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DELEGATION OF WATER SERVICES IN FRANCE SINCE THE 19TH CENTURY: A LACK OF PUBLIC EXPERTISE?

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Abstract:

In France, for nearly 150 years, the provision of water fell under the responsibility of 36,000 municipalities, which could organize water services at their own scale or within the framework of a variety of municipal associations. Municipalities also decided how to manage their services: either publicly (in-house organisation) or privately through a delegation contract. At the end of the 20th century, water services were mostly organized within the framework of municipal associations and privately managed by three operators.

In 2015, the NOTRe law transferred jurisdiction over water services from 36,600 municipalities to 2,000 urban and rural communities. This reform is the culmination of a public policy, which aims to rebalance the management models in favour of public management. This paper explores the role of public expertise in the rise and relative decline of PPP for the provision of drinking water from the middle of the 19th century.

Introduction

France is the home land of the 2 water multinationals, Veolia and Suez, originally called *La Compagnie Générale des Eaux* (1853) and *La Société Lyonnaise des Eaux et de l'Eclairage* (1881). France is the bearer of a model for the management of drinking water services known under the name of delegated management of services, a model in which the public authorities, in this case local authorities, delegate the management of their water services to private companies under long-term contracts, while remaining owners of the infrastructure and in charge of financing investments.

This management model flourished in developed countries under Roman law (Spain, Portugal, Italy) and in developing countries (Latin America, Asia and Africa) in the 1990s and 2000s. Its supposed merits consist of technical, managerial and financial expertise, which makes up for the lack of public expertise. Private companies can not only build and manage sophisticated equipment but also collect bills from water users and supplement public investments to fund services.

In France, like other developed countries, modern drinking water services (drinking water distributed in a pressurized network) were born in the 19th century. Unlike other network services born at the same time, water services have always been subject to public management. While those of gas, electricity, or even urban transport services had to be managed in delegation, local authorities have always been considered as legitimate managers of water services, consistently since the 19th century (Duroy, 1996).

At the end of the 20th century, public management of water services had become relatively marginal: it only concerns 20% of the French population. It is therefore tempting to concur that the competition between public and delegated management has turned in favor of the latter because of its greater effectiveness on public expertise (Lorrain, 1995). On the other hand, it is difficult to understand why public expertise was lacking in the management of water services when it was not, in France, in managing energy, transport or telecommunications. But what expertise are we talking

about? Has delegated management imposed itself in the absence of solid local public expertise when the other public services, nationalized in 1936 (rail transport) and in 1946 (energy), were able to benefit from sufficient State expertise? The question of the management scale is indeed crucial. As such, the NOTRe law in 2015 marks a historic turning point in the organization and management of water services (Pezon, 2020).

Until 2015, the supply of drinking water was a municipal public service in France, which the 36,600 municipalities organize at their scale or within the framework of a variety of municipal associations. These associations were twofold. Firstly, the municipalities could transfer their competence over water to specialised organisations (*syndicats*) financed by endowment of the municipalities and fees charged to the water users. Secondly, the municipalities could transfer blocks of competences including water to integrated organisations (*communautés*) empowered to levy local taxes and to charge fees on water users. Since the municipal level is very fragmented in France (32 000 municipalities count less than 2 000 inhabitants), the water services were most often transferred to municipal associations, and predominantly to *syndicats*.

To a certain extent, the water reform of 2015 is the logical outcome of the territorial reform initiated by the decentralization laws in 1982, and completed in 1999 with the creation of *communautés* to which rural municipalities and small towns could transfer a substantial part of their competences. In 2015, the compulsory transfer of the water competence to the *communautés* seeks to reduce the number of water services from 12,690 to 2,000 and thus to increase their average population from 5,600 to 46,500 inhabitants (Banatic, NOTReau, 2018). Larger services would benefit from economies of scale sufficient to apply full cost recovery without increasing the water tariffs. By forcing a change in the scale of water services, the NOTRe law also intends to allow water services to benefit from public expertise capable of really competing with that of private companies.

To understand the effects of this change of scale and the role of public expertise in the development of the French management model of water services from the middle of the 19th century, this article treats the history of urban water services from the mid-19th century to the present day. Then, it analyses the historical development of rural water services throughout the same period. Finally, it discusses the supposed shortcomings of public expertise as a factor in the growth of the delegated management of water services.

1. Governance of urban drinking water services: historical perspective

In 2015, the transformation of urban water services is already well advanced. It participates in the "silent revolution" which, since the Chevènement law in 1999, has seen large cities integrate into *communautés*, e.g. politico-administrative entities voluntarily constituted, substituting to kyrielles of municipalities that shared the decision power. Urban *communautés*, competent in drinking water, have reformed the management of their services and made a return to public management. This governance shift represents a strategic turning point in the management of the public water service, a move that is not unlike that observed at the beginning of the 20th century when major cities came out of the concession system (Pezon, 2011). To understand the proponents of the contemporary reflux of the private management, we will first retrace the opposition of cities to attempts to rationalize their territory, and detail the tipping points between public and private management of urban water services.

1.1. Reformatting the urban territory: the State and the cities

The first urban water networks appeared in the 1850s and spread timidly until the end of the 19th century. The distribution of water at home then appeared utopian and less than 200,000 privileged people benefited from it in 1899 (Goubert, 1987). However, in large cities, this goal had become a political issue. The great municipal law of April 5, 1884 established the sovereignty of the municipalities on their territory and induced the election of mayors by universal (masculine) suffrage. The elected officials seized the affairs of "water distribution" and developed, on the scale of their territory and, if possible, with local water resources, water services for the purpose of hygiene and the fight against fires (Murard and Zylberman, 1996).

The big cities did not resort to the multi-municipal formula proposed by the legislator in 1890, the *syndicat*. This municipalities association, if it did not immediately aim to allow the establishment of networks (of electricity, gas or water), was quickly apprehended as the appropriate institution for the development of these activities by small or medium municipalities (Leydet, 1936). However, the big cities, jealous of their water, intended to reserve its benefit to their only citizens, and organised the distribution of water within their boundaries.

In the 1950s, the context had changed because of a massive rural exodus to large cities and, especially, to their periphery, and an economically entrepreneurial State that assumed to develop the territory in a top-down manner. It aimed at creating unified administrative urban centres to facilitate planning decisions that were otherwise dependant on dozens of municipal councils. It suggested two integrated organisations for this purpose: the urban district in 1959 and the urban *communauté* in 1966. The big cities shunned these integrated organisations (Bourjol, 1963, de Savigny, 1971). In 1973, one could count ten urban districts and nine CUs - four of which imposed by the State - when France had 41 agglomerations with more than 100,000 inhabitants (Roussillon, 1972). The history of the resistance of the urban poles to the imperatives of territorial rationalization of the State is well known: it defeated all attempts to develop urban areas in integrated organisations from the post-war period to the early 1980ies (Pezon and Petitet, 2003). The failures of rationalization of the urban landscape resulted in a vertiginous increase in the number of *syndicats* (13,375 in 1979), which became a "refuge organisation", the cities multiplying the number of *syndicats* to which they adhered (such as the city Rouen which participated in about thirty *syndicats*), rather than renounced their local sovereignty by block or in whole. This pattern also singled out France compared to other European countries, which reformed their local administration during the 1970s (Table 1).

Table 1. Reforms of local authorities in Europe in the 1970ies

Countries	# of local authorities prior the reforms	Date of the reforms	# of local authorities after the reforms	Average population per local authority after the reforms
West Germany	24,386	1970	8,514	7,300
United Kingdom	1,383	1972	545	110,000
Belgium	2,359	1971	596	17,500
Denmark	1,388	1967-1974	275	19,500
France	37,708	1971	36,257	1,586

Source:based on Mény (1984)

The decentralization laws of 1982 and 1983 put an end to the supervision exercised by the State over the *municipalities*, without finally reforming the local level. It was not until 1992 that a new integrated organisation was proposed to small towns, while the urban *communauté*, reserved for larger urban areas, be modernized. These formulas did not appeal. On the other hand, the number of mixed specialised organisations - associating municipalities and *syndicats* or *syndicats* between them - multiplied reaching 1,124 in 1999 vs 750 in 1988. On the eve of the 21st century, the metaphor of the "coat of harlequin" that Roussillon used in 1972 to describe the local organization of the French territory remained relevant.

In 1999, the Chevènement law broke with this curse: in eight years, as many urban *communautés* were created voluntarily as in the previous 40 years, and more than 3,000 municipalities making up medium-sized towns constitute 171 small-town *communautés* (Ministry of the Interior, Banatic) . In 2010, a special formula was developed for the largest cities: the Metropolis. If the Fillon and then Ayrault governments were hesitant about the binding nature of their constitution, there was no longer any need to force the major urban poles to adopt it. Twenty-two metropolises emerged in three years.

When the NOTRe law was promulgated in 2015, the urban centres all entered integrated organisations that count drinking water in their compulsory skills.

1.2. The tipping points between public and private management

Schematically, the management of major urban services experienced three tipping points. At the beginning of the 20th century, the cities that had first opted for the concession of their water services switched to public management. Then, in the 1980s and 1990s, the large cities abandoned public management in favour of delegation contract. Finally, since 2010, public management has resumed. These tipping points occurred in contexts that need to be specified to understand the role played by the organizational variable.

In the 19th century, large cities were equipped with water networks most often through concession contracts (Copper-Royer, 1896). The contracts distinguished the development of the "public service" (free water at fountains and hydrants) from that of the "private service" (paid service of water at home). The concessionaire obtained the monopoly of the private service in return for the financing of the public service. It served the populations interested in home supply on its terms. However, it must supply a certain amount of free water to a number of fountains and fire hydrants established at its expense. When the objective pursued by elected officials became the universal distribution of water at home, they were constrained to respect the economic and financial conditions that

prevailed in the original contracts, under the effect of a strict interpretation of the contracts by the Conseil d'Etat, the Supreme Court for litigation between administrative and private entities. It meant that cities had to apply water rates at a level respecting the rate of return on investment approved for the private service, level contravening to the generalization of the service of water at home. The largest cities came out of the concession system at the price of heavy litigation. Those who started to establish water network at the beginning of the 20th century massively opted for public management (Pezon, 2000, 2010).

Nearly a century later, following the decentralization laws, the context was radically different from that which prevailed when the municipal law of 1884 was promulgated. The cities, freed from the supervision of the State and now responsible for their development, competed for projects (metro, tramways, etc.) that required considerable investments. Urban water services were not left out: networks had to be renewed, wastewater sanitized and the growing pollution of water resources required securing supply by interconnecting the systems of large cities with those of their suburbs.

Private operators had long been established on the outskirts of large cities: they remained there after being evicted from the cities centres at the turn of the 19th century or settled there after the World War 2, at the request of the small suburb municipalities whose territorial scale was too narrow to organize efficient water production and distribution (Lorrain, 1995). As the coverage of the national territory with home water supply was completed, operators could only increase their market share at the expense of public management. The big cities found a double interest in abandoning it, financial and political.

Financially, they delegated the management of their water services for periods unrelated to the 12-year period in force prior to Decentralization, in return for entry fees and reinstatements of debt that were similar to auction products that can be mobilized to finance other activities (Table 2).

Table 2. Financial conditions and duration of some delegation contracts procured in the 1980ies

Cities	Tariff increase	Duration of contracts	Annual provision	Right of use	Debt recovery	Purchase of material	Annual charge for occupying the public domain
Saint-Etienne	21%	30 years	8 MF / y	400 MF	500 MF	20 MF	22 MF / y
Troyes	73% in 7 years	25 years	5 MF / y	0	0	0	0
Toulouse	17% en 3 ans	30 years	*	437,5 MF	*	*	34 MF in 1990 41,5 MF / y from 1990
Dieppe	5%	30 years	*		*		77 MF / y
Marseille	15%	30 years	70 MF / y	0	*	0	0
Bordeaux	12%	30 years	80 MF / y		433,5 MF	39 MF	6 MF / y

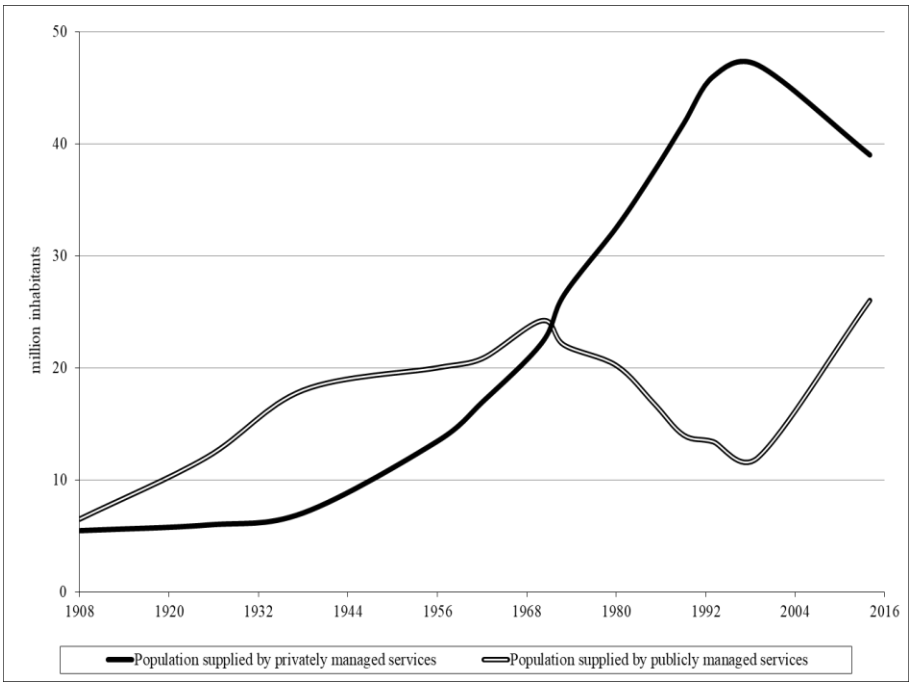
* unknown. Source: based on Pezon, 2000, pp.342-344

On the political front, private management made it possible to defer on the private operators the responsibility of inevitable tariff increases. In fact, from 1978 to 1986, the economic anti-inflation policy limited the tariffs of the publicly management services, obliging the large cities to delay their decisions of investments. After price liberalization in 1986, they had to make substantial price increases to balance their water service budget and finance investments. The private operators were ready to finance part of these investments, before the vote of tariffs rising sharply. The public management lost its finest jewels, in the space of seven years (Paris, Lyon, Toulouse, Montpellier, Toulon, Saint-Etienne, Grenoble, Caen, Montbéliard, Troyes, Brest, Blois, etc.) and private management market share culminated at 80% of French population in the early 1990s.

The last tipping point is recent. It begins with the *remunicipalization* of the water service of Paris (Le Strat, 2015), and continues with the water services of newly established *communautés*, starting with

the first created by Nice in 2011, whose water service had been delegated to *La Compagnie Générale des Eaux* since 1864. In the space of a few years, public management doubled its market share to 40% of the French population (Chart 1). The balance of power has been reversed: operators are offering spectacular price reductions (20 to 40%) to save some contracts (Toulouse, Bordeaux and Marseille), and are competing with each other (15 to 30% of contracts change of hand, ONSEA, 2017).

Chart 1. Private and public management of water services in population



Sources: based on Pezon, 2000 & ONSEA, 2017

In our opinion, the recovery of public management is attributable to two factors. The first is the loss of the strategic advantage enjoyed by operators in terms of management scale. The urban centres, duly constituted, offer the small municipalities at their periphery an alternative to the private management of production and distribution systems, which exceed their territory. The private management used to remedy the lack of urban integrated organisation. By organizing services on a scale larger than a single municipality territory, the operators offered the peripheral municipalities a sound management scale, rationalized technically and economically. With the development of integrated organisations, technical management scale and political decision scale now coincide, facilitating the change of management or operator. A second factor is the legislative clarifications made in the 1990s to put an end to the misuse of delegation contract. Launched in 1993 with the Sapin law - on the prevention of corruption - and pursued in 1995 through the Barnier and Mazaud laws, the regulation of privately managed services has been reinvigorated[1]. It has restored equality between public and private management by neutralizing the benefits that could before be derived from the delegation contract unrelated to its management performance.

[1] The tacit renewal of contracts and the bidding process at the time of procurement have been prescribed. At the same time, it has become compulsory to advertise the end of contracts, to limit their duration to 12 years, to make public an annual report on the price and quality of the public drinking water service, and to apply performance indicators in contracts. See Guérin-Schneider and Nakhla, 2000.

2. Governance of Small Town and Rural Water Services: the Mayor, the State Engineer and the *Syndicat*

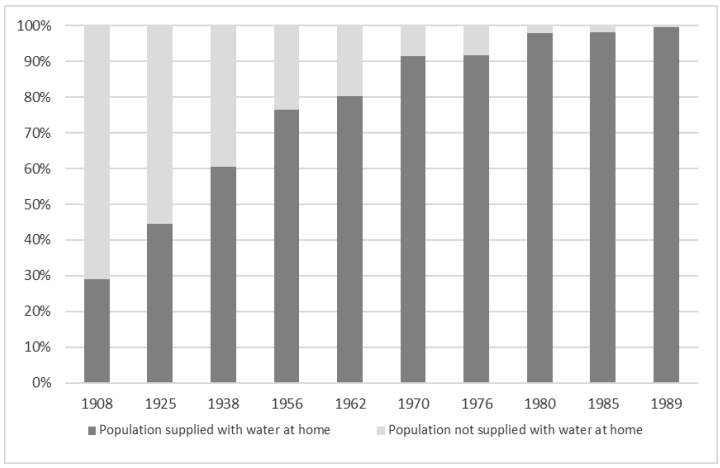
When the NOTRe law was enacted in 2015, unlike urban water utilities, rural and small town water services still fell under municipalities' responsibilities: they were organised either at the scale of municipalities or within *syndicats*. If all municipalities had joined *communautés*, among rural and small town municipalities, few had then transferred their water competence, preferring to maintain the governance in force.

The upheaval introduced by the NOTRe law is twofold. It consists first in reformatting some 11,000 services whose perimeters obeyed hydrogeological and technico-economic considerations unrelated to the political foundations governing the formation of *communautés*. It consisted, above all, in leaving the *communautés* decision makers solely responsible for financing their water services, at a time when very heavy investments in network renewal are needed (CGEDD, 2016).

2.1. Water at home for everyone!

The goal of universal access to drinking water at home was laid in 1934. It was achieved half a century later (Chart 2.) (Loriferne, 1987).

Chart 2. Supply of water at home from 1908 to 1989 in population



Source: based on Pezon, 2000

In the countryside, water services were deployed from the 1930s to the 1980s under the guidance of the State engineers: the rural municipalities submitted to their plans to obtain the subsidies without which it was impossible for them to modernize. State engineers organized services in *syndicats* when natural resources required it, whether it was necessary to share these resources between several municipalities in their natural state, or that the processing capacities of a degraded resource served several municipalities. State engineers identified the water resources to mobilize, drew the territorial contours of the public services, and decided on their governance. A municipal management was sufficient when the water was near and distributed in its natural state but the delegation of water *syndicats* to private operators was preferred when catchments were shared and / or water treatment necessary (Ministry of Agriculture, 1959, 1960, 1966, 1969, 1970, 1976, 1981, 1987, 1990).

In 30 years, the number of water *syndicats* increased from a few tens to thousands. Concomitantly, the number of small water services managed by private operators exploded. The annual reports of the *Compagnie Générale des Eaux,* the largest water operator*,* noticed a growing number of rural

syndicats among its clients, to the point that the average size of the delegating authority halved between 1952 and 1968. In 16 years, *Compagnie Générale des Eaux* took a position in 75 *départements*[2] and the number of municipalities opting for private management, mainly through *syndicats*, increased from 1,200 in 1952 to 9,193 in 1968, when the 1,048 municipalities which appointed the Company had an average population of 250 people (Loosdredgt, 1990, Compagnie Générale des Eaux, 1950 to 1970).

In most small towns, water planning was also the responsibility of State engineers (Thoenig, 1987). Their objective was to establish distribution networks and ensure their extension to cope with the massive rural exodus of the 1950s and 1960s (Ministry of the Interior, 1961). As in rural areas, State engineers drew out the contours of water services transferred to *syndicats*, and relied on private operators now present throughout the national territory for these services to be privately managed (Camus, 1969).

Table 3. Small towns delegating their water services to the Compagnie Générale des Eaux from 1950 to 1975

1950	Outreau
1951	Luçon
1952	*none*
1953	*none*
1954	*none*
1955	*none*
1956	*none*
1957	*none*
1958	*none*
1959	*none*
1960	Bastia, Abbeville, Beaune
1961	*none*
1962	Auch, Bapaune, Cherbourg, Autun-le-Tiche, Richelieu
1963	*none*
1964	*none*
1965	Creusot, Reims, Caen, Monchanin
1966	*none*
1967	*none*
1968	Valence, Hagondange, Nantua
1969	Mantes-la-Jolie, Sarreguemines, Provins
1970	Vervins
1971	Gannat, Mende, Millau, Roche-la-Molière, Saint-Chamond
1972	Coulommiers, Belleville-sur-Saône et Saintes
1973	Metz, Autun, Sélestat, Rethel, Beaucaire, Bourg-de-Péage, Lillers, Sainte-Menehould, Charleville-Mézières (usine de traitement et pompage dans la Meuse), Aire-sur-la-Lys (usine de traitement destinée à la Communauté Urbaine de Lille).
1974	Salon-de-Provence, Mâcon , Nancy (usine de traitement), Cognac, Senlis, Bagnols-sur-Cèze, Fontenay-le-Comte, Jarny
1975	Gap, Alès, Revin, Grand-Couronne, La Ferté-Macé, Auchel, Moyeuvre-Grande

Source: Pezon, 2000, p. 153

[2] France is composed of 95 *départements*.

In 1968, the State offered to the municipalities to recover the VAT paid on the investments (be they new, for extension or improvement) made by privately managed water services - thus to reduce these costs by 20%. For seven years, this tax benefit was exclusive to *affermage* contract. This period marks the strongest growth of private management, with medium-sized cities joining the ranks of rural municipalities and small towns, causing a sharp increase in the average size of the delegating authorities. In the space of a few years, *Compagnie Générale des Eaux* expanded into 11 additional *départements*, increasing the take-up of medium-sized urban services (Table 3). The private management took precedence over public management in terms of population in the early 1970s (Chart 1).

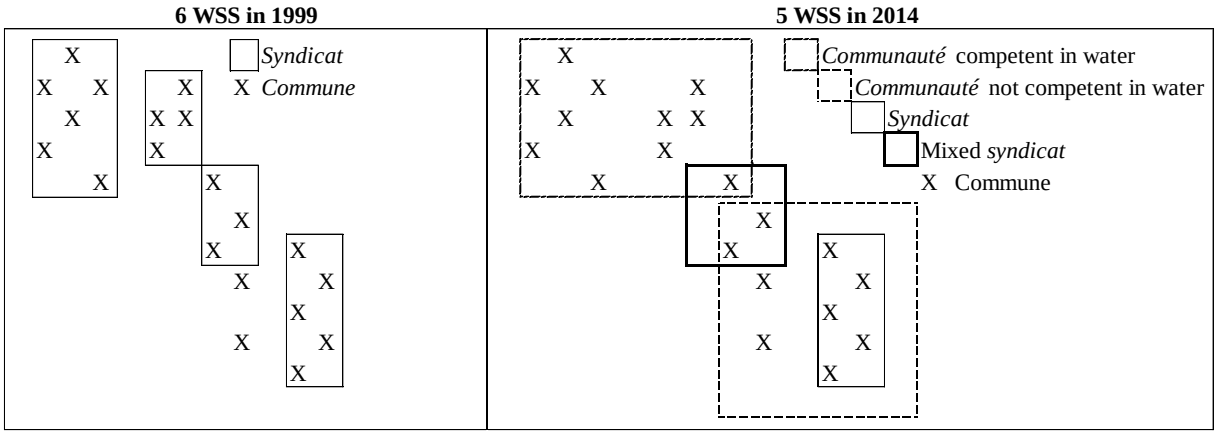
2.2. *State versus* Communautés *expertise*

The 1980s marked the completion of the territory's drinking water supply. Nearly 16,000 drinking water services were in place, of which 12,000 municipal and 4,000 organised in *syndicats*. The latter served three-quarters of the French population, two-thirds through private management (Delamarre et al., 1992). Whether publicly or privately managed, the water *syndicats* could balance their costs with tax resources, as long as their municipal members accounted for less than 3,500 inhabitants each. They were thus exempted from the full cost recovery rule that applied to larger water services, not matter their governance structure.

In the early 2000s, the popularity of rural municipalities and small towns for the *communautés* had little effect on the organization of water services. Water was an optional competence that few exercised. As a result, the number of communal water services decreased little (9,400), as did those organized in *syndicats* (3,600).

At the opposite, about one hundred of mixed *syndicats* exercising the drinking water competence emerged. Some were former *syndicats* transformed into mixed *syndicats*, following the membership of all or part of their municipalities to a *communauté* not competent in drinking water. Figure 1 illustrates the example of a territory where, in 1999, two water services are organised at communal scale and four in *syndicats.* In 2014, all municipalities belong to two *communautés.* One *communauté* is competent in drinking water while the other is not. Law dissolves all the syndicats included in the perimeter of the former, while the water organisations that prevailed in the perimeter of the latter are unchanged. On the other hand, the *syndicat* whose perimeter straddles that of the two *communautés* has been transformed by law into a mixed *syndicat*. At its board stand the *communauté* competent in water, which represents its municipal members (substitution-representation principle) and the two municipalities, which did not transfer the water competence to the *communauté* they entered.

Figure 1. Example of WSS in 1999 & 2014



Moreover, mixed *syndicats* could also result from the concentration of municipal and *syndicat* services at the *département* level, which for some, presented itself as the appropriate local authority to which to transfer the drinking water competence in rural areas (Barbier and Hellier, 2013; Barbier, 2015).

The NOTRe law invalidated this devolution option in favour of full decentralization: more than 9,200 communal water services and more than 2,700 services organized in *syndicats* must disappear by 2020. Only the 290 *syndicats* whose perimeters are straddling the territory of at least three *communautés* can be maintained in the form of mixed *syndicats*. The research team NOTReau predicted, in 2017, that 29 services would remain exempted from full cost recovery through tariffs in 2020, compared to 8,785 in 2007 (Canneva and Pezon, 2008). In the short term, the transfer of drinking water competence would lead to a multiplication of the water tariff by a factor of 2 to 4 in rural areas and small towns.

In 2018[3], the legislator slightly softens the NOTRe law. *Syndicats* straddling the territory of only two *communautés* will eventually be able to maintain themselves, bringing the potential number of mixed water *syndicats* from 290 to 1,250, and the number of services using taxation to balance their budget from 29 to 590 (NOTReau Group, 2018). Through this revision, the legislator seems to recognize that the concentration of water services will not be enough to avoid a substantial increase in tariffs much feared by local elected officials.

[3] Law n ° 2018-702 of August 3.

3. The role of public expertise in rise and fall of PPP: discussion

At the end of this rapid historical analysis, the key success factors of the delegated management of water services appear clearly. They lie in the very great fragmentation of the public authorities responsible for these services and in the State's territorial planning policy which, through its departmental technical services, has ignored the reluctance of local authorities to cooperate by promoting the growth of private operators (Pezon, 2012). In urban areas, the inability of large cities to form urban poles with their peripheral municipalities has left the field open to operators in suburban towns. The fiscal boost given to delegated management in the early seventies came after the repeated failures to set up urban centers. In rural areas, muncipal public expertise is clearly deficient since the water resource cannot be distributed without prior treatment. The operators can take care of this, under acceptable economic conditions, thanks to the constitution of large specialized *syndicats*.

However, the lack of expertise differs in urban and rural areas to explain the growth of delegated management. In urban areas, it is rather a lack of political interest, whereas in rural areas, the lack of technical expertise is obvious. The lack of political interest lies with the big cities and their peripheries. The big cities, jealous of their water and their financial resources, did not wish to form water *syndicats* with their periphery, knowing that they would be underrepresented politically but financially the main contributors. In fact, each municipality has an equal weight in the decision-making bodies of a *syndicat* but contributes to the level of its population. Conversely, the peripheral municipalities had long been resistant to forming a *communauté* with the large city center, knowing that the decision processes at stake for all the services managed by the *communauté* depend upon each municipality's population. In rural areas, the lack of technical expertise and financial resources combined to explain the use of delegated management, which only the devolution of water competence from the municipalities to the departments could have been an obstacle.

However, the lack of public expertise cannot be posited as the historical explanation for the rise of delegated management. Indeed, it takes two to succeed in a public-private partnership.

The historical analysis proved that delegated management in the form of a concession was born and then died in large cities in the 19th century. It has found a second wind thanks to the change in regulation mode instilled by the Council of State after the First World War which allowed it to remain within the framework of an affermage contract in the suburbs of big cities. However, it was in rural areas that delegated management took off after the Second World War to compensate for the lack of municipal public expertise. This effort took place within a heavily regulated framework, which was strictly applied by State engineers at the departmental level. Delegation contracts had to comply with the standard contract promulgated by the State in 1951 which, while it guaranteed the recovery of their costs to operators (operating cost of water services), also guaranteed to local elected officials the maintenance of very low water tariffs (the investment costs were borne by the municipalities or the *syndicats*, subsidized for this purpose by the departments).

Conversely, the very strong growth of delegated management in urban areas in the 1980s occurred in a context marked by a withdrawal of public expertise. It is not so much technical expertise as regulatory expertise. In fact, with the decentralization of 1982, the role previously assumed by State engineers at departmental level became obsolete. Urban municipalities could contract freely but also financed their water services on their own. Their water networks were in the process of needing to be renewed, and water prices were far too low to finance these investments. Operators were diversifying across the entire field of urban services and positioning themselves as solution providers to the multiple needs of municipalities. The perception that elected officials had of the water service

was changing. It was no longer a question, as it was a century before, of lasting improvement in hygiene conditions by providing everyone with drinking water. Access to water was then universal, thanks to massive public funding over several decades, and the standard of living of the population had improved enough for users to become the primary financial contributors to their water services, in place of taxpayers. The conditions were met for drinking water to become a commodity. Elected officials prefered to reserve their financial reserves to finance other services.

From a redistributive management, water services have been managed according to an allocative logic. In this new situation, operators, well established on the outskirts of cities, were able to offer large cities attractive economic management conditions. They could in fact constitute services at the scale of urban centers, without forcing large cities to join existing water *syndicats*, and therefore allowed them to benefit from economies of scale that had become crucial to limit water tariff increases. Cities also had the advantage of getting their hands on additional financial resources through the sale of delegation contracts. Moreover, private companies would be the ones to assume, vis-à-vis the populations, the price increases made necessary by the reduction in public funding. (Table 2).

The strongest growth in delegated management, as observed in the 1980s and 1990s, was in fact concomitant with a lack of public expertise in terms of contract regulation. It was not until the mid-1990s that national mechanisms put an end to the abuses observed during the awarding of contracts and the shortcomings denounced regarding the lack of monitoring of the same contracts. The legislative arsenal put in place in 1993 and 1995 quickly resulted in an interruption in the growth of delegated management. The creation of the first urban communities competent in water in the early 2000s marked the beginning of the decline in delegated management. Public management has steadily increased since then, to the point that the resumption of water services under public management is now at the top of the list of commitments made by candidates for local elections. It is not a matter of going back on the recent achievements of delegated management (full cost pricing), but rather of including the management of water services within the framework of a local policy of common goods from which emerges water resources. However, the very principle of profit is excluded from the management of the commons, as it was 150 years ago when it came to implementing a public hygiene policy.

Conclusion: towards a collaborative water governance?

The "*communitarisation"* of drinking water services turns a long page in the history of water services in France. The invention of a *communauté* water service, financially autonomous, and applying a tariff whose level is acceptable to all users, thanks to the equalization of the costs of many former communal or *syndicat* services, urban and rural, remains a high-risk political bet.

We have tried to show how this "*communautarisation"* is a test, especially for the rural and small town services, dependent, since their creation, on the public expertise of the State engineers. It is also undoubtedly a test for the private operators. They have lost their competitive advantage since the territorial and decision-making fragmentation has been resorbed. As a result, the market for private management has shrunk considerably. It could be assumed that the two water multinationals would reposition themselves in markets with higher benefit (advanced treatment of potabilization) (Brochet and Pecqueur, 2013), or other sectors (energy for Suez and transport for Veolia). However, the recent takeover of Suez's water activities by Véolia indicates that there may no longer be enough room for two operators in France, in the short term. In any case, the institutional evolution of water services is transformative. Operators must demonstrate a great "territorial agility", and reposition themselves as contributors of solutions to *communautés*, regardless of the management model retained, on the small as on the great cycle of water, both now under *communautés* responsibilities.

The challenges posed to public expertise are also sizeable. The eminently political dimension of the decision-making process of the *communautés* makes the predictions risky. The decision on how to manage the *communauté* water service will result from a multilateral decision-making process, involving the elected officials of all *communauté* members, engaged in permanent negotiations, in relation to the many competences of the *communautés*. Reignier rightly assimilates these negotiation processes to "tournaments" from which emerges a consensus that contributes to the construction of the political identity of the *communauté* and its common goods (Reignier et al., 2010). To the binary choice between public and private management, both requiring public expertise, could succeed a collaborative governance resulting from the repositioning of local policy makers, private operators and users.

The key word of this collaborative governance could be multimodality. In all these forms, multimodality requires an adaptation of public expertise.

Multimodality concerns first the management models. Indeed, *communautés* are not required to unify the management of their water services and can practice multimodal management, thus being publicly managed in some parts of its territory, and privately managed in others (AMF, 2016). As a matter of fact, the oldest urban *communautés* have not all standardized the management of their water services, like that of Nantes, which promotes the emulation of public and private management operating on its territory. In 2014, 25% of *communautés* managed their water services under several delegation contracts against 18% under a single delegation contract and 18% by mixing private and public management (ONSEA, 2017). Learning integrated organisation takes time and the multimodal management of the *communauté* water service can, as a temporary solution, end up lasting and lead to a relative status quo of management models (Loubet, 2012).

The multimodality of water services also refers to the joint supply of water and energy by a local public company, owned by at least two *communautés*. This limited company (whose shares belong entirely to *communautés*) is similar to the German StadtWerke, in particular because it allows a number of activities to be carried out, if they are complementary, for example production and / or supply of energy and water (DGCCRF, 2014). The joint production of water and energy is made plausible by the deregulation of the energy market and the multiplication of renewable energy

production projects (solar or wind) carried by the *communautés*. The cost of energy is, together with the payroll, the first operating cost of a water service (30% on average). The use of renewable energy would thus reduce the recurrent costs of water services, limiting or even neutralizing the effect of investments in renewal (rural) or security of supply (urban) on water tariffs. The prospects for development of local green energy are all the stronger because, as Dupuis says, the territorial organization that is played out at the level of the *communautés* is not only "for the project of realizing infrastructures but to answer complex questions including sustainable development." (Dupuis, 2015, p.26)

A last spring of the multimodality of water services touches their technical support, the network. The renewal of 900,000 km of network requires investments that rural *communautés*, by far the first concerned, will be reluctant to charge to their users. However, individual initiatives to complement the supply through network already multiply. They range from the purchase of rainwater harvesting equipment to water its garden or supply its toilets (Hellier 2015a) to the well drilled in one's garden (Montginoul, 2009). If little has been done to accompany this society search of a greater autonomy and water-saving use, more could be done to limit the investment in network renewal, considering that only 1% of water supply is used for drinking purpose, and that flushing toilet consumes, on average, 30% of household drinking water. Thinking an alternative to the all-network is not just a technical question (Hellier, 2015b). The challenge is to develop a *communauté* water policy in an inclusive way (Ghiotti, 2006). Considering users as co-producers of services, or even, as in the case for renewable energies via crowdfunding platforms (Lendosphère, Enerfip, Lumo, etc.), as contributors of capital, would reinvent the governance of local public services.

The challenge of public expertise is therefore no longer to prove that it can do as well as private expertise but that it can support the ongoing transformation of water services in an inclusive manner and by taking advantage of the existing private expertise.

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