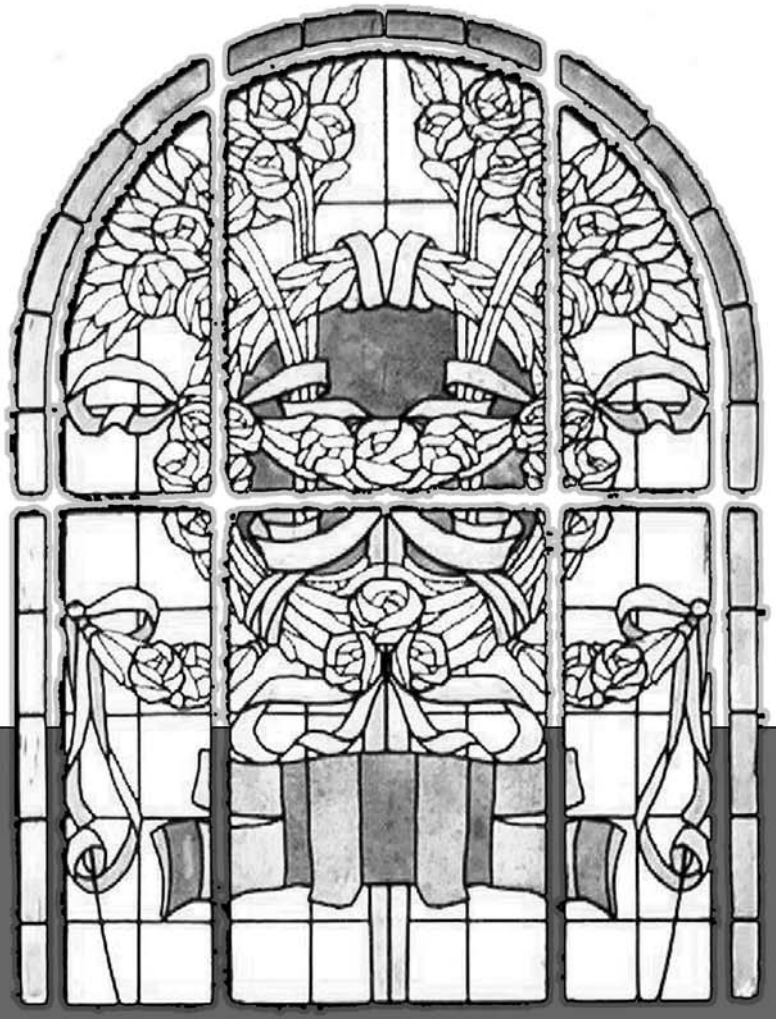

MATERIALI UVAL

Analisi e studi

Documenti

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Issue 10 - 2006

RISKS, UNCERTAINTIES AND CONFLICTS OF INTEREST IN THE ITALIAN WATER SECTOR: A REVIEW AND PROPOSALS FOR REFORM

L. Anwandter and P. Rubino

Ministero dell'Economia e delle Finanze
Dipartimento per le Politiche di Sviluppo
Unità di Valutazione degli Investimenti Pubblici

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Collana Materiali Uval

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Editorial team: materialiuval.redazione@tesoro.it
Graphic Design: Communication and External Relations Office, DPS
Autorizzazione Tribunale di Roma n. 306/2004

First printed in September 2006

Materiali UVAL is also published in electronic format at: http://www.dps.mef.gov.it/materialiuval

Risks, uncertainties and conflicts of interest in the Italian water sector: A review and proposals for reform

Abstract

This paper highlights some of the critical factors that stand in the way of modernization of the water sector in Italy and deter private financing, at a time when the latter is badly needed due to the huge investment needed and dwindling public funds. A number of proposals are put forward to kick-start the currently stalled reform process. Local-level conflicts of interest, irregularities in contract tendering procedures and insufficient clarity in the allocation of risks are identified as the product of information asymmetries between the parties to water service management contracts and significantly incomplete contracts. A case is made in favour of a strong independent regulator, to be established either at the regional or national level. It is suggested that the existing Optimal Service Area Authorities should cease to act as local regulators and focus exclusively on the task of awarding service management contracts. The advisability of developing a standard contract template, which renders the service management concession "bankable" and provides a clearer framework to govern cases of early termination, is emphasised. In order to facilitate private investment, greater involvement of banks from the investment plan drafting stage and explicit regulation of the ways in which awarded contracts may be renegotiated – according to pre-established rules and under the supervision of an independent technical expert - are called for.

Rischi, incertezze e conflitti d'interesse nel settore idrico italiano: analisi e proposte di riforma

Sommario

Il lavoro individua alcune criticità che ostacolano la modernizzazione del settore idrico in Italia e il ricorso alla finanza privata, sempre più necessaria per l'elevato fabbisogno di investimenti e la riduzione dei tradizionali apporti pubblici, proponendo alcuni correttivi per superare lo stallo. Vengono sottolineati i conflitti d'interesse a livello locale, le distorsioni nelle procedure di affidamenti e la scarsa chiarezza nell'allocazione dei rischi, effetto delle asimmetrie d'informazione tra concedente e concessionario e di un'ampia incompletezza contrattuale. Si argomenta in favore di un forte regolatore indipendente, da attestare a livello regionale o nazionale, suggerendo che le Autorità d'Ambito non svolgano più funzioni di regolazione per assumere esclusivamente quelle di concedenti il servizio.Viene evidenziata l'utilità di disporre di una convenzione Tipo che renda la concessione"bancabile" e preveda maggiori dettagli in caso di sua risoluzione anticipata. Per agevolare i finanziamenti privati si auspica un maggiore coinvolgimento delle banche fin dalla fase della definizione dei piani d'investimento e una disciplina esplicita delle forme di rinegoziazione dell'affidamento, da condurre secondo regole prestabilite e con la supervisione di una terza parte indipendente e di elevata competenza tecnica.

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We thank Professors Antonio Massarutto of the University of Udine and Alessandro Petretto of the University of Florence for their invaluable comments on an earlier draft of this paper. Any remaining inaccuracies are solely attributable to the authors.

Table of Contents

I. The transition of the Italian water sector[1]

In the mid-1990s, the enactment of the "Galli Law" (Law 36 of 5 January 1994) paved the way for a change in direction in water resource management. The reform aimed at taking management powers out of the hands of local governments, in an effort to overcome the fragmentation in the sector, creating integrated operational structures capable of attracting private capital and achieving a scale of operations capable of servicing all users within the so-called *Ambito Territoriale Ottimale* (Optimal Service Area, or OSA).[2]

In 1994, legislators saw overcoming localism as the path to managing the sector on a more industrial scale. A drastic reduction in the number of operating entities from over 8,000 micro-firms, often municipally-owned, down to 90 integrated companies would make it possible to achieve a minimum size threshold. It would therefore be possible to exploit the economies of scale[3] and density typical of a highly capital-intensive sector with modest rates of technological innovation and demand growth, constrained by the dual requirement of reaching all dwellings through a comprehensive network infrastructure and of complying with extensive service obligations.

While local authorities would retain ownership of the existing infrastructure, the construction and management of new works would be the prerogative of a single operating entity – which could equally take the form of a public or private company or a public-private joint venture. Industrial-scale, integrated management of water services would produce more efficient and profitable use of the resource and, consequently, would attract private financing for investment. The challenge consisted of gradually reorienting the sector towards arrangements similar to those in the UK, where there are only 22 operators[4] and where competition for ownership and control, together with a strong and stable regulatory framework, has encouraged a significant influx of private funds, including from abroad.

Examining with hindsight the events of the decade that followed the enactment of the Galli Law and the adoption of the rate calculation methodology – the so-called "Normalized

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1 This paper constitutes an extensive reworking of a previous version which appeared in issue 1-2006 of *Mercato Concorrenza Regole*. See Anwandter and Rubino (2006).

2 Among the various papers available on the topic, for a comprehensive summary of the events surrounding the reform written some ten years after the passing of the law, see Bardelli and Muraro (2003) and, in relation to the institutional aspects, Arnaudo (2003).

3 A recent empirical study, which analyses the cost figures of a group of around 20 Area Plans, found evidence of significant economies of scale and density up to a level of around 90 million cubic meters (equal to about 1 million inhabitants). The usual provisos apply regarding the interpretation of these findings, particularly as the analysis is of theoretical figures, taken from the Area Plans, and not actual operating results (see Fraquelli and Moiso, 2005). It is, however, worth noting that only ten or so of the 91 OSAs created in Italy cover more than one million inhabitants, which suggests that the level of aggregation chosen in many areas of the country is less than optimal.

4 The operators consist of ten integrated drinking water and water treatment companies and twelve smaller companies dedicated exclusively to the distribution of drinking water.

Method"[5] – one can conclude that the reform is still only halfway there[6]. The stasis is not due to the institutional restructuring, which can be considered complete. As at 30 June 2005, 88 *Autorità d'Ambito Territoriale Ottimale* (Optimal Service Area Authorities, or OSAAs, which are the local regulators) of the 91 envisaged had been established and the infrastructure survey by these authorities had been completed in 81 cases. However, the institutional progress was not matched by a comparable drive for modernisation and change in the management model. As at the same date, the water service had been contracted out to integrated operating entities in only 54 areas.[7] that is, in little more than half of the OSAs anticipated (in fact, in 3 of these areas, the pre-existing operating bodies were retained as a transitory measure), while in more than 3,600 municipalities, equal to 45 per cent of the total and covering more than 33 million inhabitants, the Integrated Water Management Service had not yet been awarded (see Table I.1).

In some cases, horizontal and vertical integration of the preceding operating entities had taken place only on paper, given that in the 54 OSAs where service management contracts had been awarded, there are 100 operating entities[8] in operation in total and only 37 of these are actually single entities. Furthermore, and this is perhaps the most critical factor prompting this review, only three substantial long-term private financing arrangements have been concluded in the period (those with ACEA for the Rome OSA and with Acquedotto Pugliese and the Nuove Acque operator for the Alto Valdarno OSA).

Table I.1 The long transition to reform: Municipalities which had not yet contracted out the Integrated Water Management System as at 30 June 2005

	Absolute figures		Percentage figures	
	Number	Resident population (in thousands)	Number	Resident population
ITALY	**3,632**	**19,550**	**44.8**	**33.4**
North	2,230	8,408	49.1	31.8
Centre	148	542	14.8	4.8
South	1,254	10,600	49.0	51.1

Source: Based on ISTAT figures, *Indagine sui servizi idrici* (November 2005)

[5] Defined in the Ministerial Decree DM LL.PP. of 1 August 1996. The "Method" essentially aims at guaranteeing, albeit with a certain gradualness, the financial sustainability of management through full cost recovery through rates (of both capital and operating expenditure, duly required to be made more efficient). It does not, however, provide incentives for the improvement of service quality.

[6] On the topic of rates, see Castellucci (2004) on their sustainability with particular focus on environmental protection objectives.

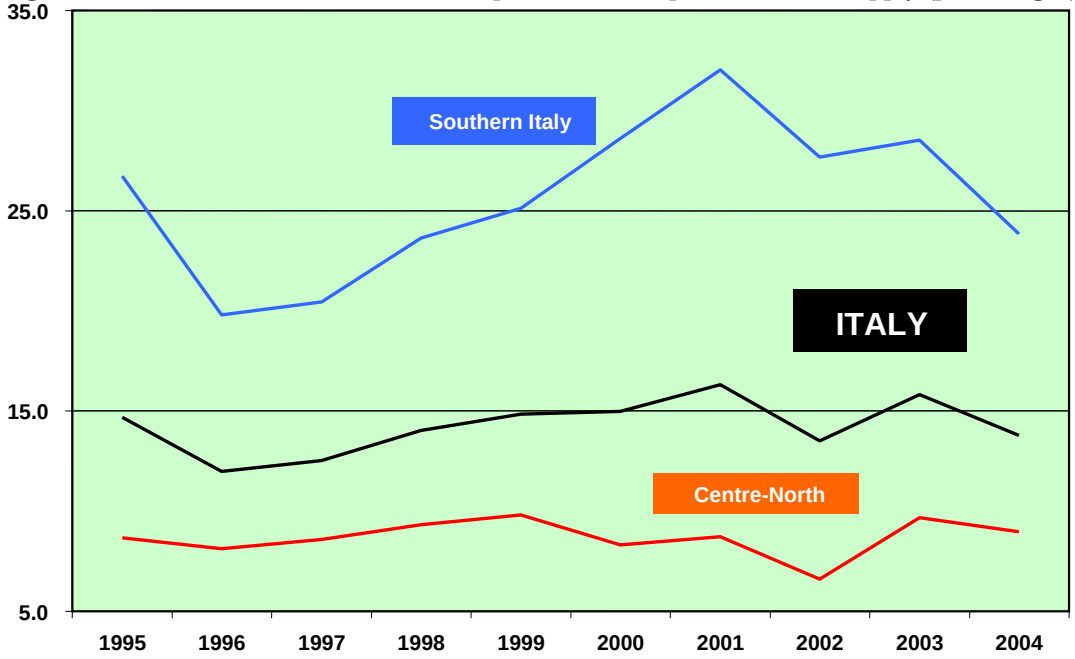
[7] These figures are taken from *Indagine sui servizi idrici: ricognizione sullo stato di attuazione del Servizio idrico integrato al 30 giugno 2005*, the results of which, broken down by Region and OSA, were published by ISTAT on 4 November 2005. Of the 54 OSAs with an integrated management service contracted out, 12 were in southern Italy, 17 in central Italy and 25 in the North.

[8] Among which are the so-called "protected operating bodies", pursuant to Art. 9 of the Galli Law.

The sector is experiencing a difficult transition between the old and new system, the outcome of which is uncertain. On the one hand, dwindling public funds, and on the other, a shortage of private operators and financiers, have led to a real investment slump. According to ISTAT figures analysed by the *Comitato per la Vigilanza sulle Risorse Idriche* (the Water Resources Surveillance Committee (CoViRi)), investment in the sector fell by more than 70 per cent over the course of the decade ending in 2000, dropping from approximately €2.0 billion to around €0.6 billion a year.

The drop in investment has contributed to an increasing obsolescence in the infrastructure, a rise in network leakages and a decline in service levels, including disruptions in supplies to end-users. A sample survey conducted annually by ISTAT shows drinking water supply disruptions being experienced by about 15 per cent of families in 2004, with the highest figures being registered in southern Italy, where almost a quarter of users complained of supply problems (Figure I.1). [9]

Figure I.1 Households that have complained of disruptions in water supply (percentages)



Source: Based on ISTAT figures, *Indagine Multiscopo presso le Famiglie* (2005).

The fall in investment occurred precisely at a time when applicable European environmental directives[10] required, on the contrary, an increase in investment. Recent

[9] These figures are based on a consolidated survey of a sample of more than 22,000 consumer units aimed at gauging user-satisfaction levels of a wide range of public services and utilities supplied in Italy (the so-called *Indagine Multiscopo,* or Multipurpose Survey). Nationwide network infrastructure leakages, on the other hand, are estimated at between 30-40 per cent depending on the figures considered.

[10] See, in particular, Directive 91/271/EC on urban waste water treatment.

studies involving 60 Area Plans (covering a pool of around 36 million people) estimate the investment requirement at about €32 billion over 25 years.[11] Scaling this estimate up to the entire user universe, we arrive at an overall cost on the order of €55 billion, or around €2.2 billion a year (in per capita terms, almost €38 a year). The challenge for the sector is therefore to more than triple the current level of investment, without being able to rely any longer on the contribution of public funds at a level comparable with the past.

In order to meet this challenge, which in essence means moving away from an assortment of municipally-controlled operating bodies, predominantly financed with public funds, to an industrial-type system financed mainly by private funds, a strong impetus from the authorities responsible for the sector, both nationally and locally, is urgently needed.

This paper aims to evaluate the water sector's approach to organisational transformation in Italy. In particular, we ask whether this approach has reached a point of no return that would hinder – or at least render inadvisable – a mid-course correction, which might undermine the results achieved thus far, or whether it is still possible to adopt some corrective measures in the sector's organisational and governance model, such as adjusting relations between the various regulatory levels, easing the single-operator requirement for OSAs or removing some of the dysfunctional elements in the structure of service management contracts and in the allocation of risk which these contracts entail.

The paper is structured as follows. After the description of the current state of the sector in Italy (section I), the basic features of the prevailing water sector models in Europe are described, comparing them to the Italian system (section II). In the three subsequent sections, we examine the critical factors which, in the authors' view, constitute the major obstacles to bringing about effective market transformation of the water sector and attracting the private capital necessary for its development. The issues are grouped into three thematic areas: the limitations of the regulatory framework (section III), the problematic aspects of the organisational model, including the ways in which operating contracts are awarded and the possibility of separating asset ownership from service management (section IV) and problems relating to risk allocation (section V), to which greater attention will be dedicated given that it represents a factor of major significance for private investors. Following the identification of the critical factors, some specific proposals are presented for further reflection, which it is hoped may provide a helpful contribution to future policy for the sector. Finally, the conclusions (section VI) sum up the review and reform proposals contained in the paper.

[11] Proaqua and Anea (2005).

II. Regulation, competition and the market in the water sector

In Europe , the development of the water services sector has diverged from that of other public utility sectors, which have opened up to a competition-based paradigm, thanks in part to the stimulus provided by new EU policies.

In the absence of a clear deregulation and growth strategy on the part of the European Union, national water systems evolved along different and divergent lines. The multiplicity of the organisational frameworks adopted within Europe does not, however, prevent us from identifying three distinct industry organisational models in the water sector. They are: the "Anglo-Saxon" model, with the United Kingdom providing the main example, and the continental model, in its French and German variants. The Anglo-Saxon model is based on a clear separation between financial regulation, the province of the public sector, and service delivery, for which private enterprise is responsible. The continental system delegates the function of providing the service to publicly-owned companies or public-private mixed-ownership companies, while regulation of the sector remains within the jurisdiction of various levels of government (local, regional and central government authorities).

The three models can be defined as follows: the regulated monopoly (as represented by the Anglo-Saxon model), delegated operation (the French model) and local public enterprise (the German model).

Under the Anglo-Saxon model, there is no service management agreement entrusting public assets to a private entity for a limited term, since the ownership of the assets passed to the private sphere when the water companies were privatised. The private sector bears the operational risk and, at least in theory, the investment risk, inasmuch as the company, the owner of the network infrastructure, is responsible for guaranteeing its operability and compliance with service standards, over which the regulator exercises very close scrutiny. On the other hand, the market risk is mitigated since the company is entitled to make rate adjustments where there are significant falls in demand. There being no award of a service concession as such, there is also no termination date for the company's operation of the service. The risk of early termination is to some extent replaced by the risk of being the target of a hostile takeover bid. The regulatory risk takes the form of five-yearly price reviews by the Office of Water Regulation (OFWAT, the single regulator for England and Wales), which is in any case obliged to ensure the financial sustainability of water companies and to "fairly" remunerate investment, thereby providing a guarantee for private investors.

In the French model, private operators bear the operational risk and, in part, the market risk. However, in exchange, the responsibility for investment is shared with the public

sector through hybrid management models (such as *affermage*, namely the leasing of ready-built infrastructure to private operators, or *gérance*, service provision remunerated by way of a standard fee for a fixed period of years). Under this approach, the private company assumes only some of the risks, which are linked to certain contractual and rate undertakings. Other risks are borne by the local authority which is the owner of the network infrastructure leased to the management company for an agreed rental. The regulatory risk is low, due in part to the absence of any fully-fledged regulator, while there are numerous options during the management period for passing on any further costs through rates by means of the mutual renegotiation of contracts. In return, private companies can offset the management risks by exploiting synergies with other companies in the same group. However, in the French system, the role of the public entities tasked with encouraging investment for the improvement of network infrastructure, plant and services, such as the *Agences de basin*, is significant.

In the German model, the risk is principally borne by the end-user, as management companies are required to fully recoup costs through rates, calculated in such a way as to systematically include a depreciation charge based on the "real" cost of invested capital (namely, valued using the reconstruction cost method). However, the accounting procedures and mechanisms for remunerating capital are those typical of the public sector, with long depreciation periods (calculated with respect to useful life) and lower rates of return. The very significant role that municipalities and private law companies controlled by them (*Stadtwerke*) have in the management of water services reflects the federalist influence in the division of public functions, which derives from the principle of subsidiarity adopted in Germany.

As regards management aspects, there is a growing trend in various countries to reduce the number of operators active in the market. This development, which is in line with trends in network services following deregulation, limits the fragmentation which still characterises some systems, such as those in Italy and Germany. The situation is different in the Netherlands, however, where the number of management companies fell by almost half in the 1990s, to about sixty entities, and in France, where the two main companies, which are multinationals, hold more than half the market. In other countries (including Finland, Australia, Canada, Ireland and the United Kingdom), the water services sector is organised on a regional basis. In general, in the various OECD countries, the roles of the public and private sectors are ownership and management respectively (see Table II.1).

The organisational model adopted in Italy is a combination of the three approaches discussed above . The existence of a national regulator (the "*Autorità di Vigilanza sulle Risorse Idriche e sui Rifiuti*" or Water Resources and Waste Oversight Authority, the former CoViRi)

and the use of a price-capping system, based on a mechanism which creates incentives to increase efficiency, shares elements with the Anglo-Saxon model. The need for an independent authority arises from the difficulty of basing the regulatory system on exclusively ex ante mechanisms (competitive tendering, service contracts and area plans) given the typical incompleteness of water service management contracts, made worse by the difficulty of standardising supply terms and conditions given the considerable variety of infrastructure across the country, which exposes the parties to the contract to significant risks (see section V). As regards management entities, the private companies or mixed public-private companies envisaged in the Italian legal framework and controlled by the local regulators (the OSAAs) are similar to the "delegated management" model (used in France), while the wholly-owned in-house companies correspond to the "direct public management" approach (used in Germany and the Netherlands).

Regardless of the form of management, other aspects specific to the sector also present particularly critical issues. As leading experts in the field have noted,[12] these include the choice of company to which to award the service contract and the extent of the powers to be granted, and the ability to delegate certain specific management functions outside the selected company (outsourcing) in order to prompt the management company to concentrate its efforts on raising the efficiency of its core business.

Another issue regards the ways in which competition can be introduced into the sector, considering the technical constraints flowing from the rigidity of the infrastructure and the economic constraints that spring from the local monopoly typical of the water distribution service. Indeed, a review of the organisational conditions of the sector shows that real competition *in* the market is, in reality, unworkable.[13] In such cases, economic theory suggests that the best possible alternative to competition *in* the market is competition *for* the market during the competitive manager selection phase, combined with a form of *virtual competition through comparative rate regulation* during the actual management stage. This latter concept takes us back to the importance of a regulator with the technical expertise and independence to develop and implement comparative rate regulation schemes.

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12 See Massarutto (2005-b).

13 As emphasised by Arnaudo (2003), among the various network and public utility services, water supply is probably the service that least lends itself to the introduction of competition into the market. Such competition has, however, been able to develop to varying degrees between traders and resellers in the electricity, gas and telecommunications sectors. There are basically four reasons for this limitation: (i) due to high infrastructure costs, a dual (or multiple) physical network infrastructure, which is a prerequisite for facility-based competition, is not feasible; (ii) network interconnections between various water basins are limited, a fact which makes the option of managing demand by resorting to different supply sources less significant and not very practical; (iii) the high cost of transporting water resources compared with its final sale price does not permit competition to be widened between providers or between treatment plants which are far from the location in which water is delivered to the end-user; and (iv) in order to control the quality and health risks, a single provider would seem to be preferable, since the inevitable blending of water resources in pipes makes it difficult to distinguish between water resources of differing quality coming from different suppliers.

Table II.1 Water sector governance in selected OECD countries

	Basis of Organisation of Water Service	Ownership	Management	Regulator
Australia	Regional	Public/Private	Public/Private	Regional/Independent
Austria	Municipal	Public	Public	Municipal
Belgium	Inter-municipal	Public/Private	Public/Private	Federal government
Canada	Regional	Public	Public	Provincial government
Denmark	Municipal	Public	Public	Municipal
Finland	Municipal	Public	Public	Municipal
France	Municipal	Public	Public/Private	Municipal
Germany	Inter-municipal/municipal	Public/Private	Public/Private	Municipal/Regional
Greece	Municipal	Public	Public	Central government
Ireland	Regional	Public	Public	Regional
Italy	Municipal	Public	Public	Central gov. and reg.
Japan	Municipal	Public	Public	Central government
Norway	Municipal	Public/Private	Public/Private	Central government
Netherlands	Municipal	Public	Public/Private	Central gov. and reg.
Portugal	Municipal/Regional	Public	Public/Private	Central government
Spain	Municipal	Public	Public/Private	Central government
Sweden	Municipal	Public	Public	Municipal
Switzerland	Municipal	Public	Public	Central government
UK	Regional	Private	Private	Independent
United States	Municipal	Public/Private	Public/Private	Independent

Source: OECD (1999).

III. The problems of the regulatory framework

III.1 The national authority and its relationship with OSAAs

The structure of the water sector and the nature of the transactions that take place in it represent a situation of "market failure", which, as such, necessitates regulatory intervention in markets and contracts.

Massarutto (2005-a) identifies the following problematic aspects of the sector: 1) the large public-interest role, with significant externalities in the production and consumption of the resource; 2) major financial risk factors due to the "irreversible" nature of many productive assets; 3) the modest potential for competition in the delivery of the service, for instance by allowing independent operators to access the network infrastructure through forms of third-party-access mechanism, which can be used for other public utility services such as electricity and telecommunications; 4) the indivisibility and rigidity of the network infrastructure, characterised by high fixed costs and negligible variable costs; and 5) incomplete contracts, information asymmetries and issues relating to public sustainability of use and private sustainability of expenditure.

Thus, in this sector, independent regulation is a fundamental ingredient for setting rates in a manner that is efficient in terms of allocation and fair in terms of distribution, while at the same time guaranteeing compliance with service standards.

In this respect, the Italian situation is especially complex as it combines two different regulatory methods, which normally are not found together, so much so that they characterise distinct national contexts.[14] While regulation through an independent authority seeks to encourage the functioning of a broadly competitive market on a uniform and homogeneous scale, regulation by contract revolves around the concept of granting service management rights and is characterised by its generally local scope.[15] The challenge for Italy is to combine these two models effectively by making them interact efficiently.

Thus, in Italy today, there is no single national regulatory risk but various dissimilar local regulatory risks, which change not just from region to region but even from OSA to OSA, which represent 91 (or, at the moment, 87) monads. We are hence faced with a regulatory framework in which skills, commitment, available resources and political influence can vary significantly between two municipalities in the same region if they belong to two different OSAs. While the CoViRi has not failed in its past annual reports to emphasise the low cost of regulation in Italy (€0.7 per inhabitant per year), these savings do not make up for the high cost (if not a substantive lack) of private financing in the water sector, which is in part due to uncertainties in the regulatory framework.

Indeed, the existing regulatory heterogeneity generates significant systemic effects. It raises transaction costs for the sector as a whole since it makes it more complicated for any new entrant and its private investors to understand the risks present in the sector and, once these are identified, to allocate them correctly. This may constitute a disincentive in those areas of the country where higher legal risk is perceived at the local level (for instance, in some OSAs in southern Italy). Nor does it encourage resort to sophisticated and innovative financing instruments, such as "corporate securitisation",[16] or to specialised entities such as

[14] The paradigm for "regulation by independent authority" is the UK model, where ownership has been transferred to the private sector, no service concessions are awarded and there is a single national regulatory authority. An alternative model is "regulation by contract", which originated in France and has been adopted in various developing countries. The latter is based on service management contracts between public institutions and private management entities. Mixed and hybrid forms in which both models co-exist can be found throughout the world, particularly in the developing countries.

[15] Nevertheless, empirical evidence shows that in ex-post reviews of infrastructure service concessions initiated by the concession holder, the existence of an independent regulator at the time of the signing of the original contract reduces both the likelihood of the contract being amended and the risk of opportunistic behaviour on the part of companies or of unfair expropriation of profits by public institutions in the event the contract is actually renegotiated. See Guasch (2004) and Guasch, Laffont and Straubl (2005), who conducted an empirical study of over 300 water and transport projects developed in Latin America during the 1990s.

[16] Using "corporate securitisation", which essentially consists of segregating the cash flows produced by the water sector, a multi-utility company in the United Kingdom can improve its rating for direct financing to the water sector by a few steps, thereby saving around 20 basis points on the cost of financing.

financial insurance companies ("monoline" insurers[17]), mechanisms which in the United Kingdom, in conjunction with the existence of a stable national regulatory framework, have reduced financing costs.

The need to establish a strong, authoritative and independent regulatory body has not met with an adequate response in recent reform initiatives for the sector. The Environmental Code,[18] approved on 29 March 2006 by the Council of Ministers under the provisions of the environmental enabling authority granted by Parliament,[19] provides (in section three) for the establishment of the Water Resources and Waste Oversight Authority. But this is a merely token innovation, as the new authority would still lack independence and continue to be subject to the control of the Ministry for the Environment, which in any case has responsibility for setting the rates that are then applied by local regulators[20] with considerable discretionary power.

The new body does not possess the characteristics that qualify a regulatory authority as independent, both because it is functionally answerable to a government entity – the Ministry for the Environment – and because, paradoxically, the task of fixing rate levels or establishing the methods for calculating them does not fall within its jurisdiction; nor is it vested with adequate powers to impose penalties. The number of the authority's staff and their required professional qualifications are not specified, despite the fact that the experience of Italian and European authorities in public utility sectors undergoing deregulation has shown that these are essential prerequisites if the regulator is to do its job effectively.

Indeed, the Code is basically silent on the crucial topic of the reform of the rate mechanism, which for years has been partially responsible for the sector failing to take off, leaving the matter to be dealt with by further decree of the Ministry for the Environment (see Art. 107, par. 2) and not setting any precise timetable for this to occur.

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[17] "Monoline" insurers are insurance companies with a AAA rating that guarantee the debt serviceing of a transaction in exchange for a premium. The amount of the premium is inversely proportional to the rating of the underlying transaction, which in order to be accepted by the monocline insurer must be at least BBB. In England, for instance, the monoline insurer FSA guaranteed a series of medium-sized water company bond issues arranged by the Royal Bank of Scotland (using an instrument known as "artesian finance").

[18] Legislative Decree 152 of 3 April 2006 concerning regulations governing environmental matters, published in the *Gazzetta Ufficiale* no. 88 of 14 April 2006, Ordinary Supplement no. 96.

[19] Law 308/04 concerning the granting of enabling authority to the government to rationalise, coordinate and supplement legislation concerning the environment and directly applicable provisions, in particular the law concerning regulations governing soil protection and the fight against desertification, the protection of water from pollution and the management of water resources.

[20] The skewing of rate regulatory powers in favour of local regulators (to the detriment of the national regulator) would have been even more pronounced had the proposal for review of the rate method, surprisingly put forward by CoViRi itself in May 2002, been approved. The proposal recommended that the comparative efficiency parameter 'x' (which justifies the importance of a central regulator taking its inspiration from *competitive benchmarking* methodologies) be defined by local regulators, thus unyoking it from clear efficiency indicators. The notion of stripping the parameter of its technical content, thereby rendering it potentially volatile, diametrically contrasts with the need to create a long-term stable regulatory framework, based on transparent and predictable criteria.

In essence, the operation risks being a mere window-dressing exercise, with no change of substance in the current regulatory set-up. The provisions of the Code do not appear to be capable of ensuring an improvement in the quality of the regulatory framework for the sector, but rather contribute to perpetuating the weaknesses that currently characterise it and which, in final analysis, play a part in preventing the emergence of a real water industry.

The ambiguity and fragility of the Italian regulatory regime are further accentuated by the conflict of interest of the local regulators (the 91 OSAAs), whose members often represent the interests of shareholders of the management entity being monitored (this happens in the frequent situations where a service management contract is awarded to mixed public-private companies or to entirely public companies). The result is a confusion of the regulatory and service management roles, which sends distorted and contradictory signals to management. This confusion is particularly heightened where service management has been delegated in-house to entirely publicly-owned companies.[21]

Considering that each OSAA generally has jurisdiction over a single management entity, the regulatory capture risk, namely the risk of subjection of the local regulator to the interests of the regulated body, would seem to be high. This risk is worse in cases where the management entity represents the interests of major, and aggressive, multinationals and when the OSAA does not possess either the skills or the staff necessary to deal with the private party on equal terms.

[21] According to European Court of Justice judgment in the "Teckal" case, the necessary preconditions for the acceptability of in-house delegation are the exercise of control over the company by the institutions that own it, analogous to the control they exercise over their own departments and that the company carries out the most significant part of its operations with the controlling public institutions. This therefore implies that the local authorities, who are members of the OSAA, also have total management control over the in-house company (in accordance with the concept of "in-house delegation", though this was not unequivocally set out: see Proposal no. 3 below).

Box A – Proposal no. 1

In order to reinforce the regulatory system, it is recommended that a Water Sector Regulatory Authority be established that is independent of the Ministry for the Environment and, in general, the executive branch, as well as, naturally, of commercial interests in the sector.[(a)]

It would appear to be important for regulatory functions to be exercised unequivocally, without any overlapping of jurisdiction between levels of government and the risk of conflict of interest. These requirements are compatible both with an authority established at the national level and, alternatively, with regional regulators.

The Authority should hire highly-qualified staff, who should accordingly be adequately remunerated, and should draw on the support provided by an monitoring centre, equipped with an appropriate number of staff members with sound technical expertise, as was in any case originally envisaged by the legislation governing the sector.[(b)] Clearly, it will be necessary to ensure that staff recruitment opportunities for the Authority are advertised and that selection is conducted fairly.

The principal role of the Authority would be that of an *ex-ante* regulator fostering "comparative competition" between the various integrated management entities, to be performed on the basis of objective criteria, using competitive benchmarking and yardstick competition[(c)] mechanisms.

The Authority would be responsible for developing integrated rate calculation methodologies, taking into account service quality and environmental protection standards, and designing and ensuring compliance with incentive and penalty mechanisms aimed at encouraging improvements in efficiency and quality. It should also conduct *ex-post* monitoring of the application of average rate levels and conduct audits (substantive or commercial, not administrative or authorising) of the efficiency and quality of the management entities' service.

In order to prevent the conflict of interest present where the management entity is a mixed public-private company or a wholly public-owned company from creating harm, the AATOs should not be involved in formulating rate methodologies or parameters (such as restoring efficiency, return on invested capital and limits on real increases in rates) ,over which the national authority or regional authorities should have exclusive jurisdiction.

In this new set-up, the AATOs would still exist, but would mainly be responsible for awarding service management contracts for their area of territorial jurisdiction, concentrating on the preparation of the investment plan, tendering for the service in accordance with national and EU law and monitoring service quality and environmental protection objectives.

The only rate-related role remaining for the AATOs might be refining the structure of rates around an average level in accordance with pre-established and verifiable factors (such as consumption bands, types of supply and territorial sub-areas), regarding which they should have privileged access to the necessary information.

a) In the authors' view, the issue of which sector to base the new Authority in – namely, whether it would be preferable to create a regulatory body *ex novo*, dedicated exclusively to the water sector (and possibly extended to the waste sector) or whether it would be better to bring it within the jurisdiction of an existing sectoral authority, such as extending the jurisdiction of the Energy Authority - is not a priority issue, at least as far as the scope of this paper is concerned. On the other hand, it is obviously a point which is very significant in terms of the design of institutional structures, a topic which however lies outside our scope here.

b) The Galli Law of 1994 and the Ministerial Decree of 1996 on the Normalised Method were based on the premise of a strong CoViRi, equipped with a Technical Secretariat and a Water Services Monitoring Centre (which was meant to have a staff of around 40). But the Monitoring Centre was only created in 2004 (that is, ten years later) with a reduced number of staff, which given the importance of its mission seems totally insufficient.

c) On the importance of incentives resulting from the application of yardstick competition in the water

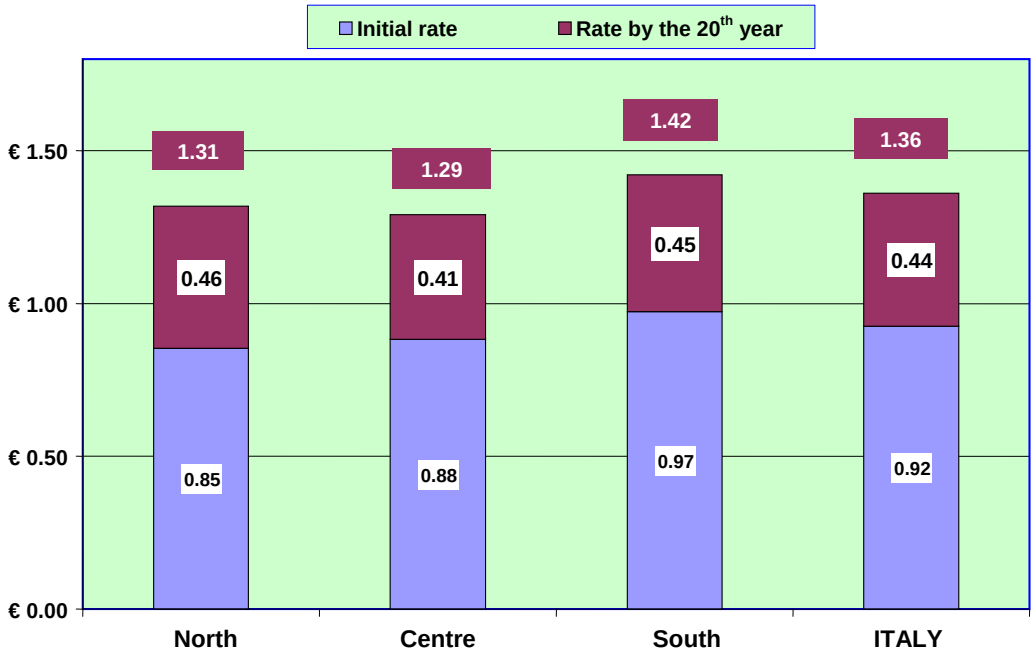
III.2 Rate mechanisms

In recent years, water rates in Italy have increased very slowly, due both to the Normalised Method, where applied, and to occasional decisions of the Inter-Ministerial Committee for Economic Planning (CIPE) which, in the long transition period of the reform, has functioned as the rate regulator for those areas where there has been no award of an integrated water services management concession.

The increases allowed thus far have been completely insufficient to trigger the cycle of investments needed to make up for the structural lag that has accumulated over recent years. In fact, rate levels in Italy remain largely lower than those prevailing in other European countries. While the average rate in Italy today is around €0.90-0.95/cubic meter (with wide variations across the country[22]), forecast to rise to €1.3/cubic meter in the first ten years of the application of the Normalised Method and up to a maximum of €1.36/cubic meter by the twentieth year of operations, in many European countries rate levels are already between €2.00 and €3.00/cubic meter (see Figure III.1).

[22] So-called *Existing management entity weighted-average rate* (TMPP) figures have been recorded at between €0.58/cubic meter for the Veneto OSA of "Valle del Chiampo" and €1.39/cubic meter for the Enna OSA.

Figure III.1 Rate developments in Area Plans (euro/cubic meter)



Source: Based on CoViRi data, *Rapporto sui Piani d'Ambito*, 2004.

In many OSAs, the initial rates only just cover operating costs, not yielding any added return on investment. So new works and refurbishing need to be entirely covered by equity or debt capital, i.e. funds that, obviously, flow to markets that offer greater potential for return for any given level of risk, or lower risk with the same level of return. Not only do rates start at modest levels, but increases are also unpredictable, nor is there any margin of flexibility for increasing them (the Normalised Method establishes a maximum limit for annual rate increases, a parameter known as "K", equal to 5 per cent in real terms). It follows that, especially in the first few years of a service management concession, debt service becomes a challenge.

The Normalised Method sets a ceiling of 7 per cent for *gross* returns (before tax) on capital invested, which is equivalent to *net* returns in the order of 4 per cent.[23] While this might be sufficient to service debt (which benefits from a tax shield on finance costs), it is not very attractive for equity capital, especially considering the uncertainties of risk allocation between the concession grantor and the concession holder (see section V).

It is helpful to compare the situation with that in Britain. In England and Wales, the regulatory framework has been in place since 1989. Companies should therefore benefit from a lower cost of capital (including the risk premium) than in Italy as a result of a well-

[23] Note that the return on invested capital envisaged by the Normalised Method can be taken to mean the weighted average of the returns on debt and equity capital, making it an approximation of the WACC, the method used by OFWAT for calculating the cost of capital.

designed, tried-and-tested and enduring regulatory system. According to OFWAT, in the five-year period between 2005-2010, the return on capital net of taxes (which are about 30 per cent lower in England than in Italy) will not be permitted to exceed 5.1 per cent,[24] as the weighted average of a cost of debt net of taxes of about 3 per cent and a return on equity capital net of taxes of 7.7 per cent. In addition, OFWAT envisages an increase in the weighted average cost of capital, or WACC, to encourage use of equity capital by smaller companies (defined on the basis of their recognised capital) of between 0.3 per cent (for capital of between £280-700 million[25]) and 0.9 per cent (for capital of less than £70 million).

Assuming that the cost of debt is the same in both countries and that Italian companies have the same leverage as British companies (two optimistic suppositions given the differences between the regulatory frameworks), the net return of 4 per cent set by the Normalised Method would imply a return on equity capital of 5.2 per cent, significantly lower than that obtainable in England. In other words, to obtain the same return on capital in Italy as in the UK (7.7 per cent) with a net WACC of 4 per cent and net cost of debt at 3 per cent, Italian companies would need to push their leverage up to almost 80 per cent of invested capital.

Leverage this high, typical of project financing operations, would require a high level of confidence on the part of banks and institutional investors, which is certainly not compatible with the existing uncertainty regarding risk allocation in service management concessions and with the current regulatory and rate adjustment framework.

[24] OFWAT (2004) defines the value of allowed WACC on invested capital assuming a level of borrowings (or leverage) equal to 55 per cent of invested capital.
[25] At the beginning of November 2005, the exchange rate was €1.00 = £0.68.

Box B – Proposal no. 2

The Normalised Method needs to be revisited to increase flexibility to increase rates when necessary to cover investment costs.

In particular:

- it should be possible to review the cost of invested capital every three or five years, clearly on the basis of substantiated "external" and "objective" variations in the cost of debt capital, risk allocation and leverage;
- the current annual ceiling imposed on rate increases (the K parameter) could be eased, converting it to a three-year or five-year ceiling, with the effect of giving greater flexibility to the management entity in meeting it. In this regard, it will be necessary to ensure that such greater flexibility is only used to reflect the need to adjust to the implementation of investment plans, without tampering with operational costs, so as to prevent it being used to conceal or accommodate, *ex post*; any management inefficiencies;
- increases in the recognised cost of capital could be introduced for smaller ATOs (which suffer from diseconomies of scale and greater volatility and risk in their business performance due to the greater ratio of fixed costs to total costs), along the lines of the methodology used by OFWAT in England and Wales.

IV. Organisational structure of the service

IV.1 Forms of management and in-house operation

According to ISTAT figures, as at 30 June 2005, the number of OSAs that had contracted out the service under the Galli Law was 54 (of the 91 planned). Of these, only 3 (Frosinone, Syracuse and Enna) had awarded the concession via competitive tendering to entirely private companies, the model that was originally envisaged in the 2002 Finance Act[26] as the only permissible method of contracting out the service. The majority (26) had chosen to award the contract to mixed public-private companies or had opted for a wholly publicly-owned management entity (in-house management[27]).

In the period between 1998 and October 2005, 22 OSAs chose to resort to competitive tendering. There were 12 calls for tender to find a private partner for a mixed public-private company and 10 for the award of an integrated water services management contract to third parties. Overall, these calls for tender concerned OSAs with more than 15 million inhabitants with an average contract term of 26-27 years (see Table IV.1).

Nevertheless, participation in the tenders was modest overall. In the tenders for the selection of a private partner, an average of 1.6 bids was recorded, while in the tenders for service management contracts, the number of bids was slightly lower at an average of 1.2. Of the 22 calls for tender, only 12 had been completed by November 2005 (9 of which related to finding a private partner and 3 for a contract award to third parties), while 10 were still in progress. The competitive tendering mechanism was used by the OSAs in central (9 calls) and southern (13 calls) Italy, while tendering was not used in the North.[28]

Generally, the financial aspect of the tenders has been judged on the basis of the lowest rate proposed, but there were cases where the criteria of maximisation of the annual fee paid by the concession holder to the local authority or the lump-sum price offered to acquire the public holding in the case of mixed public-private companies. From an economic efficiency and end-user perspective, the minimum rate criterion would certainly seem preferable, as maximisation of the fee or share price in the water sector leads to exploitation of the dominant market position by the monopoly-holder to the detriment of the user, as demonstrated by Muraro (2003).

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[26] The reference is to Art. 35, par. 5, of Law 448/01.

[27] In-house delegation of service management was introduced by Art. 14 of Legislative Decree 269/03 and was confirmed as an option in the 2005 Finance Act (Law 350/03). In particular, that Finance Act preserved contracts awarded without competition to companies already listed on the stock exchange as at October 2003 as well as delegation of management to companies which were initially wholly publicly-owned but as at that date had floated equity stakes on the market through open and public procedures.

[28] As is clearly highlighted by Drusiani (2005).

While in the early stages, contracts were frequently awarded to mixed public-private companies (especially in central-northern Italy, notably Tuscany and Lazio), direct in-house delegation later prevailed, including, among others, OSA 2 in Lazio (Rome), OSA 3 in Piedmont (Turin), the single OSA in the Basilicata region to Acquedotto Lucano and the single OSA of Sardinia (to ESAF) and Acquedotto Pugliese (via a national law). It is also being considered for some areas in Sicily, where many calls for tender (for service management contracts or for private partners in mixed public-private companies) produced no bids.[29] In addition, the in-house model seems to be emerging as the preferred option even in some regions in northern Italy (particularly Emilia-Romagna, Veneto and Lombardy).[30]

Table IV.1 Competitive tendering completed in Italy to award service management contracts and to find a private partner

Type of tender	Number	Population resident in the OSA (thousands)	Duration (in years) of concession		Number of bids	
			Simple Average	Population-weighted average	Simple Average	Population-weighted average
Search for private partner	12	10,127	26.3	26.0	1.1	1.6
Award of service management contracts to third parties	10	4,983	28.0	28.3	1.1	1.2
TOTAL	**22**	**15,110**	**27.1**	**26.8**	**1.1**	**1.4**

Source: Based on figures from Drusiani (2005).

Organisational structures so profoundly different across the country are partly due to the haphazard development of the legislative framework. In recent years, the competent authorities (among them the Ministry for the Environment) have produced extensive legislation governing the manner in which services may be contracted out, which have sometimes resulted in contradictory regulations. These continual changes have created a climate of uncertainty, which has likely delayed the awarding of contracts in some cases.

[29]Some of these calls for tenders were held several times, perhaps precisely to prove the "residual necessity" for direct delegation. But perhaps the failure of the tenders was due in particular to the manner in which they were conducted rather than to a lack of potential participants.

[30] Some of the operations that involve mixed initiatives comprising companies linked via bilateral agreements could entail violations of competition principles. At the time this paper was being finalised, the Italian Competition Authority had launched an enquiry into Acea S.p.A. and Suez Environnement S.a. to investigate whether they had reached agreements that could harm competition. The inquiry concerns the temporary consortium formed by these companies with a view to participating in bidding for 40 per cent ownership of Publiacqua – the water services management entity for OSA 3 "Medio Valdarno" – announced in October 2002 by the Municipality of Florence and finally adjudicated in February 2006. The result was the acquisition of a controlling interest in Publiacqua by a company established by Acea and Suez Environnement, among others. The inquiry should be concluded by 30 September 2007.

However, it remains to be seen whether in-house delegation should be considered as last-rersort option, to be adopted only where competitive tendering turns out to be unfeasible.[31]

In one sense, in-house solutions benefit the banks and the service concession holder, who are protected (albeit implicitly) by the presence of public support. On the one hand, this could reduce financing costs and thus rates, while on the other, users risk paying the cost of inefficiencies not monitored by the area regulator, which is a direct off-shoot of the local entities that control the in-house company, a risk that is also encountered in the German model.

The risk of management inefficiency (limited cost-containing effort) at in-house companies is especially high where the management is appointed on a "political" basis. It follows that the benefits that might accrue by virtue of the integration of existing fragmented municipally-controlled service management entities run the risk of being lost through management inefficiencies that may become entrenched over time.

Examining the Italian situation, one has the suspicion that the recent enthusiasm for direct delegation reflects a desire on the part of local authorities to perpetuate the fragmented system, a far cry from the integrated industrialisation paradigm which was one of the driving forces behind the reform law. Indeed, direct delegation can offer opportunities for the fragmented management entities - some of which are utility companies with close local ties, including political connections – to maintain the market positions they have acquired, thereby impeding the integration of the service and the establishment of a single service management entity. It is therefore necessary to develop and implement a system of incentives and governance that can ensure the operational efficiency of in-house companies. Here again, the importance of an independent regulator resurfaces - a regulator capable of evaluating the comparative efficiency of the various in-house companies and developing appropriate incentives.

[31] Under the recent Environmental Code, in-house management of the service is expressly permitted but is made conditional on the demonstrated existence of "objective technical and commercial grounds" for its adoption.

Box C – Proposal no. 3

As far as in-house delegation is concerned, it would be advisable to clarify the minimum necessary requirements and criteria (in terms of organisational and corporate structure, size and governance) in order for delegation to wholly publicly-owned companies to be acceptable.

The adoption of the in-house approach should be made conditional on producing verifiable proof that the public entity to be entrusted with the service is capable of operating on the efficiency frontier (or close to it), and on submitting a business plan geared towards maintaining the efficiency levels already achieved, outsourcing to the extent possible and eliminating existing management fragmentation within fixed time limits.

Where it is not possible to evaluate the comparative efficiency of a public company on the basis of an adequate track record or a busienss plan, the in-house approach should be a last resort option. It should only be adopted after having held a competitive tender to award the service management contract, in which the public company may in any case participate.

Finally, the risks of inefficient management for reasons attributable to the in-house nature of the management entity should be borne by that company itself (and thus also by its financing banks) and not by users.

IV.2 Separation of ownership and management

In order to overcome the stalemate produced by the conduct of local authorities, who are often reluctant to hand over control of water assets in their territory, some regions in northern Italy have proposed organisational solutions that have eased the absolute preference for the single management entity envisaged in the Galli Law.

One of these options is the creation of a holding company which is vested with the ownership rights to the infrastructure and charged with carrying out investment (a "network infrastructure company"). The private sector is then given responsibility for managing the network and plant to deliver the service without having to sustain the investment risk, which is borne by the public company that owns the infrastructure.

Put forward as an *ad hoc* mechanism for the water sector, the proposal is in reality borrowed from the experience of other network sectors (such as electricity transmission). It encompasses some variants, such as the separation of ownership and management of the network from management of the service, or ownership of the network separated from its management and service supply.[32]

[32] In one version, the assets are valued by discounting historic connection fees or are calculated on the basis of the finance costs (on loand) borne by the local authority. Under another approach, assets are valued at reconstruction cost net of depreciation, calculating concession fees on the basis of the depreciation charges. Under a final, more extreme method, the company also takes on the local authority's operational cost centres (such as public lighting or maintenance of green

So far, solutions of this kind have been adopted in Lombardy and Emilia-Romagna. In Lombardy, in particular, the regional government has availed itself of this opportunity introduced by national legislation on local public services in the early years of the current decade.[33] In 2003, the Regional Council passed a law[34] which covers all public utility services (not just water, but also waste, economic management of urban subsoil and power distribution), creating a unified code in this field.

As regards water resources, the regional law diverges from some of the principles contained in the Galli Law, starting with the latter's preference for single management entities in each area. In fact, the Lombard reform establishes that "*the Area Authority may award contracts for integrated water services management to multiple entities in order to best meet the criteria of effectiveness, efficiency and economy and where it demonstrates in its area plan that this will produce economic, functional and environmental benefits for the OSA*". In short, the law appears to favour the option of awarding the service contract to several entities rather than just one.[35]

With the recent enactment of the Environmental Code, which provides for a single management entitiy (potentially jeopardising the separation of ownership and management), the Lombardy Region is considering a review of its regional law, which would provide for a single holding company and a single management body for each OSA. The situation is still highly fragmented. In the OSA of the Province of Milan, for instance, various holding companies co-exist (some for drinking water, others for sewage and water treatment) together with multiple small management entities.

The intention of the Lombard legislature, however, seems to be to aim for modernisation of the sector in the interests of the user, while choosing not to attempt to defeat or force the hand of local authorities resistant to overcoming management fragmentation within the territory[36]. The holding company option also splits the functional dyad of infrastructure management and service supply. In the framework set up by the Galli Law, these two activities are carried out together by a single management entity. The approach embodied in the Lombardy law, however, separates both infrastructure and operational management of the network and plant from supply of the service, limiting the private sector's area of

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spaces), generating the operating margins necessary to finance them with the return on capital invested in the infrastructure.

33 Art. 35 of Law 448/01 (the 2002 Finance Act).

34 Lombardy Regional Law 26/2003, Art. 49, par. 2.

35 Note that even the Galli Law, in Art. 9, par. 4, envisaged the possibility of contracting management out to more than one entity, with the aim of "*preserving the forms and management capabilities of existing bodies which meet the criteria of efficiency, effectiveness and economy*", but only as a strictly secondary option to the preferred solution of the single management entity.

36 A special regional regulation details the operational aspects of the law, including setting service standards, methods of supply and criteria for eligibility and adjudication of bids. The law also provides protection for the benefit of users based on: a Service Charter which commits management entities to guaranteeing quality, continuity and safety; the role of the regional watchdog authority, which has the task of carrying out surveillance on the quality of services supplied; and on a Monitoring Centre, which has the task of collecting information useful for gauging user satisfaction.

activity to the latter. The public sector is responsible for extraordinary maintenance of plant and equipment and for investment, which is considered to be in the public interest and therefore inalienable. These tasks are performed either directly or by means of a dedicated wholly publicly-owned company.[37]

At the level of service organisation, the innovative element of the Lombardy law is the introduction of greater flexibility in the management model. This flexibility may prove beneficial in situations where it is not possible or realistic to standardise highly diverse services within the territory. Nevertheless, it does require close coordination between the owner and supplier of the service in order to avoid making infrastructure choices that are inconsistent with the needs of management and users and to ensure that, in evaluating investments, the operating costs that they will generate are also duly taken into account.

The advantages of the Lombardy model are twofold:[38]

(i) the first regards the financing of investment, which is less expensive for a public entity, given that it can raise funds on more favourable terms than a private operator;
(ii) second, ownership and management are better protected in public hands since this ownership arrangement prompts local communities to perceive the network infrastructure and plant as public goods.

[37] Art. 2, par. 1 of Regional Law 26/03 states: "*The networks, plant and all other assets involved in the supply of the services constitute public interest assets. Local authorities may not transfer title thereof. However, they may transfer rights, including by way of partnership, to wholly publicly-owned companies, or majority publicly-owned companies whose minority equity shareholders have been selected through open and public procedures.*"
[38] The arguments made in SRM (2006) are reiterated here.

Box D - Proposal no. 4

The separate holding company model represents an option which has several benefits and as such should be kept in mind as a possible alternative. However, for it to be effective, it requires considerable skill in regulating the ownership aggregation process on the part of the regional government. It would therefore not be advisable in those situations where these skills are in short supply.

The choice of a very limited number of management entities per OSA, for instance a single management body, could introduce rigidity into a model which, conversely, seeks to enhance flexibility and diversity while preserving the existing arrangements within the territory. An accurate analysis of the economies of scale obtainable by the aggregation of management entities would enable a comparison of the benefits of these economies with the costs of the reform.

Economies of scale can more readily be envisaged for procurement, investment and financial functions, which seem to be the real advantages of this approach. In order to be able to finance the high level of investment needed without incurring excessive due diligence costs, banks need to interact with counterparties of adequate size, expertise and experience. In this regard, the French model throws up an interesting consideration. In that country, three large management entities obtain private financing but the service areas they operate number over 10,000.

However, for the banks, public ownership (even if the company is very large) is not sufficient. It is also necessary to obtain certainty in risk allocation (see section V), a detailed investment and business plan and a well-defined management structure (with one or more management entities), which specifies the contact people, the responsibilities and the rights and duties of the holding companies and the management entities in the event of disputes.

It is worthwhile noting that the nature of ownership (public or private) is not, as such, a decisive factor for investors, whose real interest is in the future cash flows the service will generate. One clear advantage of separate ownership (public or private) is that it eliminates the problem of the duration of the service concession. As in the Anglo-Saxon model, the maturity of the financing can thus reflect the life of the assets, and would not be restricted by the duration of service management agreements (which under the new Environmental Code may not exceed 30 years, but in many instances in Italy is significantly shorter).

The argument that public ownership requires a lower return on invested capital than private ownership must be evaluated in the light of the allocation of risks. If the allocation of risks is clear and the private sector prices these risks correctly (and it can be assumed that this does happen when there is strong competition for the market), a lower valuation by the public sector could entail an implicit guarantee or hidden subsidy for the sector.

The main avenue for reducing the cost of financing therefore must not be sought in the public nature of management entities or holding companies, but rather in the clear allocation of risks. The following section deals with this issue.

V. Risk allocation

From a theoretical point of view, an allocation of risks that assigns each contractual party the risks which it can manage most effectively (for instance, through actions to prevent the losses that would be caused if the risk event were to occur) can be considered efficient, thus enabling the minimisation of the economic cost of meeting such risks. From a financial point of view, a clear (even if not necessarily efficient) allocation is indispensable for the identification and assessment of potential losses and for structuring and pricing the risks, on the basis of sensitivity analyses and the propensity of investors to assume such risks.

Without clarity on risks, it is practically impossible to determine whether the level of rates or returns on invested capital (the 7 per cent enshrined in the "Normalised Method") is sufficient or not. In other words, in conditions of extreme uncertainty, a significantly higher rate may still not attract any private investment. Even if rates were increased, passing on costs arising from the incompleteness of the contract to end-users would seem to be inefficient when the problems could be resolved at their source.

A problem endemic in the Italian water sector is precisely the incomplete nature of contracts granting service management rights.[39] The agreements signed by OSAAs with management entities are often thin on detail, sometimes based on regional templates, which contain few particulars on the allocation of risks between the parties. In essence, there is a dual weakness in the contractual arrangements that frequently characterises public service management concessions: contractual incompleteness and imperfect allocation of risks. These shortcomings appear to create a classic case of "market failure", so much so that, in fact, the "market" concept does not seem to have held any great sway in the sector to date.

The uncertainty is especially serious when the service manager is a private company or mixed public-private company. In such cases, the uncertainty can produce considerable conflict between the public sector (represented by the regulator) and the private sector (the operator), which can lead to high transition costs. In the case of wholly publicly-owned concession holders selected in-house, the uncertainties create fewer problems, but they do nevertheless surface as soon as a third party needs to be involved in the relationship, for instance when long-term finance from a bank is sought.

Four main risk categories can be identified:

- Risks at the time of the initial award of the contract;
- Risks linked to investment and to service standards;

[39] See Bakovic, Tenenbaum and Woolf (2003) and Klein (1998) on the weaknesses of the framework which regulates relationships between the parties and which often characterise the awarding of public utility service management concessions, namely the incompleteness of contracts and the imperfect allocation of risks.

- Risks linked to financial equilibrium; and
- Risks linked to the early termination of the concession.

V.1 Risks at the time of the initial award of the contract

A particularly complex aspect of the water sector is the process of selecting the management entity during competitive tendering for the service management contract. The existence of genuinely "hidden assets"[40] and the importance of knowing the territory and customers produce significant information asymmetries between the authority granting the contract and potential service managers.[41] The majority of infrastructure surveys, Area Plans and business plans (*Piani economico-finanziari*, or PEFs) annexed to the contracts do not go into the level of detail that meets the standard required by private investors. PEFs have been drawn up with great difficulty (including to access additional resources available under the Community Support Framework in southern Italy), but they do not always reflect the local situation in sufficient detail.

As there are time limits for the preparation of PEFs, sometimes needs have been determined using parametric methods (such as the number of litres per inhabitant per day) to make up for the lack of reliable data on local demand and on the infrastructure scattered across the territory. One consequence of this information asymmetry is that after the award of the contract, many management entities require 4-5 years to review the PEFs before they can proceed with investment and apply for bank financing.

The "certification" of a PEF by a bank would seem to be of limited significance. Indeed, such certification creates no obligation to finance the project, nor does it entail an assumption of responsibility by the bank with regard to the commercial sustainability of the PEF or the plausibility of the assumptions underlying it, since the examination of the PEF is often limited to formal and accounting aspects.

Apart from the problem of the low level of rates, which we have mentioned, the PEFs contain a variety of other difficulties, which can be summarised as follows:

- a first issue regards the the profit and loss projections in PEFs: private investors are more interested in cash flow projections, which determine the value of the investment;[42]

[40] Referring literally to the pipelines, which, being buried underground, are not easy to locate.
[41] Unlike, say, the case of financing a new hospital or power plant, a project finance operation in the water sector does not constitute a greenfield initiative in a circumscribed territorial area, but rather covers a series of widespread works within the context of a pre-existing distribution, sewage and water treatment system..
[42] For instance, in PEFs, a line item for rate revenues is included, while for investors it is important to have a realistic valuation of the share of invoiced revenues actually received, as well as the actions the management entity intends to undertake, if any, to increase this share. In addition, the PEF often sets out the technical and economic depreciation of

- a second problem regards the plausibility of demand estimates used as the basis for revenue growth figures: often, the analysis of the underlying detail, which should provide information regarding the demographic, economic and environmental assumptions made, is incomplete. Despite this, in many Area Plans, annual growth of between 2 and 5 per cent is assumed. In many parts of Italy, these figures are clearly unrealistic, given the state of development of the sector, the modest rate of technological innovation, the impossibility of differentiating the commodity, the high rate of penetration already achieved in civil water usage and the low population growth rate.[43] Accordingly, there is a well-founded suspicion that the growth rate is calculated to "square the circle", namely the PEF, in the face of a high investment requirement and low rates;
- a third problem is the fact that investments envisaged by Area Plans following territorial surveys carried out by the OSAAs are generally very high, especially in the early stages of the concession period. This can be explained by the need to make up for lags and to comply with the requirements laid down by EU directives.[44] But it is also possible that the volume - if not the cost - of investments are overestimated since the needs estimates are often prepared by the OSAAs on the basis of reports from local authorities that are focussed on the level of infrastructure in the area (input driven) and do not have an integrated view of the system and resource quality parameters (output driven). An investment profile of this kind requires a significant leap in technical expertise in the drawing up of calls for tenders and the drafting and monitoring of contracts, precisely at the time when the new management entity is still settling in. It also requires high levels of debt and equity capital, given that in the early stages, rates (and hence the possibility of self-financing) are particularly low.

In order to correct the Area Plans and PEFs, the contribution of the management entities and banks is crucial. In order to obtain this contribution as quickly as possible (and not after the contract is awarded, at which point it becomes more difficult to modify the underlying assumptions), in the latest calls for tenders not only was a bank approval required but also a

assets, while investors are more concerned about the financial amoritisation of debt capital, which is usually higher (due to its shorter maturity).

[43] In some areas of the country, it might even be possible to reduce the volume, considering that: (i) the average level of per capita consumption (for instance, greater than 220 litres/inhabitant/day, net of leakages) is higher than that in other European countries (around 180 litres/inhabitant/day); (ii) an increase in rates over time and improved metering and invoicing of the volumes consumed could lead to a reduction in demand, particularly industrial demand; and (iii) there may be a reduction in population growth.

[44] See Directive 271/91/EC on wastewater treatment.

signed loan contract.[45] The same approach was recently applied in a governmental context.[46] Nevertheless, the results obtained so far have been disappointing, given that, as mentioned, there has been a discernable slowdown in the awarding of contracts, partly due to the fact that many calls attracted no bids (precisely those that required an accompanying signed loan agreement).

It should also be noted that, even in cases where an effort has been made to reduce the information gaps typical of the water sector (such as through the drafting of detailed call-for-tender documentation by the authority awarding the concession), there have been frequent *ex-post* discussions and renegotiations between the authority and the concession holder.[47]

While the risks that an *ex-post* contractual review may imply for the transparency and fairness of a public decision-maker's choices should not be ignored, the possibility of introducing contract renegotiation mechanisms should not be excluded in principle. It is, however, necessary that this be done efficiently, namely by filling in the gaps of a necessarily incomplete contract at minimum cost. A sequence of proceedings which involves the initial preparation of an Area Plan and the related PEF, the tendering process, the awarding of the contract and a subsequent review of the Plan and PEF according to clear procedures, in specified circumstances under the scrutiny of a trusted neutral third party, could constitute an example of "efficient renegotiation" of an incomplete contract, in line with the recommendations drawn from the theoretical literature on the issue.[48]

By the same token, without adequate supervision and clear and known *ex-ante* procedures, renegotiations risk being highly onerous for the parties and distorting competition, since they alter the level playing field to the point of undermining the very legitimacy of the original contract award.

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[45] In the Sircusa OSA, the notice for the first call for tenders (which attracted no bids) for the awarding of an integrated water services management concession stated: "*The financial plan contained in the bidder's tender…shall be guaranteed by an irrevocable undertaking issued by banks…to provide the necessary financing for the activities established in the tender. At the time the service management contract is signed, the successful bidder will be required to document said undertaking by producing the relevant loan contract".*

[46] See Unità Tecnica Finanza di Progetto (2005), a paper containing comments and proposals that also deals with the more general topic of the shaky take-off of project finance in Italy.

[47] Financing in Arezzo was only secured five years following the award of the contract after various revisions of the Area Plan and rates. The experiences in other OSAs (such as Latina, Pisa and Florence) also confirm that, owing to renegotiations, the timeframes for securing finance after the contract award are long, often more than four years. At the international level, the case of the contract award in Buenos Aires is famous. In that case, despite a significant contribution from the World Bank, perceived by the parties as a sort of "honest broker" in the preparations for the tender, the renegotiations on rates and investments have been numerous.

[48] See Shavell (2004), Ch. 14.4.

Box E – Proposal no. 5

Calls for tenders in the water sector should not only require the simultaneous signature of a loan contract but also provide for a possible review of the Area Plan and the PEF after the contract has been awarded.

This renegotiation should follow procedures strictly defined *ex ante*, with particular reference to the circumstances in which it may take place and the rules to follow, to be specified in the contract at least in general terms.[a] The certainty of these rules is an essential pre-condition to ensuring the fairness of the renegotiation process.

It is also necessary at the tendering stage to clearly define the assumptions underlying financial equilibrium, clarifying that where the parties agree on the necessity of reviewing *ex post* some of those assumptions, such financial equilibrium will also be reviewed as a consequence. This innovation would introduce an element of procedural flexibility, thereby creating circumstances more in keeping with the participation of private-sector actors.

Where permitted, the negotiation process should be managed by the AATOs. To ensure transparency, fairness and rigour, the AATOs should be supervised in this activity by the national or regional authority. The key element, however, is that any review should take place in agreement with the private investors, including banks. In this regard, it is essential that a neutral third party – known in international practice as an "independent technical advisor" – should be involved as an arbitrator, a guarantor of fair play and a source of technical expertise[b].

a) It should be noted that the possibility of renegotiation is already contemplated by the legislation in force: Legislative Decree 158/1995 (which implements Directive 93/38/EEC on procurement) in fact provides for the possibility of agreeing technical and planning variations with the winning bidder after the bidding has been adjudicated.

b) In essence, renegotiation would not infringe equal treatment principles, as feared in the Circular of the Department for EU Policies of 15 November 2001, entitled "*Divieto di rinegoziazione delle offerte nelle pubbliche gare dopo l'aggiudicazione*". The authors would like to thank Monica Scatasta, water projects expert at the EIB, for suggesting the use of an independent technical advisor.

V.2 Risks linked to investment and to service standards

The variety of management models (public or private companies or mixed public-private companies) that exist in Italy makes comparison with other countries difficult. It is, however, possible to note that the British model clearly transfers the responsibility and risk of investment and service standards to the contractor (with the aim of benefiting from the technological know-how of the private sector). The French *affermage* contract, on the other hand, only delegates the operational functions to the management entity, while the granting authority retains the risk for new works.

Box F– Proposal no. 6

Given the current situation, in which many infrastructure surveys carried out by the AATOs do not reflect the local reality, and in which the management entity is not involved in reviewing the investment plan prepared by the AATO, it seems difficult to establish incentives and penalties to motivate the concession holder to comply with service standards linked to investment.

In these cases, one possible solution, which would in any case ensure the bankability of the managing entity and which has been adopted by many banks, is to set a cap on the amount of penalties the AATO may impose, expressed as a share of revenues. This is clearly a less-than-optimum solution from an economic point of view, but it is at least sustainable thanks to the limitation of the risk to which the management entity is exposed.

From a purely theoretical point of view, a better mechanism would be one in which the regulator fixes service goals and the management entity has the option of choosing the instruments that will enable it to meet those goals best. In this case, the entire risk related to investment and the pursuit of service standards falls on the management entity (whether it be public or private), as occurs in the Anglo-Saxon model, which can set itself the goal of minimising investment costs (and thus the level of debt) necessary to meet the quality objectives set by EU, national and regional directives and reiterated in the Service Charter.

In a system like Italy's, where the regulator also fixes the level of investment, this choice needs to be made on solely technical grounds, in agreement with the concessoin grantor and holder. Political interference must be avoided at all costs as it could cause delays and sudden changes of course. Recourse to the support of an independent technical advisor would provide a guarantee against this. Only in this case would it seem reasonable to require the management entity to also comply with service standards linked to investment.

In Italy, the allocation of investment risk is not clear. While the OSAA is responsible for planning investments, the party awarded the contract (the management entity or holding company) makes them, in accordance with the service standards. Given that the investments and service standards are closely linked, the latter becomes ultimately responsible for a risk it cannot control, potentially exposed to heavy penalties for failing to meet the service standards.

V.3 Risks linked to financial equilibrium

The idea which underpins service management contracts – namely, preservation of the financial equilibrium of the concession holder, a notion of prime importance to private investors – is generally not well-defined.

There are various related problems. They include the fact that the causes that may potentially upset that equilibrium are not exhaustively identified; events outside the control

of the service manager (such as breaches by the authority that awarded the contract, actions of third parties, *force majeure*, extreme natural events and other situations that are not insurable) are not distinguished from those over which it should reasonably have control; the parties may have different opinions on what the expression "re-establish the equilibrium" means; the timeframes for achieving the latter may be quite long, because the procedures and time limits that the parties must follow are normally not specified; and finally, the agreements may be ambiguous regarding the penalties that can be imposed by the awarding authority in the event of a breach by the service manager and thereby worsening its economic and financial equilibrium.

Box G – Proposal no. 7

National authorities with advanced expertise in the sector[a] should draft a National Contract Template in which the concept of economic and financial equilibrium, risk allocation and incentives and penalties could be set out clearly. The Contract Template, also to be drafted on the basis of the experience already gained by certain Regions, could be used for future contract tendering by the AATOs, or to amend and/or supplement some of the existing agreements (without calling into question the original award of the contract)[b]. From the point of view of debt capital investors, the equilibrium would be defined on the basis of debt-service coverage ratios. From the point of view of equity investors, reference would also be made to the return on invested capital. Re-establishing equilibrium after a destabilising event should involve a return to the financial ratios and a return on capital at levels applicable prior to the event. For these purposes, the AATO and service manager should have a business model which is continuously monitored – an element that has often not been in place[c].

Furthermore, the procedures for imposing penalties should be specified, providing for compulsory prior warning notices and ensuring that the managing entity has a "grace" or cure period before penalties are actually imposed.

a) This task could, for instance, be assigned to CIPE's Project Finance Technical Unit, in agreement with other parties equipped with sufficient expertise within the various economy-related ministries and within the private sector (e.g. consultants, legal firms and banks).

b) For contracts that have already been awarded, where the agreement has been signed but private financing has not yet been provided, it will be necessary to draft, with the participation of the banks, a "Deed of Acknowledgement" recognising the agreement or an "Interparty Agreement" between the parties to the service contract and the banks. These documents should clarify, on the basis of a genuine but shared interpretation, the points mentioned here, without changing the assumptions underlying the award of the original contract.

c) Often, only the business plan annexed to the agreement exists. Frequently, however, it does not reflect the real situation and is updated every three years instead of whenever destabilising events occur.

V.4 Risks linked to termination of the contract

In some cases, the principles set out in the general policy law governing public works, the so-called "Merloni Law"[49], could apply to the awarding of contracts in the water sector, precisely to the extent they constitute contracts for public works and services. This law provides that, in the event of early termination of a contract, the contractor (and its financiers) has the right to receive compensation from the party who awarded the contract[50]. In particular, in the case of revocation by the latter on public interest grounds or where the said party is demonstrated to be in breach, the compensation covers:

a. the value of the works completed in addition to related costs (net of depreciation and public capital contributions) or, where the work has not yet passed inspections, the costs actually incurred by the contractor;

b. penalties and other costs incurred by virtue of termination or revocation of the contract;

c. damages for lost earnings equal to 10 per cent of the value of the works still to be completed or of that part of the service yet to be managed, valued according to the PEF.

On the other hand, in the case of breach by the service manager, the compensation due is at least equal to "*the residual value of the works net of depreciation and public contributions*" (see point (a) above). This amount therefore depends on the value attributed to the infrastructure and the depreciation approach adopted in each individual case. The valuation methods used for the former and the rules for applying the latter should be clarified, in accordance with the valuation of depreciation amounts allowed in rates under the Standardised Method[51].

The application of the "Merloni Law" also raises the question of the financial capacity of the authority which awarded the contract (the OSAA) to make payments within fixed time limits. As is widely known, an OSAA can take one of two legal forms, namely constitution by way agreement or through a consortium between municipalities. The consortium is a more structured form, in that it has its own institutional bodies (a President and Board of

[49] Law no. 109 of 11 February 1994.
[50] The reference is to art. 37-*septies* of the Merloni Law.
[51] The choice is between technical and economic depreciation (resulting in a positive residual value at the end of the contract, given that in Italy the useful life of plant and equipment generally exceeds the term of service management contract, which is limited by law to 30 years and is sometimes only for 20 years) and financial depreciation (which, by contrast, envisages a depreciation period commensurate with the term of the contract). Since many agreements provide for a nil residual value at the end of the contract (with an assignment by the service manager of the assets for no consideration), the logical depreciation method to adopt would by implication seem to be that of financial depreciation. But this method risks representing an intertemporal trade-off by current users for the benefit of future ones. The issue of the discrepancy between financial depreciation and the useful life of assets arises to a lesser degree in Spain, where some contracts last 40 years, and does not arise at all in the United Kingdom, where the management contact is granted for an indefinite period, since ownership of the infrastructure was opened to competition and transferred to private managers listed on the stock exchange.

Directors), while those constituted by agreement are more tenuous, the product of a mere working agreement between the relevant municipalities[52]. In both cases, however, it is clear that the OSAA does not produce revenues of its own[53], nor does it have a sufficiently ample budget, backed by contingency funds or guarantees, on which to draw to meet payments due in the event of early termination of the contract.

Another issue concerns those service management contracts in the sector which make no reference to the "Merloni Law" and thus provide other forms of compensation that are required to be paid by the replacement management entity (and not the authority that awarded the original contract). In these cases, it is not clear whether the payments due to the original contractor in the event of termination, repudiation or revocation of the contract are sufficient to cover liabilities incurred and equity invested. In addition, where the contract is terminated for breach by the service manager, it is not clear whether the mechanism of the banks stepping in to preserve the agreement, as provided in art. 37 of the "Merloni Law" [54], would apply.

Finally, a very sensitive topic is the method of transfer of company assets, both tangible and intangible, at the end of the contract. In the water services sector, this transfer takes the form of a new company stepping into the shoes of the previous management entity. While for physical infrastructure the issue may be resolved by duly regulating the terms of property ownership in the event of a take-over of the management, it is intangible assets – such as goodwill, professional expertise and patents – that particularly pose greater problems. The same could be said of investment in training and management solutions capable of being financially exploited by subsequent management entities and in other territorial areas, such as remote monitoring and control systems and supply contracts with other operators.

[52] The different institutional weight of the two options is also reflected in the related management costs, estimated (by CoViRi) to be 0.5 euro/inhabitant/year for OSAAs formed by agreement and 0.9 euro/inhabitant/year for those taking the form of a consortium.

[53] In fact, it receives only a part of the contract fee paid, to cover its costs.

[54] This mechanism enables the financing banks to nominate a substitute with the aim of avoiding termination for breach by the service manager, which would result in it being deprived of rights and left without any payment of compensation or with insufficient compensation to cover the outstanding debt.

Box H – Proposal no. 8

The National Contract Template (mentioned in Proposal no. 7) should also clarify the methods, timeframe and amount of the compensation due on termination of the contract. The methods of transferring company assets to a replacement managing entity should be specified in a very detailed manner in the notice calling for tenders.

In the event of termination for reasons not attributable to the service manager, the latter should have the right to compensation which covers the outstanding debt and equity invested, financial penalties for the termination of finance contracts and lost profits. Where termination is for breach by the service manager, reference to the net value of depreciated assets may suffice, as long as the depreciation methods and criteria for valuing capital assets are specified.

Where payments are owed by the authority that awarded the contract, the legal personality of the AATOs, the applicability of insolvency laws to them and any consequences ensuing from their insolvency should be specified by the applicable legislation. In particular, an obligation on the part of the local authorities that constitute the AATO (or the responsible regional authority) to take over its debts should be made clear, as well as the timeframe within which this must occur.

Where payments are owed by the replacement service manager, maximum time limits should be fixed within which such payments must be made, on pain of forfeiture of the contract. The solvency of the new service manager should also be verified prior to its taking over.

VI. Conclusions

The water sector in Italy is in a worrying state. At a time when huge investment is necessary in water infrastructure in order to meet the requirements of water resource quality set by EU Directives and to support competitiveness in public services, the public funds which have traditionally sustained the sector have all but run out.

The momentum of the reform, launched over ten years ago with the passing of the "Galli Law" aimed at shepherding the sector out of a landscape made up of subsidised and heavily fragmented municipally-controlled enterprises, towards an industrial, integrated and financially sustainable framework, seems to be flagging in many areas of the country. The "fatal error" committed by the Galli Law has become apparent: there is an inherent inconsistency between the strategic plan of overcoming the constraints of local borders and the decision to accord municipalities a pivotal role in bringing about this transition, without preparing a system of incentives that correspond to that objective.

There are three main factors that provide disincentives to private financing of the sector:

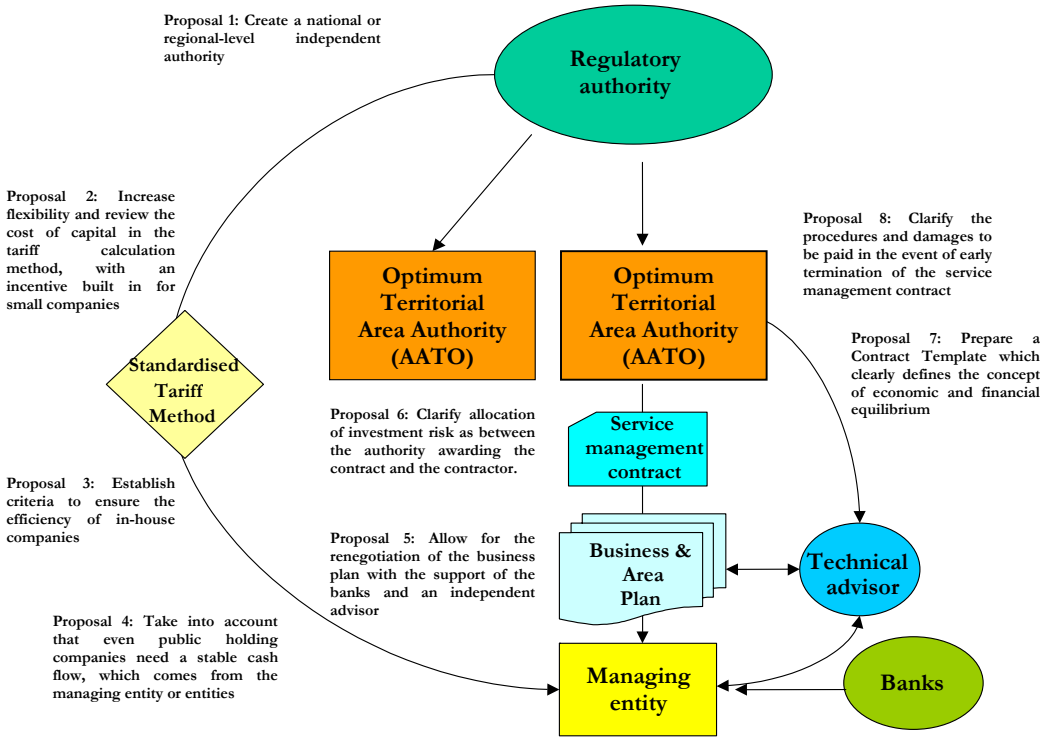
1) a lack of independence and conflicts of interest which beleaguer a regulatory framework characterised by the co-existence of a national authority and various local regulators;

2) delays in awarding service management contracts and uncertainty regarding the management model, especially in relation to in-house delegations and the separation between network infrastructure holding companies and management entities in certain regions of the country; and

3) the lack of clarity in the allocation of risks, at the time the service management contract is awarded, during the management and investment stages and in the closing stages of contracts.

This paper recommends some innovative measures aimed at reviving the reform process, thereby avoiding a halt or even a slide backwards in its progress. The measures proposed above have been summarised as a flowchart, showing their interrelationship, in Figure VI.1 below (which, it should be noted, reflects the order in which the proposals have been presented in this paper and *not* the order in which they should be implemented).

Figure VI.1 Eight proposals aimed at restarting water sector reform



As far as the order in which they should be implemented is concerned, given the failings of many of the current service management contracts drafted at the local level, a high priority is the drafting of a National Contract Template. This document should clearly set out the concept of economic and financial equilibrium and methods and timeframes for its review, the allocation of risks, as well as the methods for quantifying outstanding liabilities and residual asset values. In addition, in order to ensure that the information asymmetries typical of the sector do not alienate potential management entities and banks (with the result that calls for tenders attract no bids), it is recommended that the procedures for any subsequent renegotiation of the Business Plan be made clear from the competitive tendering stage.

We emphasise the expediency of having an entity that may be called upon to act as an arbitrator and guarantor of fair play (the equivalent of the Independent Technical Advisor in international best practice). An advisor would be useful not just in the early stages, but could also participate in subsequent reviews of the investment plan, contributing to a clear allocation of risk in the event of disagreement between the parties to the contract.

Another priority is the creation of a stable regulatory framework not influenced by changes in government (at the national or regional level). In this way, the conflict of interest

inherent in the current coexistence of local regulators (the OSAAs) and companies governed by the very same shareholders would be overcome. A single, coherent and homogenous national regulatory framework would also have other benefits compared to a framework that is regionally-based:

a. positive impacts on areas of the country in which the regulatory and legal risks are considered higher by finance market operators;

b. economies of scale in financing and the possibility of introducing innovative financial products, since the costs of due diligence necessary to analyse and quantify the regulatory risk would be lower; and

c. the introduction of elements of virtual competition - "in" the market – based on systematic comparisons of the efficiency and quality of service offered by the potential management entities (competitive benchmarking); a fundamental choice given the impossibility of effective competition *in* the market and the low appeal of calls for tender *for* the market, due also to the increasing resort to in-house delegation.

After having clarified the allocation of risks and resolved on a regulatory framework that is more independent of the executive, the need to adjust rates or returns on invested capital should be assessed. In this regard, it is stressed that the Normalised Methodcould be revisited and greater flexibility introduced in rate adjustments (with three or five-yearly instead of annual ceilings on the 'K' parameter) together with a raising of the allowed return on invested capital for smaller companies, which are subject to diseconomies of scale and greater risk volatility. It is also suggested that the allowed return on invested capital (fixed at 7 per cent net of taxes in 1996) should be reviewed periodically, making a clear distinction between the cost of debt and the cost of venture capital and taking into account the leverage that is typical of the sector.

Finally, in respect of the management model, it is proposed that the minimum prerequisites for the acceptability of in-house delegations be clarified, in order to ensure that they are subject to the same efficiency incentives as apply to ordinary companies.

As regards the option of distinguishing between holding companies owning the network infrastructure and service managers (the avenue adopted in Lombardy and Emilia-Romagna), the benefits that this provides for financiers (such as the absence of the risk of early termination of the service management contract) should be noted. However, even where the holding company is entirely publicly-owned, it should be noted that banks assess cash flow stability first and foremost – and hence, indirectly, the profitability of management – irrespective of whether the company is public or private.

In conclusion, a necessary precondition for launching a successful reform process is cooperation between the various responsible actors. National, regional and local authorities, financiers, management entities and users should interact to enable the sector to bridge the distance separating it from full adherence to a competitive model, the "last stretch" capable of reconciling managerial efficiency with a better quality service.

The task of sectoral policy is to flank that process with clear rules and, if necessary, to intervene to foster and accelerate it.

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