

WORKING PAPER

The French system of water services



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Pierre BAUBY

Laboratoire d'économie dyonisien (LED)
Université Paris VIII, France

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Foreword

Developments in Europe: A progressive and pragmatic approach to liberalization

In Europe there exists a wide range of approaches (public/private) to the organization and management of water distribution and sanitation. This diversity derives from the histories, traditions and institutions of Europe's various countries.

The European water services market is extremely fragmented¹. There were over 30,000 different operators in the European Union's fifteen member states before enlargements of 2004 and 2007. Approximately 55% of the EU's population was supplied by public operators, 35% by private companies, and 10% by mixed economy operators. But there are strong disparities between member states: on the one hand, a complete privatization of infrastructure and management in England and Wales, on the other hand a majority of States in which the government remains dominant and between these two situations French and Spain, where delegated management is largely majority. Unlike other network services such as electricity and telecommunications, there is no large public sector operator in the water services sector, the public operators being essentially municipal.

Starting in the 1970s, the European Community introduced a number of directives on water services largely aimed at protecting public health and the environment. Ambitious water quality and pollution norms were central to the policy.

The directives were introduced in three phases:

- An initial wave of legislation (1973-1988) concerned ensuring the high quality of water used for human activities (directive on water quality, 1980, revised in 1998)
- A second wave of directives (1988-1995) focused on pollution (notably a 1991 directive on the treatment of waste water in which an agenda was drawn up for the construction of water treatment plants in all urban zones)
- A third wave of directives, the most important being the Water Framework Directive of 2000 concerning the water production and management of water that repeals, in seven, respectively thirteen years after its entry into force, a part of the previous legislation on the quality of waters and protection against pollution.

These European directives imposed high standards in the field of water quality and represented a genuine challenge to authorities responsible for water distribution and sanitation in the EU's member states.

¹ Euromarket study, <http://mir.epfl.ch/page18246.html>

The EU's approach at the time was oriented towards the implementation of a policy based not on the construction of an interior market but on ambitious quality norms motivated by public health and environmental concerns. The approach was encouraged by the major operators who dispose of the expertise required to provide the authorities with feasible solutions and, in so doing, develop an increasingly tighter grip on the market.

The preamble to the EU Water Framework Directive published in 2000 states that "drinking water is not an ordinary commodity." At the same time, the framework directive introduced economic concepts into the environmental legislation by requiring Member States to produce economic analyses of water use from 2004 and to introduce the principle of full cost recovery from 2010.

It should be underlined that in 2001 the EU Council of Ministers recognized that "each person has the right to a sufficient quantity of water for his or her basic needs." Nevertheless, such declarations do not provide a viable framework for the development of a pan-EU water law.

While electricity, telecommunications, postal services and transport have undergone significant changes due to a European liberalization process, the water sector has until now been treated differently, and was not subject to the European policy of liberalization of services.

This can be explained by the fact that in all EU countries responsibility for organizing water distribution and sanitation lies with municipalities and local authorities, and that water is rarely transported over long distances, with the consequence that there is little possibility of developing interconnections between networks or developing a unified "interior market."

Nevertheless, in 2003² the European Commission suggested that an analysis should be made of "the legal and administrative situation in the water and waste management industry, including an appraisal of issues concerning competition with regard to the guarantees provided by the treaty on services of general economic interest, as well as provisions concerning the environment. All options will be envisaged, including the possible adoption of legal measures."

Similarly, in the 2004 White Paper on Services of General Economic Interest³, the European Commission undertook to publish an "evaluation of the water sector by late 2004." In March 2006, largely due to the sensitivities of all the players involved in the field of water distribution and sanitation, the evaluation had still not yet been published.

In the meantime, an article by Alexander Gee⁴ revealed the importance of three separate issues. Firstly, "although water distribution and waste water collection

² Communication of the Commission on "Internal Market Strategy/ Priorities 2003-2006", May 7, 2003; MEMO (2003) 238 final, p. 14.

³ White paper on services of general interest, MEMO (2004) 374, p. 16.

⁴ Directorate-General Competition, *Competition Policy Newsletter*, 2004, number 2, Summer.

for domestic purposes are generally considered to be natural monopolies, the supply of water and waste water services is not". He points out that, as a corollary, "the question is therefore whether there are legal obstacles to competition. The main threat to competition at the wholesale market, including supply to industrial and commercial consumers, seems to be anti-competitive state measures (i.e. state and local measures which cannot be justified by Article 86-2)." In this regard, Alexander draws the reader's attention to "exclusive rights whose scope or duration is greater than justified; vertical restrictions arising from exclusive long term supply dealings; horizontal restriction between operators." Lastly, he underlines that, "the main barriers to competition in this market seem to be the lack of transparency when services are provided in-house by the owner of the network (normally the local authority) and problems with public tendering when the owner outsources the exclusive right to operate the network".

The author displays a certain degree of prudence insofar as recommendations are concerned: "liberalization is probably not the best approach at this stage, but it is possible to encourage transparency and competition within the current structure of the market." He suggests introducing measures designed "to limit the scope and duration of the exclusive rights granted to local monopolies to the minimum necessary to allow them to provide the public services obligations with which they are entrusted" and "to ensure a competitive market whenever an authority decides to outsource water activities." Alexander's article can be considered as a sounding board, but no proposals have resulted from it thus far. The European Commission appears to be particularly prudent when it comes to this subject.

At the same time, during international negotiations (WTO, GATS), the French government behaved in an opportunistic manner, by turn accepting or suggesting liberalization in sectors in which there existed national leaders (ex: drinking water, sanitation), and refusing or limiting liberalization in other sectors.

There is, therefore, no European policy to promote a compulsory liberalization of the water sector. Each EU member state and every individual local authority responsible for organizing water services and sanitation within its territory has its own policy which is generally implemented pragmatically. This situation has encouraged a general trend towards a slow but sure development of delegated management.

A. National Analysis of Water

In France, 21% of the population in water supply and 47% in wastewater treatment are served by a public operator through a direct management (*régie*) and the rest by delegated management on the basis of delegation contracts signed for periods running from 7 to 20 years: delegation contracts concern 79% of the population served with drinking water supply and 53% of the population served with wastewater treatment.

It is the only country to have such an importance of delegated management to private companies; in fact, the major French groups are the world leaders in this sector (Véolia-Générale des Eaux, Suez-Lyonnaise des Eaux).

We will analyse the origins of delegated management in France, its main features, and its reforms.

1. Legal framework, responsibility and organisation for planning and programming

Inventory of French legal framework

Water production
Law of the 6 th February 1992 relative to the territorial administration of the Republic (<i>loi ATR</i>) 1993 Law (<i>Loi Sapin</i>) of the 29 th January relative to the prevention of corruption Law of the 2 nd February 1995 relative to the protection of the environment Decree of the 26 th May 1997 relative to material used in water production and distribution Decree n° 2001-1220 relative to water intended for human consumption Law of the 6 th February 2002 on proximity democracy (<i>démocratie de proximité</i>)
Water distribution
Law n° 2006-172 of 30 th December 2006 on water and aquatic medium 1993 Law (<i>Loi Sapin</i>) of 29 th January relative to the prevention of corruption Law of the 2 nd February 1995 relative to the protection of the environment Decree of the 26 th May 1997 relative to material used in water production and distribution Code of territorial communities (<i>Code Général des Collectivités Territoriales</i>) National Convention on Water Solidarity (28 th April 2000) Decree n° 2001-1220 relative to water intended for human consumption Law of the 6 th February 2002 on proximity democracy (<i>démocratie de proximité</i>)
Sewerage
Law n° 2006-172 of 30 th December 2006 on water and aquatic medium Decree n° 94-469 of the 3 rd June 1994 on the collection and treatment of wastewater Orders of the 22 nd December 1994 on collective sanitation Orders of the 6 th May 1996 on individual sanitation Code of territorial communities (<i>Code Général des Collectivités Territoriales</i>)

2. Provision and regulation of water services

a) Origins of the delegation-concession of the water supply and sanitation sector to private companies in France⁵

The way in which France is politically and administratively organized is particularly complex. The country has 36,000 communes, 95 counties (*départements*), and 22 regions, as well as numerous structures designed to facilitate co-operation between its various administrative entities. France's many communes vary considerably in size. Over 10,000 of them have less than 200 inhabitants, and of 30,000 communes have less than 2,000 (accounting for 25.3% of the country's total population). At the other end of the scale, 102 communes have between 50,000 and 200,000 inhabitants (14.4% of France's population) and 10 have over 200,000 (8.9%). This diversity has important consequences in terms of the organization and regulation of the water distribution and water treatment system.

The responsibility of France's communes for water and sanitation dates back to the Revolution. The original legislation, introduced in 1790, was bolstered by a number of laws and regulations passed throughout the 19th and 20th centuries, a process culminating in the decentralization laws of 1982 which confirmed the legitimacy of the practice.

The French water market has been characterized by an oligopoly since the 1960s. Thus in 2000-2001 the Générale des Eaux - Véolia and Lyonnaise des Eaux - Suez Environnement served 66% of the French population. This situation has changed little since.

Figures concerning the 3 main private operators in France (2000-2001)						
	Générale des Eaux		Lyonnaise des Eaux		Saur	
		<i>% of pop^o</i>		<i>% of pop^o</i>		<i>% of pop^o</i>
Number of contracts	8,000		2,900		7,000	
Consumers served (millions)	45 (1)		23 (1)		6	10 %
Drinking water	26	43 %	14	23 %		
Wastewater treatment	19	31 %	9	15 %		

Source: OIE⁶

(1) A proportion of consumers are double counted as they are served by the same operator for drinking water and wastewater treatment.

⁵ This part is largely based on Euromarket research carried out in 10 European university centres between 2003 and 2005 for the European Commission (DG Recherche) in which the author of this report actively participated: <http://mir.epfl.ch/page18246.html>

⁶ OIE, French Country Report, Aqualibrium Project, 2002.

The origins of water management in the 19th century

Lise Breuil and Christelle Pezon have pointed out⁷ that “in the late 19th century, French local authorities called upon the services of private companies to develop individual water conveyance systems which, at the time, were not considered to be part of the public sector remit (which was limited to providing free access to public water fountains). Water supply is a risky business and it was precisely for that reason that it was left to the initiative of private operators.”

French local government bodies have long been precluded from “economic” activities. In terms of water supply, they were responsible for public fountains and, to a degree, for monitoring water companies, but they did not have the right to levy charges on the end users. Thus, many of the earliest French water distribution networks were built by private concerns. Such are the roots of the practice of delegating water services to private sector companies.

The responsibility of the communes and public or private management

The management of water supply and the services of wastewater treatment fall under the competence of some 36,000 municipalities; they can, if they wish, team themselves up within inter-municipal cooperation structures: inter-municipal syndicate, municipal or town communities; thus the number of water supply services is about 13,500, and a little more for those of wastewater treatment.

It should be noted that, in France, the management of water supply and of water treatment are independent and that companies providing water are not necessarily involved in water treatment activities.

Local authorities are obliged to choose between two management approaches: either direct management, i.e., through a public operator, or *régie* (a system which presently covers the water supply needs of 21% of the population, and the wastewater treatment needs of 47% of the population); or delegation contracts, which run for between 7 to 20 years, and which are awarded on the basis of tender procedures open to competition (75% of the market is controlled by 3 major companies).

⁷ BREUIL Lise and PEZON Christelle, « Une analyse comparée de l'évolution du modèle concessionnaire en France au 19^{ème} siècle et dans les pays en développement à la fin des années 1990, Systèmes de régulation du service public de l'eau, » GDR-CNRS Rés-eau-ville seminar, 10th and 11th February 2005, University of Paris 8 Saint-Denis.

The origins of the major operators: Générale des Eaux and Lyonnaise des Eaux⁸

The Compagnie Générale des Eaux and the Lyonnaise des Eaux have their origins in the supply of drinking water and wastewater treatment services in the 19th century (the Compagnie Générale des Eaux in 1853 and the Société Lyonnaise des Eaux et de l'Eclairage in 1880).

Bouygues, was created in the early 1950s and grew with the wave of urbanization that took place in the 1960s and 1970s⁹.

Private operators first took an interest in water distribution in 1853¹⁰. While most operators were content to do business on a local level only, managing the water needs of a single commune, others, including the Compagnie Générale des Eaux, founded in 1853, and the Lyonnaise des Eaux, set up in 1880, had national ambitions which they furthered by building up a portfolio of contracts and adding an ever increasing number of communes to their client roster.

The Société Lyonnaise des Eaux et de l'Eclairage (SLEE) was founded in 1880. The company's aim was to "obtain, purchase, lease and run, in France and abroad, all concessions and companies linked to water and lighting; more precisely, the distribution of drinking water, water treatment, irrigation, the building of dams and ponds, and public lighting and heating. The company also intends to purchase patents and shares in already existing firms"¹¹. In 1939, the turnover generated by the Lyonnaise des Eaux in the energy sector was five times bigger than that generated in the water sector. By comparison, in 1914, the two figures had been practically identical.

From the first half of the 19th century to the 1950s

By the end of the 19th century, the Lyonnaise des Eaux had a number of concessions in small French cities and was also active in Spain. Indeed, in 1903, a third of the company's turnover was generated in France's southerly neighbour, principally in Barcelona and Valencia. And the firm continued to expand, supplying water to Dunkerque in the Lille region (the Société des eaux du Nord was set up in 1912 as a partner company of the Générale des Eaux), obtaining its first concessions in the suburbs of Bordeaux, and building its first water conveyance systems. In 1939, the turnover generated by the Lyonnaise des Eaux in the energy sector was five times bigger than that generated in the

⁸ Throughout this report the original names of the companies will be used: Lyonnaise des eaux – which now goes by the names of Suez, Ondeo and Suez Environnement in the water sector, whose projected merger with Gaz de France was announced by the French Prime Minister on 25th February, 2006; and Générale des eaux – which became Vivendi, then Veolia.

⁹ Bouygues purchased SAUR in 1984; it was sold to PAI Partners in 2005.

¹⁰ PEZON Christelle, *Le service d'eau potable en France de 1850 à 1995*, Presses du C.E.R.E.M., Paris, 2000.

¹¹ DE MERITENS Patrice, and FABRY Joëlle, *La Lyonnaise des Eaux (1880-2000)*, Suez-Lyonnaise des Eaux 2001, Preface by Jérôme Monod.

water sector. By comparison, in 1914, the two figures had been practically identical.

At the turn of the 20th century, the French Conseil d'Etat, the highest court in the land, gave the communes the right to undertake certain economic activities on condition that no private firms were willing to put themselves forward. More and more water conveyance systems were being built and, at the same time, local authorities, fuelled by a legalized sense of civic responsibility, decided to enter the fray. Gradually, in the first half of the 20th century, a relative equilibrium between public and private sector influence developed in the water supply sector. Christelle Pezon has demonstrated¹² “the decline of concessions as the dominant form of organization in the early 20th century and its gradual replacement by the lease contract system.”

At the same time, a number of factors played a decisive role in changing the approaches adopted by the major companies: post-Second World War reconstruction; the growth of cities and the rise of consumer society; the nationalization of the gas and electricity industries (1946); and decolonization (1960).

Water increasingly became an added value industry: demand soared, and rising pollution led to specific legislation making it obligatory to re-treat used water. Hence the Lyonnaise des Eaux's interest in the water treatment company Degremont, which it acquired in 1972.

Having become used to dealing with the contingencies of local, national and political life and after the nationalization of the gas and electricity industries, the Lyonnaise des Eaux entirely restructured its activities. In both France and the French colonies the company became increasingly active in the energy and water sectors.

The development of delegation-concession contracts 1960-1980: A combination of advantageous factors

In France, unlike in most other European countries in which water falls under the remit of the public sector, local authorities, particularly in the period straddling the 1960s and 1980s, increasingly delegated water and sanitation services to private companies.

There are numbers of reasons which explain this phenomenon.

Firstly, the production and distribution of water necessarily involves treatment procedures which are becoming more and more demanding in terms of public health requirements and increasingly strict quality standards; wastewater treatment has evolved and treatment plants are now a *sine qua non*. Some municipalities, particularly small and medium-sized ones, have struggled to acquire the requisite levels of technical and administrative proficiency.

¹² op. cit.

Delegation management provides the possibility for an integration of the conception, building and maintenance of an infrastructure or of a service.

Delegated management makes it possible, in cases of constrained budgetary situations, to call on private investments, without being obliged to go as far as “total privatization” since the infrastructure remains the property of the municipality (as opposed to the reform introduced in the United Kingdom where there has been complete privatization of regional firms).

It also enables the introduction of the logic of enterprise to replace administrative management and thus encourage efficiency in management.

Furthermore, the increase in water supply and wastewater treatment procedures generally leads to the increase in the cost of service, above the increase in productivity, and tendency to increased costs for consumers. Delegation contracts, saves elected leaders from taking the responsibility of the rise in the price of water and, more generally, in the cost of the management of the service.

Delegated management is supposed to bring together the advantages of a monopoly (the delegatee enjoying the monopoly over the duration of the contract) and those of competition (since competition rules must be observed at every renewal of the contract).

The process of decentralization applied to France’s politico-administrative system which began in the 1980, a process which involved devolving greater powers to local government, was a contributory factor in the growth of delegated management.

In 1980, delegated management accounted for 47% of the French water market. Nine years later, the figure had risen to 73%. Thus, the number of delegated contracts involving the Lyonnaise de Eaux rose from 1,300 in 1979 to 2,500 in 1988. In 1989, the Lyonnaise des Eaux supplied water to 10 million people in France and controlled 40% of the water sanitation market.

This combination of factors demonstrates that delegated management was an effective approach in terms of not only of innovation and technical excellence, but also of management flexibility, economies of scale, etc.

But it should also be borne in mind that one of the reasons for the success of the approach was that, until the 1990s, delegated management was used in France for a number of years as a significant means of financing political activities and election campaigns in the absence of public funding, which encouraged, in some cases, the development of corrupt practices and led to the introduction of the Sapin Law passed on 29/1/1993 aiming at prevention of corruption and encouraging transparency in the economic activity and public procedures.

The gradual development of large integrated multi-service companies and their territorial hegemony

The increase in technology, the diversification of needs as well as the growing autonomy of local elected leaders further strengthened by the decentralization process of the 1980s, have resulted in an evolution of integration and in the formation of three major groups (*Générale des Eaux-Véolia*, *Lyonnaise des Eaux-Suez*, *Bouygues-SAUR*), and, today, they cover the whole of the network from the urbanization section to buildings and civil works.

Thus, after being nationalized in 1946, the *Lyonnaise des Eaux* was able to acquire interests in a number of unrelated sectors: water and sanitation; waste collection and processing; heating; gas and electricity distribution; fire safety; surveillance; and funeral services. It was also involved in the production of equipment and accessories required in those sectors.

In the 1970s, the number of water treatment lease contract grew substantially. During the same period, companies offering a number of different services were constituted.

One of the characteristics of the major companies is that they all are technically and managerially highly proficient and, via their various divisions, involved in every stage of the process of production and distribution of water and water treatment from research to sales to the running of plants to the building of infrastructure to activities linked to water usage (the treatment of water used in industrial processes, waste water, etc.).

These characteristics were reinforced by the major operators' close relationship with the public sector and the political clout that they were able to develop during the substantial period of time that this arrangement lasted.

Indeed, they were able to develop international expansion strategies and have since become world leaders in the sector.

Over time the three major groups have extended their domain of activities to everything involving production and management in town.

They offer to local authorities all provisions necessary for the existing services; from financial know how and surveys to the installation and management of infrastructures; they can also, when required to do so, meet new demands (hospitalised old people's homes, cable television, mobile telephony, etc). They are found in all notable calls for tender organized by the local authorities as well as those organized by the State.

These three groups committed themselves to a process of vertical and horizontal integration. This diversification proved beneficial in that it exploited existing synergies between various activities. These synergies, covered both production and commercial activities, enabled the firms to increase their influence in the wider world.

The three firms have become true multinationals, with interests in Europe and throughout the world. They are active in all liberalized sectors of the world economy (telecommunication, energy, transport) as well as in the media and television (TF1, Havas, Canal +, M 6, cable TV, program-making, newspapers and magazines, etc.). There is a growing suspicion that the excessive profits generated by the water distribution and treatment monopoly have been invested in other sectors of the economy. Certain commentators have expressed concerns that, by expanding their sphere of influence not only to these national and international means of communication (the “tubes”), but also to what travels through them (their “content”), these companies intend to exert a massive influence on the society of the future.

What is certain is that we are witness to the creation of a trans-sectorial oligopoly.

b) The fundamental characteristics of the French delegation-concession system as applied to the water supply-water treatment sector

Whereas technological changes have allowed the distribution in the telecom sector to be competitive, the water sector has remained a natural monopoly. Contrary to electricity, the transport of water is very expensive compared to the value of the good in itself. Thus, it has always been produced locally. In the absence of any dramatic technological change, this situation is unlikely to change in the foreseeable future. Hence, the water network utility has been justly described as the natural local monopoly *par excellence*.

Water supply is unusual among network utilities because it has strong positive and negative externalities that are health-related. The provision of clean water provides enormous positive externalities to public health through the control of infectious, water-borne diseases. On the other hand, water is part of a cycle, and needs to be cleaned before it is given back to the environment.

In the water and sanitation sector, contrary to other network industries, competition in the market is difficult for many reasons: natural monopoly, very high hidden costs and transportation costs, geographical, environmental and local constraints.

Indeed, the main type of competition in water and sanitation system is competition for the market: it occurs when potential (public or private) operators bid competitively for what is called in France a delegation contract.

The various forms of delegation-concession contracts

Delegated management can take two forms, both of which have the character of public law contracts. However, they are not financed in the same manner.

The first form is a concession, or lease contract. Here, the contract winner is effectively paid by the end user. The concessionaire is responsible for building,

maintaining and managing a water distribution system, while the lessee is responsible for maintaining and running an already existing system.

The second form taken by delegated management is that of government contract whereby the contract holder is paid directly by the local authority which has accorded the right to exploit the water distribution network.

The company responsible for running the service is granted a territorial monopoly (covering a given geographical area) and a chronological monopoly (lasting for a predetermined period of time).

Different delegation contracts

Four types of contracts are used in delegation of industrial and commercial public services in France: concession, lease contract (*affermage*) – these two first types of contracts being the most common in France, management contracts (*gérance*) and commissioner management contracts (*régie intéressée*):

- **Concession**

The private firm finances and builds utility installations and manages them. The firm is remunerated directly by the consumers (through the price of the water). The municipality remains the owner of the assets. The concessionaire is responsible for the services including operation, maintenance, and management as well as capital investments for rehabilitation and expansion works. When a concession contract expires, all works and equipment are returned to the local authorities¹³.

- **Lease contracts (*affermage*)**

This is the most common form of delegation: for drinking water services, 88% of communes have *affermage* contracts; for wastewater services, 85% of municipalities have this type of delegation contract. The private company rents the facilities to the commune, and is responsible for operation, maintenance and management of the service. The commune which remains the owner of the system, is responsible for capital expenditures for new projects, debt service and tariffs and cost recovery policies. The private company is responsible for operation and maintenance expenditures as well as billing, collecting and financing management work. Leaseholders must pay the municipality a rental fee (*surtaxe*) included in the price of water or wastewater services fixed in the contract, billed and collected by the private company. Lease contracts are generally set up for a period of 10-12 years.

- **Management contracts (*gérance*)**

The municipal organization retains control of the infrastructure, preserves a share of responsibility related to operation and maintenance of the system, bears all the commercial risk and finances fixed assets and working capital. It has financial responsibility for the service and has to provide funds for working and investment capital. The responsibility of the operator is limited to managing its own personnel and services efficiently.

- **Commissioner management contracts (*régie intéressée*)**

These contracts are the same as management contracts, but payments of the contractor are linked to the work performed instead of guaranteed payments. These contracts are rarely applied in France.

Source: Elnaboulsi¹⁴, 2001

¹³ The French Competition Council commented in 2000 that “taking into account the present economic climate, concessions have practically disappeared from recent delegated management contracts. Today, the need to develop infrastructure no longer influences the choice of mode of management, since investment funds are almost always guaranteed by local authorities and government agencies (the Water Agency, the General Council, the FNDAE)” - Order No. 00A12 of 31st May 2000 pertaining to a request from the Commission of Finance, the Economy and the National Assembly Plan on water prices in France.

¹⁴ ELNABOULSI Jihad C. (2001), “Organization, Management and Delegation in the French Water Industry”, *Annals of Public and Cooperative Economics*, Vol. 72, No. 4, pp. 507-547.

Contracts and tenders

When the organizing authorities decide to delegate their water supply/water treatment services, the first step they take is to elaborate a list of specifications defining the means are objective required for the effective provision of the service in question. After the list has been finalized, a call for tenders is issued. Based on the results of the call for tenders which takes into account a number of selection rules (lowest offer, best offer, free choice), the authorities sign a contract which provides the chosen firm with exclusive rights (in other words, a monopoly) in a given territory for a predetermined period.

A number of points in this process should be examined, the French system of delegation presenting all the characteristics of an “ideal-type”.

- *Asymmetry of information and the principal-agent theory*

Information is one of the key factors in pure and perfect competition: every player in a given market must have equal access to all relevant information, information which is accurately reflected in market prices. In fact, this ideal situation is extremely rare; more often than not, markets are characterized by an asymmetry of information, with some players privy to more knowledge than others.

The principal-agent theory was developed by J. Stiglitz¹⁵ as a part of his analysis of insurance contracts. He demonstrated that buyers and sellers do not have the same information at their disposal at the moment that contracts are signed. Indeed, both the quantity and quality of information to which the two parties are privy is substantially different.

In the case of a delegated contract, the principal and the agent are in an asymmetrical position insofar as information is concerned. The agent has a great deal of experience in the field and has acquired an impressive store of information into which he or she can delve at any time. It is for this reason that one of the two parties involved in the transaction will always derive a greater share of the profits deriving from it than the other one¹⁶.

In the water and sanitation system, the term “bounded rationality”¹⁷ is often applied to local authorities, which do not always have the expertise and experience needed to understand and evaluate the content of contracts. It is hard for them to gauge whether or not the services proposed correspond to real needs,

¹⁵ STIGLITZ Joseph *Imperfect Information in the Product Market*, in Schmalensee and Willig, *Handbook of Industrial Organization*, vol. 1, Chap. 13, North Holland, Amsterdam, 1989.

¹⁶ Conceptualised by the theory as the “hold-up effect”.

¹⁷ SIMON Herbert, *Economics, Bounded Rationality and the Cognitive Revolution*, Edward Elgar, 1992.

and this, in turn, reduces their ability to re-negotiate contracts. Such difficulties increase over time. Delegated management implies a loss of local authority control, and indeed competence; through a process known as “lock-in”, local authorities gradually lose any expertise they may have had at their disposal. The more a private company becomes involved in the management of water services, the less the local authority can call upon the kind of expertise required to properly monitor the contract. Eventually, the situation becomes irreversible (the cost of acquiring the information and expertise needed to effectively oversee the activities of the private companies and re-negotiate delegated management contracts increases to the point at which it becomes prohibitive). The situation becomes increasingly asymmetrical: the local authority no longer has either the skills or information necessary to evaluate the water and sanitation service.

In the water and sanitation system, there is an important advantage for the incumbent operator that arises from its detailed knowledge of the state of infrastructure and operating conditions, known as ‘first mover advantage’. This factor plays a particularly important role in the renewal of contracts and partially explains why in 90% of cases (95% in 1997) contract holding companies win the call for tenders.

Laetitia Guérin adds¹⁸ that “all agent relations contain an implicit dissymmetry between the agent, who is not familiar with details concerning the implementation of the contract, and the principal, who is *au fait* with all of them. This gap in knowledge can be observed in both *régie* (public) and delegated services. But in the case of management by private company, this dissymmetry is made yet worse by the difference in status of the two partners. The fact that private operators manage literally thousands of services throughout the country means that their experience is by no means limited to the resolution of technical issues. Such companies have developed departments which specialize in the negotiation of contracts and which are armed with all the necessary legal and economic skills.”

Since the 19th century, delegated companies and their personnel have acquired a vast store of experience in the supply of drinking water, drinking water treatment technology, and investment. Due to this long process of “learning by doing”, these firms have become exceptionally difficult to replace.

The imbalance between, on the one hand, the three major companies with their technical expertise and financial clout, and, on the other, France’s 36,000 communes with their limited negotiating ability, is clear for all to see. There is a flagrant asymmetry in terms of information and expertise and the balance of

¹⁸ GUERIN-SCHNEIDER Laetitia, *Introduire la mesure de performance dans la régulation des services d'eau et d'assainissement en France*, ENGREF, GEA, 2001, p. 51, <http://pastel.paristech.org/56/00/>

power evidently favours the firms and runs counter to the interests of the local authorities.

While the history of France's public service networks at the national level has been characterized by the gradual adaptation of the regulatory system to technological, economic and capitalistic changes in the way in which operators conduct their business, the same cannot be said to be true in regard to locally administered public services. Responsibility for the organization and regulation of water services is still the domain of commune and inter-communal administrative bodies (which both organize and "regulate" the services), while supply and treatment, and, in the case of pumping stations, distribution, are no longer, in the vast majority of cases, run by the communes. Increasingly, basins are seen as the focal point of water-related issues (In France, the Basin Agencies were set up in 1964). Meanwhile, the major water companies have become active at both the national and international level and are able to take advantage of the complexity of their operations to steer clear of the pitfalls of transparency.

More than in any other sector, it is legitimate to speak in terms of the regulator having been "captured" by the operator.

- *Incomplete contracts*

A number of commentators have contributed to the emergence of the theory of incomplete contracts, amongst them Grossman and Hart¹⁹.

Asymmetry of information gives rise to incomplete contracts: if one party is privy to less information than the other, it will be at a disadvantage when it comes to negotiating the contract. This asymmetry can be extended to the agent acting as third party: should a dispute arise, both parties will appeal to an arbiter or judge; the complexity and specialized nature of contracts means that the third party is not guaranteed to have all the information and expertise to fulfil his or her role effectively.

In a whole gamut of situations, water companies draw up contracts suited to their own expertise; local authorities, on the other hand, do not always have the skills necessary to properly evaluate the contracts that they are asked to sign.

The main reason for incomplete contracts is uncertainty about the future; in reality, circumstances not covered by the contract crop up relatively frequently, leading to re-negotiation and, occasionally, arbitration.

In the water supply and treatment system, uncertainty is an even more influential factor in contracts which are traditionally valid for a period longer than ten years. Numerous questions arise in such cases. How will the population change?

¹⁹ GROSSMAN Sanford J. and HART Oliver D., The Cost and Benefits of Ownership: A Theory of Vertical Integration, *Journal of Political Economy*, 94, pp. 691-719, 1986.

What will the situation be in regard to resources? What kind of new norms modifying the legal obligations of water companies will have been introduced? Often, local authorities have neither the skills nor the tools needed to clearly and comprehensively express the fundamental objectives that they intend to accord delegated water supply/water treatment companies. Laetitia Guérin underlines²⁰ that “there are two reasons for incomplete contracts: the complete description of contingent commitments runs into the obstacle of the cost of obtaining information in a context of bounded rationality; moreover, the innate uncertainty of the future makes it impossible to produce a comprehensive list of all possible eventualities”.

According to the same author: “Delegation, on the other hand, is based on a real contract with real objectives. Indeed, this is one of the characteristics that distinguish delegation (specification of objectives) and public procurement (specification of best-endeavours). So much for theory. In practice, such objectives are defined in what Williamson might describe as a rough and manner²¹.”

In France, contracts, particularly those in the water industry, have traditionally been vague about objectives. Operators prefer to emphasize the efficiency of the means employed, and local authorities, by and large, find it hard to properly define what objectives are to be achieved. One of the characteristics of these contracts is that they are frequently re-negotiated and modified with amendments added to take into new circumstances into account. But it is legitimate to ask whether the kind of bargaining that results is the best way of arriving at the most acceptable prices.

In its 1997 report, the Cour des Comptes, the highest administrative court in France pointed out²² that “in many instances prices are hiked after delegated management contracts for public services have been signed; the lack of contractual clarity, the lack of information at the disposal of local authorities and end users, the insufficiency of monitoring procedures, and the absence of genuine competition are contributory factors to this state of affairs.” The report also mentioned “that many contracts were re-negotiated, sometimes before their expiry date, a few months or a few weeks before the Law (of 8th February, 1995) came into effect.”

J. Luis Guasch outlines the characteristics of the French system²³, pointing out that “renegotiation can be a positive instrument when it addresses the inherently incomplete nature of concession contracts. Properly used, renegotiation can

²⁰ GUERIN-SCHNEIDER Laetitia, op. cit., p. 47.

²¹ WILLIAMSON Oliver E., WINTER Sidney G., *The Nature of the Firm*, Oxford University Press, 1991.

²² The Management of Local Water Supply and Sanitation Services, Public Report, Cour des comptes, 1997.

²³ GUASCH J.Luis, *Granting and Renegotiating Infrastructure Concessions. Doing it Right?*, World Bank Institute, Development Studies, 2004.

enhance welfare”, he adds, stating that “two elements play major roles in determining the bids of operators, aside from how efficient they are in providing the service and what information they have about the concession. The first element is the operators’ assessment of the likelihood of renegotiation; the second is the operators’ assessment of their own ability to renegotiate. If both assessments are positive, operators bid to secure a concession. Then, if they win the contract, they request a renegotiation with the government to secure better terms. This approach distorts the competitive process, because the winning operator may be the one most skilled in renegotiation or the one most optimistic about its likelihood, rather than the one most efficient - particularly if the government cannot credibly commit to a policy of no renegotiation - as it is intended.”

- *Duration of contracts*

Some contracts cover long periods, sometimes as long as twenty or thirty years. One of the parties involved in the elaboration of the contract will have had no previous experience of the process and thus no way of predicting future changes and developments. However, the other party may be a firm which has been elaborating and signing dozens of identical contracts on a yearly basis for decades; such a firm would have accumulated a vast store of experience not only in terms of industry and technology, but also in terms of the kind of legal expertise which would enable it to prepare for possible future disputes by inserted clauses which it could exploit during renegotiations and, perhaps more telling, during any future disputes.

Long-term contracts inevitably bring their fair share of renegotiations, amendments and court battles. And not surprisingly there exists a startling asymmetry in terms of legal expertise between firms with a substantial experience of renegotiating contracts and local authorities new to the game who discover for the first time the traps laid by various clauses in the contract at the same time as they fall victim to them.

In the water-sanitation system, meaningful competition for market can only occur every ten to fifteen years or more due to the fact that most contracts need to be valid for a long period of time in order to amortize investments made by the operator. In France, the duration of contracts traditionally bore little relation to the period required to amortize investments. In fact, contracts were generally much longer. Only with the Bernier Law of 1995 (see below) were delegated management contracts limited to a period of twenty years. Since then, contracts have tended to become shorter. The average is now some eleven years, with 59% of contracts lasting twelve years on signature²⁴.

²⁴ Observatoire Loi Sapin. Déroulement des procédures de délégation des services publics d’eau et d’assainissement. Etude des procédures menées en 2002. Recueil des principaux résultats, ENGREF-GEA, Montpellier, 2004.

- *Calls for tender and competition*

The high degree of concentration in the water and sanitation sector in France means that there is little in the way of meaningful competition and a restricted number of candidates responding to calls for tender (indeed, the average number of candidates is 4.4, often including more than one subsidiary of the same company). In the last five years²⁵ around 30% of calls for tender have been answered by a single candidate.

The French Competition Council recently stated²⁶ that “on average, three candidates reply to calls for tender and independent operators account for under 2% of firms bidding for contracts”.

In 2001, there was an average of 3.8 candidates per call for tender, but the average number of solid offers was only 2.2²⁷.

The official representing the DGCCRF (French Directorate-General for Competition, Consumer Rights, and the Repression of Fraud) stated in his report to the National Assembly Finance Commission²⁸ that “this is really one of the key points in terms of kick-starting the market, or in other words extracting the market from a state of total certainty where everyone knows, especially the members of the oligopoly, whose bid is going to win the tender. In this sense, we could perhaps talk of a negative transparency”.

Due to the kind of oligopolistic competition which exists in the French market the major operators are frequently suspected of acting in the manner of a cartel intent on sharing opportunities exclusively between themselves. Such suspicions are not entirely unjustified due to:

- Partnerships and agreements concerning a large number of projects accompanied by the setting up of shared subsidiaries or consortiums²⁹; the French Competition Council commented in 2000³⁰ that “Vivendi and Lyonnaise des Eaux have set up companies in common in order to provide water distribution services in certain geographical zones. In fact, twelve subsidiaries and sub-subsidiaries were set up some time ago”; in 1984 the

²⁵ Procedures for Delegating Public Services in the Water Supply and Sanitation Services, op.cit.

²⁶ French Competition Council, Order no. 00-A-12 of 31st May 2000 on water prices in France.

²⁷ GUERIN-SCHNEIDER Laetitia and LORRAIN Dominique, Les relations puissance publique-firmes dans le secteur de l'eau et de l'assainissement, *Flux* No 52-53 April-September, 2003.

²⁸ Information Report (No. 3081) by Mr Yves Tavernier, presented on behalf of the Finance Commission under the 11th Legislature on the financing of the management of water services, 2001, followed by a debate amongst members of the Commission.

²⁹ As in the case in Argentina (Aguas del Aconquija Générale des Eaux / Aguas Argentinas Lyonnaise des Eaux).

³⁰ Order No. 00A12 of 31st May 2000 pertaining to a request from the Commission of Finance, the Economy and the National Assembly Plan on water prices in France.

City of Paris signed delegated management contracts lasting 25 years for water distribution: the Right Bank of the River Seine was accorded to the Compagnie des Eaux Parisienne, a subsidiary of the Compagnie Générale des Eaux, while the Left Bank was delegated to the Parisienne des Eaux, a subsidiary of the Lyonnaise des Eaux; the companies concerned were advised to unravel the links that bound them together, but years later they have still not done so.

- Agreements concerning the sharing of markets: the fact that a very low percentage of delegates lose their contracts to a competitor (5% in 1997) can be explained by the practice of “holders of delegated management contracts agreeing with other firms in the sector, at least implicitly, to decline to bid for new contracts when calls for tender are issued”³¹.
- Opportunistic business practices: for example, making low bids in order to obtain an initial contract with a view to generating large profits through multiple amendments to the contracts, new works programs, an extension of the geographical area covered by the contract, or under-investment at the end of the contract; the practical consequence of such an approach is that once the contract has been signed, the concessionaire immediately attempts to renegotiate; confronted with competition from an “independent” candidate, firms can opt to sign a contract which will lose them money, secure in the knowledge that their losses will be compensated by profits generated by other contracts, a route that smaller, independent firms cannot take: the ability of major groups to untransparently shift monies around in this manner is one of their greatest strengths.
- We should, at this point, underline an issue that has, until now, remained taboo in France: the impossibility of foreign operators to enter the market; “up until now, the only company to have made a bid – for the renewal of the delegated management contract for the City of Quimper – is Thames Water”³².

This, “the particularly pronounced concentration of firms in the market raises doubts about competition. It puts local authorities who want to delegate the public service of water supply and sanitation in a particularly delicate position in that, since no real competition exists, they are never certain that the bid they accept is actually the best in terms of both quality of service and costs”³³.

As Laetitia Guérin concludes³⁴, “This monopoly situation causes problems which have been extensively dealt with in the economic literature”³⁵. Specifically, prices are not dictated by the market, but fixed by the monopolist, whose concerns over maximizing profits encourage it to select prices superior to

³¹ Information Report (No. 3081) by Mr Yves Tavernier, presented on behalf of the Finance Commission under the 11th Legislature on the financing of water management, 2001.

³² Information Report (No. 3081) by Mr Yves Tavernier, op. cit.

³³ Information Report (No. 3081) by Mr Yves Tavernier, op. cit.

³⁴ GUERIN- SCHNEIDER Laetitia, op. cit., p. 46.

³⁵ See PEZON Christelle, *Le service d'eau potable en France de 1850 à 1995*, Presses du C.E.R.E.M., Paris, 2000, Part 2, Chapter 1, Section 1.

margin costs³⁶. The monopolist is thus able to generate extra profits at the expense of the consumer. This situation is rendered even more unacceptable by the fact that the client is not only deprived of the right to choose the supplier, but is also obliged to buy. This point is important in that it distinguishes water services from other local monopolies. (...) Because water is fundamentally necessary for life and because there is no product which can replace it, the clientele is effectively a captive one.”

c) Regulation issues and reform initiatives

Taking these factors into account, French companies in the sector are used to working in an environment in which regulation is largely carried out on an informal basis (a system sometimes referred to as “self-regulation”).

“Regulation” may be defined as a mode of permanent, evolutive adjustment of a plurality of actions and their effects, providing a guarantee of the dynamic equilibrium of unstable systems. If there is “regulation”, it is because standards and rules cannot provide for all eventualities, must be interpreted, and are continually called into question and constantly adapted to different situations and objectives.

Any regulation implies a series of arbitrations between different interests - taking account of the diversity of players, the time scales entering into consideration (interests of future generations), national specificities, the internalization of this or that externality, etc. Such arbitrations put at stake interests and forces that are not only different, but more often than not opposed.

As we have seen, the regulation of the water supply-sanitation system in France is confronted with a number of profound distortions:

- The structure of the industry, marked by the existence of an oligopoly made up of international companies providing a number of different services; this situation not only reduces scope for competition, but makes monitoring the sector more difficult. The problem of defining which activities are linked to the water and sanitation industry and which are not is, from a financial point of view, particularly arduous.
- Limited regulatory powers due to the vast number of organizing authorities (36,000 communes, 15,000 services);
- The traditional succinctness of contracts, in which objective are only sketchily explained, and in which incentive mechanisms are rare and monitoring tools rarer still.

³⁶ Maximisation of profits leads monopolists to opt for a level of production balancing its marginal revenue and marginal costs. In such cases, marginal costs are lower than marginal revenues (unit price). The divergence between price and marginal costs is effectively borne by the consumer. Cf. PEZON Christelle, op. cit., pp. 244 and following.

- A flagrant lack of transparency, both in terms of the selection of providers (informally negotiated contracts, use of the principle of *intuitu personae* in deciding the winners of calls for tender), and in terms of how contracts are implemented (incomplete information provided by the delegated firm, which is faced with few obligations in this area); recently, the filing of succinct³⁷ or incomplete accounts making it impossible to correctly evaluate profit margins³⁸ has been criticised; a variable accounting system was the subject of a report published by a French Administrative Court³⁹; artificially inflated costs, double accounts and false invoicing was the subject of a court case in northern France⁴⁰; investments inferior to provisions yet included in the price were investigated in Provence⁴¹; in a case in which indexing mechanisms ensuring that prices rose faster than costs also came to light⁴².
- A highly informal regulatory system based on trust rather than contractual considerations, a system which is both flexible and adaptable in that it allows for a near infinite range of adjustments, but which is at the same time lacking in transparency and open to compromise; dispute resolution is also carried out in an informal manner, with the parties involved rarely having recourse to arbitration procedures and industrial tribunals⁴³.

Since the mid-1980s, the French system has been legally attacked on a number of occasions, both by local authorities and by consumer rights groups unhappy with, amongst other things, price rises.

The development of local consumer associations protesting against the rise of the price of water or working on the stakes of its quality should also be emphasized. These associations have sometimes put up cases against concessionary firms which have in most cases led to the condemnation of the firms in question. It is striking to note how such small associations having at their disposal only very little means, manage to cause problems for large international groups.

³⁷ Paris Regional Financial Court, Definitive Observations published 07/09/2000 concerning the management of the production and distribution of drinkable and non-drinkable water in Paris.

³⁸ *Id.*

³⁹ Report of the Cour des comptes, No. 54, 2003.

⁴⁰ Nord-Pas de Calais Regional Financial Court, Order No. 97-0079, Provence regional Financial Court. Definitive Observations published 11/03/1999.

⁴¹ Provence Regional Financial Court. Definitive Observation published 11/03/1999.

⁴² *Ibid.*

⁴³ When a contract is terminated by the local authority that accorded it, the notion of expropriation does not come into play (as it would in Argentina). In fact, an informal agreement is negotiated, as happened in the case of Grenoble (See Report of the Cour des Comptes, 2003) in which Suez accepted compensation substantially inferior to what was stipulated in the contract in the case of the contract being unilaterally terminated (especially when future profits were taken into account).

Considering the difficulties in ensuring a real regulation of the delegation of the service, some municipalities have found it necessary, in recent years, to go back to direct management of water and/or wastewater treatment.

Official reports have taken account of these criticisms and have led to wide-ranging legislative and regulatory reforms.

The lack of transparency, the absence of effective regulation and control, the exaggerated profits which result from this situation, the existence of informally negotiated contracts or, in the case of calls for tender, the practice of basing the choice of operator on the principle of *intuitu personae*, and the difficulties involved in taking disputes through the courts have encouraged sleaze and even corruption. Indeed, until the late 1990s and the introduction of the Sapin Law on selection procedures and the laws on the financing of political parties, a substantial proportion of the funds flowing into the coffers of the parties came, via admittedly circuitous routes, from the water and sanitation industry.

- *The fight against corruption*

The preamble to the Sapin Law of 29/1/1993 “on the prevention of corruption and on transparency in economic activities and government procedures”, mentions the delegation of public services amongst the five areas in which increased transparency and competition were needed. It notes the absence of a framework governing calls for tender and competition and underlines the “grave concerns” caused by such phenomena as hidden negotiations, improper use of public monies to the detriment of users, and unfair advantages accorded to operators.

- *Reinforcing competition*

The same law, which is not specific to the water sector, renders it obligatory in case of delegation contract to apply competition rules and calls for tender on the basis of clearly defined specifications indicating objectives sought in volume, cost and service; tacit renewals are prohibited.

The Sapin Law reduces the duration of contracts and can be used to increase competition between various operators⁴⁴. As we have seen, observers have recorded⁴⁵ an overall reduction in delegated company pricing calculated by volume (- 9% in 1998, - 10% in 1999, - 12% in 2000, - 8% in 2001, - 21% in

⁴⁴ However, the Cour des Comptes points out that “the duration of the delegated management contract can be extended – without a new call for tender – in the case in which the contract holder makes substantial investments requested by the local authority but not initially stipulated in the contract, thus modifying its budget. The Regional Finance Courts’ enquiry has revealed cases in which such provisions have been extensively employed.” Management of Local Public Water and Sanitation Service, Public Report, Cour des comptes, 1997.

⁴⁵ Procedures for Delegating Public Services in the Water Supply and Sanitation Sector, op. cit.

2002 and – 10.5% in 2003). However, the three major companies have retained their dominant positions in terms of market share, accounting for 91% of industry turnover in 2003, 81% in 2002, 88% in 2001, 89% in 2000, and 78% in 1999.

Another area that remains to be examined is potential competition (or pseudo-competition). However, this sector is little developed in France.

- ***Greater transparency***

The Barnier law of 2/2/1995: annual reports on the price and the quality of service should be written, every year, by the municipality.

The Mazeaud law voted on 8/2/1995 on public procurement and delegation of public service supplements the Sapin law by obliging the operator to present, every year, to the delegating authority a report including, in particular, accounts of all operations accruing to the delegation and an analysis of the quality of service; the regional chamber of auditors can check the accounts of the operator.

However, as the National Assembly Finance Commission recognized in 2001, we are still a long way from this position⁴⁶: “The least that should be done is to normalize accounting practices so that accounts posted provide an accurate reflection of the transactions undertaken by delegated companies and make possible valid comparisons between the level of service provided in various financial periods. At the same time, delegated companies should be obliged to provide more detailed accounts, especially in terms of certain balance sheet items and explanations of methods used to calculate depreciation, provisions, financial products and indirect costs.”

The Observatory set up by the Sapin Law under the aegis of ENGREF and designed to encourage transparency and competition has, since 1999, published an annual report of delegated management contracts⁴⁷.

- ***The development of incentive mechanisms***

The National Assembly Finance Commission report of 2002 underlines⁴⁸ that “the concept of “risks and perils” of the concessionaire, or, broadly speaking, “responsibility”, which constitute a factor of key importance in the legal definition of delegated contracts⁴⁹, must now cover service quality and performance indicators directly linked to the amount of remuneration received by the concessionaire. (...) Contracts which include clauses of this kind will encourage delegates to provide the highest level of service for the best price

⁴⁶ Information Report (No. 3081) by Yves Tavernier, op. cit.

⁴⁷ Observatoire Loi Sapin. op. cit.

⁴⁸ Information Report (No. 3081) by Yves Tavernier, op. cit.

⁴⁹ Cf. Conseil d'État, 7th April 1999, Commune of Guilhaud-Granges.

and will put an end to the kind of monopolistic profits which presently characterise the market”. However, much remains to be done in this area.

The report⁵⁰ goes on to state that these “risks and perils” are, in fact, absent in the French water industry. The role of the new law will be to “reintroduce the notion of concessionaire risk. As things stand, best-efforts obligations have replaced objectives and ‘quantitative’ risk has disappeared from delegated contracts in the water sector.”

The report produced by the Cour des Comptes in 2003⁵¹ broaches the subject of the risk engendered by the stagnation or even fall in the amount of water consumed, particularly in France’s larger cities. This phenomenon “threatens operator profits. As a reaction to this situation, some operators are attempting to negotiate clauses which will, in effect, afford them economic protection. Clauses stipulating automatic price rises in the event of a continued decline in the volume of water sold can have the effect of shielding distributors from the risk of declining profits.” This is unacceptable in that the only risk accepted by companies signing lease contracts is precisely a commercial one.

More generally, Christelle Pezon highlights⁵² “the aversion of operators to risk, which encourages the regulator to protect them from certain contingencies”.

- ***The introduction of user participation in the regulatory process***

In this context, the setting up of the Consultative Commissions for local Public Services should be mentioned. These bodies provide advice on the type of management best suited to particular areas, on large investments, and on the annual reports published by concessionaires. However, the level of competence of these commissions varies dramatically from commune to commune.

- ***The project to set up a national regulatory body***

A report by the *Haut Conseil du Secteur Public* (1999) recommended the creation of a regulatory authority for water and urban services responsible for defining technical standards, investment financing, price index rules, etc. In 2000, the French Competition Council⁵³ suggested “the creation of a monitoring body with the right to make public any information held by the various administrations and organizations already operating in the water sector; the body would play an observational role, and dispense information and advice; it would also have the power to refer cases of malpractice to the Competition Council.”

⁵⁰ Information Report of the National Assembly Finance Commission on the financing of water management, 22nd May 2001.

⁵¹ Report of the Cour des comptes, No. 54, 2003.

⁵² *Le service d’eau potable en France de 1850 à 1995*, Presses du C.E.R.E.M., Paris, 2000.

⁵³ Order No. 00A12 of 31st May 2000 pertaining to a request from the Commission of Finance, the Economy and the National Assembly Plan on water prices in France.

In June 2001, the government proposed a bill to National Assembly including the setting-up of such a regulation authority (*Haut Conseil du Service Public de l'Eau et de l'Assainissement*). The negotiations have been very hard, and the prerogatives of this authority have been progressively cut down. After the 2002 general elections, the project was shelved.

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This last episode demonstrates just how difficult it is to change the system. In spite of the reforms, recent official reports continue to emphasize the dysfunctions that characterize the French water supply and sanitation industry.

The Cour des Comptes's 1997 public report⁵⁴ underlined that “the absence of a framework for overseeing the manner in which delegated public service contracts are accorded has, along with the lack of transparency of this style of management, led to abuses. The Law of 29th January, 1993, and the recent Laws of 2nd and 8th February, 1995 were intended to remedy these problems.”

Commenting on a survey conducted by the French Competition Council⁵⁵, the National Assembly Finance Commission report of 2001 concluded by stating that, “it is essential to ensure that delegated management contracts are not slanted in favour of delegates and against end users. This has what the legislator has been attempting to achieve these last ten years without, however, having succeeded in entirely rectifying the structural disequilibrium between the parties involved.”

⁵⁴ The Management of Local Water and Sanitation Services, Public Report, Cour des comptes, 1997.

⁵⁵ Order No. 00-A-12 of 31st May 2000 on water prices in France.

B. Case studies

The three case studies presented below were chosen, the first – Grenoble, because of the double change of management mode in a ten-year period: from a *régie* to delegation, then a return to direct public management (*régie*), and the two others – Rouen and Nantes, because they give examples of an increased control over delegated and public water management by an intercommunal organization (the case of *agglomération de Rouen*) and of an efficient organizing intercommunal organization (the case of the *communauté urbaine de Nantes*).

a) Grenoble provides a good example of management change: from direct to delegate management, and presently a return to direct public management⁵⁶. It is a big town situated in the heart of the Alps that benefit from a privileged access to an available water resource. After the municipal elections in 1989, the new Mayor Alain Carrignon decided to delegate the water service to the city of Grenoble, and delegate the service to *Lyonnaise des Eaux*, with a payment of a right to entry in the city's water market, including other payments that will be the object of controversy and liquidations. From 1991 to 1995, the price of water (for a consumption of 120m³/year) varies from 0,512 €/m³ to 0,753 €/m³, representing an increase of about 50% in current euro.

Such an evolution led to the creation and development of an association for the protection of water named « *Eau Secours* » in 1994. This association is environmentalist militants that contest the rise in prices and delegation of the water service to private companies. This association has different forms of action: denunciation, organization of consumer payments (representing 10% of the water bill) that are put on a frozen bank account, law suits, institutional interventions, etc.

The water question has been subject to many law and political battles, and is one of the important issues during the 1995 elections. A left-wing alliance is elected, with a socialist Mayor, Michel Destot and elected ecologists among which were also some that had contested the delegation of water management. The new municipality wants to question this management mode, but without paying any financial compensation to the *Lyonnaise* Group for breach of contract. At first, it negotiates with the *Lyonnaise* Group and creates a mixed society, the *Société des eaux de Grenoble* that associated the municipality and the *Lyonnaise* Group. In 1997, the price of water diminishes by 8.5%. But the presence of the *Lyonnaise* Group in the mixed company is criticized and tensions subsist

⁵⁶ See EUROMARKET, <http://mir.epfl.ch/page18246.html>

(regarding billing); justice annulates different clauses in past contracts⁵⁷. A return to a municipal *régie* took place in 2000. Only the offices in which the *régie* works are managed by the mixed company.

Over the course of the last few years a number of local authorities have decided to return to public management, including Neufchâteau (Vosges), Cherbourg (Manche), Castres (Tarn), Chatellerault (Vienne), Alès (Gard) or Pertuis (Vaucluse), and probably Paris in 2010. It should be noted that, in 2000, the French Competition Council⁵⁸ commented “that a provision should be added to the Local and Regional Authorities Code obliging the deliberative assemblies of such authorities, as well as their public establishments and agencies, to express their view on the possibility of a return to the *régie* (or public) system of management after the present management contracts have expired.”

Regarding users that do not pay their bills, the *régie* tries to distinguish those that cannot pay the bills from those that are dishonest. But with 60,000 subscriptions and 8,500 changes each year, it is difficult to have a personalized follow up. The *régie* participates to the solidarity fund that exists at the level of the *Préfecture de l'Isère* (58 files were dealt with in 2003). Moreover, in case of leakages at the user's household, the *régie* has installed an upper limit at two years maximum and incites the user to repair leakages.

b) Municipalities usually group together (there are around 14,000 *intercommunalités* in France), and some have increased their negotiating power and controlling capacity like Nantes Métropole or the Agglomeration of Rouen.

Rouen provides an example of increased control over delegated and public water management by an inter-commune organization in the form of the Rouen Agglomeration⁵⁹. This agglomeration groups 37 communes, out of which Rouen represents 25% of the population. The Rouen Agglomeration is responsible for the wastewater sector since the 1st of January 2000. From the 1st of January 2005, the *agglomération de Rouen* has also taken the responsibility of the organization of the drinking water sector. The *communauté de l'agglomération de Rouen* is now the organizing institution for all communes. Before, drinking water services were organized according to the following order: 17 different structures would provide drinking water for the 400,000 inhabitants of the *agglomération*, out of which 39% of distributed volumes are done by *régies* and 60% by delegated management. Out of these 17 different structures, 12 were intercommunal syndicates (delegated management), 3 communes did not have a

⁵⁷ The two successive changes in management modes have led to notable evolutions of prices: a rise of about 50% between 1991 and 1995 with the passage to delegation contracts, and then a decrease of 8,5% between 1996 and 1997, during the passage to a *régie* which has led to a stabilization of price ever since.

⁵⁸ Order No.00A12 of 31st May 2000 pertaining to a request from the Commission of Finance, the Economy and the National Assembly Plan on water prices in France.

⁵⁹ Cf. EUROMARKET, op. cit.

syndicate (delegated management) and 3 communes were managed by *régies* (*régies simples*): Rouen, Le Grand-Quevilly and Darnetal. Now, the Agglomeration of Rouen has more power to negotiate contracts to induce price reduction.

In 2003, for 120m³ (before tax), the price is between 109.04 euro to 190.70 euro in the agglomeration. The *agglomération*'s objective is to better control private companies and increase competition⁶⁰. One objective is to increase negotiating power with companies in order to have a unique and harmonized price in 2012 that should be fixed at the lowest existing price. This would lead to geographical equity: same price for the same service. The agglomeration wants to harmonize the financing of investments by communes. This harmonization will take time due to existing disparities (the variation is from simple to double for drinking water and from simple to triple for wastewater treatment).

A consultative commission was created since 2000.

c) **Nantes** is another example⁶¹ that illustrates an efficient organizing entity, the *communauté urbaine de Nantes* (intercommunal organization). Since the 1st of January 2001, the *communauté urbaine de Nantes* is responsible for the drinking water and sanitation. Before, 33 different administrative entities (communes, syndicates) organized the water service, which was more complicated to organize. The water bill was constituted of 214 different elements with 48 different tariffs. The *communauté urbaine de Nantes* (or *Nantes Métropole*) has chosen to accept the mix of management modes (*régies* and delegation), as it thinks competition between management modes can have positive impacts. For drinking water and sanitation, *régies* (*régies simples*) cover more than 50% of the population, and there are 24 delegation contracts. The objective is to harmonize the water bill which varied from simple to double for an average bill: it varied from 490 euro to 205 euro for a consumption of 120m³. The harmonization is planned for the year 2006. The harmonization of prices is also accompanied by a harmonization of quality of services with the creation of a Charter (*Charte du service public d'eau potable*) proposed by the *communauté urbaine de Nantes* and agreed upon with the three operators (*régie*, SAUR, Générale des Eaux).

Some small municipalities have weak negotiating power and control, and this asymmetry of available information and competences distorts the power balance to the detriment of the elected leaders and local authorities. One can talk of the non regulation of the operator, even if the public municipalities have set up expertise tools of their service such as the "Service Public 2000" association⁶².

⁶⁰ Delegation contracts stop between the 31st December 2006 and the 31st December 2011.

⁶¹ Cf. EUROMARKET, op. cit.

⁶² This association was created in 1996, by the AMF (Association des Maires de France - Association of mayors of France) and the FNCCR (Fédération Nationale des Collectivités

C. Summary of findings on major issues and trends in the provision of this service sector

Concluding remarks

The French delegation-concession system in the water-sanitation sector, anchored by one hundred and fifty years of history and tradition, has provided improvements in quality and efficiency in a sector whose administrative organization is not always a well adapted as it might be, especially in view of continual technological advances in water treatment, distribution and sanitation.

Nevertheless, the French system is characterized by the existence of profound structural imbalances, notably in terms of structural asymmetry in knowledge and expertise between organizing authorities and delegates.

Operators have used the margins for manoeuvre which exist in the system to obtain – in a manner fundamental to their specific logic – extremely healthy returns based on the possible exploitation of monopoly situations. They have developed vertical and horizontal integrations which have created an oligopolistic competitive framework whose characteristics were examined above.

Since the early 1990s, a series of legislative and managerial reforms have been introduced in response to growing public concerns about water issues in France and throughout the world. These reforms have given organizing authorities greater powers in terms of setting objectives, monitoring, and regulation in the areas of reinforcing competition, increasing transparency, developing incentive mechanisms, and bolstering the expertise at their disposal. They have not, however, put an end to the structural asymmetry between local authorities and concessionaires. In some areas, water supply and sanitation services are “remunicipalised” by the public sector. In other cases, local authorities have acquired a critical mass in terms of influence which enables them to carry out their role more effectively; the most striking examples are perhaps those in which local authorities are able to acquire expertise by directly running water supply and sanitation services in part of their administrative areas.

The tariffs of public water services differ widely in France, according to the territories because with no national equalization of tariffs. These differences are primarily due to major disparities in cost of access to resources and treatment; depending on whether it is located, in an area where the resource is abundant

Concédantes et Régies-association of régies) in order to help municipalities out in the management of drinking water and wastewater services, with the growing complexity of legislation and techniques. This association provides expertise, assistance and advice to municipalities in their decisions regarding water management.

and of good quality or on the contrary in an area where the resource is rare and requires extensive treatment to make it drinkable, the differences in costs are significant. Any comparison of rates and costs are meaningful only in relation to these realities.

Given the different modes of management of public water services, it was attempted to compare the rates to try to prove the superiority of one mode of management on the other. Global statistics show that tariffs are lower in a communal organization and in the direct management than in the more complex intercommunal organization or under a delegated management.

**Price of water according to the organization and management of the services
in communities with collective wastewater system⁶³**

	<i>Organization</i>	
	<i>Communal</i>	<i>Intercommunal</i>
<i>Direct management (régie)</i>	2,19	2,85
<i>Delegated management</i>	2,93	3,44
<i>Mix management*</i>	2,60	3,04
<i>Total</i>	2,59	3,19

* With a different management and organization for drinking water and wastewater

But overall this comparison does not make much sense. Moreover it does not take into account the differences of resource's costs, the fact that the decentralized management is correlated with the size (area and population) of the organizing authority and that it tends to generate increasing costs. While tariffs of delegated management include the benefit of the operator and the management in house does that only to balance the accounts, there may also appear differences in the effectiveness of management in coming up the effects. Overall, there is no proved evidence on the superiority of a management mode on the other.

Nevertheless, the major operators continue to innovate, developing the kind of new techniques mentioned in the official reports quoted above. At this point in time, it is legitimate to ask ourselves what these firms would do if legislative were introduced to ensure that they were no longer able to generate profits over and above the norm. Perhaps they would be tempted to develop new areas of expertise or new, less strictly regulated geographical zones in which to practice their existing, well tried skills?

⁶³ Source: Ifen-Scees, Enquête Eau 2004 – Insee, Recensement 1999 de la population, <http://www.ifen.fr/uploads/media/de117.pdf>

ANNEXES

In the frame of the research project of the International Scientific Commission "Public Services / Public Enterprises" on local public services, a common study grid was set up to gather data. The objective of this grid is to collect descriptive material to enable the future analytical and comparative examination of the provision modes of local public services. Indeed, national studies are being elaborated in 8-12 countries with three sectors covered, namely: distribution of water, local public transport and waste collection.

The two following tables present part of this common work grid with some overview information, data and indicators obtained from open sources concerning the water distribution sector in France.

* * *

Table 1. Responsibility and organization	
<u>Responsibility</u>	<p><u>Subject in charge of programming: who balances the demand for water resources? How and by whom supply is planned and organized? How and who decides tariffs, the level of financing and investment?</u></p> <p>In France, the water-sanitation sectors are the responsibility of local communities or of inter-community cooperation structures: inter-municipal syndicate, municipal or town communities.</p> <p>Price is fixed either between municipality and operator during contract (delegation) or by the municipality or syndicate (<i>régie</i>).</p>
<u>Form of the market and provision</u>	<p><u>Legal monopoly or partial or total liberalization of entry</u></p> <p>In the case of direct management (<i>régie</i>), the monopoly is complete; in the delegate management the legal monopoly subsists during the contract period.</p> <p><u>Procedures used to choose the provider: in house, direct award (in the case of direct management - <i>régie</i>), public tendering (in the delegate management).</u></p> <p><u>Contractual forms of provision.</u> Four types of contracts are used in delegation of industrial and commercial public services in France: concession, lease contract (<i>affermage</i>) - these two first types of contracts being the most common in France-, management contracts (<i>gérance</i>), and commissioner management contracts (<i>régie intéressée</i>).</p> <p><u>Prevailing firm typology:</u> private</p> <p><u>Regime of wage bargaining and possible specific social clauses for the existing staff:</u> The statute of the employees is statutory or contractual and the regime of wage bargaining public or private. In the case of change of the operator (from public to private/from private to public) there is an obligation for the new operator to take the employees of the old operator in the respect of their conditions of employment (statute, collective conventions etc.).</p>
<u>Monitoring and regulation</u>	<p><u>Relationship between the programmer and the provider; the role of service contract; type of monitoring; degree of independency and autonomy from the relevant political subject.</u></p> <p>The Sapin law obliges the operator to present, every year, to the delegating authority a report including, in particular, accounts of all operations accruing to the delegation and an analysis of the quality of service; the regional chamber of auditors can check the accounts of the operator.</p>

Table 2. Nationwide indexes and data suggested for Water Sector

Quantitative monitoring and indicators			
Organizational forms	<p><u>% of the supply according to different operational forms (in house, direct award to public or mixed enterprises, tendering or concessions to private, public or mixed enterprises) and % share of different provision types (public, private, mixed)</u></p> <p>In France, the local authorities are responsible for the services of water supply and of wastewater treatment. 21% of the French population in water supply and 47% in wastewater treatment are served by a public operator through a direct management (<i>régie</i>) and the rest by delegated management on the basis of delegation contracts signed for periods running from 7 to 20 years: delegation contracts concern 79% of the population served with drinking water supply and 53% of the population served with wastewater treatment.</p> <p><u>% of the supply provided by the 3 major operators.</u> Three main groups share three quarters of the market: Veolia-Environnement (service of drinking water for 43% of population; service of wastewater treatment for 31% of population), Suez-Lyonnaise (service of drinking water for 2% of population; service of wastewater treatment for 15% of population), Saur (10% of population) (Source OIE, 2002a).⁶⁴</p>		
	PRODUCTION (bulk supply)	DISTRIBUTION	SEWAGE AND WASTEWATER TREATMENT
Supply and demand	<p><u>- Total demand and supply trends.</u> Annually, in France, it is produced about 34 milliards m3 of water⁶⁵.</p> <p><u>- Sectoral demand.</u> The total production are shared as follow:</p> <ul style="list-style-type: none"> - 19,1 milliards m3 for the production of electricity; - 6 milliards m3 represents the drinking water (less than 20% of the total production; the quantity of water for the public framework are relatively stable since 25 years⁶⁶); - 4,8 milliards of m3 for irrigation; - 3,6 milliards of m3 for industry⁶⁷ 	<p><u>- Demand and supply trends</u></p> <p>Water is general abundant in France, despite local and periodic disparities: about 1000 billion m3 of reserves and 170 billion m3 from internal resources.</p> <p>The annual consumption of a person represents approx. 50 000 litres⁶⁸</p> <p><u>- N° of inhabitants served</u></p> <p>In 2004, 99% of the total population of France was served with drinking water = approx. 62,3 millions habitants (for a total population of approx. 63 millions)</p>	<p><u>- N. of inhabitants served:</u></p> <p>In 2004⁶⁹, the population linked to the collective system of wastewater represented 78,8% of the total (46,1 millions of inhabitants).</p> <p>More than 5 millions housing, about 12 millions inhabitants (19% of the total population) were equipped with individual installations of wastewater and 2,2% of the French population has no connection or individual sanitation⁷⁰.</p>

⁶⁴ Bauby Pierre, Lupton Sylvie, Euromarket Work Package 4 (Phase 2), Report France – Analysis of the legislation and emerging regulation at the EU country level, 2004

⁶⁵ Ministère de l'Ecologie, <http://www.ecologie.gouv.fr/Bon-a-savoir-les-chiffres-de-la.html>
 What quantity of water, called "consumed part" does not return to the natural environment? 5.75 billion m3 How is this part consumed? - 2.8 billion m3 irrigation - 1.4 billion m3 of water - 1.3 billion m3 of electricity production - 0.25 billion m3 industry. *Les prélèvements d'eau en France* – voir le rapport complet sur <http://www.ecologie.gouv.fr/Les-prelevements-d-eau-en-France.html>

⁶⁶ Fédération professionnelle des entreprises de l'eau (FP2E) & BIPE, *Les services collectifs d'eau et d'assainissement en France. Données économiques, sociales et environnementales*, 2008, p. 7

⁶⁷ 32 552 million m3 in total: 59% (19.1 Mm3) for energy production, 9% (2.9 mm3) for the needs of industry, 14% (4.7 mm3) for the agriculture, 18% (5.8 mm3) for drinking water, 19% comes from groundwater, 81% comes from surface water - Source: Ifen 2006 68% for agriculture, 24% for drinking water, 5% for industry (excluding energy), 3% for energy production; 162 liters / day: average water consumption per capita (118 l/day for the Nord-Pas-de-Calais to 259 liters / day for Corsica) - Source: Ifen 2002 http://www.eaufrance.fr/spip.php?rubrique187&id_article=449

⁶⁸ http://www.eaufrance.fr/spip.php?rubrique187&id_article=466,
http://www.eaufrance.fr/spip.php?rubrique187&id_article=472

⁶⁹ Fédération professionnelle des entreprises de l'eau (FP2E) & BIPE, 2008, op. cit, p. 13

⁷⁰ Bauby Pierre, Lupton Sylvie, 2004, op. cit.

Financial coverage	<p><u>% of costs covered by tariffs and other private or public sources</u> The costs of the water and wastewater services is annually of 11 milliards euro, covered: 98% by the price of the water; 2% by the communes⁷¹</p>	<p><u>% of costs covered by tariffs and other private or public sources</u> 2,71 euro: medium price of one m3 of distributes water (from 3,44 euro for Bretagne to 2,15 euro for Auvergne) comprising the costs for: drinking water - 49%; and for wastewater 51%.⁷² In 2006, the medium total budget of the French housing was a little more than 37 800 euro, on which 290 euro consecrated to expenses concerning water and wastewater, that is about 0,8% of the budget.⁷³</p>	<p>Expenditure on non-collective sanitation: 700 millions euro/year for investments, 170 millions/year for operation. The growth tariff has slowed since 1998: part of the investments needed to implement the standards of sanitation (obligations under the European directive “urban wastewater” of 21 May 1991) was carried out by communities. 2006 marked a slight recovery that increases in 2007.</p>
Quality	<p><u>-% leakage</u> In 2004, of 6 milliards m3 of drinking water produced 1,6 milliard were lost (about 25%)⁷⁴ Households pay for most of the pollution costs; although they only contribute to 20-35% of this pollution⁷⁵</p>	<p><u>-% of population served</u> In 2003, 99,2% of the French population was connected to public water supply⁷⁶ and 98% of French housing is connected to a public network of distribution of water.⁷⁷ At the present, the domestic consumption represents 137 litres/day/inhabitant⁷⁸. <u>-% leakage</u> The level of leakage in the residential habitats⁷⁹ represents approx. 20%. Other sources appreciate that in France from 15 to 25% of consumed drinking water of housing is lost because of leakage (of tap, in the toilets, and in the canalisations of commune’s areas). A leakage rate of 17 l/min at 3 bars goes to 20 l/min at 4 bars or more 3l/min and an annual waste of about 26 m3 i.e. slightly more than half of the annual consumption of an individual at his home. <u>-Consumer satisfaction and dislike</u> Users only use 1% of their drinking water for drinking purposes, and consume more and more drinking water bottles. This situation is seen as a lack of confidence in water quality and safety, due also to the different sanitary crises in France that have shown a lack of control done by public authorities.⁸⁰</p>	<p><u>-% of population served</u> In 2004⁸¹, the population linked to the collective system of wastewater represented 78,8% of the total. More than 5 millions housing, about 12 millions inhabitants (19% of the total population) were equipped with non collective installations of wastewater. <u>- Quantity (%) of treated water</u> The daily volume of recycled wastewater was appreciated to 19200 m3 (2000-2003)⁸². <u>-% of recycled wastewater</u> The abundance of water resources did not encouraged the recycle of wastewater. The actual experience is very limited and concerns the irrigations (at the end of 1990, 2300 ha were equipped for irrigation with recycled water⁸³).</p>

⁷¹ http://www.eaufrance.fr/spip.php?rubrique187&id_article=467. For details see Bauby Pierre, Lupton Sylvie, 2004, op. cit.

⁷² http://www.eaufrance.fr/spip.php?rubrique187&id_article=467

⁷³ http://www.fp2e.org/fic_bdd/annexe_fr_fichier_pdf/12041894031_Rapport_BIPEFP2E_2008_BAT_vf.pdf, p. 23.

1%: part of water in housings budget - http://www.eaufrance.fr/spip.php?rubrique187&id_article=473

⁷⁴ http://www.ifen.fr/uploads/media/dossier07_02.pdf

Social objectives Public service obligations		<p><u>Increasing block tariff vs uniform price with rebate minimum service, no denial of access, etc.</u></p> <p>The example of prices in France with delegation contracts and public management show higher prices for delegated management. Companies can cut off the water supply for non payment.</p>	
Efficiency	<p><u>- Investment for inhabitant</u></p> <p>Investment in the field of water and sanitation in 2006 was, in France, of 5.6 billion euro (886 euro/inhabitant if counting 63.2 million inhabitants in 2006). It focused on the creation of new networks and treatment facilities and remediation; upgrading of existing equipment, particularly to meet the new regulations. For example, now three out of five connections are compatible with the future quality limit for lead in 2013. Municipalities and associations of municipalities are responsible for more than half of these amounts of investment. Private operators have made, for their part, investments in the amount of 713 million euro as part of their business delegation. A comparative situation: communities (excluding departments and regions) 58%; Water Agencies 18%; Private Operators 13%; Departments and regions 11%⁸⁴</p>	<p><u>- Investment for inhabitant</u></p> <p>In 2003, 1,6 billion euro/year investment in water for about 63 million people = 25 euro/inhabitant</p> <p><u>- Length of pipes for employee:</u></p> <p>En 2004, 900 000 km of pipes served the French territory⁸⁵ and 32 000 persons worked in the water services (2003), that is approx. 28 km of pipes for employee⁸⁶</p> <p><u>- Supply (cm) for employee</u></p> <p>5,8 milliards m3 of water/annually for 32 000 employees⁸⁷ = 18 125 m3/employee</p>	<p><u>- Investment for inhabitant</u></p> <p>3 billion euro/year for investments in sanitation and wastewater treatment (invested by the public services of water and wastewater) for approximately 63 million people = approx. 47,62 euro/inhabitant</p> <p>From the agencies of water for fighting against pollution: 1152 millions euro for the local communities; 185 millions euro for the industries; 48 millions euro for agriculture and 241 millions for the management of resources⁸⁸</p> <p>For non collective wastewater : 700 millions euro/year⁸⁹</p> <p><u>-Treated wastewater (cm) for employee</u></p> <p>In 2001, 28 millions housing (95% of the total French housing, approx. 58 millions inhabitants) were connected to a wastewater system (collective or individual). Same year, the 16 100 wastewater stations could treat the pollution corresponding to 86, 4 millions equivalent-inhabitants (EH) (in 1998, 15 400 stations developing a capacity of 81,3 millions EH). The stations are meant to treat the pollution of industries, too. In total, in 2001, for approx. ¾ of French housing an appropriate treatment of water was ensured. But 4% of housing in normal area and 6% in sensible areas do not treat their wastewater.⁹⁰</p>

⁷⁵ Bauby Pierre, Lupton Sylvie, 2004, op. cit.

⁷⁶ Source: EUROSTAT, 2003, EUROMARKET WP 4, 2004, LUPTON S. and BAUBY P., *Analysis of the Social Implications of the different Water Liberalisation Scenarios*, 2005, p. 7

⁷⁷ http://www.eaufrance.fr/spip.php?rubrique187&id_article=466,

http://www.eaufrance.fr/spip.php?rubrique187&id_article=472

⁷⁸ Fédération professionnelle des entreprises de l'eau (FP2E) & BIPE, 2008, op. cit., p. 7

⁷⁹ *Données 2007, Ministère de l'Ecologie*, <http://www.ecologie.gouv.fr/Bon-a-savoir-les-chiffres-de-la.html>

⁸⁰ Bauby Pierre, Lupton, Sylvie, 2004, op. cit.

⁸¹ Fédération professionnelle des entreprises de l'eau (FP2E) & BIPE, 2008, op. cit., p. 13

⁸² B. Jiménez and T. Asano, *International survey of wastewater reclamation and reuse practice*, IWA Publishing, 2007, cited in <http://www.agref.org/XEauXLAZAROVA.pdf>

⁸³ Valentina Lazarova, François Brissaud, *Intérêt, bénéfices et contraintes de la réutilisation des eaux usées en France*, <http://www.agref.org/XEauXLAZAROVA.pdf>

⁸⁴ Fédération professionnelle des entreprises de l'eau (FP2E) & BIPE, 2008, op. cit., p. 27

⁸⁵ http://www.ifen.fr/uploads/media/dossier07_02.pdf

⁸⁶ 856 000 kilometres of pipes http://www.eaufrance.fr/spip.php?rubrique187&id_article=466,

http://www.eaufrance.fr/spip.php?rubrique187&id_article=472

⁸⁷ http://www.eaufrance.fr/spip.php?rubrique187&id_article=64

⁸⁷ Between 1993 and 2002, the total employment in the water sector increased from 31 207 to 39 446, which means a 26% employment increase in 10 years. The main source of increase is in the wastewater treatment sector as the increase in this sector represented an employment increase of 77%, whereas the drinking water sector employment only had a 17% rise. LUPTON Sylvie and BAUBY Pierre, 2005, op. cit., p. 7

⁸⁸ http://www.eaufrance.fr/spip.php?rubrique187&id_article=66

⁸⁹ Source : Commission des comptes 2002, www.eaudefrance.fr/spip.php?rubrique18&id_article=66

⁹⁰ www.ifen.fr/actualites/presse/

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Université de Liège au Sart-Tilman
Bât. B33 - bte 6
BE-4000 Liège (Belgium)

Tel. : +32 (0)4 366 27 46
Fax : +32 (0)4 366 29 58
E-mail : ciriec@ulg.ac.be
<http://www.ciriec.ulg.ac.be>