Water Sector Regulation in Europe: the Italian case

2e Workshop at the Florence School of Regulation on “WATER SECTOR REGULATION IN EUROPE”
28-29 November 2013

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Outline – following an historical perspective

1. The Italian water system before 1994

2. In between 1994 and 2011
   - The Galli Law:
     - Regulatory design
     - Its implementation

3. Since 2011, current issues at stake for the new Authority:
   - Investments, how to foster them
   - New tariffs design and affordability (measures and practice)
   - Efficiency and quality in the service provision
Water Sector in Italy (1)

Until 1994

- Municipal - very fragmented - service, local public provision, cross subsidies among local utilities (i.e. gas, water)

- drinking-water: 5,000 service provisions, almost all directly owned by local public administrations, each one serving around 9,000 inhabitants; the 200 largest firms served around half of the Italian population

- sewerage and wastewater disposal systems traditionally were also managed at the local level.

- ordinary maintenance and quality monitoring: extremely onerous
- access to resources to finance investment programs: very difficult
Water Sector in Italy (2)

**National Law 36/1994 (i.e. Galli Law):**

- Definition of the Integrated Water Service, IWS (supplying of water – fetching, transporting and distributing - sewage and water treatment/purification)

- Definition of Optimal Territorial Basins (OTB) according to hydrographical and political-administrative criteria: 91 catchment areas over the country

- New tariff system (based on full cost recovery principle) referring to IWS

- Creation of
  - i) a National Committee, with NO regulatory independent power;
  - ii) OTB Authorities with some local functions (regulation/programming/monitoring of the IWS) and the property of infrastructures

- Management of the IWS held by a single and independent operator, contracted out by the OTB Authority

→ The reform aimed at favoring new investments and improving both scale and managerial efficiency, ascribing main functions at local level (*Muraro and Valbonesi, 2003*)
Water Sector in Italy: the Galli Law, 1994
Borders of the OTB (2.a)
a “fairly” price-cap mechanism: based on a pre-specified parametric formulas, used to define the “modelled” costs for each OTB (i.e. according to the local service characteristics).

Each OTB Authority should compare its own planned operating costs – computing the Average Real Tariff – with such modelled costs – Limit Tariff - and, according to defined rules, fix minimum efficiency improvement rates.

Limit Tariff: \( T_n = (C + A + R)_{n-1} \times (1 + \Pi + K) / m^3 \); Average Real Tariff: \( ART = (C + A + R) / m^3 \)

- \( C \) = operation costs
- \( A \) = amortization costs
- \( R \) = capital remuneration component
- \( \Pi \) = inflation rate expected for the current year
- \( K \) = price cap, i.e. max rate of increase over planned inflation
- \( m^3 \) = volume of water provided

Those operators who succeed in delivering the service at a lower cost than that assumed by the OTB Authority keep the benefits as in price-cap. However, differently from traditional price-cap based on yardstick competition, the Italian regulatory model was organized according to a decentralized pattern (i.e. yardistick competition not implemented).

In 2002, the National Committee proposed a re-formulation of these rules for the water tariff, which have never been implemented. (D’Alpaos and Valbonesi, 2006)
Water Sector in Italy: The Galli Law’s implementation (2.c)

- Very slow in the local areas, with a lot of exceptions/differences w.r.t. to the regulatory design (i.e. governance; tariff structure; etc.)
- Affected by the weak relationship between the National Committee (not independent, nor with full regulatory powers) and the OTB Authorities
- By the National Committee: no benchmarking; and OTB Authorities were often not able to give the right incentives to the operating firms (i.e. local regulatory capture)

OBSERVABLE OUTCOMES:

- Cost efficiency not well monitored, not effective incentives provided;
- Very low level of investments, in particular in the sewage collection and treatment; and in the maintenance of the networks (2.d)
- Quality of the service provided/resource: large heterogeneity in the different areas (2.e) (2.f)
The Blue Book (2011) estimated the need of investments in the sector for the next 30 years of 65,15 billions € (about 2,17 billion €/year); expected public investments will cover only 9,1% of the total (5,6 billions €).
Water uses and quality -(2.e)

A) as related to the service provision

In the Blue Book (2011), different metrics on the **Domestic Use**, (i.e. the number of complaints, the timing required to interventions, average timing in refound mistakes in billing, etc) ➞ all highlight large **heterogeneity** among water local providers

<table>
<thead>
<tr>
<th>Providers</th>
<th>Simple interventions (N Days)</th>
<th>Complex interventions (N Days)</th>
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<tbody>
<tr>
<td>Acam Spa</td>
<td>30</td>
<td>45</td>
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<tr>
<td>CIIIP Spa</td>
<td>25</td>
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<td>Iren Spa Piacenza</td>
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<td>Multiservizi Spa</td>
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<td>Acquedotto del Fiora Spa</td>
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<td>SII Scpa</td>
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<td>15</td>
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<tr>
<td>Nuove Acque Spa</td>
<td>7</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: Blue Book (2011), form Providers’ Service Codes
Water uses and quality - (2.f)

B) As related to environmental criteria for different Uses of water

Provision of standard (usually defined at national level): Industrial Use, Irrigation Use, Hydroelectric Use

➤ But very different local monitoring/enforcement of rules

Figure: % of sewage systems in large towns that are in accordance to environmental standards, by region (2009)

Source: Ispra Report, 2012
Reform on May 2011, “Decreto Sviluppo”:

- New National Water Authority with regulatory and independent power (AEEG):
  - OTB, in their role, will disappear; different catchment areas, Basin, governed by "Basin Counsils";
  - NWA (AEEG) has to set new rules to provide incentives for investments:
    - to increase efficiency in the service provision (i.e. reduce leakages in underground assets, innovation, etc.)
    - to make the IWS to perform better: does governance matters?
  - NWA (AEEG) in two years, it has to set a new tariff system:
    - to connect the quality of the service with the tariff’s level
    - to make water affordable for “vulnerable consumers”
Conclusions – open issues

INSTITUTIONAL SETTING
- Design of the water basin borders to exploit all the advantages from economies of scale and scope in the local management of water resource
- Increase efficient coordination in the multilevel governance
- Reduce regulatory risk, uncertainty and the number of existing rules
- Organise a national Task Force to support local actors/institutions involved
- Adopt a “more economic approach”: i.e. use tax, tariff or intake prices to incentivate agents’ behaviour

INCREASE EFFICIENCY, INVESTMENT & QUALITY IN THE SERVICE PROVISION
- Data collection over different years (for panel analysis)
- Benchmarking analysis: the AEEG should have the economic resources to implement it regularly
- Quality in the provision: on the top of standards for different water uses, design stick and carrot system to increase investment for environmental protection and process innovation
- Design a new regulatory framework - short and long run - to foster investments in the sector, along with new financial tools

TARIFF and AFFORDABILITY
- Tariff structure: new rules to define transparent and comparable tariffs
- Tariff level: how to relate it to the quality provided
- Design a system of incentives – sticks and carrots – to foster virtuous agents’ behaviour (i.e. resource saving)
- Design a policy to support vulnerable consumers
Conclusions

The Italian water sector is characterised by a lot of heterogeneity, often inherited from the past implementation of rules in the different local areas

- a good setting where to test issues under different conditions!

- implement some randomised trials (natural experiment) to assess the effects of new policy/tariff & incentive design

- it is a way to save money, find the best policies and reduce potential harm from them
Issues investigated


- **ITALIAN TARIFF REGULATION**: D’Alpaos and Valbonesi (2006): Una valutazione delle ipotesi di revisione del metodo tariffario normalizzato per il servizio idrico integrato, *Economia Pubblica*

- **ECONOMIC ANALYSIS OF REGIONAL WATER USES and QUALITY**: Valbonesi (2006): Economic Analysis for the Piano di Tutela 2000/60/CE (WFD), Industrial Use, Idroelectric Use, Domestic Use,

- **AFFORDABILITY IN THE ITALIAN WATER SECTOR** (and in other utilities): Miniaci, Scarpa, Valbonesi (2008a, 2008b, 2013)

- **GOVERNANCE AND INVESTMENT IN THE ITALIAN WATER SECTOR**: Bordin, Padula and Valbonesi (2012)
WATER TARIFF in ITALY: the main cost factors

- Staff costs (incidence between 20%-60 %)
- Wholesale water purchasing costs (only in some cities)
- Electricity costs (incidence between 0%-17%)
- Cost of chemical reagents (incidence between 0%-15%)
- Costs of materials and works relating to the running and materials (incidence between 3%-43%)
- Costs related to general items (incidence between 1%-6%)
- Costs relating to the depreciation allowances (incidence between 2%-25%)
- Costs relating to financial charges (incidence between 0%-17%)
Tariffs in Italy

- Torino (+32%)
- Milano (+65%)
- Firenze (+33%)
- Roma (+21%)
- Palermo (+1.6%)

Water: expected price dynamics, Italy - Miniaci, Scarpa, Valbonesi 2008