# Water Privatisation Revisited

## Panacea or Pancake?

J.J. Hukka (TUT, IEEB) and T.S. Katko (TUT, IEEB)
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IRC International Water and Sanitation Centre
PO Box 2869
2601 CW Delft
The Netherlands
Tel: +31 15 21 929 39
Fax: +31 15 21 909 55
Website: www.irc.nl

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# Executive Summary

In the final decade of the 20th century, water privatisation came to be regarded as virtually the only option for improving the performance of water and sewerage authorities in capital cities of developing countries and the transition economies of Eastern and Central Europe. When the Margaret Thatcher Government privatised the UK water industry in 1989, the international publicity opened a Pandora's box for French and British water giants to "help" national and city governments to seize the anticipated investment and performance benefits of privatisation. As city after city transferred assets and management responsibilities to the European megacorporations, the values of concessions reached dizzying heights – reaching the relatively highest private investments in 1997 but thereafter faced with a declining trend.

With the World Bank and other influential donors pressing the privatisation cause, it was easy for hard-pressed municipal governments to appreciate the benefits that would flow from private sector competition, efficiency, expertise and investment capacity. Sceptics, who wondered why competition, efficiency, expertise and investment capacity were necessarily the prerogative of private monopolies, were drowned out in the rush for the privatisation panacea. Jarmo J. Hukka and Tapio S. Katko, the authors of this report are among those sceptics. As Finns, they have seen at first hand that publicly owned and publicly controlled water and sewerage authorities can deliver effective and efficient services to all sections of the community. The Finnish model includes competition among private sector companies for the provision of goods and services. It also incorporates incentives for improved performance and capacity development, but it does so without handing over assets and responsibilities to companies whose primary driving force is delivering dividends to shareholders.

As experience of privatisation grows, so do the doubts. It is instructive to compare the forecasts and targets of city managers at the start of privatisation with the actual achievements after several years of operation. And, those contemplating new privatisations will do well to reflect on what their negotiating strength will be in a few years time, when the private operator seeks to negotiate away the more burdensome restrictions of the original contract.

Jarmo J. Hukka and Tapio S. Katko decided to study the results of privatisation critically. There is plenty of literature expounding the advantages and benefits of privatisation. This report presents a different perspective. It deliberately looks for problems and disbenefits. The aim is not malicious. It is to ensure that anyone considering the privatisation option is aware of the pitfalls and the alternative publicly driven options.

The main criticism is aimed at full privatisation, in which the assets of a public utility or municipal corporation are sold to the private sector. There are numerous other forms of "Public-Private Partnership" (PPP) to be considered as alternatives to full privatisation, and

several examples are discussed in this report. Another option is “commercialisation”, the term used when a public utility applies commercial principles to its own operations to improve its performance.

The authors put their own opinions on the line from the start. They challenge the logic of privatisation. They are dubious about the sale of public assets and the substitution of a private monopoly for a public one. Their aim is to encourage readers to look beyond the promotional propaganda and consider the realities of handing over management of vital services to commercial companies.

## Characteristics of water and sewerage services

Water supply and sewerage (WSS) are arguably the most vital of all infrastructure services in society. Lack of adequate services is a prime contributor to poverty, ill health and civil discontent in many developing countries and restoring damaged WSS services is usually the first priority after a war or natural disaster. There is consequently an inescapable responsibility on governments to see to it that all their citizens obtain the best WSS services that can be affordably delivered. Government does not have to deliver the services, but it does have a duty to ensure that they are delivered.

Delivering WSS services is a highly capital-intensive business. Reservoirs, pipelines, sewer networks, treatment works, pumping stations and other elements of WSS infrastructure involve huge investments, often extending over decades. Linked to the high capital costs is the high proportion of fixed costs involved in water utility operations. Only a small proportion of costs are related to the volume of water produced or sewage disposed of. Yet the revenue of most utilities depends mainly on the volume of water sold.

By its very nature, providing WSS services is a natural monopoly, linked to ownership of the resources and infrastructure. Whether those assets are publicly or privately owned, the owner is in a monopoly position. Because of this, together with the crucial health, environmental and social implications, strong control and regulation of WSS service delivery is essential. Legislation and standards will normally apply in relation to water quality, effluent discharges, water resources management, environmental protection, regional and land-use planning, and consumer rights. Usually the regulation function is separated from that of delivering WSS services.

These unique characteristics of WSS services are highly relevant to considerations of whether or not a particular country or city’s services should be privatised. In particular, they should bring pause for thought on the issue of competition. Proponents of privatisation argue that there is no competition in the public sector, so prices are unreasonably high because there are no incentives to improve efficiency. This study aims to show that this is a myth and that privatised WSS services actually reduce competition. There may be some notional competition in the bidding for concessions in the first place, but once the winner is chosen, the private monopoly with shareholders to satisfy needs more revenue than the

public one with consumers' interests as its primary driving force. When the objectives have been defined properly, a public monopoly is more efficient than a regulated private monopoly.

## Privatisation market leaders

Probably the most publicised example of WSS privatisation was the one in England and Wales in 1989. A prime argument for that privatisation was that the public sector would be unable to raise the investment finance needed to achieve acceptable environmental standards and meet future water demands. It can be argued that this was a phoney reason. In effect, the Margaret Thatcher government in the UK had imposed very tight restrictions on the regional water authorities (RWAs), preventing them from borrowing for capital projects. This then became the justification for turning the publicly controlled RWAs into private companies and selling the government's ownership interest to shareholders. The results have been a significant rise in water rates, a reduction in the number of staff and in their salaries and benefits, an accompanying rise in the salaries and benefits of the directors, and good returns for shareholders. At the same time, in some cases, there has been a decline in the quality and quantity of drinking water provided and a growth in environmental problems (Martin 1996). These are the companies now winning privatisation concessions in the international markets.

French experience of private sector involvement in WSS goes back much further. Generally nowadays, municipalities compete with private companies for the right to supply WSS services, but most often the municipality retains the responsibility for regulation and for setting charges. The infrastructure also remains in public ownership. The number of people served by private companies has been growing over the years, but the system has not been without its problems, including some high-publicity corruption cases. Competition is also becoming somewhat nominal lately, as three conglomerates dominate the market. These giant companies are also the major players in the global privatisation market. It is interesting that whereas concession contracts in which the private operator takes over the whole operations are quite rare nowadays in France, they are the favoured form of contract when the French conglomerates operate overseas. In France itself, the competition authorities have criticised management practices in both public and private sectors. Problems relate to poor governance, lack of information and competition, excessively long contract periods, and inadequate or non-existent supervision of private companies.

## Alternative models

A primary driving force for the privatisation bandwagon has been the ubiquitous inadequacy of public/municipal bodies to meet user demands sustainably. Public utilities, particularly in developing countries, are underfunded, understaffed and generally badly managed. The result is poor services, dissatisfied customers and demotivated staff. Not surprisingly, the promised benefits of privatisation can look like a key to paradise for beleagured city administrators facing pressure and criticism from all sides. Selling the

assets puts money in the coffers; granting a concession to the private operator takes away the day-to-day management challenges; and the extra efficiencies will mean happier consumers – or will they? Experience suggests that it doesn't always work that way. Some of the deals struck between eastern European cities and transnational operators provide cautionary tales of over-optimistic targets and rising prices. Nor is privatisation the only answer.

Bringing market economics into public services does not necessarily entail giving up ownership of assets or management control. In Finland, and to a large extent in many other developed economies, public-private partnerships have helped both to reduce the expenses of providing WSS services and improve the performance of the public sector agencies that retain overall responsibility for those services. There is a very wide range of public/private combinations that can be evaluated to suit local conditions. Outsourcing of non-core operations to private contractors through competitive bidding is one simple example, and is really just an extension of procurement policy to include the delivery of services as well as supply of materials. Through such arrangements the private sector gets 60 to 80 percent of operating expenditure and nearly 100 percent of capital investment projects. Besides, competition is continuous - not once in 12 to 30 years like in management, lease or concession contracts.

With huge numbers of the world's rural and urban poor still lacking safe water and adequate sanitation facilities, appropriate PPPs are going to be increasingly important in helping to meet global targets of improved coverage. The question remains, what kind of PPPs? Should they be orchestrated by local people and based on participatory processes, or imposed from on high by municipal accountants and turbo-capitalistic international financiers.

In this study, both types have been appraised. What has emerged is that there is a spectrum of PPPs to suit many different local circumstances. It is evident that we should escape the consideration of public versus private as a black and white issue. The countries with the most comprehensive and best operating WSS services have a mix of PPPs. Importantly though, public ownership seems to fare well in comparison with private ownership, but often only when significant steps are taken to commercialise management of the public organisations concerned. The key consideration is not whether the service producer is public or private, but how well the producer fulfils its objectives.

# Foreword

The business as usual approach will not allow us to serve all people of the world with safe water. That was a conclusion of the International Water Decade 1981-1990. Since that time, many new and revived approaches have been tried in order to improve the performance of the sector. One, which has become popular, is “privatisation” or “public-private partnerships, ppps”. Quite often, however, one gets the impression that not all who use the term thoroughly comprehend what it means. What are the positive and negative consequences of giving the responsibility for service provision to “market forces” or selling publicly owned assets to national and international enterprises.

VISION 21, the resolution of the Water Supply and Sanitation Collaborative Council, calls for people-centered solutions. Is privatisation or pps such a solution? Does the process give a say to those affected by the process? If so, what are the boundary conditions for success?

This paper is a contribution to the discussion. It presents cases of success and others of a less fortunate outcome in order to illuminate points of importance for those who contemplate ways in which to serve the most needy individuals and groups with safe water at a cost they can afford, in the way they prefer, and when they need it.

Heikki Wihuri
Head, Advisory Services, IRC

# Preface and Acknowledgements

Water and sewerage services can be classified in terms of water acquisition, treatment and delivery, wastewater disposal, collection, conveyance, treatment and ultimate disposal. Water and sewerage services are no doubt the most important public infrastructure services, and the key systems in practical environment protection. In addition to using other public and industrial goods and services, we all as consumers use water and sewerage services tens of times daily. The need for those services is unquestioned. In Finland, many municipalities decided to sell out their energy utilities within a very short period of time. In principle, they handed over their technical monopoly on very weak grounds. Internationally, privatisation has advanced strongly also in water and sewerage services in the 1990s.

The well-known case of privatisation of water and sewerage services occurred in England and Wales, where the government implemented full privatisation by turning the former water authorities into water and sewerage service companies and by selling its ownership interest in these 10 regional water holding companies in 1989. In France, private enterprises have operated water utilities already since the 19th century. In developing and transition economies, efforts have been made to introduce major privatisation or private sector participation during the 1990s and 2000s. The main argument has been that the public sector will not be able to raise the finance required for the investments. In general, the argument for privatisation has been that the private sector always performs better than the public sector in service delivery.

The goal of the water and sewerage works is to produce safe, sufficient and affordable drinking water for households, public use and industries. Furthermore, they have to take care of the communities' wastewater disposal, collection, conveyance, treatment and ultimate disposal. The paramount interest is to safeguard public health and a healthy environment for the citizens in accordance with the principles of socially, environmentally and economically sustainable development.

A major aim of this study is to contribute to the debate about the development of water and sewerage services, and highlight the many aspects and approaches concerning international privatisation and public-private partnerships in the water and sewerage sector. The writers are sceptical about the sale of public assets or full privatisation, and they hope that the readers will come to share some of their views after reading this report.

The original study – Hukka, J.J. and Katko, T.S. 1999. (Original in Finnish, summary in English) Privatisation of water services? The Foundation for Municipal Development. Research Report No. 19. 93 p. http://www.kaks.fi – grew out of a research project at Tampere University of Technology, Institute of Water and Environmental Engineering in 1999 for the Foundation for Municipal Development (Kunnallisalan kehittämissäätiö), Finland. The study was done in collaboration with Finland Futures Research Centre, Turku

School of Economics and Business Administration. The material from that project was expanded and updated to include, most importantly, the cases studies from Colombia, Kenya, Lithuania and Vietnam. Dr. Mario Alejandro Pérez-Rincón from Cinara Institute, Universidad del Valle in Colombia, Dr. Ezekiel Nyanchaga Nyangeri from University of Nairobi in Kenya, Mr. Pekka Pietilä from Tampere University of Technology, Finland, and Mr. Do Trong Nhan from Asian Institute of Technology Centre in Vietnam have prepared the respective case studies, which were further edited by the authors. We would like to express thanks to our respected colleagues for their great contribution. The structure of this, modified and extended report derives from the original study that had a look mainly from the Finnish water sector´s point of view.

The Foundation for Municipal Development and the Academy of Finland supported financially the original study, and the complementary study was financed by the Ministry for Foreign Affairs, Department for International Development Cooperation; the Ministry of the Environment, Unit for Environmental Cooperation in Central and Eastern Europe; the Ministry of Agriculture and Forestry, Department of Rural Areas and Natural Resources, Water Resources Unit; and the Finnish Water and Waste Water Works Association. The authors gratefully acknowledge this support.

Comments on the draft of the original report were made by Professors Pertti Ahonen, Briitta Koskiaho and Pentti Meklin, and Researcher Pentti Siitonen from the University of Tampere; Chief of Municipal Economical Affairs Arto Laitinen from the Association of Finnish Municipalities; Senior Consultants Kaj Hedberg, Kari Homanen, Tauno K. Skyttä and Hannu Vikman, and Researcher Jouni Paavola from Oxford University; Managing Director Rauno Piippo from the Finnish Water and Waste Water Works Association; Emeritus Professor Matti Viitasaari; Senior Researchers Pekka Pietilä, Sirpa Sandelin and Osmo Seppälä from Tampere University of Technology, Institute of Water and Environmental Engineering. In addition to water engineering, they represent, for instance, the sciences of municipal administration, social policy, and public finance.

The expansion and updating was initiated by Programme Officer Heikki Wihuri from the International Water and Sanitation Centre (IRC). This version was commented by Ari-Veikko Anttiroiko, Okke Braadbaart, Bernard Barraqué, Jose Esteban Castro, Kallis Giorgos, Neil S. Grigg, Jan-Erik Gustafsson, Sergio Guzman, Mona Hansen, Peder Hjorth, Jonathan Hodgkin, Alan Hurdus, Annukka Lipponen, Emanuele Lobina, Jack Moss, Jouni Paavola, Issayas Tadesse, Tony Turton, Cecilia Ugaz, Dennis B. Warner, Simon Watt and Sverker Westman as well as the CADWAS research team members and colleagues at TUT. The English language was checked by Jorma Tiainen. The contributions of Sascha de Graaf and Brian Appleton at the final stage of editing at IRC are gratefully acknowledged. We also thank for constructive critique and debate we found valuable although we could not always agree with all the comments. We would like to express our sincere gratitude to all of them, particularly to Heikki.

The views and interpretations are, however, those of the authors, and should not be attributed to any of the individuals or organisations involved in this study or to any of their departments, institutes or units, or to any individual acting on their behalf.

Finally, a big hug to our wives. We promise to play a bit more tennis with them in the future.

Tampere, ‘Manchester of Finland’, 15 August, 2002

Jarmo J. Hukka Tapio S. Katko

# Introduction

## Background and objectives of the study

Water supply and sewerage (WSS) are among the most crucial services in a society. They are essential elements in environmental protection, human health, security, infrastructure and land-use planning. In most respects, management of water and sanitation services is a local issue. It is heavily influenced by the scale, geography, history, sociology and economy of the location. Local and national legislatures each set their own conditions and requirements. It follows that no two situations are identical and similar problems cannot be treated in the same way everywhere.

The study that forms the basis of this report came about because the authors, Jarmo Hukka and Tapio Katko, were concerned at the rapid spread of a particular form of WSS privatisation in developing countries and the transition economies of eastern and central Europe. More and more cities were handing over assets and granting extensive concessions to joint-venture companies controlled by giant French and British conglomerates. The privatisation process was being encouraged by the World Bank and several bilateral donors, on the basis that the private sector provided investment capacity, competition, efficiency and expertise deemed to be lacking in the public sector. The logic seemed superficial and flawed, but the privatisation momentum was unstoppable. So the study was set up to check out the experiences of privatisation and to identify any pitfalls and shortcomings that national or city governments should be aware of when evaluating the prospects of privatisation of their WSS services.

In Finland, municipalities have the responsibility to ensure that these services are provided and, in practice, they also produce the services, either through their own municipal technical department, a public utility company, a joint-stock company owned by the municipality, or a supramunicipal utility. In areas beyond city or town planning boundaries, water cooperatives owned directly by the consumers provide and produce the services. Municipalities support the establishment of the cooperatives, and also offer operational assistance. This kind of support is often rather limited, but it is important that it is available. The municipality may also set standards regarding the quality of the water systems, i.e. they should be constructed to meet the requirements set for the municipality's own water system. This is to guarantee the quality of the operations, and a smooth transition, if the municipality has to take over the water system in the future.

WSS utilities are increasingly outsourcing planning and design, construction, and maintenance to the private sector. Finnish and other Nordic water and sewerage services are thus run as public-private partnerships (PPPs). In recent years, there has been increasing interest internationally in both privatisation and PPP, but with a major involvement of the western European water giants in the partnerships. It was therefore felt

to be helpful to examine the history of WSS service provision in the host nations of these major players – France and Great Britain.

The oldest examples of private sector involvement in the provision of WSS services come from France, where a few private contractors or operators have in practice had about 30-year concession contracts or shorter leases and management contracts. The French conglomerates are vertically integrated, i.e. they offer full services to their customers without having to introduce competitive tendering for those services. At the same time, they are multipurpose infrastructural service companies engaged in the telecommunications, energy, transport, waste management, etc. sectors. The French companies have been winning an increasing number of contracts in different parts of the world.

In 1989, the regional water and sewerage authorities serving about 75 percent of the population in England and Wales were privatised. The UK government decided to privatise the water and sewerage industry for two main reasons: the desire to mobilise private capital for investment in a situation where the government was facing a budget deficit, and the belief that private ownership would improve services (Ehrhardt 1994). The regional water authorities had not been allowed to raise enough funds for the required investments for 15-20 years. In such conditions, privatisation must have appeared to be a feasible solution. But some may wonder whether the situation was somewhat contrived? In non-privatised Scotland, a 1996 public opinion poll showed that almost 90 percent of the consumers were against privatisation of the water and sewerage industry. Nevertheless, the huge private companies created in the 1989 privatisation have, like their French counterparts, been winning concession contracts around the world.

French companies in particular have also been spreading their influence to other industrialised countries. In June 2001, the town of Norrtälje in Sweden contracted out its water and sewerage services to Vivendi Water (PSI 2001, Gustafsson 2001b). Elsewhere in Sweden, some bigger cities have incorporated their utilities, but ownership has remained with the city. The City of Malmö invited tenders for a management contract before the general election in 1994 (Gustafsson 2001a, p. 61-64) and French companies showed great interest. In the end, the city decided to go for the municipal organisational option.

In eastern European transition economies, in particular, many bigger cities have established joint ventures with transnational conglomerates. One recent example of full privatisation is the Tallinn water works in Estonia where majority ownership passed to private hands.

Problems related to privatisation have emerged gradually. For example, in England water rates have been increased considerably, while the number of personnel and their salaries and benefits have been reduced significantly. At the same time, the salaries and benefits of the directors and managers have grown substantially. The consequences have been, in some cases, deterioration of the quality and quantity of drinking water and environmental

problems (Martin 1996). The primary objective was to get risk capital from the private sector, but in practice, the companies raise funds from banks instead of risking their shareholders' money. But why were the public RWAs not allowed to borrow money before privatisation?

The tidal wave of privatisation raises a question: "What is the ultimate purpose of WSS services?" In most countries, the view is that they should meet the hygienic and health requirements for drinking water, safeguard public health, protect the environment and meet the needs of other interest groups, nowadays commonly referred to as "stakeholders". WSS services are also commonly needed for fire fighting, watering and other public purposes. The food industry is one of the important industrial concerns dependent on water services. So, WSS services have many functions: they are simultaneously a marketable private good, a public or collective good, a common property resource, and a basic social service. How should this kind of a multipurpose entity be organised to follow the principles of sustainable development and economics?

In 1991, at the 18th IWSA World Congress in Copenhagen, the need for privatisation of water and sewerage works was discussed extensively. At that time, the English and Welsh delegates were still strongly in favour of full privatisation. One French participant insisted that the French model involved competition between privately managed and public water works (IWSA 1991). A question posed by this study is also: how real is this competition in practice?

In international debate, those favouring privatisation (e.g. Spulberg & Sabbaghi 1998, Myers 1998, Funk Jr. 1998) often state that there is no competition in the public sector. This study aims to show that this is merely a myth, and that "privatised" water and sewerage works actually reduce competition. Another goal of the study has been to collect information on privatisation and public-private partnerships (PPPs) experiences and trends, especially for those who have to analyse the options for the future management of WSS systems. The following key questions were posed:

- What are the reasons for the international interest in privatisation of, and private sector involvement in, water and sewerage services?
- What have been the consequences of privatisation in various countries?
- What would be the consequences of privatisation for the owners and consumers of public water and sewerage services?
- What are the options for performance improvement and capacity development of public water and sewerage services?

The objective of dissemination of the study results through this report is to give rise to a debate about the premises of privatisation and public-private partnerships, and viable alternatives for improving the provision and production of WSS services.

## Research methods

The study was based on collected international experiences from privatisation and a literature review covering mainly documents published by the end of 2001. The experiences were gained especially through contacts with colleagues, e.g. in England, Scotland, Sweden and the United States. The authors' contacts as members of the International Water Association (IWA), the American Water Works Association (AWWA), the International Water Resources Association (IWRA), and the Water Supply and Sanitation Collaborative Council (WSSCC) have been utilised. Experiences and problems discussed in a doctoral thesis (Hukka 1998) have also been included. Examples of the most recent literature are shown under the heading "further reading" in the bibliography.

The authors' experience gained from international missions and especially material from the following conferences, seminars and field visits have been used:

- 18th IWSA Congress, Copenhagen, Denmark, May 27-31, 1991
- WSSCC Global Forum, Oslo, Norway, September 18-20, 1991
- Stockholm Water Symposium, Sweden, August 10-14, 1992 and August 9-12, 1999
- Sound Institutional Strategies for Water Supply and Sanitation Services, UETP-EEE Short Modular Course, Tampere University of Technology, Finland, December 8-9, 1993
- XIV World Conference of World Futures Studies Federation: Futures Beyond Poverty, Nairobi, Kenya, July 25-30, 1995
- 21st WEDC Conference: Sustainability of Water and Sanitation System, Kampala, Uganda, September 4-8, 1995
- Management of Water Utility Transition in Baltic Countries, The World Bank Regional Mission, Ligetne, Latvia, August 28-29, 1996
- Water Policy: Allocation and Management in Practice, Cranfield University, England, September 23-24, 1996
- Specialised Conference on the Challenges of the Next 50 Years. IWSA 50 Years Ahead, Harrogate, England, June 16-17, 1997
- Professional mission, Colorado State University, Fort Collins, the United States, May 12-July 17, 1997
- WSSCC Fourth Global Forum, Manila, the Philippines, November 3-7, 1997
- Seminar on Water Sector Policies and Strategies, FINNIDA, Hanoi and Haiphong, Vietnam, November 10-12, 1997
- Expert Group Meeting on Strategic Approaches to Freshwater Management. Department of Economic and Social Affairs, the United Nations, Harare, Zimbabwe, January 27-30, 1998
- Water Africa'98 Conference, Nairobi, Kenya, June 30- July 2, 1998
- APWA Congress, Las Vegas, the United States, September 13-18, 1998
- WSSCC Africa Consultative Forum on Water Supply and Sanitation, Abidjan, Côte d'Ivoire, November 16-20 1998

- WSSCC Vision 21, Knowledge Synthesis Workshop, Wageningen, the Netherlands, April 20-22, 1999
- 25th WEDC Conference: Integrated Development for Water Supply and Sanitation, Addis Ababa, Ethiopia, August 30-September 3, 1999
- Second World Water Forum, the Hague, the Netherlands, March 18-22, 2000
- 1st International Conference of IWA, Paris, France, July 3-7, 2000
- Management of water, wastewater and solid waste services in comparative historical and futures perspective. A Nordic Research Workshop. Tampere University of Technology, 10-12 June, 2001
- IWA World Congress, Berlin, October 15-19, 2001
- IWA World Congress, Melbourne, April 7-12, 2002
- First PRINWASS International Conference, University of Oxford, April 24-25, 2002
- 3rd World Water Forum, Japan, March 16-23, 2003.

In addition to the international events, the authors have made presentations at several Finnish seminars and workshops on privatisation and public-private partnerships in water and sewerage services (Hukka & Katko 1998, 1999).

### Approach and structure

This study is based on the view of the futurist Wendell Bell (1997, pp. 73-114) that the major task of research is to communicate and advocate a particular image of the future. Bell considers that the task of futures studies is to uncover images of possible, probable, and preferable futures that enable people to make informed decisions about their lives, i.e. to make the future. Furthermore, long-term development, i.e. history and the present, can be analysed based on the futures research approach: What, if things had been done otherwise? According to Bell, a task of futures studies is also to integrate knowledge and values for designing social action, and to increase democratic participation in imaging and designing the future (Niiniluoto 1999). Futures research can also be used to increase the number of alternatives (Tapio 1999).

The approach of the study combines engineering sciences, development studies, new institutional economics and futures research. The Nobel laureate and new institutional economist Douglass C. North (1990) has emphasised that history matters. Although history does not repeat itself accurately, surprisingly many discussions about public-private partnerships and the provision of water and sewerage services were held in the middle of the 19th century and the beginning of the 20th century. This fact was almost completely overlooked in the international debate of the 1990s. In this study both the historical and futures perspectives are taken into account.

After the objectives and fundamentals of the study, the main concepts and options of privatisation and public-private partnerships are discussed and analysed. They are initially treated mainly in historical and chronological order. The earliest examples of private sector involvement come from the United States, Continental Europe, and the Nordic countries.

The description of privately managed water and sewerage systems in France is followed by a discussion of the experiences from full privatisation in England and Wales since 1989 and recent global trends. Thereafter, case studies from Colombia, Kenya, Lithuania, Vietnam and recent examples from other countries are presented. A more detailed case is presented of Finnish public-private partnerships. This model is based on autonomous municipality-owned utilities that buy services to a large extent from the private sector. Somewhat similar models are also widely used in many other western countries. The analysis and assessment are conducted based on different models, and the areas where further research is needed, are pointed out. Finally, a summary of conclusions is drawn. An epilogue has been added to point out the latest views that have been raised during the editorial and printing process.

## Concepts and principles of WSS services

### Impacts and framework

A fundamental question regarding WSS services is: what is their purpose? Investments in water supply and sewerage/sanitation, including adequate treatment and disposal, can be justified by their positive direct and indirect impacts (Figure 1).

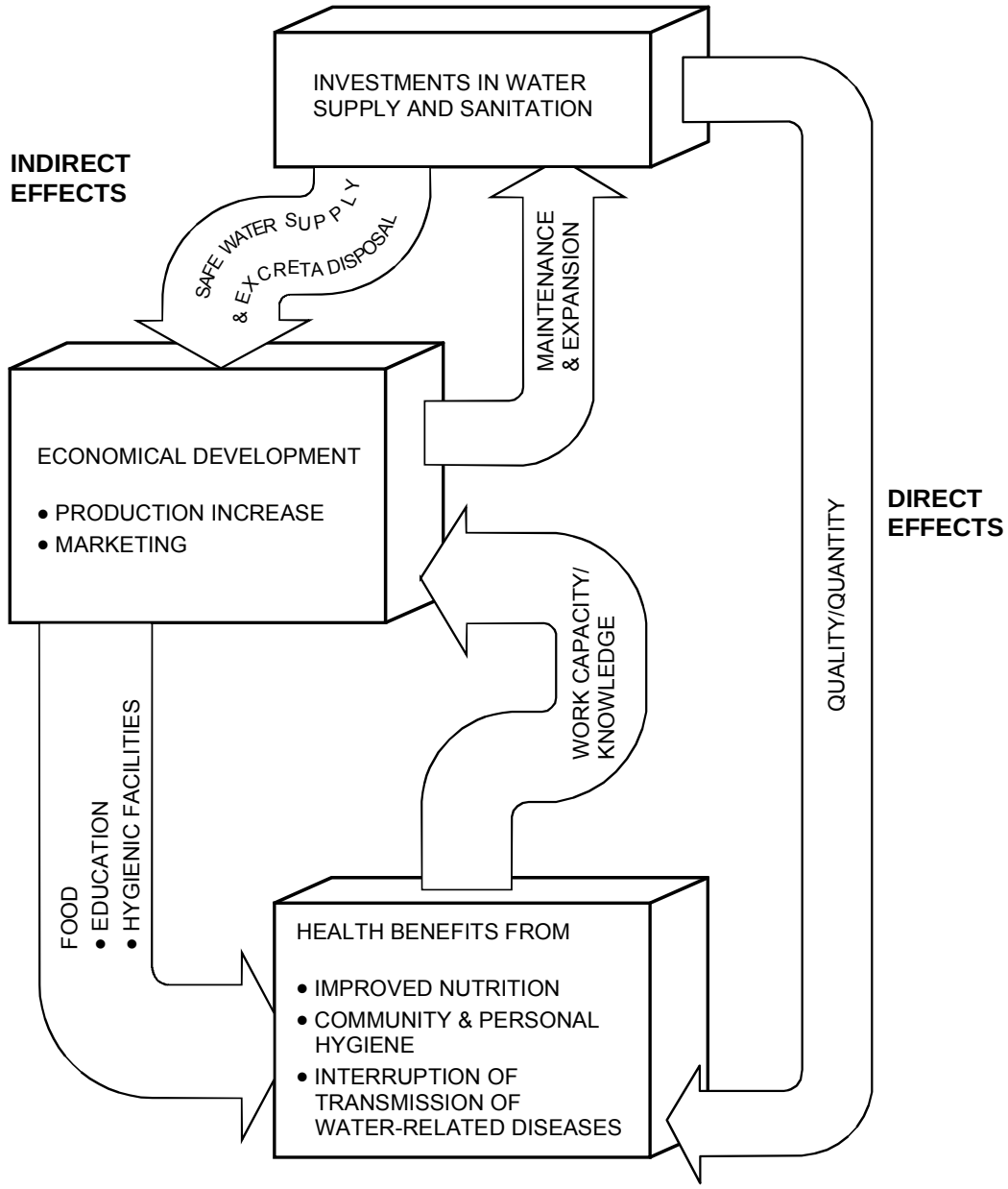


Figure 1. Benefits gained through improved water supply and sanitation (Cvjetanović 1985, modified by the authors).

Investments in WSS services improve health thanks to the increased use of better quality water. Health gains are achieved in the form of better nutrition, a cleaner environment and improved hygiene. In consequence, water and sewage-linked diseases are prevented. An improved socio-economic situation adds to health benefits indirectly through improved nutrition and hygiene. WSS investments also improve environmental protection and through it the standard of living. Better WSS services can also enhance social development and equality. The services can also increase convenience and property values, i.e. the value of real estate. Water is a renewable natural resource, but its delivery as safe drinking water makes it also a commodity.

The institutional framework for WSS services is somewhat complicated (Figure 2), and involves a great number of stakeholders, often with conflicting interests. In Finland, for example, the major organisations having an impact on water and sewerage services are the European Union, the central government, and the local governments or municipalities. Citizens as individuals and interest groups have their own perceptions and ways and means of pushing for changes that advance their vested interests or preventing innovations that undermine them (Juhola 1995).

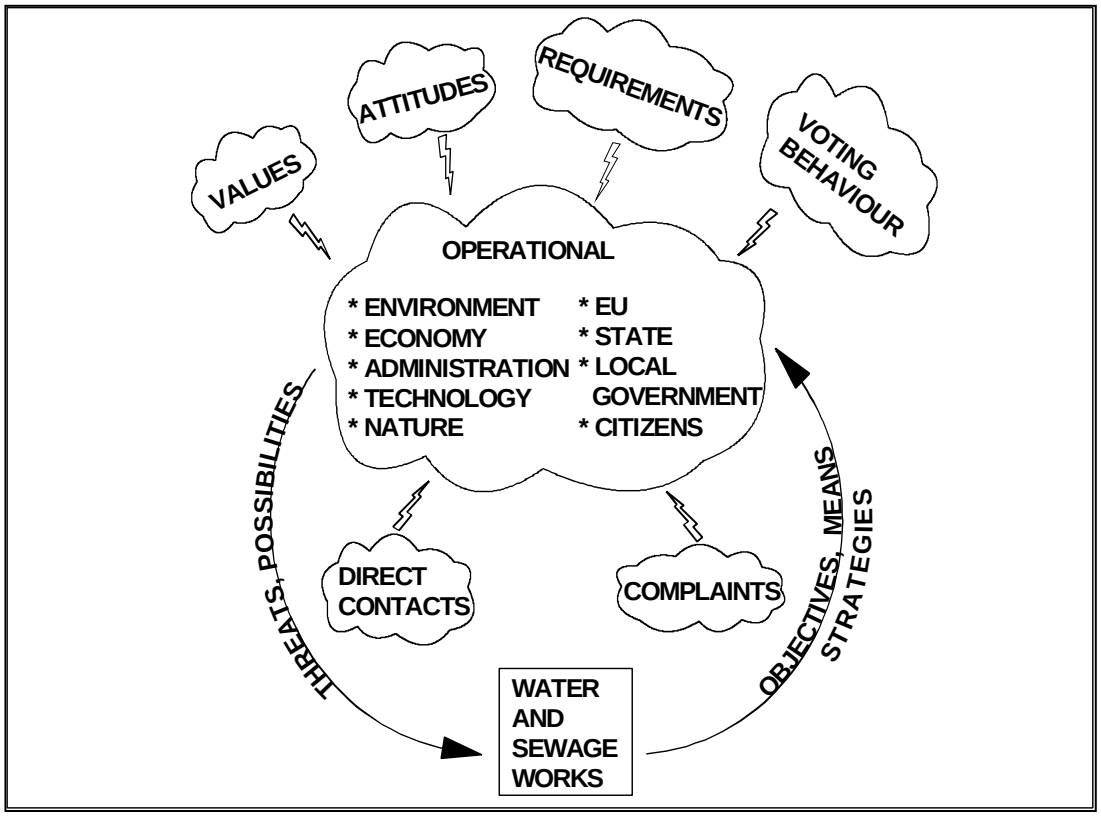


Figure 2. The complex framework of water services (Juhola 1995).

WSS services provision can be divided into central functions or core activities and peripheral functions or non-core activities (Figure 3). Core activities may include: main

responsibility for required investments or, at least, for raising the finance; ownership; and strategic planning and development. Non-core activities may include design; construction; equipment supply; vehicles and machinery; repairs; inspections; operation and maintenance; data processing; meter reading; laboratory services; and research. This is one interpretation of core and non-core operations. Individual utilities may have their own definitions. The division is important when it comes to considering which activities are suitable for private sector involvement.

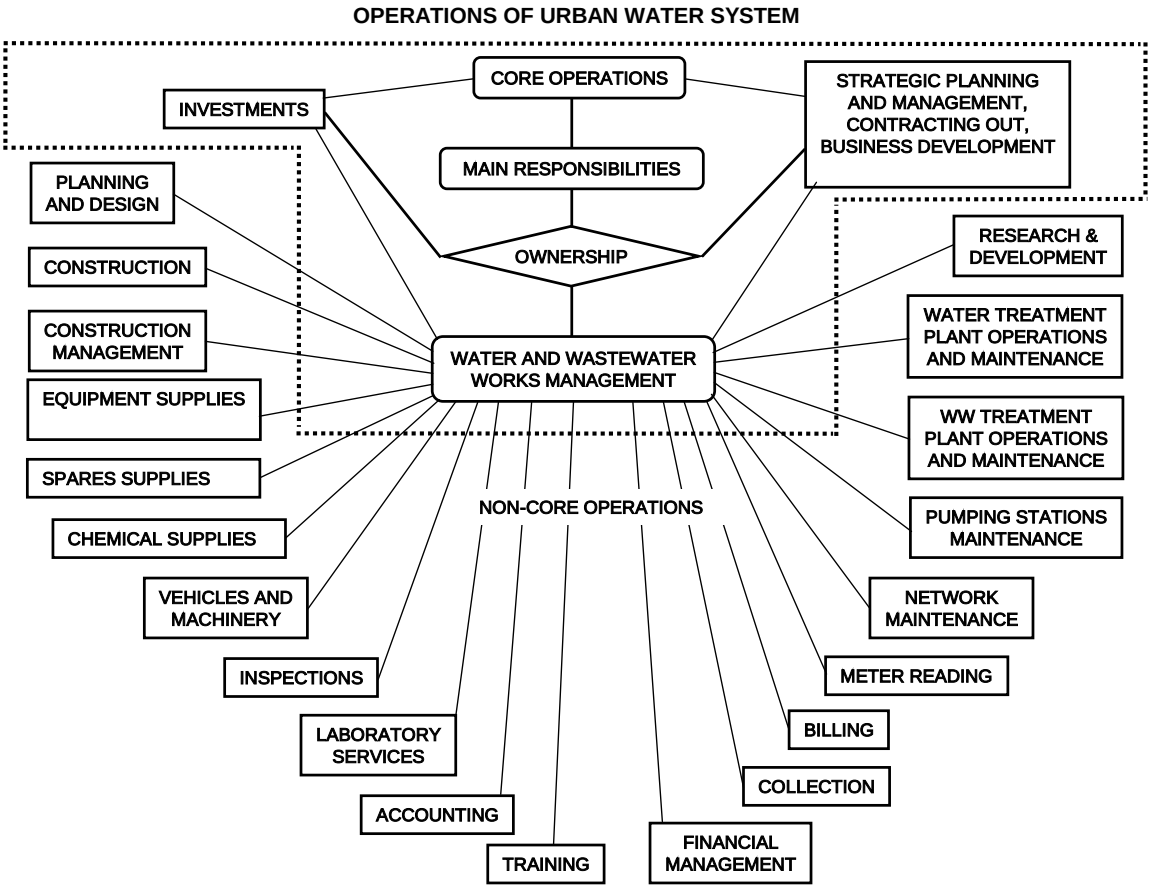


Figure 3. Suggested classification of core and non-core operations (Kraemer 1998a p. 324, modified by the authors).

## Characteristics of WSS services

Water and sewerage services have certain special features not necessarily typical of other infrastructure services. First, they are exceptionally capital-intensive compared with other public services. The capital costs (including interest and depreciation) are often 65-75 percent of annual operating costs. The greatest share of capital costs by far is related to pipe and sewer networks. Contrary to common belief, adequate and modern water and wastewater treatment accounts for only 10-15 percent of annual operating costs. Yet, the

treatment processes are of utmost importance for health and environmental reasons. The capital intensiveness is partly due to the low ratio of annual turnover to cost of assets.

A second special feature of WSS operations is that fixed costs – i.e. those that do not vary with the volume of production, except within very wide limits – are about 80 percent of operating expenses. Yet, the revenue of many utilities depends mainly on the volume of water sold. This has a profound effect on the structure of rates and charges. Consumers have to pay for the services, commonly through consumption related charges, sometimes by other means like taxation. Lack of proper cost recovery policy has been one of the key problems in many countries.

The third, and maybe the most important, feature from the viewpoint of this study is that the WSS infrastructure is a natural monopoly – a concept first introduced by John Stuart Mill in 1848 (Sharkey 1982, p. 14). In the case of services like water and sanitation it is feasible to construct only one system for one service area. The Nobel laureate Milton Friedman described the options for managing natural monopolies as follows:

*"We can only choose between three evils: private unregulated monopoly, private monopoly regulated by the state, and public monopoly" (Williamson 1987, p. 33).*

The fourth special feature relates to the necessity for control and regulation over such issues as health, environmental protection, land-use planning, competition and consumer rights.

It is important to remember that urban and rural water systems differ widely with regard to political, economic, social, technical and ecological features. This is true especially when considering the options for megacities, for peri-urban areas, for smaller communities, and for dispersed rural areas. Sometimes there is scope for combined schemes to serve several different community groupings, but there is an evident danger with privatisation that the private operator may only be interested in serving the better off and more concentrated areas where cost recovery is easiest to achieve.

Grigg (1996, p. 442) refers to Tennessee's water policy in the US. He points out that institutional issues were the greatest impediment to regionalisation and that success in regionalisation is based 70 percent on politics, 20 percent on engineering and 10 percent on luck. One may ask if this is not true in other water management issues as well. Whatever the truth, it is obvious that in the case of any plans for private sector involvement, the institutional framework, or the lack of one, should be taken into account.

One of the key premises of this study is that in assessing feasible ways of owning and managing a public service like water and sewerage, we should first know and analyse the special conditions and features of the service. Thus, we should not be tempted by fashionable, ideology-driven discussions, where all public services are equated, overlooking or not understanding their special features. Such assumptions easily lead to

wrong conclusions, such as that combining various public and infrastructure services automatically leads to savings.

## Public services, public-private partnerships and privatisation

Despite the long tradition of privately managed water and sewerage services in France, the recent privatisation boom started from Britain, where Margaret Thatcher's Government established a policy in 1979 of downsizing the public sector through privatisation (Rasinmäki 1997, p. 2). In 1989, this manifesto led to the privatisation of the regional water authorities by turning them first into water and sewerage companies and then floating them as public-liability companies in England and Wales.

In Finland, the principles of a potential increase in public-private partnerships were outlined in the 1992 national budget. In accordance with the proclamation (7 May, 1995), the public and private sector are complementary to each other in the pursuit of national competitiveness. Public services can be produced by the public or the private sector. Prime Minister Paavo Lipponen's Cabinet decided on 13 April 1995 that municipalities can select their own production models (Rasinmäki 1997, p. 5). In September 1999, the Permanent Secretary of the Ministry of Trade and Industry, Mr. Erkki Virtanen, stated that municipal services should be privatised increasingly also in Finland (Rautio 1999):

*"It's time to ask whether the small share of private enterprises engaged in public services production is due to their ineffectiveness or whether the private sector is given the same possibilities as public and third sector organisations?"*

This is a relevant question with respect to some services, but the water and sewerage services being a natural monopoly, the question could also be reversed: Shouldn't the public sector also be given the chance for viable operations? This has unfortunately not been the case, particularly in developing and transition economies. Consequently, privatisation or private operation have lately been seen as almost the only alternatives to improve public utilities' performance.

### *Purpose and context of water and sewerage services*

Since WSS services have several objectives and various types of benefits, it is useful to look at their relationships to wider human needs. According to Max-Neef (1986), fundamental human needs are finite, few and classifiable, and they are the same in all cultures and all historical periods. It is only the form or the means by which those needs are satisfied that changes over time. Max-Neef identifies nine fundamental human needs: permanence (or subsistence); protection; affection; understanding; participation; leisure; creation; identity (or meaning); and freedom. In his words:

*"From such classification . . . it follows, for example, that housing, food, income are not to be considered as needs, but rather as satisfiers of the fundamental need of permanence (or subsistence)."*

Accordingly, water and sewerage services could be considered satisfiers of the need of permanence. Grigg (1988, p. 1) defined the infrastructure as the physical systems that provide transportation, water, buildings, and the other public facilities that are needed to meet basic human social and economic needs. These facilities are required by people regardless of their level of economic development. When there is no infrastructure, or it does not function properly, it is impossible to provide basic services such as food distribution, shelter, medical care, and safe drinking water. The World Bank report (World Bank 1994, p. 2) referred to public utilities, including piped water supply, sanitation and sewerage services, as economic infrastructure.

Grigg (1986, p. 3) considered the physical infrastructure, including water supply, to be the foundation of a city, which supports economic and social activities (Figure 4). According to the World Bank report (World Bank 1994, p. 13), providing infrastructure services to meet the demands of businesses, households, and other users is one of the major challenges to economic development. Grigg (1988, p. 56) emphasised that the correctness of the assumption that the infrastructure is necessary to support society is seldom disputed. Debates usually concern how much, what kind, where, when and who pays. The debate discussed in this study is also concerned with who provides and produces the infrastructure services.

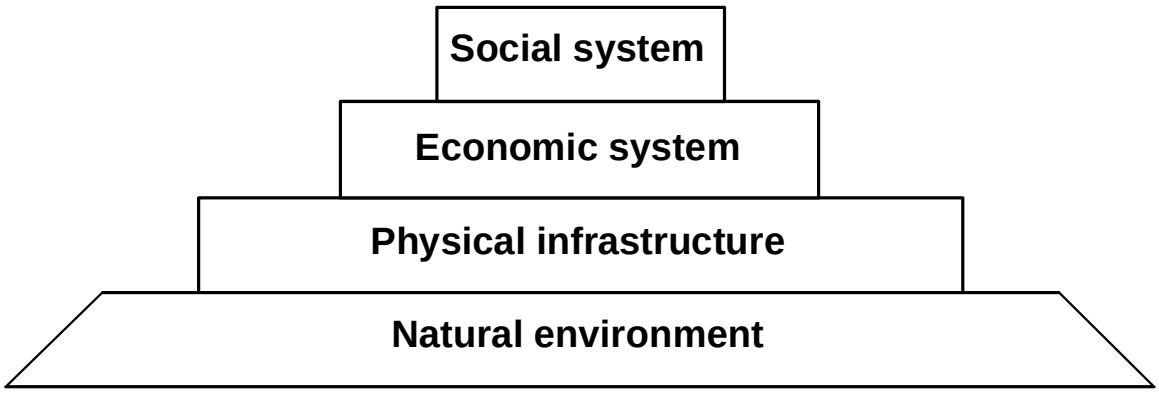


Figure 4. Relationship of infrastructure to socio-economic systems and environment (Grigg 1988).

The development of the operations of water and sewerage systems aims primarily at improving customer service, performance and returns. In the development, future requirements should also be predicted, and, under all circumstances, the high quality of drinking water, treatment of waste waters, and viable functioning of the plants and networks have to be safeguarded (SKOY 1991, p. 11).

Recently the terms “governance and “good governance” have been used increasingly in development literature. Lack of good governance principles is regarded as a root cause of major constraints within our societies, as well as in the WSS services sector of developing

and transition economies. Major donors and international financial institutions are increasingly making it a condition of their aid and loans that reforms, which ensure “good governance”, are undertaken (UNESCAP, 2002).

Good governance is participatory, consensus-oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law (Figure 5). It also assures that corruption is minimised, the views of minorities are taken into account and that the most vulnerable in society are listened to in decision-making. It is also responsive to the future needs of society.

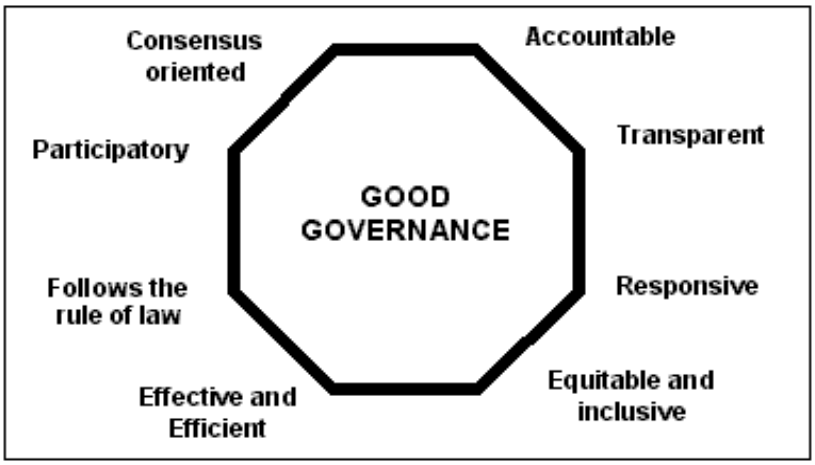


Figure 5. Characteristics of good governance (UNESCAP 2002).

*Provision and production of services*

Rasinmäki (1997, p. 167), divides responsibility for ensuring that adequate services are provided from the task of actually producing those services. Provision responsibility is seen as the duty of the public authority, public decision making, procuring investments, regulation, exercise of public power, and organising the production of services. According to Ostrom, Schroeder and Wynne (1993), the term provision refers to decisions made through collective-choice mechanisms regarding the following:

- The kinds of goods and services to be provided by a designated group of people.
- The quantity and quality of the goods and services to be provided.
- The degree to which private activities related to these goods and services are to be regulated.
- How the production of these goods and services is to be arranged.
- How the provision of these goods and services is to be financed.
- How the performance of those who produce these goods and services is to be monitored (ACIR 1987, cited by Ostrom et al. 1993).

The term production refers to “the more technical process of transforming inputs to outputs - making a product - or, in many cases rendering a service” (ACIR 1987, cited by Ostrom et al. 1993).

It is implicit in these definitions that the public sector needs to retain responsibility for the functions listed under the provision heading.

### Public-private partnerships models

The following general options for privatisation, or private sector involvement are suggested by Rasinmäki (1997, p. 2):

1. Contracting out (the public sector entity makes a contract, usually with a private enterprise, regarding the production of specified services).
2. Deregulation (the government exempts a business activity from rules and controls).
3. Liberalisation (the government makes a law or rules and regulations less strict for private sector’s entry into the market and for its business activities).
4. Competitive tendering (the public sector is required to invite a compulsory tender usually from private enterprises for specific service production).
5. Assets sales (the public sector sells all or part of its assets to the private sector).
6. Outsourcing (the public sector contracts the private sector to produce specific services).
7. Hiving off (the public sector entity establishes special units to produce specific services as private entities).

In practice, at least in WSS services, the first, fourth and sixth options are practically the same thing.

Table 1 gives the typical alternatives for private sector involvement in service production and durations of the contracts. The contract periods range from service contracts of a couple of years to about 30-year concessions.

Table 1. Main options for public-private partnerships in water and sewerage services production and the typical contract periods (World Bank 1997a).

| Model | Contract period (years) |
|---|---|
| Service contract | 1-2 |
| Management contract | 3-5 |
| Lease contract | 8-15 |
| Concession | 25-30 |
| BOT (Build-Operate-Transfer) | 25-30 |
| Divestiture | indefinite or limited by licence |

The World Bank (1994) introduced four major institutional options representing different allocations of ownership, financing, and operations and maintenance responsibilities as well as risks for the government and the private sector (Table 2). The options are the following: Option A–Public ownership and public operation; Option B–Public ownership and private operation; Option C–Private ownership and private operation; and Option D–Community and user provision. The public entity can be a parastatal, a public enterprise, a public authority, or a government department owned and controlled by the central, regional, or local government.

Table 2. Main institutional options for provision of infrastructure (World Bank 1994, modified by the authors 2000).

| Function | *Option A* | | | | | *Option B* | | *Option C* | *Option D* |
|---|---|---|---|---|---|---|---|---|---|
| | Government department | Public entity: Traditional | Public entity: Corporatised and commercial | Public entity: With service contract | Public entity: With management contract | Lease contract | Concession contract | Private (including cooperative ownership and operation) | User or community provision ("self-help") |
| Ownership of assets | Public | | Public (majority) | | | Public (majority) | | Private (majority) | Private or in common |
| Sectoral investment planning, coordination, policymaking, regulation | Internal to government | By parent ministry | Parent ministry or separate public authority | | | Public authority negotiated with private operator | | None or public authority | None or public authority |
| Capital financing (fixed assets) | Government budget | Subsidies and public loans | Mainly market-based financing | | | Public | Private operator | Private | Private |
| Current financing (working capital) | Government budget | Mainly subsidies | Mainly internal revenues | | | Private operator | | Private (government may pay for public service obligations) | Private |
| Operations and maintenance | Government | Public entity | | Private operator for specific services | Private operator | Private operator | | Private | Private |
| *Collection of tariff revenues* | Government | Government or public entity | Public entity | | | Private operator | | Private | Private |
| **Other characteristics**<br>Managerial authority | Government | | Public entity | | Private operator | Private operator | | Private | Private |
| Bearer of commercial risk | Government | | Public entity | | Mainly public | Private operator | | Private | Private |
| Basis of private party compensation | Not applicable | | | Fixed fee based on services rendered | Based on services and results | Based on results, net of fee paid by operator for use of existing assets | | Privately determined | Privately determined |
| Typical duration | No limit | | | Fewer than 5 years | About 3-5 years | 5-10 years | 10-30 years | No limit | No limit |

Rasinmäki (1997, p. 44) has defined a four-level model of privatisation (or public-private partnerships – authors´note) in local administration as follows:

1. Application of private sector operating principles, i.e. formal privatisation, e.g. tendering, hiving out, introduction of private sector management practices, introduction of a pricing policy based on financial self-sufficiency, and establishment of a commercial public utility.
2. Partial, i.e. functional privatisation, e.g. compulsory tendering, outsourcing, contracting out, delegation, liberalisation, deregulation, and re-regulation.
3. Organisational privatisation, e.g. corporatisation, i.e. establishment of municipality-owned company.
4. Absolute, i.e. material privatisation, which also covers the privatisation of property, assets sales, deregulation, and re-regulation.

Table 3 shows Rasinmäki's (1997) four judicial concepts of privatisation in local government in Finland. He pointed out the following (Rasinmäki 1997, p. 497):

Table 3. Four-level judicial conceptual model of privatisation in local government (Rasinmäki 1997).

| Formal privatisation | Functional privatisation | Organisational privatisation | Material privatisation |
|---|---|---|---|
| Applying of competition rights to municipalities | Purchasing services | Corporatisation and other forms of organisations under private law:<br>A) Public entity is the majority shareholder (subsidiary)<br>B) Public entity is the minority shareholder (partnership) | Assets sale/donation |
| Public procurements | Vouchers | Public entities have private shareholders and joint ventures with the private sector | Sales of the shares of public enterprise |
| Tendering | Right to choose between public and private service | Municipality is shareholder in private company | Withdrawal |
| Public utility/Enterprise | Authorisation/Concession/ Delegation | | Purchase right for public property (rental apartment) |
| Hiving out/Privatisation of administration | E.g. consumer guidance | | Rights to produce private services parallel with public services |
| Net budgeting unit | Personnel's companies | | Personnel's companies in voluntary services |
| Charging policy | Subsidies to private sector | | Divestiture |
| Internal contracting/Client-producer org. | Contracting out/Agreements | | Liberalisation, deregulation and re-regulation |
| Management systems | Competitive tendering | | |
| Applying of Accounting Act | Liberalisation, deregulation and re-regulation | | |
| Dissolution of auditing monopoly | Removing barriers from private sector production | | |

*"The hypernym privatisation serves as an umbrella definition of those phenomena in the public sector which describe the interface between the public and private spheres, be this a complete or partial crossing of the border or an application of the modes of operation of the private sector to local government. In the judicial sense the four subordinate concepts of privatisation are theoretically categories by which the current legislation can be systematized from the standpoint of regulation of privatisation. Through judicial argument it is possible to define the characteristics of the subordinate concept, which distinguish them from each other. On the other hand, the concept of deregulation vs. re-regulation, for instance, may occur in all groups, but to a different extent."*

All in all, privatisation obviously may mean different things in different connections. In relation to WSS services, we suggest that the term privatisation be used only in case of full or material privatisation, i.e. when the assets are sold to the private sector. The term public-private partnerships should be used when referring to various contract operations such as build-operate-transfer (BOT) contracts, concession, lease, management or service contracts. The term commercialisation of service production is recommended, when the public utility improves its performance merely through various measures within its own organisation.

Dominy (1999) stated that the debate on the roles of the public and private sectors and the measures for improving public services requires clear concepts and definitions. He recommended the following classification which involves gradual change from completely internal activities to external activities: 1) benchmarking, 2) reengineering, 3) bid to goal, 4) managed competition, 5) contract operations, and 6) privatisation. The individual indicators can be used to assess performance benchmarking, whereas process benchmarking is used to assess how the best organisations have carried out particular activities. The later process does not necessarily require administrative or proprietary changes. Reengineering means self-assessment, whereby the employees evaluate how they best could improve services. Bid to goal means a particular objective, with the help of which savings are achieved. In managed competition the activities of the public and private operators are compared considering the different nature of the operations such as different rates of return. In contract operations and privatisation, a private operator is responsible for the operations.

### Discussion on the importance of the public and private sectors

Public-private partnerships are receiving increasing attention in international debate. Partnerships have their goals, and the parties should have their own specific objectives and goals. The Association of Finnish Local and Regional Authorities (1997, p. 9) defined the four key elements of partnerships:

1. Private sector has its own, for-profit-oriented objectives.
2. Public sector has its own, development-oriented goals.
3. Both parties participate in the implementation of the project at their own risk.

4. The project would not be implemented in the first place without the partnership, or effective and efficient implementation would not be possible without the partnership.

Sometimes it is argued that public-private partnerships are real partnerships only when both parties assume equal economic risk and contribute corresponding inputs. This study will not make such a categorical and rhetorical definition, and the hypothesis is that partnerships can be formed based on various models and cases.

Service contracts have traditionally been used widely in the construction of technical monopolies (Jääskeläinen 1994, p. 49). Water and sewerage works can also be considered monopolies (Rasinmäki 1997, pp. 288-289). Monopolies as such are not prohibited in the European Union, but the misuse of a monopoly position is not allowed. The forms of misuse in Finland are stated in §7 of the law on restrictive trade practices (KilpRajL §7): refraining from business relations, restrictions, exclusive selling/purchase rights, excessive pricing and subvention and in addition to -situation.

According to Jääskeläinen (1994, p. 152), the life-cycle concept means that ownership or the organisational model should not be limited to a certain model, which has been found feasible at a particular phase of the development. The organisational and ownership models should be changed when the organisation or its environment is changing. Especially in Finland, the life-cycle considerations of energy utilities have typically focused on the expansion phase. In water and sewerage utilities, on the other hand, areal limitations exist: it is not economically feasible to build too large physical systems. On the other hand, organisations can be merged without establishing a physical connection between the utilities.

Martin's (1994, p. 18) key conclusions concerning privatisation and reforms in the public sector are the following:

- The state has a fundamentally important social and economic role and duties.
- The effective and efficient implementation of that role and duties requires new approaches to how the public sector is managed.
- The involvement of service users and employees does not only improve the services, but it creates wide consensus on how the resources for the production of these services will be allocated.

Willner (1997, p. 26) pointed out that some justifications for public sector services may be in contradiction with the minimisation of costs, which, however, should not be attributed to ineffectiveness or inefficiency. Pint (1991, cited by Willner 1997) stated that by weighting the objectives correctly, public monopoly is more efficient than (regulated) private monopoly. According to Willner's extensive study (1996, cited by Willner 1997), public ownership is not inferior to private ownership and in some fields even superior to it. Public ownership works especially well, or at least equally well, as private ownership in energy, insurance, railway, and water and sewerage services. He further pointed out that the

external objectives, the internal distribution of profits, and the genuine differences in technical and organisational effectiveness may get mixed up in the comparisons between the public and private sector.

According to Rasinmäki (1997, p. 14), the new market economy model emphasises social and ethical responsibilities partly at the expense of profit maximisation. The legal boundaries of privatisation cannot be defined only by considering whether the public or private organisation is in charge. In principle, sales of public assets or absolute (material) privatisation may be possible, if regulatory legislation and procedures adequately ensure citizen's legal protection, equality, and fundamental and human rights in the new environment. Rasinmäki pointed out that before implementing privatisation, legal public responsibility should be defined first as well as those core competencies and functions which cannot be transferred to the private sector. A municipality can transfer public service production to a private organisation which is not bound by the obligations defined in the legislation on municipalities (Rasinmäki 1997, p. 90). The private organisation does not guarantee democratic decision making, control, transparency and legal protection of citizens in the same way as the local administration would. The advantages of municipal service production are, for instance, the manageability of municipal operations, municipal democracy and the legal protection of citizens (Rasinmäki 1997, p. 391).

The objective of privatisation in Finland has not been material privatisation, but the establishment of functioning market economics in public procurement and services (Rasinmäki 1997, p. 489). Other objectives have been the improvement of performance and a reduction of public sector expenses.

The privatisation of water and sewerage services in England and Wales can be considered to be contrary to the principles of the welfare state, and even the market economy. Tuomala (1997, p. 116) also considered it paradoxical that the British regulatory system, which was praised as simple after privatisation, actually expanded and became quite complicated.

According to Rees (1984), the only proper way to assess the performance of a public organisation is to determine how well it meets set goals and objectives. This fact has generally been forgotten, when the public sector organisations have been criticised for being ineffective and inefficient. Martin (1994, p. 23) pointed out that the debate on privatisation has focussed on which ownership or management model is better, the private or the public one. This has generated many fierce disputes, but it has seldom produced any verifiable results. Martin (1994) emphasised that the question itself is the problem, not the answer. There has been very little discussion on the difference between the principles and profit-seeking of public services. Yet, Martin considers this difference the central issue, but does not mean that only the public sector can implement the values of public services or that the public sector has no need to apply private sector operating principles and practices or engage in public-private partnerships.

During the 1990s the need for the development of customer-oriented services emerged also with respect to other services than water and sewerage. Although the customer is formally the one with whom the water and sewerage works has the contract, de Faria and Alegre (1995) regard the end-user and beneficiary of the service, i.e. the direct user, as the real customer. In addition to direct users, they recognise also indirect and pro-active users.

There has also been a change in the philosophy of operations. The traditional planning-oriented philosophy focused on the supply side or production activities, e.g. procurement of inputs, personnel, investments and budgets. Public competition, however, requires focusing on the demand side and customer-orientation. Indeed, during the 1990s the need for the development of customer-oriented services emerged also with respect to other services than water and sewerage. Although the customer is formally the one with whom the water and sewerage works has a contractual relationship, de Faria and Alegre (1995) regard the end-user and beneficiary of the service, i.e., the direct user, as the real customer. In addition to direct users, they recognise also indirect and pro-active users.

The so-called responsive public management model can be described with the following slogans: entrepreneurial, service-oriented, decentralised, and customer-friendly (Figure 6). This model consists of two parallel systems: structural and human (Anttiroiko & Rönkkö 1994, p. 189; Hukka & Katko 1998, Seppälä, Hukka & Katko 2001, p. 56). Perhaps a corresponding responsive model for the private sector should be developed by those promoting it strongly.

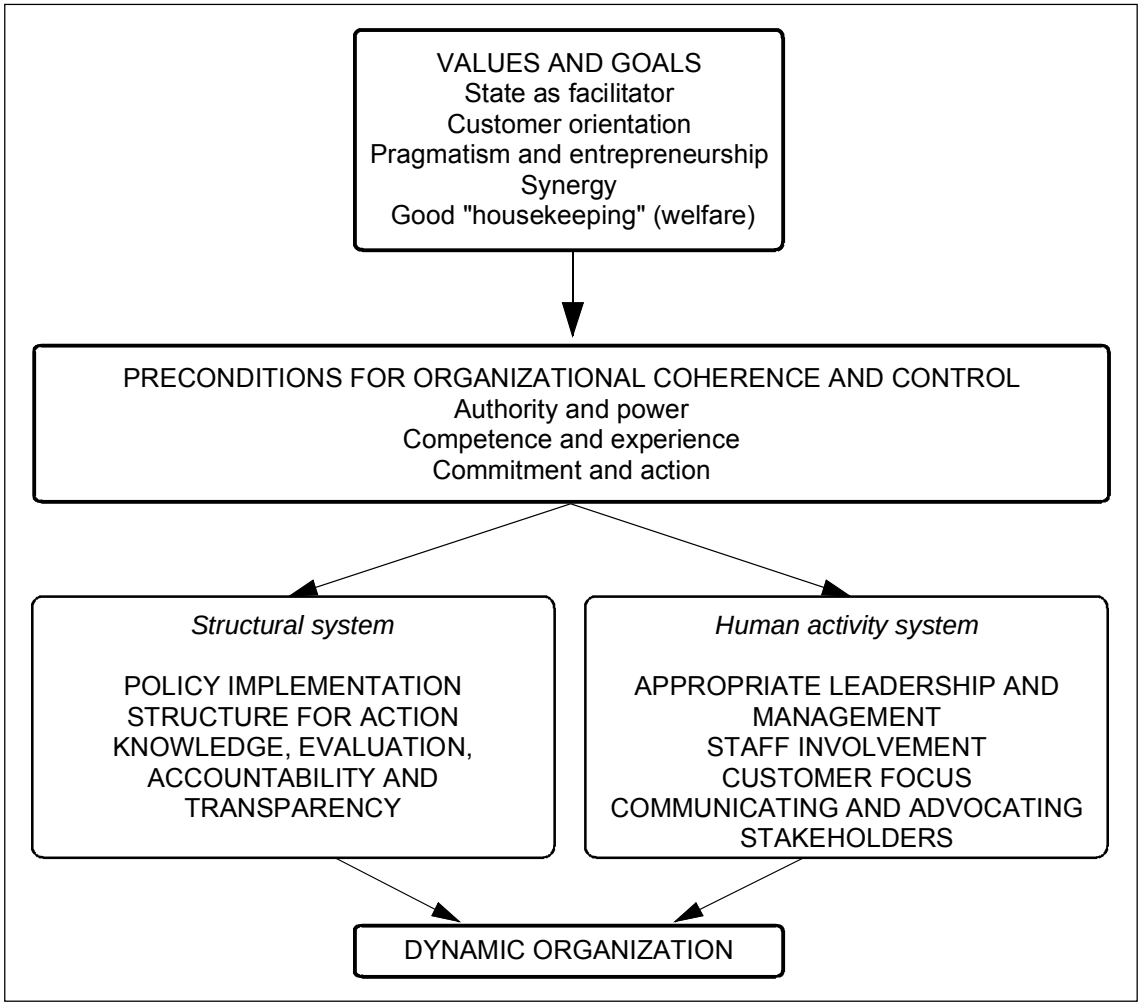


Figure 6. Key elements of a responsive public services model (Hadley & Young 1990, modified by Seppälä, Hukka & Katko, 2001).

Willner and Parker (2000) suggest that, from the standpoint of cost efficiency, the way in which a company is organised may be more important than ownership. The public sector or the shareholders can be active or passive. The way to develop the approach is towards, as they call it, dynamic efficiency.

According to Rasinmäki (1997, p. 109), the privatisation strategy and recommendations of the Organisation for Economic Co-operation and Development (OECD) for Central and Eastern Europe and the developing countries can be criticised as biased and lacking alternatives. He considers that development aid becomes a form of ethically questionable tyranny, if the borrower has to commit to privatisation as the only option in a structural adjustment programme. Similar critique has been raised also by Stiglitz (2002), among others.

The World Bank's Pierre Guislain has raised doubts about whether regulation of privatised monopolies is necessary at all, and indicated that in some World Bank projects it is no

longer practised (Martin 2000). There would be real concerns (shared by the authors) if this line of argument was to be applied to natural monopolies such as water and sewerage services in the future.

Since discussions about public-private partnerships are too often dominated by the role of private operators, it would certainly be more sensible to speak about public-private cooperation (ppc) in its various forms. In any case, due to the nature of WSS services, it is obvious that public-private partnerships or cooperation should be implemented so that the strengths of both parties, and those of other stakeholders, are fully utilised while at the same time guaranteeing the fundamental goal of the services.

# History of public and private water and sewerage services in industrialised countries

The first modern water systems were built on the basis of builder-owner or concession models in many European countries, and particularly in the North America. In most cases, however, municipalities soon took over the water and sewerage systems. For example, in the early 20th century, 93 percent of the systems in German urban centres were municipal, as were all the urban systems in Sweden and Finland (Wuolle 1912).

## The US Experience

The history of WSS services in the US has been documented by Keating (1989), and, except where otherwise stated, the discussion that follows is based primarily on that source.

### *Development of private and public water works*

Most US citizens drew their drinking water from private wells or other water sources until the last quarter of the 19th century. According to some researchers - e.g. Joel A. Tarr, Stuart Calishoff and Nelson Blake - the needs of businesses and industries, real estate owners, fire fighting companies and health authorities hastened the birth of water works, making public works necessary. For example, New York and Chicago started providing water acquisition and distribution with the help of private enterprises. New York began providing financial aid to encourage the construction of new wells in the 1780s and 1790s. Manhattan Water Company was awarded a contract to provide water services at the end of the 18th century. The cities then took over the works, since the private enterprises refused to produce enough water for public uses such as street cleansing, fire fighting, pollution prevention, and network extensions to meet estimated population growth or serve the peri-urban areas of the cities. The required capital outlays were also too large for many enterprises.

The share of public water works in the whole of the US was only 6.3 percent in 1800, but up to 53 percent in 1896. The change was particularly noticeable in big cities. For example, all 16 largest cities owned their water works in 1860, whereas the smallest cities often had private water works. In some cities, e.g. Denver and Kansas City, private companies owned the water systems until the 20th century. By the year 1896, about 200 cities had taken over the private water works, whereas only 20 public water works had been privatised. Keating suggests two reasons for the trend towards public ownership: the private sector's unwillingness to invest enough to allow implementing the necessary improvements; and some companies' unwillingness to provide services which were considered essential from the viewpoint of the well-being of the society.

Some case studies indicate that the transition period from private to public water services gave rise to much discussion for many years in the United States. For example, in Atlanta

many alternatives were tried in the 19th century before the municipality-owned water works was constructed. The common trend in the 19th century was transition to public water works. Yet, in the 1870s and 1880s, during a recession, some public water works were privatised. According to Keating, writing in 1989, this was the only period in the history of the United States when the relative share of private water works increased. A similar trend may have occurred in the 1990s. By the First World War about 70 percent of the water works were public, which was the situation also at the end of the 1980s.

Although the biggest cities usually owned the water works and were responsible for their operation at the end of the 19th century and in the beginning of the 20th century, only a few of them had their own engineers and expertise in design and construction. Many cities hired consultants to make designs and supervise construction. Some engineers of consulting companies later became city engineers and chiefs of public works while others designed and supervised construction works in different parts of the country.

In the western parts of the country, in California in particular, individuals and private companies took care of the provision of water services to a large extent. This situation lasted considerably longer on the west coast than in other parts of the country, until cities assumed the responsibility for provision of public water services. Public water systems were established primarily for irrigation - not for domestic water use.

In 1902, a federal law was enacted that enhanced the use of water, especially in irrigation and hydropower production (Reclamation Act). Thus, the federal government was involved in water sector activities. The act authorised the federal government to construct dams and canals for storing water and delivering it, especially for irrigation. These construction projects were implemented together with private irrigation projects. According to Shallat, this legislation supported the concept that large water systems, such as water abstraction, should be under public ownership. Roosevelt's economic policy in the 1930s (the New Deal) focused on the construction of public works on the basis of the Public Works Act, which provided financing for 35-50 percent of all water and sewerage network construction at that time. Subsequently, the New Deal programs gave the opportunity to many small communities to build their own water and sewerage systems. Similar programs continued after the 1930s.

The water works was the first important public utility and the first municipal service in the US that demonstrated a city´s commitment to growth. In 1830, some 20 percent of the 45 waterworks were publicly owned and 80 percent privately owned. The share of public water works increased gradually, being about 50 per cent in 1880 and 70 per cent in 1924 (Melosi 2000, p. 74, 119-120).

*Development of sewerage works*

Before the introduction of wider sewerage systems, wastewaters in American cities were collected, as elsewhere in the world, into septic tanks or waste chambers emptied by

municipal workers or private persons. In some cities, homeowners joined forces to construct a sewer for their street. Systematic sewer construction in American cities did not start until the middle of the 19th century and the majority of the systems were built towards the end of the century. The first sewerage systems in small towns were constructed in the 1930s with financing based on the Public Works Act. These systems were built almost exclusively with public funds.

In a few cases, the sewerage systems were built based on private initiative and finance. Private entrepreneurs and developers recommended making the systems more efficient and improving them in various parts of the country. For example, in the Kenilworth suburb of Chicago, Illinois, a private system was built to serve the rich people. In some instances, sewerage systems were expanded to business and residential areas, because the private developers wanted to increase the value of their real estate. In a Chicago suburb, for example, a developer paid the city for the expansion of the municipal sewerage system. Private contractors were hired to design and build sewerage systems at the end of the 19th and the beginning of the 20th centuries. Cities and communities seldom had the required expertise and therefore hired private experts and consultants to design the sewerage system (Keating 1989, pp. 100-102).

*Solid waste management*

In the United States, contracting out of solid waste management was already being practised in the 1880s and 1890s. The privately operated solid waste management systems were often criticised and ownership and management by municipalities increased. In 1880, solid waste collection was provided by a municipal system in 24 percent of the cities in the United States, but the share jumped to 65 percent by 1900 and to nearly 90 percent in 1920. According to Melosi (1989), the construction of the suburbs, the transformation in the cities' population dynamics and increased financing from the federal government changed attitudes.

Some cities started again to enter into contracts or grant concessions to private enterprises for solid waste management in the 1960s. About 40 percent of the cities in North America had a public solid waste collection system completely under municipal administration. According to Melosi, the change in solid waste management practices did not indicate the superiority of any system, but was merely an expression of the political, economical and social climate of each time period (Keating 1989, p. 84).

*More recent development*

According to Spulberg and Sabbaghi (1998, p. 199), there were altogether 54 477 residential water works in the United States in the beginning of the 1990s. Thirteen percent of them served more than 3 300 inhabitants and 87 percent less than 3 300 inhabitants. Yet, the small water works served only 10 percent of the whole population, and the bigger ones 90 percent of the population. Forty-five percent of the residential water works were under public ownership (mainly the local government, municipalities or state). Twenty-eight

percent of the water works were under private ownership. The rest were serving mostly institutions, parks and mobile home areas (Spulberg & Sabbaghi 1998, p. 203).

According to Kiuru (1996), available US information showed that the reliability and quality of private water and sewerage works were considerably lower than with public works. The important private stakeholders in the privatisation of water and sewerage services in the US are French and English companies (Spulberg & Sabbaghi 1998, p. 204). According to Westerhoff (1999), a total of 67 concessions had been granted in the US by March 1998 at a value of 4 000 million USD. Furthermore, there were about 40 new concessions under consideration.

Heilman and Johnson (1992, p. 191) concluded that, in general, privatisation is a practical and viable option with respect to efficiency and effectiveness in some infrastructure services. Yet, according to them, out of the public-private partnerships the privatisation, especially the successful privatisation, is a paradox (in wastewater treatment - authors' note). The private sector becomes more like the public sector, not the other way around. In addition, privatisation is extremely complicated, since there are high transaction costs (e.g. Lamberg, Ojala & Eloranta 1997) and other difficulties in the implementation. Transaction costs accrue from the time and efforts used for planning, decision making, negotiations, preparing contracts, enforcing contracts, arbitration and dealing with breaches of contract, co-ordination and other related activities (Oulasvirta 1994, p. 147).Yet, for example, Brubaker (1998) argued that several US experiences indicate that privately owned water utilities should save costs and be more efficient than public operations. According to Moody's Investor Services, however, public-private partnerships will remain extensively complicated and costly to set up (Reina 2000b):

*"Interaction among lawyers, contractors, the public sector, accountants, lending bankers, technical advisers, insurers and even rating agencies. . . rarely results in a quick and inexpensive financial closing."*

Although there are many factors contributing to the privatisation of, or public-private partnerships in, public services in the US - for example growing public debt and awareness and expectations regarding private sector involvement in the production of traditionally public sector services - political traditions and processes play the biggest role. The political system of the US is pragmatic in the way that it enhances innovative solutions to specific problems. Privatisation is seen as an innovative alternative in many sectors. According to Heilman and Johnson (1992, p. 193), political reasons outweigh economic realities in privatisation.

In the US, many private works were planned and implemented within a clearly shorter time than government financed or self-financed works. The real differences in the planning and construction costs of private and public works are difficult to estimate by statistical analysis, but according to Heilman and Johnson (1992, p. 193), private works could be built more cheaply. They also noted the possibility that all private companies may not have

used the full opportunities of private sector operations in the planning and construction processes. It was paradoxical that the alleged efficiency of the private sector was lost, when there was no competition in planning and construction. Contracts between the public and private sector have transferred a considerable share of the risks to the public sector, although privatisation has often been justified on the basis that the private sector would bear the risks of wastewater treatment and the management of the facilities, whereby public accountability would improve and become clear. It should also be noted that privatisation was succeeding in those states, where authorities were participating more in the enforcement of national effluent permissions and less in the regulation of the privatisation process.

Morgan and Chapman (1997) argued in their study that myths and stereotypes are not useful when discussing seriously privatisation and its applicability to water and sewerage services. In practice, private companies are producing high quality services in an environment, where real competition exists. This does not mean that they are by nature better than public organisations, but that the markets are forcing them to be efficient. In the case of a monopoly, however, there is too little incentive and consequently the quality of service may suffer and prices may increase.

In order to improve their performance, some public water utilities introduced competitive tendering between themselves and private companies,for instance, in North Carolina and Florida (Gullet & Bean 1997, Pontek & Wehmeyer 1997). In both cases the utilities' own organisations won the management contracts. On the other hand, it may be difficult to evaluate how real the competition was in those cases. Las Vegas Valley Water District has outsourced some of its operations - for example, the replacement of asphalt and concrete paving, the installation of safety barriers, and the planning of traffic diversion are done by external contractors (Jones Jr. 1999). Seattle resorted to public-private partnership (DBO, design-build-operate) in the implementation of its first water filtration plant (Kelly et al. 1998). An important reason for this was that the city did not have experience from, the planning, construction and operation and maintenance of this kind of a plant, whereas the required expertise was available in the private sector.

Haarmeyer (1994) argued that the US is not likely to follow the example of England and Wales, and that municipalities would merely take over private water companies. This has been the case, for example, in Pelham (Myers 1997). The American Public Works Association (APWA 1999), however, emphasised the outsourcing of non-core operations. Some authors like Elwell, Kellogg & Matthews (2000), Triche (2000) and Owen (2001) believe that an increasing section of the population will have privatised water and/or sewerage provision in the near future also in the United States.

Greenough et al. (1999) discussed the issue of managed competition, in addition to public and private management in public services in North America. Managed competition allows either local government services or privatisation or both. The most important achievement of managed competition in Charlotte, North Carolina has been developing a culture where

government is run like a business. This includes i.e. focusing on key business areas and support businesses, preparation of business plans, implementing activity-based costing and adopting new human resource policies. According to Greenough et al. management trends such as “In Research of Excellence” and “Reinventing Government” continue to influence practices for improving services and lowering costs.

*Evaluation*

Privatisation, or more precisely, public-private partnerships were often introduced as a new cure for an old disease in the late 1990s and early 2000s, though, according to Keating (1989), they absolutely were not. Melosi (1989) too reminded us that these questions are not really new, although the debate today is conducted as if this is the first time that different roles and responsibilities have been considered.

One of the key issues in the discussions is to distinguish between responsibility for ensuring that services are provided (“provision responsibility”) and responsibility for service production (“production responsibility”). For example, in the United States the federal government has increased its responsibility for providing public services, while the services have been provided through different kinds of public-private partnership models.

According to Melosi (1999), U.S. cities wanted to take the responsibility for public services for four main reasons. They wanted to look after their own interests (so-called home rule), and to control more closely the cash flow to the city from the services instead of giving money to the private sector. In water and solid waste management services, cities considered that the safeguarding of hygienic and healthy conditions was their responsibility, and they did not have confidence in the private sector’s ability to manage these affairs. The cities also considered the feedback from the customers regarding the quality of the services. According to Melosi, the nature of the political system in the States explains the tendency to emphasise the services owned by the public sector. Private sector involvement has been greater in solid waste management than in water and sewerage management.

## Nordic cases

In Tampere, Finland, the industrialist William von Nottbeck offered to build a water pipe at the request of the municipal authorities in 1865. He proposed that a wooden pipe could be constructed from Mältinranta at the head of Tammerkoski Rapids to the Central Square at a cost of 7 500 silver roubles. In his second proposal, a network covering the whole town would have cost 28 000 roubles. He was then asked to submit his conditions for running the water supply. These conditions, consisting of ten paragraphs, can be summarised as indicating that the industrialist would take the money and the town would take all the risks. Although the implementation of the plan might have been a considerable financial risk for the town, revenue from the planned water pipe would have been only a tiny fraction of the enormously rich aristocrat’s income. His dividend income alone was in six figures at that time (Juuti & Katko 1998). The town decided, however, not to accept his tender and started

developing the water works as part of the municipal administration (Katko, Juuti & Hukka 2002).

A similar proposal was made also in Sundsvall, Sweden, in 1874. The industrialist J.W. Bergström from Stockholm made an offer to build a water pipe for 250 rikstaler. The town, however, approached J.G. Richter from Gothenburg and asked him to make a plan for both a water pipe and a sewer. In Linköping a private water system was constructed in the 1870s based on a 30-year concession. There may have been a few similar arrangements in Swedish municipalities, but the works have for the most part been under municipal administration (Isgård 1998).

In 1866, a proposal for the establishment of Helsinki water works was made, originally at the request of the Senate. Later, the entrepreneur A.V. Åberg offered to implement the approved plan, and after lengthy negotiations the town signed a concession with Åberg in 1871. In accordance with the agreement, the concessionaire undertook to build a water pipe. He was also given a special permit to distribute water against payment. The concession was given for 75 years, but Åberg withdrew from the project and transferred the concession to the Neptun Company from Berlin in the summer of 1872.

Under direction of the engineer Robert Huber, the new company started constructing the water works, but because of the Europe-wide recession, the project could not be completed within the agreed time (Norrmén 1979, p. 7; Turpeinen 1995, p. 223). Neptun had financial difficulties and had to stop water pipe construction in several towns including Helsinki, where construction halted almost completely in 1874. Neptun submitted a proposal to the municipal authorities, in which the company was willing to transfer already completed works and the concession to the town for compensation. The company would be willing to finish the work under certain conditions, if an agreement could have been reached. It proposed two milllion marks as the price of the completed water pipe. After many long negotiations, the town bought back the concession and the water pipe for 1.2 million marks, and the company made a commitment to finish the work (Waselius 1954, p. 25; Norrmén 1979, p. 8).

At first, Neptun operated the works and was paid by the town. The company also got a monopoly to build house connections, and together with three other companies a monopoly for plumbing installations. In 1879 the company established a special plumbing unit which was the beginning of the Huber Plumbing Company. In July 1880, the town of Helsinki took over the water pipe and the responsibility for operation and maintenance, and the company's monopoly and the agreement ended. The operations and maintenance of the works was given to Robert Huber for an agreed annual payment. Huber took care of the works until December 1882, and the town started operating and maintaining the system in the beginning of 1883 (Lillja 1938).

*Discussions at the First Finnish Municipal Days in 1912*

At the first Finnish Municipal Days in Helsinki in September 1912, Bernard Wuolle, Managing Director of Helsinki Electricity Works, gave a speech, in which he described municipalities' technical enterprises and technical basic services (Wuolle 1912, pp. 88-103). He dealt with municipal business activities, especially the centralised management and delivery of water, lighting and energy, and tramlines and town railways. According to Wuolle, water works differ from the other activities:

*"especially in that in their establishment the main emphasis is not on economic viability or, at least, they are not absolutely required to make a profit, but the emphasis is on their health impacts and other indirect benefits."*

In 1912 there were 24 municipal and 15 private electricity works in Finnish towns. The latter group included some small towns, which bought electricity from nearby industrial plants and distributed electricity exclusively only to a few private entities. According to Wuolle, many of the municipality-owned electricity works were originally privately owned and were bought by towns only in the early 1900s. On the whole, Wuolle stated that in the beginning of the 1910s the trend was towards municipalities taking over both gas and electricity works and tramlines, or at least the delivery of gas and electricity in their areas.

An interesting part of the speech were his remarks on the following arguments of the English banker, scientist and statesman Lord Avebury (Sir John Lubbock) concerning municipal services (Avebury 1906):

- The municipal administration has enough, if not too many, tasks and responsibilities determined by law, even without the utilities.
- Utilities increase immensely municipalities' debt and make it difficult for them to borrow for other important needs.
- The municipal authorities become involved in labour conflicts.
- It is probable, if not absolutely certain, that municipal enterprises do not have the same incentive for savings, that they will be unprofitable or operate with higher costs than private ones. This will increase municipal taxes, which in turn is felt more heavily by the working class. Lord Avebury also argued that municipal enterprises' profits are often nominal, obtained by bad bookkeeping and inadequate depreciation.
- According to Lord Avebury, municipal enterprises hinder development and the introduction of new inventions.

Wuolle argued that Lord Avebury's general conclusions cannot be validated from his own findings. If Lord Avebury could show, for example, some flaws in municipal meat procurement or a textile factory, he would conclude that the municipality is not in general able to manage, e.g. water, gas, and electricity plants. If one makes these kinds of conclusions, it is as easy to prove that private persons are not able to take good care of private enterprises. Wuolle stated that everyday life has shown that there also are poorly

managed private enterprises. In addition, Lord Avebury's presentations show that the English local administration laws may be partly responsible for the "naughtiness" he noted. Wuolle stated that:

*"one can doubt whether the deficiencies, are the result of municipal business activities and whether it might be better to try to improve and develop the legislation instead of proposing a return to private enterprise in sectors which for practical and local political reasons are natural municipal monopolies."*

*Evaluation*

On the whole, quite similar arguments in favour of privatisation were presented by its promoters in the 19th century as in the 1990s. Yet, for a variety of reasons, municipalities took over the responsibility for these services. It would have been interesting to introduce some of Wuolle's 1912 arguments (expressed at a time when Finland was a grand duchy of the Russian tsar) into the international debate on privatisation in the 1990s. The ideas remain very pertinent 90 years later, including the management of business activities by specialists and competitive tendering for operations.

## France

France has a particularly large number of small municipalities and a long tradition of private companies and municipal water and sewerage works competing for the production of WSS services. In 1990, there were about 37 000 municipalities and 14 000 independent water works (Morange 1993). Around 2000 there were some 16 000 water utilities and some 16 800 sewage utilities (Barraqué 2002).

*A range of management options*

In general, the municipality or a joint board of municipalities has responsibility for the provision of the services. Municipalities also have the right to determine service charges independently, regardless of who the service producer is. The law allows municipalities to select their service production model (Haarmeyer 1994). A municipality or a joint board of municipalities can produce the services or contract them out to private companies. Contracting out is very common – 45 million French citizens, or three quarters of the population, are supplied water on the basis of management or lease contracts (Beecher 1997). The share has almost doubled during the last 40 years.

In the early 1990s the average municipality had a population of only 1 500, and two thirds of them had formed joint boards to operate water and waste water works (Morange 1993). Concessions were once widely used in France but are quite rare nowadays. On the other hand, French companies have increased the use of concession-type contracts in other countries (Barraqué 2002, Kraemer 1998b).

With regard to sewerage services, some 55 percent of the population is served by public utilities (Barraqué 2002, Moss 2002). The share of private operators has also grown.

Water and sewerage works can be managed by any of the following options (Barraqué 2002, Morange 1993, Moss 2002):

- Ordinary municipal works. The works has no economical, juridical or accounting autonomy, and in general, no individual budget. An individual budget is compulsory, but very seldom drawn up. These works represent 90 percent of the total, but they deliver water to only about one quarter of the population.
- Economically independent municipal works. The works has economical autonomy, but it is not a legal entity. The works has separate administrative organs, but the municipal council oversees and controls its operations.
- Concession: The municipality contracts out the implementation and responsibility of for all required investments to a private company. The private company produces the services and is responsible for them in accordance with the contract. The municipal council, however, determines the charges to be collected from customers. Since 1993, the concession period has normally been limited to 20 years.
- Lease contract (affermage). The municipality or the alliance of municipalities is responsible for investments. A private company is in charge of service production. The lease contract often follows a concession, and the lease period is 10-15 years. Combinations of concession and lease contracts are also possible.
- Management or service contract. The works of a municipality or an alliance of municipalities purchases various services from a private company.
- Fixed management contract (gérance). The municipality is responsible for investments. A private company, a joint board of municipalities or the provincial department is responsible for the management of operations, and the municipality pays the agreed fee for the service rendered regardless of the amount of revenue collected from customers. The municipality determines the service charges.
- Service contract based on results (régie intéressée). The municipality pays to a company a bipartite fee, which consists of a fixed fee and a bonus based on results. The bonus is, however, merely an incentive and not directly linked to profit.
- Public corporation under private status (Société d'Economie Mixte). The public corporation is an enterprise owned jointly by the municipality and a private company. The municipality must own an absolutely majority of the assets and control a majority of the votes in the governing board of the company, but not more than 75 percent. The public corporations are governed by private law. Services can be contracted out partially or fully to a private company in accordance with any of the models listed above.

According to Barraqué (2002) and Moss (2002), public corporation (viii) and BOT (build-operate-transfer) contracts are rare in France.

Clearly, there are quite a few options for managing water and sewerage services in France. For example, in the case of Paris, water services are shared. The municipality takes care of water intake and treatment while water distribution is shared by two private operators: Vivendi and Ondeo, two-thirds and one-third, respectively (Barraqué 2002).

In 1964 six river basin-based water agencies, “Agences de l’éau”, were established. These state-owned companies levy taxes, fixed by a board of users, on all the users (abstractors and polluters). Thus they play a key role in equalising the weight of heavy investments. According to Barragué (1999b), the promoters of such Agences sometimes get carried away by referring to them as “water parliaments”.

*Evaluation*

With so many small municipalities in France, it is practically impossible to have WSS utilities run by individual municipalities.

Private companies have participated in the operational management of water works for over a hundred years (Kraemer 1998a, p. 335). The best known enterprise, the Compagnie Générale des Eaux (later Vivendi and Veolia Water), was founded by an imperial decree as long ago as 1853 (Goubert 1989, p. 175). According to Morange (1993), there is nevertheless no real competition because four companies have dominated the market. Around 2000, there were three conglomerates - Vivendi, Suez Lyonnaise des Eaux (Ondeo) and SAUR/Bouygues. They are also the major global contractors, controlling more than 70 percent of the global private water market (PSI 2000, Section 4.5).

French municipalities have the option to return to municipal management, though many would question how realistic exercise of this option is. In Grenoble, the water services were re-municipalised in 2000 due to the bribery involved in awarding the contract in the late 1980s (PSI 2001). There are also a few other cases of municipal take-over (Barraqué 2002). Another scandal erupted in the municipality of Saint-Denis in 1996. According to Spulber and Sabbaghi (1998, p. 242), it was related to money transfers benefiting the mayor´s political party. Although there are only these two officially recognised cases of corruption, it is easy to see flaws in the workability of such an institutional arrangement.

The competition authorities have criticised the management practices of both the public and private sector (Myers 1997). There have been problems related to poor governance, lack of information and competition, excessively long contract periods, and supervision of the private companies which has been either inadequate or non-existing. Moreover, a minister was convicted of corruption some years ago. As a result, two laws were enacted in the hope of improving the possibilities of getting more information on the activities of private companies and supervision. According to Moss (2002), these new laws have strengthened control and transparency.

Vivendi is an example of the large, dominant French multi-utility companies. It operates as a leading infrastructure services producer in several countries, including England, the United States, Australia, and the Ivory Coast. Vivendi is involved in the media, IT, transport, real estate, etc. The original core business, Vivendi Water, is a part of Vivendi Environment. In 1999 the latter had a total of 215 000 employees, and its annual turnover was about USD 20 000 million (Gustafsson 2001b). The French conglomerates are not shy about using their economic power to implement hostile takeovers of smaller competitors. It also is obvious that they can operate at a loss, for example during economic slowdowns or recessions, and compensate for those losses in the long run.

The problems related to the French model in France were summarised in the report of the Cour des Comptes, the official audit body, in 1997 (Cour des Comptes 1997, cited by PSI 2000). Among other things, the report cited lack of competition, lack of transparency, corruption, water price rises, and unequal powers.

In France, it was also recognised that concessions have been used to improve the balance sheets of municipalities at the expense of the inhabitants. It has been illegal for the council to sell a concession to a private company since 1996 (Cour des Comptes 1997). Yet, according to Hall (2001a), this problem exists in countries, where it is legal to do that. For example, in Budapest, Hungary a concession was granted to a consortium which promised the council “an entry fee”, although the price of water to the consumers was higher than in another bid.

Clark and Mondello (1999) pointed out that several factors linked to the oligopolistic nature of the water management market in general, and to the French institutional arrangements in particular, cause a situation, where there is no effective competition. The private companies are able to extract excessive profits at the expense of consumers. The authors considered that the most important reason for the popularity of delegation is that the mayors are personally liable for any damage due to negligence on their part in water resource management, including the protection of water supplies, river management, and pollution control. Delegation of authority to a private company eliminates the mayors’ personal liability.

According to a Swedish study (Mattisson 1993), new French contracts have been granted almost without exception to the previous operators. This is largely due to the fact that the company has detailed knowledge of the water works in question and can thus minimise risks better than its competitors. This lack of competition emerges particularly with long concessions. The companies have also divided France into territories among themselves, which means that hardly any competition exists between them. According to Clark and Mondello (1999), the 1999 French law limits a contract to 12 years. The law though was not retroactive: the older and longer ones are still valid but their number will decrease (Moss 2002). In practice, due to many constraints, the only bargaining chip the municipality can use is to return to direct management.

Yet, according to Clark and Mondello (1999), the following factors complicate the revoking of delegation:

1. Technologies are controlled by the cartelised companies.
2. The lack of qualified municipal personnel (due to long delegation contracts).
3. Possible high costs of new investment and indemnities to the former operator.
4. Loss of fiscal advantages (VAT and other taxes paid by the private firm).
5. The mayor would become personally liable for any damages.

Since all the obstacles are financial in nature, Clark and Modello (1999) suggested that the solution could be to set up a fund or a financing mechanism to make the revocation threat credible. According to Moss (2002), French government statistics show that the concessionaire is changed in some 15 percent of the cases and in one percent operations return to direct municipal management. Desmars (2003) reports that more than 500 contracts come to their end annually. In some 20 percent local councils study the possibility of reverting to public management but only in one percent a new “regie” is established.

Barraqué (1999a) discussed the recent clash between economists and water managers in France, and asked whether water policy should be only (economically) “efficient”. He also raised the issue of regulation. In the French system, there seems to be no actual regulator, but it works better than the English one, which operates under a complex regulatory arrangement. Barraqué (1999b) has also raised the issue of subsidiarity, i.e. appropriate level of governance, within the EU water management. When analysed from a historical perspective, the French case raises the issue whether we should give sovereignty to institutions which are not the product of popular elections.

## Privatisation experiences from Britain

*“Governments and municipalities cannot work as economically as private enterprises and it follows that municipal trading must increase our rates more and more, while at the same time it raises the price of necessaries so that it cuts down incomes with one hand and with the other makes life more expensive.”*
*Lord Avebury 1906 (cited by Hietala 1987)*

### *England and Wales*

In Britain, the private sector started operating water works at the beginning of the 19th century and parliamentary regulation was introduced gradually. As in many other countries, the responsibility for most water works and practically all sewerage systems belonged to local governments by the end of the 19th century or, at the latest, the beginning of the 20th century. During the 20th century financing by the central government continuously increased.

Modern WSS systems can be considered to have been born in England, from where they spread to Germany and other parts of continental Europe from the 1840s. The first

systems in England were privately owned. On the continent, however, the public sector had a more central role from the beginning, except in France, where a private company, the Compagnie Générale des Eaux (presently Veolia Water), was established in 1853 (see the previous section). The British were still more advanced in water management than their continental counterparts around 1870 and English companies became involved in the establishment of water and sewerage works in many cities in continental Europe. This came about in three ways (van Craenenbroeck 1998):

- An English enterprise provided financing or became an owner;
- An equipment and appliances manufacturer established the water works to guarantee a market for itself; and
- Development of the works was started by hiring English experts as managers.

The birth of the Helsinki water works in the 1870s was part of the trend. The Antwerp water system is also an example from that period. An English engineering company, Easton & Andersson, started to work on it on the basis of a concession contract in 1879. The concession ended in 1930, although the city had tried to take over the works earlier (van Craenenbroeck 1998).

Meanwhile, in England, the lobby for state-run WSS services had begun in the 1880s. Among others, Joseph Chamberlain, a member of the Liberal Party, campaigned strongly for state to take over responsibility. He argued in 1884, for instance, that:

*"It is difficult, if not impossible to combine the citizens' rights and interests and the private enterprise's interests, because the private enterprise aims at its natural and justified objective, the biggest possible profit."*

Martin (1994) speculates that a hundred years later Chamberlain would have been thrown out of the Conservative Party - which he later joined - accompanied by hoots.

Castro, Kaika and Swyngedouw (2002) point out that in England, particularly in London, the poor quality of private water services prompted complaints from the 1850s, but it took half a century to put the water companies in public hands. That happened in London in 1902.

Until 1974, most water supply and all wastewater services were developed by local government, with increasingly support provided by central government subsidies. During that time, there was no enforcement system to safeguard drinking water quality.

In 1974, the UK Parliament decided by a big majority to transfer the provision responsibility for water and sewage services in England and Wales from local authorities to regional water authorities (RWAs). The boundaries of these authorities were set in accordance with the watershed areas. The RWAs were owned and managed by boards nominated jointly by national and local governments (Summerton 1998; Gustafsson 2001a). Twenty

statutory private water supply companies, serving some 25 percent of the population, were allowed to exist alongside the RWAs (Castro et al. 2002). Sewerage systems were still operated by local governments, but as agents to the RWAs.

According to the grand old man of water and sewage services, professor emeritus Dan A. Okun (1977) the regional water authorities based on river basins were pioneers of their era, and from the point of environmental protection, the arrangements could be considered viable and trailblazing. Later, Okun (1992a) argued that public ownership was given up lightly, just when a system had been created that would have made it possible to develop services and environmental protection as a whole.

According to Summerton (1998), a consequence of the establishment of RWAs and the role assumed by the central government was that WSS services became a tool of short-sighted political decision making. In the eyes of the public, establishment of RWAs had made the central government responsible for all matters related to service provision. In particular, the central government had assumed responsibility for water charges.

During the oil crises of 1974 and 1979, the British government used the water sector as a macroeconomic regulatory instrument. In order to control public sector borrowing requirements and to keep water charges low for political reasons, central government cut its financing to RWAs heavily. As a result, investments at the beginning of the 1980s were only one third of those at the beginning of the 1970s. This in turn meant that the government did not worry about the long-term environmental protection requirements, and it also disregarded the fact that Britain was about to join the European Union. It had actually promised to increase sector investments, which at the time of reorganisation were already barely enough to maintain the systems. As the WSS systems were very old, there was a desperate need for extra finance (Summerton 1998).

According to Semple (1993), one of the key problems was that the central government did not give RWAs permission to borrow enough funds. The main reason was political and ideological. Okun (1992b, cited by Kubo 1994, p. 36) too pointed out that an important factor in privatisation was that Mrs. Thatcher limited RWAs' ability to borrow money for capital projects:

*"Before, they could borrow money everywhere easily. They could get money at very good rates. Restrictions on external borrowing prevented the WAs from getting capital. They were considered ineffective because they could not borrow money. Thatcher prevented them from borrowing and then blamed them for not building."*

The authors' discussions with British and other colleagues have almost without exception confirmed this view. Green (2001) mentioned also that "colouring the decision to undertake privatisation were also several essentially ideological factors". He further continued to an English proverb: "marry in haste: repent at leisure". In other words, privatisation was carried out first and thereafter it was worked out how to make the system work. According

to Summerton (1998), another key feature was that the responsibility for service provision was in conflict with the regulation responsibility. The authorities controlled their own activities inadequately and, for example, the sewage works were operated poorly. According to Hjorth (2002), the EU convergence criteria also helped the Government to justify selling off the authorities.

The real objectives and achievements of the 1989 privatisation of the water industry are still widely debated. Officially, the Conservative administration set five main objectives: 1) promoting competition and enterprise; 2) reducing the size of the public sector; 3) involving staff of companies; 4) spreading share ownership; and 5) freeing the enterprises from state controls. There is a consensus that the fifth objective has been, perhaps, the most important driver of privatisation. It was expected that it would help to solve the chronic underfunding of the water sector, which was perceived as a major obstacle to the much needed upgrading of the systems after decades of underinvestment and the need to comply with the tighter environmental and quality regulations driven by EC directives (Castro et al. 2002).

After privatisation, the institutional arrangements in England and Wales were the following (Summerton 1998, p. 58, Figures 7 and 8):

- The setting of policy and standards are the responsibility of the politically elected government and, especially, the Secretary of State of Environment, Transport and Regions.
- Regulation of drinking water quality is the responsibility of the Drinking Water Inspectorate, which is the implementing body for the aforesaid policy and standards.
- Protection of the water environment is the responsibility of the Environment Agency (earlier the National Rivers Authority). This agency inherited the regulatory roles of the regional water authorities.
- Economic regulation is done by the Director General of Water Services, who has over 200 employees in the Office of Water Services (OFWAT).
- Provision of water and wastewater services is the responsibility of the private companies. The companies have some kind of a concession, a licence, which the Director General gives and which can be taken away in principle, if the companies do not operate satisfactorily. The private companies were established in such a way that works of the ten RWAs were transferred to ten new private companies. Originally, the government owned the works completely. The companies were privatised by floating the majority of the shares in December 1989. The rest of the shares were sold in the stock exchange. French sector companies also own stakes in English and Welsh water companies.

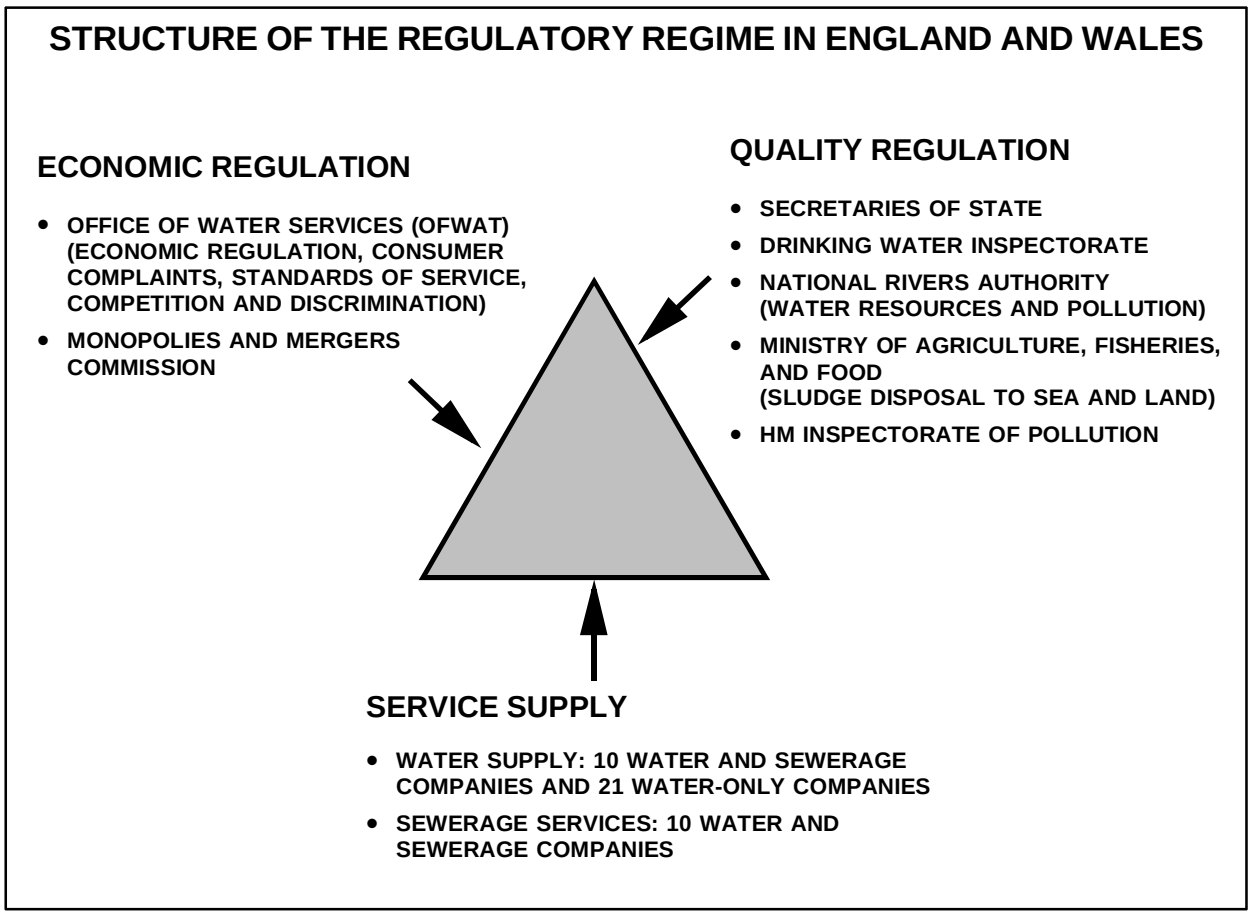


Figure 7. Structure of the regulatory regime in England and Wales (OFWAT 1992).

This arrangement differs significantly from the French-type concession in which municipalities are the owners of the works and providers of the services. According to Summerton (1998), the French system does not take consumers' interests adequately into account, which is why an economic regulator, observatoire des prix, has been established in France.

One idea behind privatisation was obviously to allow the government to be less involved in water affairs than in the time of the RWAs. The Director of Water Services and OFWAT have gradually become involved in regulatory activities of such an extensive scope that no one could have imagined in advance. It is generally agreed that in this kind of privatisation of WSS services, it is essential that the private sector is controlled properly to protect the consumers' interests. On the other hand, Summerton (1998) believes that the privatisation of English and Welsh WSS services has improved drinking water quality as well as surface water quality in general.


Figure 8. Areas of privatised regional water works in England and Wales (OFWAT 1997).

Kinnersley (1998) evaluated the privatised English and Welsh water and sewerage operations, starting with a description of the nature of water and sewerage services:

*"First of all, water delivery and sewerage are services, which almost all of us depend on at home and work. Water and sewerage services also have a central role in public health and water policy, which the government has to take a stand on even when the works responsible for operations are under private ownership."*

Another key feature, according to Kinnersley, is that there is very little room for traditional competition in the water sector. Both conclusions were disappointing, especially to the politicians favouring privatisation. In practice, the need to regulate the water sector has increased in England and Wales, and regulation has become highly complex. The government cannot just simply make the issue go away by privatising water and sewerage works. According to Kinnersley (1998), privatisation of the English and Welsh WSS services has had the following positive results:

- The management of watershed and river-basin related activities such as water resources, river water quality, flood protection, fishing, navigation, etc. have succeeded quite well. The National Rivers Authority (NRA) is under public ownership and control. It is perhaps more strict with private water companies than those representing other industries.
- The private companies have succeeded in increasing investments, especially in sewage treatment works. In 1991-1996 the annual investments were approximately USD 3 100 million or about twice as much as before privatisation.
- The National Rivers Authority succeeded in creating efficient control for sewage disposal. Regional water authorities had previously ignored illegal sewage discharges. Since 1995 they have been under the control of the Environmental Agency and its eight regional catchment-based units.

Kinnersley argues that it is rather artificial to speak about competition in the water sector since each company has its own service areas, and it is difficult, if not impossible, to create competition inside these areas. He and many other people obviously are not aware of the Nordic competitive model, where the municipal organisation is responsible for the core operations, and planning and design, construction, maintenance and other production-related activities are contracted out to private enterprises based on competitive tendering.

It has been agreed that there will be changes in water charges in connection with the privatisation of WSS services in England and Wales. Earlier the charges were based on property values. Water companies have introduced metering for business properties, but only a few households are metered. Britain is a rare exception among the developed economies (Norway is another) in not practising large-scale metering of water consumption. In Finland and many other western and Nordic countries metering has been the norm in single-family houses for more than a hundred years.

Kinnersley (1998) considered that the privatisation of WSS services in England and Wales as a whole has been a disappointment, regardless of some improvements, especially at the investment level. For example, it is obvious that the profits should benefit the consumers, not just the shareholders. OFWAT made new estimates to serve as a basis for water charges for the next ten years, which increased tension between OFWAT and the environmental authorities. One key issue was how much would consumers be ready to pay for a better environment. Kinnersley pointed out that it is very difficult to separate water management issues from politics. WSS services are simply a natural monopoly, and consumers' ability and willingness to pay matters.

Martin (1996) has bitterly criticised the privatisation of water and sewerage services (Box 1). The privatisation programmes were unable to solve the debt problems of government ownership and control; they only promoted mobility of transnational capital and globalisation. International privatisation processes have increasingly concentrated power and wealth in transnational systems and corporations, which are accountable to no-one. According to Martin, the most remarkable change due to privatisation was not the transfer

of power from the public sector to the private sector from the state to the markets, but from local and national political decision-makers to transnational decision-makers, who cannot be controlled through any democratic governance processes and principles. In developing countries, enterprises have become the property of the local elite and foreign transnational companies as a consequence of privatisation.

Contrary to the original ideas of privatisation, the state had developed an unprecedented regulatory apparatus. According to Castro et al. (2002), this regulatory framework was further tightened after the 1995 drought. The lack of compliance with investment targets committed to at the time of privatisation, also became an important factor in the tightening of regulation after 1995. The Water Summit of the New Labour administration in 1997 increased pressure for tighter regulation, resulting in the revision of the tariff system in 1999. Castro et al. (2002) suggested that there are signs of significant changes in the British water industry which would, after a relatively short period, once again reshape the public-private divide.

**Box 1. A critical assessment of privatised water and sewerage works in England and Walesin 1989.**

In his article “From many to a few”, Martin stated that the international financing agencies have systematically attacked public services on the basis of neoliberal policies for almost two decades. The key argument has been that the role of the government should be minimised and the private sector should create wealth which subsequently would trickle down through the national economy. In developing countries this meant so-called structural adjustment programmes, which required governments to divert attention from public services and public enterprises in order to service public debt. In developed economies the same ideas have been applied, although the structural adjustment programmes have not officially been discussed. The goal has been to decrease public debt and to increase efficiency. In many countries poorly functioning public services have cleared the way for privatisation along with the collapse of communism and the Soviet Union.

Source: Martin 1996.

The private water companies established in England and Wales have entered into other sectors and changed their ownership. For example, Welsh Water (later mutualised Glas Cymru, Section 3.4.3) and North West Water bought the corresponding regional electricity companies, Swalec and Norweb, in 1995. That time North West Water (later United Utilities) has also linked up with the US giant construction company Bechtel. Welsh Water, as well as some other English companies, have also increased their operations in developing and transition economies - either directly, but most often, in cooperation with local companies.

Thames Water, which serves 12 million people in and around London, has been cooperating with Vivendi, the biggest company in the water sector. In 2000, the German multioperator RWE acquired Thames Water which that time also served some 12 million customers in the Americas, Asia and Australia (Reina 2000a). Okun (1992b, cited by Kubo 1994) pointed out that:

*"The price of the shares was so low that the shares were just grabbed up, and as a result the people of England are paying twice. They've already paid for the whole system, but now they're having to pay these water companies which have to get back the money they invested in what had already been paid for. They paid the original cost, and now they have to pay the water companies that bought the system.*

*The water companies have so much money that they are investing all over the world and in many sectors that have nothing to do with water supply or sewerage operations."*

According to Martin (1996, p. 149), the Independent on Sunday newspaper studied the ten privatised water companies and found that they were responsible for 237 cases of polluting water courses in the beginning of the 1990s. Therefore, they were considered the biggest water polluters in Britain. According to Sexton and Hillard (1996), Thames Water announced in November 1995 that it would increase its profit by 10 percent and its dividends by 12 percent. This happened after a summer, when water distribution had been cut off from many consumers due to a drought. Morgan and Chapman (1997) stated that high charges, poor quality and inefficiency are common daily features with privatised water companies in Britain. A shift back to public ownership is unlikely, because the value of the shares in the private companies has increased considerably in 10 years.

In England and Wales small water and sewerage systems can also be provided by companies operating privately without being under OFWAT. An unregulated water supply system can be a well supplying one or more properties, or a larger supply serving a whole village. There are about 50 000 self-contained water supplies, which supply more than one property. Many industrial customers have their own sewage treatment works on site, and four percent of households are not connected to main sewers. Some of them are served by private systems draining to private treatment plants. The quality of unregulated water is tested by the local authority, and private sewage discharges to rivers, etc. are regulated by the Environment Agency (OFWAT 2000).

An interesting development in the English water industry is 'mutualisation' proposed by Kelda, the owner of Yorkshire Water in July 2000 (Shaoul 2000). Kelda proposed to sell its reservoirs, pumping stations and network to a Registered Community Assets Mutual (RCAM). The RCAM would have been owned by customers and operated on a not-for-profit basis. Kelda proposed that the RCAM should take over all the debts and be subject to regulation (Lobina & Hall 2001). The mutual would also have outsourced the management of service production to a Kelda subsidiary for the first five years, and thereafter on the basis of competitive tendering for subsequent five-year terms. Of what,

however, rejected this proposal (Shaoul 2000). The proposal evoked a strong response in the local community. For example, a Yorkshire newspaper wrote (Lobina & Hall 2001):

*"Yorkshire Water has amassed colossal debts, the core water supply business is struggling to make a profit, and the share price is depressed. The directors' answer to the mess they have created is to give the business back to the public. Having milked it dry with excessive dividends and excessive wages and share options for themselves, they are walking away. And even then they have the nerve to want to continue to run the company – no doubt at a profit – saddling the public with the GBP 1.4bn debts they have left behind."*

Kelda would have received GBP 2.4 billion, which is more than five times the 1989 purchase price, from the sale of the assets created by generations of taxpayers and consumers. Kelda would have been able to pay back Yorkshire Water's and the other subsidiaries' debts and pay up to GBP one billion to shareholders. That would have been more than twice their original investment, and would have come on the top of the paid dividends of GBP 350 million. Shaoul (2000) concluded:

*"Thus the turn to mutualisation, far from presenting a return to a form of public ownership, represents an exit strategy for the infrastructure industries and a mechanism for evading price regulation, at the expense of consumers. We can expect more subtle variants on the mutual theme to surface in the future. That this should happen within 11 years of privatisation is testimony to the failure of the policy.*

*The statement that equity is more expensive than debt finance, which is itself unaffordable and more costly than public debt, is a tacit admission that the private ownership of a capital-intensive business with limited demand is unviable. And that in turn raises questions about partial privatisation and public private partnerships of the less cash-generative public services with heavy investment requirements."*

The water industry has improved its performance constantly since 1991 across the various service indicators, especially in the core activity of water distribution (OFWAT 2001a, p. 4). Environmental performance standards have also improved, in general, for the sixth successive year. Yet, the number of successful prosecutions (pollution incidents) increased from 37 to 50 (OFWAT 2001a, p.5).

As for competition the so-called "common carriage" principle, analogical to electricity services, was introduced in relation to the new competition Act of England and Wales (DWI 2000). The idea is to allow several enterprises to use the network for water distribution. Even from a technological point of view, such an arrangement is probably very risky in terms of water quality and control, and may undermine the possible benefits of such "competition".

In 2002 OFWAT made a proposal that the private companies´ licenses should be amended to make them monopolies for four decades. In 1989 with no competitive tender, the

companies were given licenses of 25 years until 2014. In 1991 OFWAT decided that the companies would be given 10 years of notice of termination. In 2002, it was suggested that this notice being extended to 25 years. According to Hall (2002) this would make it extremely difficult to any UK government to reconsider water privatisation. The suggestion extension of notice is in contradiction with the French and international trend of reducing the length of concessions.

In April 2003 the UJ government gave the go-ahead to a bid by Vivendi Environment and Royal bank of Scotland for Southern Water, one of the nation's largest water and sewerage companies (Anon 2003) The Royal Bank of Scotland has been involved in Southern Water since 1996 through an investment group called First Aqua (Timmons 2003).

*Scotland*

According to Summerton (1998), the Conservative government also considered privatisation of the WSS services in Scotland in 1979-1997. It was not possible since, in contrast to England and Wales, the local authorities owned the utilities. Summerton considers even more important the political situation in Scotland, where the Conservative Party's support is traditionally considerably smaller than that of the Labour Party, Scotland's National Party and the Liberal Democrats.

Instead, in April 1996, the WSS services were transferred to three independent regional organisations, which the central government established. This was a virtual repeat of the the 1973 Water Act in England and Wales, which created the ten RWAs. The clear aim behind the organisational change in Scotland was to bring in private capital for investments through a so-called private finance initiative (Anon 1996a, Kinnersley 1998, Summerton 1998).

According to Kinnersley (1998), the fundamental difference compared with England and Wales is that the regional water and sewerage utilities are publicly owned. Researchers like Ashley (1996), argue that the objective has been to implement gradual privatisation in Scotland. The Conservative government selected its own candidates to manage the publicly owned utilities without considering the political situation in Scotland.

*Evaluation*

The water authorities based on the river basins, which were established in 1974, have been considered feasible (i.a. Okun 1977), since they promote the integrated approach in water and environmental affairs. What happened though was that they simply made large-scale privatisation of WSS systems easier to implement.

The privatisation of the English and Welsh regional water and sewerage works in 1989 was a unique undertaking globally. The experiences gained are only partly positive from the consumer's point of view. Many English colleagues have admitted in private

discussions that this kind of privatisation would be impossible to implement elsewhere. One Welsh colleague said that they have returned back to the situation of 150 years ago (Cooper 1999). Porter (1998, p. 249) stated that during Margaret Thatcher's era, the Victorian institution was taken into use once again with its many Victorian problems. Privatisation has created a regulatory system which is complicated compared, for example, to the Finnish system. The real costs to consumers and taxpayers can be only imagined. These transaction costs were described by Okun (1992b, cited by Kubo 1994, p. 37) as follows:

*"When a private company is created, you think that you will save money. But if you have to spend a lot of money building Government Regulatory Agencies, that is expensive to the taxpayer. The taxpayer pays taxes to regulate the water company and then pays in rates for the water company to make a profit. In English we call it a "rip-off."*

As for regulation, one can ask how realistic or democratic it is really to have an "independent" regulator. The regulation of private utilities is quite complex, as is evidenced by the continuously changing role of OFWAT. One can also ask what is basically wrong with democratic regulation by local governments in the case of municipality-owned systems.

Johansson (1997) argued that Finnish local decision makers and civil servants would not like to adopt the English form of local government. In Finland, competition and public-private partnerships have been implemented according to the needs of the municipal administration rather than through intervention of the central government like in England.

The dualistic political system in England (as well as in some other countries, notably the US) has no doubt an impact on the decision making concerning privatisation. For example, Pint (1991) argued that if the government can achieve adequate electoral benefits by redistributing interest group costs and benefits through privatisation, it may select to privatise a public agency. Yet, according to her, the government-owned agency is likely to operate more efficiently than the privately-operated regulated firm. Margaret Thatcher's policy has committed the Labour government to the same policy, since the privatisation of water companies is pretty well irreversible. This, on the other hand, has created what can be considered over-regulation during Tony Blair's administration (e.g. Shaoul 2000, Lobina & Hall 2001, Anon 2001a, b). In particular, the price cuts imposed by OFWAT may create problems for water and sewerage infrastructure in the future, if the companies continue to pursue big dividends through asset stripping, i.e. through deferred maintenance and under-investment.

According to Castro et al. (2002), the private companies reacted to the 1999 reduction of prices and, of expected profits, by cutting down investment programmes, reducing staff, and searching for alternative management models. At this stage, at least two of the ten water and sewerage companies presented plans for partial or total mutualisation and

becoming not-for-profit operators. This was first proposed by the Kelda Group in Yorkshire, but OFWAT rejected the application mainly on technical grounds.

However, another quite similar proposal for mutualisation by Welsh Water (Glas Cymru) was approved by OFWAT in July 2001 (OFWAT 2001b, cited by Castro et al. 2002). This Welsh case represents the first serious departure from the model institutionalised in 1989 with the full privatisation of the water industry. Yet, it seems clear that the Welsh case was also driven by political considerations, in the context of partial devolution of political power to the National Assembly for Wales by the New Labour administration. According to Vass 2002 (cited by Castro et al. 2002), this created the conditions for a sort of "deprivatisation without renationalisation" of the water company.

In France, the prevalence of private companies in the water and sewerage sector can be explained largely by the great number of municipalities. In England and Wales, however, the importance of local government has decreased continuously. From the viewpoint of the development of local democracy and governance, these two models are special cases. In other developed countries water and sewerage services have been managed by municipality owned works in co-operation with the private sector. The Nordic countries strongly emphasise this principle: the services should be managed at the lowest appropriate level (ICWE 1992). This principle was approved at the international conference in Dublin in 1992, and it was ratified at the Rio Conference (UNCED) later the same year. This principle should be promoted more widely now at the beginning of the 21st century. The quite similar principle of subsidiarity is one of the cornerstones of the European Union.

It remains to be seen whether the private companies and OFWAT are right in arguing that the investments in water pipes and sewers have been adequate in England and Wales (e.g. Lobina & Hall 2001), or whether the doubts expressed in the parliamentary committee report of November 2000 about the sufficiency of investments in infrastructure are correct. Kelda's interest in mutualisation might be an indication of inadequate investment.

Over the last years some of the water companies have been bought by international multi-utility companies. This poses quite a risk from the point of view of water utilities and sectoral competence. The mistakes of full privatisation of water utilities in England and Wales have now been largely acknowledged. Time will tell how the private companies in England and Wales will manage to operate now that they have been subjected to increasing regulation and competition. We have a recent example of bankruptcies in other fields of infrastructure, namely railways (Myllylahti 2001). This again is an extra burden on the public and taxpayers.

In 2003 some of the multinational water companies wished to sell their shares of the British based water companies while increasing interest was now seen among banks and private equity firms (Timmons 2003). Interestingly, the buyers were attracted by the same feature of the water industry that disappointed the sellers – modest but dependable profits. This

again reminds us of the basic fact that people pay for services. The final question is – should somebody else than the fundamental payers get the profits?

### Other industrialised countries

Apart from the high-profile systems in France and the UK, other European nations have well-developed WSS systems that offer comparisons of different management systems. Table 4 shows the management types in the European Union (EU) member states in 1996.

Table 4. Management types in EU member states (EUREAU 1997, modified by Hukka 1998).

| EU member state | Population ($10^3$ inhabitants) | *Direct public management* (%) | Direct supramunicipal management[2] (%) | Delegated public management (%) | Delegated private or mixed management[3] (%) | Direct private management (%) |
|---|---|---|---|---|---|---|
| Austria | 8 030 | 90 | 10 | - | - | - |
| Belgium | 9 958 | 5 | 50 | 40 | 5 | - |
| Denmark | 5 228 | 67 | - | 33 | - | - |
| Finland | 5 117 | 90 | - | - | 10 | - |
| France | 56 576 | 23 | - | 2 | 75 | - |
| Germany | 81 800 | 27 | 24 | 31 | 18 | - |
| Greece | 10 269 | 61 | 10 | 29 | - | - |
| Ireland | 3 526 | 100 | - | - | - | - |
| Italy | 57 280 | 72 | 23 | 1 | 4 | - |
| Luxemburg | 407 | 100 | - | - | - | - |
| The Netherlands | 15 493 | 6 | - | 94 | - | - |
| Portugal | 9 865 | 93 | - | 6 | 1 | - |
| Spain | 40 460 | 39 | 12 | 12 | 37 | - |
| Sweden | 8 838 | 98 | - | - | 2 | - |
| United Kingdom[1] | 57 897 | 3 | - | 9 | - | 88 |
| Total average weighted by population | 370 744<br>100 | 138 652<br>37 | 44 471<br>12 | 60 970<br>16.5 | 75 702<br>20.5 | 50 949<br>14 |

1 England and Wales: 100% direct private management; Scotland: 100% public authorities: Northern Ireland: 100% direct public management.
2 Supramunicipal: inter-municipal or regional.
3 Delegated management with mixed or private capital.

Kraemer (1998a) classified water and sewerage works into three categories as follows:

1. The centralised Anglo-Saxon model, where municipalities have no actual role (private companies compete for the ownership of a natural monopoly - authors' note),
2. The French model, which emphasizes markets and the competition between a few monopolies (private monopolies compete for the management of a natural monopoly - authors' note), and
3. The German model, where competition exists (competition for production of services - authors' note) and where municipalities are responsible for democratic control.

#### *Sweden*

In 1993 the WSS services of six Swedish municipalities - including Vaxholm and Åre (Lindblad 1993) - were organised according to the management contract model. The so-

called client-producer model has been implemented in Örebro. In Malmö, companies, including one French company, vied for the management contract at the beginning of the 1990s, but the final decision was to continue operations as a municipal water utility. On the other hand, the Stockholm Underground has been transferred partly to the French conglomerate Vivendi / Connex (Litukka 1999).

According to Vikman (1999b), Swedish water and sewerage works are well behind Finnish works in increasing managerial autonomy and the establishment of commercial utilities. One reason could be that the Swedish works are not allowed to make a profit. In Finland profit-making is not forbidden, but it must be reasonable in accordance with the law. Norrköping, Sweden established an energy and environmental company a few years ago which also includes a water and sewerage works. In 2001 this company was sold to Sydcraft, an energy company that, again, is owned by the German EON Energy AG. Thus, the city's WSS services are provided by a multi-utility company. In June 2001, Vivendi won the first contract in Scandinavia for outsourced services in Norrtälje, Sweden (PSI 2001; Gustafsson 2001b).

*Switzerland*

Kilchmann (1997) emphasized, based on Swiss experiences, that the commercialisation of WSS services is good in principle. The nature and conditions of WSS services, however, are such that business principles are difficult to implement in practice. According to Kilchmann, the most important thing is to free the operations from political control. By giving enough autonomy to the utilities, the business principles and practices can be adhered to without suffering the disadvantages of full privatisation. A possible disadvantage is the unwillingness to serve areas which are not lucrative for the private enterprise ("cherry picking").

The monopoly expands through mergers or cartels with equipment manufacturers or contractors, which further decreases competition. Possible long-term investment planning may be sacrificed for short-term profit-making. The shareholders of private companies prefer dividends to an idealistic enterprise with noble principles. Profit-making under regulation encourages indirect profit distribution such as salary increases for the management. In order to safeguard WSS services properly, quite complicated agreements are required between the parties involved. For example, future maintenance needs of the network are difficult to assess. What happens, if the private enterprise goes bankrupt? Strong local self-governance is a key issue in Switzerland. Another point is that large international conglomerates, through their sister companies, sell e.g. equipment and services to publicly owned utilities that invite bids for purchases (competition). But is there actually competition on the supplier side?

*The Netherlands*

In the Netherlands the history of water and sewerage works can be divided into three stages according to the implementation of the services (Figure 18):

- 1854-1920, when private companies were operating the majority of the works.
- 1921-1975, when the majority of the works were under municipal administration.
- Beyond 1976, when the works have been owned by municipalities and provincial governments, but have been managed quite autonomously according to commercial principles (Blokland, Braadbaart and Schwartz 1999).

The number of water and sewerage works was at its peak in 1938, after which it has constantly decreased (Figure 9). In 1957 a new water law was enacted, which required the establishment of larger works. At the end of the 1990s there were about 30 works. Some water and sewerage works were merged with public energy utilities. Even if an energy utility were to be sold to a foreign company, it would remain public. The intention was to change these rules, but in September 1999 the Dutch government decided that water services will remain in public hands (Petrella 2001, p. 14).

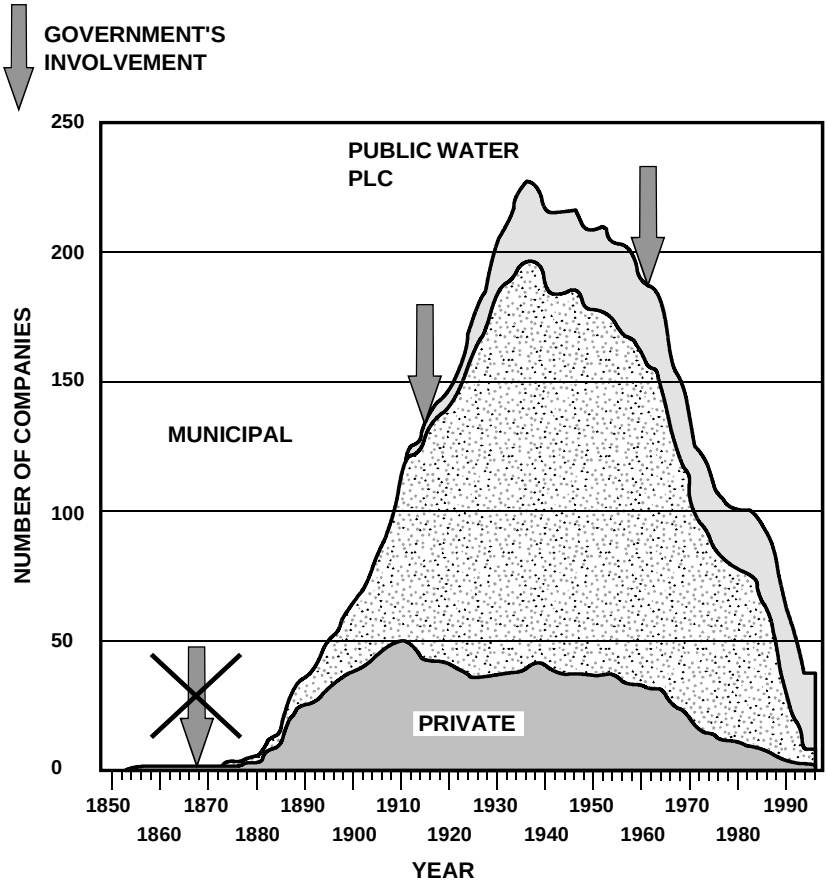


Figure 9. Organisational development of water utilities in the Netherlands, 1850-1995 (Braadbaart & Blokland 1997).

*Germany*

In Germany, municipal enterprises have proved very successful in the late 20th century and the early 21st century, and it has been acknowledged that they have been managed according to sound business principles.

About 6 000-7 000 small organisations, mostly municipal, supply the bulk of the water. Germany's Federal Environment Agency (FEA) expressed its concerns about liberalising the water industry. It concluded that the current structure has guaranteed drinking water quality and has protected the environment. The report stated:

*"These accomplishments would be jeopardised if regional influence was to be reduced and the consumer's connection to 'his' waterworks was weakened by opening the market, which would further increase the rising costs of companies."*

The FEA also noted that many health- and environment-related services and benefits are not stipulated in law, or are difficult to monitor and could be lost as a result of liberalisation. For example, drinking water might be chlorinated more to compensate for the lack of maintenance of the network, which is common around the world. The FEA considered that liberalisation and competition would enable so-called common carriage, which could cause mixing of different types of water, further increase chlorination and have negative effects on drinking water quality. The FEA doubted whether the technical, hygienic and legal liability problems could be solved satisfactorily. The constitutionality of water industry liberalisation was also questioned, because it might interfere with the municipalities' basic right to self-governance (Reina 2001).

In Germany any individual "länder" can decide their own policies in terms of ownership of water and sewage utilities. With the financial crisis of local governments there has been a debate in 2002-03 on possible selling out of assets in several of the federal units (länder), such as Hamburg (Lanz 2003).

*Australia*

The constitution of Australia does not recognise de jure municipal administration, but local government is considered a continuation of the central government. After the new government came into power in 1992, it started controlling local governments for the first time in more than a hundred years (Bard-Brucker et al. 1998). For example, the state of Victoria changed its policy so that within three years the number of municipalities decreased from 210 to 58. Simultaneously, compulsory nationwide competitive tendering was introduced. The voluntary consolidation of municipalities was favoured in principle, but according to Bard-Brucker et al. (1998), it is possible only by coercion. Water services are not managed by municipalities since they have their own authorities. At least in Australia, the basic question is the role and status of the local administration. Similar development can be seen in England and Wales, although it has not been considered very much in privatisation discussions.

*Italy*

In Italy, the 'Legge Galli' (Galli Law), introduced in 1994, set out the rules by which the water industry was to be restructured. Earlier, over 5 000 separate management bodies were responsible for water services. Under the new law, the regions are responsible for designating the administrative areas. The existing 19 regions, about 100 provinces and 8 000 municipalities are organised into fewer, larger water and waste management zones each covering a single 'optimal basin.' There should be 80-120 zones called 'ambiti' providing services under a single management entity. As of June 2002, the total number of zones called Ambiti Territoriali Ottimali (ATO) was set up was 91 (Willsher 1995, Lobina et al. 2003).

Local authorities are responsible for the selection of water operators and the regulation of operations. ATOs are being set up as consortia of communes and provinces and other local entities. ATOs are responsible for the selection of the water supply and sanitation operators and not to run water operations directly. This, however, does not exclude the selection of a publicly-owned and managed operator, despite legal restrictions recently introduced. Although the Galli Law does not require privatisation of water undertakings (see http://www.psiru.org/reports/9902-W-Italy-Leg.doc for further details), one of the objectives of the restructuring of the Italian water industry was to facilitate private sector involvement (Lobina et al. 2003).

Private sector involvement resulting of the implementation of the Galli Law was expected to start by the end of 1995 and reach its full extent by 1999 (Willsher 1995). Yet, implementation of the Galli Law has been subject to severe delays and remains to date partial. The first case of restructuring of local water operations was that of Arezzo in 1999, when local authorities selected a Suez-Lyonnaise des Eaux-led consortium as the private partner operator (Lobina et al. 2003).

As of February 2003, Rome-based part-privatised multi-utility Acea was the major Italian water operator, serving 7 million people throughout the country. Apart from Arezzo, Suez Ondeo (former Suez-Lyonnaise des Eaux) run water operations in Siena and Pisa (both in Siena and Pisa, Ondeo was part of consortia led by Acea). Veolia Water (former Vivendi Water) run water operations in Latina (Lobina et al. 2003).

*Evaluation*

On the whole it can be concluded that in the countries described above the interest for private operators varies. As an alternative, the performance of public water and sewerage utilities can be improved and sectoral reforms be taken.

# Examples of public-private partnerships in developing and transition economies

This chapter presents cases from Colombia, Kenya, Lithuania and Vietnam written by experts with extensive experience and familiarity with the local conditions. These cases are followed by more recent examples and findings from other developing and transition economies.

## The case of Palmira City, Colombia

Prepared by Mario Alejandro Pérez-Rincón (Lecturer from Universidad del Valle-Instituto Cinara, Cali, Colombia. E-mail: map@telesat.com.co)

### *Introduction*

This case study gives a historical review of Palmira's experience from the start of the corporate transformation process in the latter part of the 1990s. The changes increased participation of the private sector considerably, in particular that of French companies. The experience proves the importance of public-private partnerships in the provision of WSS services, and the need for a negotiation process to acquire international private capital. The national level authorities, which have wider experience and knowledge than local entities, should facilitate and support the process to avoid any imbalances in the negotiating powers of the partners.

### *Drinking water and sanitation sector in Colombia*

#### National context

Colombia is located in north-western South America (Figure 10).

Colombia has an area of 1 141 748 km2 and a population of 40 million. The country's water resources are abundant, 25 000 m3/c/a, and 71 percent of the Colombia population lives in urban areas and 29 percent in rural areas. Over 90 percent of the urban centres have less than 30 000 inhabitants. The per capita income is USD 2000 per annum - 52 percent of Colombians are classified as poor. The present national water supply coverage is 76 percent while sanitation coverage is 63 percent. Rural coverages are only 45 percent and 30 percent, respectively.

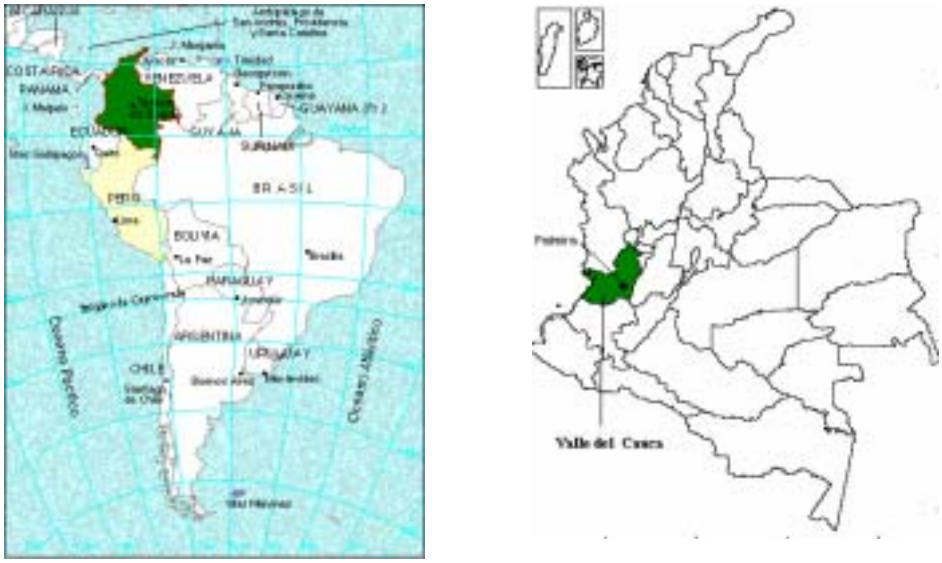


Figure 10. Location of Colombia in South America and Palmira City in Colombia.

*Evolution of drinking water supply and sanitation*

The provision of WSS services in Colombia has evolved cyclically, following various administrative reforms and changes in international fashions such as decentralisation and centralisation (Figure 11). Establishment of community utility systems to provide WSS services in Colombia dates from the late 19th century . The systems have generally been public-private associations. In big cities, for example Bogotá, Barranquilla and Medellin, it was common in the beginning for local authorities to provide the common facilities, e.g. main pipes and fountains in public squares (Jaramillo 1995).

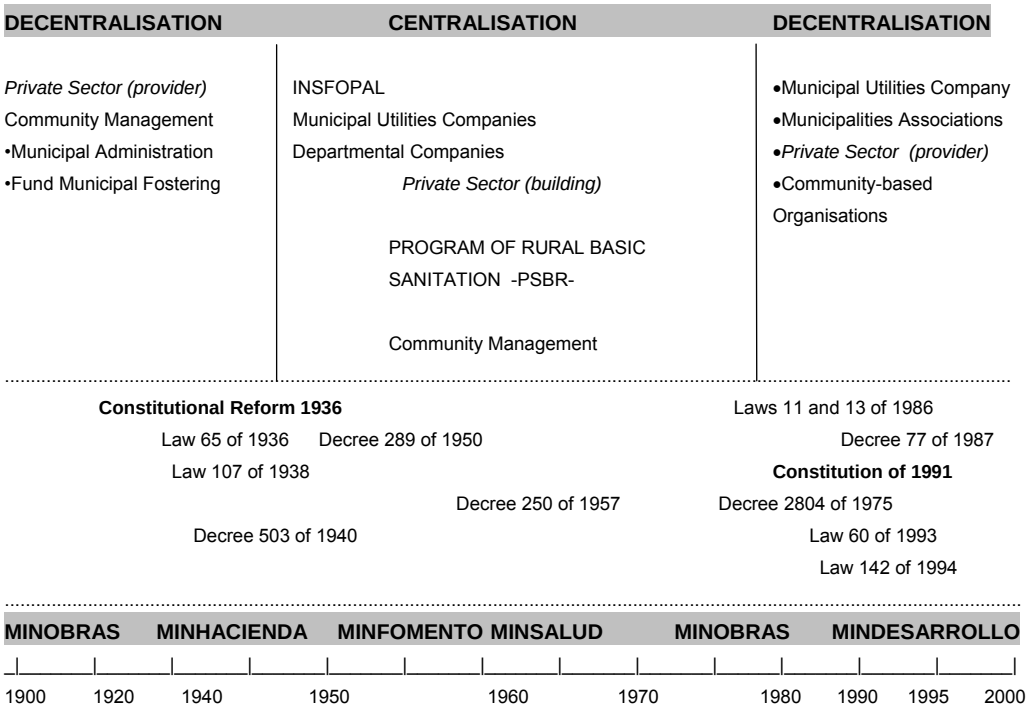


Figure 11. Institutional and legal evolution of drinking water and sanitation sector in Colombia.

Expansion of the coffee industry at the beginning of the 20th century increased the country's GDP and made the cities grow, necessitating the first water systems with house connections. Businessmen initiated the first systems in urban centres with higher economic and demographic growth. The municipalities granted concessions for water systems in Barranquilla in 1880, in Bogotá in 1886, in Medellin in 1891, in Cartagena in 1905, and in Pereira in 1918 (Betancourt 1998).

During the 1910s, municipalities bought the aqueducts from private individuals and service production was nationalised, mainly due to the increasing difficulties of meeting the growing demand for services and due to the more challenging requirements for the treatment both of drinking water and sewage (CRA 2001). From the 1930s, the international economic crisis and the Second World War caused considerable changes in the role of the state. The government played a greater part in productive activities and social welfare. This made it possible to establish municipal utilities, while departments looked after smaller towns. The role of the central government was to promote the utilities while municipalities had the main responsibility for their operational management. The private sector was involved in the planning, design and construction of the systems.

In the 1930s and 1940s the government was involved only at the departmental and municipal levels, but in the mid-1950s the direct intervention of the central government increased through the establishment of the Municipal Fostering Institute (INSFOPAL). INSFOPAL was in charge of WSS sector management in urban areas with more than 2

500 inhabitants, and the Rural Basic Sanitation Program (PSBR) coordinated by the National Health Institute (INS) was responsible for rural areas. Until the mid-1980s, the private sector was involved only in the planning, design and construction of WSS systems. A new decentralisation process was initiated in 1987, and once again WSS services production was delegated to the municipalities. This also meant the liquidation of INSFOPAL and the Rural Basic Sanitation Program of INS.

At the beginning of the 1990s, important political and economic reforms, known as the Washington consensus, were started in Latin America. The structural reforms were aimed at diminishing the central government's role in the economy, and at reducing the fiscal deficit to enhance economic growth. The 1991 Constitution defined WSS services as a collective right and a government obligation, but continued to hold municipalities responsible for service production.

In 1994, Law 142 on Public Utilities was enacted. It covered drinking water, sewerage, treatment, electricity, gas distribution, fuels and telecommunication services. It also enhanced the private sector's involvement in the production of these services, and formulated institutional arrangements for the sector. The Ministry of Economic Development, together with the Regulatory Water Commission and the Superintendence of Public Utilities, are responsible for planning, technical assistance, defining of regulatory norms, and compliance surveillance. The Ministry of Health is responsible for the standards and control of water quality and the Ministry of the Environment is in charge of the protection of water resources.

Law 142 promotes private sector involvement in the production of water and sanitation services under different contractual models. Concession contracts are most popular. This has increased foreign investments (Table 5), but private involvement in the production of WSS services in Colombia is still low representing, only five percent of the total number of organisations (Table 6). Similarly, only a few systems have been subjected to complete privatisation, i.e. their assets have been sold. These include mainly systems serving private condominiums, which are independent from municipal systems.

Table 5. Foreign investments in Colombia (USD million).

| Year | Total | Total public services | Water and sanitation services |
|---|---|---|---|
| 1990 | 3 500 | 0 | 0 |
| 1994 | 5 780 | 6 | 1 |
| 1996 | 9 510 | 160 | 32 |
| 1997 | 12 930 | 1 110 | 166 |
| 1998 | 16 890 | 3 510 | 701 |
| 1999 | 20 860 | 4 320 | 951 |

Source: Republic Bank of Colombia 2000.

Note: Investments in oil production not included.

Table 6. Number and type of registered WSS service organisations (Superpúblicos 1997, modified by Pérez-Rincón 2001).

| Type of organisation | Total national | | Less than 12 500 inhabitants | |
|---|---|---|---|---|
| | (no) | (%) | (no) | (%) |
| Direct municipal management | 367 | 26.4 | 210 | 20.7 |
| Mixed | 22 | 1.6 | 10 | 1.0 |
| State-owned company | 272 | 19.5 | 132 | 13.0 |
| Company with private involvement | 69 | 5.0 | 42 | 4.1 |
| Community-based company | 630 | 42.3 | 595 | 58.6 |
| Other | 30 | 2.2 | 27 | 2.6 |
| **Total** | **1 390** | **100** | **1 016** | **100** |

Source: Superpúblicos of Colombia (1998).

*Evolution of water and sewerage services in Palmira City*

**Local context**

Palmira is a municipality located in the south-eastern part of the Valle Department (Figure 10). It is presently the second most important city in the region, and had a population of 227 000 in 1988. Its main economic enterprise is the agro-industry, based largely on sugar cane and sugar production. The metal-based industry also has some importance. Due to the industrial activities, the average income of the population is close to the national average. 46 percent of the population is classified as low-income, 47.7 percent as mid-income, 4.6 percent as lower-income and 2 percent as high-income.

**WSS services development in 1850-1950**

In order to solve the water supply problems of the town in the mid-19th century, the municipal administration built a calicanto aqueduct running along Real Street to the main square where a fountain or a pump was installed. Later, branch pipes were built along several streets, and pumps were installed in squares and other public places. In 1925,

when the town had grown bigger and required high-pressure water mains, a joint-stock company was established. The municipality's share was 25 percent and the remaining 75 percent of the company was owned by a single individual. Construction of the works started in 1926, but the company was liquidated in 1929 before finishing the work. All the assets and rights then transferred to the municipality. The same year, a new partnership was established including the municipality, the department, and twenty private shareholders. The aqueduct was completed in October 1929. Once the service became regular, some channels were built for sewage, which was a nuisance and a public health hazard. In 1938 the company built a water treatment plant (Raffo 1956).

Thus, the production of WSS services in the city of Palmira has always involved public-private partnerships (municipality and department with private shareholders). In addition, most of the construction work has been done by the private sector under contract.

**The Municipal Public Utilities Company of Palmira and Empalmira, 1950-1996**

The Municipal Public Utilities Company of Palmira was founded in March 1950 based on an initiative of the municipality, and with the support of the governor's office. The company's objective was the production of services for the municipality-owned infrastructure, namely water, sewerage, telephone, municipal slaughterhouse and market squares. At that time, the Municipal Public Utilities Company followed the policies and management practices commonly adopted by similar companies. A major change occurred in 1970, when the company was transformed into a Public Establishment of Municipal Order with economic, financial and management autonomy. That allowed the transfer of ownership and assets from the municipality to the established company, Empalmira.
At that time, the water, sewerage and telephone services were provided efficiently, and were continually profitable, in contrast to the slaughterhouse and the market squares (Raffo Rivera 1992). In 1996, water and sewerage coverages were 87 percent and 83 percent, respectively well above the national averages. During this period, Empalmira actively sought private participation through contracts for optimisations, master plans enlargements and improvement of various services. Priority was given to local and departmental companies meeting established technical requirements.

Like other municipal utilities, Empalmira was not free from political interference in its management, and this increased after the mid-1980s and the early 1990s. This, combined with poor management, led the company into difficulties, especially persistent financial deficits in water and sewerage in 1992-1996. This was accompanied by a significant fall in water and sewerage investments, and by a technological standstill in development of the telecommunications infrastructure. The situation with the municipal slaughterhouse and the market squares, which had always run a deficit, was more complex. In January 1995, Empalmira had an accumulated deficit of USD 4.5 million, payable accounts of USD 6.5 million, and 620 workers of whom 301 were in water and sewerage services. The company also faced a very delicate situation regarding poor service levels (Empalmira 1996).

The new juridical framework (Republica de Colombia 1994) forced the transformation of municipal utilities into joint-stock companies. The purpose was to achieve greater efficiency and better corporate performance. As a consequence, Empalmira was made into two new companies under mixed public-private ownership, but with private management. Telepalmira was created for the management of telephone services and Acuaviva for the management of WSS services. The slaughterhouse was liquidated, and the market squares were transferred to the municipality.

**Acuaviva S.A., 1997-2001**

Acuaviva S.A. was established in December 1996, with authorised capital of USD 1.25 million and subscribed capital of USD 0.5 million. The shareholders were: the municipality of Palmira (40 %), Lyonnaise des Eaux (LYSA), France (48 %), and the private investors of the region (12 %). The French company is the operator of the systems, and Empalmira leased the water and sewerage infrastructure to Acuaviva for a 15-year period for approximately USD 12.5 million per year. Empalmira will receive 60 percent of the profits starting in 2007 to the end of the contract. After 15 years, the infrastructure, including investments, will return at no cost to Empalmira. However, the total investment to increase service coverage must be financed by the Palmira Municipality. In addition to the leasing contract, other contractual arrangements were done within Acuaviva:

- Management contract with LYSA, according to which the company becomes the operator of the WSS services. It appoints the key managerial personnel of Acuaviva and supports it with technical and administrative assistance. The total value of this contract is USD 4.61 million payable yearly over five years.
- Contract of Technical Assistance with SAFEGE, France worth USD 6.41 million. This five-year contract includes: Preparation of the master plans for water, sewerage and stormwater; modelling of aquifers and hydrological studies; modelling of networks; implementation of geographic information system, and overseas training for technical management and personnel.
- Contract of equipment supply with AQUA TECHNIQUE, France worth a minimum of USD 2.06 million including a 20-percent (USD 0.41 million) of the value of the contract. The equipment to be provided on the basis of this contract included: vans, trucks, backhoes, compressors, consumer meters, small tools, valves, and telecommunication and control equipment and devices.

This model also requires a comprehensive investment plan for the 15-year lease contract. The investment plan would require USD 42.8 million, of which USD 28.4 million is for the extension and renewal of networks and equipment, and USD 14.4 million to pay for the advisory services of the French companies. The plan will be financed with service charges and a credit of USD 16.3 million from the national bank, which is guaranteed by the revenue of Acuaviva and the water and sewerage infrastructure of Empalmira.
In January 1998 Empalmira was transformed into a Financial and Fostering Institute for the Municipal Development of Utilities (INFIPAL) to administer the new operator companies (Telepalmira and Acuaviva), to supervise and monitor services, and to take over the operations after the expiry or termination of the contracts. Despite the enormous pension

liability of INFIPAL, the fulfilment of these objectives was limited, and caused the liquidation of the new institute in August 1999. The process of transferring all the assets and liabilities to the municipality is still going on (Infipal 2001).The complex framework of public-private partnership for the provision of WSS services in Palmira is shown in Figure 12.

In practice, this PPP framework has given LYSA extensive control of the company, and Empalmira and the municipality have difficulties in getting any real control in this complex institutional framework. The arrangement is also highly advantageous to the French companies, and the rate of return of public partners is very low. The companies invested USD 0.24 million in Acuaviva, and will earn about USD 13.5 million on the three contracts and an additional USD 14.4 million on contracts for advisory services. On the other hand, Empalmira, or actually the municipality, which provided USD 41.6 million (capital of USD 41.2 million and USD 0.2 million in Acuaviva), will get during the 15-year lease contract an approximate amount of USD 12.5 million, which is about the same as the French companies any possible profits are not considered in those figures.

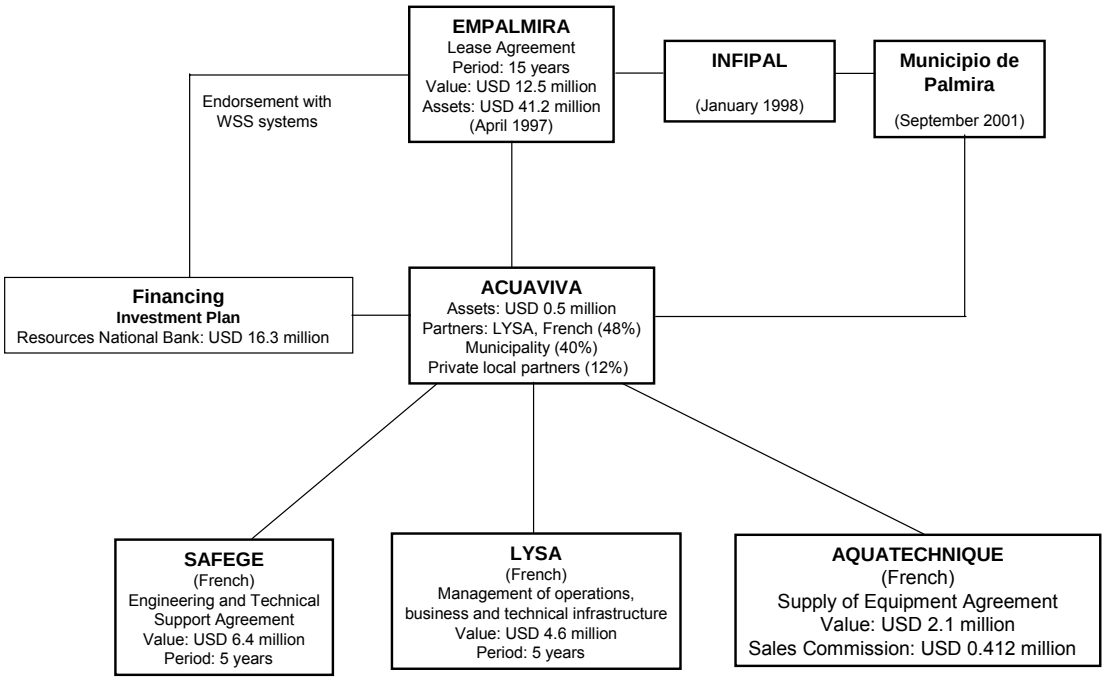


Figure 12. Public-private partnership framework for WSS services in Palmira, Colombia.

It is usually argued that public-private partnerships bring the needed foreign investments to developing and transition economies, but this was not the case in Palmira. The financing of the investments came mainly from the customers and the national bank. The amount of foreign investment was only USD 0.24 million, which is a tiny fraction of the amount spent for foreign services and equipment. The process for the establishment of the public-private partnership in Palmira was carried out without the support and advocacy of the national authorities. Yet, the Ministry of Development, which is the highest authority in the WSS sector, has created a programme to assist in contractual negotiations and agreements.

**Present situation of Acuaviva**

Acuaviva provides water and sewerage services for the urban area of the municipality and for two small rural areas, Barranca and Guayabal. The total number of its employees is 164, of whom 115 are in water and 49 in sewerage services - 107 perform operational and 57 administrative duties. In December 2000 the company served 48 396 users of water services, and 47 924 users of sewerage services. Service coverage was 97 percent in both services. Table 7 shows the performance of the company in 1998-2001.

Table 7. Operational and managerial indicators in Acuaviva, 1998-2001.

| **Performance indicator** | **Dec-98** | **Dec-99** | **Dec-00** | **Jun-01** |
|---|---|---|---|---|
| Accumulated unaccounted-for water | 31.6% | 35.9% | 35.1% | 33.1% |
| *Index of accumulated collection* | 84.2% | 91.8% | 97.2% | 99.0% |
| Index of public accumulated collection | 13.9% | 30.1% | 54.6% | 49.6% |
| Index of private accumulated collection | 90.4% | 98.4% | 100.9% | 103.3% |
| No. of subscribers – water | 47 185 | 47 629 | 48 396 | 48 927 |
| No. of subscribers – sewerage | 46 374 | 46 991 | 47 924 | 48 365 |
| *Service coverage* | | | | |
| Index of water coverage | 98% | 97.1% | 96.9% | 97.1% |
| Index of sewerage coverage | 96% | 95.8% | 96.0% | 96.0% |
| No. of meters installed in operation | na | 39 392 | 46 667 | 47 573 |
| *Coverage of efficiency measures* | na | 82.71% | 96.43% | 97.23% |
| No. of complaints/claims received | 321 | 342 | 52 | 57 |
| No. of complaints/claims for each 1000 subscribers | 6.8 | 7.2 | 1.1 | 1.2 |
| Average installation of connections in days | na | 7.85 | 6.62 | 3.48 |
| Length of sewerage network cleaned, km | 172.323 | 145.389 | 121.581 | 83.052 |
| % accumulated of cleaned network | 54% | 45% | 37.7% | 25.8% |
| *Portfolio rotation* | | | | |
| Rotation global portfolio in days | 57 | 102 | 5.83 | -4.18 |
| Rotation private individuals portfolio in days | 35 | 73 | -4.75 | -27.00 |
| Rotation public portfolio in days | 310 | 376 | 126.77 | 260.28 |
| *Labor efficiency (USD/m3)* | | | | |
| Accumulated global labour efficiency | 178.34 | 217.38 | 228.47 | 249.03 |
| Accumulated global labour efficiency | 247.49 | 338.15 | 391.29 | 410.90 |
| Water quality | 100% | 100% | 100% | 100% |
| Service continuity | 100% | 100% | 100% | 100% |
| *Financial balance* | | | | |
| Income (USD thousand) * | 5727.3 | 6652.5 | 7719.3 | 8905.2 |
| Expense (USD thousand) | 5815.4 | 6808.3 | 6916.1 | 8607.5 |
| Profit or loss (USD thousand) | - 88.2 | -156.2 | 802.6 | 237.7 |

*Exchange rate: USD 1 is $2 000.

Source: Acuaviva 2001.

Many of the operations are outsourced to other private companies, e.g. renewal of water and sewerage systems, repair and maintenance of company vehicles, leasing of machinery and vehicles, fee collection from banks and supermarkets, and minor design and studies. The use of outsourced services can be considered an explicit policy of the company, based on criteria of effectiveness and efficiency, which can be obtained through special outsourced services (Acuaviva 2001).

*Concluding remarks*

The current complex public-private partnership arrangements in Palmira make the role of the municipality extremely difficult, especially, if it is supposed to regulate and control the lease and other contracts of the French companies. The municipality is one of the owners of Acuaviva, i.e. a leaseholder, and obviously also the owner of the system responsible for the lease contract. Furthermore, it is partly responsible also for the supervision and control of the management contract (as the owner of Acuaviva} awarded to the principal owner of Acuaviva, i.e. LYSA.

Although the lease and contracts may not be very beneficial to the municipality of Palmira, and Colombia as a whole, it is obvious that the quality of the WSS services has improved in the early stage of the lease contracts. The municipality has tried to renegotiate the conditions of the lease contract, but until now without any success. However, this model has been able to operate only because the new investments are financed basically by municipal resources.

It is clear that public-private partnerships, such as the one in Palmira, should be based on more equal terms and conditions. The roles of each party should be clear and concise, and not ambiguous like in Palmira. The roles of the central government, the municipality, and the companies awarded the contracts should be clearly defined with respect to policy-making, regulation (e.g. health & safety, financial, environment, service quality and water allocation), and contract-based production activities. In the case of Palmira, the public-private partnership arrangements seem to create and exacerbate conflicts of interest. Thus, it is important to strengthen the local government and user organisations.

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## Scope for public-private partnerships in WSS services in Kenya

Prepared by Dr. Ezekiel Nyangeri Nyanchaga, (Senior Lecturer from Department of Civil Engineering, University of Nairobi, Kenya. E-mail: enyangeri@uonbi.ac.ke)

*Past policies and practices*

Immediately after Kenya attained independence in 1963, the government launched: "Sessional Paper No. 10 of 1965 on African Socialism and its Application to Kenya." This paper guided the government's policy towards the priority concerns for Africans, which at that time were identified as eradication of poverty, illiteracy and diseases. This policy meant that major basic services were going to be provided free of charge or subsidised by the government. The implication was that privatisation of certain services, including water, was to be minimised or not to be applied at all.

In the early 1970s, the government recognised the crucial role of the water sector for the general economic growth of the country. It therefore increased the status of the Water Department under the Ministry of Agriculture to become the Ministry of Water Development, with a mandate to actively steer water sector activities. Under the new ministry, a new plan of action was established aimed at improving efficiency and extending the water services to as many citizens as possible. This increased access to safe water tremendously in the rural areas. Unfortunately, this momentum was not sustainable.

In an effort to succeed the ambitious programme, the government took over several water supplies previously managed by the local communities, local authorities, and other public and private bodies. This did not last long, as the government soon realised that resources for sustaining the services were not forthcoming. The economy of the country was on the decline. In 1985, for instance, the country's inflation rose above the two-digit level for the first time since independence. The funding momentum, which was generated during the early part of the International Drinking Water Supply and Sanitation Decade (IDWSSD 1981-1990), started diminishing due to the global economic recession and unsustainable sector strategies. Therefore it became necessary for the government to change the strategies.

During the third decade of independence, the government launched another "Sessional Paper No. 1 of 1986 on Economic Management for Renewed Growth." Under this new policy, the government tried to address strategies for provision of basic services, which would accelerate economic growth and reduce inflation. The economic growth could only be revived if serious reforms were put in place in the public sector, i.a. reforms in the management of urban water supplies. For a long time, the Ministry was responsible for the management of urban water supplies, excluding Nairobi's water and sewerage services. Problems multiplied and ranged from low revenue collection to poor technical infrastructure.

The National Water Conservation and Pipeline Corporation (NWCPC) was established as a state corporation in 1988 under the State Corporations Act (Cap 446), reporting to the then Ministry of Water Development. NWCPC was mandated to manage and develop urban water supply projects within entrusted areas on a commercial basis. Some urban and regional water supply systems were transferred to NWCPC together with ministry staff. NWCPC moved from government to commercial accounting procedures and developed a five-year corporate plan to identify priority activities, policies and operational targets, tariffs and a management organisation plan. Although nominally autonomous with the opportunity for commercial orientation, NWCPC has failed to attain financial viability or to make improvements in service. NWCPC is implementing billing systems and improving metering, but its water supply systems are managed much like those of the Department of Water Development; with most procurement and expenditures being handled at headquarters, and there is a general lack of commercial orientation by field staff and managers.

*Inadequacies in the past policies and practices*

Past measures and policies have not adequately addressed problems in the WSS sector in urban areas. Water delivery systems have been ineffective and inefficient for the following key reasons:

1. Water was regarded as a social good. It therefore became part of the political culture, and the provision of water and sanitation was considered to be an obligation of the state. Citizens, civil servants and politicians regarded water utilities as the entities to fulfill that social role.
2. Uncertainties over the policy regime and regulatory framework have been a major constraint in WSS sector management.
3. Centrally managed monopolistic public enterprises or government departments had the responsibility to provide water services, but the entities and professionals given the task of delivering those services were rarely given the managerial and financial autonomy they needed to carry out their functions properly.
4. The centralised system of managing water utilities, particularly those under the Ministry of Water Resources Management and Development (MWRMD) and the National Water Conservation and Pipeline Corporation, makes efficient operations difficult. The role of private capital and management in the WSS sector, and the pricing of services were not clarified.
5. There were no performance measures for water utilities. This meant that managers could not be sanctioned for poor performance.
6. Laws overlap, duplicate each other and create potential for conflicts because: all vest competing mandates in different institutions and home provides for resolving institutional conflict.

*Present policy and practices*

The National Policy on Water Resources Management and Development: The Government's policies for the reforms are set out in "The National Policy on Water Resources Management and Development, Sessional Paper No. 1 of 1999". Following promulgation of the National Water Policy, work commenced on the development of the

Country Strategy on Water and Sanitation Services (WSS), which is currently in final draft form dated March 2003, and the Country Strategy on National Water Resources Management dated March 2003.

The National Water Policy covers issues related to water resources management, water supply and sewerage development, institutional framework and financing of the water sector. With regard to WSS, the policy provides for a re-evaluation of the respective roles of the key actors in the WSS sector. The role of the government should be decreasing in the direct implementation of WSS projects and in the provision of WSS services, and consequently, there should be growing participation of communities and the private sector. The policy, which requires the updating of the Water Act Cap 372, emphasises the need to develop sanitation in conjunction with water supply and to have WSS tariffs that ensure adequate cost recovery while protecting the rural and urban poor.

The Water Act 2002: The Water Act 2002, (Acts No. 9) was published on 24 October 2002. It provides the enabling legal framework for the implementation and realisation of the water policy objectives by spelling out the functions of the ministry as that of policy formulation, sector coordination and financing. The Act repeals the Water Act Cap 372 (last revised in 1972) and some sections of Local Government Act Cap 265 that deal with water and sanitation services.

The Act separates water resources from services through creation of administrative autonomous bodies (i.e. Water Resources Management Authority (WRMA), Catchment Area Advisory Committees and Water Resources Users Associations). The Act has clarified the policy with regard to institutional and legal mandates and introduced legal changes to rationalise mandates of Government and statutory bodies. However, the implementation timetable for the act is not stated. Thus, until the commencement date of the appropriate clauses of the Water Act 2002 is named, water supply operations within urban areas shall continue being guided by the Water Act. Cap.372, which spells out the powers and responsibilities of the water undertaker. Similarly, the Local Government Act Cap.265 shall also continue to guide the operations of water and sanitation services in as far as establishment and maintenance of sewerage and drainage works are concerned, fixing and collecting tariffs, regulation of private sewer and water connections and maintenance of water fund accounts.

National Water Services Strategy: The strategy for Water Services provides a suitable framework to achieve decentralisation, injection of efficiency and increase sustainable access to improved water and sanitation services as legislated in the Water Act 2002. Water and Sanitation Services will be the responsibility of Water Services Boards (WSBs). Regulation of the water services sub-sector will be through the Water Services Regulatory Board (WSRB). Provision of water services, including sewerage, will be undertaken by an agent of the Board designated as Water Services Provider (WSP) who shall be private companies, NGOs, or companies formed by Local Authorities, except where a WSB has satisfied the WSRB that such an arrangement is not possible. The reform of the water

services sub-sector will be the most complex aspect of implementing the reforms as the new legislation provides for entirely new approach to the regulation, management and operation of the sub-sector and the transfer of the existing assets held by Ministry, Local Authorities and communities will be transferred to the WSB's. Establishment and the subsequent operationalisation of the WSRB are the essential first steps in the process, as WSBs cannot be granted licences to operate until the WSRB is operational.

The MWRMD is mandated to implement the new legislation. It has established a Water Sector Reforms Secretariat (WSRS) to steer the reform process. The WSRS will report to an Inter-Ministerial Committee, the Water Sector Reforms Steering Committee (WSRSC). The WSRS has to prepare a practical transition plan and reform route map to guide the implementation of the reforms in accordance with The Water Act 2002, within a timeframe that does not conflict with the new legislation.

The proposals for the reform of the sector defined in these documents have weaknesses which are likely to impact negatively on the whole sector reform, and could inhibit the active participation of the private sector in the future delivery of water and sanitation services. Some current proposals in the strategy papers envisage decentralisation of both water resources management and water supply. It is clear that the strategy and legislation are being developed in the absence of a national policy on sanitation, which is currently being prepared under the coordination of the Ministry of Health. The current proposals in the national strategy papers and the Act indicates that all matters related to water shall entirely be administered by the MWRMD whereas the policy recommends, decentralising water supply and sanitation to local authorities, which are under the Ministry of Local Authorities and communities. Therefore, the strategy paper and the legislation are in conflict with the National Water Policy.

National Water Resource Management Strategy: This strategy paper supports the implementation of the National Water Policy and strengthens the effective implementation of the Water Act 2002, which amongst other things establishes the Water Resources Management Authority (WRMA). Regulation of water resources management issues will be by the WRMA, with focal management areas being Catchment Area Advisory Committees and Water Users Associations. Once established, the WRMA would be expected to take over responsibility for water resources management currently carried out by Director of Water Development, but would, in parallel, have to develop the improved systems and procedures necessary to effectively implement the provisions of The Water Act 2002.

Although there is a tacit understanding of the cross-sectoral nature of water resources, the reality of jointly managing the resource is not widely understood and accepted across sectors. Although there was good knowledge about the Water Act within government organisations, the World Bank mission found a limited understanding of the draft Water Resource Strategy on other Ministries and parastatals and complete absence of understanding in the provinces, districts and communities. The strategy will be difficult to

implement, given its cross-sectoral nature, if it is not widely owned or there is not a widespread understanding and agreement with the Ministry's plans (Aide Memoire 2003).

*Private sector experiments*

The formal involvement of the private sector has been so far limited to private consultancy and contractor services, and to a management contract in Malindi. Failure of the public sector to provide and produce adequate water and sanitation services to a significant proportion of the urban population has encouraged informal private service providers to be involved in meeting the demand, particularly in peri-urban areas. Due to the inability of the public sector to provide water services, some industries, institutions, enterprises, and residential properties have developed private water supply and sanitation facilities. In some cases these facilities have benefited the residents in the vicinity.

There are some examples of public-private partnerships in the water sector. Apart from the Water Department, which was responsible for managing most public water utilities, the government has registered a number of public and private institutions, e.g. local councils as water undertakers. Examples include:

- Nyali Wells Water Company, which supplied water to the residents of Nyali area as a purely private enterprise.
- Runda Water Supply Company Ltd established in 1975 as a housing development estate and appointed a water undertaker the same year. The supply is a privately owned and managed water company that supplies water to the residents of Runda in the suburbs of Nairobi city.
- Karen Properties, a private water company in Karen/Langata area in Nairobi, which was involved in the supply of water to the local residents on commercial basis.
- The Urban Water and Sanitation Management (UWASAM) project. To help to commercialise WSS services, the Ministry of Local Government established the UWASAM project with the support of the Germany Agency for Technical Corporation (GTZ). The project aims at assisting local authorities to achieve sustainability for their WSS services through commercialisation and privatisation. The initiative has been carried out in phases, the emphasis being on commercialisation in the current phase. The project builds on the experience acquired during a pilot phase in July 1987 - December 1993 (phases I and II) in three municipalities. In the January 1994 - December 1996 phase III, the financial management guidelines developed during the pilot phase were implemented in nine participating municipalities. It was recognised that if financial viability was to be attained, financial autonomy from the urban councils would be required. Water and Sanitation Departments (WSDs) were established in those nine municipalities. The departments have a general manager, a commercial manager, and a separate bank account. The project supported the staff of the ministry by employing full-time financial consultants, and an expatriate water manager. Public awareness workshops were also held, and action committees were formed.
- Although the creation of the WSDs created some improvements in service production, it soon became apparent that certain problems were inherent within the local government structure and even the creation of separate departments within that structure could not solve these problems. The problems included:

1. Cost covering tariffs were not introduced for reasons of short-term political popularity;
2. Delays in the approval of tariffs and budgets due to long bureaucratic approval procedures;
3. Diversion of water revenue to unrelated expenditures at the expense of the water services; and
4. Difficulty in the recruitment and retention of competent staff at all levels.

- In April 1996, the Ministry of Local Government accepted, in principle, the need to introduce a commercial approach to the water and sanitation operations in the local authorities. Various options were considered during the phase IV of the project (1997-1999). The most favoured was the adoption of public sector ownership and private operation and management models. These were accepted for implementation on a pilot basis for four municipalities (Eldoret, Nakuru, Kitale and Nyeri). Nyeri Water and Sewerage Company started its operations in July 1998, Kitale and Eldoret in September 1999, Nakuru followed in July 2000. Kericho never took off by then. The water and sanitation companies, fully owned by the municipalities, were established under the Companies Act, Chapter 486. A corporate management team ran these companies, comprising a managing director, a commercial manager, and a technical manager, who were all acountable to the board of directors. Phase V (January 2000-June 2003) continued with more pilot companies and introduction of macro-level activities. By the beginning of 2002, only the Nyeri and Eldoret companies remained operational, whereas the Department of Water Development took over Kitale and Nakuru operations due to poor performance of the companies. The recent changes under the new water act show Kericho, Kisumu and Nyahururu starting operations in mid 2002, as commercialised water and sewerage companies.

The UWASAM project has experienced considerable implementation difficulties and restricted impacts mainly because the councillors and officers of local authorities, Ministry of Local Government and Ministry of Environment and Natural Resources have a fear for changes to unknown situations, fear for autonomy and fear to lose jobs or officers (UWASAM, 2001).

*Future considerations for PPP*

In the past, water policy issues were treated within the ambit of general government policy. Production of the National Water Policy is a very positive step. Certain aspects of it, however, require immediate attention:

- The previous government was very strong in intention, but weak in policy implementation. However, the new Government with a popular base and reform minded agenda offers renewed opportunity to address difficult and complex public policy issues. Time-bound action programmes and mechanisms must be put in place to implement and to follow the stated policy.
- Although the Ministry of Water Resources Management and Development has been publicly stating its support for commercialisation and private sector participation, this is not stipulated in the documented policy. The policy must be revised to incorporate this aspect.

- The current policy framework does not mention the intention of creating appropriate institutional structures on which effective private participation is founded.
- The policy is not emphatic on clear delineation of responsibilities in the water sector, a prerequisite for any successful commercialisation and private sector participation.

Maintaining the current institutional framework has important implications for PPP as follows:

- The Ministry is regulator, operator and policy maker, which is a clear constraint for the PPP.
- PPP cannot thrive in an environment of stultifying bureaucracy. The complex enabling environment and need for approvals (e.g. fixing of tariffs) by the WSRB whose members are appointed by the minister could inhibit private sector participation. The regulator is not autonomous. There will be conflict of interest having the regulator and the Water Appeal Board (WAB) answerable to the Ministry.
- Political considerations must not outweigh what is socially and economically desirable. Economic viability and social justification are the cornerstones on which PPP is founded.
- The current institutional arrangement has encouraged maximisation of political objectives such as over-employment in the water sector. This is not sustainable in the PPP environment.
- The current institutional structure cannot support or encourage a performance-based incentive/reward system that is critical to the success of PPP.

Even though the Country Strategy Papers on Water Supply and Sanitation Services and Water Resources Management are being harmonised with the Water Act 2002, some grey areas that might hamper effective operations of a PSP/PPP system do exist with respect to the proposed institutional arrangements. It is evident that Water Service Providers cannot be appointed within the provision of the new Act until the WSBs are established. Although not mentioned in the Act 2002, it is likely that a system of interim licensing of WSBs will have to be introduced during the transitional stage of the reform process. This will allow WSBs to take over their new responsibilities while they are procuring WSPs and then being able to comply with the full licence application requirements specified in the Act (Tony, 2002).

During the review study of the water sector in Kenya, Rafiki (2000) stated that an effective water sector, irrespective of whether it is managed by the public sector or private sector, needs in the first place an effective regulatory framework for managing water resources. Currently, the Water Resources Management regulatory framework is being developed parallel with the Water Supply and Sanitation Services reforms.

A major impact in the management of water resources can be achieved by overhauling the current institutional arrangements in the water sector. To achieve effective PPP, the following will need to be addressed with respect to the institutional framework:

- Restructure the roles and responsibilities of the MWRMD by clarifying the policy with regard to institutional and legal mandates to enable it to handle policy, planning, monitoring and evaluation and hand over its operator's role to the entities in accordance with the Water Act 2002.
- Decentralise decision making to the utility levels and empower the utility management.
- Create the office of an independent water utilities regulator and Water Appeal Board.

Finally, from the foregoing, it can inferred that for the Kenyan situation, effective WSS services can only be achieved if there is a clear and strong political commitment that recognises the scarcity of water, that underscores the importance and value of water for all citizens, and that is willing to take effective actions for managing water wisely, in an equitable, sustainable and economically efficient manner.

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## A case study of Lithuania

Prepared by Pekka Pietilä (Senior Researcher, Tampere University of Technology, Institute of Environmental Engineering and Biotechnology, Tampere, Finland. E-mail: pekka.e.pietila@tut.f)

### *Lithuania in brief*

Lithuania has a population of 3.7 million people and an area of 65 000 km2. Its population density is 57 habitants/km2, and 70 percent of the population lives in urban areas. The largest cities by population are Vilnius (590 000), Kaunas (410 000), Klaipeda (200 000), Siauliai (150 000) and Panevezys (130 000). (Statistical Yearbook of Lithuania 2001)

Lithuania is divided into ten administrative regions (counties). The county administration does not perform many activities or duties related to environmental affairs except for those related to general regional planning. The counties are divided into municipalities. There are a total of 60 municipalities in Lithuania; each county has three to seven municipalities. Only two municipalities have a population of less than 10 000. The two largest municipalities have environmental departments employing up to twenty people, but mid-size and smaller municipalities have small environmental staffs; for instance, in Panevezys, the environmental department has only three staff members. Smaller municipalities have just one person responsible for environmental affairs.

After Lithuania regained her independence in 1990, environmental affairs were handled by the Department of Environment which became a ministry in 1994 (HELCOM 1994). Under the Ministry are eight Regional Environmental Protection Departments. Thus, the boundaries of counties and Regional Environmental Departments do not coincide. The duties of Regional Environmental Protection Departments include ensuring companies' and municipalities' compliance with environmental laws and regulations and issuing of pollution and construction permits (HELCOM 1994).

*Legislation and responsibilities*

In Lithuania, the Ministry of Health together with the National Agency of Food and Veterinary Affairs is responsible for controlling the quality of drinking water. The Ministry of Environment is responsible for the regulation and sustainability of water resources and the regulation of environmental pollution (Spokas 2000, 2001).

The municipalities are responsible for implementing the laws related to environmental protection, developing and implementing local environmental programmes, and allocating funds for environmental protection purposes (HELCOM 1994). Furthermore, they are responsible for screening environmental permits before they get final approval from the Regional EPD, exercising control over permits and stopping the operations of a company that fails to observe permit conditions. Until recently environmental permits have been issued for only one year at a time, but now they are also issued for longer periods. For instance, the city of Klaipeda (population 200 000 people) has about 250 companies which need environmental permits, and the city's environmental department has handled about 150 permits annually (Berankiene 2001).

Legislation makes local autonomous areas (=municipalities) responsible for water supply, sewerage and treatment of wastewater (Law on local self-government 2000). In 1998 an independent economic regulator of the water sector, a water department under the National Control Commission for Prices and Energy, was established. The reason for transferring the water sector's regulatory functions to a non-political institution was the significant increase in water prices. (National control commission for prices and energy 2000).

*Institutional set-up in the water sector*

During the Soviet rule in Lithuania (1945-1990), water supply and sewerage were state responsibilities. The country had been divided into 14 regional utilities for the administration and operation of the systems. Each utility, again, consisted of subdivisions. In rural areas people used their own wells, as they still do to a large extent. Rural areas also had collective farms which had their own WSS systems, and in most cases also wastewater treatment. These systems were operated by the farms themselves and were not part of the state water utility.

After the country regained her independence, the former water utilities were reorganised into municipal companies. Forty-two water companies were formed of the 14 utilities and their 86 subdivisions (National control commission for prices and energy 2000). Earlier units were regrouped according to the newly created municipalities. Originally a total of 56 municipalities were established but only 42 water companies. The explanation for the difference in the numbers is that some water companies operate the water supply and sewerage systems of more than one municipality. These 42 water companies have established the Lithuanian Water Suppliers Association (Lietuvos vandens tiekeju asociacija).

After independence, land was privatised and returned back to previous owners and the system of collective farms in its earlier form collapsed. Some farms continue operating as cooperatives or private companies. However, in many cases, buildings and related production facilities are not in use anymore, even though the farming land is cultivated by the new owners or has been rented to local farmers. In many cases too responsibility for the WSS systems of earlier collective farms has been transferred to municipal water companies. In the case of some other earlier state organisations (companies, holiday resorts, schools, etc) responsibility for the property, and consequently also for the water infrastructure, has been transferred to municipalities. Municipalities may have decided that the municipal water company should take care of the water systems.

*Pollution taxes*

Water companies or industries which draw water (either groundwater or surface water) have to pay a tax for the use of natural resources (Law on taxes on state natural resources 1991). For taking groundwater, the water companies have to pay a minimum tax of 0.03 LTL/m3 (exchange rate 4 LTL = 1 USD), but the tax on surface water is only a fraction of that (Klaipeda MEA 1999, Ignalina MEA 2000, Spokas 2001).

All industries must have environmental permits, and they have to pay taxes and fines for the environmental pollution they produce. Even municipal water utilities have to pay environmental pollution taxes when they discharge wastewaters into the environment. The taxes are paid to special Environmental Protection Funds by the organisation which actually discharges the wastewaters; so, if a plant is connected to a municipal utility's network, the utility pays the tax, but collects the tax ultimately from the plant. There are two kinds of pollution taxes: a) a tax for discharging pollution into nature, and b) fees for exceeding the permitted limits. Allowed discharges of pollutants are stated in the environmental permit. An enterprise has to pay a pollution tax for its discharges even if the pollution load is within the permitted limits. Should the pollution load exceed the limits, the company has to pay a fine for exceeding the limits. The fine per ton of pollution increases progressively (Law on pollution tax 1991).

*Payment for water*

People used to pay a water bill based on standard consumption, the standard quantity depended on the level of housing. National water consumption standards dating back to 1992 are in use, for instance, in Ignalina. According to these standards, people pay for 1.5 m3/person/month of water if there is no sewerage, 2.7 m3/person/month with sewerage but no bathroom, and 4.2 m3/person/month in a flat that also has a bathroom (Ignalina MEA 2000). Kaunas had several categories in 1999, depending on the level of the facilities, ranging from 30 to 230 l/person/d: the value is 30 l/person/d when there is no water supply to the house and the water has to be fetched from a standpipe in the street, and up to 230 l/person/d for a residence with modern plumbing fixtures (Kauno diena 1999).

In recent years, the practice has changed quickly and more and more people in blocks of flats have had a water meter installed in their flat and are now paying for their water according to their actual consumption. The meter used to be the property of the flat owner, who was also responsible for its maintenance. Nowadays the water utilities are increasingly assuming responsibility for the maintenance of the meters and also own them (Spokas 2001). Industries and commercial establishments have paid and continue to pay according to metered consumption. Based on the volume of water used the water companies sent their bills to customers covering both water and wastewater fees.

During the last ten years water tariffs have risen dramatically. Figure 13 shows the increase in water tariffs in Kaunas since 1995 (World Bank 2000). The average tariff in Lithuania (water plus wastewater tariff) in 1999 was 3.5 LTL/m3 (0.9 USD/m3) (National control commission for prices and energy 2000). The main explanation for the big increase in tariffs has been the huge investments in improving WSS services; in many cases also excessive investments. It is also true that some years back the utilities were subsidised and their tariffs did not cover the real costs of the services.

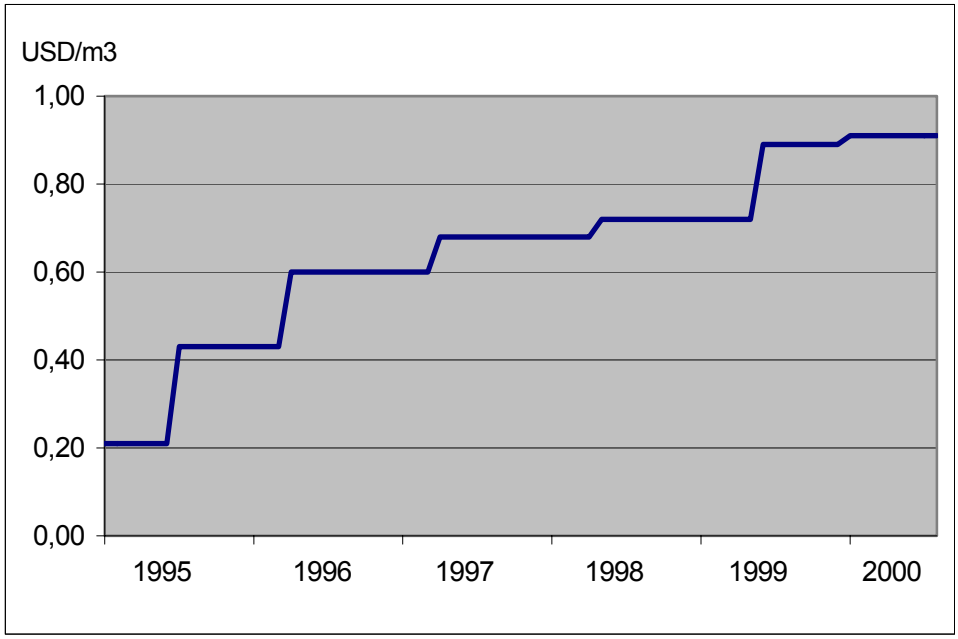


Figure 13. Water tariff (water plus wastewater) in Kaunas, Lithuania.

*Water and wastewater services*

Lithuania depends entirely on groundwater for its drinking (domestic) water supply (Abromavicius 1999). In rural areas about one million people get their water from dug wells. In built-up areas centralised water supply systems have been built. Most water is supplied by 42 municipal water companies (National control commission for prices and energy 2000). These companies are in charge of sewerage and wastewater treatment as well. But there is also a large number of other smaller water suppliers (cooperatives,

residential groups, agricultural companies, municipal companies, other companies, schools, etc) bringing the total to 714 water supply providers (Spokas 2000). The total amount of water supplied by water companies in 1999 was about 180 Mm3/annum (Statistics Lithuania 2000). The majority of the water, 65 percent, is used for residential needs, while industry uses less than 10 percent. The losses in the system are in the region of 25 percent. During the last ten years, the use of water has decreased dramatically. In 1987 the water utilities supplied a total of over 475 Mm3/annum of water (LTSR Komunalinio ukio ministerija 1988). A typical example of the development of water use in the 1990s is shown in Figure 14 (Klaipeda MEA 1999).

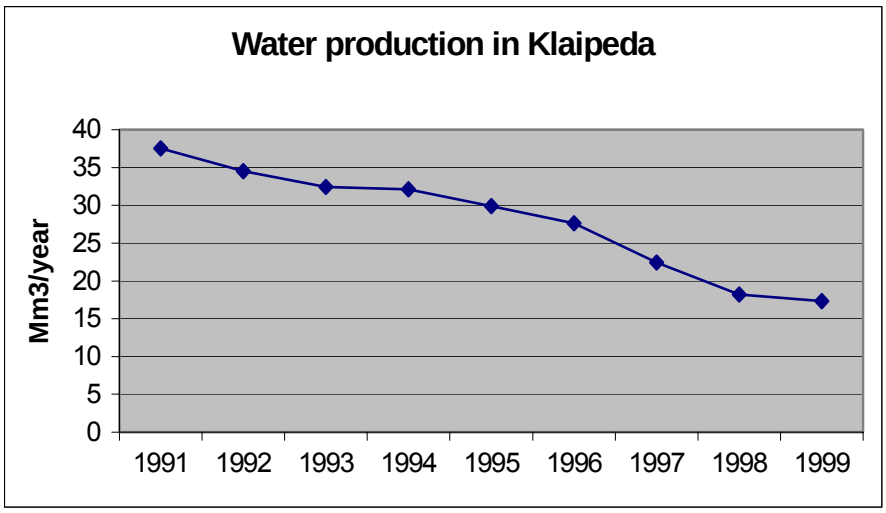


Figure 14. Annual production of water in Klaipeda, Lithuania.

Industry uses huge amounts of surface water for cooling purposes - only a small fraction is used in production processes. A few municipal water companies operate separate small industrial water supply systems, which draw surface water, but the industrial companies themselves supply the great majority of industrial water. The total abstraction of surface water in Lithuania was about 4 500 Mm3/annum in 1999 (Statistical yearbook of Lithuania 2001). Wastewater from most of the population centres is treated. According to the Lithuanian Environmental Ministry's information, 12 percent of wastewaters are still discharged untreated (Ministry of Environment 2000). In 1998 there were close to 800 wastewater treatment plants, of which 650 were in the countryside (Abromavicius 1999). The discharges of the seven largest cities constituted about 67 percent of all discharges.

*Financing of water infrastructure*

The water companies are independent financial units expected to operate on the income they generate. In practice, the situation is not that simple. During the last ten years the use of water has dropped in many areas to one third of what it used to be. This is of course advantageous from the viewpoint that the capacity of the units is sufficient, and there is no need to expand the systems. But, on the other hand, it is not economical to run over-

dimensioned systems. As fixed costs have been estimated to be 70 to 80 percent of the costs of water (Abromavicius 1999), larger than necessary systems result in high unit costs. A big problem for the finances of water companies some years ago were unpaid bills. Companies went bankrupt while individuals neglected to pay their water bills. Social pressure made it difficult for the companies to take tough measures to collect their bills. For instance, Klaipeda Water Company whose 1998 billing revenue was close to 30 MLTL had unpaid bills worth more than 10 MLTL (Klaipeda MEA 1999). During the last two years, the situation has improved clearly, and some companies are able to collect close to 100 percent of their bills (Spokas 2001).

Thus, many water companies are struggling to earn enough to keep their operations running and have hardly any funds for capital investments. Capital investments are still needed, even when the systems are large enough to cope with the demand. Many structures are old and need renovation or even complete replacement. As a consequence of decreased flows, machinery is often over-dimensioned and uneconomical to run. Water quality also needs upgrading in many cases, and the efficiency of wastewater treatment has to be improved.

External funding is required for investments. One of the largest environmental projects has been implemented in Kaunas. In the mid-1990s the City of Kaunas still did not treat its wastewaters. In 1995 a comprehensive 'Kaunas Water and Environment Project' was set up with financing from various sources. The total value of the five-year project was 78 million USD, of which 51 million USD was for the construction of a wastewater treatment plant (SIDA 1999). The largest share of the costs, 54 percent, was provided by the Lithuanian government. Other Lithuanian sources were the Municipality of Kaunas (8 %) - tariff revenue was planned to cover 10 percent. Loans were provided by EBRD (15 %) and NEFCO (3 %). Grants were received from EU's Phare Programme, Sweden and Finland (5 %, 4 % and 1 %, respectively) (EBRD 2001).

In Kaunas, Stockholm Water, a publicly-owned autonomous utility has run so-called twinning arrangements supported by the Swedish Government. In Estonia, the Finnish Government had a twinning arrangement with Tallin water company, which, however, was privatised in 2001.

*Private sector involvement*

Municipal water companies were established by reorganising the regional water utilities of the Soviet period. The employees of the old utilities were transferred to new companies along with technical facilities and machinery. The scope of activities and work practices remained the same to a large extent.

Water companies have been, to a great extent, 'full service' companies. They have had employees and own facilities to meet all their needs such as vehicle maintenance, metal work and welding and carpentry. Thus they have not had much need for the services of

private sector enterprises. This is one reason why the number of people working for a Lithuanian water company is far larger than that of a similar size company, for instance, in Finland. Marijampole Water Company in Lithuania serves about 40 000 people and company has over 200 employees, while the water utility in Kokkola, Finland, is providing water to 35 000 people with about 30 employees (Pietilä 2001).

Large investment projects are, however, carried out entirely by private companies starting with feasibility studies through all the stages of implementation. If and when foreign funding is needed for larger investment projects, tenders are invited in accordance with international practice. Nowadays, private companies also do a lot of maintenance work mainly because water companies do not have the necessary specialised equipment or experience from new methods.

Huge international water companies have shown interest in coming to Lithuania to run the water businesses of some of the largest cities. Until now, the policy in Lithuania has been that water companies will be kept in municipal ownership - not even management or service contracts have been considered.

*Investment needs*

The investment needs of Lithuania's water sector are big. Lithuania has applied for membership in the European Union, and it has been estimated that to meet the requirements of the EU's drinking water and wastewater directives close to 1 000 million Euros of investments would be required (Abromavicius 1999). The Environment Ministry's plan until year 2006 suggests 43 million Euros in annual investments in the water sector. Roughly half of this need is expected to be covered by foreign grants, the most important from the EU's ISPA Programme. Some 25 million Euros in ISPA funds are expected to be granted to the environmental sector annually.

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## Private sector participation: The case of Hanoi, Vietnam

Prepared by Do Trong Nhan, Deputy Director (AIT Center in Vietnam, E-mail: nhan@aitcv.ac.vn)

*Background*

Hanoi Water Business Company (HWBC) is a state-owned enterprise in the Hanoi Transportation & Urban Public Works Service Department. Its mission is to exploit, produce and supply water for all users within the city (domestic, industrial, commercial and public). HWBC was established in its current form in April 1994, but its history extends back for more than 100 years. Hanoi People's Committee defines the tasks and functions of the Hanoi Water Business Company as follows:

- Production and provision of water for all types of consumers under the jurisdiction of Hanoi People's Committee.
- Procurement and repair of water pipes, water meters, mechanical devices and equipment to meet the requirements of the water sector.
- Design, construction and repair of small water plants and medium-size networks at the request of customers.
- Preparation of investment plans and investment projects in accordance with the Water Master Plan of Hanoi City commissioned by Hanoi People's Committee and Hanoi Transportation & Urban Public Works Service and effective implementation of the water sector development program for Hanoi in cooperation with the Finnish consultants of the Finnish Water Supply Program.

To fulfil its tasks and functions HWBC is organised into two main sectors:

- Production sector including eight water treatment plants (WTPs).
- Distribution sector including five water distribution enterprises (WDEs), which manage and distribute water within their administrative district areas. They are also responsible for customer management, water billing and revenue collection within their area.

In addition, there are 11 specialised departments and 4 subordinate enterprises that provide service to the two main sectors. The total number of employees of HWBC is 1 671, of whom 215 are university graduates and 121 are technicians. The organisation chart is given in Figure 15.

HWBC is now operating eight water treatment plants and 14 small water production stations, which produce about 390 000 m3 water per day. Approximately 80 percent of produced water is metered; the rest is estimated on the basis of the capacity of the equipment.

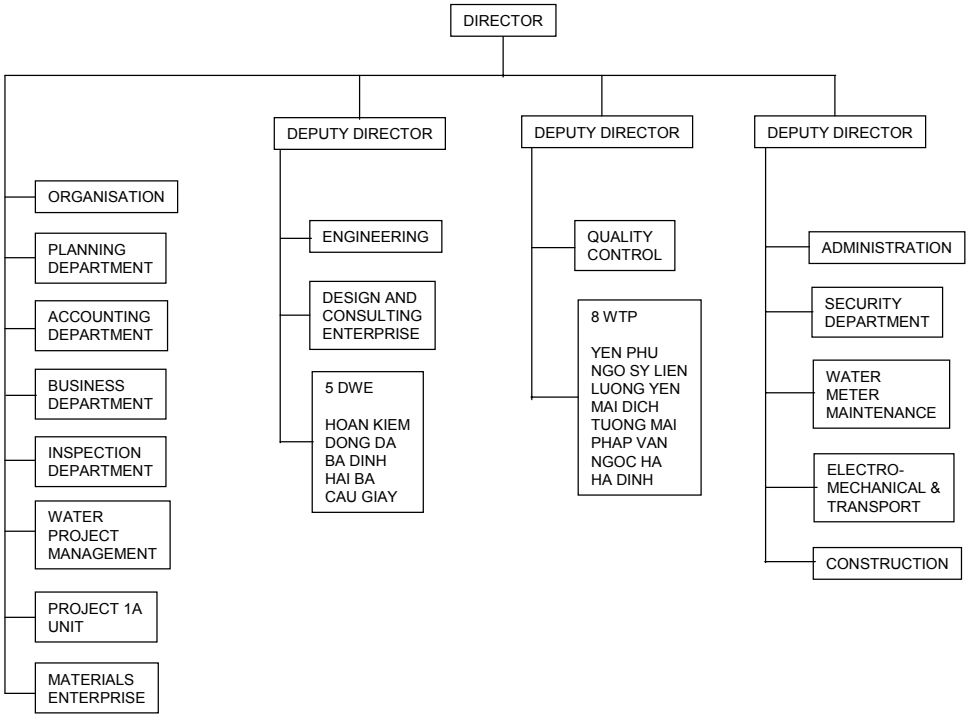



Figure 15. Organisation chart of Hanoi Water Business Company.

The total length of the water transmission and distribution system is 542 077 km. The pipe sizes are from 40 mm to 600 mm. The old network with a length of 170 124 km (31 %) was constructed before 1980. The new network with a total length of 371 953 km (69 %) has been rehabilitated and constructed under the Finnish Water Supply Program since 1985. At present, HWBC supplies water for 185 560 customers, 544 public taps, about 1 000 public storage and street wells and 72 fire hydrants.

HWBC operates as a commercial entity, but all its costs are not fully accounted for. The main reason is that HWBC has lowered basic depreciation and major repair costs in order to reduce water tariffs, which the Hanoi People's Committee determines on the basis of the economical and political situation. In fact, current water tariffs do not even cover production costs. HWBC can only cover operation and maintenance expenditures. A persistent problem for the company is the high percentage of unaccounted for water  some 50-60 percent.

*Functions of central and local government, water utilities and users*

In general, responsibilities regarding water supply have been divided between the central and local governments, water utilities and users as follows:

**Central government**

- In the urban water supply and drainage sector, central government is responsible for making national plans, approving regulations and rules, implementing criteria and allocating the investment budget.
- The Ministry of Construction, as a national agency, is responsible for the urban water supply and drainage sector. The Ministry of Construction supports the subordinate departments and companies in preparing their plans, managing, designing and assisting the implementation of urban water supply and drainage projects. It is also responsible for other fields such as construction and investment, project and technical design, and some supervision tasks.

**Provincial government**

- The provincial government is mainly responsible for construction, operations and maintenance of urban water supply systems and implementation of annual investment projects necessary for upgrading and extending small systems. It is also responsible for the financial management of water services and for setting water tariffs.
- Provincial people's committees have considerable authority in making decisions regarding water sector development policies, setting targets for water production and distribution, and formulating local financial policies for water supply companies, including subsidies, investments and cross-subsidies. This organisation formulates the policies of each province for investment projects and setting of water tariffs.

**Water utilities**

- In major urban areas, water distribution, management and operations are carried out by water supply companies under the jurisdiction of the respective provincial people's committees through their provincial Urban Public Works Service Department.

**Water users**

- Water users have to pay for the pipes and water meters needed for a house connection.

*Lease contract*

In Vietnam, water sector enterprises are considered public utilities whose main objective is to ensure sufficient and safe water supply for people, industries and other consumers in urban areas. This objective has resulted in the setting of low water tariffs and poor financial performance of water utilities. Water tariffs are set politically by the Hanoi People's Committee to protect the public interest and to make the tariffs affordable even by the poor. In general, Vietnamese water utilities are still subsidised. Nevertheless, in accordance with the transition from a centrally planned economy to a market-oriented one, the government encourages private sector participation (PSP) in water supply provision and management.

According to the PSP concept, the responsibilities of supplying water are shared by stakeholders: the local government, community organisations, consumers, and private enterprises. PSP has been implemented, for instance, through lease contracts. Starting from 1995, the HWBC has applied the lease contract with PSP in water distribution and retail sale to domestic water consumers. Altogether 20 management contracts have been awarded so far.

The mechanism of the lease contract is that in a suburb that HWBC is not obliged to serve by the people's committee, a group of 1 000 to 5 000 water consumers establishes a water supply management unit to represent them. All water management units have to be guaranteed by an organisation that may be a local people's committee, a community organisation or a business enterprise. The unit then signs the lease contract with the HWBC on the following terms:
HWBC is responsible for:

- Installing house connections and water meters.
- Supplying water in bulk to the area through master meters.

The water management unit is responsible for:

- Paying the installation costs of house connections and water meters.
- Distributing and selling water to customers within the area in question.
- Operation and maintenance of the water supply system.
- Repairing leaks and protecting the water system against damages to avoid water loss.
- Billing and collection of revenue and paying to HWBC a certain percentage of the value of the water pumped to the area at the agreed price. The prevailing percentage is 85 percent, the non-revenue water rate is 10 percent, and the management fee is 5 percent.

The water management unit is authorised to apply the prevailing regulations set by Hanoi People's Committee and the Water Supply Company to their daily management. For example, they can refuse to supply water if a consumer fails to pay for the water service. Many water management units are not performing well at the end of 5-year lease contracts. They are making losses and failing to pay HWBC, because they have too much non-revenue-water. Their collection is insufficient to cover the costs, although many water management units have increased their selling price (normally from 20 % to 100 %) and thus violated the rights of customers. For instance, the People's Committee of Dich Vong Commune decided in October 2000 to terminate the management contract unanimously, and handed over the local water system to HWBC when their water arrears to HWBC were USD 40 000.

The following main reasons have been noted for the failure of water management units:

- A regulatory framework is missing or not suitable for managing the water supply system (this also concerns HWBC), which is the primary reason for the construction of illegal connections with leaks in the pipelines and defective water meters.

- Employees of water management units are inexperienced and unskilled. They lack the specific knowledge and skills required in water system management and billing and collection. In many cases they apply the wrong flat rate to unmetered consumers and fail to detect illegal connections, which are common in Hanoi. The result is too much non-revenue water .
- Responsibilities and tasks of the personnel of the unit are not clear, which in practice means that there is no clear direction of the contract.
- The terms of the service contract favour the HWBC, and there is little incentive for the water management units to improve performance. Although the non-revenue rate, on average, is 60 percent, the respective rate in the service contract is only 10 percent. The 5 percent management fee is too low considering the unit's management responsibilities. As a result, broken pipes are poorly repaired, which causes further water loss. The water meters are not serviced periodically and defective water meters are not replaced or repaired, which means that the flat rate must be used. This increases non-revenue water and arrears.

When the construction of house connections is delegated to the unit, the lack of technical skills and responsibility of the unit's employees results in poor installation and the use of cheap materials. This also increases non-revenue water due to the leaks in new house connections.

*Advantages and disadvantages of the lease contract*

**Advantages:**

- Convenient for HWBC as part of the responsibilities fall on the contractor.
- In principle, non-revenue water should be controlled carefully, since the bulk water sold to the unit is metered.
- Involvement of local government in the management of water supply systems, because the water supply system is community-based.
- Involvement of community organisations and private sector in the distribution and sale of water.
- Consumers' attitude to water is changing from a state-subsidised public good towards a service and commodity.
- Creates jobs for local people in the service area.
- The local government's role is increasing in the management of infrastructure works.

**Disadvantages:**

- Legal framework is not viable - when the water units are unable to pay, HWBC cannot collect past debts directly from the customers after the termination of the contract. Furthermore, HWBC is not enforcing the contracts properly; since sometimes the units have been allowed to run up a lot of debt.
- Technical capabilities of water units are often poor causing water shortages in the service area.
- The financial management skills of the water unit often lead to financial losses and difficulties.

Although the lease contract has not produced the expected results, it forms a basis for the HWBC to formulate a new orientation and to encourage community organisations and the private sector to participate in water service production.

*Concession contract*

A form of concession contract with investment decision rights has been developed, based on lessons from the lease contract. At present, the HWBC is considering a pilot project on the concession contract in three communities: Phuc Xa, Phuc Tan and Chuong Duong. These areas meet the requirements of the concession contract because their networks have been recently rehabilitated and the amount of water supplied to the service areas can be measured.

The concession contract aims to achieve the following economical and social objectives:

1. Improve the effectiveness of the investments in water supply system rehabilitation by keeping the non-revenue water percentage under 25 percent, which is the project target.
2. Increase the water service level in the project area due to the amount of metered water pumped into the area.
3. Minimise the monopoly of the water utility in production and distribution.
4. Educate users about water economy.
5. Form a comparison basis for assessing the performance of the public utility and the private company.

The concession contract model of the HWBC is as follows:

- HWBC transfers all responsibility for water supply management and service to the area to a private company – the contractor.
- HWBC sells water in bulk to the contractor through main meters.
- The contractor distributes water to all consumers and collects water fees from them.
- The contractor pays HWBC monthly for the bulk water pumped into the area as per the agreed rate.
- The contractor covers the operations and maintenance expenditure of the water supply system, the billing and collection expenditure, and his obligations to the State according to current regulations.
- All prevailing regulations are applied and enforced.

This model gives the contractor an incentive to improve his performance. Naturally, water service expertise is also required to be able to do this successfully. The main terms of the concession contract are as follows:

**Assets**

- HWBC hands over the assets to the contractor at book value. The assets are depreciated at the rate applied in the company and regulated by the Hanoi People's Committee.
- The contractor is responsible for management and maintenance of the system in accordance with the initial design plan. Any investments in system expansion or

house connections should be agreed to and approved by the HWBC (investment decision right). HWBC will consider major repairs based on the contractor's proposal.

**Water services**

- HWBC is responsible for supplying bulk water to the service area through main meters in the quantity and quality defined in the contract.
- The contractor will be responsible for supplying water to the contracted area based on the general operation plan of HWBC.

**Collection and payment**

- Every month, HWBC and the contractor read the master meters to confirm the amount of water pumped into the area. These readings then determine the contractor's payments to HWBC as per the agreement.
- The contractor is responsible for meter reading, billing and collection in the service area.
- The contractor has to pay at least 75 percent of the prevailing water price, which is decided by the People's committee. The contractor can keep the remaining 25 percent to cover the expenditures related to the production of contracted services and as his profit.

**Contractual relationship between contractor and customers**

The contractor can sign water supply contracts directly with consumers. The prevailing rules and regulations govern the consumer contract.

**Guarantee conditions**

- The contractor has to deposit as a guarantee an amount of money equaling 3-months water revenue from the project area.
- The contractor can apply the rules and regulations set by the law and Hanoi People's Committee for his contract management within the project area.
- The contractor has to comply with existing legislation on money collection and payment, financial principles, and tariff policy.

In general, the main differences between the concession contract and the lease contract are that in the case of the former, the HWBC hands over the assets to the contractor, while in the latter case the contractor does not have to finance extensions of fixed assets. It can also be assumed that HWBC will enforce the contract agreement in the case of the concession more strictly than with the lease contract, which may have been influenced too much by political decision-making.

The drawbacks are that very few qualified local private companies participate in bidding, because the public water service sector has had the monopoly for many years, and very few entrepreneurial people have the required knowledge about the water industry. International companies are unlikely to be interested in bidding, because the scope of the works is small considering the transaction costs, and they are unfamiliar with the local

business environment. The legal framework is also unclear and the tradition of enforcing the law is poorly developed.

*Conclusions and recommendations*

The concept of private sector participation in Hanoi means that, in addition to private companies, community organisations and local people's committees are involved in water service management. There is model in existence that satisfies all the stakeholders. The HWBC is in the process of developing a model of management that is acceptable in Hanoi. The experience gained from the application of the lease contract is valuable for HWBC in formulating new types of contracts such as the concession contract. Yet, the prospects for the concession contract are not very good.

While it is important to attract the private sector, the barriers to its entry seem to be high, at least for three reasons: (i) the water business is quite unique; (ii) the water service is highly regulated and requires therefore efficient enforcement of the law; and (iii) there is perhaps too little incentive for the private sector.

There are various options for public-private partnerships including: service contract, management contract, lease contract, concession contract and build-operate-transfer (BOT). Therefore, the public sector should carefully study and develop models that encourage private sector participation so that all stakeholders - the regulators, the water utility owners, the private contractors, and the customers - benefit equally.

## Other cases from developing and transition economies

A French company has operated in the Ivory Coast since 1974. It has a concession for 300 water works outside Abidjan, the concession for the Abidjan water works, and the management contract for the maintenance of the Abidjan sewerage system. The Republic of Central Africa, Gambia, Sao Tomé, Senegal, Ghana, Guinea-Bissau, Congo, and Morocco have also been preparing for the privatisation of their water and sewerage services (Logan 1995).

According to Triche (1990), WSS services have been operated in Guinean cities on the basis of under-ten-year lease contracts by a company owned by French companies (51 %) and the government (49 %). Efficiency and the distribution area increased - the charges also increased from the 1989 level of USD 0.12/m3 to USD 0.75/m3 in 1993.

French-type concessions and management and service contracts have been implemented in Latin America, especially Mexico (Haarmeyer 1994). In Puerto Vallarta, a concession was granted to an English company. Monterrey also granted a concession, while Mexico City awarded a management contract to a consortium of four European and one Mexican company for the renewal of the customer register, installation of water meters, billing, and maintenance and rehabilitation of the network (Casasús 1994). Also Cancun, Guadalajara,

Naucalpan and Puebla started contract negotiations with private companies (Water Sources 1995).

In Buenos Aires, Argentina a consortium of French and Argentinian companies obtained a 30-year concession to operate a water treatment plant, where the plan was to invest about 1 000 million USD (The World Bank 1995). Chile has also started to attract private enterprises to invest in its infrastructure by granting concessions (Hayward 1996). In Surabaya, East-Java, Indonesia a 15-year concession has been granted for the construction of a water main and the delivery of water (The World Bank 1993). One of the biggest utilities operated on concession in the developing world is in Manila, the Philippines.

Private sector involvement has increased considerably in water and sewerage projects of developing economies in the 1990s (Figure 16). According to the World Bank (1998) management and lease contracts are attractive in countries, where the private sector considers an actual investment too risky. These contracts are used in 13 percent of all projects. In Africa, however, seven out of ten make use of these contract models. Divestiture, on the other hand, is very rare. In the World Bank's statistics partial divestitures account for six percent. Concessions are used in most projects where financing of investments and working capital are included. At that time this kind of financing seemed to increase rapidly (The World Bank 1998).

However, the investments in water and sewerage projects, like other fields of infrastructure have not increased in the way predicted in the late 1990s. The peak year of private investment was in 1997 whereafter a decline was experienced (Figure 16).

According to Houskamp and Tynan (2000), private water and sanitation projects were rare in low-income countries in 1990-1999. The total investment of USD 1 800 million in water and sanitation represents only two percent of projects with private participation in low-income countries. The earliest projects were operation and management contracts, which involved little or no investment by the private operator. As a rule, private investments grew considerably in developing countries in 1990-1997, but they declined during the financial crisis of 1998-99 (Izaguirre & Rao 2000). Private investments, however, grew from USD 2 600 million in 1996 to USD 5 900 million in 1999.

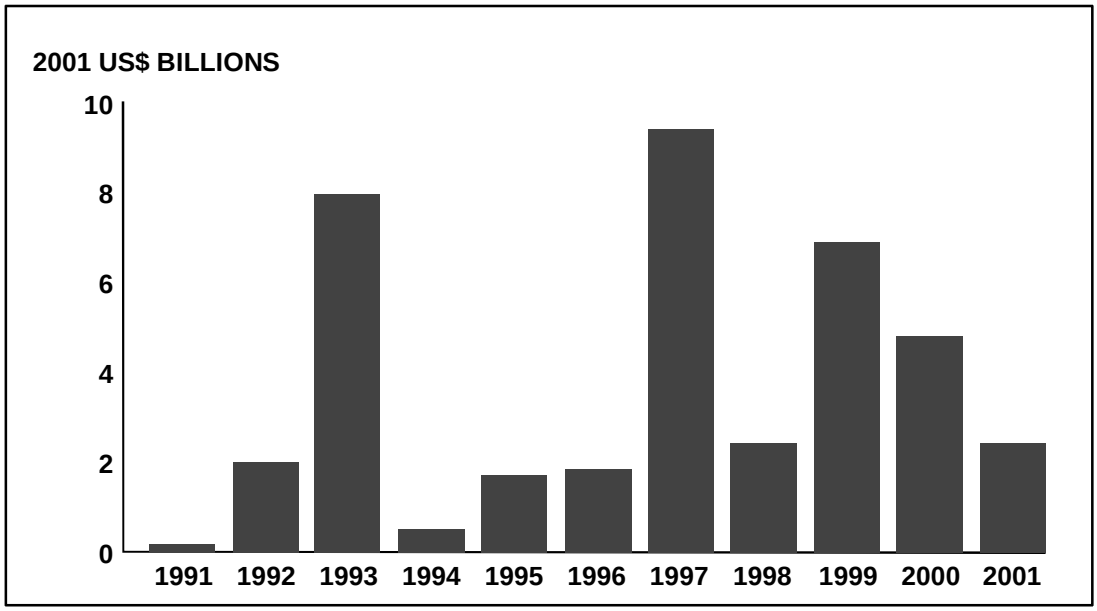



Figure 16. Investments in water and sewerage projects with private participation in developing countries, 1991-2001 (The World Bank Group 2002).

The general emphasis in developing economies has been on water system investments. In Latin America concessions and BOT contracts are more common in the case of both water and sewerage systems. According to the World Bank (1998), the WSS infrastructure of these countries is already quite developed, which makes it possible for municipalities to expand their activities into sewerage systems.

Table 8 shows the five largest international water companies and their subsidiaries in 1999. That time Vivendi Environment alone had over 200 000 employees with turnover some 25 billion USD. A summary of the biggest multinational water companies showing their sales and worldwide customers in 2001 is shown in table 9. Both tables indicate how the business is largely controlled by the two French conglomerates. At the time of printing this document situation may have changed due to changes in ownerships and business strategies.

Table 8. Features of the five biggest international private water companies in 1999 (Earle 2001).

| **Parent company, subsidiaries** | **Turnover** USD billion | **Employees** |
|---|---|---|
| Vivendi | 48.4 | 290,000 |
| - Vivendi Environment, earlier Generale des Eaux | 24,6 | 215,00 |
| - Water division | 11,9 | 67,000 |
| Suez | 31,6 | 173,200 |
| - ONDEO (earlier Lyonnaise des Eaux) | 8,5 | 17,670 |
| RWE | 43,7 | 172,000 |
| - Thames Water | 4,0 | 23,000 |
| Bouyges | 17,7 | 120,000 |
| - SAUR | 2,2 | 23,000 |
| AWG | 1,8 | 10,000 |

Table 9. Water multinationals and their sales in 2001 (Hall 2002, p. 3)

| **Parent company** | **Sales (Euros m.)** | | **Water division** | **Water Sales (Euros m.)** | **Worldwide customers (millions)** |
|---|---|---|---|---|---|
| Suez | 42359 | | Ondeo | 10088 | 115 |
| Vivendi Universal | 51125 | | Vivendi Water | 13640 | 110 |
| RWE | 52788 | | Thames | 2746 | *37* |
| Bouygues | 20473 | | SAUR | 2494 | 36 |
| AWG | 1813 | | Anglian | 936 | 5 |
| Nuon | 4530 | | Cascal | 181 | 6.7 |
| Bechtel | 13400 | | IWL | 100 | 10 |

Note: Thames customers exclude customers on shared contracts i.e. Adelaide, Berlin, Budapest. Vivendi Water, later Veolia Water

Westerhoff (1999) has compared the biggest international WSS service concessions. The concessions in Argentina, the Philippines and Malaysia were very large, whereas the concessions in the United States were much smaller. According to Westerhoff, concessions are increasing globally. By November 1998 about 150 contracts (USD 27 000 million) had been concluded and about 190 contracts (USD 38 000 million) were being planned.

In developing and transition economies public-private partnerships based on concessions seem to be popular and are increasing rapidly. Yet, there are examples from other infrastructure sectors, for instance, from Malaysia, where the earlier “privatised” solid waste treatment plants and railways have been nationalised after the Asian economic crisis (Korhonen 1999).

It is good to remember that most urban centres are too large to be managed by consumers (e.g. Braadbart & Blokland 1997). Besides, there are too many of them, and they are too small, to attract the interest of the private companies. A similar situation exists, for example, in the Baltic region, though regionalisation is at least considered in Lithuania (Pietilä 2001).

While private sector participation has been promoted by international financial bodies, public sector water utilities have also implemented quite successful reforms, e.g., in Sao Paulo, Brazil; Lilongwe, Malawi; Sri Lanka; Hyderabad, India; Debrecen, Hungary: and Tegucigalpa, Honduras. In Sao Paolo, the state-owned water company has undergone extensive restructuring aimed at organisational and operational reforms. In Lilongwe the capacity of the water board was strengthened by a World Bank project. In Sri Lanka the National Water Supply and Drainage Board carried out a series of organisational and tariff reforms. In Hyberadad the Metropolitan Water Supply and Sewerage Board experienced gradual organisational changes. In Debrecen a public autonomous company was created in 1995. In Tegucigalpa the state-owned water company was restructured improving efficiency and effectiveness (Hall 2001b). In Algeria, five regional water authorities were established to enhance the policy of outsourcing operations to private companies (IRC 1996). Thus, public sector reform as an option for developing countries has not been completely ignored.

### Problems and failures of PPPs

Contrary to the earlier optimism at least by international financial bodies, private sector participation through management, lease, concession or other types of contracts in developing countries and transition economies have faced increasing number of difficulties and criticism. Based on his review of a large number of concession contracts in developing countries, the former OFWAT deputy director A. Booker concluded that they were structured in favour of the contractor. As a consequence, many long-term contracts in the WSS sector will continue to be an economic drag on some of the poorest and most vulnerable economies in the world (Booker 1999).

According to van den Berg (2000), some concessions in Argentina had to be renegotiated, because the original contracts had not been drafted properly. The contracts did not specify the distribution of benefits, and, for example, in Buenos Aires current users were favoured. In order to meet coverage targets, the contract had to renegotiated so that extension of the services to the poor became possible. Yet, according to her, this kind of revision of contracts is risky, and has led to termination of contracts, loss of credibility of the regulator, or large legal and process costs. Unsuccessful private contract operations can also be found in places like Puerto Rico, Trinidad, and Hungary (Hall 2001b, p. 4).

Harris et al. (2003) have analysed the reasons for cancelled private infrastructure projects. In WSS the share of cancelled projects from 1990-2001 was 11.5 percent. Such projects were faced with controversies over price increases and difficulties in fee collection. Public

water utilities had generally kept prices below costs while raising prices and improving collection in connection with private participation led to opposition. Considering later announcements in relation to Manila, Argentina and Brazil, the relative share of cancelled projects is even higher.

Sometimes, according to Harris et al. (2003) project design has worsened the situation like in Cochabamba in Bolivia where the local government opted for a high-cost water source thus leading to the need of tariff increase. When tariffs were increase by 35 percent almost immediately after privatisation, the project faced strong opposition.

According to Dalton (2001) the use of private finance in Cochabamba was unsuccessful due to the flaws in its implementation. Such flaws prevented private funding from being used efficiently and therefore the potential benefits were not achieved. Dalton (2001) further concludes that private sector solutions will only work if the benefits of their impacts are sufficiently visible. Private sector participation is not feasible unless it is accepted by civil society as the way forward and implemented in a acceptable way bringing services at affordable rates.

In Jakarta, Indonesia two foreign private firms started their concession in 1998 but were plagued by problems from the beginning. According to Braadbaart (2001) this case illustrates how the efficacy of the contract is subject to certain boundary conditions. Such conditions would require genuine rivalry among contract bidders, manageable risk and uncertainty, a proper specification of services to be contracted, and a realistic way for contract termination. Braadbaart points out that none of these conditions were met in Jakarta. The contract documents signed in 1997 were essentially unfinished, concession was launched in the worst possible circumstances – a deep economic crisis – that had destroyed the 25-year financial plan. Assuming a contract to work in such conditions is asking for trouble.

In Manila, the Philippines a concession was awarded in 1995 though affected by currency collapse two years later. In December 2002 Suez´s subsidiary Mayniland Water announced that it is abandoning the concession in the western half of Manila. The local partner is Benpres, one of the local companies which dominate much of the Philippine economy (Hall 2003b, p. 6).

Buenos Aires, Argentina used to be presented as a model and best practise case of private involvement. However, after the economic crisis in the country the situation has changed. One of the key arguments in favour of privatisation has been the argument for increased competition. If and when the market is governed by a small number of multinationals, while the establishment of local enterprises are not necessarily promoted, competition is quite questionable. Besides, some concessions happened without any competitive tendering like concessions in Czech republic, Hungary and Poland up to 1997. Furthermore, contracts with multinationals are easily combined with procurement and other services from their subsidiaries. (Hall 2001a, p. 10). Multinationals have also established

joined ventures between themselves (Hall 2002, p. 7) making the issue of competition even more questionable. Thus, we clearly face a situation described by the client-agent theory.

In February 2002 the chairman of SAUR International described the varying levels of service and risks involved in international water markets such as rising costs, currency devaluations and the difficulties of attracting funding. He further "advocated increased involvement of the public sector in the form of grants and soft funding to promote private sector development" (Talbott 2002). In January 2003 the multinational group Suez announced a series of decisions on restructuring its actions and future strategy. In effect Suez had decided to retreate from water operations in developing countries, including a one third reduction in its current investments. These decisions were related to financial and political reversals on Suez' global water business, including the USA. The other major French water multinationals Vivendi and SAUR have also indicated their reservations about water investments in developing countries. These developments call into question the financial strategies of the World Bank, the Camdessus panel on water financing, and the EU Water Initiative (Hall, Lobina & de la Motte 2003a).

Although the interest in private investments and operations in developing countries seems to be declining companies like Suez, Vivendi and RWE have increasingly been buying water companies in the USA. Even so, the private sector currently has just 14 percent of the water business in the USA. In Atlanta, Georgia, USA the city privatised its water in 1999 to United Water Resources, the US subsidiary of Suez. The concession, one of the largest privatisation efforts in the USA was terminated in January 2003 since only a half of the expected savings were gained (Hall 2003b). China has been seen as a future market (Hall 2002).

In transition economies we have interesting variety in terms of private companies´ involvement and public sector reforms. As for central and eastern Europe in Poland like in Lithuania (section 4.3) restructuring of public sector has been the mainstream while, e.g., in the Czech Republic water multinationals are dominant (Hall et al. 2003).

Tallin, Estonia is a case where in the 1990s the public water utility was reformed with the support from neighbouring Nordic governments and twinning from Stockholm Water Co. However, in 2001 just over 50 percent stake in the Tallin Water company was sold to an international joint venture. Half a year later, in September 2002 the company paid high dividends. In November 2002, an EBRD loan was agreed to the company. This was for the same amount as the post-privatisation owners had taken out of the company during the first 17 months (Hall 2003b). In this case it should be remembered that Tallin, like Estonia, generally has a long tradition of municipal administration and therefore development of an autonomous municipality-owned utility could have been a viable option. We could at least hypothesise that privatisation of Tallin Water was more due to the general ideology of the country than a necessity to develop water services.

In the Balkans and NIS countries, private sector involvement was relatively low in the 1990s but since 2000 it has started to grow, according to Hall et al. (2003) often in connection with World Bank support. While some two thirds of the EBRD has support has went to projects with multinational operators, the EU's so-called ISPA programme as well as EIB have supported mainly public sector restructuring.

In Kosovo, for example, we have a situation where politicians, civil servants and organised mafia are working in informal, partially overlapping cooperation. Now that private operators are coming in because of external support, we can only guess how difficult it will be to have an independent regulator in such conditions. How could such a regulator operate better than municipal regulation in connection with municipal water utilities?

As a summary, we can conclude that the assumptions argued in favour of private operators or ownership have not necessarily have been found true. There seem to be various serious risks in this kind of arrangement. Institutional development and reforms of public utilities is an option that certainly should not be forgotten especially in cases where there is already some tradition of such culture. Considering this, the authors, like many others, are highly concerned about the leaked EU GATS market access requests to 109 other WTO member governments. All this has been prepared without any transparency in spite of the clear public interest in water and sanitation services. Related bilateral negotiations are due to take place by 2005 (Polaris Institute 2003).

## Discussion points

In general, it can be concluded that private sector investments in international water and sewerage projects seem not to be increasing. Private companies are not likely to take unreasonable risks, but they will invest in projects yielding regular profits. On the other hand, the companies have selected a strategy where risks are minimised and the focus is on lease and management contracts (e.g. Anon 1996b). However, they are mainly interested in the biggest cities of developing and transition economies. One should remember that the annual sales of, for instance, Vivendi are about USD 6 600 million (PSI 2000). Therefore, these conglomerates can offer their services below actual costs in order to penetrate a market, and collect the profits later.

There have been cases in developing economies, where the same individuals have represented both a transnational company and the client or the regulatory authority (e.g. Martin 1996). This way political decision-makers can protect their 'own' companies from competition (Ostrom et al. 1993). There is also a conflict of interests when companies having received concessions, for example in Latin America, are involved in the establishment and support of regulatory bodies. These kinds of problems related to legal incompetence have hardly been discussed. Regulation is a crucial issue, since 'the privateers' argue that regulation should solve the problems related to the rights of local authorities and consumers. Yet, regulation has failed to meet its original objectives in many

privatisations during the last ten years (PSI 2000). In the Philippines, for example, water operators can appeal the regulator's decisions to an international arbitration panel.

Another important question is the access to information. Dourojeanni (1999, cited by Castro 2002) reports evidence that privatisation, coupled with the dismantling of the public sector, has prompted an institutional crisis due to the withdrawal of crucial information (e.g. on water management). This was previously in the public domain and has become the property of private corporations. Such a procedure is clearly against the requirement of transparency. This is also a central issue when long-term contracts by private operators expire and new contracts are vied for. Without proper access to information there will be no actual competition for a new contract.

Only a few transnational companies dominate the water industry. Entry into the market is very difficult for other enterprises, even for the largest multinational companies. Privatisation is said to create competition, but the opposite seems to be true in the water industry. The 'competitors' may compete for one contract in one country, but can also form a consortium with each other to vie for another contract in another country. In England and Wales, the companies never had to compete for the regional monopolies; they were simply given 25-year concessions when they were established (PSI 2000). Water concessions are among the few contracts that are not subject to competitive tendering. Until 1998 all contracts in central and eastern Europe were awarded without competitive tendering. Also, the world's largest concession at the time, to operate the water supplies in Ivory Coast, was granted without a competition in 1987 (PSI 2000). This has also been the case, for example, in Albania (Berlin Wasser) and Ecuador (International Water).

It is also obvious that conglomerates are interested in large water and sewerage works. Therefore, the majority of the works, medium and small ones, will not be able to attract private investments. They need a solution based, at least partly, on the development of local organisations.

One reason for the international interest in privatisation of water and sewerage services is the accounting aspect. Debts show up in public accounts, but not physical assets. Thus, bookkeeping-wise, the government looks richer if the physical assets are sold because the money received will show up in the books. The World Bank and others think that developing countries get a better balance of payment by selling their utilities to international investors.

International financial institutions such as the World Bank, the International Monetary Fund (IMF), the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD) regard private sector involvement as almost the only solution to improved performance of the water industry, especially in developing and transition economies. They and their turbo-capitalistic advisers are, however, distorting the available options when providing financing for water and sewerage projects.

According to PSI (2000) their policy is to:

- Require water privatisation as a condition of loans.
- Finance multinational companies, even in preference to efficient public enterprises.
- Secure multinationals' profits rather than their operating performance or public accountability (many contracts are kept secret, -authors' note).

The power wielded by these 'pro-privateers', for example in the World Bank, became apparent in 1999, when the chief economic adviser Joseph Stiglitz (one of the Nobel laureates in economics in 2001) resigned or was forced to resign, because he was not in agreement with the mainstream economists in the question of the privatisation programmes implemented in Russia. The IMF told Russia to privatise as fast as possible, but showed little interest in how it was done. The IMF resisted strongly any change in the exchange rate and was willing to pour billions of dollars into the country to avoid it. The result was that it took merely hours or days for the oligarchs to bleed the money out of the country. Privatisation before a legal system was in place enhanced the ability and incentive for asset stripping rather than reinvesting in the future of the country. Thus, the privatisation as implemented undermined confidence in government, democracy and reform (Stiglitz 2002, p. 133-165). Such critique cannot be ignored since Stiglitz worked for the IMF and the World Bank for several years.

On the other hand, the World Bank has funded successfully improvements of public sector water utilities, for example, in Lilongwe, Malawi (The World Bank 1997b), and in Haiphong, Vietnam. An interesting and innovative approach would be, however, to make public sector utilities compete with private companies for the contracts. Of course, this might also require providing special assistance to the public organisation concerning tendering procedures in developing and transition economies.

# Finland: public-private partnerships in non-core operations

The primary reason this study was undertaken is that the authors believe the Finnish approach to WSS service management to have considerable merit. In this chapter, therefore, we look in some detail at the institutional, legislative and strategic background to the Finnish approach and try to identify the strengths and possible weaknesses of the different management systems employed.

The framework of water and sanitation in Finland is often said to be complicated, multi-tiered and bureaucratic. But is it actually? Annex 1 lists the different institutions that have an interest in WSS services and the legislative framework in which they operate. The framework described is largely based on work by Rasi (2000). Local and global borders are being eliminated while at the same time borders are being drawn between market areas. Simplicity may be appealing, but it is not necessarily the best possible model for water supply and sanitation.

Factors external to water and sanitation strongly influence the functioning and decisions of sector organisations. These include actors and stakeholders outside the organisations. According to Jääskeläinen (1994), individual organisations can be guided by: (i) societal values; (ii) organisational and professional culture; (iii) laws and regulations; (iv) the financier; and (v) customers and markets.

## Water resource and water services strategies

A water resource strategy has recently been devised by the Ministry of Agriculture and Forestry in collaboration with the Ministry of the Environment, the Ministry of Social Affairs and Health, the Finnish Environmental Agency and Regional Environment Centres. In relation to water and sanitation, the strategy focuses on water supply for communities and sparsely populated areas, sewerage and wastewater treatment, protection of ground water and the environmental impacts of water extraction and wastewaters. This implements for its part the Agriculture and Forestry Ministry's strategy for renewable natural resources approved in February 1997. The water resource strategy is meant to be a basis for planning activities and financing and for management by results on the governmental and local administration levels. Vision 2010 for water resource use covers versatile use of water resources, consideration of needs, rights and obligations and socially, economically and ecologically sustainable use of water resources.

In addition, the vision includes the idea of users' satisfaction with water and sanitation services and the usability and condition of water bodies. Vision 2010 is also concerned with the efficiency of water and sanitation, performance of water-body tasks and safety of water-body structures. Figure 17 shows the goals of the water resource strategy set for realising the vision by 2010.

| | | |
|---|---|---|
| EFFICIENT, EQUAL AND TRUSTWORTHY AUTHORITY ACTIONS | ACTIVE CO-OPERATION AMONG STAKE HOLDERS MEETING THE OBJECTIVES SET BY THE COMMUNITY | WATER AND SEWERAGE SERVICES RESPONDING THE NEEDS OF RESIDENTS, INDUSTRIES AND FREE-TIME ACTIONS |
| GOOD ACCESS TO WATER RESOURCES AND GOOD ECOLOGICAL STATE OF WATER BODIES | THE LEAST POSSIBLE HARMS AND MAXIMAL BENEFITS OF WATER MANAGEMENT PROJECTS<br>VIABLE WATER RESOURCES MANAGEMENT AND SAFEGUARDED WEALTH | EFFICIENT AND RELIABLE ACTIONS FOR FLOOD CONTROL SAPE DAMS AND PROPER DRAINAGE |
| R&D THAT IS COMPETITIVE AND PRACTICE ORIENTED | ACTIVE AND INITIATIVE FINNISH PARTICIPATION IN INTERNATIONAL WATER AFFAIRS | ADEQUATE RESOURCES FOR WATER MANAGEMENT INCLUDING COMPETENT HUMAN RESOURCES SENSITIVE TO CONSUMER NEEDS |

Figure 17. Goals of water resource strategy in Finland (Ministry of Agriculture and Forestry 1999; modified by Rasi 2000).

Municipal strategies indicate what municipalities wish to be like in the future and present the action plan for getting there. They demonstrate the will of political leadership regarding the direction of the activities of the municipal organisation (Sotarauta 1996). The overall strategy based on municipal strategies impacts on the water-and-sanitation development strategy. The water and sanitation utility of a municipality has its own strategy which, in the ideal case, is part of municipal strategies. At best, strategies are interactive.

The objective of WSS policy in Finland is to have the entire population of urban and rural centres connected to common systems by 2010. That would mean that the coverage of common systems would be 95 percent of the total population in water supply ( it was 87% in 1997) and 90 percent in sewerage (78% in 1997). The target for sewerage coverage is high, because more than 200 000 extra people would need to be connected to common systems (Vikman 1999a). It still means though that a significant number of people in dispersed rural areas will continue to rely on on-site systems in the future. It should be remembered that Finland is a very sparsely populated country and so coverage rates are well below those of Central and Western European countries. High coverage rates are very difficult to attain and, if interpreted incorrectly in international comparisons, they can give a false picture of the true level of the services.

Another objective is to have about 50 percent of the population who live outside urban and rural centres connected to common WSS systems by 2010. That would mean about 85

000 more people being connected to common sewerage systems (10-20 percent of the population living outside urban and rural centres, depending on the migration rate).

The water resources protection policy states objectives up to 2005. Attainment of the targets requires more efficient treatment of wastewaters from common and individual systems as well as repair, rehabilitation and replacement of leaking sewers. Other important and urgent challenges are (Vikman 1999a):

1. Reduction of wastewater load from the areas outside urban or rural centres, and the establishment of a related institutional framework.
2. Increased utilisation and disposal of the sludge from wastewater treatment plants.
3. Improvement of the performance of the water and sewerage utilities.
4. Information management and development of data banks.
5. Monitoring and regulation of vertically integrated monopoly utilities.
6. Rehabilitation and replacement of water and sewerage networks.

The volume of WSS activities can also increase through supramunicipal cooperation (Hukka & Katko 1993), rural-urban migration, and involvement of larger utilities in international projects.

These basic features of Finnish WSS services provide a framework for assessing the privatisation of, and public-private partnerships in, these public services.

### Three main types of water and sewerage services

In Finland, public water and sewerage works can be owned by the municipality or by any other appropriate entity (Rasinmäki 1997, p. 219). The enabling legislation, the Water and Sewerage Services Act (2001), does not put limits on private involvement in works. The municipality is responsible for ensuring the provision and development of WSS services within its area. The WSS utility is responsible for producing the services within its service area (to be approved by the municipality). According to Rasinmäki (1997, p. 220), one problem is how the municipality can fulfil the requirement of providing the services, if the private undertaker or the private owner fails to comply with requirements or files for bankruptcy. According to him, the municipality as owner and operator is better prepared to handle such a situation. For example, it can dismiss the management or dissolve the municipality-owned company.

According to Hietala (1987, p. 177), municipal ownership was never debated as strongly in Finland as in England and the United States in the beginning of the 20th century (although it has intensified recently due to international trends). Hietala considered that the reason may be the great interest in the development and positive experiences from the successful operation of public enterprises in Germany (Hietala 1987, pp. 176-177).

Rasinmäki also thought that any possible problems related to financing of rehabilitation and extension of networks in accordance with sustainable development would be easier to

manage in the case of a municipal utility than by delivering an ultimatum to a private undertaker based on the public health act. Finally, the municipal council can cancel the licence of the private undertaker to operate/own the public works (Rasinmäki 1997, p. 268 and p. 355). The Competition Agency considers the WSS utility an entrepreneur, because it sells drinking water and collects and disposes wastewater against payment (Rasinmäki 1997, p. 284).

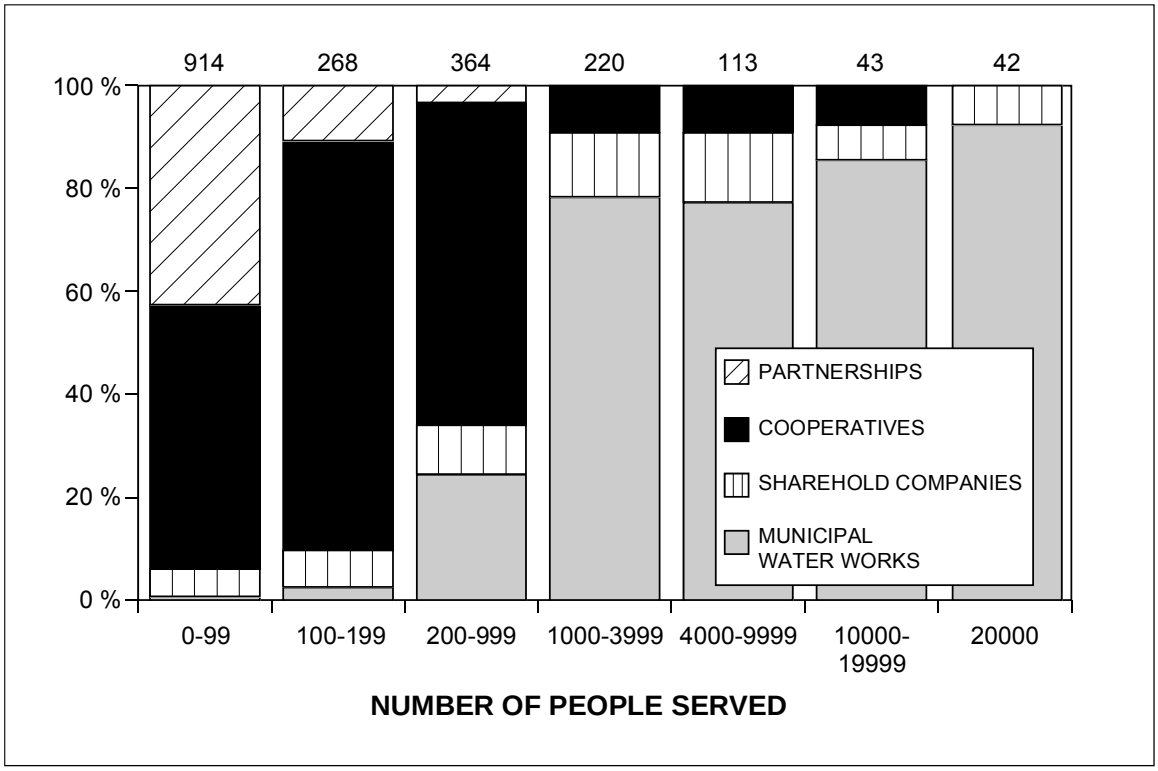
Finnish WSS utilities can be classified into three main categories based on the organisational and functional model:

1. Small private water associations serving country communities and sparsely populated areas within municipalities.
2. Municipal utilities serving population centres and municipalities.
3. Supramunicipal utilities.

In 2001 the total number of the two first categories including those serving more than 50 people was some 1970. The small systems, water associations can be partnerships, water cooperatives, or joint-stock companies owned mainly by municipalities. There were about 1 000 associations in 1988 and the number has increased in dispersed rural areas (Figure 18). The number of municipal water utilities in 1998 was about 500 and some 460 in 2001, slightly over the total number of municipalities. In 1993 there were about 20 supramunicipal water or sewerage systems rising to 30 by 2001 (Salonen 2002). The small water associations, mainly cooperatives, usually provide water supply services, whereas sewerage services are provided by municipal utilities.

The water and sewerage utilities of bigger municipalities have been merged, although many of them still call themselves a ‘water utility’. This is probably one of the most practical means of so-called Integrated Water Resources Management (IWRM), which is strongly emphasised in international water policy discussions. Thus, integrating of water and sewerage services could be the first step in this development although IWRM certainly means also wider integration and interaction.

At the end of 1976, there were altogether 776 water works and 642 sewerage works serving more than 200 inhabitants. The respective figures at the end of 1991 were 812 and 617. In particular, works serving industry, hospitals, and garrisons have been merged with the municipal utilities. The average size of water and sewerage utilities has increased, and the number of municipal utilities has increased in all size categories. In towns, water and sewerage utilities form a single organisation, but in smaller centres they often operate separately (Katko 1993).




$N_{TOTAL}$ = 1964

Figure 18. Organisational distribution of water works in Finland according to size in 2001 (Muukkonen et al. 2003).

*Small private water associations*

Small private water associations have a long tradition in Finland (Juhola 1990, Katko 1991, 1992). Some of them have been dissolved or merged with larger works, but new water associations have also been established in sparsely populated areas in the 1990s. Formation of a water association and, especially, a water cooperative requires: a 'champion'; a board of directors; and consumers/members (Figure 19). Typically, a cooperative needs an active champion who initiates the project and is often involved in the management of the system. The role of authorities has been negligible, although in recent years water cooperatives have obtained financial support from the government and the municipality. The main responsibility, however, belongs to the cooperative itself.

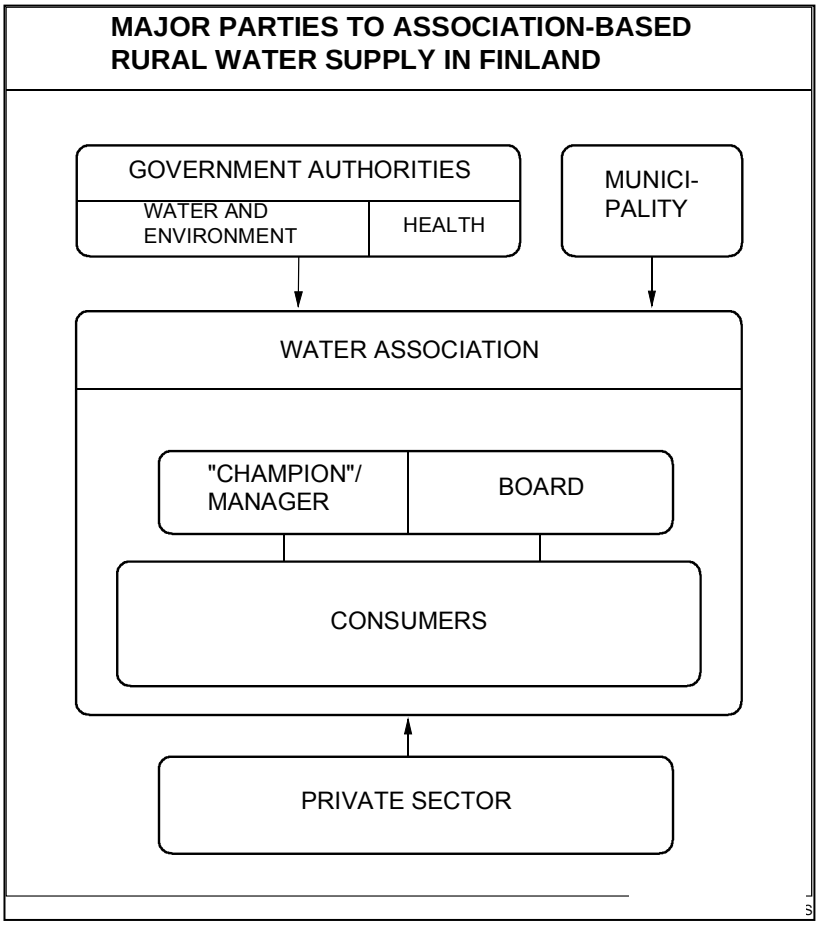



Figure 19. Major stakeholders of water cooperatives in Finland (Katko 1992).

Small water cooperatives are managed by the consumers themselves, and the aim is to get adequate service at minimum cost. To a certain extent, they can arrange the service quite cheaply. The small cost-minimising, non-profit private water works are rather different from for-profit private companies. This difference has very rarely been assessed in international discussions.

Each type of water association has its own pros and cons, but the generic business format seems appropriate at least for smaller systems. Partnerships are no longer popular, since they require unanimous decisions that are difficult to achieve. Water cooperatives have a long tradition and much experience. Consumers participate in the activities and have their own responsibilities. Decision making is flexible and fair. Earlier, water cooperatives may have been unwilling to extend their service area, and their technical expertise may have been limited, though sometimes when there has been a need, private sector services have been used. As the younger generation have started to take over the activities of the associations there are signs of some problems over lack of cooperation with the municipal sewerage works (Table 9).

Table 9. Strengths and weaknesses of water associations (Juhola 1990, Katko 1991).

| |
|---|
| Strengths |
| • Long tradition and experience (12)<br>• Consumer involvement and responsibilities (6)<br>• Flexible decision making (6)<br>• Equality (5)<br>• Applicable, when the consumer base is uniform (4)<br>• Applicable to smaller systems (3)<br>• Owners' (consumers') property is not endangered (2) |
| Weaknesses |
| • Possible unwillingness to extend the service area (9)<br>• Possible lack of technical expertise (7)<br>• Possible problems related to the 'generation gap' (7)<br>• Possible unwillingness to cooperate with the sewerage system<br>• Limited possibility to collect funds for investments (6)<br>• Aim to minimise charges and financial risks (5)<br>• Risk of management problems after takeover (5) |

Note: Number refers to the frequency of the issue

The biggest advantage of joint-stock companies has been their flexible decision making in which influence is proportional to shareholding. Cost recovery, rate increases and network extensions have also been easier in joint-stock companies. On the other hand, there has been the danger of bigger consumers wielding too much influence (Table 10). Water associations and joint-stock companies have become more alike due to the reform of the association legislation in the 1990s. The joint-stock company has been the business format used for a long time in WSS services, and the related experiences could be used in converting municipal WSS utilities into municipality-owned companies.

Table 10. Strengths and weaknesses of water companies (Juhola 1990, Katko 1991).

| |
|---|
| Strengths |
| • Flexible decision making (10)<br>• Decision making proportional to shareholding (10)<br>• Cost recovery through proper charges (3)<br>• Rapid service area extension (2) |
| Weaknesses |
| • Large consumers' may enjoy too great benefits (3)<br>• Possible problems in increasing equity constantly (3) |

*Municipal water and sewerage utilities*

Municipal water and sewerage utilities have traditionally come under the municipality's technical board or construction and facilities board or equivalent. Financial matters have been decided by the city or municipal board and more important issues by the council. The income and expenditures of traditional municipal water and sewerage utilities have not been treated separately in the municipal budget. This has not increased economic

efficiency. Water utilities have been able to cover their costs relatively well, but sewerage utilities especially have been subsidised.

Traditional municipal water and sewerage utilities have increased their autonomy through rules and regulations that transfer power to the utilities from the boards. Some municipalities have set rate-of -return requirements for their utilities. A survey was made in April 1993 concerning organisational changes in municipal water and sewerage utilities, for instance, from a traditional to a public utility company. Table 11 shows the key results of the survey.

Table 11. Organisational changes implemented or under consideration in water and sewerage works. A study on the Finnish municipalities in April 1993 (Katko 1993).

| | Water works | | | Water and sewerage works | | | Sewerage works | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | I | P | N | I | P | N | I | P | N | I | P | N |
| Public utility company (PUC) | 1 | 1 | - | 7 | 21 | 17 | - | 1 | 6 | 8 | 23 | 23 |
| Net budgeting | 1 | - | - | 4 | 20 | 16 | . | 1 | 6 | 5 | 21 | 22 |
| PUC funding reserves | - | 1 | - | 7 | 10 | 29 | - | - | 6 | 7 | 11 | 35 |
| Incorporation | 3 | - | 1 | 3 | 10 | 34 | 1 | 1 | 5 | 7 | 11 | 40 |
| Other organisational changes | - | - | - | 1 | 10 | - | - | 1 | 1 | 1 | 11 | 1 |
| Contract-based | | | | | | | | | | | | |
| • Bulk water delivery | 1 | 1 | - | 15 | 2 | - | | | | 16 | 3 | - |
| • Wastewater collection& treatment | | | | 16 | 1 | - | - | - | - | 16 | 1 | - |

Questionnaire sent to 102 municipalities, 68 replied.
I = implemented; P = under planning; N = not under planning.

The Local Government Act, enacted on 1 January 1993, made it easier to increase the economic autonomy of public utility companies. The municipality was allowed to decide the extent to which it would apply the new legislation. Almost one third of the municipalities had incorporated their WSS works, or planned to do so, retaining their ownership. Earlier, only rural municipalities and regional bulk suppliers had incorporated works. In recent years bigger municipal utilities have also studied the possibility of incorporation. The energy or electricity works of those municipalities have often already been incorporated. In addition, there have been plans for regional companies which would manage the WSS services of several municipalities. A recent example is the surpamunicipal WSS company

for Hämeenlinna and its surroundings. LV Lahti Water may be the only municipal water and sewerage utility which has been incorporated (municipality-owned).

A new Act on Water and Sewerage Services, enacted in March 2001 includes some interesting stipulations concerning PPPs. Municipalities are in charge of providing water and sewerage services in the way they see most feasible. In addition, a full cost recovery principle and net budgeting is to be used (Kaatra 2001).

*Supramunicipal cooperation*

The traditional form of cooperation in WSS services between neighbouring municipalities that is gaining ground is contract-based bulk water sales and/or wastewater collection and treatment. About one fourth of the Finnish municipalities were involved in this kind of cooperation in 1993. There were also 21 supramunicipal (regional or inter-municipal) water works in 1993 (Katko 1993), and 26 in 2001 (Salonen 2002). The latter were managed by joint boards (1 case), a federation of municipalities (5 cases), bulk companies (17) and joint-stock companies (4). They delivered about 30 percent of the total water distributed in Finland. The biggest share of supramunicipal water, about 20 percent, was delivered by Helsinki Metropolitan Area Water Ltd.

In the sewerage sector, there were six such supramunicipal systems in 2001 (Salonen 2002), two of them combined with water supply. In addition, municipalities and industries had some joint water and/or sewerage companies. Water and sewerage utilities and energy utilities were cooperating closely in five municipalities. There are several more supramunicipal systems under consideration.

Bulk companies have a long experience of water delivery in Finland. The first bulk companies were established in the river valleys of Ostrobotnia, in western Finland. Municipal works, joint-stock companies, or water associations have, however, usually been responsible for water services to individual customers. The larger water consumers sometimes get water at the wholesale price, especially if they have been involved in the establishment of the joint project. In large projects, groundwater has generally been conveyed in to the actual service area from a great distance.

Supramunicipal sewerage utilities are joint-stock companies or federations of municipalities. There were three joint-stock companies for wastewater collection and treatment in 2001 and another three for wastewater treatment only. Cooperation of water and sewerage works does not necessarily require that the networks are connected. There may be cooperation in maintenance and service contracts and procurement. Many municipalities have advanced the establishment of common water works in sparsely populated areas through support to water associations. Municipal water and sewerage utilities, or private companies, may sell maintenance and other services to the water associations. The smaller works have, however, problems related to operations and maintenance, which require development of viable practices.

Municipal water and wastewater utilities have separate contracts for water and sewerage services with the biggest industries. The foodstuff industry has often been a shareholder and a financier of regional water utilities because of its need for good quality groundwater. When industrial wastewater is conveyed to and treated in a municipal wastewater treatment plant, the fee is based on the wastewater quality. If the quantities of industrial wastewater are large, joint financing and implementation with the municipality has been used.

A federation of municipalities or a joint-stock company established for a region can be a bulk company, an operator company, or a joint-stock company. The bulk company buys the water intakes, the water treatment plants and generally also the trunk mains from the owner municipalities, or it builds them. The operator company can be a federation of municipalities or a joint-stock company that leases the facilities from its owner municipalities. For example, in the case of a proposed common operator company for the metropolitan area, each owner municipality would decide the water and wastewater charges for its own area.

If water and sewerage utilities of several municipalities are merged without merging the municipalities themselves, one key issue is how to calculate the value of the fixed assets of the diverse works of varying ages so that the interests of all shareholders are adequately considered. If the municipalities were also to be merged, that kind of a problem would not exist. A radical reduction of the number of municipalities would be too simple a solution with wide-ranging consequences. Besides, municipalities have the basic right to self-governance in Finland. Figure 20 shows the optional levels of supramunicipal cooperation and their intensity. The weakest form of cooperation is one-time and informal cooperation while the strongest form of cooperation is the joint-stock company.

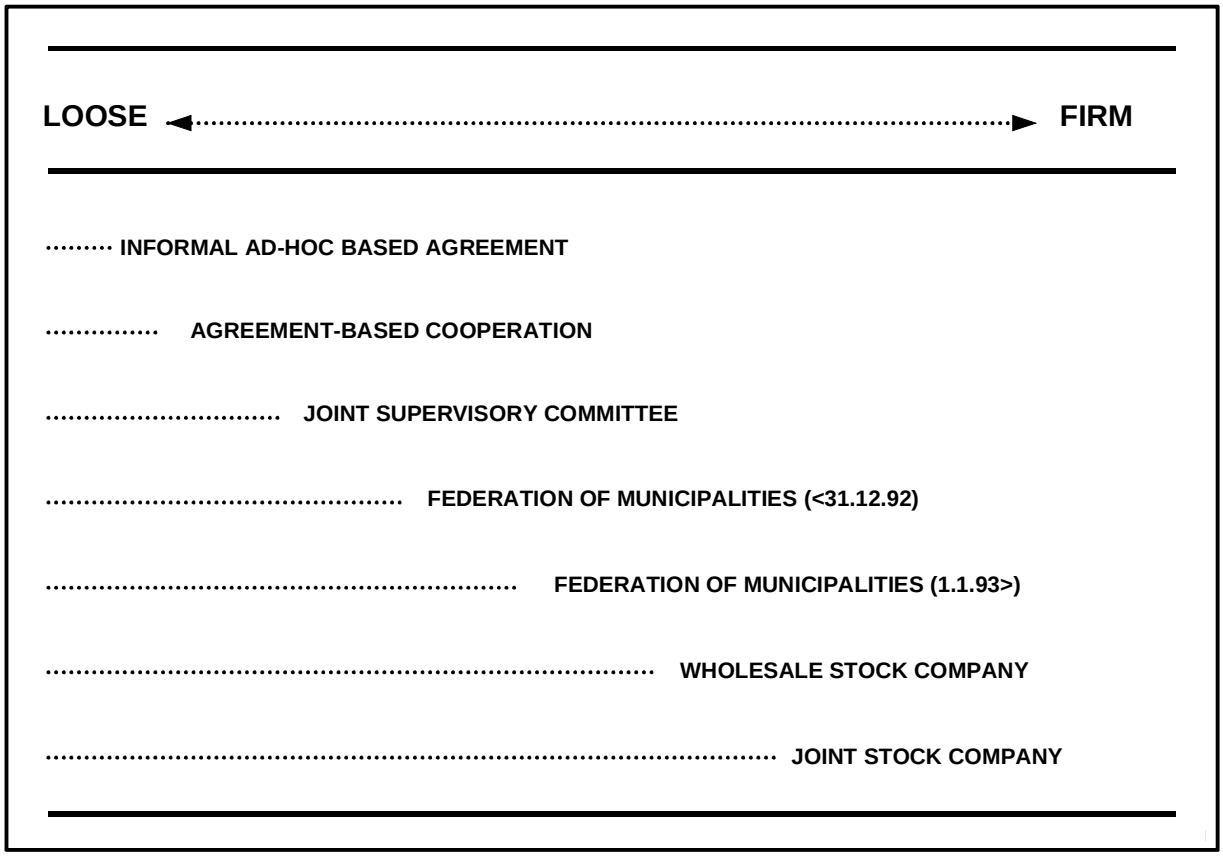





Figure 20. Alternatives of supra-municipal cooperation in Finland and estimates of its permanence (Katko 1993).

### Financing, water rates and sewerage charges

Government financing increased in real terms until the 1980s, but was never more than 10 percent of total investments. In the 1970s and 1980s, the government provided finance for groundwater investigation and, especially, larger WSS and water protection projects to foster the establishment of supramunicipal cooperation. As noted, the government's share has been rather small, and it has been used solely for the advancement of common projects. The water and sewerage utilities together with the municipalities have assumed main responsibility for the projects.

Initially, municipalities financed projects through taxation, but, especially in the 1980s and 1990s, the finance has come increasingly through water and wastewater charges. The new Water and Sewerage Services Act interestingly stipulates that WSS charges can include no more than a reasonable rate of return for investments.

## Evaluation

When making comparisons between different countries, one should remember that the conditions vary. For example, the average population density in Finland is about 15 inhabitants per square kilometre  much lower than in central Europe in general. Figure 21 shows an estimate of the autonomy of water and sewerage works under different management options. The traditional municipal water and sewerage works can increase its autonomy by empowering rules and regulations, the client-producer model, or the establishment of a municipal public utility company, incorporation, a bulk company or a water association. In densely populated areas, or at least in towns, the last option may not be viable, although the biggest water associations serve more than 10 000 consumers.

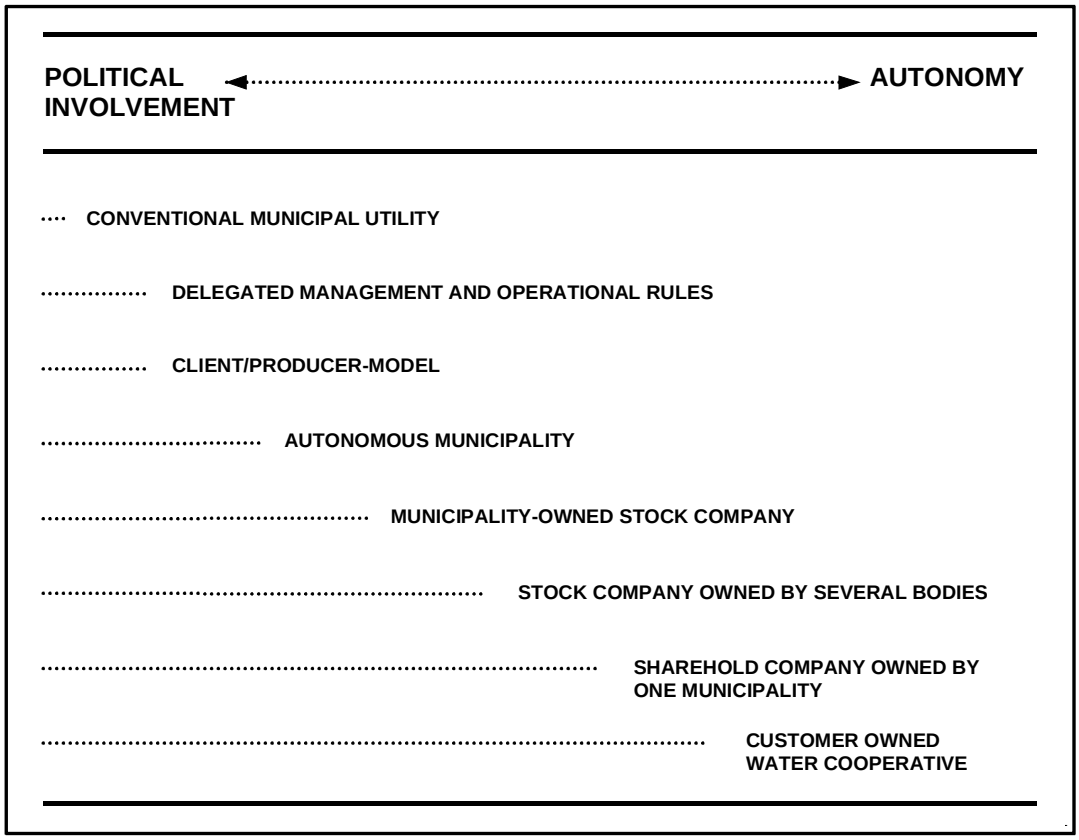





Figure 21. Organisational alternatives for water services in Finland and their relative autonomy (Katko 1993).

In Finland public WSS services are under municipal regulation. In spite of its possible drawbacks this local level administration has several advantages compared with any institutional structures based on excessive, centralised regulation with complex and complicated contract arrangements (e.g., Seppälä et al. 2001, p. 49).

According to Juhola (1995), increasing automation, increasing water quality requirements, and increasing conveyance distances of good quality raw water mean that bigger regional water abstraction and conveyance systems will be built □ possibly also larger delivery systems. In the future the bulk companies will become more like management companies, and offer planning and design, maintenance, financial management and accounting services to service delivery companies. The smaller cooperatives will be merged, although it is not viable in sparsely populated areas to interconnect networks that are far apart. The autonomy of the municipal utilities will be increased, and they may also be incorporated. Water and sewerage utilities will be further merged, and joint water and sewerage associations may be established. They may be based on the existing private water associations or municipal sewerage works. The first alternative would be more natural. Then, the situation would be similar to that of the 1950s (Juhola 1995).

If a regional cooperation model is selected, the impact of the following factors on all participants have to be considered: technical possibilities for cooperation; synergy benefits and costs savings; condition of the networks; calculation of capital costs and the depreciation on fixed assets; tariff policies and practices; functioning of the works; employment and personnel policies; taxation and legislation; and, especially, benefits to the consumers.

*The implementation options for regional cooperation may be the following:*

1. The **Do-nothing** strategy assumes that cooperation between municipalities is too difficult, so there is no point in introducing it.
2. The **Business-as-usual** strategy assumes that the present form of cooperation is good enough.
3. The **Step-by-step** strategy means that municipalities gradually develop cooperation based on existing organisations and practices.
4. The **Crash** strategy can mean, for example, that a traditional water and sewerage utility is merged with a regional joint-stock company.
5. According to the **PPP** strategy, municipalities outsource the operational management of the works to a private company on the basis of management, lease or concession contracts.
6. The **Cash-in** strategy means selling of the public assets to the private sector (Hukka & Katko 1993, modified by the authors in 2001).

Regardless of the selected option, municipalities should be guaranteed enough say in policy formulation concerning the objectives of the WSS services. Possible obstacles should be studied, including negative attitudes towards regional cooperation, and generally towards the development of WSS utilities. When the governance of the public sector is discussed, the key duties and roles of the central government, the regional administration and the municipalities have to be remembered.

Although in a welfare state like Finland, ownership by municipalities can be justified in many respects, WSS services have to be developed continuously. Effectiveness and

efficiency can be increased by introducing commercial principles and practices. Benchmarking is especially viable in developing the performance of a single organisation, and it also facilitates the assessment of organisations operating in similar conditions. When the WSS sectors of developing and transition economies were being discussed in the 1990s, good governance, transparency and openness were emphasised. In Finland that emphasis could mean, for example, a more open personnel recruitment policy, where professional expertise would outweigh political qualifications (Majuri 1998).

Emphasis on consumer satisfaction means giving more consideration to opinions of ordinary consumers. Professionals can be appointed to the boards of public utilities and municipality-owned joint-stock companies in addition to the representatives appointed on political grounds. Whichever organisational and management option is selected, the most important thing is what kinds of human and other resources will there be available for the development and operational management of WSS services. This emphasises the importance of education and training, and research and development efforts.

Table 12 shows the key events/activities affecting the relative shares of the public and private sector in the development of water and sewerage services in Finland, and especially the relative shares of the public and private sector and changes in them from the 1860s until 2001.

Table 12. Author's view of the key events affecting the relative shares of the public and private sector in Finnish water and sewerage services, 1860-2000.

| Year | Event/Activity | Change (+/-) | |
|---|---|---|---|
| | | Public | Private |
| before 1866 | Private initiatives and projects | | |
| 1866 | von Nottbeck's proposal for a private water system was rejected | + | - |
| 1876 | Helsinki water works concession | - | + |
| 1879 | Public Health Ordinance | + | - |
| 1883 | Helsinki water works concession to municipality | + | - |
| 1902 | Water Rights Act | + | - |
| 1912 | First construction company | - | + |
| 1949 | First consultancy company | - | + |
| 1962 | Water Act | + | - |
| 1970 | National Water Board | + | - |
| 1993 | New Local Government Act | + | - |
| 1999 | First operator company | ? | ? |
| 2000 | Second operator company | ? | ? |
| 2001 | First BOT tenders | - | + |

+ increased; - decreased; ? yet to be determined

A relatively big change occurred in the 1870s and 1880s, when municipalities assumed primary responsibility for water and sewerage services. The share of the private sector as a service producer has been considerable during the whole period, which emphasises the need for continual cooperation between the public and private sector.

# Analysis, assessment and conclusions

Note: This concluding chapter reflects the authors' own assessment of the cases described in the preceding chapters.

## Main development trends and findings

Private sector investments increased considerably in water and sewerage projects in developing economies during the 1990s. However, after 1999 these investments have declined (Figure 16). After problems faced by multinational companies they have started to argue that other parties should give them support or quarantees in terms of risks.

The French cases (Chapter 3) show that there are some serious question marks surrounding public-private sector arrangements such as:

- Usually a public organisation is required for sewerage, although the private sector operates water services. This leads to double organisations.
- Private water services seem to be more expensive than public ones.
- In some cases, the business ethics of large operating companies cannot be considered to follow the principles of good governance.
- Private monopolies dominate the market – the claimed benefits of competition are largely illusory.
- French companies have obtained "worldwide" monopoly status in the water industry at the expense of French citizens.

In England and Wales, (Chapter 3) privatisation may well seem to have restored the level and quality of services. However, that impression is based on comparisons with the situation immediately before the 1989 privatisation. In fact, the services had been deliberately weakened by the Thatcher government starting in the late 1970s, when they were under public ownership. Earlier, the public regional water authorities had provided adequate WSS services. This indicates that without heavy ideological or political involvement public organisations are quite capable of producing viable services.

The case of Palmira City (Chapter 4) shows that service performance has been improved by the lease contract, but there are many reasons, like the public sector not having the leading role in the partnership, which require a different approach to produce a long-term viable public-private partnership in the future. In Kenya (Chapter 4), despite promising change for several years, the government has not been able to make the necessary reforms, including the involvement of the private sector as service producer and financier. The Hanoi case (Chapter 4) indicates that skilled and trained personnel are needed in the private sector to manage and operate the services. They are also needed in public sector organisations seeking to provide the services themselves or to create a suitable environment for service production.

Figure 22 shows simplified conceptual frameworks for four different models to provide and produce water and sewerage services:

1. Finnish-Scandinavian-Dutch (pluralistic-regulated municipal public monopoly-private sector competition for non-core operations);
2. English-Welsh (dualistic-regulated regional private monopoly-owner company's vertical integration in non-core operations);
3. French (mayoral-competition for regulated municipal monopoly rights-operator company's vertical integration in non-core operations); and
4. Developing and transition economies' (one-party system-centralised "unregulated" public monopoly-lack of private non-core service producers).

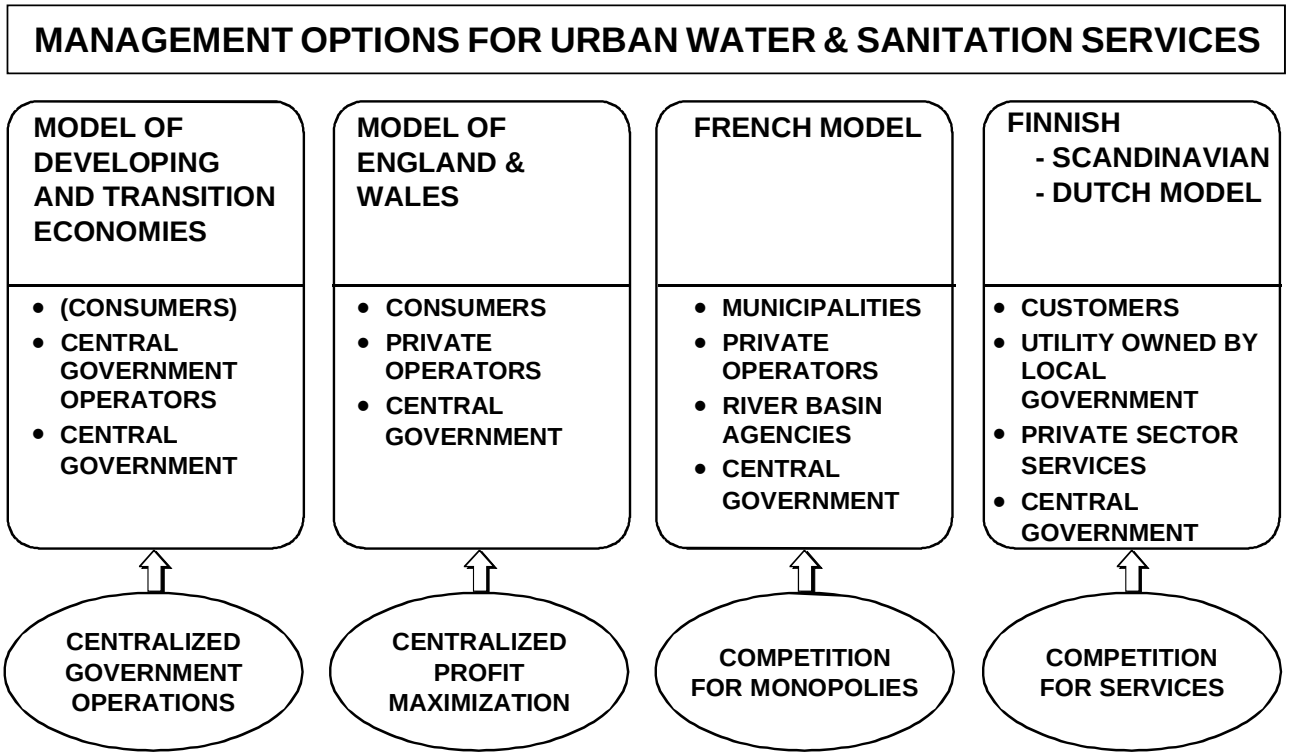



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Figure 22. The four main models for urban water and sewerage services: Finnish-Scandinavian-Dutch, French, English-Welsh, and developing and transition economies.

In the international debate on privatisation, people often speak about competition without specifying what kind of competition they mean. Due to the limitations of a natural monopoly, most competition occurs in the Finnish-Scandinavian-Dutch model, where, apart from the core operations, all or significant production-related activities are outsourced to the private sector based on competition. The model resembles those of many other western countries like Germany and the US. In the French model, oligopolistic competition occurs between monopolies, and in the English-Welsh model profit maximisation is the

actual driving force and premise. Only in the Finnish and French models do municipalities have real decision-making power.

It is noteworthy that most western countries are, and have been, taking care of WSS services in a similar way to Finland and other Nordic countries. According to Seppälä et al. (2001), Finnish citizens are, at least theoretically, able to exercise power and influence when ownership has been retained under municipal administration (management at the lowest possible level according to the Dublin Principle). Most public WSS utilities are managed well in Finland with respect to finances and quality of service. Because large and medium-size utilities in particular are profitable, it is highly unlikely that their assets will be sold. From the point of view of the citizens - the paramount owners who have paid for the assets (in some cases many times over) - it would be strange if the right to enjoy the profits was transferred to the private sector.

There are several international comparative studies directly or indirectly connected with WSS services. In a study by Transparency International (2001), Finland was found to have the least corruption. Several other countries with little corruption also seem to have mainly municipality-owned utilities that buy services from the private sector. According to the same study, the other Nordic countries, New Zealand, Canada, Singapore and the Netherlands were among the best countries, while France, for instance, was ranked 21st among the 90 countries surveyed.

The World Economic Forum (2002) ranked Finland first among 142 nations in the Environmental Performance report. Earlier the country had scored well in keeping water pollution to a minimum, according to the researchers from Yale University and Columbia University, which also published the Environmental Sustainability Index along with the Davos-based World-Economic Forum. In connection with the World Water Assessment Programme (WWAP) a so-called water quality indicator were assessed for 122 countries. The indicator was based on a range of factors, such as quantity and quality of freshwater, especially ground water, wastewater treatment facilities as well as legal issues such as the application of pollution regulations. In this comparison Finland was ranked the first, while Belgium as the last one (UNESCO 2003).

The EU commission has established “name, shame and fame” data showing the level of wastewater treatment and efficiency in EU member states to monitor compliance with the urban wastewater directive. The data indicate that there are remarkable differences in the coverage and efficiency of these services. Nordic countries and the Netherlands have clearly better records than countries with higher private involvement (europa.eu.int/comm./environment/nsf/index.htm).

Although these data are not necessarily applicable in comparing WSS services, and although they might be partly biased in favour of countries with abundant water resources, at least they indicate that properly managed services can be attained under public ownership. When different options are discussed, the natural monopoly of water and

sewerage services has to be considered. The role and duties of the public sector in relation to the social and economic well-being of society then become highly significant.

There is no evidence that a public monopoly in WSS services is ineffective or inefficient compared with a regulated private monopoly in a well-functioning society. It is also important to weigh the advantages and disadvantages of non-profit and for-profit operations. Eventually, citizens' rights with respect to services production may be safeguarded better by administrative norms than by consumer rights protection norms in services production. The privatisation in England and Wales may be considered to be contrary to the principles of the welfare state. This has been a concern in the recent discussions in Germany as privatisation is gaining ground.

Supporters of privatisation or private operators argue that private companies offer a more efficient, effective and simplified solution for WSS service production than public organisations. They tend to ignore the fact that there are also problems in privatisation. Competition is frequently removed by unified private ownership, by taking transactions out of markets and organising them internally through vertical integration. Standard neoclassical conditions apply to allocative efficiency and assured rational behaviour but not adaptive efficiency. Adaptive efficiency provides the incentives to encourage the development of decentralised decision-making processes that will allow the maximisation of those efforts required to explore alternative ways of solving problems (North 1990).

The lack of a comparative market means that it is difficult to compare the economic efficiency of public and private provision of service (Williamson & Masten 1999). Several examples and attempts to apply transaction cost economics to long-term contracts in various sectors clearly indicate the following (Seppälä et al. 2001):

1. Contracts always tend to be incomplete by nature, which may lead to hazardous contracts and inefficiency when the period is long.
2. Contracting the services to a vertically integrated organisation may seem to reduce transaction costs (by making them internal), but in practice competition does not exist.
3. Due to incompleteness and a long contract period, unforeseen developments may occur, which call for a costly re-negotiation or arbitration process between the parties to the contract.

These characteristics beset long-term concession contracts in the water services sector. How well institutions solve the problems of coordination and production is determined by the motivation of the players (their utility function), the complexity of the environment, and the ability of the players to decipher and order the environment (measurement and enforcement).

We question whether PPPs, which are often created in favour of private operators, are actually used to improve WSS services, or whether they are adopted because they provide more attractive monetary incentives for decision-makers in developing and transition economies than other performance improvement measures in the public utilities. Based on

the experiences discussed earlier, we can conclude that some PPP arrangements do not meet the requirements of “good governance”. International companies based in developed countries should provide an example, since their own governments require good governance from the recipient countries of their development aid.

We can also ask why the terms of the concession contracts in developing and transition economies are often 30 year, when in France, for example, the term is limited to 12 years by law.

### Building of viable public and private cooperation

Figure 23 shows the conceptual and general development framework for WSS services. The starting point should be the basic aim of these services, and not necessarily profit making. On the one hand, the profit, or rather, the benefits can come in the form of improved services and a better environment, or more affordable services. In the selection of an implementation model or models, the long-term experiences and the nature of the services should be considered, especially under heavy pressure and requirements from the international stakeholders. In the end, everything depends on conscious value-bound selection, that is, what the decision makers consider most viable and essential. The nature of water and sewerage services requires that the long-term vision and duties of the public sector of a welfare state should be considered in decision making. Therefore, the authors feel that the selling of the public assets in the case of this kind of a natural monopoly should be the last option, if an option at all.

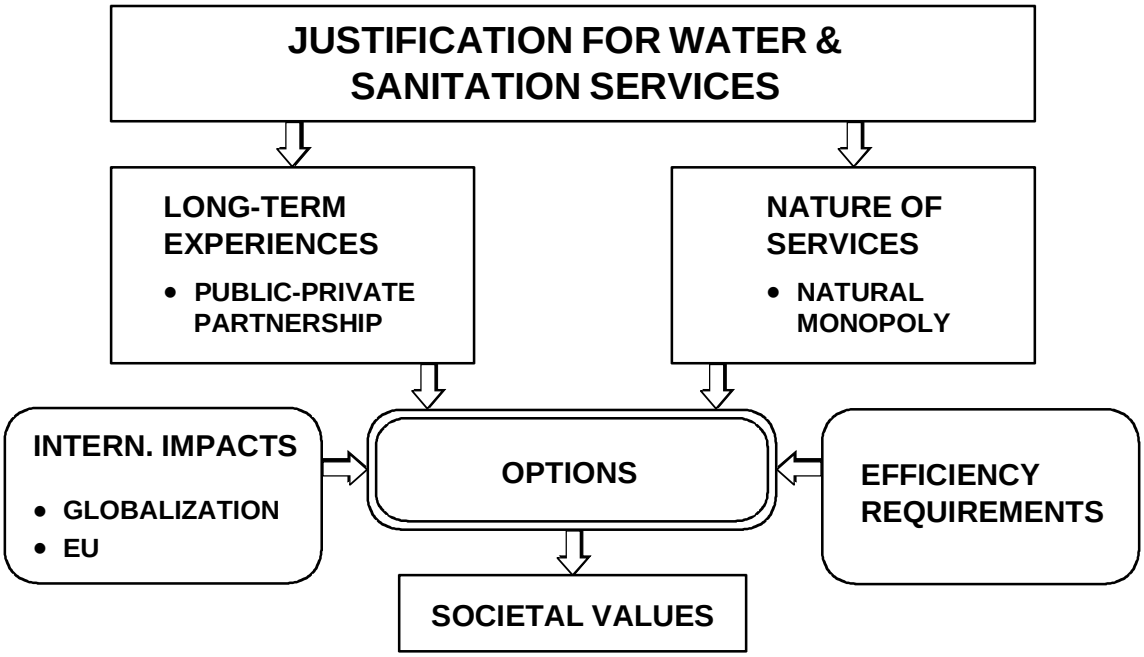




Figure 23. Conceptual and general framework for water and sewerage services.

Figure 24 shows symbolically the Finnish-Scandinavian-Dutch model of water and sewerage services. The filling rate fluctuates typically from 30 to 100 percent, which corresponds to the procurement of private sector services. The foot and foundation of the tower represent the core operations of WSS utilities and municipal ownership. The core operations consist particularly of strategic planning and management, contracting out based on competitive bidding, and overall administration of the works. The government should oversee the set WSS policy, with the support of the regional authorities.

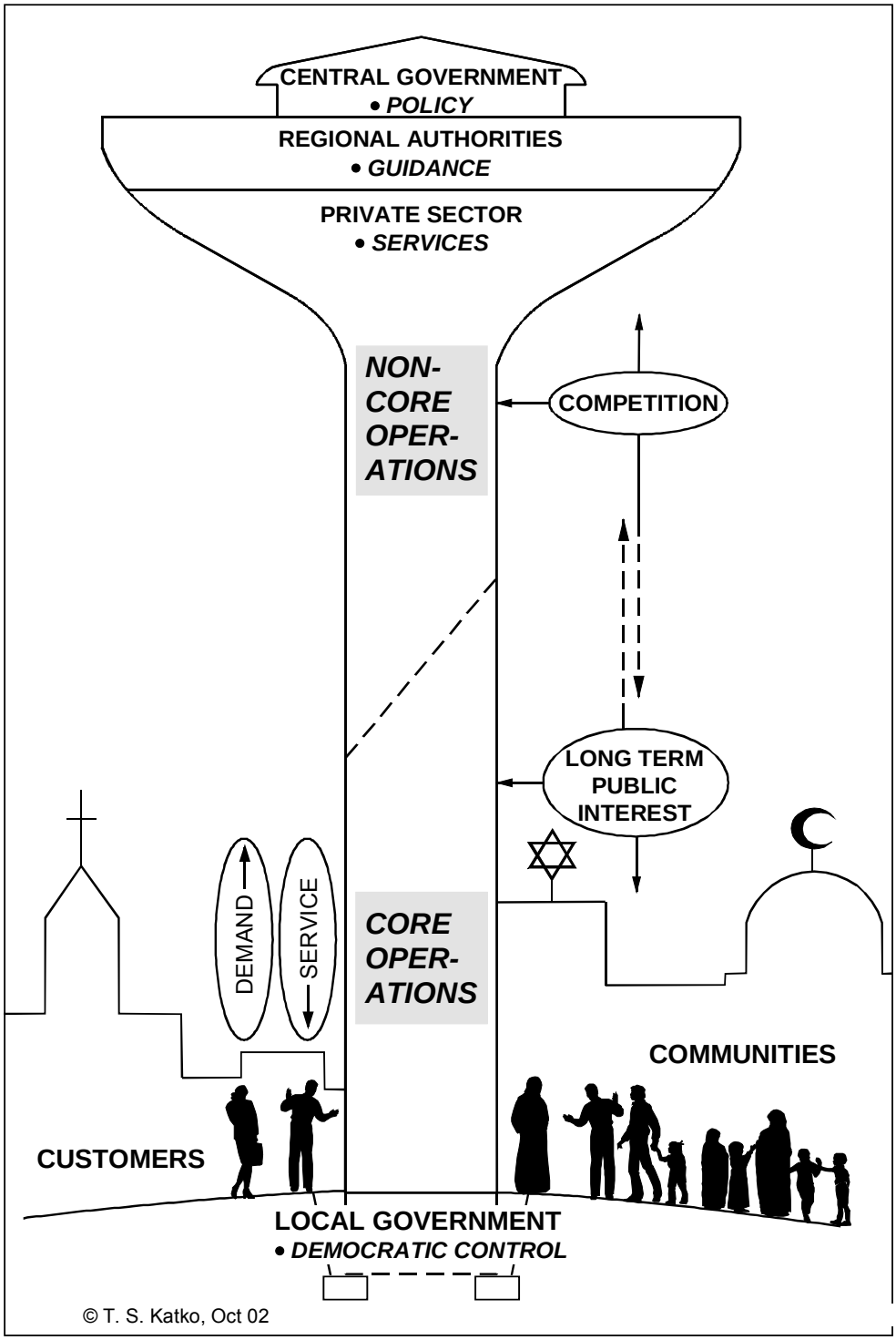


Figure 24. Suggested model for public-private partnerships: core operations to be performed by municipality-owned utilities and none-core operations to be bought from the private sector.

Figure 25 shows an estimate of the key challenges to WSS services in Finland, and defines a vision and the related actions to cope with those challenges. The quality and performance of the relatively high-level services can be further improved by increasing public-private partnerships, commercialisation of the services, incorporation of the works, supramunicipal cooperation and focused research and development. WSS services are competing with other sectors, and a better image can be created through systematic reputation building and management, as well as information services. Education and training of different levels as well as international cooperation in various forms can also be used to improve WSS services. The performance of small utilities can be improved by developing and/or introducing models of public-public or public private partnerships, for instance, satellite management and/or outsourcing of specific operations on a regional basis.

In the international forum, the pros and cons of different models should be debated alongside the questionable blessings of privatisation and PPPs. The benefits, as well as the true reason for failures, of public sector utilities should be highlighted more. Most of the services in developed economies are produced by public organisations, and even more are owned by public entities. Yet, these services are produced in collaboration with the private sector based on competitive bidding.

Table 13 shows that improvement of services in the developing economies, requires increasing investment - especially by the private sector (Global Water Partnership 2000, p. 78).

Table 13. Sources of funds for investment in water security in developing countries, 2000-2025 (GWP 2000, modified by the authors 2001).

| | USD million per annum | | % of total | |
|---|---|---|---|---|
| | Today | Vision | Today | Vision |
| **In country** | | | | |
| Governments, public sector | 48 000 | 50 000 | 64 | 28 |
| In country private sector (including small scale) | 14 000 | 70 000 | 19 | 39 |
| **International** Private sector | 4 000 | 48 000 | 5 | 26.5 |
| Multilateral and bilateral donor funds | 9 000 | 12 000 | 12 | 6.5 |
| Total | 75 000 | 180 000 | 100 | 100 |

*Notes:* Estimates developed by Vision team and GWP Framework for Action Unit.

If the countries wish to attract the necessary investments from the private sector, they must reduce political and regulatory risk (Izaquirre & Rao 2000), that is, they should introduce good, accountable and transparent governance, effective property legislation enforcement, a sound regulatory framework (health, environment, financial, service quality, water allocation), proper incentive structures, and less commercial risk. Still it is difficult to imagine that the private sector would invest heavily in WSS services, since they are capital-intensive and require long-term investments and commitment. In any case, the customers would bear the burden of such investments and on top of that they would pay the return on the private sector's investment.

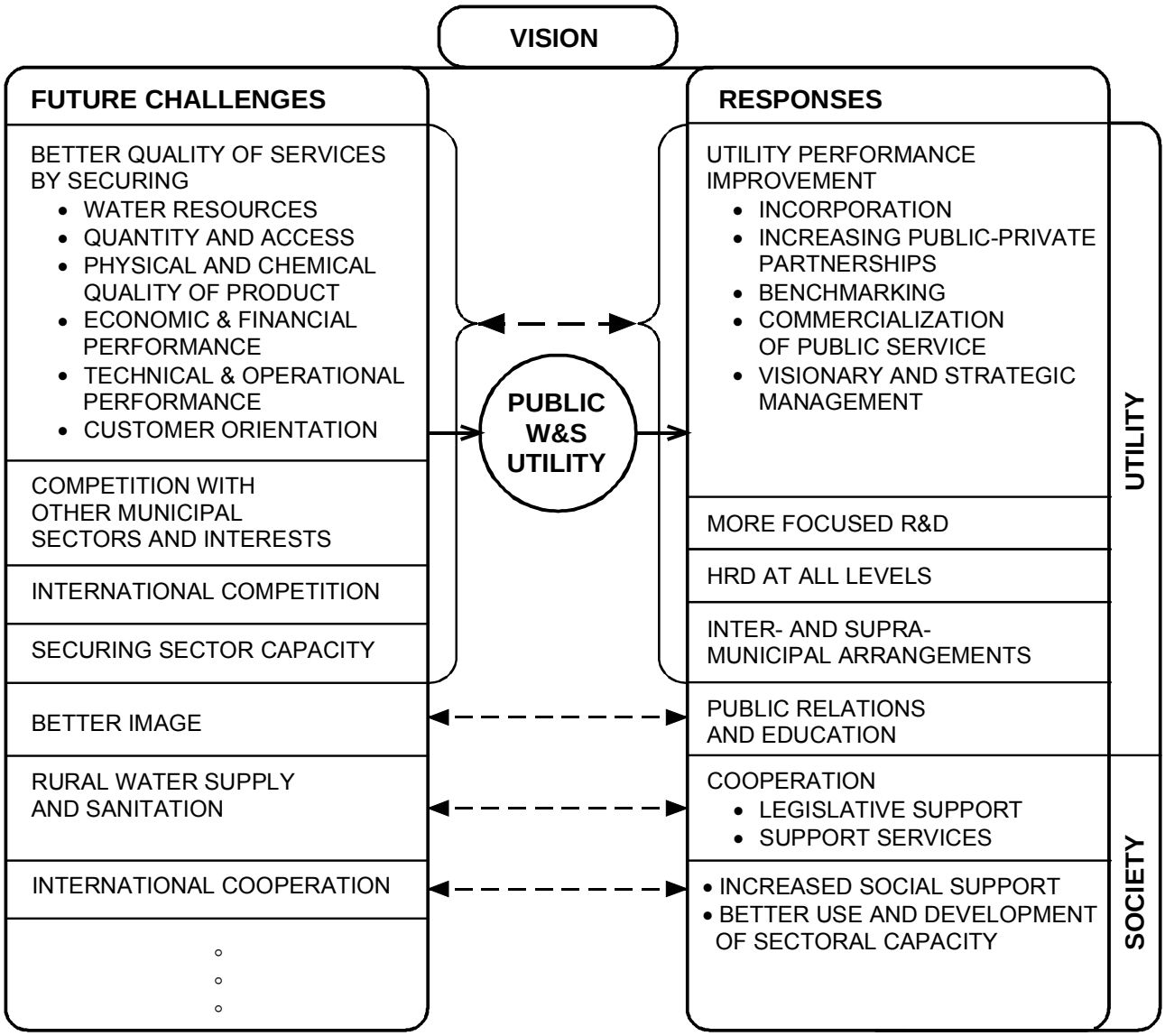


Figure 25. A view of the future challenges to water services in Finland and suggested responses through public-private partnerships and improved internal and external efficiency (Juhola, Hukka & Katko 1999, modified by the authors).

Therefore, commercialisation of public services and public-private partnerships may be the prevalent solution in the future. If developing and transition economies had the necessary sound regulatory mechanisms introduced first, what would stop the public sector from being able to perform well in producing WSS services? Why should a viable business environment be created only for private sector organisations? A good example of how to assess the various management, operations and ownership approaches, and private sector involvement is given, for instance, by AWWA (1992, 1997). Developing and transition economies often lack the capacity for sound regulation and control of private operators. Those who promote private operations extensively argue that they are necessary since public utilities do not have capacity to manage and develop WSS services. In many cases this may be true. How then are they going to regulate a private operator effectively? Should we not focus on building both the local regulatory and control capacity and autonomous public WSS utilities.

It is to be expected that various forms of public-private partnerships will increase. In order to serve the unserved, and to serve better those whose services are inadequate, PPP in its wide context is necessary. The only question is: "What kind of partnerships or cooperation?" Should they be orchestrated by the local people or by water industry conglomerates and their footmen in developing and transition economies along with turbo-capitalistic international financiers? Can they really say that the private option is free of problems such as corruption, secret contracts, bribery, lack of competition, concessions forever, and higher prices for consumers. Hall (2001b, p. 3) has argued that public sector undertakings can be cheaper, as efficient, more flexible, more transparent and accountable than privatisation or PPP. Gresham and Shlaudeman (2000) and Hall (2001b, p. 3) pointed out that, so far, international competition for contracts has remained limited to a few companies. Thus, they concluded that greater competition is desirable as it would increase the transparency and effectiveness of the private sector's participation.

Gleick el al. (2002) analysed privatisation in the globalisation context. Among other things, they pointed out the complex and often contradictory international trade rules, such as those of GATT, WTO and NAFTA. They used the concept "commodification" to describe a process where formerly socially related services are turned primarily into market goods. Gleick et al. concluded that any efforts of privatisation or commodification must be evaluated more carefully than has been the case so far. Along with privatisation, we should respect the principles of basic water needs of people and ecosystems, equitable access to water, participation in decision making and improving water-use efficiency. Finally they stressed that "water is far too important to the well-being of humans and our environment to be trusted entirely to the private sector".

It should be pointed out that where public utilities perform poorly, governments are most likely to be weak. In such conditions the risk for inequitable and uneconomic privatisation is very high. If the countries do not have the capacity to run services through public organisations, how could they have capacity for proper regulation, probably the most demanding duty?

Regulation is needed in all institutional options whether public, privatised or mixed. Regulatory control should not protect and limit market mechanisms but facilitate them. Competition and the creation of a functioning market requires appropriate, sector-specific regulation and independent, strong regulators (Seppälä et al. 2001). In case of good local governments, we can have the democratic local government based regulation and control. Bode (2002) points out that we need a well emancipated public partner for public-private partnerships, otherwise the public partner and, in the long run, the customers become the loser.

In its draft water resources strategy paper the World Bank (2002) points out that there is a wide consensus on the central features of sound a water supply and sanitation sector. This may be true in a wider context, but implementation of PPP or PPC would really need further and continuous assessment and evaluation of the experiences gained. Our research suggests that there are contradictory views of this issue.

When considering various alternatives of public and private cooperation for managing water and sanitation services and related institutional frameworks, we could, and perhaps should, speak about institutional diversity. Such “insdiversity” is analogical to the “biodiversity” now commonly accepted in international environmental management.

According to Seppälä et al. (2001), one must consider the long-term experiences from the services and their nature in the selection of the mode of water service implementation. Ultimately, it is a question of a conscious value judgment: what do decision-makers consider most essential? Political bodies should not make such major irreversible strategic decisions as have been made in England and Wales. The huge profits and salary increments indicate that the early tariff increases were not introduced merely to recover costs but to earn profits for the private owners. This is corroborated by the substantial investments and expansion of the water companies into other sectors and businesses outside the water industry.

The nature of water-and-sanitation-service activity itself requires that the longer term be considered in decision making. Ultimately, the responsibility for providing water services lies with the public sector. Thus, novel approaches to public sector management and the sector’s interaction with society and citizens are needed. The key consideration, however, is not whether the utility is private or public, but how well it attains its objectives. A public organisation is definitely capable of reaching set objectives – with or without PPPs. In any case, public ownership will ultimately have wider objectives than private ownership. While the former is concerned with general social and environmental interests, the latter focuses on profits.

## Assessment of the study

During the study - the first phase of which was intended mainly for the Finnish audience, and this second, extended and modified version for a wider international audience, the

authors have received feedback and comments from some 40 experts from water and other related development sectors. Most of these comments we have been able to take into account. One of the concerns was the structure of the study and the role of the Finnish case, which is hopefully now better explained in the report. We received several valuable detailed comments and important recent or earlier research that we were happy to include in our report.

Having controversial and complicated topics such as privatisation and public-private partnerships it is fair to admit that it has and will also draw critique and raise emotions. We appreciate the critical comments although we were not able to include them all. The arguments in favour of public or private involvement seem to be emotionally charged.

As hopefully made clear in this report, these issues are always value-bound. It is of interest to note how the Nobel lauriate Stiglitz (2002) concludes that, in relation to Russia, the IMF and the World Bank approached privatisation from a narrow ideological perspective – promotion of implementation was rapid. The very same approach is often taken by those in favour of private ownership and increased private operation, ignoring the possibilities for public sector reforms. Thus, in such a broad and complex theme it is impossible to agree all the views. This has not even been the purpose of the study – but rather to promote discussion on the topic that we see one of the most important ones in international water management – on various options for water and sewerage services production that could be considered and applied.

## Further research needs

The study has highlighted the need for research in the following areas:

1. How have public-private partnerships and related roles and responsibilities developed in the long-term, what issues have been the driving forces, what impacts have changes had, and what are the possible development paths?
2. What is the extent of outsourcing in various countries, how has it developed, and to what extent and on what basis can outsourcing be increased?
3. What kind of performance indicators can be used and developed for the assessment and benchmarking of the performance of various ownership and management options? What kinds of indicators can be used to evaluate the quality of services? What is required to be able to measure and compare all the costs (transformation, transaction, organisation, and compliance costs) and benefits of various management and ownership options, especially, when considering the entire cycle from the source to effluent disposal and environmental protection.
4. How can transparency, accountability and openness of water and sewerage services be improved?
5. What kind of public-public and public-private partnership model can be applied in supramunicipal cooperation? In particular, how can the performance of small utilities be improved?

6. How can the EU's policies for small and medium-sized enterprises (SMEs), state aid and competition policies be introduced to PPPs in water and sewerage services? (Association of Finnish Local and Regional Authorities 1998).

Alternative scenarios and development paths and a vision of the preferable future could be formulated.

The following issues can be raised concerning developing and probably also transition economies:

1. Macroeconomic effects in developing and transition countries, particularly in the areas of balance of payments and fiscal deficits of central and local governments.
2. Social and political effects in general with emphasis on developing countries. What happens with income distribution? What happens with concentration of political power and ownership? Does the privatisation in WSS help to decrease poverty? What happens with democracy in these countries? What happens to privatisation in the decentralisation process? The privatisation in developing countries is equivalent to transnationalisation (foreign investment). What effect does that have on the economies of developing countries? What kind of effects does privatisation have on the regular and poor users' ability to pay? Which are the effects at local level in relation to local services, workers, suppliers, etc? What environmental effects can privatisation have?

This study has concentrated on private and public cooperation in water and sewerage services. From the overall water management point of view, the area of water rights and their relationship to water services management options should also be explored.

The need for research on the roles of private involvement in water and other basic infrastructure services is increasingly evident since we are now getting actual experiences from reforms implemented. Certainly, these lessons should be openly debated and used in formulating future policies for WSS services.

### Summary of conclusions

The following experiences have been gained over the long-term:

1. Nearly all of today's OECD countries tried to establish water supply and sewerage systems run by private companies in the mid- and late 1800s. Yet, municipalities acquired ownership of these facilities quite rapidly. In the US, the Federal Government used to give strong support to large-scale water supply projects and, later, the construction of communal sewerage systems in a way that would be considered excessive intervention by the state in the Nordic countries.
2. In Finland municipalities have operated and owned the water supply and sewerage systems of cities and other population centres since the 1880s. Water works have financed their operations primarily by consumer fees, but, especially earlier, sewage works were financed with municipal taxes. Small facilities have traditionally been consumer-owned and -managed water cooperatives. Although the latter are private

enterprises, they aim at cost minimisation instead of profit maximisation, partly at the expense of service quality.

3. In France, private water service operators were established in the mid-1800s and have gradually captured markets around the world also in other service sectors. In practice, these enterprises have received concessions of up to 30 years to manage facilities. This results in hardly any competition as the external services needed by a utility are bought from a member of the same or an affiliated group. The competition for a new concession or lease (affermage) is not real since only the enterprise itself knows the facility well enough to be able to minimise risks. Moreover, three companies have in practice divided the market geographically.
4. The sale of water and sewage works to the private sector in England and Wales in 1989 is a unique incident in the water service sector. Thatcherism and the legislation arising from that ideology, which curtailed the borrowing by earlier public water and sewage utilities, lie behind that privatisation drive. As a result, the English and Welsh local governments have lost their relative importance. On the other hand, the privatisation of utilities has allowed additional investments, which were prohibited in 1979-1989. After privatisation, a quite complicated control structure had to be formed in order to safeguard consumers' interests. This type of system is over-organised by Finnish and Scandinavian standards. Privatisation of various forms of PPPs cannot eliminate the fact that, in the public sector, the various levels of administration have their own tasks and liabilities with regard to water and sewerage services and environmental protection in general.
5. The cases of France and England show that vertically integrated companies involved in public-private partnerships and privatisation have taken over leadership in the global “turbo-capitalistic” water industry market. Yet, as the examples indicate, they have sometimes followed unscrupulous and questionable business practices. Currently, companies in other countries, notably in Germany and in the US, but also in Finland, are penetrating, or trying to penetrate, the markets.
6. Public ownership seems to hold its own against private ownership in water and sewerage services. Outsourcing of non-core operations to the private sector based on competitive bidding is often used to increase effectiveness and efficiency.

Some general conclusions can be drawn with regard to the nature of WSS services and gained experiences:

1. Water supply and sewerage systems are, and will remain, natural monopolies since it is not viable to build several networks and facilities in the same physical area.
2. The privatisation of, and PPS in, a natural monopoly, as implemented in France, England and Wales, do not increase actual competition — in practice a public monopoly is only replaced by a private monopoly.
3. The research did not find any proof that private enterprises would operate facilities more efficiently than public ones in well-functioning societies.
4. Finnish and other Nordic municipal water and sewage utilities have already, to a large extent, implemented extensive public-private partnerships. Most of the utilities operating expenses are used to buy services from private companies. Furthermore,

the private enterprises are involved in the construction and rehabilitation of the facilities.

5. In public-private partnership arrangements, especially in developing countries, it is very important to strengthen the roles of local governments and users.
6. Although it can be explicitly concluded that privatisation of, and PPP in, WSS services is neither a panacea nor a pancake, it can be implicitly concluded that the principles and practices have to be developed further to create a win-win situation for all concerned stakeholders.
7. The following principles may be considered essential in WSS services:
    - Instead of privatisation, it is better to promote public-private partnerships or public-private cooperation. Whatever option is selected, the principles and practices of good governance should be followed. The core business of a water and sewage utility should be operated in the form of a municipality-owned (public) enterprise. Support services can be bought from the private sector through continuous competitive bidding.
    - In a welfare state, competition may be best promoted through municipality-owned utilities that buy goods and services from the private sector. These services can include, for instance, planning and design, construction, operation and maintenance services, renovation, billing, research, and laboratory services. Wider participation by the private sector in the form of operational management contracts, lease contracts or concessions may come into consideration, if the local government has insufficient capacity to manage utilities.
    - One alternative for building capacity in developing and transition economies could be arrangements like BOTT (build-operate-train-transfer). Such participation does, however, require prudent regulation and clear-cut rules for public-private partnerships, and an adequately short transfer-time.

# Epilogue

During the first years of the 21st century, involvement of transnational private operators in the production of water services in developing countries has been discussed increasingly and critically (see “further reading“ in bibliography). Discussions were also held during the 3rd World Water Forum in Kyoto in March 2003.

A key argument in favour has been that private operators can provide their own capital and also attract other private financing. It is certainly true that the global millennium targets for water supply and sanitation will not be reached unless there are reforms and new sources of financing. Yet, understandably, private operators are reluctant to assume major risks in developing countries. Recently, some have argued that international donors or bilateral agencies should cover the risks involved in such private investments. This would be something of a conflict with the main objective of international development cooperation, to help build self-sufficiency, and hard for bilateral donors to justify to tax payers in the developed world.

There is also a lack of understanding of past experiences and lessons. One of the key messages of the long-term development of water services is that they depend so much on local political, social, natural, economic and cultural factors. There are not global “models” that can be introduced everywhere.

In international discussions, the role of local governments is frequently ignored, or dismissed. A key argument of this publication is that we should try promoting public sector reforms in developing and transition economies. The aim should be to develop local government structures and municipally owned public utilities that cooperate with the private sector. The trouble is that, in the past, local government has usually been seen as weak and poorly resourced. There have been two international trends: in some countries, the role of the local government has been decreasing continuously; in others, like the Nordic countries, it has been strengthened and increased continuously.

International discussion still seems to concentrate too much on the public versus private issue. Yet, in any democratic society we need both. Therefore, public-private partnerships should include all possible modes of private and public cooperation – certainly not just those involving transnational vertically integrated private operators.

Procurement of goods and services from the private sector based on competitive bidding also seems to have dropped from consideration in the international debate on public-private cooperation. In the case of the bigger utilities in Finland and Sweden, this kind of “outsourcing” to the private sector can account for 60-70 percent of the utilities’ operating expenditures. In addition, investment projects are carried out almost exclusively by private sector consultants and contractors based on competitive bidding.

At some of the most recent international meetings, the authors have noticed that there is still uncritical promotion of privatisation – even in the way that it was implemented in England and Wales. Arguments have been presented such as “let’s forget ideology and discuss what is possible in practice”. Yet, the decision to privatise the assets in England and Wales was clearly an ideological one. Would it not be fairer, at least among professionals, to accept this and recognise that in areas such as public-private partnership or cooperation, most solutions are linked to some form of ideology or values.

Although it is possible that some of the criticism of private sector involvement by some non-governmental organisations is too simplistic and ideological, at least they have brought the issue to public discussion. One of the key questions is related to regulation. A common argument is that we should involve multinational private sector operators in developing countries since the latter lack the capacity to manage their own WSS services. Even if that is the case, the private operators themselves recognise the need to have proper regulation. If the developing countries do not have the capacity to run their public water utilities, how could they have capacity for proper regulation? And, if capacity can be built for regulation, why cannot it be built for management?

During the last few years several international comparisons have been made related to the adequacy of water and environmental services and management. These include, among others, the water poverty index, the water quality index, the transparency index and several environment-related indices. Such indices certainly have their limitations and can only be regarded as indicative. Nevertheless, it is hardly a coincidence that in all these comparisons the countries that come out best are those with a long tradition of municipal autonomy and local government-owned water and sewerage utilities.

It is difficult to transfer modes and practices to other countries and conditions. However, we should certainly raise the questions: “What is actually the key long-term objective of development cooperation in the water and sanitation sector. Should we just be more realistic with our development goals and accept that there is no simple shortcut to sustainable development? Instead of promoting modes that seem to favour a few transnational private companies, should we not develop local capacity, including the local private sector in developing countries?” Maybe this is a topic on which external support agencies and all the other stakeholders could sit together and analyse their own experiences.

Tampere, 4 April, 2003
The authors

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# Annex 1: Institutional framework of water and sanitation in Finland

## A1.1 Organisations linked to water and sanitation

The Ministry for the Environment directs Finnish environmental and housing policy, use of land areas, construction, and preparation of legislative proposals. It is also responsible for land use planning, a good living environment, development of the regional and community structure, cultural environments and the building legacy. The Ministry for the Environment also engages in the development of regional land use planning.

The Ministry of Agriculture and Forestry, jointly with the Ministry for the Environment, directs the Finnish Environment Institute and Regional Environmental Centres. The Ministry is charged with development of water supply and sewerage, use and management of water resources, performance of facilities management, and land surveying. It develops farm economy-related building and the rural built environment.

The Ministry of Social Affairs and Health directs environmental health care. It issues instructions concerning, for instance, water quality, permitted chemicals and the minimum standards for untreated water. It also oversees observance of the Health Protection Act, which directs how domestic and swimming water quality is to be monitored. State Provincial Offices are organs of state regional government that direct municipalities, which, again, are responsible for the provision of environmental health care.

The Finnish Environment Institute (FEI) is a research and development centre of the environmental sector. In cooperation with Regional Environmental Centres it maintains an environmental information system. The Finnish Environment Centre and its regional centres are responsible for research and monitoring under the environmental administration. Research subjects include eutrophication, chemical contamination of the environment, acidification and environmental hazards and accidents. The goal of the Environment Institute is to promote economical, safe and fair use and care of water resources to maintain and improve the natural values and attractiveness of bodies of water.

The Regional Environmental Centres are the state's regional administration authorities under the Ministry for the Environment and the Ministry of Agriculture and Forestry. Each centre is a participative and guiding organ entrusted with the task of ensuring the preconditions for sustainable development in its region. Regional Environment Centres deal with emissions, planning and building, protection of nature and landscapes, nurture of the cultural environment and use and management of water resources. Through the centres, FEI studies and monitors the state of the environment and strives to promote environmental awareness among all actors in each region. The goal is to make authorities work in a united and flexible fashion serving the region.

State Provincial Offices are the state's general administrative authorities. They also perform duties in the areas of judicial administration, rescue services, police administration, educational and cultural administration, sports and youth work, agricultural and forest management, transport, consumer protection, competition and food administration, and social affairs and health. State Provincial Offices promote regional cooperation and strive to advance well-being, due process and justice, equality and enforcement of citizens' basic rights. They also monitor and evaluate how well municipalities perform their duties. In addition, they supervise, inspect and grant certain permits. Finland has five State Provincial Offices covering the regions of Southern Finland, Western Finland, Eastern Finland, Oulu and Lappi.
The Regional Council functions as a federation of municipalities in regional development and land use planning. A statutory duty of federations of municipalities is to supervise preparation, updating and development of the regional land use plan which guides municipal and other land use planning. Transportation, technical service, agriculture and use of shores have been areas of planning. Regional land use planning falls between central administration and local government. The Regional Council is also a key actor in the EU's regional development programmes.

Municipalities provide basic services for their inhabitants. They direct land use and building within their areas and organise water and energy supply and waste disposal, maintain streets, and protect the environment. Municipalities take measures to provide WSS services in their jurisdiction when these are required for health reasons or because there is a large group of consumers. Municipalities grant environmental permits, monitor the state of the environment and control activities affecting the environment. The municipal council makes decisions concerning the general bases for charges for municipal and other services (Association of Finnish Local and Regional Authorities, 2000).

The Finnish Water and Waste Water Works Association (FIWA) is a national joint organisation of water and wastewater works. It works with organs of government, makes suggestions and issues statements. In addition, FIWA participates in the preparation of, for instance, EU directives as a member of international organisations.

The Finnish Association of Local Authorities works to improve the ability of municipalities and federations of municipalities to carry on their activities as well as their cooperation and viability for the benefit of inhabitants. It provides service in the areas of municipal economy, legal, social and health issues, education and culture, communal, technical and environmental issues, development of its region and commerce and industry, municipal development and research, the information society, communications and international affairs. It creates preconditions for basic municipal services, functioning democracy and a good living environment for the inhabitants. The Finnish Association of Local Authorities looks after the interests of municipalities and federations of municipalities. It provides expert services, oversees training and development, and disseminates information.

Employment and Economic Development Centres provide counseling and development services related to employment and commerce and industry. Their tasks include planning and organising of labour policy-related adult education, promotion of farm economy, viability of the countryside and its sources of livelihood, development of the fishing industry, and participation in and making a mark on the development of their purviews. The rural development programme also embraces water supply and sanitation. The centres are also experts on EU funding and grant funds.

The Finnish Competition Authority has the task of improving economic efficiency by promoting competition. It focuses on major restraints of trade from the viewpoint of the efficiency of the national economy. The law on restrictive business practices bans, for instance, misuse of a controlling position as well as the formation of cartels by competitors to fix prices or divide markets or production between themselves.

The National Consumer Administration works to secure the economic, health care and judicial status of the consumer and improves his/her chances of participating in public decision making and the markets.

Environmental Permit Offices are independent authorities granting permits according to the Waters Act and the Environmental Protection Act. They also hold the power of decision over environmental permits for key enterprises. Other significant permits are processed by Regional Environmental Centres. Less important permits fall within the jurisdiction of municipalities. Environmental Permit Offices also tend to administrative compulsion issues and the majority of claims concerning pollution of waters. Finland has three such offices: the Western Finland, the Eastern Finland and the Northern Finland offices.

Administrative Courts hear appeals by private persons and corporations concerning decisions of authorities. They are courts of appeal in all environmental issues also for decisions made by municipalities. The Administrative Courts are located in Helsinki, Turku, Vaasa, Hämeenlinna, Kouvola, Kuopio, Oulu and Rovaniemi. Vaasa Administrative Court hears cases pertaining to environmental legislation.

The Supreme Administrative Court is the highest court of appeal in all environmental cases to which decisions of lower courts and certain administrative authorities can be appealed. Besides taxation, other large groups of issues are building and planning, the environment and water, transportation and roadways, municipal law and social welfare law. In addition to administering justice, the Supreme Administrative Court also oversees the administration of justice by lower authorities in the field of administrative law. Fig. 19 shows the relationship of the Supreme Administrative Court to other branches of administration.

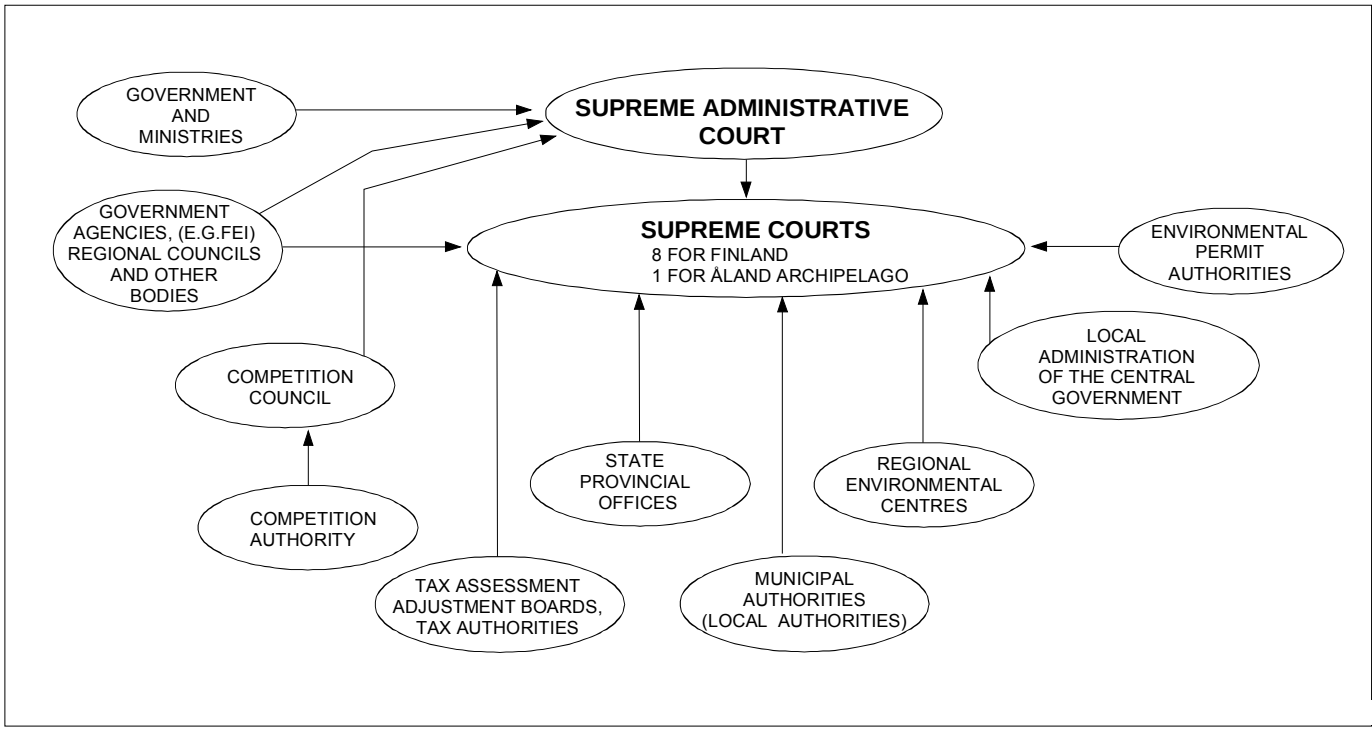


Fig. A1 Relationship of Supreme Administrative Court to other branches of administration in Finland (Supreme Administrative Court 2000).

## A1.2 Legislative aspects

*EU directives*

EU directives are put into effect by Finnish legislation. Thus, directives as such are not directly binding on a Finnish citizen, only on the Finnish state. The EU has issued directives on the quality requirements for domestic and wastewaters and water bodies.

In 2001, an EU water policy framework directive came into force which established goals, minimum requirements and an action plan for water pollution control and sustainable use of water resources. The directive standardises the planning, monitoring and classification practices concerning water throughout the European Union. The key aim of the directive is to bring about a sound ecological and chemical state of surface waters, a sound quantitative and chemical state of groundwaters as well as the best possible ecological

state of heavily altered and built waters. The new framework directive will change prevailing Finnish legislation on water use and protection and environmental administration and its application. Regulations concerning environmental degradation are provided in the new Environment Protection Act (Finnish Environment Agency 1999).

*Environment Protection Act*

In March 2000 a new Environment Protection Act came into force harmonising and consolidating the laws protecting the environment. The legislative reform changed 24 laws and compiled separate statutes into a general law which governs activities which pollute soil, waters and air. The new Environment Protection Act replaced the Air Protection, the Noise Abatement and the Environmental Procedure Acts.

Municipalities are obligated to chart the need for protection of waters and the environment. They issue environmental protection orders for the building and maintenance of waste water systems. Inhabitants may be required to be connected to the public sewer system if it is technically and economically possible. Presently, a building is connected to a sewer line if the distance to the pipe is less than 20 metres. In future, the health authority may order a building that lies even further away to be connected to the sewer line if its wastewaters constitute a health or an environmental hazard.

*Water Services Act*

The bill for a Water Services Act was submitted to Parliament on 16 June 2000 and was enacted into law on 1st May, 2001. The Act supersedes the laws on water supply and sewerage works and the sewage fee. The Act also incorporates provisions on the minimum standard of consumer protection. The Act clarifies the liabilities of the municipality. It sets a general obligation for the development of WSS services by municipalities aimed at supplying a sufficient amount of domestic water of a good hygienic standard at a reasonable cost as well as proper sanitation from the viewpoint of environmental protection. The Act applies to water supply and sanitation for human settlements and comparable commercial, industrial and leisure activity. The key change is the harmonisation of the contractual and payment systems on the basis of civil law.

The properties in the operating area of a WSS system should as a rule be connected to its system. This guarantees the operational and economic conditions it needs to provide WSS services for the operating area.

*Health Protection Act*

The Health Protection Act includes provisions on the quality of domestic water and its monitoring as well as several provisions on water works. In 2000 a new Act on the quality standards and inspection of domestic water was brought into force by the Ministry of Social Affairs and Health, based on EU directive 98/83/EU. It supersedes earlier statutes on the quality of domestic water and its monitoring as spelled out in the Health Protection Act.

The Act requires that water and sewage works and health protection authorities provide more information.

*Land Use and Building Act*

A new Land Use and Building Act superseded the previous Building Act in January 2000. The new act emphasizes the significance of environmental issues. Its general aim is to organise the use and building of areas so that preconditions for a good living environment are created and ecologically, economically, socially and culturally sustainable development is promoted. The Act makes it easier to consider the conditions for organising water supply and sanitation when granting new building permits and planning land use. In particular, provisions related to the need to plan use of areas, the content of municipal building regulations, and the conditions for granting a building permit are central from the standpoint of water and sanitation.

The new Land Use and Building Act has increased municipalities' independence in decision making concerning planning.

## Annex 2: Glossary

| | |
|---|---|
| de facto | existing as a fact |
| de jure | according to the law |
| rikstaler | ancient Swedish-Finnish currency |
| turbo-capitalism | the markets are deregulated, and guided by the service producers, not by the customers (Luttwak 1999) |

## Annex 3: List of Abbreviations and Acronyms

| | |
|---|---|
| a | year (annum) |
| ACEA | a multiservice operator |
| ACIR | Advisory Commission on Intergovernmental Relations |
| AFD | African Fund for Development |
| APWA | American Public Works Association |
| AWWA | American Water Works Association |
| BOT | Build-Operate-Transfer |
| BOTT | Build-Operate-Train-Transfer |
| c | person (capita) |
| CPS | commercialisation of public services |
| CRA | Commission Regulating Drinking Water and Basic Sanitation |
| DBO | Design-Build-Operate |
| DWI | Drinking Water Inspectorate |
| e.g. | for example (exempli gratia) |
| EBRD | European Bank for Reconstruction and Development |
| EPSU | European Federation of Public Service Unions |
| EIB | European Investment Bank |
| EU | European Union |
| EUREAU | European Union of National Associations of Water Suppliers and Waste Water Services |
| FEA | Germany's Federal Environmental Agency |
| FINNIDA | Finnish International Development Agency (presently Department for International Development Cooperation) |
| GATT | The General Agreement on Tariffs and Trade |
| GATS | The General Agreement on Trade and Services |
| GBP | Great Britain Pound |
| GTZ | German Agency for Technical Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit) |
| GWP | Global Water Partnership |
| HWBC | Hanoi Water Business Company |
| i.a. | among others (inter alia) |
| ICWE | International Conference on Water and Environment |
| IDWSSD | International Drinking Water Supply and Sanitation Decade |
| i.e. | that is (id est) |
| IEEB | Institute of Environmental Engineering and Biotechnology (TUT) |
| IMO | Institutional and Management Options (IWA) |
| INFIPAL | Financial and Fostering Institute for Municipal Development of Utilities |
| INS | National Health Institute |
| INSFOPAL | Municipal Fostering Institute |
| IRC | International Water and Sanitation Centre |

| | |
|---|---|
| IWA | International Water Association (IWA) |
| IWEE | Institute of Water and Environmental Engineering (TUT, currently IEEB) |
| IWRA | International Water Resources Association |
| IWSA | International Water Services Association (merged to IWA) |
| KFW | German Reconstruction Bank (Kreditanstalt für Wiederaufbau) |
| KilpRajL | Law regulating the competition (Kilpailurajoituslaki) |
| km | kilometre |
| km2 | square kilometre |
| LV | Lahti Water (Lahti Vesi) |
| LYSA | Lion Deus Auex |
| m3 | cubic metre (1 000 litres) |
| MENR | Ministry of the Environment and Natural Resources |
| MOWD | Ministry of Water Development |
| MOLRRW | Ministry of Land Reclamation, Regional and Water Development |
| na | not available |
| no | number |
| NAFTA | North American Free Trade Agreement |
| NIS | Newly Independant States |
| NRA | National River Authority |
| OECD | Organisation for Economic Co-operation and Development |
| OFWAT | Office of Water Services |
| PPP | public- private partnership |
| P3 | public-private partnership |
| PSI | Public Services International |
| PSIRU | Public Services International Research Unit |
| PSBR | Rural Basic Sanitation Program |
| PSP | private sector participation |
| RCAM | Registered Community Assets Mutual |
| RWA | Regional Water Authority |
| RWE | Germany-based multioperator |
| SAUR | Société d'aménagement urbain et rural |
| SKOY | Plancenter Ltd (Suunnittelukeskus Oy) |
| SME | small and medium-sized enterprises |
| TKVL | Tampere Water (Tampereen kaupungin vesilaitos) |
| TUT | Tampere University of Technology |
| UETP-EEE | Universities and Enterprises Training Partnership Programme-Environmental Engineering Education |
| UK | United Kingdom |
| UNCED | United Nations Conference on Environment and Development |
| UNDP | United Nations Development Program |
| UNESCAP | United Nations, Economic and Social Commission for Asia and the Pacific |
| UOP | University of Pristina, Kosovo |

| | |
|---|---|
| US | United States (of America) |
| USD | United States Dollar |
| UWASAM | Urban Water and Sanitation Management |
| VAT | Value Added Tax |
| WA | Water Authority |
| WASH | Water and Sanitation for Health Project |
| WDE | water distribution enterprise |
| WEDC | Water and Engineering Development Centre |
| WSA | Water and Sanitation Department |
| WSS | Water supply and sanitation |
| WSSCC | Water Supply and Sanitation Collaborative Council |
| WTP | water treatment plant |
| WTO | World Trade Organisation |
| WWAP | World Water Assessment Programme |