencies.

The W.U.P programme focuses on the whole Africa Region, particularly through its association with UAWS, with membership in 33 African countries, and ITN Centres, active in 25 countries. The programme has the unique characteristic of being executed by an African professional association, UAWS, which has developed credibility with a very important constituency, i.e. CEO's and senior staff of water utilities throughout Africa.

The W.U.P launching activity was a recent joint conference with the Economic Development Institute of the World Bank (EDI) in Johannesburg, July 8 to 11, 1996, on the institutional options in the water supply and sanitation sector (which was attended by 180 representatives from 23 African countries). This activity has demonstrated the advocacy for the W.U.P initiative in the region. The conference was followed by a donor consultation who endorsed the business plan and identified six priority activities to be started in 1996-1997.

3. Objectives

The major objectives of the W.U.P Programme consist in increasing the coverage in water supply and sanitation (WS&S) services and improving the quality of this service.

These objectives can be achieved through :

- **Water supply and sanitation utilities performance improvement**, in terms of cost recovery, service coverage and quality, with a special focus on institutional reforms,
- **The development of a strong collaboration among water utilities and community-based organizations (CBOs) and NGOs** involved in the sector, emphasizing on improving access to WS&S services in urban fringe areas,
- **The strengthening of the capacity of CBOs and NGOs**, involved in WS&S services to populations under-served by formal institutions,
- **The creation of an adequate platform and a coherent framework** for collaboration between CREPA, TREND, UAWS and other training, information and research organizations,
- **The coordination of external support to the water sector in Africa**, which goes together with investment.

4. Characteristics

The aim of the W.U.P action is a **progressive asset capitalization** by the identification of centres of excellence who would take the role of **reference centres in Africa** and the **dissemination of good practices** through the **spreading of information** based on experiences of efficient water and sanitation utilities and their achievements. Focusing on the whole Africa region, the W.U.P programme benefits from the complementarity between English, French and Portuguese speaking Africa experiences.

The activities of the W.U.P are implemented in the framework of an **open partnership** among different actors with the **water utilities as focal points**.

It is a **network of experience gathering, spreading and exchange** among African countries, and between Africa and other continents.

The programme plays a **catalyst role** by introducing **new ideas and innovative approaches**, to initiate a change of attitude to improve performance of the WS&S sector at national and regional levels. It is a continuous initiative based on a **three year rolling programme**.

The development of knowledge and information dissemination through W.U.P will include subregional workshops and seminars, and subregional consultations and studies. The programme will liaise with other networks and regional programs in the water sector, active in Africa, and active collaboration will be pursued with WS&S projects financed by multilateral agencies and the private sector.

5. Programme components 1996-1998

For the first three year period, the W.U.P programme has four main components, with six projects :

1. Drinking water and sanitation sector development

- Project 1 : Institutional options, including Private Sector Participation, Control and Regulatory Systems, and Institutional Observatory
- Project 2 : Performance Indicators of Water Supply and Sanitation Utilities

2. Mastering water utilities management

- Project 3 : Water Utilities Management & Leakage Control and Reduction

3. WS&S service in urban slums & peri-urban areas

- Project 4 : Strengthening Water Utilities Competence in Public Health
- Project 5 : Strengthening Informal Sector by Water Utilities in Urban Fringe Areas

4. Network development

- Project 6 : Setting up an Internet Site

Each project has a pilot institution as leader. This will be either an African water utility or a water utility jointly with an ITN centre, in close collaboration with external support agencies involved in the Programme.

6 - Programme expected output

The main output of the Programme will include :

- knowledge and information dissemination workshops and seminars,
- activity reports including concrete recommendations from specific studies and regional workshops,
- manual and toolkits, resulting from studies conducted in the water sector in Africa, e.g. Institutional Observatory, Performance Indicators, Concessional Arrangements between utilities and CBOs and,
- formal and informal network of contacts for exchange of experience.

The intermediate achievements and results of the Programme will be presented at the 9th Congress of UAWS to be held in Marrakech, Morocco, in February 1998.

7 - Programme financing

The total Programme cost for 1996-1998 is estimated at US\$ 7.600.000. The annual flow of expenditure is expected to be between US\$ 2.5 and 3.0 million. The bank's contribution (Special Grant) is meant to account for about 15 to 20 percent of the total cost of the Programme undertaken by W.U.P. The UAWS commitment will be in the order of 10 percent of the programme cost.

Other donors and private sector are encouraged to contribute to the funding of the Partnership.

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COMMENTS AND DISCUSSION ON "THE URBANIZATION CONTEXT"

BY SOON-BO SHIM

The urbanization of water supply sector through private investments sets off many important and controversial issues in building new policies and strategies in the sector. In summary, Dr. Porter has proposed private sector involvement in water supply utility through financial investments in return of tradable bulk water entitlements and right to collect tariffs from the customers for the provision of quality water service within the pre-defined zone. The financial investments partly from the land reclamation, partly from the private sector, and partly from ADB. The service zone, which is "chosen on the basis of hydrological conditions, and economic consideration – that is the area small enough to avoid diseconomies of scale in distribution, but large enough to reap economies of scale in water treatment and pumping". Although there are a few important issues to be addressed and resolved, the privatization of water sector provides promising future towards quality life.

Nevertheless, we must give careful consideration to the hydro-meteorological conditions and to the socioeconomic conditions in Asia in order to achieve successful introduction of privatization in water supply sector. The careful comparison studies between the European water supply system and the far east Asia water supply systems through a workshop such as this, we can achieve quantum leap in the water resources development and management .

Government Role (national and provincial)

- Define bulk water entitlements and facilitate a capacity to trade.
- Define the regulatory arrangements relating to tariffs and water service quality.
- Specify environmental obligations - in relation to discharge, water quality, forestry, and other catchment issues.

- Implement water supply utility reforms – incentives, efficiency audits, benchmarking.
- Review corporatization and privatization options.
- Define the customer zones over which competitive water services may be provided – hopefully through a transparent bidding process that enables the maximum value in water service deliveries to be obtained, at minimum costs to customers.
- Define clear scopes of works for competitive tender, and develop a sound contractual basis for private sector water supply provision – contracts between government and the private sector and between the private sector and customers.
- Define relevant force majeure and environment risks that the utility or government can manage better than the private sector.

Water Supply Utilities Role

- Survey customer attitudes to the performance of the utility, and scope for improved “custom focused” service.
- Adopt governance arrangements (boards and management) that promote accountability and incentives to efficiency, for example, commercialization and corporatization.
- Implement human resource policies that can converge on best practice, with benchmarking of performance against comparable external water supply businesses.
- Assess scope for horizontal and vertical “unbundling”, assess economies of scope and scale with a view to structuring the business more efficiently.
- Assess scope for contracting out to private sector at lower cost and higher consumer satisfaction.

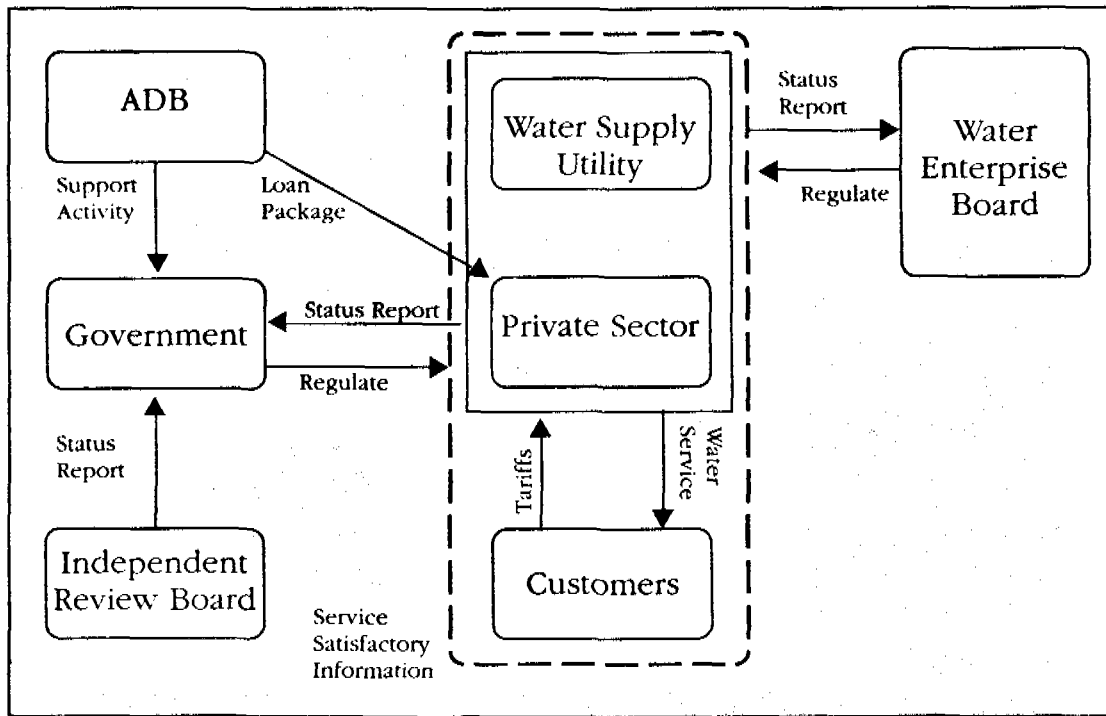
Private Sector Role

- Negotiate with water supply utilities and government as to the scope for private provision of some or all water supply services.
- Form international and local private sector consortia capable of managing commercial and technical risks inherent in water supply sector investments.
- React to draft scopes of works prepared by government and water supply utilities.

Asian Development Bank Role

- Support government activities set out above, for example, through conferences, technical assistance, sectoral and other loan programs.

Schematic Diagram of Proposed Policy



- Prepare standardized private sector participation contracts for the water supply sector, for example, for contracts between private sector parties and banks, and customer service contracts.
- Assist in minimizing risks – acting as guarantor – in relation to non-commercial and political risks with leverage applied via conditions of loan packages.
- Work with private banks and infrastructure funds in developing packages of finance suitable for water supply investments.

Financing the Project

- Value created through land development – drainage and land reclamation
- Participation from private sector

ISSUES TO CONSIDER

Fundamental Consideration

- As water is an essential element in a living environment, should we consider it as a property to own? (Water is not something one can live without !)

- Although capitalism in a water supply sector may increase the quality of the service, by the same token, it may be the main cause of poor reliability when it is no longer economically feasible.
- Not all countries in Asia welcome foreign investment, especially when the terms are giving them entitlements of natural resources and guarantee of bulk raw water supply, which may not be possible due to the randomness in nature itself.
- Each country has its own culture, principles, and fundamental policies towards basic living utilities, such as water supply. Furthermore, the socioeconomic structures are different between each country.

Specific Consideration

Quality Contracts

- Can appropriate regulatory structure provide secure water quality? If so, then to what extent does the government need to regulate them and is it practical in reality?
- Why should certain categories of customers pay more tariffs for the same water as others? What are the benefits they receive by paying more?
- No evidence of resolving the distrust in the process.

Environmental Issues

- Is the excessive mining of the aquifers the main cause of those environmental disasters?
- Would privatization meaning not using aquifers? If so, are there other water sources such as reservoirs always available near by the cities to be used?
- Do the economic benefits come solely from the extension of the coverage?
- How would government stop the poor from using the wells?

Zoning Issues and Water Supply

- Population and the demand within the defined zone are not static, it is dynamic in nature.
- Once the boundary of the zone is set, is it static? If dynamic, who will manage the overlapping or uncovered area.

Financing Mechanisms – Drainage and Land Reclamation

- How do privatization and land reclamation tie in ?
- Is reclaimable land, always available to be developed ?
- Who will be in charge of the land reclamation and who will finance the initial cost?
- Is there any other way to finance the water sector ?

The Nature of the Business – Water not Pipes or Connections.

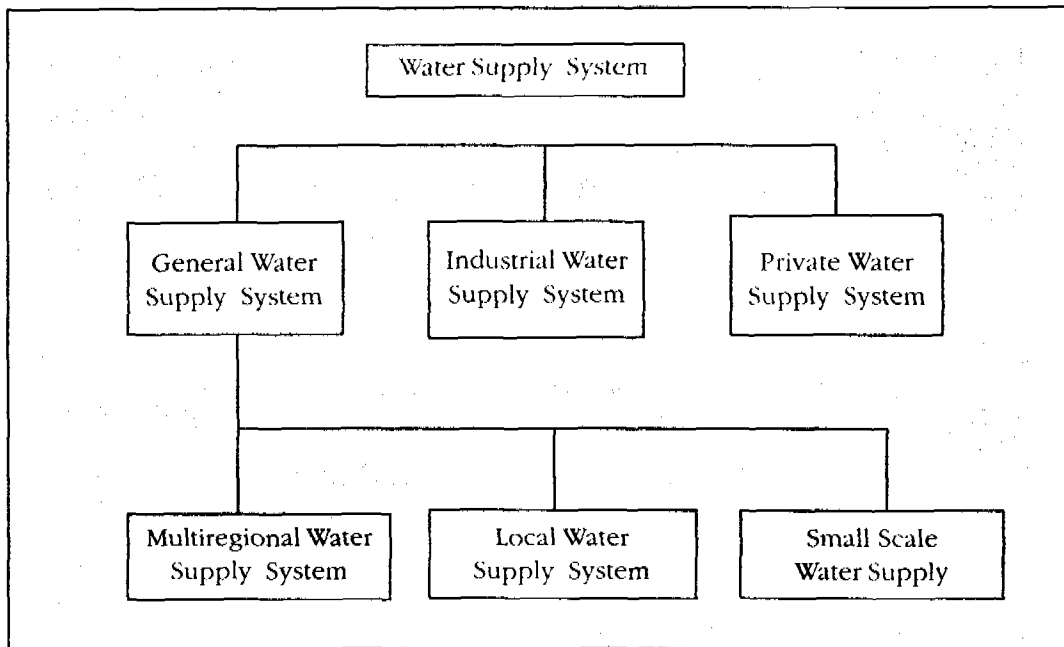
- Which one is better, per connection or per cubic meter? Have there been any comparison studies done? If so, what are the results?
- What is the primary cause of people preferring short term interest – may be it makes more economic sense in practical world?
- What are the problems related to the raise in tariffs?

Nonrevenue Water

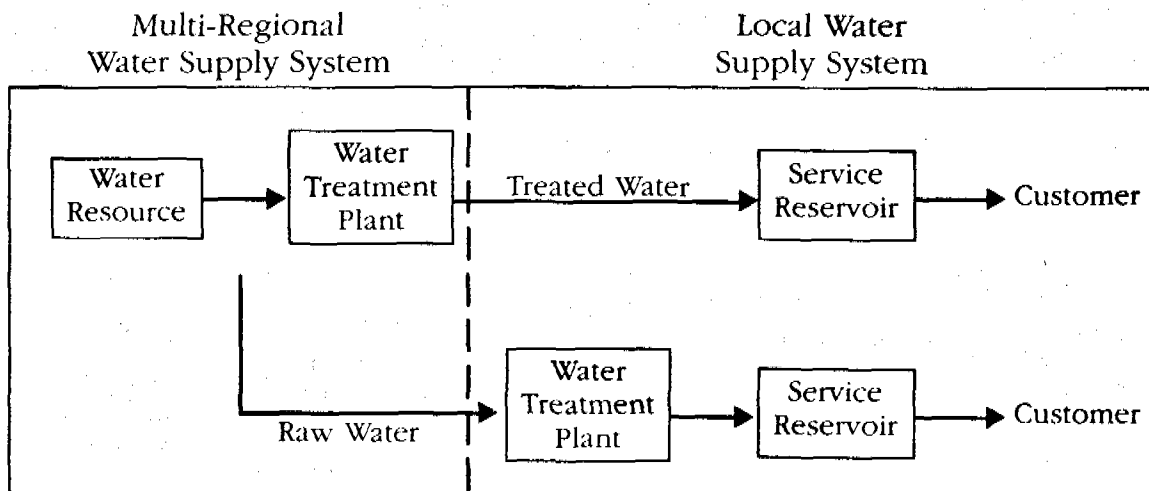
- What are the primary causes of such high losses in the system, unaccounted for water and nonrevenue water?
- Is it just the lack of motivation to resolve unaccounted for water problem or are they technically difficult?
- When you say “competitive”, it usually means that customers have a option to switch between different suppliers if they are not satisfied with the service. However, it may not be the case in the water supply sector, this is not a long distance phone service. Furthermore, the competitiveness goes against the author’s point on privatization based upon monopoly structure.

THE WATER SUPPLY SYSTEM IN THE REPUBLIC OF KOREA*Classification System*

There are three different classes in the water supply system: central water supply system, industrial water supply system, and private water supply system. The central water supply system divides further into another three different sections: multiregional water supply system, local water supply system, and small scale water supply system. This classification was necessitated by the fact that the geological and economical environments were different.



Distribution System



Water Supplier

- Central and/or industrial water supplier under authorization from the central government or the local government.
- The private investment is allowed, however, no such cases have been sighted yet.

Water Authority

- An authorization can be obtained from the Ministry of Construction and Transportation, the Ministry of Environment, or local governor with respect to administrative region and the type of a water supply system.
- Multiregional water supply system, industrial water supply system: the Ministry of Construction and Transportation
- Local water supply system: the Ministry of Environment
- Small scale water supply system, private water supply system: local governor

CONCLUSIONS

After a careful consideration of the hydrometeorological conditions and the socioeconomic conditions in Asia, the privatization of the water supply sector under proposed policy is very much arguable. However, with a further careful comparison studies between the European water supply systems, for instance, the United Kingdom system and French system, and the Far East Asia water supply systems, such as, the systems of the Republic of Korea and Japan, through a workshop such as this, much improvements can be achieved.

WATER SUPPLY AND SANITATION COLLABORATIVE COUNCIL

WORKING GROUP ON INSTITUTIONAL AND MANAGEMENT OPTIONS

WORKSHOP

THE HAGUE, THE NETHERLANDS

2ND - 4TH JUNE 1997

OUTLINE CASE STUDY

PRIVATE SECTOR PARTICIPATION IN THE WATER INDUSTRY

IN

TRINIDAD AND TOBAGO

PREPARED BY: LESTER FORDE

The Water and Sewerage Authority of Trinidad and Tobago is a water utility which was set up in the 1960's along the lines of the British Water Authorities to provide water and wastewater (sewerage) services in Trinidad and Tobago.

By the late 1980's, the country's economy which is dominated by oil was in trouble and the help of the International Monetary Fund (IMF) was sought. The IMF recommended a structural adjustment programme which was backed up by special drawing rights from the Fund and the country also accessed a loan from the World Bank. The general terms of the structural adjustment programme were that subsidies for social services and the utilities were to be reduced, i.e. they were to become cost effective.

The Bank provided an Emergency Water Rehabilitation loan to deal with critical items of the water infrastructure. The last capital injection in the water subsector took place in 1982 and the wastewater sub-sector had only minor capital additions since centralized sewerage systems were installed in 1964.

At the time that the emergency loan was obtained, the quality of water service was poor as a result of no money being available for well rehabilitation, booster station repairs, pipeline replacement, leak repairs and refurbishment of water treatment plants.

The poor supply resulted in recalcitrant customers who were angry at paying for poor service. As a result, the revenue stream was impacted significantly.

Poor morale among the utility workers was a result of inadequate funding to provide materials, equipment and protective gear to carry out the day-to-day business of the company. In 1992, the Government took a decision to significantly reduce subsidies to the Authority. The Authority's management responded by reducing operations so that only that which was absolutely necessary was carried out. Later on believing that the malaise was a function of poor management, senior Managers from outside the utility were brought in to "straighten out the mess". However, these persons were not provided with the promised financial assistance to transform the utility. The utility continued to limp along with some minor reforms such as a significant reduction in expenditure and an improved collection drive to bring in revenue from delinquent customers being the major achievements.

The situation became so acute that salaries were not paid on time for several months in 1992 and 1993, thus further reducing morale and suppliers were experiencing difficulty with getting payments. They responded by withholding credit and demanding cash only transactions.

The Government decided finally in 1994 that the water utility would be "privatized". However, it was clear that all the politicians were interested in was to get rid of a public utility which was leading to serious political problems for them in terms of customer dissatisfaction. At the time, revenues were less than expenditure by some \$140 Million Trinidad and Tobago dollars. (\$6:00 TT = \$1:00 US Dollar)

This attempt to privatize was seen as a panacea for the utilities woes. The process was not properly thought through and this led to unnecessary work and costs. In the first step, requests were invited from companies who were interested in operating the utility and who had "an international track record." More than one hundred (100) companies some foreign, some local and some joint ventures of local and foreign firms indicated interest. After a review of the companies indicating interest, this list was shortened to about twenty (20) and these were asked to submit proposals. Out of this group six (6) were finally shortlisted. They included four (4) of the major British Water Companies and two (2) French Water Companies.

The process which evolved was a two-envelope type, one containing a Technical Proposal and the other a Financial Proposal. A third envelope was added and this dealt with a proposal to supply water to a new industrial park. It was generally felt that this third envelope was the politician's way of influencing the outcome of the process since it was a how-to proposal rather than the detailed type as the Technical or Financial proposal.

A system of points was used to evaluate all of the submissions and resulted in the two (2) top contenders - Severn Trent Water International of the United Kingdom in joint venture with George Wimpey (Trinidad) Limited and Lyonnaise des Eux of France. After further discussion of their proposal, Severn Trent Water was chosen as the preferred operator.

The negotiations for the contract details began and it was only then that "privatization" was defined to be really a management contract. The lawyers for the three (3) sides, the Government, the Water Authority and Severn Trent then began to work out the contract details.

The first problem which was encountered was that the Water and Sewerage Act of Trinidad and Tobago did not permit a foreign company to operate in the water utility. Consequently, Severn Trent International and their joint venture partner George Wimpey (Trinidad) Limited (now Tarmac) had to form a new local company called Trinidad and Tobago Water Service Limited (TTWS).

The Water and Sewerage Act did not permit a delegated management contract between the Water Authority and TTWS. Further, it was felt that such a contract would not require TTWS to risk anything in managing the Authority. Consequently, a Business Plan was developed by TTWS and this defined the deliverables, payments and penalties. That is the Plan constituted the contract between the Authority and the private operator.

While all of this was going on, the country was leading into a general election. Three (3) days before the general election, the then Government (now the Opposition) signed the contract with TTWS. The then Opposition Party (now the Government) vowed to reverse the "privatization" if they were elected as the Government.

After the elections, the new Government appointed new persons to the Board of the Water Utility. This change in personnel and philosophy together with the new government's review of the privatization process in keeping with their election campaign promises slowed up the entire schedule. The Bank had by now signalled that they would view any reversal of the contract process as being in breach of the loan agreement. The major portion of the funding was still outstanding and this was therefore good leverage.

In any case, the contract which had been signed was a valid one and would have cost money to extricate the government out of it. One of the critical items in the entire private sector participation scenario was the valuation of the Authority's assets. Because no agreement could be arrived at as to how this should be done, a new strategy was adopted. The strategy had to be arrived at since by this time, negotiations had been taking place for six (6) months.

An Interim Operating Agreement was drawn up which allowed the private partner to come on board at the Authority while the asset valuation exercise was being conducted. This agreement was for a three-year management contract between TTWS and the Authority which will be reviewed at the end of the three years. At that time, a long term contract would be entered into. This could take the form of the present contract being extended, a new contractor selected or fully privatization embarked upon with TTWS given the opportunity of first refusal.

In the present contract, the Contractor provides funding for Operations and Maintenance while capital funding is to be provided by the state. In the original proposal, the moneys invested by the operator was not supposed to be guaranteed by the State. In the new arrangement, the State guarantees the loan. The World Bank which is providing a loan for both Medium and Long Term Rehabilitation of the utility in pushing the process along and considers that private sector participation has been beneficial to the Authority.

Very early in the game, the contractor realized that one critical item which had to be addressed is the quality of service to consumers. The aging infrastructure resulted in water supply to some areas being scheduled and not many areas of the country were receiving a twenty-four hour supply. The intermittent supply in other areas was inconvenient and customers were not usually informed of schedules and in some cases, schedules were not kept. Scheduling resulted in turbid water being supplied as a consequence of turning the supply on and off.

Thus continuity of service (supply) became one of the major indicators of performance.

The Contractor's payment will be based on meeting service delivery targets using the P-factor as one of the indicators of performance which has been set and which will be continually updated.

In order to improve the level of service, the Authority has established District Meter Areas so that unaccounted for water levels can be reduced. Three (3) pilot areas have been established and preliminary analysis shows that the concept is reducing the levels of unaccounted for water and providing longer hours of supply.

Better quality service has also affected the revenue stream resulting in significant increases in collections from customers.

CONCLUSIONS

The road to privatization (private sector participation) has not been as smooth as the politicians envisaged. The key pitfalls that Developing Countries must avoid are:

1. There must be proper benchmarking so that performance can be properly evaluated. This means that data is critical.
2. Asset valuation is very important. Most of the problems with asset valuation probably stems from the fact that at privatization, the British held a "fire safe" and it is generally agreed that the assets were undervalued at privatization. The present Labour Government is attempting to redress this by the windfall tax on water companies.

The process is long and must be allowed to develop and we must recognize that importation of solutions also means importing problems. In the case of Trinidad and Tobago, there has been little regulatory change except that political interference in the operations of the utility has been reduced significantly. Time will tell if the process will be successful.

Comments and Discussion on “Bridging the Urban-Rural Divide: Public Water PLC’s for Developing Countries”

by
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1. Introduction

The paper showed comprehensive and well thought out study on bridging the urban and rural divide in water supply using the “public water PLC.” The authors recognized that water should be treated as a scare resources as if it is “goods.” Water should be carefully managed, priced in accordance with its cost, and allocated in accordance with sectoral priorities. Furthermore, they recognized that there is lack of attention to the secondary cities, towns and larger villages that harbor a substantial part of many countries’ households. The authors addressed the question of “how this new water regime is to be put into effect?” with an answer ,the Public Water PLC.

Secondary Urban Nodes’ Problems

- Too large for effective user management
- Too small and too numerous to be privatized



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Proposed Solution : Public Water PLC

Advantages :

1. One captain on the ship, the Managing Director.
2. Provides a proven system of checks and balances between main actors.
3. Difficult to abuse the utility's monopoly power.
4. Provides a commercial orientation of the company and its workers.
5. No government hand-outs.
6. Charging real costs → encourages cost consciousness and consumer orientedness.
7. Forces the companies to comply with industrial standards of financial performance.
8. Maintains transparent system of performance monitoring.

2. Analysis

- **Possibility of being abused by a few high ranked public sector officials. The Public interests are ignored or even disregarded which in turn could bring in further distrust in the water supply system.**

Comment : This is common case in most developing countries where quality water supply is hard and important to achieve, however, it is always the last in priority. The "Dutch compromise" works well under the

assumption that the each party, public and private, will do each job well and honorably. However, it is not the case for the most developing countries where information on the activities controlled by any government level are not easily available to the general public. Furthermore, the most general public has little or no high priority interest in the community work, thus feed back from the general public is extremely difficult to achieve unless getting quality water supply is a matter of life or death situation for the general public. Thus, if the public sector cooperates with the private sector, it is easy to abuse the Public Water PLC system by using its monopoly power in negative and unfair way.

The author pointed out that the PLC's management is structured in a such way that the powers of each of the actors are set by law, and further defined in the company bye-laws drawn up before a public notary. However, I would like to mention that the laws are as good as the constituents who uphold those laws.

Recommendation :

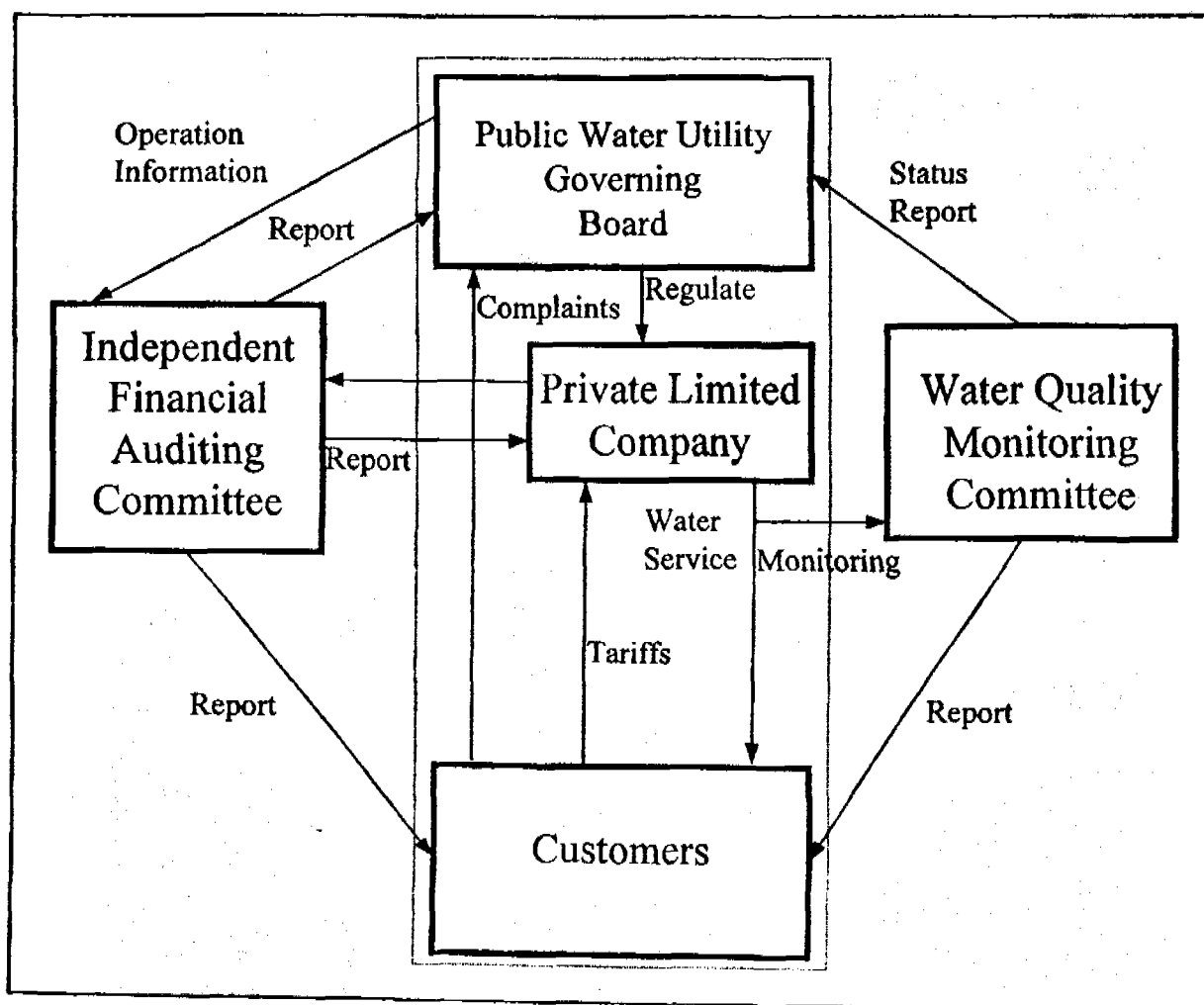
The Public Water PLC is excellent structure to ensure the public interests and economic efficiency as long as the management structure is sound and abuse proof. This can be achieved through better check and balance system with independent financial auditing and water quality monitoring.

The independent operation auditing by an auditing firm will increase the credibility of the operation and an additional leverage against possible abuse of the power by high level public sector officials. Furthermore if a

auditing firm is selected by the general public, the public confidence and the trust will increase even more.

In addition, the independent water quality monitoring and reporting to both public sector governing board and to the general public through mass media will give additional leverage against wrong doing of private limited companies.

Schematic Diagram of Proposed Structure



■ **Can general consumer bear or afford the “real cost” of quality water?**

Comment: This is another common case in most developing countries where quality water supply is difficult and expensive to achieve. Charging “real cost” of quality water to the consumer, encouraging cost consciousness and customer orientedness, is plausible only when the tariff is bearable to the consumer. However, it is not the case for the most developing countries where average household income is far less than the GDP per capita; the bearable tariff is far less than the “real cost” of producing quality water. Furthermore, the most developing countries have little or no technology to produce and provide such high quality water. In most cases, the private sectors in developing countries have to be foreign private sectors; this in turn increases “real cost” even more.

The Public Water PLC is plausible only if the tariff is economically bearable to the general consumers. Having a steady supply of high quality water may not be a priority to consumers whose goal is to make a sustainable living.

Recommendation:

The Public Water PLC is excellent structure to establish an economic ecosystem among public sector, private sector, and consumers as long as the resulting tariff is economically bearable to the general consumers. Thus, I recommend a careful economic feasibility study beforehand.

3. Conclusion

After a careful consideration of socio-economic structure of developing countries, the proposed management structure is very much arguable and somewhat inappropriate in developing countries where general public feedback and the proposed check and balance system is extremely difficult to achieve. Furthermore the proposed economic ecosystem is somewhat doubtful in most developing countries. However, with some modifications in the management structure and careful economic feasibility study, I believe the "Public Water PLC's" is the wave of the future urban-rural water supply system.

*Bridging the Urban-Rural Divide:
Public Water PLC's for Developing Countries*

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*Bridging the Urban-Rural Divide:
Public Water PLC's for Developing Countries*

As the twentieth century draws to a close, the water supply sector in developing countries faces major challenges. Continuing population growth and rising standards of living mean that safe water is to be supplied to ever increasing numbers of households in increasing quantities. There is widespread mismanagement of existing water supply systems. And fresh water resources are continuously shrinking due to pollution and encroachment.

There is general consensus in the water industry as to what should be done to cope with this situation. Water should be treated as a scarce, and therefore economic, good. It should be carefully managed, priced in accordance with its cost, and allocated in accordance with sectoral priorities.

What is much less clear is how this new water regime is to be put into effect. What mode of water supply sector organisation is most appropriate for this task? Should the water industry be privatised? Should governments limit themselves to regulatory functions or do public water utilities still have a role to play? Should consumers manage their own systems and if so, how? It is these issues we tackle in a forthcoming book preliminary titled Public Water PLC's for Water Supply Management. This paper summarises the book's central argument.

Its main thrust is to provide a correction to the emerging new consensus on appropriate water supply management. By the new consensus we refer to the viewpoint that far-reaching private involvement in water services provision is the optimal form of management for urban and peri-urban areas, whereas rural systems should preferably be managed by user communities. The book argues that, even though basically sound, the policy prescriptions of the new consensus are incomplete. Banking on the private sector may be an appropriate strategy for dealing with developing country mega-cities. And community management may be the appropriate solution for the small settlements that dot the countryside of the developing world. But this still leaves us with the question of what to do with the secondary cities, towns and larger villages that harbour a substantial part of many countries' households.

We hold that **secondary urban nodes are too large for effective user management but too small and too numerous to be privatised**. Privatisation will not work, for one, because the number of qualified private operators is far too small to cover aggregate demand for water services of these nodes. For another, private operators will not be attracted to secondary towns because profit margins are likely to be much lower than in metro cities. Table 1 (see following page) provides a rough indication of the size of this niche of secondary urban nodes. In 1990,

roughly a quarter of the world's population, or 1.2 billion, lived in settlements defined as 'urban' but containing less than 500,000 inhabitants.¹ Of these, approximately 800 million could be found on the Asian, African, and South American continents. Stated differently, a substantial part of the developing country population lives in smaller cities, towns and larger villages.

Table 1 Population distribution by settlement type, 1990

Region	Primary urban nodes (population over 500,000)		Secondary urban nodes (population under 500,000)		Rural settlements	
	absolute, in millions	percentage of total	absolute, in millions	percentage of total	absolute, in millions	percentage of total
Africa	80	13	121	19	431	68
Asia	443	14	571	18	2,175	68
South America	101	34	119	41	73	25
North America	126	43	84	29	82	28
Europe	187	26	333	46	201	28
Oceania	11	41	8	30	8	30
Total	948	18	1,236	24	2,970	58

Source: United Nations (1995)

In terms of sheer numbers of separate municipal units, secondary urban settlements far outnumber primary urban nodes. Whereas the developing areas boasted less than 400 large primary cities in 1990, the number of secondary urban nodes ran into tens of thousands. This means that not only do we face a problem of providing water services to large numbers of consumers but these are also to be provided through a huge number of independent supply systems.

We argue, furthermore, that **public-owned Private Limited Companies (PLC's) may be an appropriate form of management for such secondary urban nodes.** The public water PLC combine the strengths of market and state governance by offering a combination of private management and public ownership. Under this mode of organisation the water utility is an autonomous for-profit shareholding company with local and provincial government as majority stockholders. Performance-wise, public water PLC's have proven their mettle among industrialised countries, as will be made clear in what follows. However, so far no systematic investigation has been made of the functioning of this mode of organisation and its potential for developing countries. Our aim is to make a start with filling this conspicuous gap.

Modes of Sector Organisation: Overview

EUREAU, the European association of water enterprises, distinguishes five main modes of water supply sector organisation. Table 2 presents an adapted version of the EUREAU scheme. Although the scheme has the drawback of being somewhat Eurocentric, it offers a useful shorthand for the discussion of complex water supply organisation issues following below.

Table 2 Water supply sector organisation: five basic modes

Mode of organisation	Who owns the infrastructure?	Who operates the infrastructure?	Legal status of operator	Who owns the shares?
<i>Direct public/local</i>	Local (municipal) government	Municipal administration	Municipal department	Not applicable
<i>Direct public/supra-local</i>	State, provincial or national government	National or state government agency	Government agency or parastatal	Not applicable
<i>Public-owned Private Limited Company</i>	Local and/or provincial government	A PLC as permanent concessionaire	Private Limited Company	Local/provincial government
<i>Delegated private</i>	Any combination of government agencies	Government and temporary private concessionaire	Private Limited Company	Private shareholders
<i>Direct private</i>	Private agents	Private company	Private Limited Company	Private shareholders

Source: adapted from EUREAU (1992)

The scheme distinguishes five basic modes of water supply sector organisation in terms of: ownership of utility infrastructure, that is, treatment plant, network, and other assets; the identity of the system operator; the legal status of the system operator; and the ownership of the water company, where applicable.

The terminology introduced here is interchangeable with terms used across the water supply industry. Thus, the direct public/local management mode comprises the municipal waterworks departments found in countries as diverse as Indonesia, the United States, and Spain. It has also recently grown into a dominant form in the transition countries of Central and Eastern Europe. These former central planning have shifted en masse from direct supra-local to direct local government, with some contemplating a further downgrading of central government involvement by introducing delegated private management.

Supra-local public management describes the prevalent management situation in most developing countries, where one tends to find large organisations, e.g., the State Water Boards in India, the Ghana Water Supply and Sewerage Corporation, or the Provincial Waterworks

Authority of Thailand, responsible for water supply and assorted other services on a country or state-wide scale.

Delegated private management describes what is known as the French system of outcontracting construction and O & M activities to private firms. Delegated private management is also the management option currently favoured by the World Bank. In the developing world, it can be found mainly in mega-cities, e.g., Buenos Aires and Manila.

The direct private mode describes what is also known as the British model. More precisely it refers to the current situation in England and Wales, whose water utilities are both privately owned --stocks are traded on the Exchange-- and privately managed.

Finally, the public-owned water PLC refers to a mode of organisation where both the utility's infrastructure and the shares of the water company are owned by local and provincial government representatives while the operator is a PLC, that is, an autonomous for-profit organisation falling under commercial law. The public water PLC is crucially different from French delegated private management in that the operator is owned by public rather than private shareholders.

Furthermore, the public water PLC is a permanent concessionaire where its French counterpart is a temporary concession-holder.

The public water PLC also differs from direct public management, and it does so in two important respects: consumer influence and autonomy. First, under the public water PLC structure the utility's consumers have a direct say in strategic decisions, e.g., their representatives must approve of the annual budget, an investment plan, or a proposal to change the tariff. Consumer interests may be exerted in various ways. In the Philippines, five representatives of local interest groups (business, women, and so on) form a Governing Board which meets with the General Manager of the water utility on a regular basis. Umgeni Waterboard in Kwazulu-Natal province, South Africa, works under a similar, if larger, governing board. Under the Dutch system, consumer delegates exercise their power through the Board of Directors and the annual shareholders meeting.

Second, unlike direct public management, the public water PLC is always an autonomous for-profit entity. Unlike the municipal waterworks of direct public/local management, it does not form part of the administrative apparatus of a town or village. And unlike direct public/supra-local management, it does not form part of a technical agency such as the Ministry of Water Supply, the Department of Interior Affairs or a Public Works Department.

Public water PLC's are quite common in Western Europe, where they can be found in, e.g., Germany, the Netherlands, Belgium, as well as in the United States, but they are relatively rare in the rest of the world: examples can be found in the Philippines and South Africa, among others.

Public Water PLC's: the Dutch Case

The performance of Netherlands water supply utilities is excellent and still improving. Table 3 (see following page), which provides a comparison of the performance of the Dutch water

industry with that of four other developed countries, underscores this point. It is evident that in terms of water price, labour productivity (number of connections per utility employee), and maintenance state of the distribution network (as expressed in Unaccounted-for Water), Dutch water utilities are high performers. In addition, the quality of Dutch drinking water conforms to European standards and supply interruptions occur only sporadically if at all.

The public water PLC structure is integral to the success of the Dutch water supply sector. First, all stakeholders --local government, water utility management and employees, and water consumers-- are involved in strategic decision making. Second, utility management has sufficient autonomy to pursue its mandate of commercial policy-making. Before we take a closer look at this system of checks and balances, however, the necessary country and historical background is provided.

Table 3 Comparison of key performance indicators, five industrialised countries

Country	Dominant mode	Water charge, major cities, in ECU ¹	Utility staff per 1,000 connections	Unaccounted-for water ²
Netherlands	Public PLC	172	1.3	5
France	Delegated private	237	4.5 ³	15 ⁴
United Kingdom	Direct private	195	-	28
Japan	Mixed	181	1.7	11
USA	Mixed	67	2.7	12

1. Average water charge for a family living in a house consuming 200 m³ per annum

2. Water produced minus water legitimately consumed

3. Paris only

4. Bordeaux only

Sources: Cheong (1991); IWSA (1995); VEWIN (1994); Yepes & Dianderas (1996)

Country Context and Evolution of Water Supply

The Dutch, numbering nearly 16 mln, inhabit a surface area of only 40,000 km², making the Netherlands one of the most densely populated countries in the world. International interest in the 'polder model', the Dutch economic model, is on the rise due to remarkable achievements recently made in combating unemployment while maintaining low inflation and interest rates, an expanding trade surplus, and healthy company profits.

The origins of Dutch public water supply date back to the 19th century. Initially, water supply development was a matter of local, often private, initiative. The report to the King of 1867 described the generally poor condition of water supply throughout the country and stressed the need for a national initiative. This advice was not acted upon, however, and it was not until 40

years later that the national government stepped in. Until such time it was local governments and private entrepreneurs that established piped water supply systems under direct public and direct private management. They did so particularly in the larger and richer municipalities, where attractive rates of return on investment could be achieved. By comparison, the provision of rural municipalities stayed behind.

From 1910 this started to change. At the national level, for the first time funds were allocated for water supply, and in 1913 a national agency, the Royal Institute for Drinking Water (RID), was created to advise and assist with drinking water supply development in the less profitable rural areas, particularly through the establishment of regional systems. This task was to take more than 50 years to be completed. In tandem with restrictive legislation and licensing policies at the provincial level, the RID promoted the development of the regional water supply companies under delegated public management at the expense of other institutional forms.

After World War II rapid economic development and population growth took place. In 1957, a national Water Supply Act came into force. Apart from laying down quality standards and control mechanisms, the law also required the reorganisation of the drinking water sector into larger units able to exercise quality control, and face new technical and commercial challenges. Provincial governments were to lead the reorganisation and were given the task to prepare plans for this. Amalgamation of water utilities into larger vertically integrated units under delegated public management was the preferred option, whilst horizontal integration with other utilities and other institutional forms were disfavoured.

Table 4 Number and average size of Dutch water supply companies, 1994

Parameter	
No. of companies	35
-PLC's	30
-Other	5
Average size indicators	
-No. of connections	170,300
-Water volume supplied (million m ³)	34.8
-Staff	228

Source: VEWIN (1994)

Present Size, Structure, and Scope of the Dutch Water Industry

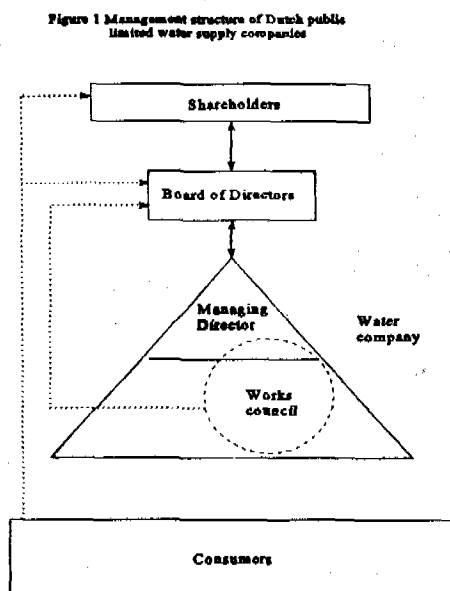
As per end 1994, the Netherlands had 35 water utilities, 30 of which were public-owned PLC's and the remainder being under direct public management. The average utility supplies 35

mln m³ annually to 170,000 connections through 3,000 kms of network, and employs 230 staff (see Table 4). The number of water utilities is expected to decrease to about six in 2005. Most water utilities operate independent from other service providers, but an increasing number is integrated with power supply companies. Integration with pollution control boards or water management boards as is common in other countries is not practiced in the Netherlands.

Concerns surrounding the Dutch water utilities focus primarily on source quality. Both surface and ground water quality are threatened by pollution from the highly industrialized and densely populated environment of North Western Europe. Combating pollution at source requires complex cross-national co-operation between countries traversed by the Rhine, Meuse, and Scheldt rivers, all of which flow through the Dutch delta to empty into the North Sea. The Dutch, as downstream recipients of upstream pollution, have played a leading part in this trans-boundary management effort. Furthermore, Dutch water supply companies are investing heavily in advanced treatment processes and experimenting with new technologies for the purification of surface and groundwater.

The First Key to Success: Management Structure

The Netherlands has organised its water supply in what may be called a typically Dutch compromise between private and public concerns. While nominally a private firm with a view to efficiency, each company is controlled by public actors to ensure that the public interest is safeguarded. This is compatible with a general Dutch tendency to pursue controlled economic liberalization - a minimum of state meddling while retaining the ultimate say in the management of a vital good.



Nearly all water companies are constituted as a 'Naamloze Vennootschap' (N.V.), equivalent to the British Public Limited Company (PLC), the American Stock Corporation, or the French Société Anonyme. In the Netherlands, the shareholders of the water supply companies are municipalities joined in some cases by the provincial government. Let us review the formal set-up of this structure and its functioning. By law, the PLC's management structure consists of a Managing Director, a Board of Directors, a Shareholders' Meeting and a Works Council. The powers of each of the actors are set by law, and further defined in the company bye-laws drawn up before a public notary. The powers are

complementary and as such there are no strict hierarchical relations between the actors. Extensive

consists of personnel (20%) and other costs (25 to 30%).

Looking at cost allocation by activity, production and distribution costs are at 40 to 45% each, sales account for about 5%, and overheads for about 10%. The distribution of labour costs over the key activities shows that about half the personnel cost is in distribution, a quarter in production and the remainder in sales and overheads.

Table 5 Breakdown of 1995 operating costs of two Dutch water supply companies

Item	Friesland Water Co.		Limburg Water Co.	
	Nlg. x 10 ⁶	%	Nlg. x 10 ⁶	%
<i>Direct costs</i>				
Personnel	21	20	37	20
Other	27	26	49	27
Subtotal	48	45	93	47
<i>Indirect costs</i>				
Depreciation	24	23	31	17
Interest	18	17	39	21
Groundwater tax	16	15	27	15
Subtotal	58	55	97	53
<i>Total</i>	107	100	183	100

Exchange rate: US\$1=Nlg. 1,75

Source: primary data

Cost control. Given their similar magnitudes, cost control is equally concerned with indirect and direct operating costs. Measures to control the indirect cost component include, among others, renegotiation of commercial loans during periods of low interest; structural improvement of key financial indicators to obtain favourable loan conditions; careful planning and cost-conscious design of new works to reduce and/or postpone interest payments and to lower depreciation cost. Efficiency improvement on direct operational costs include such measures as reorganisation, reduction of permanent and temporary staff; improved logistics; setting time and/or cost standards for routine operations; adapted maintenance guidelines and procedures; use of cheaper materials; changes in criteria for meter replacement and overhauling, mains renewal, and equipment overhauling; professionalisation of procurement of goods and services; improved budgeting and cost control.

Customer relations. As it is the consumer who foots the bill for the entire operating budget of the company, it is but natural that (s)he gets the attention (s)he deserves. To illustrate, one water company has set up Customer Information Centre as a single intake point where consumers can lodge complaints and obtain information on the spot on any relevant matter. The centre is facilitated by a computerised Customer Information System that allows prompt and accurate

powers are bestowed on the Managing Director, who is the company's legal representative with full responsibility for its operations. The Board of Directors meets the MD every two months and is charged with the supervision of and counselling of the Managing Director, as well as with the approval of important management decisions concerning investments, staff, take-overs and mergers, and so on, as defined in the bye-laws.

The shareholders of a water supply company meet with the MD and the BoD twice yearly. It is charged with the approval of the Annual Report, the rolling Five Year Plan, and the tariffs, the appointment of the Managing Director, the amendment of the bye-laws, and changes in company activities and structure. The Works Council, finally, is empowered to be informed on nearly all matters affecting the company, and has powers to advise, initiate, and concur on matters of direct concern to the company's employees.

The composition of the different bodies differs from one company to the other. Generally speaking the Managing Director is a professional engineer, lawyer or administrator, and tends to be recruited externally. The Board of Directors numbers between five and 15 persons and is generally made up of public representatives. The Board members are appointed either by the Shareholders or by the Board members themselves. Between 25 and 50 mayors and aldermen represent the municipal (and provincial) shareholders.

This structure, in the first place, produces a clear division of responsibilities within the management structure. The Managing Director is in the driver's seat and carries the responsibility of running the business. Second, the other players respect the Managing Director, but hold considerable powers that force him to anticipate their position and co-opt their opinions in preparing his policies and decisions. Third, the Board and Shareholders are largely public representatives and will, in their dealings with the company, consider both company and public interest.

The Second Key: Water Supply as Commercial Business

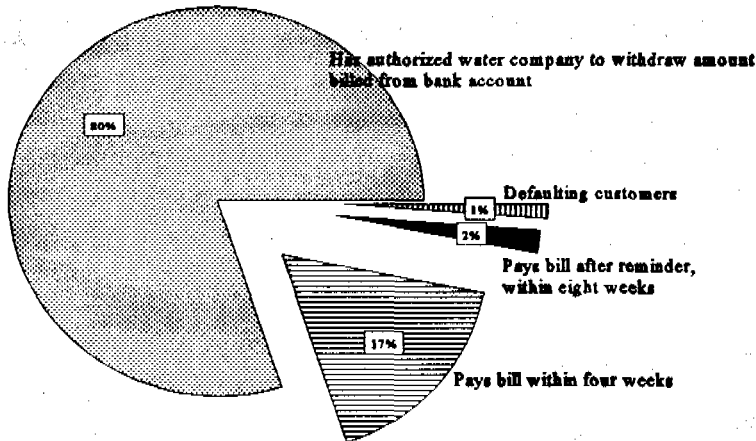
The drinking water sector in the Netherlands has an annual turnover of Nlg. 3,400 mln, made up of Nlg. 2,400 mln operating expenses and Nlg. 1,000 mln of investments (1995, exchange rate at US\$1=Nlg. 1,75). Operating expenses are recovered in full from the consumers and investments are financed largely through loans. State subsidisation of operating and investment expenditures is unknown in the Netherlands: the companies rely entirely on their consumers and commercial banks for their financial operations. Let us investigate the cost structure of Dutch water PLC's to see how they treat their consumers and access the financial market.

Operating costs. The components of operating cost are defined by private company law and consist of indirect cost such as interest payments, depreciation and environmental levies, and direct cost related to the actual production, distribution and sales of drinking water, consisting of expenditures on staff, energy, chemicals, services, etc. Typically, indirect operating cost represents between 50 and 55% of operating expenditure. The balance of direct operating costs

reactions to consumer queries.

Billing and collection. Out of 26 water utilities, 23 have metered all their connections, and bill the consumers a standing charge plus a fixed amount for each m³ consumed. Large consumers are treated somewhat differently to promote cost-effective use of water supply infrastructure: customers showing peak drawoffs are charged in excess of the standard m³ price and those able to avoid peak withdrawals get water at a lower m³ price. Meter reading and billing practices vary from one company to the other. The company we investigated for this purpose bills its customers four times a year. Three

Chart 1 Collection Efficiency at Water Company East Brabant: Disciplined Customers



invoices concern advance payments and the last invoice, sent at year-end, is a settled billed based on a meter reading.

Investment. The other important party to the financial operations of the company is the financier providing capital for investments. Traditionally, commercial banks, insurance companies and pension funds have lent money to the water supply companies on favorable terms, on account of the water sector's low-risk profile: the combination of a government-supported monopoly, municipal/provincial ownership and steady demand guarantees a stable and reliable return on their investment. The recent upturn in investments and associated demands for capital that was originated by the upscaling process, the increasing cost of treating water and the recent product diversification drive have caused investors to rethink their strategies, however. As a result, water supply companies are increasingly concerning themselves with financial performance standards such as solvency and profitability ratios, and to achieve a performance that is more in step with private sector standards.

Dutch Public Water PLC's: Assessment

The main advantage of the Dutch public PLC structure is the combined strengths of public oversight and private management that it offers. Its strengths may be summed up as follows:

- under delegated public management there clearly is only one captain on the ship, the

- Managing Director, who carries all executive powers.
- the private limited structure provides a proven system of checks and balances between the main actors, i.e. the Managing Director, the Board Members, the Shareholders and the Employees.
 - the fact that the Shareholders and Board Members are public office-holders makes it difficult to abuse the utility's monopoly power as these functionaries are inherently focused on both the wellbeing of the enterprise and that of the consumer.
 - the public Shareholders and Board Members are municipal representatives and directly accountable to their constituents.
 - the application of the PLC format provides for a commercial orientation of the company and its workers.
 - the water company cannot turn to the government for the funding of its recurrent and/or capital requirements.
 - for this reason the company cannot but charge the real cost of the product to the consumer; this encourages cost consciousness and consumer orientedness.
 - dependence on the financial market for investment loans forces the companies to comply with industrial standards of financial performance.
 - their twin dependence on consumers and commercial financiers, together with their accountability to the Board and the Shareholders, forces public PLC's to maintain a transparent system of performance monitoring.

Public Water PLC's for Developing Countries

Few developing countries have so far experimented with public water PLC's. Quasi-private corporations, boards and authorities were set up in great numbers throughout the developing world in the 1970s and 1980s. These parastatals do not qualify as delegated public companies, however, as they lacked the Private Limited status and consumers had no power over these organisations through representation on a board or as shareholders.

We believe that the persistent performance problems experienced by these national or state-level parastatal agencies may be traced to the following deficiencies. First, the absence of a mechanism for feeding back consumer interests, wishes and complaints into the parastatal's decision making at management level; the governing boards of water parastatals are usually manned exclusively by top-level civil servants and lack consumer representation. Often this is a consequence of the fact that the parastatal covers an immense service area.

Second, lack of autonomy. Many developing country water boards and authorities lack autonomy. Whereas many governments formally embrace the concept of an autonomous water utility, many have failed to put it into practice. In some cases devolution was enshrined in law but never carried beyond the paper stage. In other cases governments drafted and enacted statutes guaranteeing full autonomy in staffing, finance, and so on, to a newly-formed corporation, only to

take away these powers through subsequent add-on regulation. And in yet other cases governments never became fully committed to enterprise autonomy because it was forced onto them by an external support agency, e.g., as a loan conditionality. It is a telling fact that the World Bank, in evaluating 120 water and sanitation projects carried out between 1967 and 1987, singles out the autonomy issue as a key reason for the failure of its projects (World Bank 1992:39-40).

Third, the continuance of a 'government mentality' in the semi-privatised water utilities. Often, a government line agency was transformed into an autonomous water corporation from one day to the other. More often than not, this change of formal legal status did not effect the desired improvements in cost recovery, consumer orientation and operational efficiency, however. In many cases, after the shock effect of the corporatization had worn off, little had changed besides the name of the utility. Part of the blame for this failure may be laid at the doorstep of utility management, who shrank from a more market-like approach and failed to shake off the subsidy syndrome. But an equal responsibility lies with government who left the newly-independent utilities completely unprepared for their task as quasi-private entities.

We contend that the public PLC may provide part of the solution to this quandary and we do so for the following reasons:

1. Secondary urban nodes are unattractive to and far surpass the present management capacity of the private sector, and will do so for decades to come.
2. The public PLC offers a useful compromise for those countries that consider French or British style privatisation a bridge too far.
3. The introduction of the public-owned PLC structure gives consumers a clear voice in the utility's strategic decisions. This may help to solve the accountability problems that produce inferior services in so many developing countries.
4. The public PLC set-up may give utilities much-needed autonomy in particular with regard to capital procurement and cost recovery.
5. The shift to a public PLC structure may work as a cure for the subsidy syndrome afflicting so many developing country utilities.

Having said this, a number of caveats are in order for those countries willing to give the public PLC mode serious consideration. Political commitment to reform is a vital precondition for a successful transformation. The shift to public-owned PLC's will inevitably upset vested interests. Without broad-based political support, there is little chance of overcoming such hurdles. Furthermore, sufficient time should be allowed for building commitment to the new mode of operations among utility employees as well as for preparing them for their new mission. As the disappointing experiences with parastatals have shown, a change in legal status alone will not suffice to produce results. Finally, the paper autonomy of many of today's water corporations teaches one to be wary of backsliding. Public-owned PLC's will not solve all these problems in one blow. However, they may make the ride both faster and smoother.

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1. There is enormous variation in country definitions of what is urban and rural. Criteria employed vary from population size and density to legal status or level of public services provided. For this reason it is impossible to draw a firm quantitative boundary between urban and rural in aggregated cross-country data.

23 May, 1997

**WATER SECTOR CAPACITY BUILDING:
from concept to application**

**Frank Hartvelt, Director, Water, Water Management
and Aquatic Environment Programme,
SEED/BPPS/UNDP**

Five years ago, UNDP and the Institute of Infrastructural, Hydraulic and Environmental Engineering (IHE) organized the symposium "A Strategy for Water Sector Capacity Building", in Delft. Participants from developing countries, external support agencies (ESA) and other institutions articulated the capacity building concept as:

- Creation of enabling environment including appropriate policy, legal and regulatory frameworks
- Institutional development, including community participation (women in particular)
- Human resources development and the strengthening of managerial systems

What have we learned about the application of the concept of capacity building in practice both at international and national levels?

Capacity building has come to be seen as an integrating concept combining policy, legal, regulatory, institutional and human resources issues in a holistic approach towards sustainable water resources development. For example, an institution can not function without well-trained staff, well-trained staff can not function well in a poorly organized institution, and neither staff nor institution can achieve their full potential in the absence of an enabling policy and legal environment.

Over the past five years the capacity building concept has found its way in a number of international conferences such as the Conference on Water and Environment, the Earth Summit, the Noordwijk Conference on Water and Environmental Sanitation, and the Beijing Conference on Urban Water Supply. Interestingly, this concept is also reflected in conferences which do not focus on water in particular, such as the Beijing Conference on Women, the Social Summit in Copenhagen, and the Istanbul Conference on Human Settlements.

At the national level the capacity building concept is increasingly reflected in policy or strategy statements, both in developing and developed countries. For instance, in a policy statement the minister of Water Resources and Forestry of South Africa remarked, "The enormous backlog of basic water and sanitation services to local communities will not be reduced unless the communities themselves are empowered to undertake their own development. This is not

possible if they do not have the skills acquired which they can only acquire through training and experience. Although training is not cheap, the costs of project failure are far greater."

Another telling example of capacity building in practice is found in the following anecdote. Three women had been chosen by a village to take care of the wells and handpumps. Every month they would collect a small fee from the families in order to maintain the pumps, buy the spare parts and bring in a mechanic when needed. After a year they had collected a considerable sum of money which they wanted to deposit in the local bank. When they talked to the bank manager, he said that he could not accept their money because the three women did not have a status and he could not accept money to maintain water supplies since he managed an agricultural bank, not a water bank. This matter was taken up at the central government level where reason prevailed and the ministers of water resources and agriculture agreed to allow these deposits. So what did we learn? First, that a committee of three women do constitute an institution, however small, and second, that the regulatory environment can be changed in order to accommodate local demand.

In our work with developing countries, we do see that the various elements of capacity building are more and more reflected in their strategies and programs. International organizations too have changed their strategies, e.g. the World Bank's water policy paper, the strategy paper of the Asian Development bank, UNDP's strategic framework paper, as well as strategies of the FAO and other UN agencies. The UNDP/World Bank/FAO guide on water sector policy review and strategy formulation is an example of three agencies working together in providing guidance to both developing countries and ESAs. In UNDP's definition capacity building is undertaken through and with governments and civil society for the management and use of water resources and the aquatic environment in ways that reconcile poverty alleviation and environmental protection.

Bilateral agencies have also issued strategy papers incorporating capacity building as a central concept.

Based on these strategic frameworks a number of field programs have also put capacity building as a central theme of their operations, for instance the UNDP/World Bank Water and Sanitation Program, the International Program for Transfer of Technology and Research in Irrigation and Drainage, the Utility Partnership for Africa, as well as the UNDP Capacity Building Program for Sustainable Water Sector Development co-financed by the Netherlands, the World Bank, and other bilateral agencies.

Over the past year two international support mechanisms have been established: the Global Water Partnership, co-sponsored by UNDP, the World Bank and SIDA which represents a coalition of external support agencies, developing countries and other groups dedicated to achieve greater impact of development cooperation programs at the country level through the harmonization of policies and approaches, the identification of gaps and the creation of partnerships, and the World Water Council which is designed to focus on long term water issues as well

as awareness raising from the general public to the highest political levels. The Water and Sanitation Collaborative Council, which represents a forum for exchange of ideas for water sector professionals, was created several years ago.

At the regional level support mechanisms have been created as well, for example, the Mekong Committee, the Water Office of the Southern Africa Development Community, the Organization for the Management of the Senegal River Basin and the most recently created Nile Basin Cooperative Framework.

It is clear that an impressive array of instruments and mechanisms has been created in recent years in support of sustainable water resources development. Let's focus on how the concept of capacity building and its modus operandi are applied at the field level.

For capacity building to be truly effective all the stakeholders need to be involved in the planning and implementation of programs. Stakeholders include central government ministries ranging from water resources to agriculture to health and others; municipalities; regional and local authorities including river basin commissions; communities; the private sector; professional associations; universities; nongovernmental organizations; and external support agencies.

Experience has shown that capacity building can be initiated or strengthened by undertaking a water sector assessment, a process led by the government and implemented by a team of national specialists complemented as necessary by external expertise. The water sector assessment addresses:

- Social and economic development objectives
- Water resources availability and requirements
- Facilities available for water supply and sanitation and agricultural irrigation as well as other water related activities
- Policy, legal and regulatory tools
- Institutional resources at national, regional and community levels
- Human resources and facilities for their development
- The financial situation with regard to capital and operations and maintenance requirements including the potential for pricing and cost recovery
- Identification of prospective external support agencies interested in providing technical and financial support
- Outline of a short term strategy (three to five years) and long term outlook (fifteen to twenty years)

Transboundary river basins represent a challenge with regard to integrated water resources management. It is felt that river basin management can be greatly facilitated when adjacent countries have first carried out their own water sector assessments.

What are the outputs of a water sector assessment? In the short term they are the initiation of a process of capacity building; a nucleus of committed and

trained officials and specialists, and a water sector assessment report including a short and a long term strategy. In the longer term the outputs are improved inter- and intra-sectoral collaboration; improved coordination among national agencies and ESAs, and development strategies and programmes incorporating capacity building activities.

Let me illustrate what the capacity building process has brought about in a number of countries. In Bolivia the river basin approach has been adopted together with a decentralization process for which special efforts are required to develop the human resources for implementation.

In Mexico, the fiscal framework will be adjusted with regard to water levies, and changes are considered in the organizational structure of the National Water Commission. In Peru the water law will be reformulated including regulations and incentives to allow decentralization and private sector participation, a river basin approach will be adopted, and programmes will be initiated for training and information management, awareness raising and education.

In Ghana, a consortium of the World Bank, UNDP and several bilateral agencies is currently supporting the preparation of a national policy based on a water sector assessment with a special focus on regulatory issues, economics, financing, institutional and human resources development, and information management.

In Mali, the results of the water sector assessment will be reviewed shortly by the government. Main issues include the mandate of a water authority, the harmonization of various acts and laws defining the ownership of the natural resources, i.e., land tenure and water legislation, coordinating mechanism between the major institutions in the water sector and human resources development at all levels to support the decentralization process and information management.

In Yemen, a number of ESAs including UNDP, the World Bank and the Netherlands have joined forces with the government in the establishment of a national water resources authority.

One issue that has emerged in recent years is access to local finance from development or commercial banks. Given the limitation of current flows of official development assistance and private sector funding (which primarily focuses on large scale investments for urban utilities) these banks should offer great potential to increase the flow of resources to rural and periurban communities which are prepared to pay for water services but which do not have the conventional collateral. Instead, these communities have what may be called "social collateral" because of the way they are organized for the collection of fees, and for operations and maintenance. Support from NGOs may be needed to assist the community in administrative and technical matters to enhance their creditworthiness. To make this work credit guarantee mechanisms are being considered to pay local banks in case of a default. Increasingly it is understood that water is not only a social but also an economic good. Indeed, community water supplies are often used both for

household use (e.g. drinking, cooking, bathing) and for income-generation (e.g. small-scale food production and small enterprises).

The lessons learned over the past years may be summarized as follows:

- Capacity building is both a concept and a process leading to specific products.
- Sustainability of investment projects in the sector is a direct function of the capacities of the individuals and the institutions.
- Policies, laws and regulations need to be changed in order to create an environment conducive to water resources management and the provision of water services in a sustainable manner. For this change process to be successful the principal stakeholders need to be consulted, ranging from government ministers, provincial authorities and city mayors to industries, farmer associations, and village well caretakers.
- Institutions need to be reformed in order to deal effectively with decentralization of functions and contracting with private sector entrepreneurs. This process can be described as a transformation of the role of government from "provider" of services to "enabler".
- The river basin is the unit of choice for planning and implementing water management activities involving all the stakeholders who have a direct interest in having sufficient quantities of water of good quality for their social and economic well being. It is at the basin level that hard choices need to be negotiated in order to accommodate competing interests such as between fast growing cities and agriculture. For transboundary river basin management, countries will be in a good position to undertake negotiations provided they have sufficient information as well as a long term strategy for the future. For this purpose, they can undertake water sector assessments which would give them the necessary information and policies which could be used when negotiating with their neighbors. Thus they would level the playing field allowing them to arrive at solutions of mutual interest. It is vital that negotiations are carried out in a participatory and transparent process involving all the stakeholders.
- Collecting and sharing information are fundamental in planning and negotiation processes. Awareness raising among the general public as well as at the highest levels of decision making requires active communication systems.
- Pollution of surface and underground water needs to be tackled through numerous approaches including legislation, fiscal and economic incentives, reduction of pollution at the source (limiting the use of fertilizers, pesticides, industrial chemicals and effluents), reuse of water (circular instead of linear approach) and awareness-raising.

Since capacity building is a long term step-by-step process and constitutes the very basis of sustainable development, governments and ESAs, would be well advised to design and implement programmes with a sufficiently long time horizon. Such approach could be enhanced if lending and budget policies are adapted to this end and, perhaps most importantly, their staffs are mobilized and rewarded accordingly.

The challenges ahead are manifold. Some of the most pressing issues can be summarized as follows:

- Water resources need to be managed in river basins and in coastal areas. For instance, it is clear that the negative consequences of land-based pollution need must mitigated not only along river banks but also in coastal areas, for the benefit of human settlements, tourism and fisheries. Capacities need to be built or strengthened for people and institutions to deal with the complex social, economic and environmental issues and interests.
- Human resources development remains a difficult and complex issue. Among the measures to be considered are the inclusion of contemporary notions and experiences in water resources management and capacity building in the curricula of education and training courses; distance learning programmes to reach more students and practitioners as compared with traditional courses; rewards for outstanding performance of staff.
- Leveling the playing field for negotiations on water allocation and pollution control between countries, states or other entities. Techniques for the prevention and resolution of conflicts between stakeholders.
- Financial and decision making autonomy of public sector water and sewerage utilities. Contracting with the private sector.
- Financing of water supply and sanitation. If the vast number of people without access to safe water (1.4 billion) and adequate sanitation (close to 3 billion) is to be reduced additional resources are to be found in national commercial, community or development banks, other sources of credit and private entrepreneurs. Policies, legal and institutional frameworks conducive to such new sources of funding would need to be developed for this purpose. Measures to be considered could include the use of loan guarantees, issuance of bonds, tax write-offs for banks, debt conversion or swaps, creation of water and sanitation banks. As stated above a critical factor is to see water as a social good and a economic commodity if it is to be considered "bankable".
- The creation of a network for capacity builders which would not only allow the sharing of information and expertise but also become proactive in synthesizing experience and lessons learned, identify research areas and encourage "virtual exchange of views".

The past years have witnessed many promising initiatives. Let us analyze and build on them thus allowing us to shift capacity building into a higher gear for the sake of making development truly sustainable.

CONCLUSION

Domnique Lorrain

Les leçons de l'expérience

Plusieurs idées éclairent en arrière plan les chapitres de ce livre. La croissance urbaine et les problèmes d'environnement posent des problèmes nouveaux dans l'histoire urbaine et ont pour conséquence l'engagement de grandes entreprises. L'entrée de la grande entreprise dans l'univers "local" du gouvernement des villes crée une situation totalement inédite. Une asymétrie que nous pensons structurelle existe entre elles et les pouvoirs publics locaux. Comment faire alors pour organiser ces marchés dans des conditions satisfaisantes pour la puissance publique, les usagers et les entreprises ?

La réponse principale nous vient de l'économie dans ses derniers développements élaborés principalement à partir de la régulation des télécommunications et de l'électricité – théories des équilibres imparfaits, économie des contrats, (voir les références à la fin de l'introduction). L'usage de contrats incitatifs, la séparation entre infrastructure en monopole et services ouverts à la concurrence, la théorie du principal agent, le passage de rémunérations de type "cost plus" à des formules "price cap" sont autant de progrès qui ont amélioré la manière d'organiser les marchés d'infrastructure. Ces solutions constituent-elles une réponse appropriée au problème des réseaux techniques urbains ? pour partie seulement.

Partons des textes de ce livre. Sans le dire ils tracent les contours d'une manière de formuler la question. Tous ont parlé de la géogra-

phie, des conditions économiques ; ils ont éprouvé le besoin de brosser le contexte historique ; certains ont décrit le réseau technique - longueur, ancienneté, état -. Le message est clair ; la socio-économie des réseaux techniques urbains ne peut se débarrasser du temps long de l'histoire, des contraintes techniques et géographiques, des modes de vie et de la politique. Autrement dit, l'analyse des réseaux techniques urbains n'est pas réductible à quelques indicateurs financiers. La solution ne viendra pas de l'application d'une "formule mathématique" unique qui réglerait les relations entre la puissance publique et les opérateurs. Cette manière de poser le problème nous invite à positionner les réseaux techniques urbains à l'intersection de trois grands corpus théoriques : la nouvelle économie institutionnelle (*constitutional economics*) et l'économie des contrats car il s'agit d'examiner "le choix des contraintes" avant de se pencher sur les "choix dans les contraintes" ; l'économie industrielle pour mettre au point des solutions optimales d'un point de vue technico-financier ; les sciences politiques et le droit, ce qui nous invite à examiner les fondements des catégories du service public (en France, Duguitt, Aurioux) et à relire Rawls et sa "théorie de la justice".

A partir de là plusieurs leçons ressortent d'une lecture des différents chapitres. S'impose d'abord *le facteur temps* bien mis en évidence par les villes françaises. Le problème de la gestion du temps long - inhérent à ce type de réseau - constitue une limite de l'économie des contrats. Les exemples que nous avons traités montrent que pour des durées de plusieurs décennies la force prédictive des contractants se réduit et les contrats fonctionnent comme des processus d'apprentissage pour la puissance publique et pour les entreprises.

Ressort ensuite *la dimension politique*. Elle peut être gommée dans le cas de l'électricité et des télécommunications ; l'exercice devient plus difficile pour les réseaux techniques urbains, trop proches de l'organisation physique des villes, de leur gouvernement et des questions de justice et d'équité. Aussi le cadre d'action doit englober dès l'entrée la figure du politique qui introduit la notion de *rationalité limitée*, résultat classique de la sociologie des organisations et construit en réaction à la toute puissance de l'acteur rationnel "homo economicus". Les exemples de différents pays étrangers viennent conforter cette dimension que montrent aussi les villes françaises.

Ces deux dimensions - temps long et rationalité limitée - se conjuguent alors pour faire du contrat non un moment ultime mais une étape qui stabilise une relation à un moment donné et qui doit pouvoir évoluer.

Un autre grand résultat renvoie au comment des choses. Comment faire pour obtenir une relation stable et équitable entre puissance publique et entreprise privée ? La prise en compte de différents cas dans leur très grande diversité fait ressortir deux notions – les conditions préalables à l'action et le mode de réglage du système, avant le contrat ? ou pendant l'action ? Leur combinaison trace alors un panorama de situations qui vont des plus satisfaisantes aux plus difficiles. A un extrême nous trouvons le cas de Sydney qui réunit de bonnes conditions préalables et une préparation de qualité avant le contrat. A l'autre extrême, c'est l'exemple de Caracas, ou celui des villes françaises au commencement de l'histoire des réseaux techniques urbains, à la fin du XIX^e siècle, lorsque les conditions préalables restaient insuffisantes.

Comment faire dans ces cas limites ? Si les conditions préalables sont nécessaires pour que l'action collective puisse se nouer, comment commencer l'action tant que ce qui est préalable fait défaut ?

Bref, pour sortir de l'impasse et parce qu'il n'est pas possible d'attendre, les acteurs se lancent dans l'action dans des situations imparfaites. Les exemples traités nourrissent cette vision de l'action collective. La construction d'un cadre d'action passe par des phases préliminaires, par des stabilisations limitées, avec des expériences qui marchent plus ou moins bien, des accords partiels, des tentatives qui sont parfois des anticipations. L'action peut se faire dans la précipitation, sans mise à plat rationnelle et elle peut être critiquée, mais c'est le détour nécessaire pour que les acteurs fassent les premiers apprentissages. Cette manière de décrire les situations entraîne des stratégies d'action variables selon les cas de figure.

1. La gestion du temps long

A parcourir les chapitres consacrés aux cas français le premier fait qui s'impose avec force est la durée de la relation entre la grande entreprise et les villes : près de cent cinquante ans à Lyon, quatre-vingt-douze ans à Bordeaux. Sur quoi repose cette exceptionnelle durée ? A l'évidence sur les stratégies des entreprises qui s'implantent dans une commune, s'efforcent de conserver la confiance des élus locaux, des fonctionnaires et de satisfaire les consommateurs. A partir de là elles agrandissent leur pré-carré. A Lyon, la Compagnie Générale des Eaux part de la commune centre mais à l'époque les relations sont difficiles ; elle s'implante alors dans la périphérie ce qui lui permet de rester ensuite dans cette agglomération lorsqu'elle perd la commune centre en 1900. Finalement elle y revient quatre vingt six ans plus tard comme opérateur de toute l'agglomération.

Démarche inverse à Bordeaux, où la Lyonnaise débute modestement par la banlieue en 1903, pour intervenir plus tard dans la commune centre. Fondamentalement cette durée tient à la mise au point d'un cadre d'action assez précis pour agir et assez souple pour gérer le temps long.

Le facteur temps. La mise au point de solutions couvrant l'ensemble d'une unité urbaine ne s'est pas faite en une fois. Il a fallu du temps, de 1928 à 1949, pour transformer les contrats passés avec chaque commune de la banlieue lyonnaise en un contrat commun à toutes les communes réunies en un syndicat. Du temps pour que s'estompent les passions politiques autour de l'opposition entre gestion publique et gestion privée comme ce fut le cas à Lyon. Du temps pour que se réduisent les oppositions entre la ville centre et les communes de banlieue. A Bordeaux, la Lyonnaise commence en 1903 par une concession avec deux communes de banlieue ; complétée entre 1925 et 1933 par d'autres exploitations toujours en banlieue. En 1949 elle intervient sur toute l'agglomération mais cette fois dans une formule de régie intéressée pour finalement se voir accorder en 1992 une concession pour l'eau et l'assainissement d'une grande partie de l'agglomération.

On retiendra de l'exemple de ces deux villes la gradualité des systèmes institutionnels qui permet de s'adapter à ce que souhaitent les élus.

Souplesse ou flou des conceptions ? Il est clair que pendant longtemps les élus ont signé des contrats insuffisamment préparés – du moins par rapport aux références actuelles – ; contrat de quatre-vingt dix neuf ans, non révocable avant trente ans, signé en 1853 par la ville de Lyon ; contrats séparés signés par les communes de banlieue sans aucune coordination entre elles ; il faudra vingt ans pour les harmoniser. On pourrait dire rétrospectivement que les collectivités locales ont pris des risques. Pourtant avec le temps des solutions satisfaisantes ont été trouvées.

A Bordeaux, on pourrait tout autant dire que les relations n'ont pas toujours été optimales. La régie intéressée et son mode de rémunération de type "cost plus" procurait une position confortable à l'entreprise du point de vue financier, même si elle la plaçait dans une position inconfortable du point de vue de la politique industrielle. En 1990, le nouveau contrat de concession a été élaboré très rapidement, certains diront trop. Pourtant ça marche ; le système s'équilibre. Les acteurs redéfinissent le cadre d'action, complètent les points laissés en suspens.

Les contrats comme un processus d'apprentissage. Il faut voir dans ces résultats une propriété très importante. Ces contrats de long terme, dédiés à la résolution de problèmes pratiques fonctionnent aussi comme des processus d'apprentissage pour les collectivités locales et les entreprises. Les deux parties parent avec un "cadre mou", des objectifs limités et agissent sous une double contrainte de résultat et de rentabilité. Ce faisant, elles construisent leur cadre d'action ce qui se marque par la révision partielle des contrats et par la signature d'avenants ; "Le traité de 1970, signé à Lyon, a connu en moyenne un avenant tous les deux ans et demi". Cette construction peut prendre du temps.

Le système est aussi interactif. L'entreprise fait des propositions aux collectivités locales mais inversement elle évolue en fonction de leurs demandes. La qualité du cadre d'action explique en partie le comportement de l'entreprise. Par exemple à Lyon, la CGEva évoluait lorsque les communes de banlieue se regroupent en 1928 dans un syndicat unique et expriment des demandes plus claires, elle va adapter son comportement aux attentes de son partenaire. Encore aujourd'hui la qualité des demandes du pôle public local - les élus et les fonctionnaires municipaux - joue un rôle structurant de l'action de l'entreprise.

De cela on retiendra i) dans un jeu interactif la définition claire des règles du jeu par la puissance publique tire le niveau vers le haut, ii) mais puisque tout n'est pas prévisible il faut conserver une flexibilité, permettre aux acteurs d'adapter les règles en fonction des résultats observés.

La coopération par la technique. Le secteur de l'eau a été un terrain où se sont mises en place les premières coopérations communales. C'est à cette occasion que les élus locaux ont appris à travailler ensemble et à un niveau qui dépasse les intérêts immédiats de leur commune. Comme le montre l'exemple de l'intercommunalité à Bordeaux l'application d'un tarif unique a fonctionné comme un mécanisme de péréquation entre les communes riches et pauvres, ville centre et périphérie ; la tarification sur le centre a permis d'équiper la banlieue et par la même son développement urbain. En acceptant un tel mécanisme les élus des communes reconnaissent un principe supérieur d'agglomération.

Les réseaux techniques urbains ont été pour les élus français un lieu d'apprentissage à la gestion. Ils se sont ouverts à d'autres méthodes ; ils y ont appris à combiner l'efficacité technique et des principes de justice sociale par l'intermédiaire du tarif, à travailler dans un territoire étendu, à intégrer la gestion quotidienne et le

temps long des grands programmes d'investissement. Cette évolution a été très importante pour le gouvernement des villes et aussi pour les politiques des entreprises. L'apaisement des passions politiques, la reconnaissance des raisonnements économiques par les élus sont autant de facteurs qui permettent le développement des entreprises ; l'inverse les bloque dans des solutions non optimales.

On peut aussi retenir que l'introduction d'opérateurs privés dans des secteurs largement dominés par des acteurs publics en position de monopole territorial a créé une compétition. L'existence d'un pôle privé performant a constitué un aiguillon pour réformer la fonction municipale.

On retiendra l'idée de deux vecteurs de modernisation de la gestion locale i) le transfert du savoir-faire des entreprises de service en direction des élus, ii) l'introduction d'un principe de compétition avec le pôle public.

Deux manières d'organiser le transfert du savoir-faire. L'histoire de la gestion déléguée de l'eau fait ressortir plusieurs manières d'organiser le contrôle de la puissance publique sur l'entreprise délégataire. A Nîmes de 1969 à 1983, les élus se sont fortement impliqués dans la gestion du service d'eau, sans doute plus que le prévoyait la lettre d'un contrat d'affermage. Entreprise et représentants de la ville se rencontraient sur une base régulière. A partir de 1983, la nouvelle équipe municipale applique des méthodes de gestion des entreprises - la direction par objectifs -. Principal avantage, une clarification entre celui qui décide - l'autorité publique - et celui qui exploite. Autre avantage un gain de temps pour chaque partie, par économie de réunions. Cependant, avec le recul du temps l'usage de ces méthodes de gestion appliquées à la gestion des villes peut poser questions.

En quoi les protocoles de contrôle facilitent le transfert du savoir-faire des entreprises vers les élus ? On retrouve la question des apprentissages qui se pose avec force dans les pays émergents. L'exemple de Nîmes tend à montrer que les processus informels qui impliquent fortement les élus présentent l'avantage d'être des processus riches en informations transmises ; tandis que les procédures de contrôle de gestion, dérivés du contrôle des entreprises, entretiennent une séparation entre les deux univers, fonctionnent sur des informations très limitées et ne marchent bien que si les deux partenaires ont le même niveau.

Rationalité limitée et dimension politique

Une grande partie de la théorie économique de la régulation des marchés de monopoles pour les activités en réseaux a été élaborée à partir des secteurs de l'électricité et des télécommunications. L'organisation de ces secteurs, tant en France que dans les autres pays, s'y fait largement sans intervention des autorités politiques locales, de sorte que le débat concerne le comportement des entreprises, la rationalité des ingénieurs et le comportement des consommateurs. Avec les réseaux techniques urbains et l'eau en particulier, c'est la figure de l'élu. Ceci est particulièrement vrai dans le cas français qui fait de l'élu local l'autorité responsable ; dans les autres pays, même si le cadre juridique est différent on ne peut l'exclure tant certaines décisions ont une dimension politique – les tarifs, la gestion des impayés –, ou concernent directement la gestion urbaine – la mise en œuvre des travaux. Cette figure de l'élu introduit dans les modèles une autre dimension de la rationalité.

Le cycle de l'eau est un cycle complexe pour des usages diversifiés à des niveaux territoriaux différents. Si bien qu'une gestion rationnelle de la ressource nécessite plusieurs acteurs et la coopération de plusieurs niveaux territoriaux – collectivités locales, bassin de l'exploitation, bassin naturel pour gérer la ressource, État qui harmonise. La mise en cohérence de ces intérêts différents ne se fait pas seulement se faire par des institutions techniques. On ne peut résumer le moment politique, l'affirmation d'intérêts antagoniques.

Lorsque la Communauté Urbaine a été créée en 1968, à Bordeaux, l'eau et l'assainissement relevait de ses compétences obligatoires. Pourtant quelques communes ont préféré garder leur indépendance, tandis que des syndicats de communes ne faisant pas partie de la Communauté Urbaine se sont joint à elle pour l'eau et l'assainissement. De même à Lyon, lorsque des communes créent un premier syndicat pour la distribution d'eau en 1928, toutes les communes de bassin ne s'y adhèrent pas. Il faut attendre la création de la Communauté Urbaine pour que les limites de l'intercommunalité se rapprochent du périmètre urbain. Il en résulte une nécessaire complexité des structures institutionnelles. On peut parfois s'interroger sur le sens de ces systèmes complexes et se dire que tout serait plus simple avec une intercommunalité large et obligatoire, voire une institution unique ; peut-être.

Il reste cette observation de longue période : les systèmes institutionnels collectifs ne font que refléter les mœurs, les habitudes à un moment donné. Ce sont des construits contingents liés d'abord à la résolution de problèmes et non à l'illustration d'un dogme. Mieux vaut des dispositifs souples et adaptables dans le temps que rigides.

— *La rationalité politique des processus de prise de décision.* La décision ne relève pas seulement d'une logique rationnelle. La dimension politique entre en ligne de compte. En 1969, les élus de Nîmes choisissent la solution proposée par la SAUR sans doute parce qu'elle leur permettait de faire l'économie d'un investissement coûteux — une nouvelle conduite d'aménée d'eau —, que les électeurs/contribuables ne percevaient pas comme prioritaire. Pendant vingt ans ils repoussent la décision de remplacer cette canalisation datant de 1904. Pendant plus de trente ans, de 1930 à 1963, la régie municipale de Lyon qui avait remplacé la CGE ne va pas faire d'investissements importants ; les habitants et les élus vivaient sur l'acquis des programmes des années vingt ; de nouvelles dépenses ne leur semblaient pas prioritaires.

Les décisions se prennent sous une double condition de nécessité technique et d'acceptabilité politique.

L'appréhension différente du temps selon les acteurs. La mise en œuvre des programmes ne s'accomplit pas de façon linéaire. Ressortent deux temporalités.

— La longue durée des programmes d'équipement qui dépasse souvent les durées prévues, tout simplement car les recettes sont moins importantes que prévues, car de nouveaux besoins surgissent et la réalisation de grands systèmes techniques reste en définitive une opération complexe.

— Le temps à court terme des hommes politiques, scandé par des élections et des crises. Les décisions sont souvent prises dans l'urgence, hier à Lyon, à Bordeaux, aujourd'hui à Gdansk, à Caracas, en Indonésie.

Cette observation a un résultat pratique. Si la juxtaposition du temps court et du temps long découle des mécanismes de décision dans les démocraties alors il est sans doute utopique d'imaginer qu'un processus rationnel de préparation puisse venir à bout de tous les imprévus. Les cas présentés montrent que la mise au point du contrat n'est qu'un moment dans un processus plus long.

Du rôle des crises pour prendre des décisions et s'engager dans de nouvelles voies. Le mécanisme qui arrache les hommes à la routine semble être un invariant :

— épidémie de choléra à Lyon en 1928 qui conduit les communes de banlieue à créer le syndicat unique qui était en projet depuis quelques années,

— blocage de l'alimentation de l'usine principale de pompage par le gel, en 1963 à Lyon ; la ville découvre les retards pris par son ser-

vice ; elle se lance alors dans un programme d'investissements très ambitieux qui ne sera achevé que trente ans plus tard.

– inondations à Bordeaux (1982) et Nîmes (1988) qui débloquent d'importants programmes d'investissements pour l'évacuation des eaux pluviales.

- crise du modèle public à Caracas et Buenos-Aires,
- crise de tout un système à Gdansk,
- problèmes multiples, retards et sous investissement à Macao.

Ces exemples montrent un décalage entre le contexte de la prise de décision marqué par l'urgence, le drame et parfois les passions et les recommandations des consultants qui imaginent un processus rationnel, où tout serait mis à plat, comparé et évalué. Si la "crise", l'imprévu, fait partie intégrante du processus, alors ce qui se passe après la prise de décision a de l'importance. Autrement dit, il faut tenir un équilibre entre la qualité des procédures de préparation et les mécanismes d'autocorrection. Le bon équilibre dans la réforme doit accorder autant d'importance à la préparation qu'au suivi en temps réel.

3. Les apports de la grande entreprise

Deux ans après l'entrée en fonction de Aguas de Argentinas, des résultats tangibles peuvent être enregistrés ; 530 000 habitants supplémentaires reçoivent l'eau à domicile, 300 000 de plus sont raccordés au réseau d'assainissement ; le service a été amélioré pour tous les usagers ; 250 millions de dollars ont été investis dans le réseau ; l'entreprise dégage des bénéfices grâce à une meilleure gestion commerciale et des gains de productivité ; l'usager a vu son tarif réduit en moyenne de 14 % par rapport au tarif au moment de l'appel d'offre. Ce cas exemplaire par la taille de l'opération montre quels peuvent être les apports d'une grande entreprise spécialisée.

Les mêmes observations peuvent être faites dans les cas de Macao, Gdansk, Sydney. En faisant rapidement des investissements, optimisant la gestion du système technique, en rétablissant la gestion commerciale et plus largement la relation à l'usager, l'arrivée de ces entreprises permet d'obtenir dans des délais rapides des améliorations substantielles pour le consommateur.

Ce faisant on ne fait que vérifier des propriétés économiques. En passant d'un état de bien naturel à celui de bien industriel, le secteur de l'eau se trouve soumis aux mêmes règles d'économie que d'autres secteurs. La question stratégique qui se trouve alors posée est de savoir à quelles conditions des gains de productivité peuvent être obtenus. On retrouve le débat sur les modes d'organisation des mar-

chés - marché atomistique d'entreprises moyennes en compétition, ou marché de monopole pour de grandes entreprises ? La question mériterait d'être creusée d'un strict point de vue économique à partir de l'observation de situations contrastées.

Un acteur pour le changement. Plusieurs exemples, l'eau en milieu rural au Mali, l'Italie, ou Caracas nous rappellent l'évidence de Schumpeter : il ne peut y avoir d'économie de marché, sans entreprise et sans entrepreneur. L'importance des hommes et de leur implication directe est un des enseignements de l'hydraulique rurale au Mali. Cet exemple montre clairement qu'il faut un "acteur-actif" qui se mobilise, assure la continuité, répare le matériel et fasse payer le juste prix car la gratuité crée le gaspillage. Le blocage italien peut se lire à partir de cette entrée. Les gros bataillons se trouvent manifestement du côté des villes mais les réformateurs ont opté depuis assez longtemps déjà pour un transfert des responsabilités au niveau des régions. Le cadre juridique existe mais il est partiellement élaboré. Les régions devraient organiser, mais les exploitations resteront dans les villes.

L'approche service, écouter les élus. Un facteur du succès de ces entreprises vient de leur capacité à répondre aux attentes des élus. Plusieurs cas présentés l'illustrent parfaitement.

En 1969, les élus communistes de Nîmes qui délèguent leur service d'eau veulent que l'entreprise fasse des investissements, qu'elle reprenne les équipements existants et les exploite, ce qui situe normalement le contrat entre la concession et l'affermage ; mais ils veulent aussi être étroitement associés à la gestion. L'entreprise s'adapte ; elle crée une filiale ad-hoc ; elle adopte un type de fonctionnement très proche de la gérance.

A Bordeaux de 1949 à 1992, l'exploitant intervenait selon une formule de régie intéressée et pourtant à plusieurs reprises il a participé à certains investissements, sans doute pour compenser certaines restrictions des finances publiques.

Cela signifie que les entreprises s'adaptent aux demandes des autorités organisatrices et que la formule contractuelle adoptée n'enferme jamais les comportements.

L'approche service, former le personnel, éduquer le consommateur. C'est un facteur qui distingue une approche service d'une approche travaux. Pour une société d'exploitation de services urbains, la qualité des hommes, leur technicité, leur motivation sont des facteurs très importants. Cet aspect est particulièrement visible dans les interven-

sions hors de France. A Macao, Gdansk, Buenos-Aires, la Côte d'Ivoire ou la Guinée les exploitants ont mené des politiques de formation, ils ont transféré du savoir-faire. A terme, ils fonctionnent avec du personnel local qui peut participer aux autres politiques d'expansion du groupe. D'où l'attention particulière qui est accordée au personnel par ces exploitants dès qu'ils reprennent un réseau.

A plusieurs reprises - Gdansk, Côte-d'Ivoire, Guinée -, ils sont également penchés sur le comportement du consommateur pour éviter le gaspillage, expliquer le tarif.

4. De l'importance des conditions préalables

Pour qu'une relation puisse se nouer il faut d'abord que des conditions préalables à l'action soient réunies : une autorité responsable, un marché financier, des règles de droit, des standards, des normes, une procédure de révision des tarifs etc. Tout ceci tend à disparaître de l'horizon des acteurs quand ces conditions sont bonnes mais revient au premier plan lorsqu'elles sont insuffisantes.

Aujourd'hui un grand nombre de pays veulent s'engager dans des réformes mais ils ne savent pas exactement ce qu'ils veulent. Leurs références proviennent des relations entre leurs ministères et les grandes entreprises publiques du secteur de l'énergie ou des télécommunications. L'expérience locale y est souvent absente. La référence pour d'autres est encore plus grande. Ils viennent d'un système centralisé qui laisse peu de place au marché et la tendance actuelle invite à s'engager vers une économie de marché dans un environnement institutionnel décentralisé.

L'exemple de Caracas montre bien l'importance de ce contexte et l'ampleur des difficultés. Au départ il y a crise de confiance et un modèle public dont on vient mais en même temps non stabilisé des règles du jeu :

- incertitude sur le financement du service et sur la politique à suivre ; on voit bien que c'est un problème politique car il s'agit de changer en profondeur les habitudes - on passe de 1 bolivar à environ 36 Bolivar/m³.

- absence de choix sur la régulation globale du service : normes, principes tarifaires.

- incertitude sur le niveau d'organisation du réseau : cela concerne la Nation toute entière comme par le passé ou niveau municipal.

- manque de clarification pour le partage des responsabilités : l'autorité responsable et l'entreprise ; de ce fait le travail de l'entreprise se trouve subordonné au rythme à court terme, désorganisé, des élus qui interviennent trop en voulant régler les problèmes.

Trop de questions ne sont pas réglées si bien que les partenaires ne parviennent à s'entendre et cette privatisation annoncée débouche sur un échec. Au-delà de chacune de ces difficultés non résolues qui représentent autant de points de blocage des négociations, l'expérience se heurte à un ensemble de pratiques qui font système. En voulant réformer la distribution d'eau, apparemment technique, les acteurs touchent en fait à une certaine manière d'organiser la redistribution des revenus dans le pays, à un certain équilibre entre la société civile et le politique, à des modes de vie. En définitive, c'est bien sur cette épaisseur des rapports sociaux que vient buter la tentative de Caracas.

Cette résistance de système qui se cristallise autour de la tarification se retrouve en d'autres pays – la Côte-d'Ivoire, la Guinée, le Mali et aussi l'Italie. La "bonne" solution serait de faire payer le prix, afin de réduire les gaspillages et pour dégager des recettes d'exploitation. Mais aucun acteur n'est politiquement assez fort pour imposer ce type de mesure. Il est difficile d'obtenir le paiement du prix du service soit parce que les revenus sont trop faibles, soit que des habitudes de gratuité ont été prises. L'équation italienne nous rappelle cette importance du politique.

Alors comment faire ? comment faire lorsque les droits de propriété ne sont pas établis ? lorsque les conditions financières ne sont pas fixées dans la durée ? lorsque la population tant à la base qu'au sommet considère que l'eau n'a pas à être payée ? lorsque trop peu de gens sont connectés au réseau ?

L'exemple de la Guinée montre qu'il faut savoir gérer le temps long et se ménager des transitions institutionnelles et technologiques.

– *transitions institutionnelles* ; compte tenu des risques potentiels, de la faiblesse des retours sur investissement il n'y aura pas de privatisations des réseaux avec rachat des actifs mais des gestions déléguées – c'est à dire une mise à disposition des équipements par la puissance publique. Un des rôles des institutions sera de changer les habitudes, d'expliquer la double nature de l'eau – élément du service public et bien industriel –, et de donner l'exemple. Il faut prendre le temps de former des décideurs locaux. Des montages financiers peuvent être réalisés pour réduire le coût des factures en imputant une partie des charges sur des financements aidés.

– *transitions technologiques*. Peut-être est-il illusoire de vouloir reproduire partout et maintenant le modèle occidental de l'eau à domicile. Entre l'eau à domicile et les porteurs d'eau, la solution réside dans des réseaux de qualité et des bornes avec un exploitant et vente d'eau, ce que montre le Mali, la Côte d'Ivoire ou la Guinée.

5. Manières d'organiser la coopération

Par leur diversité, les cas présentés nous instruisent sur les manières de parvenir à un partenariat entre la puissance publique et les entreprises. Dès lors que des conditions préalables minimum existent, les acteurs ont le choix entre deux modalités pour mettre au point une relation satisfaisante sur le long terme ; nous parlons de réglage du système. Ils peuvent faire ce réglage *avant* la signature du contrat ce qui nous rattache à plusieurs expériences récentes souvent d'influence anglo-américaine ; ils peuvent partir avec un contrat minimum et régler le système *pendant* l'action et l'on se trouve cette fois dans le pragmatisme à la française tel qu'il a fonctionné pendant longtemps.

Entre ces deux approches, l'opposition n'est pas totale c'est plutôt une question de dosage quant au moment où l'on place l'effort de clarification : avant de s'engager ou au cours de l'action ? Manifestement, au vu des expériences qui donnent des résultats satisfaisants il n'y a pas de voie unique. La gestion des affaires urbaines se trouve trop à l'intersection de la variété des mœurs, des coutumes et des régimes politiques pour que l'on puisse l'organiser à partir d'une seule logique.

TABLEAU 1
Organiser la coopération

Réglage du système	Conditions préalables		
	Bonnes	Minimum	Insuffisantes
Avant	Sydney, Buenos-Aires	Gdansk, Conakry	Indonésie, Caracas 2
Pendant	Lyon 2, Bordeaux, Nîmes, Murcia	Lyon 1, Abidjan	Caracas 1

De bonnes conditions préalables et le réglage avant l'action. L'expérience de Sydney ressort indiscutablement de ce cas de figure. Elle combine à la fois de grandes qualités dans les conditions préalables et un grand professionnalisme dans la conduite du processus qui mène au choix final. Dès le commencement, le Water Board a constitué une « task force » à l'approche très professionnelle. La procédure a été structurée en trois étapes qui permettent efficacement de passer d'un premier stade de formulation d'un intérêt, au stade final de signature des contrats. Les différentes étapes ont permis d'affiner les

projets et de réduire le nombre des compétiteurs de 17, puis 10, puis 7, puis 5 en phase finale avec qui la négociation a été approfondie. Ce résultat s'explique aussi par le temps consacré à ce dossier. La durée du processus dans son ensemble a été de près de deux ans et demi ; la décision de construire quatre usines de traitement des eaux a été prise par le Water Board au début de 1991 et c'est en septembre 1993 qu'était signé le contrat pour l'Prospect, la plus importante des usines.

A Buenos-Aires tous les observateurs s'accordent pour dire que le succès de l'opération doit être imputé au gouvernement qui a su mener un programme global de privatisation pour lequel il n'avait pas d'expérience préalable. Il a été épaulé par des experts commandités par la Banque mondiale et par les équipes des entreprises. La confiance qui entourait ces programmes de privatisation a crédibilisé celle de l'eau auprès de la communauté financière. Autrement dit, la qualité des conditions préalables à l'action a facilité l'opération de délégation du service d'eau. Ensuite, les acteurs se sont donné du temps pour parvenir à un contrat. Les travaux qui ont eu lieu entre la décision de privatisation en 1991 et le choix de l'entreprise concessionnaire à la fin de 1993, ont permis d'élever le niveau de préparation.

Des conditions préalables minimum et le réglage avant l'action. Il s'agit d'un cas de figure où les conditions de mises en œuvre se trouvent plus compliquées par la faiblesse de l'environnement général. Les acteurs se sont donnés le temps pour mettre au point le cadre institutionnel. A Gdansk, il s'agissait de la première expérience de délégation dans un ancien pays du bloc de l'Est. Et même si le processus de préparation a été moins internationalisé que pour Sydney ou Buenos-Aires, il fallut un an pour les négociations directes du contrat et huit mois pour la négociation des statuts de la société. En Guinée la tâche était immense compte tenu des retards, des habitudes prises sous le précédent régime. La Banque mondiale et ses experts ont joué un rôle considérable auprès du gouvernement, dans la gestion de tout le processus et ensuite dans l'accompagnement de l'expérience.

Des conditions préalables minimum et le réglage pendant l'action. L'expérience française nous donne une autre lecture. Au commencement de ces exploitations privées, c'est à dire au début du siècle, les conditions préalables étaient minimum, bien des points restaient inconnus et pourtant le réglage de la relation se fera pendant l'action. On combine l'impréparation des acteurs et des contrats souples. L'apprentissage se fait en marchant avec parfois des diffi-

lés comme le montre l'exemple lyonnais dans le passé (Lyon 1). "Les conditions d'exploitation se révèlent insatisfaisantes pour les deux parties... ; les tarifs pratiqués par la Compagnie sont trop élevés tandis que cette dernière se plaint du gaspillage de la ville pour le lavage des rues". L'insuffisante préparation peut nourrir la méfiance des élus ; toujours dans le cas lyonnais ce sera en 1900 la reprise en régie et la création d'un syndicat des communes de banlieue en 1928, destiné à opposer un front uni à la puissance de l'opérateur privé.

Des conditions préalables satisfaisantes, le réglage pendant l'action. Plus tard dans les cas français une forte qualification des acteurs au plan technique, juridique, financier, l'habitude de travailler ensemble va autoriser la mise en œuvre rapide des contrats. L'action repose sur la confiance. Ce sont les exemples de Lyon en 1986 (Lyon 2), de Bordeaux 1992 et de Macao 1985. Et l'on peut ajouter que les contrats dans les villes françaises relèvent de ce type. Si l'on compare à Sydney ou Buenos-Aires les temps de préparation sont infiniment moindres.

Macao est un cas très intéressant qui fonctionne quelque part avec un schéma à la française : sélection de Sino-french sans véritable mise en concurrence internationale, rapidité de la prise de décision, responsabilité globale de l'exploitant sur la production et sur la distribution. Cet exemple fait la démonstration des avantages d'un cadre d'action souple :

- rapidité de la mise en œuvre du programme d'investissement (les premiers contacts datent de l'été 1984), le contrat a été signé au milieu 1985 et le premier plan quadriennal de travaux a débuté au début de 1986.

- mobilisation des ressources humaines de l'entreprise dès la commencement pour définir des solutions.

De cette classification on retiendra les points suivants :

- Lorsque les conditions préalables font défaut il est peu probable de parvenir à un résultat quelle que soit la démarche adoptée.

Les solutions achoppent toujours sur un point ou un autre.

- Lorsque les conditions préalables sont minimum, les acteurs peuvent s'engager directement mais ils risquent de payer pendant l'action le coût du réglage du système qu'ils auront évité à l'entrée. Mieux vaut donc prendre le temps de la préparation, surtout s'il s'agit d'une "délégation totale"¹. Cependant tout va dépendre de la

1. Sur ces termes de "délégation totale", "délégation limitée" voir le chapitre d'introduction.

nature de la mission ; entre en ligne de compte la gradualité des contrats. Les acteurs peuvent compenser la faible préparation par un contrat de "délégation limitée" – opération & maintenance, marché d'exploitation, contracting-out, régie intéressée, gérance – qui leur donne la possibilité de faire des apprentissages en marchant.

– Lorsque les conditions préalables sont bonnes il est possible d'engager la relation sur une base professionnelle, les chances d'aboutir sont grandes ; la démarche va dépendre des habitudes et surtout de la connaissance que les partenaires ont l'un de l'autre. Un premier choix nécessite un temps de préparation pour parvenir à un bon réglage. L'habitude de travailler ensemble permet de signer rapidement un contrat.

Plusieurs questions demeurent quelle que soit la démarche adoptée.

Quel est le coût d'une préparation soignée ? Assurément il est élevé. L'effort consenti à l'entrée met-il les partenaires à l'abri d'imprévus, voire de crises au cours du contrats ? On comprend bien que la question stratégique est de savoir jusqu'où il faut aller dans un réglage du système avant l'action, étant donné qu'au delà d'une certaine durée les prévisions perdent de leur force prédictive.

Lorsque le temps de préparation est plus bref comme en France, où à Macao quelles sont les garanties accordées à la puissance publique ? Quelles sont les clauses contractuelles qui la protègent en cas de crise grave ?

Reste enfin une question, quel est le coût de l'inaction ? ce qui nous renvoie à Caracas. Si on suit la présentation qui nous est faite, cette expérience est passée par deux stades successifs. D'abord une phase discrète (Caracas 1), pendant laquelle le gouvernement négociait avec l'entreprise locale d'électricité appuyée par des entreprises françaises. Cette phase n'a pas abouti, a été critiquée pour son manque de rigueur et le processus de réforme est alors entré dans une nouvelle phase (Caracas 2), avec des études, un appel d'offre international qui lui non plus n'a pas abouti. La question stratégique qui se pose alors est de savoir s'il n'eût pas mieux valu en définitive que la première négociation aboutisse même si elle était imparfaite. Une fois les acteurs engagés et les problèmes étant là ils auraient dû trouver des compromis et avancer.

6. Où sont les risques et pour qui ?

Le fait qu'une collectivité locale s'engage dans une relation contractuelle de longue période avec une grande entreprise – qui plus est étrangère –, ne manque pas de soulever des interrogations.

La relation entre les deux parties peut-elle être équilibrée et à quelles conditions ? Où se situent les véritables risques ? Examinons plusieurs points.

- Le marché est-il contestable ? Peut-on revenir en arrière ? La crainte exprimée est que l'appauvrissement du savoir-faire dans le pôle public rende impossible toute alternative à l'opérateur privé. La puissance publique a le choix entre deux grandes solutions. Première solution maintenir un marché atomistique ce qui nous rapproche des cas de "délégation limitée" présentés en introduction, puisque le nombre d'entrants potentiels est grand. Mais cette solution ne résout pas le problème posé car elle ne permet pas de bénéficier des avantages économiques de la grande entreprise.

Dans ce cas la solution se trouve en partie au niveau de l'autorité organisatrice par la rédaction des clauses du contrat. Elle n'est certainement pas nous semble-t-il dans le maintien d'un savoir-faire d'exploitation alternatif au niveau local. C'est une solution coûteuse et sans doute illusoire car la posture de conseil de l'autorité organisatrice entraîne avec le temps une autre manière de voir les choses. Pour l'essentiel la contestabilité de ces marchés s'organise au niveau du pays tout entier. L'Etat par sa régulation globale des marchés d'infrastructures doit maintenir une structure d'oligopole compétitif avec différents opérateurs publics et privés. En cas de crise grave un opérateur public d'un autre réseau ou un concurrent direct pourra toujours se substituer à une entreprise défaillante.

- N'y a-t-il pas risque de surprofits de monopole ? C'est l'argument le plus souvent mis en avant, enseigné par la tradition économique, à partir de l'idée de rente de situation. Des mesures empiriques¹ nous amènent à penser que le taux de rentabilité de ces grandes entreprises n'est pas nécessairement élevé car le but de la grande entreprise urbaine n'est pas de maximiser du profit à court terme mais de dégager des cashflow stables en long terme ce qui la conduit à limiter sa profitabilité pour ne pas menacer sa position en long terme, argument de la réputation, et donc toute sa stratégie.

Le problème ne doit pas être posé du côté du profit mais des prix et du consommateur. Le prix payé par le consommateur est-il justifié par le service rendu ? Les investissements engagés sont-ils nécessaires ? Si la puissance publique veut être en mesure de porter un jugement autre que moral sur ce point il lui faut développer un dispositif d'observation, d'où l'importance de la compétition

1. Voir notre article - "L'oligopole compétitif" - in *Annales des Mines*, n° spécial sur les réseaux, Paris octobre 1994.

statistique ; mais ceci doit plus se mettre en œuvre au niveau national qu'à celui d'une ville.

— Les prestations offertes par une grande entreprise intégrée sont-elles toujours rendues au prix du marché ? La puissance publique peut-elle avoir connaissance des péréquations qui sont faites en interne par l'entreprise ? Sur ce point des péréquations appliquées par les entreprises il est nécessaire d'afficher clairement la structure de marché que l'on veut atteindre et ceci fait indiscutablement partie de la régulation globale de ces marchés : "délégation limitée" et marchés concurrentiels pour toutes les prestations attenantes — travaux, services —, ou "délégation globale" à une entreprise intégrée ? Chaque architecture a ses avantages et la structure autour de la grande entreprise génère ses facteurs de productivité (voir l'argumentation en introduction). Mais si l'on opte pour le recours à de grandes entreprises intégrées alors l'argument des péréquations n'a plus beaucoup de sens, cela devient un choix interne de l'entreprise concernant ses modes d'organisation. La puissance publique doit juger les résultats et l'on revient à la question des dispositifs d'observation.

— Le risque de proximité. La grande entreprise peut tout faire dans le marché des infrastructures urbaines. Elle est en permanence en recherche de croissance, elle est à l'écoute des marchés et au contact des élus. Sa dynamique interne la conduit à se développer. L'histoire française des années soixante-dix et quatre-vingt illustre ce type de développement par proximité, par connexité avec des risques de confusion. Mais ce n'est pas une loi d'airain. L'action est interactive. Les entreprises s'adaptent aux règles définies par la puissance publique. C'est aux acteurs publics de savoir que la signature des contrats n'est qu'une étape dans une dynamique plus large. Ils doivent observer les marchés, être informés des politiques d'entreprises et réagir par la régulation lorsqu'ils pensent que certaines limites se trouvent franchies. Comme dans toute action des risques existent et ils sont partagés. Par exemple, pour l'entreprise qui travaille sur un cycle de longue période le risque est que des changements politiques remettent en cause le contrat au moment de son équilibre.

*
* *

Autrement dit, l'action collective est totalement interactive. La qualité des résultats dépend largement de l'investissement que chaque partie y aura placé.

ENCADRÉ 1

Les points stratégiques

1. Réunir un minimum de conditions préalables à l'action :

- une légitimité de l'autorité organisatrice,
- une définition du domaine public,
- un système juridique,
- un marché des capitaux,
- une stabilité du cadre d'action.

2. Le réglage du système : avant ou pendant ?

Il faut certainement consacrer du temps à l'analyse des problèmes et à la mise au point du contrat ; c'est la garantie d'une mise en œuvre plus facile. Mais jusqu'où faut-il aller ?

- La reconnaissance d'un "moment" politique dans les affaires urbaines conduit à accepter une marge d'impondérable.
- Les contrats de long terme ne peuvent pas tout prévoir. Les acteurs ne savent pas tout "ex-ante" ; ils découvrent les problèmes en avançant.

Pour résoudre ce problème de la rationalité limitée il faut intégrer les théories de l'action collective et de l'apprentissage. Dans certaines conditions la mise à plat de tous les problèmes complique et cristallise les passions. Dans ce cas mieux vaut structurer l'action autour des problèmes et prévoir la possibilité d'une transformation graduelle du cadre d'action.

3. Pour ce faire les acteurs peuvent utiliser la gradualité des contrats.

4. La nécessité d'avoir une architecture claire.

Certes le système est nécessairement complexe et implique toujours différents niveaux institutionnels mais il faut un pilote dans le navire.

Notre préférence va indiscutablement vers des autorités politiques locales, légitimes par l'élection et connaissant les problèmes en raison de leur proximité. Si les affaires de réseaux techniques urbains ont une dimension politique alors le politique doit être englobé dans le cadre d'action.

Ces autorités seront épaulées par une instance de régulation, de niveau national qui fonctionne autant en organe de régulation qu'en centre de ressources.

5. Il faut respecter quelques principes simples.

- une autonomie organisationnelle des exploitants,
- une mesure des consommations,
- un équilibre financier.

Si les revenus des populations ne permettent pas de payer le coût au moins les subventions d'équilibre seront calculées en toute connaissance de cause.

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Didier RÉTALI, Ingénieur en Chef des Mines, a tout d'abord occupé plusieurs postes de responsabilité dans le domaine de la protection de l'environnement, du développement économique et de l'énergie au sein du Ministère de l'Industrie. Il a, en 1989, rejoint le groupe Lyonnaise des Eaux où il a été successivement responsable des projets à la Direction parisienne Sud, Administrateur Délégué de la SAAM (1991-94), Directeur pour la Chine, Hong-Kong et Macao (1993-94). Il est depuis 1995, Directeur des Projets Internationaux à la Direction Internationale de l'Eau.

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Experiences from a TWINNING AGREEMENT

MAIN OBJECTIVES:

- * Develop the Company**
- * Implement the Project**
- * Create a Commercial Service**

Experiences from a
TWINNING AGREEMENT

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KAUNAS WATER - STOCKHOLM WATER 1996-09-03

- The twinning between Stockholm and Kaunas was started more than two years ago
- The main objectives are to
- Our collaboration has been divided into two phases according to the wishes of our financiers:
 - a project preparation phase, and
 - a project execution phase.

We are now in the second phase since one year.

- Our financiers are:
 - * Sida
 - * EBRD
 - * NEFCO
 - * EU-PHARE
 - * Finnish MoEnvironment
 - * Own Government and Municipality
 - * Our tariff revenue

PROJECT PREPARATION Twinning Phase I

- Facts-finding & Investigation
- Priority Investment Programme
- Procurement Plan & Work Plan
- ~~Project Presentations~~
- ~~Loan & Subsidy Agreements~~
- ~~Financial, Technical & Managerial Assistance~~
- Know-how Transfer

KAUNAS WATER - STOCKHOLM WATER 1996-09-03

2

- Long period of facts-finding, investigation and feasibility studies before getting the money for improvement
- Difficult to set priorities and match the needs and wishes with money available
- It is a new experience with work planning according to time requirements and not delayed money-flow
- To present the project to Financiers, Government, Municipality, Customers and Media has been very difficult and time consuming
 - specially to make people understand market economy and its terms and expressions
- The Project Agreements are very strong and took time to understand
- A lot of assistance is needed and welcomed
- The training is very important and must be started as early as possible

PROJECT EXECUTION
Twinning Phase II

- Loan Effectiveness
- Financial Strengthening
- Institutional Development Assistance
- Project Implementation - Procurement
- Project Management Assistance - PIU
- Training Programme
- Public Relations Activities

KAUNAS WATER - STOCKHOLM WATER 1996-09-03

3

- Difficult to make loan effective due to political problems - frequent elections:
 - understanding of Project agreements
 - tariff adjustment
 - company charter - ownership influence
- Need of better economy:
 - Reorganise finance department + new finance manager
 - reduce bad debt, O&M-costs and own debt
 - establish reasonable cash-flow projections
- Difficult to make owners understand the transition from state owned entity to join-stock company
- Difficult to establish PIU and learn the requirements of all Financiers.
- 1996-09-03 • Training is important and we want to exchange experience and receive ideas
- It is much more important than foreseeable to create a good company image and explain the project in public

EXPERIENCES

- MANY DECISION MAKERS
- PRIORITY SETTING
- POLITICAL OWNERSHIP
- FINANCIAL MANAGEMENT
- REPORTING
- INTERNATIONAL PROCUREMENT
- THINGS TAKE TIME
- COSTS ARE INCREASING
- THE UNEXPECTED ALWAYS HAPPENS

KUNAS WATER - STOCKHOLM WATER

1996-09-03

4

Our experiences are:

- There are many decision makers involved in the project and it is very time consuming to prepare all information and make all meetings needed. It requires a lot of strategy, planning, negotiation and compromising
- It is difficult to make the right priorities for the project. We need much more money than we can afford in order to bring our company up to the desired standard. A long term investment plan must therefore be established.
- The short election periods (two years) have given us a lot of extra work due to political changes and lack of project support. These problems have delayed the project implementation by nearly one year.
- The transfer from planning economy to market economy has been a long - but very needed - process in our company. Budgeting, cost reductions, revenue improvements and international auditing have been all new and interesting experiences.
- The reporting requirements by the financiers are very time consuming but a good experience in order to control the company development
- International procurement is time consuming and requires a lot of documentation.
- Most things in the project take more time than foreseen and the costs are increasing all the time.
- And we experience a lot of unexpected problems that focus our attention away from the main goals.

SUCCESS FACTORS

- CLOSE RELATIONS BASED ON TRUST AND CONFIDENCE
- WATER COMPANY TO WATER COMPANY
- LONG-TERM COLLABORATION
- KNOW-HOW TRANSFER
- MUTUAL LEARNING PROCESS
- SUPPORT FROM OWNERS & MEDIA

KAUNAS WATER - STOCKHOLM WATER 1996-09-03

5

As twinning partners we have found the following factors to be of great important for our success:

- We must establish very close relations and trust each other
- The direct collaboration between two water companies makes it easy to understand each other and to exchange know-how. It gives a strong platform for development as we "talk the same language" and experience the same type of problems.
- The project investment period and the twinning agreement is for four years only. It is, nevertheless, important to maintain a long-term relationship as the development will have to continue also after that period. A suitable financing for such twinning support - maybe on ad-hoc basis - should be created.
- An adequate know-how transfer by on-the-job-training, study tours, overseas deployment etc..., is the whole essence of the twinning
- The twinning is a mutual learning process, not only technical and administrative but also political and cultural. Both parties will develop into stronger and more modern companies. The twinning process is very fruitful.
- The project cannot be carried out without a strong support from political owners, customers, employees and media - and from the financiers of course! This support cannot be under estimated and must be created at an early stage.

GOVERNMENT

Diff. laws

Water court



COMMUNITIES ASSOCIATION



Cities

municipalities

(STOCKHOLM)



Councils

- industry
- housing
company
- citizens

citizens
customer

information
schools
homes
etc.