



WATER SECTOR REGULATION IN FRANCE

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In France, almost the entire population is connected to a water distribution system (99 percent). A slightly smaller number is connected to a wastewater collection system (80 percent), as on-site sanitation solutions tend to be used in low density rural areas.¹ The French model for the management of water services is characterized by decentralized relationships between public authorities and private operators, with multi-level financial mechanisms of redistribution to mutualise costs (essentially at the basin level). This study describes how the water sector is run and regulated with respect to the resource itself and to the management of services. Two related issues are addressed at the end: the importance of private operators and the renewal of water and wastewater systems.

Administrative and economic management of water as a resource

France is one of the richest European countries in water resources, even if scarcity can occur locally or seasonally. In 2002, the annual abstraction reached 33 billion cubic meters, of which 6.5 billion was used for water distribution.² The water used for distribution comes from about 33,000 abstraction points, of which 31,000 from groundwater.³ This presentation focuses on water distributed to domestic consumers: what regulatory and economic tools are used to maintain a stock of water for drinking use?

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¹ France has one of the lowest densities in Europe.

² The exploitation rate of the resource was 19 percent (IFEN 2005b). French water experts estimate that the amount of water effectively distributed is lower, about 6 billions, because of double counting.

³ More than a half of the abstraction points provide fewer than 100 cubic meters per day.

Legal regulation and its implementation.

The main objective of legal regulation is to protect the resource itself. Sharing the responsibilities for water policy at various administrative levels underlines the high level of the state's involvement. The Parliament establishes the status of water (as part of the nation's common property,⁴ which can be either part of the public domain or privately owned), sets quality standards,⁵ identifies the different uses and conditions to be allowed, and organizes the modality of monitoring and control of the resource. The administration of water policy is shared by the state's local representatives, i.e. the *Préfet in départements* (intermediary circumscription) and the *Maire in communes* (municipality). They can be assisted by decentralized state bodies (*directions départementales de l'équipement* – public works; *directions départementales de l'agriculture et de la forêt* – agriculture and woods ; *directions départementales de l'action sanitaire et sociale* – health and social action ; *directions régionales de l'industrie et de la recherche* – industry and research ; *directions régionales de l'environnement* – environment). At the *département* level, there is coordination within the MISE (*Mission inter-services de l'eau*). The *Préfet* is responsible for issuing abstraction and discharge permits, which are required above a certain threshold.⁶ He can also take measures to limit water use in period of shortage, or decide to close an abstraction point because of pollution after the DDASS has warned the *Maire*. The *Maire* is a proximity officer who is responsible for public salubrity and hygiene and the quality of the environment.

The implementation of protection measures is not particularly good, especially as regards European standards. The construction of wastewater treatment units⁷ seems to have fallen behind: in 2000 estimates

⁴ Since the water law of 3/01/1992, article 1.

⁵ The influence of the European framework is more and more perceptible, but directives still need to be transposed by the state to be effective.

⁶ Since the water law of 1992, direct discharges are absolutely prohibited. Permits of abstraction are necessary above 80 cubic meters an hour.

⁷ The directive n° 91/271/CEE of 21/05/1991 on urban wastewater imposed secondary treatment on all discharges for agglomerations over 2000 population equivalents, to be reached before 2005.

show a lack of more than EUR 9 billion in investments. This might be due to the very high price increase in the 1990s, which led many local authorities to postpone additional investment. France was admonished twice by the European Commission in 2004 and 2005 for not implementing protection measures. A new *circulaire*⁸ (administrative instruction) has been issued to speed up the compliance process, but some experts continue to blame a dogmatic dimension of the directive that does not take into account the low population density in large rural areas. A guarantee fund has been set up for the sludge processing of treatment plants.⁹ With respect to diffuse pollution,¹⁰ the 1992 water law set a five-year time limit to set protection perimeters around abstraction points, but this deadline has not been fully met. The reduction of nitrate pollution, which was reaffirmed in the 2000/60/CE framework directive, must be seen in the long term, since recent studies have shown a deteriorating trend for this parameter.¹¹

The feeling that France is wasting a “common property resource” is wide-spread within the population. A poll published in 2003 revealed that more than half of French population fear that the quality of water will deteriorate in the future.¹² The recent media buzz around the TV presenter and ecologist Nicolas Hulot during the political campaign for French presidency indicates that a general consensus has been reached among the population and political leaders. But the deterioration in water quality has already resulted in two consequences:

- The costs for depolluting drinking water has become a major component of the water price, oscillating between EUR 1 and 2.12 per cubic meter depending on the origin (superficial or groundwater) and the complexity of the treatment (IFEN 2007).
- Pollution could soon affect the legal responsibility of the state (and thus affect tax-payers) ever since the company Lyonnaise des Eaux won a case against the state for insufficient protection of the resource.¹³

⁸ *Circulaire* of 8/12/2006, which notably indicates that no more subsidies would be accorded to comply with directive's standards from 2012.

⁹ Water law n°2006-1772 of 30/12/2006.

¹⁰ In application of the European directive n°91/676/CEE of 12/12/1991.

¹¹ For rivers for example, see IFEN: http://www.ifen.fr/publications/syntheses/indicCles2006_eau.xls. The European Commission has given France an extension to comply with the Directive, but wants to impose a daily fine of EUR 117,900 because of 11 polluted points in Bretagne, *Le Monde*, 21/03/07.

¹² Quoted by IFEN (2004a).

¹³ Administrative Court of Rennes, decision n°97182 «Société Lyonnaise des Eaux», 2/05/2001, concerning the water distribution in Guingamp.

The water agencies system (Agences de l'eau)

In preparation for the first action programme of the Water Framework Directive (WFD), France has already identified more than 5000 water bodies (surface and ground), and will reach a number significantly higher once the small rivers have been properly documented. Before the WFD the national water planning had identified around 90 surface water catchments that could eventually be subjected to a SAGE (catchment plan with public participation). Catchments in turn belong to 6 hydrographic districts, which are identical with the territories of the *agences de l'eau* created forty years ago.¹⁴ They are public bodies held by the state, and their mission is primarily to apply the polluter-pays principle.¹⁵ *Agences* set levies on water abstraction and pollution discharge to ensure an economical use of the resource by farmers, industries and domestic users. Additionally, following the orientation given by Parliament, *agences* finance, on a 5-year plan basis (and soon 6-year), measures and infrastructure which will provide for a better preservation of the resources, upstream (protection) and downstream (purification). Their tools include subsidies for studies, subsidies for investments, and granting twelve-year loans without interest. Within each *Agence*, there is a Basin Committee with representatives from the different water users, local authorities and the state, which is consulted and whose opinions must be taken into account.¹⁶ The *Agences de l'eau* are in addition in charge of the elaboration of a Master plan for water management (SDAGE) at the hydrographic district level. Ad hoc local water commissions can complete them with SAGE for smaller territorial units.

However, the *Agences de l'eau* act more as a tool of mutual insurance than as an incentive tool for a rational use of water : farmers, industries and local authorities pay levies that entitle them to the subsidies of the agencies to finance their investments. They are more stimulated to invest in infrastructure than to adopt preventive behaviour leading to water conservation. With a global budget of EUR 1.4 billion in 2004, *agences* play a leading role in the financing of water and wastewater infrastructures.

¹⁴ Water law n°64-1245 of 16/12/1964.

¹⁵ This principle now has a constitutional basis ever since a charter for the environment was accepted as part of the constitution on 28/02/2005. The charter proclaims in article 4: “Every citizen has to contribute to the costs for repairing damages he/she causes to the environment”.

¹⁶ Before the law of 2006 was introduced, the 5-year budget was voted by the *Comité de Bassin*, and then subject to review by the Ministry of the Environment and the Treasury.

Table 1
Organization of the water sector
 (proportion of *communes*)
 in %

| | Municipal | Inter-municipal |
|--------------------|-----------|-----------------|
| Water production | 28 | 72 |
| Water distribution | 32 | 68 |
| Sewage collection | 70 | 30 |
| Sewage treatment | 61 | 39 |

Source: IFEN (2005a).

The water law adopted in 2006¹⁷ defined the next orientations of the *agences*' five-year plans (2007-12). These are the implementation of the European framework directive 2000/60/CE, support to operations concerning wastewater treatment, sludge processing, industrial discharges, solidarity regarding investments in rural areas,¹⁸ extended protection of water abstraction points, leakage control, flood prevention, management of aquatic environment, and international cooperation. The law also caps the maximum expenses of the Agencies during this IX programme to EUR 14 billions.

Organization, management and financing of water services

The competency for the organization of water and wastewater services¹⁹ lies in the hands of the *communes*, which can also transfer the competency to structures called *syndicats intercommunaux* (joint boards of several municipalities) (Table 1). For historical reasons, a small number of *départements* have retained this competency. This issue as well as the collection of rain water, which is also a municipal competency, are not discussed in this article.²⁰

A local system of mixed actors

The responsibility for water services derives from a long legal history of land disputes between the state and the local authorities. A general competency for

¹⁷ Law n°2006-1772 of 30/12/2006.

¹⁸ Water agencies have replaced the National Fund for the Development of Water Provision (FNDAE), which was eliminated on 1/01/2005. A decentralized fund held by the Ministry of Agriculture but managed by *départements*, its task was to help rural municipalities. This replacement has led to a more centralized and rationalized use of public financings for water investments.

¹⁹ The expression "water services" used in this document refers to water production and distribution, and wastewater collection and treatment.

²⁰ The new water law allows *communes* to raise a tax for the collection of rainwater. A separate sewage system has to be implemented in conformity with European standards.

Table 2
Organization and operation of water and wastewater services

| | |
|-------------------|---|
| Organization mode | Municipal or inter-municipal |
| Operation mode | Direct management or delegated management |
| Operator | Régie (direct management), private operator or SEM-mixed economy company (delegated management) |

Source: Authors.

local affairs was recognized in 1884,²¹ but objections to the municipal legitimacy to intervene in a then-considered market sector have been frequently raised up until the 1920s (Duroy 1996; Pezon 2000). Viewed as the basic entity for democracy and public administration, the *commune* suffers from its, on average, small size: there are 36,569 *communes* in France, of which about 60 percent have less than 500 inhabitants (DGCL 2007). Inter-municipal cooperation developed at the end of the 19th century,²² and is nowadays largely used to overcome the dispersion of the *maîtres d'ouvrage* (contracting owner). France however still has more than 16,200 water utilities and 16,750 sewerage utilities. There are about 17,000 sewage treatment plants.

Inter-municipal structures provide about 66 percent of the population with water and wastewater services (BIPE-FP2E 2006). Each *maître d'ouvrage*, also called *autorité organisatrice* (organizing authority) can freely choose its operation mode: direct management or delegated management. It should be mentioned that whatever mode of operation is chosen, the organizing authority owns the assets that are involved in providing the public service (Table 2).

Since the end of the 18th century the municipalities have progressively been taking over the responsibility for providing water services and since the end of the 19th century for wastewater collection, but they quickly faced a lack of technical and financial resources for service operation. The reason for mixed management of water services – bringing together public authorities and the private sector – are thus quite old. The call for involving the private sector, based on public works concession contracts, was seen as a way to overcome weak resources. Incidentally, private sector participa-

²¹ Article 61 of the municipal law of 5/04/1884 states that the municipal council is in charge of its own local affairs. Municipal councils thus base their intervention in water distribution on their competences for hygiene and public health.

²² Law of 22/03/1890 on single purpose joint boards.

Table 3
Comparison of French and international typologies of management modes

| French typology | Régie | Gérance | Régie intéressée | Affermage | Concession |
|---------------------------|------------------|--|---|---|---------------------|
| Type of remuneration | None | Fixed fee paid by the public authority | Proportional fee paid by the public authority | Revenues from users minus a fee which is returned to the public authority | Revenues from users |
| International equivalence | Direct operation | Management contract | | Lease | Concession |

Source: Authors.

where the delegate builds, operates and maintains the assets and receives its revenue from the users. Delegated management is chosen by less than a third of the organizing authorities,²⁷ but provides about 71 percent of the population with water and handles wastewater for about 54 percent of the population. These figures indicate a preference for delegated management if the population being served is higher (IFEN 2005a).

tion used to be considered the legal norm, and the right of municipalities to operate services directly was only explicitly recognized later,²³ under the influence of a doctrine called “municipal socialism”. It should also be noted that no project of a national state-owned company for water services was ever enforced, unlike electricity distribution for example.

When directly operated, the service is run by a *régie*, which is created by and responsible to the assembly of the organizing authority. The *régie* can be endowed with legal and financial autonomy, or financial autonomy alone (Table 3).²⁴ The authority can also sign a management contract (*contrat de gérance*) with a private partner who is paid a fixed fee, and is thus part of public procurement. Delegated management is a contract whereby the public authority gives a public or private delegate the responsibility to operate the service, its revenue being “substantially linked to the activity of service operation”.²⁵ Basically, this means that the delegate can earn or lose money, depending on the volume sold. There are three economic types of delegated management: *régie intéressée*, where the delegate operates and maintains the assets built by the public authority and receives a proportional fee based on the volume sold; *affermage*, the most frequent type of delegation,²⁶ where the delegate operates and maintains the assets built by the public authority, but receives its revenue from the users and transfers a fee (*surtaxe*) to the public authority in accordance with the depreciation of the assets; and *concession*,

The choice of the operation mode is made only by the organizing authority, but in the case of delegated management, the operator is chosen in a public competitive bidding procedure.²⁸ Procedures have changed considerably, moving toward more transparency since the adoption of the Sapin law in 1993.²⁹ Before this law,³⁰ there was no obligation either to place a new bid after expiration of the contract, or to limit the duration of contracts. Delegated contracts can now be drawn up freely since the decentralization laws in 1982 eliminated model contracts. According to BIPE-FP2E (2006), the implementation of the Sapin law has led to a minor revision of the operation mode: less than 1 percent of expiring contracts returned to *régies*. For 10 percent of contracts, the private operator changed.³¹ According to the *Cour des Comptes* (2003) (French General Accounting Office), the renegotiation of contracts benefited the organizing authorities, leading to an average reduction in the operators’ margin of 10 percent or better service at the same price. However, competition does not greatly affect the supply or services performed during the contract by the operator. This is because the European directive 90/531/CEE excludes from public procurement procedures services provided under a threshold of five million euros. Operators can freely choose to call upon subsidiary companies

²³ A decree adopted in 1926 explicitly allowed the municipalities to operate direct services called “industrial and commercial public services”.

²⁴ Decree n° 2001-184 of 21/02/2001.

²⁵ Law n°2001-1168 of 11/12/2001.

²⁶ According to the *Cour des Comptes* (2003), this type represents about 85 percent of delegated management contracts.

²⁷ 4,790 for water and 4,208 for wastewater over and against a total of 29,000 services with two competencies or only one (BIPE-FP2E 2006).

²⁸ Bidding procedures have also become relevant for the public-private companies (Société d’économie mixte, SEM) since the Sapin law and its confirmation by the European Court (“Stadt Halle” decision of 11/01/2005). SEMs are founded by local authorities and private operators. They represent less than 1 percent of the total billed water in France, and the city of Paris is the most prominent case. But since 2007, operators sharing the SEM of Paris have been replaced by a public bank, Caisse des Dépôts et Consignations.

²⁹ Law n°93-122 of 29/01/1993.

³⁰ The “Sapin” law was after completed by the Barnier law n° 95-101 of 2/02/1995, the Mazaud law n°95-127 of 8/02/1995, and the MURCEF law n°2001-1168 of 11/12/2001.

³¹ BIPE-FP2E (2006), quoting research by ENGREF on the 1998–2004 period.

from their own holding group. Nevertheless it has to be pointed out that the choice of the *régie* is not left to competition, and the *Cour des Comptes* (2003) also criticised public procurement procedures conducted by *régies*. Regarding the duration of contracts, the Barnier law caps them to twenty years, to be adjusted with the level of investments. BIPE-FP2E (2006) observed that contracts signed after the introduction of the Barnier law had an average duration of 11.3 years. Entry rights, which resulted in the delegate operator paying an entry fee to the general budget of the public authority, were also prohibited by the Barnier law in 1995.

Political and economic regulation of services

As regards agency theory, research has concentrated more on the regulation of public-private partnerships (and delegated management) than on direct management. The focus was mainly on the relationships between public authorities and (private) operators. From this perspective, researchers like Dominique Lorrain (2002, 2003) tried to characterize the French political model for the regulation of water services, as “regulation without a regulator”, as a kind of global regulation based on incomplete contracts, where local and incidental adjustments dominate. In this type of regulation informal relationships are more important than a strict reading of the contract and are supported by an engineering culture that favors concrete and pragmatic solutions.³² This analysis, in conformity with much of the literature on the local political system and the involved actors, could, however, be reconsidered, given the formalism and the transparency introduced by new laws.

From a formal point of view, the economic regulation of water services has above all a legal origin. These services are seen as “industrial and commercial public services” and have to fit within a precise regulatory and budgetary framework. Water and wastewater management must each have their own budget, distinct from the general budget of the organizing authority³³ and balanced on a yearly basis.³⁴ Finally, the presentation of budgets must follow an accounting standard called “M49”, which includes

³² This is very different to the Anglo-Saxon tradition, which tends to favor a strict interpretation of the contract and the responsibilities of contractors.

³³ There is an exception for municipalities under 3,000 inhabitants, which are allowed to present a single budget.

³⁴ The same exception for municipalities under 3,000 inhabitants exists. They are allowed to balance their budgets using transfers from their general budget. For all municipalities, an exception is allowed when investment charges are too high, resulting in unacceptable increases in tariffs.

the depreciation of assets. The *Préfet* is in charge of the enforcement of these principles. In practice, there are numerous exceptions to the rules.³⁵

Regional accounting offices are also involved in the financial regulation. They are entitled to audit the balance sheets of the *régies*, and more important, those of the delegated operators. They also play a central role in clarifying the notion of “renewal” and the provisions that were allocated to that purpose by delegates. However, the *Cour des Comptes* (2003) noticed that the public authorities did not adequately check whether all the provisions of the contract were actually fulfilled. Additionally, the *Cour* pointed out that there was insufficient knowledge of the assets belonging to public authorities. Criticism of the *régies* was more severe, since only few of them anticipate their needs for renewal.

Users have an increasing impact on the regulation of water services. They are now part of consultative commissions for local public services.³⁶ These commissions have to approve the choice of delegated management as the operation mode. They also have to be consulted on the report the *Maire* has to present every year on the quality of local public services³⁷ and on the report of the delegated operator.³⁸ The work on drawing up performance indicators, which was requested by the *Cour des Comptes* (2003), is now in progress.³⁹ Incidentally, the *Cour* expressed the wish that performance indicators apply to delegated management as well as to *régies*. An increased mobilization of consumers associations, like UFC-Que Choisir, is also evident. In January 2006 UFC-Que Choisir launched a campaign against water tariffs.⁴⁰ As a result the information provided to users has notably been improved. Water bills have been standardized since 2000,⁴¹ and three components are now clearly identified: one for water delivery, one for wastewater collection and treatment, and one for taxes and levies. In spite of these efforts, the *Cour des Comptes* (2003) criticized

³⁵ As an example, the city of Marseille does not recover investment charges from tariffs, so they are paid by tax-payers. The *Cour des Comptes* (2003) also points out persistent cases of free water provision to users.

³⁶ These commissions were created by the Barnier law and strengthened by the law n°2002-276 of 27/02/2002.

³⁷ Created by the Barnier law of 2/02/1995.

³⁸ Created by the Mazeaud law of 8/02/1995.

³⁹ The FNCCR (*Fédération nationale des collectivités concédantes et régies*) and the *Institut de la Gestion Déléguée* worked on the definition of performance indicators for water services. A governmental decree is under preparation.

⁴⁰ Despite the controversy, the BVA and IGD opinion-poll of 2006 showed that 93 percent of users were satisfied with their water service and 82 percent with their wastewater service.

⁴¹ Decision of the Ministry of Finance, 10/07/2006.

Table 4

National expenditure for water services (M€) in 2003

| | Water distribution | Waste water systems | On-site sanitation | Industrial self-sanitation |
|---------------------------------|--------------------|---------------------|--------------------|----------------------------|
| Operation & maintenance | 5,850 | 5,299 | 165 | 1,095 |
| Capital investment | 1,611 | 3,511 | 670 | 416 |
| <i>of which on networks</i> | 1,200 | 2,325 | | |
| <i>of which on other assets</i> | 411 | 1,186 | | |

Source: CNE (2006).

a lack of transparency with respect to the traceability: bills don't indicate the share returning to operators and the depreciation fee paid to the organizing authority does not appear. Households that share the same meter can now ask for an itemization of their bill since the adoption of a law in 2000.⁴² Many large utilities provide a user guide or a direct phone line for queries. In addition, the *Agences de l'eau* set up regional subsidiaries to monitor prices.

In addition to these measures, public authorities and operators have tried to implement self-regulating mechanisms. Water companies and their professional union have adopted a charter for the management of water assets. Some of these companies have proclaimed clear positions on sustainable development in the media, as Lyonnaise des Eaux has done with its twelve commitments to a sustainable management of water. Public authorities, in partnership with the main operators and consumers associations, have also defined their common values in a charter for local public services.⁴³

Prices and financing of water services

The national yearly expenditure for the economic sector of water and wastewater services reached EUR 11.2 billion in 2003 (CNE 2006), which represents about 0.8 percent of the GDP. In 1990, it only amounted to EUR 6.3 billion (Table 4).

⁴² Law n°2000-28 of 13/12/2000 on solidarity and urban renewal.

⁴³ Signed on 16/01/2002 on the initiative of the *Institut de la Gestion Déléguée*.

⁴⁴ See footnote 18.

⁴⁵ The average household size in France is 2.3 persons (INSEE 2006). The 165 litres include the non domestic consumption of public water.

An analysis of financial flows for the year 2004 (BIPE-FP2E) for water services to the population shows the level of intervention of other public actors (Figure 1). Important redistributions can be observed from these flows, principally for investments. Thus, if 95 percent of the operating costs are covered by user fees, about 30 percent of capital investments are financed thanks to subsidies,

two-thirds of which come from water users' mutual funding systems (Agences, FNDAE⁴⁴) and one-third from tax-payers (CNE 2006).

The water price was on average about EUR 3 per cubic meter in 2004 (IFEN 2007), i.e. for a daily average consumption of 165 litres per inhabitant, an annual bill of EUR 177 per inhabitant.⁴⁵ The average bill doubled between 1990 and 2004, and it is still three times lower than the average electricity bill. The main factor explaining this price development is the increase in levies and taxes (Figure 2); the strong increase in the pollution levy corresponds to investments needed for wastewater management as requested by the Urban Waste Water Directive (UWWD). Adding the abstraction levy to the basic drinking water price and the pollution levy to the sewerage charge shows the long-term price of both services. In 1976, the total for sewage collection & treatment exceeded the total for water supply.

Figure 1

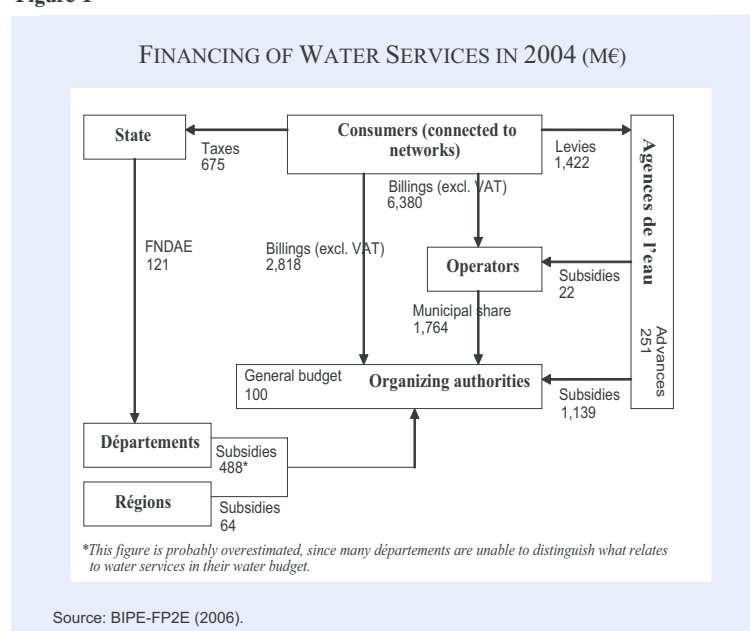
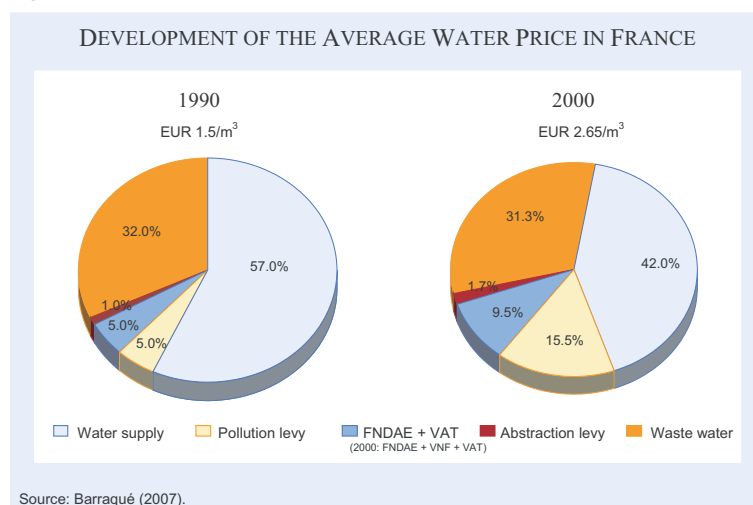


Figure 2



Regional disparity of prices is high. Prices also vary depending on the organization or the operation mode and can be explained primarily by the technical complexity of large interconnected networks, which are preferably organized at the inter-municipal level and delegated to an operator (Table 5). In the case of the *régies*, prices are adopted every year by the administrative authority, while for delegation management prices vary according to contractual indexation formulae.⁴⁶

Tariffs can include a fixed fee (subscription) corresponding to investment charges, and a proportional part that varies with consumption.⁴⁷ The fixed part is increasing and can be higher than the total amount based on yearly consumption (IFEN 2007). No social tariff is available for water services, a principle that was confirmed by administrative courts. However, social aid provided by *départements* and some *communes* can subsidize a part of the bill for poor households so that disconnections can be avoided. Social aid is financed partly from a withholding tax on the operators' revenue. The right to water is also being advanced: the new water law of 2006 states in its first article that everyone "has the right to access drinkable water at prices that are acceptable to all." Some cities, like Bobigny in

⁴⁶ Formulas basically reflect the price of labour costs, the price of energy and prices of some production inputs. In *affermage* contracts, the public authority determines every year the fee corresponding to depreciation.

⁴⁷ Fixed tariffs are now prohibited except in a few cases, for example, tourist areas or municipalities where the resource is abundant.

⁴⁸ Law n°2007-290 of 5/03/2007 creating a right to housing.

⁴⁹ Notably the Suez group, which launched in 2001 "La vraie bataille de l'eau - Bridging the water divide" (Gérard Mestrallet, CEO of Suez, in *Le Monde* of 26/10/2001), but has recently withdrawn from its contracts in La Paz (Bolivia), Buenos Aires (Argentina), Jakarta (Indonesia) and Manila (Philippines).

the Parisian suburbs, have taken measures in March 2007 to prohibit water and electricity disconnections, arguing on the basis of the Charter for the Environment and the new right to housing.⁴⁸

Related issues

Private water operators

According to the FP2E, private operators of water services had a national turnover of EUR 5.1 billion in 2004. Veolia Water provides water services to 39 percent of French population, Lyonnaise des Eaux to 22 percent and SAUR to 10 percent. Other private operators cover less than 3 percent of the market. The two main companies were founded during the 19th century, they are now vertically (from the design to the operation of assets) and horizontally (with activities in waste management, energy distribution and production, public transports) integrated holdings. They are specialized in local public services and accustomed to working with elected representatives (Table 6).

Recently in France ideological objections to private sector participation in the management of water services has developed. Increasing efforts are being made on comparing the different operation modes, as revealed by the current works on performance indicators. From an international point of view, however, private groups have encountered some misfortunes⁴⁹ that have led them to reconsider their investment strategies.

Table 5
Variations of price per cubic meter with the organization and the operation mode
in €/m³

| Operation mode | Organization | | | |
|----------------|--------------|-----------------|--------|-------|
| | Municipal | Inter-municipal | Mixed* | Total |
| Régie | 2.19 | 2.85 | 2.48 | 2.54 |
| Delegated | 2.93 | 3.44 | 3.25 | 3.28 |
| Mixed* | 2.60 | 3.04 | 2.97 | 2.97 |
| Total | 2.59 | 3.19 | 2.99 | 3.01 |

*Mixed : Different organization or operation mode for each service.

Source: IFEN (2007).

Table 6

Main characteristics of the three private water groups in France

| | Turnover | Of which water | Number of customers | Implantation | Staff |
|------------------------------------|---------------|----------------|--|---|---------|
| Suez Environment (excl. energy) | 11.1 billion | 5.9 billion | 80 million for water and 50 million for wastewater | 70 countries | 72,130 |
| of which Lyonnaise des Eaux France | 1.7 billion | | 14 million for water, 9 million for wastewater | 2,600 contracts with public authorities | 8,332 |
| Veolia Environment (incl. energy) | 25.24 billion | 8.8 billion | 108 million for water and wastewater | 57 countries (water) | 271,153 |
| of which Veolia Water France | 4.4 billion | | 24.5 million for water, 16 million for wastewater | 8,000 communes covered | 28,000 |
| SAUR group | 1.4 billion | 1.1 billion | | 8 countries | 12,400 |
| of which SAUR France | 896 million | | 5.5 million for water and wastewater | 6,700 communes covered | 6,800 |

Source : Websites of companies.

The renewal of networks

Financing the renewal of water and wastewater systems is an urgent issue, because a large part of France's 850,000 km water and 250,000 km wastewater systems date from before the 1960s. One of the main difficulties lies in the knowledge of the age and the location of networks that organizing authorities and operators have. The value of these systems is estimated around EUR 130 billion for water and 75 billion for wastewater. The costs for renewal can be estimated at EUR 1.5 billion and EUR 800 million, respectively, per year. The present rate of renewal is between 0.6 percent and 1 percent per year.

This issue will probably have a major impact on water bills. Additionally, accounting or budgetary standards will have to be improved to address the problem. For *régies* or *affermages*, which comprise the majority of management systems, investment lies in the hands of the public authorities. Until the enforcement of the M49 accounting standard in 1994, the depreciation of investments was not mandatory. The *Cour des Comptes* has recently noticed (2003) that the practice of depreciation is still not widespread. Moreover, depreciation is calculated on the historical price of the asset, not on the net present value, so that self-financing will not be sufficient to replace the asset when necessary. Among public authorities effectively depreciating the assets, few include the share of public subsidies (*Agences de l'eau*, other public entities) in the amount to depreciate. Another difficulty comes from the obligation to present balanced budgets on a yearly basis, which makes it impossible to spread the charges over several years, as is allowed, for example, with concession contracts.

Two new measures may help to overcome these difficulties for public authorities. The 2006 water law allows surpluses to be reserved for the planning of renewal needs. Furthermore, the 2004 law on public finance makes it possible for public authorities to invest their surplus obtained through public services in the private banking sector. These measures could provide incentives for public authorities to prepare for the future without being penalized by inflation erosion. Nevertheless, a major effort still has to be made to sensitize them to the necessity of scaling up such practices to enhance self-financing. Otherwise, other solutions, such as an increased use of concession contracts and financing provided by private operators, could also be explored.

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