WATER SERVICES IN WALLONIA: SUSTAINABILITY ISSUES

Cedric Prevedello
Water is under regional competence in Belgium

The 3 Regions (in charge of Water) are:

- Wallonia
- Brussels
- Flanders
Hydrographic districts in Wallonia

N.B. Most of Flanders is in the Scheldt/Escaut river basin
Wallonia & Belgium

**Belgium**
- 30 528 km²
- 11.1 millions inhabitants (364 inh./km²)

**Wallonia**
- 16 844 km²
- 3.6 millions Inhabitants (211 inh./km²)
- Average income per household : 38 555 € (2010)
  (Flanders : 42 182 €, Brussels : 37 539 €)
Local origins of water supply

- Public water supply started in big cities late 19th century, and was a municipal matter.
- Only municipalities with enough income (e.g. Liège, Brussels, Charleroi, ...) could develop infrastructure alone.
- Yet, some rural municipalities decided to join their skills/funds to make economy of scale: this led to *Intermunicipal companies (Interco)*.
- Interco is a public company owned by the single-purpose joint boards of several municipalities.
Central solution for rural areas

- Unfortunately, this mechanism did not succeed in generalising water networks in all Belgium. Rural areas stayed largely unsupplied.

- In 1912, the Belgian Government decided to create a company called SNDE (Société Nationale de Distribution d’Eau) with the aim of building all the needed water supply infrastructure.
Central solution for rural areas

Water supply connection rate in 1947
In 1986, Water policies were regionalized. The SNDE was split into two new utilities:

- The SWDE for the Walloon region
- The VMW (now called « De Watergroep ») for the Flemish region

Since then, the SWDE continued to expand its activity to the remaining municipal structures.
## Concentration

<table>
<thead>
<tr>
<th>Management type</th>
<th>Number of operators</th>
<th>% pop supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional company</td>
<td>1</td>
<td>67%</td>
</tr>
<tr>
<td>Interco</td>
<td>9</td>
<td>27%</td>
</tr>
<tr>
<td>Municipality</td>
<td>41</td>
<td>6%</td>
</tr>
</tbody>
</table>
The story is quite the same for WWT.

Sanitation is under municipal competence. In order to make economies of scale, municipalities gathered into interco’s.

Unfortunately it did not succeed in ensuring a full coverage for wastewater treatment plant (due to a lack of funding).

A public company was then built in order to levy funds and coordinate investments: the SPGE (public company for water management).
Wastewater treatment
Current issues on water sustainability

- No major problems in terms of water quantity (rainy and cloudy country ... 😞 but good to party 😊)
- Some problems concerning water quality: nitrates and pesticides in groundwater.
- EU deadlines not met in term of wastewater treatment (91/271/EC Directive).
- Most important sustainability issues regarding water services: sustainable financing - Increase of the price of water – Affordability.
Introduction

- Water services are capital intensive
- Needs of a lot of money in order to:
  - renew the water supply network (average age for water tubes: 59 y!)
  - extent the sanitation network and equip all cities with a WWTP
Finding money

- Three ultimate ways to finance water services: **the 3T’s** (OECD methodology)
  - **Taxes**: national/regional or municipal general taxes (not linked to water services) including hidden subsidies.
  - **Tariffs**: price of water services (including environmental taxes on the water bill).
  - **Transfers**: money coming from another country (Organized Development Aid, ...).
Historically, taxes have always been the way to find money for water services via the national/regional or municipal budget (in Belgium as well as in other countries).

But ....

With the regionalization in 1986, the available money fell drastically.
Sustainable financing

Investments in wastewater treatment - Wallonia 1980-2009

- Creation of SPGE and tariff-based full cost-recovery
- Increased basis for the tax
- Implementation of a wastewater treatment tax
- Regionalisation

Million Euros

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Million Euros</td>
<td>300</td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>800</td>
<td>400</td>
</tr>
</tbody>
</table>
Well... taxes or tariffs ?

- Taxes are an unreliable source of financing...
- ...While tariffs have potentially strong societal counterparts (Consumption, affordability, ...).
- **Choice made in Wallonia**: full-cost recovery pricing: all the costs must be covered via water tariffs.
- This applies to Drinking water and wastewater as well.
Sustainable financing

OK ... but ... who pays and how much?
Need to define a pricing structure!
## Water tariff structure (1)

Pricing structure with fixed part and blocks.

<table>
<thead>
<tr>
<th>Fixed Charge</th>
<th>20 CVD + 30 CVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 0 to 30 m³</td>
<td>0.5 CVD</td>
</tr>
<tr>
<td>From 30 to 5 000 m³</td>
<td>CVD + CVA</td>
</tr>
<tr>
<td>From 5 000 to 25 000 m³</td>
<td>0.9 CVD + CVA</td>
</tr>
<tr>
<td>Beyond 25 000 m³</td>
<td>aCVD + CVA with $0.5 \leq a \leq 0.9$</td>
</tr>
<tr>
<td>+ Water Social Fund</td>
<td>0.0125 €/m³</td>
</tr>
<tr>
<td>+ VAT</td>
<td>6%</td>
</tr>
</tbody>
</table>

It applies to households, industries and farmers as well.
CVD is defined by each water supplier resulting from a standard accounting plan.

51 suppliers → 51 different CVD’s

Examples of CVD (2013):

- SWDE : 2.4480 € (67% pop.)
- CILE : 2.6366 € (16% pop.)
- IECBW : 2.1040 € (5% pop.)
CVA is defined by SPGE (Société Publique de Gestion de l’Eau) and applies uniformly to the whole region: 1.5650 €/m³ (01/01/2013), 1.7450 (01/01/2014).

A 6% VAT is applied on the bill.

Lastly, a fee of 0.0125 €/m³ goes to a Water social fund aimed at helping poor households to pay their water bill.
Typical water bill for 100 m³ (01/01/2013)

Resulting Water Bill

441 €/100 m³ → <1% of average household income
Evolution of the price of water: +86% in 9 years!

Resulting Water Bill
Water Price Increase: why?

- Stress on the price of water: main factors
  - Investment needs in wastewater treatment
  - Investment needs in drinking water
  - Decline of water consumption per meter
  - Dispersal of population
  - Increase of the debt recovery procedures

- **Main objective:**
  - all cities with more than 10,000 inh. must have a WWTP with biological level by 1998. **Target met in 2012.**
  - all cities with more than 2,000 inh must be sanitized by 2005. **Target not yet met.**

- **Major difficulty:** after the regionalization of water policy in 1986, the Walloon Region lacked funding to invest in WWTP and therefore could not reach the Directive goal.
Investments in wastewater treatment - Wallonia 1980-2009

- Regionalisation
- Creation of SPGE and tariff-based cost recovery
- Implementation of a wastewater treatment tax

Million Euros

0 100 200 300 400 500 600 700 800 900 1000

1999: Creation of a public company called **SPGE** (Public company for water management).

**Main goal**: achieving the WWTP equipment in Wallonia by mutual financing of the investments.

**Main advantages of a public company compared to a classic administration**:

- VAT recovery.
- Easier manpower management.
- Financed by tariffs (and not by taxes).
- ...
WWTP construction progress

[Graph showing construction progress from 31/12/2000 to 31/12/2012 with different lines indicating WWTP > 2000 inh eq. In service, All capacities in service, and All capacities (incl. Under construction).]
<table>
<thead>
<tr>
<th>Year</th>
<th>CVA (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001 -&gt; 2005</td>
<td>0.5229</td>
</tr>
<tr>
<td>2006</td>
<td>0.6250</td>
</tr>
<tr>
<td>2007</td>
<td>0.7950</td>
</tr>
<tr>
<td>2008</td>
<td>1.0550</td>
</tr>
<tr>
<td>2009</td>
<td>1.3080</td>
</tr>
<tr>
<td>2010</td>
<td>1.3080</td>
</tr>
<tr>
<td>2011</td>
<td>1.4070</td>
</tr>
<tr>
<td>2012</td>
<td>1.4075</td>
</tr>
<tr>
<td>2013</td>
<td>1.5650</td>
</tr>
<tr>
<td>2014</td>
<td>1.7650</td>
</tr>
</tbody>
</table>
Decline in water consumption

Increase in price → Decline in demand

Through:
- Use of alternatives sources by household (rainwater harvesting, groundwater catchment, ...) and industries (GW catchment, reuse of treated wastewater, surface water, ...).
- Price-elasticity for water demand: -0.2.
- Use of low water consumption devices.
- Environmental public awareness.
Decline in water consumption

Decline in demand ➔ Rising price

Through Water supply costs:
- 80% of the cost of water is fixed costs (infrastructure and service cost).
- 20% of the cost of water is variable costs (linked to the amount of volume produced/distributed).

Through Wastewater treatment costs:
- The cost depends only on the pollution to be treated and not on the volume consumed

Result: the less water is consumed, the higher the price
Nearly all european countries are facing this trend
Rising prices → Affordability problems
The amount of unrecovered debt rises as the price is increasing.
That involves both a higher cost (justice) and a lower recovery rate.
Both tend to make the tariffs higher!
Debt Increase – recovery costs - affordability

Index (2006 = 100)

- Amount of consumers in difficulties of payment
- Water social fund interventions
- Price of water
Dispersal of population

- Built area extends much faster than population.
- This involves higher length for network, and as such, more costs for public services based on network.

Source: SPF-Economie /DGSIE et IWEPS
Might go above 6 €/m³
Is water expensive? What measure for affordability?

- 4.4€/m³ means that for 1 eurocent, you have 2.3 litres of drinking water.
- Each month, a typical household will pay 30 euros for water compared to 180 € for energy.
- What is the cost of water compared to the cost of not having water?
- Affordability does not only rely on the price of water but also on socio-economic context and on the price of the other basic goods and services (dwelling, energy, food, ...).
Since the price increase is difficult to stop, the role of an effective policy is to ensure better distribution in cost-recovery between users.

Therefore an assessment of impacts of the Pricing structure has been undertaken in 2009 in order to assess the sustainability of this pricing policy.
The higher the household’s income, the higher its consumption. Thus Solidarity principle is met + Water Social Fund
## Alternative water sources use

<table>
<thead>
<tr>
<th>Use of alternative source for indoor use</th>
<th>Average consumption (m³/y)</th>
<th>Average consumption (l/capita.day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>59.1</td>
<td>71.6</td>
</tr>
<tr>
<td>No</td>
<td>80.6</td>
<td>105.0</td>
</tr>
</tbody>
</table>

Estimated total rainwater used for indoor uses: 11 million m³.

Impact of new tariffs on industry

Large companies support a larger fraction of the bills’ increases

Variation médiane (Différence par rapport à la médiane totale)

<table>
<thead>
<tr>
<th>Nombre de travailleurs salariés</th>
<th>Variation médiane</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 à 4</td>
<td>-1%</td>
</tr>
<tr>
<td>5 à 9</td>
<td>+0%</td>
</tr>
<tr>
<td>10 à 19</td>
<td>+1%</td>
</tr>
<tr>
<td>20 à 49</td>
<td>+2%</td>
</tr>
<tr>
<td>50 à 99</td>
<td>+3%</td>
</tr>
<tr>
<td>Plus de 100</td>
<td>+4%</td>
</tr>
<tr>
<td></td>
<td>+5%</td>
</tr>
</tbody>
</table>
And then ... what’s next?

- The General issue to be address is the following:

How to make a pricing policy that:

1. Permits investments in a long-term view.
2. Ensures affordability, acceptability and solidarity.

The answer to this questions strongly depends on the context: is there a water-stress? What is the level of consumptions per type of users? What is the redistribution in the general taxes? ...
And then ... what’s next?

- Current investigations on water pricing
  - Rationalisation of catchment infrastructures.
  - Revision of industrial pricing policy.
  - Upcoming legislation on private wells.
  - Discussions on how to make rainwater contribute to wastewater treatment costs.
And then ... what’s next ?

- **Foresseen issues to address:**
  - Population growth (+ 6% in 10 years) but decreasing water consumption.
  - Partial water independence of Flanders → overcapacity for water production.
  - Higher poverty due to austerity measures.
  - Upcoming EU legislation (Eco Design Directive, incentive on water conservation, revision of vat reduced rates ...)

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**AquaWal**

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Thank you for your attention