

WORKING PAPER

Water services: what are the main challenges?



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Local public services: Facts, experiences and prospects

Water services: what are the main challenges?

Synthesis Report

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The CIRIEC International Scientific Commission “Public Economy, Public Services” has for two years now embarked on a series of researches on local public services bearing fruit in national sectoral monographs.

The water sector is one of the sectors analysed; a first synthesis of 9 monographs (7 from European countries, according to the contributions of the national sections of CIRIEC International - Austria, Belgium, France, Germany, Italy, Spain, Sweden, and one from Japan and Algeria) maps out the diversity of national situations and the broad outlines of the current trends and developments, even if we regret the absence of studies from Central and Eastern European countries. A summary table of national studies is drawn in the annexe to this report.

Water sector embodies a series of social, technical, economical and environmental features that must be taken into consideration in any analyse: it is a vital, basic good, indispensable for life, a “common good”, a service which is a matter of what European Union calls “services of general interest”; it is a “natural monopoly”, because of the prohibitive cost of duplicating distribution networks of water and wastewater collection; moreover, water quality obligations require a relative proximity between production and consumption and the costs of long distance transport are high; distribution networks of drinking water (and waste water) are local networks, rarely interconnected; water sector has strong potential for positive externalities (if water is available everywhere, of good quality, accessible to everyone, etc.) or negative (in reverse situations). Therefore, we cannot analyse water sector in the same way as other products or services.

Foreword: the European Community framework

Since the 1970s the European Community has issued a certain number of directives concerning water, mainly with an eye on the protection of public health and then the environment. More particularly it has enacted ambitious pro-quality and anti-pollution standards.

A distinction can be made between three phases of European directives:

- a first generation, during the period 1973 to 1988, concerns the protection of the quality of water used for human activities (1980 directive relating to the quality of water intended for human consumption, amended in 1998);
- a second generation of directives, from 1988 to 1995, centring on the prevention of pollution (in particular a directive of 1991 concerning urban

- waste-water treatment that set an agenda for the construction of wastewater treatment plants in all urban areas);
- the third wave led in particular to the Framework Water Directive of 2000, which laid down the general principles of production and management of water and updated the provisions concerning the quality of water and protection against pollution.

These European directives have set higher quality standards for water that represented challenges for the authorities in charge of the distribution and purification of water in the various countries of Europe.

Community water policy was thus founded not on the creation of an “internal market”, but rather on the respect of ambitious quality standards based on public health and environmental protection standards.

This approach was encouraged by leading service operators. Since the management of water and its quality relies on increasing technical refinement, they actually have the skills to offer solutions to the organising authorities solutions and thus to gradually extend their implementation.

The preamble of the Framework Water Directive of 2000¹ states that “drinking water is not a commodity just like any other.” At the same time, the directive introduced economic concepts into environmental legislation, demanding Member States to produce, since 2004, economic analyses of water consumption and to introduce the principle of complete cost recovery (starting with 2010).

It should also be pointed out that, in 2001, the Council of the European Union accepted that “all persons have the right to a sufficient quantity of water to meet their essential needs.”

While the sectors of electricity, telecommunications, postal services and transport have undergone major consecutive transformation in the liberalisation process, the water sector, sewage and drainage have thus by far been treated differently.

This has mainly to do with the fact that the responsibility for the organisation of water management in all European countries is devolved to municipalities (or local institutions) and that there is quasi no long-distance water transport and, hence, no interest in interconnection or in the creation of a unified “internal market”. The situation is similar in Japan and not very different in Algeria.

¹ http://europa.eu.int/eur-lex/pri/fr/oj/dat/2000/l_327/l_32720001222fr00010072.pdf

Therefore, there is no imperative European liberalisation policy for the water sector, that is to say, for any systematic compulsory exposure to competition. Each Member State of the European Union, and each local authority responsible for the organisation of the water and sewage service, has its own policy - more often developed in a pragmatic way. However, there is a general and progressive tendency towards a slow but steady, circumspect development of delegated management to private undertakings.

In Japan and Algeria, the public management of water by municipal governments is dominant. In Japan, the rate of outsourcing to private or other management forms it to be noticed in large water supply business, while in Algeria, the delegated management existed in only four of the biggest cities and it is only partial (modernisation of urban infrastructure, management, training and know-how transfer) and highly controlled by the State.

1. Organising authorities. Regulatory agencies. Relations between organising authorities and operators

Throughout Europe and in Japan, local communities (municipalities/communes) have borne responsibility for water supply to their inhabitants, for the treatment of the resource, the management of effluents and waste water. However, the general term “commune” masks some very substantial differences in Europe, if we only consider the existence of 290 municipalities in Sweden (8,975,000 people/441369 km²) and of more than 36 000 in France (62,130,000 people/544000 km²). In Algeria, the State continues to play a very important role; there is almost no decentralisation in the field of water management – local communities have a limited role in the construction of the secondary networks; public bodies, through their regional dismemberment, ensure the water and waste-water provision (in about 40% of Algerian communes water services are ensured by communal *régies*).

If we apply to water sector the notion of “organising authority”, whose responsibility is to define the objectives that a given sector should seek to attain, the rules that it should respect, the form of service organisation and regulation, it should be noted that in all Europe, excepting Sweden, there is a tendency towards the increasing of their territorial mesh, with the phenomenon of intercommunality, the role assigned to regions (in particular in Italy) and even to the State. In this respect one may speak of co-regulation and multi-level co-regulation or governance.

The modes of organisation and management of water services remain, however, strongly correlated with the choices of public or delegated management. As we

will see, in-house local management is largely dominant, except in France and Spain. In these cases, the distinction of roles and responsibilities between “organising authorities” and “operators” is not always made.

The relations between organising authorities and operators are thus different and they are evolving according to management forms and the procedures of entrusting the management of the service, symmetries/asymmetries of information, competence and capacities of negotiation, contracts’ length, etc. In all countries the contractual relations co-exist with the non-contractual ones with differences between countries and within countries.

In France and Spain, most relations between organising authorities and operators are contractual, while in the other countries organising authorities at municipal level are usually the operators of water service or they contract service management to public entities (companies or associations) they own.

There are no special regulatory agencies for water or waste-water in Austria, Spain, France, and Italy. In France and Italy, there were several proposals and projects for setting up a specific regulatory authority but they were not adopted. In Algeria, the 2001 Water Act provides for the creation of a regulatory authority for water and waste-water services, which was created in 2008 under the authority of Water Resources Department; however, its competences are still limited.

2. Forms of management and operators’ status. Reversibility of the management modes of operation

In the whole Europe (apart from England because of the total privatisation of this sector) and in Japan the municipalities or their groupings have once known or indeed still have real freedom in the choice of management mode (public management, direct management, various forms of public-private partnerships, etc.). Unlike the fact that certain services of the European Commission consider *in house* as an “exception”, which nothing in the treaties allows to argue, *in house* management was and remains the dominant mode of water management in EU Member States.

In five of the analysed European countries (Austria, Belgium, Germany, Italy, Sweden), in Japan and in Algeria, operators are for the most part public, essentially under the form of small local enterprises (some particularities in Algeria).

However, in France, delegation to private enterprise took the ascendant several decades ago and, much more recently, in Spain. In both former cases, delegation led to the existence of an oligopoly of large groups that dominate the market. Thus large private groups and small public enterprises now coexist in Europe.

In France, the problems posed by the delegation of services are well known and analysed (asymmetries of information, incomplete contracts and problems of renegotiation, duration of contracts, calls for tenders and competition, etc.) and a series of reforms has been undertaken over the past twenty years without the disappearance of those asymmetries, even if the development of intercommunality has yielded new means of steering and control for public authorities and the provision of public services later returned to the municipal sphere.

Reversibility cases from delegated management to “in house” management are also to be found in Spain. In Italy, on July 19, 2010, one million four hundred thousand signatures of Italian citizens were brought by the Italian Forum of the Water Movements to the highest Italian Court in Rome, demanding three referendums. The objective is to bring about once again water public management. In Japan, the re-examination of management forms by local authorities increased the outsourcing rate but no case of reversibility was noticed. Despite management deficiency and due to the State competence in fixing prices, the delegated management knew a weak development in Algeria, which is also a country with a much less developed access to water and waste-water services compared to Japan or European countries.

In the recent years, structural changes took place in the public sector of most countries to create more independent organisations, including private law status (“formal” privatisations) of public undertakings. In Algeria, in the context of the partial delegation process of water and waste-water services to external operators, four new companies were created in five of the biggest cities (Alger, Oran, Constantine, Annaba and El Tarf). The legal statuses of the operators are diverse and they also vary from one country to another. In France, Germany, Italy, Spain (countries of Roman law) they may follow a public or a private law regime.

As we will see, whether in terms of organisational efficiency, quality, accessibility or price, there is no proven superiority of one mode of management over the others. There are “in house” managements that are efficient and others that are much less; there are private operators that are real partners of public authorities and others who tend to abuse their information asymmetries.

3. How are the stakeholders represented and how do they participate in the operation of the system?

In some countries, there are different mechanisms for representation and participation of stakeholders in the operation of water system. However, formal specific forms of participation are not ensured for all stakeholders. Public authorities are the main form of representation in all countries (they are the only representatives of users' interests in Algeria, except some associations and formal records of grievances). In Spain, the National Water Council is a body of consultation and participation gathering representatives of the State, Autonomous Regions and local administrations, River Basin Authorities, economic organisations, trade unions, business representatives and non-for-profit organisations. The Spanish population may use claim services and specific call centres. The distinct representation through labour unions is also noticed in the Spanish water sector.

In France, at communal level, users may participate in the Consultative Commissions for Local Public Services. In Spain, claim services are organised and a Charter of commitment to service quality concerns about half of the population.

4. Quality, demand and accessibility

In Europe, European Community directives hammered out on the legal bases of protection of the environment and public health and also consumer protection. The accent is put on the quality of water and the treatment of waste and waste water, all the more necessary if taking into account the water cycle. However, it still remains to map out the methods and criteria of appreciation of the quality, as the indicators allow the use of piloting tools, certain studies stopping short at reference to opinion polls. Water losses are frequently regarded as an indicator of water quality (especially in Germany, where losses are the lowest in Europe, averaging out at 6.8%; against 25% - 40% in Algeria, for example).

Water demand levels also differ very considerably from one country to another and their characteristics as regards resources, geographical and climate. Thus, 56% of water is consumed by industry in Austria as against 25% in Italy, 20% in Germany, 13% in Algeria and only 9% in France and 5% in Spain. However, Germany consumes less than 4% in agriculture, Austria 5% and France 14%, as against 50% in Italy and as much as 65% in Algeria and 68% in Spain. In Japan, water service demand by households has been decreasing by the progress of low birth-rate and by the shift to the water saving facilities while in Algeria the

permanent provision of water (24 hours/day) is ensured for only 10% of the population served.

In the countries studied, connection to supply, mainly to purified water, came out at around 90% (large disparities in Algeria, between 42% and 97%), but remains less than 70% for drainage and sanitation in Italy and 86% in Algeria (more than for water services, but important disparities, between 60-99%).

5. Investments

The data collected on investment is very uneven and does not allow the drawing of general conclusions. It will no doubt be necessary to begin with understanding the national and regional diversities that concern the resource: Is it plentiful or scarce? - What is its quality? - What is the situation as regards accessibility? We cannot appreciate the real stakes of investments otherwise than by reference to these situations and to the assigned objectives.

In the countries analysed we note a trend towards the development of cross financing in investment, part put up by the users, with the participation of public institutions, now including the European Union. In Japan, current operations and costs for necessary facilities shall be covered at the charge of users; public subsidies are decreasing.

6. Charges and prices

There are substantial price differences between countries and, in certain cases, even within countries, account being taken in particular of the disparities of the costs and the quality of the resource. Given the large differences in costs, relating to the resource, its accessibility, its quality, etc., price assessments are meaningful only in time, and not in space.

Without witnessing the reduction of structural disparities, we note a general tendency as regards the development of integrated schedules of charges for water-sanitation-treatment.

Certain countries or regions have introduced schedules that increase as consumed quantities increase, this with a view to containing consumption (Brussels Capital Region, Italy).

In a more general way there is a growing tendency towards the application of the principle of "*Full cost recovery*" fixed by the Community Framework of 2000,

with Sweden leading the field (99%). Japan introduced the “*self-support accounting principle*” (costs for building necessary facilities and managing their daily operations shall be covered at the charge from their water service users). It reveals affordability problems with respect to a vital product, especially for users that have paying difficulties. In Algeria, the State fixes the water public service price scale according to the principle of progressive tariffs depending on the category of users concerned, the quantity of water consumed or the quality and quantity of waste water. The Algerian State subsidizes about 2/3 of the price of water and waste-water services.

Certain countries and regions also apply social tariffs (Austria, Wallonia, part of Flanders, Algeria for the essential needs of households) or reduced tariffs (in Italy, for the so-called essential consumption for private use) so as to allow access to disadvantaged social strata. The prices in Germany are considered acceptable. Often, investment programs determined the increase of prices (about 50% in Austria during the last decade, 10% in Sweden, progressive increase in Italy and in Japan).

7. Elements of conclusion and issues

The organisation and regulation of the water sector have undergone a series of sensitive developments and even transformations. Be that as it may, if we overlook the crass wholesale privatisation in England, the changes seems rather more gradual. And, unlike other public service sectors (telecommunications, energy, transport, postal services), they are not the upshot of restrictive Community directives in the framework of the internal market. In Europe, only the principle of “*full cost recovery*” of the Framework Directive of 2000 has a direct, convergent effect as regards the organisation of the “markets”, but the requirements of quality and protection of the environment have a structuring role everywhere.

The marked diversity of situations allows the relevant local and regional authorities broad responsibilities and room for manoeuvre with a tendency toward an increasing role for the intercommunals and regions. In Japan, despite the re-examination of management forms by local governments, as a whole, the speed of introduction for principle-of-competition in this sector is rather slow compared with other public sectors. In the recent decades, Algeria made important efforts to increase the rate of access to water and waste-water services but important disparities subsist between different regions.

Seven key issues can be brought out

1. The diversity of resources, the access to resources of quality, to distribution and treatment facilities (according to physical and human geography) bring out the essential dimension of **territorialisation** and, hence, the necessary territorialisation of the competences/prerogatives of organisation and regulation. That is to say, there cannot be any “Integrated European Internal Market” within the meaning accepted by the economist, but rather **“territorialised markets”**. True enough, there are transnational operators, but it is not by shifting the organisation mesh to Community level that we will be able to ensure control of their participation.
2. Territorialisation is not the same when we take into account catchment areas, “production” and treatment plant, distribution, drainage and sanitation networks, etc. The **governance of water can therefore only be multi-level governance**.
3. Therefore it results that the **structuring paradigm of the governance of water should be cooperation** and not competition.
4. The interest of accessibility and affordability of this essential and vital product and service prompts the question of **Community definition of a “universal service”**. But what then might be its contents in the context of territorialisation? The situation is different in the sectors of telecommunications, postal services and electricity. Guaranteed quality standards for all? They are in place for the most part. Can we arrive at a common definition of affordability?
5. At this stage of the research there is not yet any demonstrated and systematic superiority of any one form of organisation, regulation and management. Whether the management is in-house or delegated, the most important issue lies in the control and regulation modes to reduce information and expertise asymmetries between public authorities and operators. A key challenge is to guarantee the **competent public authorities’** (“organising authorities”) **freedom of choice of management modes**, and to provide them with the tools to ensure the **reversibility** of their choices.
6. All cases are confronted with the problem of **asymmetries** of information, competences, and expertise between organising authorities and operators that result in flagrant inequalities. If we cannot eradicate them altogether, then we could no doubt limit them and reduce their effects through the **intervention of all the stakeholders in the systems of water governance**, in particular in terms of regulation and evaluation, whatever the management mode, public or private.
7. These challenges fall within the **global context of increasing in more sustained quantitative and qualitative water issues**, in relation to concerns about climate change and sustainable development.

It is stated by the vote of the UN General Assembly on July 28, 2010 of the resolution stating that “safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights” (Resolution n° A/RES/64/292²); but also by the declaration of Catherine M. Ashton, High Representative of the EU for Foreign Affairs and Security Policy, on the occasion of World Water Day of 22 March 2010, for which “even more than being related to individual rights, access to safe drinking water is a component element of the right to an adequate standard of living and is closely related to human dignity”; and “the European Union reaffirms that all States bear human rights obligations regarding access to safe drinking water, which must be available, physically accessible, affordable and acceptable”³; or, even more, by the one million four hundred thousand signatures of citizens in Italy asking for referendums on water and its management.

² EU countries abstained: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Romania, Slovakia, Sweden, United Kingdom

<http://www.un.org/News/Press/docs/2010/ga10967.doc.htm>

³ <http://www.eu2010.es/en/documentosynoticias/declaracionespesc/mar22ashtonagua.html>

Annex

Water services: what are the challenges?

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Legal framework	European law: Directive 2006/118/EC ⁴ , Directive 2006/7/EC ⁵ , Directive 2000/60/EC ⁶ , Directive 98/83/EEC ⁷ , Directive 96/61/EEC ⁸ , Directive 91/676/EEC ⁹ , Directive 91/414/EEC ¹⁰ , Directive 91/271/EEC ¹¹ , etc.								
	Federal Water Act (<i>Wasserhaushaltsgesetz WHG</i>) of 1957, amended Sewage Charges Act of 1976 (<i>AbwAG</i>), amended Länder' laws Municipal regulations	Federal Constitution B-VG (<i>Bundesverfassungsgesetz</i>) Federal water Act (<i>Österreichisches Wasserrechtsgesetz, WRG</i>) of 1959, amended Environmental Assistance Act Federal provinces and municipal law/regulations	Water policy devolved to the three regions - different legal frameworks Brussels-capital: Ordinance 20/10/2006 Flanders: Decree 18/7/2003 Wallonia: Code on water 3/3/2005	Water Act, amended (<i>Texto Refundido de la Ley de Aguas</i>) of 2001 Act on the local regime (Act 7/1985)	Act n° 2006-172 of 30 December 2006 on water and aquatic medium Act of 2 February 1995 relative to the protection of environment Code of the territorial communities "Sapin" Act of 29/1/1993 relative to the prevention of corruption, etc.	Act n° 36 of 1994 on water resources April 2006 – new system of environmental regulations	Public water and waste-water Plant Act (2006) Environmental Act (1999) Health Act Food Act	Water Works Act of 1957 amended Act on Municipal Enterprises of 1952 Act on promotion of water source development of 1961 ¹²	2001 Act on the management, control and disposal of waste 2005 Water Act Code of territorial communities 2001 Act on the management and sustainable development of the territory 2003 Act on the protection of the environment in the context of sustainable development 2006 Act concerning the prevention and fight against corruption

⁴ Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration

⁵ Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC

⁶ Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy

⁷ Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption

⁸ Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control

⁹ Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources

¹⁰ Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market

¹¹ Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment

¹² "Water utility business" is defined as supplying water to more than 5000 population; "Small water supply system" is defined as supplying water up to 5000 or less population - special legal settings

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Organising authorities Regulatory agencies	<p>Ministry of Environment, in principle the superior water authority.</p> <p>District committees or regional authorities are responsible for the regional water management planning.</p> <p>Monitoring, technical advice and executive functions are within the competence of the lower water authority (cities, towns, urban and rural districts, water management offices).</p> <p>A Federal working-group (LAWA) is constituted to ensure the harmonisation of Federal State water laws.</p>	<p>The main water-juridical competence lies with the federal provinces, both in legislation and execution (provincial government office, district administrative authority).</p> <p>Federal State competence is limited.¹³</p> <p>The operation of water and wastewater services is devolved to municipalities; they ensure the majority of services.</p> <p>There are no regulatory agencies for water or sanitation in Austria. Apart from that federal and province laws are the only regulatory measures.¹⁴</p>	<p>The water policy is federalised and entrusted to the regions, so the organisation is particularly complicated.</p> <p>The regions have assigned a series of missions to public enterprises.</p>	<p>Each of the stages making up the “integral water cycle” may fall under the tutelage of a different level of Government (municipalities, autonomous communities, the State).</p> <p>The autonomous communities play an increasing role in the regulation of the water supply service:</p> <p>In water: 51% of rules issued by municipalities, 49% by autonomous communities, respectively 68% and 32% for sanitation, 9% and 91% for wastewater.</p> <p>Regulatory bodies at</p>	<p>Responsibility of municipalities or of inter-communities (36 000 communes, of which 30 000 have less than 2000 inhabitants; 15 000 water services).</p> <p>Several proposals and projects for setting up a national water regulatory body but nothing established.</p>	<p>Public property of water resources.</p> <p>Devolution of many functions for service organisation to regions.</p> <p>Local bodies (municipalities and provinces), key actors in the implementation process.</p> <p>Regulation</p> <p>Control Committee of water resources - Coviri¹⁵ established within the Ministry of Environment.</p> <p>The Observatory of water services – provides relevant information and feedback.</p>	<p>Compulsory responsibility of the local authorities. The municipalities are responsible for parts of the services, i.e. planning for and constructing water and sewage plants as well as the operation of the services.</p> <p>River Basin District Authorities work and cooperate with municipalities.</p> <p>Important geographical and demographical differences.</p> <p>The responsibility of water protection falls under the Ministry of Environment. The supervision of the quality of</p>	<p>Ministry of Health, Labour and Welfare.</p> <p>Cities, towns and villages.</p>	<p>At central level, Department of Water Resources.</p> <p>At deconcentrated level: 48 county hydraulic directorates.</p> <p>At intermediate level: two public bodies (Algérienne des Eaux-ADE and National Office of Waste Water-ONA).</p> <p>Law confers important competences on communes in water and waste water management (decentralisation process) but, in fact, their competences are limited to the accomplishment and modernisation of the local water and waste-water networks.</p> <p>Water Act</p>

¹³ Water rights, control and conservation of waters, construction and maintenance of waterways, etc. See, Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW), Ministry of Health, Family matters and Youth Welfare (BMGFJ), Federal Office of Environment, Federal Office for Water Management

¹⁴ The operators themselves need to self-evaluate water quality at some authorized institute.

¹⁵ A project of 2006 provided for the creation of a specific authority for the regulation of water and wastewater services

				central and regional level. No water regulatory agencies at municipal level.			drinking water is divided between all the three administrative levels (the Environmental Protection Agency, county and local administration).		provides for the creation of a Regulatory Authority for Water and Waste-water services; it was created in 2008 under the authority of Water Resources Department. But its interventions are still limited.
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	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Management modes. Statute of the operators. Example(s) of reversibility of the management modes of operation (between “in house” and delegation)	Water sector is to a high degree organised at decentralised level, very fragmented, small scaled, as regional public monopolies. Water supply and wastewater management are core tasks of public services of general interest within the competence of municipalities. Almost no liberalisation and competition in water sector. There are about 6400 water utilities and about 7000	Small average scale of operational water units. Management mode according to the decision of the municipality: <i>In house</i> (dominant - municipal providers 76% water and 74% sewage; associations 8% water and 19% sewage - important role in several federal provinces, cooperatives 12% water - important for sparsely populated areas - 5% sewage) <i>Delegation:</i> delivery or service contract and concessions – but in Austria private	Natural monopoly in production, distribution and disposal. Each region has its own players in the cycle of water market; certain companies integrate several activities (e.g. production - distribution). Some public enterprises are charged by their region with the application of water policy.	Reserved services (monopoly) involving many actors. The supply and treatment of water are directly assigned to the municipalities. Usually, distribution activity is unlike that of treatment, and the providers of services are therefore different. However, is not uncommon to grant integrated management (in particular in small and medium size municipalities).	Freedom of choosing the management modes: direct management (<i>régie</i> , in house) or delegated (concession, lease contracts, management contracts, commissioner management contracts, public procurement) Delegated management introduced in the XIX th century; fast development in 1960s and	Water services organised on the basis of « Optimal territorial areas » (92 OTA - population and territory that may differ - 2 standard types: 48 OTA Consortium between local authorities and 43 OTA Convention). Public tender is the standard procedure for entrusting water services – dispensations in specific cases. A large	Various geographical and demographic conditions of provision of water and wastewater services. Municipalities are responsible (with exclusiveness) for the provision of water and sewage services and for owning the physical assets (works, networks and treatment plants). For	In principle, operated by the municipal governments (cities, towns and villages) Management types of water supply utilities: - Public management dominant (prefectures’ management, municipal management, town and/or village management, co-operative and the broader-based cooperation management)	Water and waste-water management are strongly centralised and, in fact, no freedom of choice of the mode of management. Since 2005, a sort of partial delegation (know-how transfer, infrastructure modernisation, etc.) under the strong control of the State in the benefit of four enterprises (in the four biggest cities).

<p>wastewater companies.</p> <p>Most companies, in particular the smallest ones, are owned by municipalities (organised as a single service or as part of a municipal multi-service). Isolated privatisations of some municipal water companies (no national action); municipality rests responsible of the service operation and keeps an important influence on the strategic decision (at least 50.1% of the capital of the new companies of private law - PPP).</p> <p>Only few private companies are serving some of the urban agglomerations.</p>	<p>participation is still very scarce.¹⁶</p> <p>In the sewage business, while the municipalities and cooperatives are virtually the only operators and owners of canal systems, there is a wide variety of organisational forms involved in sewage plants (municipalities and associations are the most common owners).</p> <p>Distinction between public law status [different forms of undertakings¹⁷, water cooperatives¹⁸ and water associations¹⁹, sewer and wastewater « neighbourhoods »] and private law status²⁰ [trade companies with public or mix capital, PPP²¹]. In</p>	<p>Reorganisation of the water sector in the recent years.</p> <p>Mainly public actors: public undertakings or local-authority services; intercommunals in various forms; regional public companies.</p> <p>Very few private operators</p> <p>In Flanders, since 2005, water distributors have been obliged to guarantee the purification of waste water.</p>	<p>15% in direct management through municipal councils, autonomous administrative organisations, public companies.</p> <p>In large municipalities (more than 100 000 inhabitants, including metropolitan areas), mainly public entities, either by the public authority, either by public companies (about 40% of the whole population).</p> <p>Delegated management 85%: 60% through concession²², commissioner management, mixed undertakings.</p>	<p>1970s. Today delegated management for: 79% of the population for water and 53% for wastewater (oligopole: Générale des eaux – Veolia Environnement and Lyonnaise des eaux – Suez environnement - integrated multi-service groups that have territorial hegemony).</p> <p>Recently, some returns to public management. However, public operators serve 21% of the</p>	<p>majority (64) of public operators on the market; a much more reduced number (31) of mixed companies and only 5 cases of delegation to public trade companies.</p> <p>On July 19 2010, one million four hundred thousand signatures of Italian citizens were brought by the Italian Forum of the Water Movement to the highest Italian Court in Rome, demanding three referendums. The objective is to bring about once again</p>	<p>different operations and activities they are allowed to contract external suppliers to act on their behalf.</p> <p>Responsible entities (in 2000): municipal unities for 252 municipalities, municipal owned companies for 39 municipalities, intercommunal companies for 8 municipalities, management contracts for 7 municipalities</p> <p>Many</p>	<p>- Private management/ other</p> <p>Re-examination of management forms by local governments</p> <p>Outsourcing from a viewpoint of financial efficiency – enforcement rate of outsource (60-80% in the enterprises of all prefectures, government ordinance large-sized cities, etc., but about 40% in water supply enterprises of cities, towns</p>	<p>Water and waste-water management are entrusted to several European groups (SUEZ Environment, SEM, AGBAR, GELSEN-WASSER) under the supervision of Water Resources Department.</p>
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¹⁶ Except EVN or Salzburg AG. 4% for water and 2% for wastewater

¹⁷ An usual forme is the public utility company

¹⁸ Important tasks of drinking water provision

¹⁹ Tasks concerning more than one municipality. Foundations and cooperatives or water associations play an important role in some Federal provinces (Vorarlberg, Tirol, Burgenland, Salzburg and Upper Austria).

²⁰ Most private law undertakings are exclusively owned by local corporative organs (*Gebietskörperschaften*)

²¹ Few cases; the private partners in these PPPs are mostly subsidiaries of public/publicly-owned companies.

²² The concession represents almost 60% of all forms of delegated management.

<p>During 1997-2005, remarkably structural changes took place to create more independent public organisations.</p> <p>Different organisation modes: municipal departments (<i>Regiebetrieb</i>), semi-autonomous municipal agencies (<i>Eigenbetrieb</i>), public law incorporations, inter-municipal agencies or soil management association, communal enterprise of private law (SLR), PPP.</p> <p>Municipal undertakings and PPP dominate water provision; PPP developments.</p> <p>Semi-autonomous municipal agencies, inter-municipal agencies and associations dominate wastewater sector.</p>	<p>recent years, corporatisation of municipal tasks. A large majority of enterprises with a private law organisation are held exclusively by territorial corporate bodies; also, most municipal providers operate under private law (water and waste water).</p> <p>Local monopoly – compulsory connexion and use – households cannot choose a provider; they are connected to local network and have to use the local service.</p> <p>There are quite a few cases of reversibility from in-house to delegation, but the author is not aware of any case, where a delegated/out-contracted service is taken back in-house.</p>		<p>Indirect management²³: dominant in water provision and treatment (more than 85% of the market) and important tendency to indirect management. Repartition of the market between two major private operators (70% of the market): FCC Group et Agbar Group. PPP (joint venture) is more common in the context of growing population sizes.</p> <p>At least one case of return to public management from private one in a municipality in the region of Andalusia.</p>	<p>population with water and 47% with wastewater.</p> <p>Reversibility of the management modes of operation from “in house” to “delegation”: Grenoble, Paris.</p>	<p>water public management.</p>	<p>« small » entities Most activities are run or operated by municipalities but the practical capacity is often bought externally.</p> <p>The last decade cooperations between municipalities are more widely used.</p> <p>Competitive calls for tender in the small communes; pragmatic approach.</p> <p>No evident empirical differences according to the management modes.</p>	<p>and villages etc.; less than 50% in the small water supply business).</p> <p>There has been no example of reversibility of the management modes of operation (between “in house” and “delegation”) in Japan.</p> <p>However, the local Waterworks Bureau themselves can take charge of the operation again by stopping the designation of each private entrepreneur or its joint group when the designation time limit comes, for instance.</p>	
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²³ In the wastewater networks, the delegated management through concession concerns maintenance activities.

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Relations between organising authorities and operators		The organising authorities with respect to responsibility are the municipalities, who usually are also the operators of water provision. In the two other relevant cases – publicly owned private enterprise and water associations – the municipality contracts out water provision to another (public) entity, which then operates the service.		The main type of relationship is a contractual one, for a period which is around 25 years in most of the concessions (In Spain, the concession represents almost sixty per cent (59%) of all forms of indirect management – the dominant way of management in the Spanish market-) (in % of population served).	Information asymmetries Incomplete contracts Renegotiations Contracts' length Call for proposals competition Several reforms since the 1990s (fight against corruption, reinforcement of the competition, transparency, inciting mechanisms) Within intercommunality, powers of negotiation and control.		The responsible authorities are the municipalities. When the services are conducted with an in-house solution (most common) this relationship is not problematic. When the operations are contracted out or organised in a municipally owned liability company, the relationship has the character of a purchaser-provider relationship.		The main authority is the State and the essential part of water and waste-water management is ensured by public enterprises/bodies. For the four biggest cities, contract of delegation for 5.5 years following calls for tenders or by mutual agreement.

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
How are the stakeholders represented and participate in the operation of the system?		The main transmission channel for stakeholder interests is the local government, which bears the responsibility for the service. Except for labour unions, there is hardly any formal stakeholder representation.		There are different channels of participation: - the National Water Council - body of consultation and participation, made by the General Administration of the State, Autonomous Regions, Local Administration (municipalities), the River Basin Authorities, professional and economic organizations (state-wide and representative related to the sector), trade unions and business (state-wide and representative) and non-profit organizations (state level and whose object is constituted by the environmental advocacy). - Customers - almost the entire population served have a claims service. Charter of commitment to quality service: half the population has a letter of commitment to the customer including damages for breach thereof. Specific call centre services/call centres: the majority of the population served, 90%, have this service, which can therefore be considered fully implemented as standard practice.	For users, Consultative Commissions for Local Public Services, but different competences according to communes.		Not any formal stakeholder representation.	Most of the Water Supply Utility Business organization themselves are corresponding to the Utility operator in Japan. There are only 3 exceptions of different utility operators where the Designated Managing System have been introduced in the Water Supply Utility Business (e.g. Waterworks Bureau, City of Takayama).	According to Water Act, it is the regulatory authority in charge to take into account users interests. In fact, some associations are active in the field of consumers' protection and environment but the process is not developed. The records of grievances are often symbolic (in fact, ignored).

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Demand	<p>In Germany, the water is abundant. Only 19% of total annual water reserve are actually used, of which 12% to thermal power plants for public supply, 4.1% to mining, manufacturing and agriculture (irrigation plays a minor role, precipitations are sufficient), 2.9% for water utilities. 81% of all resources remained unused (in 2006).</p> <p>57% of total water is used in energy utilities, 20% in industry, 8% for private households.</p> <p>Between 1990-2004 the volume of water provided diminished by 22% and the consumption by 15% (actually 122l/inhabitant).</p>	<p>The share of water usage in Austria:</p> <p>56% for industry</p> <p>39% for households and small undertakings</p> <p>5% agriculture</p>		<p>Irrigations 68%</p> <p>Urban demand 13%</p> <p>Cooling 14%</p> <p>Industry 5%</p> <p>Overall water demand in Spain amounted 35 323 hm³/year (2005). Increase in total demand to an amount around 44 000 hm³/year expected in 2015.</p> <p>Growing trend of individual consumption (lower where prices' increases have been higher).</p>	<p>Water is generally abundant (some local and temporal disparities)</p> <p>Production of electricity 56%</p> <p>Drinking water 17%</p> <p>Irrigations 14%</p> <p>Industry 10%.</p>	<p>With about 740cm/year/inhabitant (more than 2000l/day), Italy is on the top of the European drinking water consumers (average EU 15: 612/cm/year)²⁴</p> <p>Households consumption 14.21%; Agriculture 48.97%; Industry 24.86%; Energy 11.96%</p> <p>23% of total water resources came from the ground (13% EU average). On average, 31% of the collected water is purified</p> <p>In wastewater, the supply of primary treatment is guaranteed for 54% of demand, tertiary treatment for 44% of the demand. For 42% of the population the available wastewater treatment is not sufficient.</p>	<p>Total production about 310 liters/person/day, of which: 180 consumed by households, 130 by production, industry, etc.</p> <p>In the last years the consummation diminished with about 10%.</p> <p>The use of water (an average/year) is less than 1% of what would be available if necessary (but there are not sufficient resources of groundwater in order to serve the whole population).</p>	<p>Water service demand has been decreasing by the progress of low birth-rate and by the shift to the water saving facilities, etc. (see Figure 5 of the study)</p> <p>* For other purposes than households no data.</p>	<p>65% for irrigation</p> <p>22% households</p> <p>13% industry</p> <p>80-250 liters/day/inhabitant</p> <p>60% population served, of which: 10% 24 hours/day; 40% 1 day of two/more, between 8 and 15 hours.</p>

²⁴ The total amount of the collected drinking water is of more than 8.5 billions m³, about 300 l/person/day.

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria	
Quality and consumer satisfaction	<p>Very high quality of water provision and rather high satisfaction of the public (92% very satisfied or satisfied, in 2007). The water bill can be regarded as affordable (213 euros/year for the average customer).</p> <p>Leakage is often regarded as an indicator for the quality of drinking water.</p> <p>Water loss are diminishing with 38% since 1991; in 2004 the loss represented on average 6.8%. That is the weakest rate of loss in Europe.</p> <p>The good quantitative state²⁵ is realised for 95% of all groundwater bodies.</p>	<p>It was only after the implementation of water directive on water that the competent Ministry of Health, Family and Youth (BMGFJ²⁶) begin systematic analyses (every three years) on the quality of water, which is proved to be excellent, excepting some situations due to contaminations by agricultural pesticides.</p> <p>90% of the Austrian population found water quality either good or very good.</p> <p>Leakage is considered an important indicator of service quality. It diminished progressively from 11.1% (1990) to 9.5% (1997).</p>		<p>Population well appreciates the quality of drinking water in about 60% of cases (the level of satisfaction in the autonomous communities varies significantly).</p> <p>Loss of water in distribution networks is decreasing (in 2006) 16.7%.</p> <p>Important improvements in wastewater sector and sanitation.</p> <p>Degree of compliance with exigencies set out in Directive 91/271/EEC (76% of the population, and 13% in progress, in 2005).</p>	<p>The level of leakage in residential habitats is about 20%.</p> <p>In 2004, only 1% of water resources were used for drinking - this situation is changing.</p>		<p>Critical conditions of the water system (insufficient treatment and degradation of the infrastructure).</p> <p>The Italian citizens have little confidence in the quality of drinking water.</p>	<p>Good quality</p>	<p>A customer satisfaction survey of 2008:</p> <ul style="list-style-type: none"> - Quality of the tap water: 50.4% satisfied in all uses (mainly in towns and villages, people over 70 years old), 39.9% satisfied in uses other than drinking water (mainly females), 8% - Consumers' preference for drinking water: 37.5% satisfied (town and villages), 32% mentioned "installing water purifier in their houses to tap water" (big cities), 29.6% "purchasing mineral water etc. on behalf of tap water" (big and midsized city). 	<p>Relatively good quality, except the relatively high salinity in the West.</p> <p>In rural areas, the population prefers the consumption of water directly from the source; the quality is supervised by village committees.</p> <p>Some cases of outbreak due to contaminated water (diphtheria, cholera, etc.).</p> <p>No survey/investigation on citizens' satisfaction in terms of quality of water supplied.</p> <p>According to some studies, 44% good quality water; 44% satisfactory quality; 12% poor quality.</p> <p>Estimated water losses (physical and commercial): 40% for old networks.</p>

²⁵ Equilibrium between groundwater withdrawal and groundwater state.

²⁶ See the two water ordinances *Trinkwasserverordnung*, TWV and *Oberflächen-Trinkwasserverordnung*.

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Territorial accessibility	90% of the German population is linked the wastewater treatment plants with the highest EU-standard.	Since 1990 the percentage of access is between 83% and 90% in the provision of water and between 71% and 89% in wastewater.			In 2004, 99% of the population was served with drinking water and 78.8% was linked to the collective system of waste water. 19% of the population was equipped with individual installations of waste water.	The drinking water networks cover more than 90% of the population with no great differences among the geographical areas. Collection and treatment is unsatisfactory: 69%.	90% of the population linked to water and wastewater services.	By the end of 2008, water services coverage was 97.5% (compared to 26.2% in 1950). 100% coverage area of water services in Tokyo, Osaka and Okinawa prefectures while, in north, Akita Prefecture (89.9%) and in south Kumamoto Prefecture (85.9%) water services coverage.	Drinking water: 1184 millions m3 distributed; 668 millions m3 invoiced Average connexion rate: 90% (95% of the urban population, 70% of dense rural areas) Disparities between regions (connexion rate between 42% and 97%) but important progress (from an average of 78% in 1999 to 92% in 2007) Waste-water: average connexion rate: 86%; important progress (from 72% in 1999) Disparities between regions (60%-99%).

	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Planning and investments	<p>Federal Act on water stipulates planning instruments for water management and water and wastewater networks.</p> <p>Continuously high investment in public water supply (around 2.5 billion euros/year in the 1990s and 2 billions/year in the first half of this last century (about 65% into distribution networks, about 10% into the extraction and treatment).</p> <p>Important investments in wastewater (on average, about 5 billion/year).</p>	<p>The structure of the water sector finance is based on two pillars: direct tariffs and investment funds by the Federal State and provinces (variations between provinces; no provincial finance in Vienna). EU funds for water sector are available exclusively for some provinces²⁷.</p> <p>Extreme variation of investments costs.</p> <p>The estimations for the period 2007-2015 appreciate a diminution in wastewater services.</p> <p>Compared to recent high investments for constructions and facilities, the future investments are centred on reconstruction and restoring.</p> <p>Governmental aids stipulated by the Law of environmental assistance (<i>Umweltfördsewageerungsgesetz</i>) for protection against pollution, hygienic drinking water, economies of consummation, diminution of the environmental charge, the preservation of the natural water balance, etc.</p>	<p>Financing must be ensured by passing on the real cost of water on the consumer's bill (the cost of local sewage disposal is not yet integrated in the price of water outside Flanders and some communes of Brussels).</p>	<p>A National Plan for Waste and Water Treatment (1995-2005) stipulated significant investments to realise new systems of treatment according to EU exigencies.</p> <p>New National Plan for water quality (2007-2015) and actually a Master Plan (Masterplan) is prepared for 75% of municipalities and stipulates important investments in urban services.</p> <p>Investments sources: public or private operators, EU (39% public investments), central administration (ministry of environment 25% public investments), autonomous administrations</p>	<p>In 2006, 5.6 billion euros were invested in water production (886 euros /inhabitant).</p> <p>Municipalities and associations of municipalities are responsible for more than half of these investments.</p>	<p>Important investments in South and for the collection and treatment of waste.</p> <p>Prevalence of investments in maintenance (56.7% compared to 47.4% for new infrastructures) but in the last decade less important financing for the maintenance of networks because of the policies of diminution of public debts.²⁸</p> <p>An inquiry of 2006 shows that only 46% of the investments that were planned for the three previous years were accomplished.</p> <p>The structure of the financing for</p>	<p>Municipal competences for planning and construction of water and wastewater plants.</p> <p>The resources of municipalities for investment activities were reduced in the last 15 years.</p> <p>Half of water and wastewater system was constructed in the last 35 years; the actual costs for maintenance and modernisation are developing; that represents one of the main challenges for municipalities.</p>	<p>The annual total capital expenditures by <i>Water utility business</i> were 2.260 trillion yen (= 24 Mil US\$) in FY2007, composing of: 42.3% for the construction improvement cost, and 54.1% repayment cost for Issue of Bonds.</p> <p>In regard to the <i>Small water supply business</i>, the annual total capital expenditures were 157.3 billion yen (= 1.7 bil US\$) on FY2007 composed of: 89.3 billion yen</p>	<p>National water plan (Water Act) that defines national objectives and priorities on mobilization, integrated management, transfer and resources allocation, and also the necessary economic, financial, regulatory and organisational measures.</p>

²⁷ According to evaluations, European finance covered about 15% of the total costs of the projects.

²⁸ Also, environmental problems have recently appeared. Consumers' financial charges are not enough to satisfy the needs of financement and development of the water system; important investments programs are expected to improve the actual critical situation of the water system and thus higher tariffs.

		In wastewater sector between 8% and 50% of investments are reimbursed; 15% in water sector. Aids granted on the basis of financial perequation (<i>Finanzausgleich</i>) between Federation, provinces and municipalities.		(22% public investments), local administration (15% public investments).		investments: self financing 46%, EU financing (21%), debt 14%, capital increase 11%, local authorities 1%, etc. (differences between regions).		for construction improvement and 67.3 billion yen repayment cost for Issue of Bonds. Public subsidies are decreasing since 1998.	
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	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Tariffs and prices <i>Full cost recovery</i>	Service prices and charges are strictly regulated by Länder' laws. In some Länder the «Water Cent» is imposed; it concerns the extraction of water. Based on their sovereignty, the municipalities may impose taxes for water and wastewater provision. According to the Municipal Charges Act, water and wastewater	For tariff-setting in the water sector the <i>full cost recovery</i> principle had to be implemented before 2010. Prices have increased much more than overall consumer prices: since 1995, 45% for water and 55% for sewage. In principle, there is no social assistance for this service	The rules for the setting of the price of water depend on the region. In Brussels capital: the total price (water distributor) consists of: consumption, purification, and an annual subscription charge. For households the price of water and purification is based on a system of inter-dependent charge (solidarity - the basic parts are less higher for water and wastewater).	The Autonomous Administration exercises the financial control on tariffs (the Committee on Prices establishes a system of authorised prices) with/without the participation of the Full City Council, the body that approves the predominant supply rates in small municipalities (with/without the participation of	There is no national equalisation of tariffs. Differences of prices according to costs, access to resources, treatment level. Comparing prices between direct and delegated management are not significant.	The tariff of the integrated water service is composed of three parts: drinking water, wastewater and treatment. For drinking water the law provides for a fixed part and a flexible tax according to consumption. Reduced tariffs are applied for the first part of the private use (essential consumption). ²⁹ The ratio between the reduced tariff and the maximum	The provision of water and sewage is normally finance by fees, but tax subsidy is allowed (2/3 of the municipalities - and all the bigger ones - cover full costs by fees). Today tariffs cover 99% of the total costs. The calculation of costs is based upon the so called "self cost price principle" (real cost). The consumption fee normally consists of two components: a	<i>Self-support accounting principle</i> ; costs for building necessary facilities and managing their daily operations shall be covered at the charge from their water service users. However, the "self-support accounting principle" is not applied for the Small water supply business, which are not under the Law of Municipal Enterprises. <i>Charges differ for every water utility businesses</i> (according to the	Water and waste-water tariffs are established by the State. The fixing of water public service price scale is based on the principle of progressive tariffs according to the category of uses concerned and the section of water consumed, to ensure households the provision, at social tariff, of a sufficient volume of water to satisfy

²⁹ In general, tariffs' growth was significant, principally because of the impact of investment programs that determined higher costs.

<p>are legally bound to comply with the principles of cost-covering and equivalence. Services charges contain only the tariffs of the <i>cost recovery</i> and public taxes. Private undertakings are supervised by antitrust agencies. The Law of 1976 on wastewater taxes (AbwAG), as amended, created economic charges and conditions meant to reduce the wastewater volume. The wastewater tax is paid to Länder; the revenues are used exclusively to finance works of maintenance</p>	<p>but in practice there are some cases of price diminution for some categories of persons (diminution of charges or absorption by the offices of social assistance). In the case of households, denial of service is not possible for reasons of hygiene (sewage) and service obligations.</p>	<p>Flanders: unified bill (small users) for water + wastewater (a fixed component and a variable component based on actual consumption). Prices vary according to communes. 3 distributors have developed social corrections. Wallonia: since 2004 a new system based on the «true cost/price» (distribution and purification), but different prices according to communes; social fund of water for persons in difficult situation. The <i>full cost recovery</i> principle is progressively implemented.</p>	<p>Committee on Prices). The tariffs structure is very complex. The prices paid for water by the households include the complete cycle, including wastewater and sanitation. Two types of tariffs: for households and for other necessities. Strong part of service tax that does not depend on the consumption; few incitements to reduce consumption. Different prices according to territories according to the quality, investments, water resources. On average, water prices more and more high since the beginning of</p>	<p>consumption tariff is on an average 1/6. Progressive increase of tariffs, mainly due to the impact of investment programs. The policies of planning provide for the adoption of tariffs taking into account the expenditures, the <i>total cost recovery</i> principle, but also a system of growth of tariffs (<i>Price Cap systems</i>). Some regions enacted regional tariff regulations.</p>	<p>fixed part and a current price that depends upon the consumption (some exceptions: a fixed fee or according to consumption). The revenues from water should not be used for other activities than water (not for other municipal activities). The profit is not accepted, «reasonable» benefices are reinvested. Important variations of the water price between municipalities (from 1 to 3/household; from 1 to 4.8/apartment). Over the last decade the average fee for water and sewage services has increased by 10% (in fixed prices). Swedish Court for water and</p>	<p>place and quality of water resources, the passing year of water service facilities construction, scales of economy, personnel expenses, the administrative and maintenance expense of institutions, etc.). While such as personnel salary expense also decreased in the last years and interest due are decreasing, the supply cost per m³ of tap water has been increasing (due to the introduction of the advanced water-purifying processing, accompanying reconstruction of the superannuated facilities, dam construction for securing the safety of water quality and the stability of the source of tap water, declining raw water quality, etc.) (For water-rates see Table 7 of the working paper).</p>	<p>vital needs, and, to regulate the demand corresponding to high consumption of different users categories. User categories: households, public administrations, artisans and services of the tertiary sector, industrial and tourism entities. It is the same for waste-water fixing of price scale. In this field, the principle of progressive tariffs also takes into account the importance, the nature and polluting charge of waste-water.</p>
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<p>and modernisation of water quality. Water bill is considered accessible.</p>			<p>the 1990s (more than 4%/year), most in the waste treatment to comply with Community exigencies.</p> <p>According to a source, about 82% of the population is concerned by the <i>full cost recovery principle</i>.</p> <p>According to other sources, the percentage is less important (60%).</p>			<p>wastewater (for conflicts /price and costs).</p>		
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	Germany	Austria	Belgium	Spain	France	Italy	Sweden	Japan	Algeria
Conclusions	<p>Water sector is fragmented and managed at local level (therefore, a limited international competition) as public, private or semi-private monopoly (prevalence of the public ownership of undertakings). Water public services, in the past organised as municipal departments, were reorganised as more independent structures.</p> <p>High degree of political involvement, high quality, moderate price.</p> <p>High level of technical management efficiency, guaranteed by close cooperation between companies of water provision, industry, governmental agencies, technical scientific associations.</p> <p>To reinforce German operators' capacities compared to global competitors and to improve the efficiency and the competitiveness of the sector, the Government promotes a strategy of modernisation based on the close cooperation between water companies, the development of synergies between</p>	<p>In almost all Austrian cities, either the municipality itself, either an association of municipalities provides water services to the public. The provinces possess the main legislative and executive competences (implementation and organisation delegated to municipalities). The federal State exercise mostly supervisory tasks.</p> <p>For reasons such as public debt Maastricht criteria there had been a tendency to convert the public companies of public law in companies of private law where the public sector rests the only owner.</p> <p>Solutions with</p>	<p>Initially, communal competence, but for different reasons appeared the necessity of association of communes and cooperation with regional authorities.</p> <p>Essential role of regions as concerning the water policy.</p> <p>Different management modes, but presence almost exclusive of the public sector.</p> <p><i>Full cost recovery</i> principle progressively implemented.</p> <p>Prices variable according to place of distribution.</p>	<p>Different geographic and administrative ambits.</p> <p>The complex organisational arrangements are important features of the Spanish case. Water supply and wastewater management fall within the competence of the municipality.</p> <p>The Autonomous Communities are closely involved in the legislation of water supply and wastewater management.</p> <p>Indirect management dominates, it accounts for more than 85% of the total market (oligopoly two private operators: FCC Group and Agbar Group).</p>	<p>Delegated management allowed the improvement of the quality and efficiency.</p> <p>But profound structural unbalance (asymmetries).</p> <p>The reforms of the 1990 conferred more power to public authorities, without eliminating the asymmetries.</p> <p>Remunicipalisations</p> <p>Critical size of public authorities to acquire expertise allowing them to orient, control and regulate water service.</p> <p>No proved and systematic superiority of one management mode over another.</p>	<p>Abandon of the management by local authorities to improve efficiency and economic results.</p> <p>Regions play a more and more important role in water policy.</p> <p>There are still problems concerning the methods used to determine tariffs and the way of granting services.</p> <p>It is vital that public authorities improve their capacities of planning and arrangement of tools in order to facilitate the implication of private capital in the</p>	<p>The autonomy of municipalities to provide water services and to set up the level of taxes and fees.</p> <p>Disparities between municipalities: geographical and demographic conditions.</p> <p>Isolated municipalities often too small.</p> <p>Management in-house dominant, but interest for alternative modalities of management (development of inter-municipal cooperation).</p> <p>Few elements of competition on the Swedish market.</p> <p>Two important challenges: to maintain the quality of water and</p>	<p>Although re-examination of management forms by local governments, such as business integrations and broadenings of water supply utility businesses have been also performed, as a whole, the speed of introduction for principle of competition in this sector is rather slow compared with other public sectors.</p> <p>However, the actors who try improvements for new systems have been appearing with such as introduction of the consumer-oriented, self-selection</p>	<p>The country experienced in the 80s and 90s water stress disparities of water provision. During the next period water plans and important investments in major infrastructure, diversification of water resources, to increase the levels of connection, etc.</p> <p>Significant regulatory and institutional changes.</p> <p>Important deficits still subsist concerning, in particular, the management plan and some cases of management delegation to external operators.</p> <p>However, the process of delegation is reduced and the "all public" rest important because of tariffs sensitivity: the State finance</p>

	<p>water provision and the treatment of waste water, benchmarking, PPP.</p> <p>Privatisation is not in relation with the direct competition between municipal institutions, for the market, or of a compulsory competition framework. Water companies are in a quasi-competition (75% establish the charges of the service according to the law on municipal taxes).</p> <p>Anti-trust control of prices allows price differences between providers only on the basis of criteria clearly defined.</p>	<p>PPP but they are implemented in few cases and in these PPP the «private» partners are in general branches of public companies.</p> <p>High territorial accessibility in the centralised provision of water and waste water.</p> <p>In financing, cost recovery principle and public funds for the capital intensive facilities are the most important aspects.</p> <p>Rise in accessibility to public services.</p> <p>No major changes expected in the provision of water-related services.</p>		<p>Important investments have been made (EU exigencies), increased costs reflected in prices.</p> <p>Increase of consumption but reduction of losses.</p> <p>Necessity to consider appropriated price structures in respect both of the <i>full cost recovery</i> principle and to promote transparency of tariffs.</p>		<p>management and investment policy.</p> <p>Necessary resources are much higher than those envisaged.</p>	<p>ensure a qualified personnel for a long term.</p>	<p>charge system, and also introduction of the designated management system into a water utility business and small water supply systems as case-studies. These cases are not exceptional in Japan in light of innovative steps for gradual change of the existing structure in this sector.</p>	<p>almost 2/3 of water and wastewater price.</p> <p>Weak users' participation.</p> <p>The recent creation of a regulatory agency under the authority of the Department of water resources and of an office for fight against corruption.</p>
Case studies		Vienna PPP Ernstshofen			Grenoble, Rouen, Nantes		Roslagsvatten AB	City of Okayama City of Takayama	Tizi Ouzou For delegated management: Alger, Oran, Constantine, Annaba

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