OECD Expert Meeting “Sustainable Financing for Affordable Water Services: from Theory to Practice”

Abstraction charges in practice: The Brazilian experience

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Water Pricing Manager- ANA

Brazil

- Federative Republic
- 5 Geopolitical Regions
- 26 States + 1 Federal District
- 5564 Municipalities
- 184 millions inhabitants
- 8.5 millions km²
- 12 % of the world water availability
- 89% Domestic Water Supply
- 48% Sewage Collection
- 15% Sewage Treatment
Water Pricing Implementation Process
**Legislation**

1988 – *New Brazilian Constitution*
It establishes water as a public good that can be utilized based on the concession of rights to use. Granting concessions is an exclusive prerogative of the Union or State, giving the user only a right to its use.

It establishes the National Water Resources Policy, which defines, among other fundamentals, that water is a limited natural resource with economic value and creates the water pricing as an water management instrument.

2000 - *Law 9984- “ANA’s Law”*
It regulates the establishment of the National Water Agency (ANA), a federal entity to implement the National Water Resources Policy and to grant and control concessions in federal domain water bodies.
National Water Resources Management System

Federal Rivers
1 National Water Agency/ANA
1 Water Resources National Council
8 River Basin Committees Created

State Rivers
27 State Agencies*
27 Water Resources State Councils*
137 River Basin Committees Created

* under implementation
Steps for the Water Pricing Implementation

2001 to 2003 - Paraíba do Sul River Basin

2004 to 2006 - Piracicaba-Capivari-Jundiaí (PCJ) River Basin

- Database Integration 4 months
- Stage 3 Charging Launch 1 month
- Data Consolidation and Values Calculation 1 month
- Usage Regularization 1 month
- Disc. and App. by the Water Resources Nat. Council Plenary 1 month
- Discussion and Approval by the Committee Plenary 1 month
- Stage 2 Committees and Water Resources National Council Deliberations
  - Proposal Building of Mechanisms and Prices 4 months
  - Mechanisms and Parameters Definition 6 months
  - Prices and Coefficients Definition 5 months
- Planning and Concepts Alignment
- Committee Political Announcement
- Preliminary Stage
- Definition of the Technical Forum to Lead the Discussion

Total: 19 months
Water Pricing Mechanisms and Values
Basic Structure of the Mechanisms

Charging Value = Calculation Base x Unit Price x [Coefficients]

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstraction</td>
<td>Bulk water abstraction volume</td>
<td>m³/year</td>
</tr>
<tr>
<td>Consumption</td>
<td>Bulk water consumption volume</td>
<td>m³/year</td>
</tr>
<tr>
<td>Disposal</td>
<td>Organic load disposal (BOD)</td>
<td>Kg/year</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Water quality</td>
<td></td>
<td>0.7 - 1.0</td>
</tr>
<tr>
<td>Water use efficiency</td>
<td></td>
<td>0.05 - 0.5</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>...</td>
</tr>
</tbody>
</table>
## Charging Prices

<table>
<thead>
<tr>
<th>Use</th>
<th>Term</th>
<th>Unit</th>
<th>Unitary Price (R$)</th>
<th>Unitary Price (EUR)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Paraiba do Sul</td>
<td>PCJ</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paraiba do Sul</td>
</tr>
<tr>
<td>Bulk Water Abstraction (Captação)</td>
<td>PPU\textsubscript{CAP}</td>
<td>1000 m\textsuperscript{3}</td>
<td>10,0</td>
<td>10,0</td>
</tr>
<tr>
<td>Bulk Water Consumption (Consumo)</td>
<td>PPU\textsubscript{CON}</td>
<td>1000 m\textsuperscript{3}</td>
<td>20,0</td>
<td>20,0</td>
</tr>
<tr>
<td>Organic Load Disposal – BOD (Lançamento DBO)</td>
<td>PPU\textsubscript{DBO}</td>
<td>1000 kg</td>
<td>70,0</td>
<td>100,0</td>
</tr>
<tr>
<td>Basin Reversion (Transposição)</td>
<td>PPU\textsubscript{TRANS}</td>
<td>1000 m\textsuperscript{3}</td>
<td>-</td>
<td>15,00</td>
</tr>
</tbody>
</table>

* 1 EUR = 2,52 R$
## Impact on Users

<table>
<thead>
<tr>
<th>Sector</th>
<th>Average impact on expenses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Paraíba do Sul</td>
</tr>
<tr>
<td>Water supply and sanitation</td>
<td>2,20</td>
</tr>
<tr>
<td>Industrial</td>
<td>0,02</td>
</tr>
<tr>
<td>Rice Irrigation</td>
<td>0,16</td>
</tr>
<tr>
<td>Tomato Irrigation</td>
<td>-</td>
</tr>
<tr>
<td>Sugar cane Irrigation</td>
<td>-</td>
</tr>
</tbody>
</table>
Results: Income and Investments
## Income

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>7.980.447</td>
<td>1.422.493</td>
<td>9.402.940</td>
<td>3.166.844</td>
<td>564.481</td>
<td>3.731.325</td>
</tr>
<tr>
<td>Mining</td>
<td>19.434</td>
<td>435</td>
<td>19.869</td>
<td>7.712</td>
<td>173</td>
<td>7.885</td>
</tr>
<tr>
<td>Irrigation and Animal Demand</td>
<td>11.000</td>
<td>9.102</td>
<td>20.102</td>
<td>4.365</td>
<td>3.612</td>
<td>7.977</td>
</tr>
<tr>
<td>Others</td>
<td>53.474</td>
<td>342.070</td>
<td>395.544</td>
<td>21.220</td>
<td>135.742</td>
<td>156.962</td>
</tr>
</tbody>
</table>

*1 EUR = 2.52 R$*
### Investments

<table>
<thead>
<tr>
<th></th>
<th>Investment (1.000.000 R$)</th>
<th>Investment (1.000.000 EUR*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitation</td>
<td>18,32</td>
<td>8,82</td>
</tr>
<tr>
<td>Operating costs and management support</td>
<td>3,62</td>
<td>1,30</td>
</tr>
<tr>
<td>Others</td>
<td>5,71</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>27,65</td>
<td>10,12</td>
</tr>
</tbody>
</table>

*1 EUR = 2,52 R$*

Total: 100 Projects - representing around 10% of the total investment needed per year.
Considering Paraíba do Sul and PCJ River Basins from 2003 to 2006

**Income**
- Water supply and sanitation: 72,3%
- Industrial: 26,5%
- Others: 1,1%
- Irrigation and Animal: 0,1%
- Mining: 0,1%

**Investment**
- Sanitation: 71,9%
- Others: 15,1%
- Operating costs and management support: 13,0%
Conclusions
What are the key-factors for the Water Charge Implementation?

Legislation – The water management policy must be established by appropriate legislation which may define managing instruments like water permits and water pricing. But it’s not sufficient. Political will and adequate institutions are fundamental for the implementation of water pricing.

National Water Agency (ANA) – The existence of an executive agency with technical qualification, decision-making autonomy and operational capability was essential for the implementation process. The partnership with Universities was also important to provide theoretical support to the discussions.

Committee – The creation of the basin committee was decisive for the process. It is the discussion forum to establish a common sense among the government, the civil society and the users and to legitimate the decisions. The committee provides the possibility of decisions decentralization and planning and management at the river basin level.
**The water pricing can support the investments needed?**

A part of it. With the water pricing implementation in other river basins (federal and state) and the increase of unit prices, as well as the beginning of other parameters charge, the financing capacity will increase.

But it won´t be sufficient to cover all the investments needed.

**So, what’s the solution?**

Seek for alternative funding sources like:

- Increase of counterpart from the local companies
- Government budget
- Financial yield from loans with water pricing money
- Other economic instruments
Thank you very much for the attention!

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