Economical mechanism in water management

Cost recovery for water services

(Case study)

Ovidiu Gabor

National Administration “APELE ROMANE”
RECOVERY OF COSTS FOR WATER SERVICES

“Member States shall take into account of the principle of the recovery of the costs of water services including environmental and resource costs”

“Services for households, public institutions or any economic activity:
- abstraction
- impoundment, storage,
- treatment and distribution
- wastewater collection and treatment facilities which subsequently discharge into surface water”
RECOVERY OF COSTS FOR WATER SERVICES

COSTS FOR ASSURE WATER RESOURCES TO ALL END-USERS + COSTS FOR WATER SERVICE: -ABSTRACTION -STORAGE -TREATMENT -DISTRIBUTION -WASTE WATER COLLECTION -TREATMENT + EVEROMENTAL COSTS
ECONOMICAL PRINCIPLES for water resources sustainable development:

• BENEFICIARY PAYS:

  - **System of payments** for specifically water management services for all users

    **Tariffs** for achievement the specific water management services: divided by source (surface, groundwater and Danube) and by user (agricultural, industrial, population)

    **Tariffs** for quantitative and qualitative monitoring and improvement of pollutants from waste water discharge
• POLLUTER PAYS:
Penalties for exceeding the admitting maximum concentrations of pollutants from waste water discharge

Monitored indicators:

Chemical: general, specifically, toxic and very toxic
Bacteriological
Physical

• Beneficiary stimulation - bounties

For reducing the water quantity consumption
For improving the water quality
FUTURE POLICY IN WATER FIELD

• A cost recovery policy to stimulate the users for an efficient use of water resources

• Based on “cost recovery for water services” principle including environmental and resource cost and polluter pays principle

• New economical mechanism for quantitative and qualitative resource water management involves:
  - system of contributions;
  - payments, penalties and bounties
FUTURE POLICY IN WATER FIELD

- It will assess appropriate *contributions* of different kind of users (industry, agriculture and domestic use - population)

- **Contributions** will be based on:
  - specific economical development of each RB
  - social effects in each RB
  - specific geographical and climatological conditions

- **Contributions** will be:
  - Using water resources divided by users (industry, agriculture, population) and resource (surface, groundwater and Danube)
  - for waste water discharging
  - for hydroenergetical potential
  - for ballast extraction
**FUTURE POLICY IN WATER FIELD**

**Goals:**

- recovering the operational and maintaining costs
- partial financing new investments from ANAR incomes
- Level of contributions and tariffs has to ensure partially financing to:
  - reduce the pollution;
  - implement other water directives
  - ensure founds for covering an amount of assessing costs
  - ensure founds for covering potential environmental damages
Cost recovery for water services

CASE STUDY
TROTUŞ RIVER BASIN
FLOW CHART FOR REPORTING ON COST RECOVERY

1. Define the water services (WS)
2. Identify providers, users and polluters
3. Calculate financial cost of the WS
4. Identify / estimate the environmental and resource costs of the WS (if possible for 2004 requirements)
5. Identify the cost-recovery mechanism
6. Calculate the recovery rate of the economic costs of the WS
7. Identify the allocation of costs to users and polluters

- What is the scale for the analysis?
- Who generates the costs of the WS?
- What are the financial costs of the WS?
- What are the environmental and resource costs? Can they be identified and estimated at least in qualitative terms?
- How are costs currently recovered: through prices, charges, other mechanisms?
- What is the level of financial costs recovered? What is the amount of external subsidies to the sector?
- How can costs be allocated to water uses? What proportion of the total costs do water uses cover? Is that in accordance with their actual use?
### 1. Definition of the “Water Management” Services

<table>
<thead>
<tr>
<th>Analysis Scale</th>
<th>- Trotuş river basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Services</td>
<td>- &quot;water management&quot; services done by Siret Water Directorate (Siret WD)</td>
</tr>
<tr>
<td>Water Uses (main uses)</td>
<td>- water companies (households)</td>
</tr>
<tr>
<td></td>
<td>- industry</td>
</tr>
<tr>
<td>Source of the Data</td>
<td>- Siret WD database</td>
</tr>
<tr>
<td>Origin of Water</td>
<td>- surface water 99%</td>
</tr>
<tr>
<td></td>
<td>- ground water &lt; 1% (negligible for this first assessment)</td>
</tr>
<tr>
<td>Volumes Abstracted (in 2002)</td>
<td>- households - 24 Mm$^3$</td>
</tr>
<tr>
<td></td>
<td>- industry - 91 Mm$^3$</td>
</tr>
</tbody>
</table>
IDENTIFICATION OF THE SERVICES

• SPECIFIC SERVICES
  • assurance raw water to end-users
  • monitoring of surface water quality and protection of water resources
  • assurance the level in the reservoirs for energy production

• COMMON SERVICES
  • treatment and distribution of drinking water
  • transport drinking water to the user

• OTHER SERVICES
  • monitoring and removal of accidental pollution
  • water quality analysis
2. IDENTIFICATION OF PROVIDERS, USERS AND POLLUTERS

- **WATER MANAGEMENT SERVICE PROVIDER**
  - Siret Water Directorate

- **USERS**
  - 11 water companies (households and industry)
  - 4 individual households
  - 24 industrial users
  - 1 hydropower user
  - Flood protected objectives: 80 localities, lands 8100 ha

- **POLLUTERS**
  - 11 waste water discharges
### 3. FINANCIAL COSTS

#### Resources

<table>
<thead>
<tr>
<th>Types of financial costs</th>
<th>Description</th>
<th>Value (€)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating costs</strong></td>
<td>- exploitation and maintenance of hydrotechnical works, maintenance of watercourses</td>
<td>1 296 199</td>
<td>- data come from Siret WD's database</td>
</tr>
<tr>
<td></td>
<td>- exploitation and maintenance of the drinking water plant and pipes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- hydrology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- information system (dispatcher)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- monitoring, quality analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- controle, guidance, administrative costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Capital costs</strong></td>
<td>- depreciation costs</td>
<td>-</td>
<td>- included in operating costs</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>1 296 199</td>
<td></td>
</tr>
</tbody>
</table>
## 4. Environment Costs

<table>
<thead>
<tr>
<th>Environment costs</th>
<th>169,000 EURO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local monitoring of resources and removal of accidental pollutions</td>
<td>- invoice sent by Siret WD to the polluter (plus extra time of the employees, extra fuel, materials used for the pollution effects removal)</td>
</tr>
<tr>
<td>Pressure and influence of end-users development to water resource</td>
<td>- not identified yet</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>169,000</td>
</tr>
</tbody>
</table>
## 5. COST RECOVERY MECHANISM

(2)

<table>
<thead>
<tr>
<th>Financial costs</th>
<th>Tarrifs for:</th>
<th>Prices for:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- assurance raw water to end-users</td>
<td>- treatment and distribution of drinking water</td>
</tr>
<tr>
<td></td>
<td>- assurance the level in the reservoirs for energy production</td>
<td>approval-Office of Concurrence</td>
</tr>
<tr>
<td></td>
<td>- monitoring water quality and protection of water resources after discharging</td>
<td>the non real costs for monitoring and removal of accidental pollution</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- issue of invoices based on the Water Law</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 6. Cost Recovery Rate

**Cost Recovery Rate**

\[
\text{Cost Recovery Rate} = \frac{\text{Total revenues} - \text{Subsidies}}{\text{Total costs}} \times 100
\]

*Source: WATECO Guidance*

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total revenues</td>
<td>1,228</td>
<td>services paid + environment</td>
</tr>
<tr>
<td>Subsidies</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total costs</td>
<td>1,465</td>
<td>financial + environment</td>
</tr>
</tbody>
</table>

**Cost Recovery Rate 82.3%**
7. ALLOCATION OF COSTS TO USERS AND POLLUTERS

<table>
<thead>
<tr>
<th>Types of costs</th>
<th>Allocation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial costs</td>
<td>totally to users</td>
<td>depreciation is not entirely included in the drinking water prices</td>
</tr>
<tr>
<td>Environment costs</td>
<td>totally to polluters</td>
<td>those environment costs represent a first assessment</td>
</tr>
<tr>
<td>Pressure and impact costs</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Total costs with entire depreciation = 1,596 M€

Cost recovery rate 76.9 %
WHAT TO DO NEXT REGARDING COST RECOVERY

ENSURE

- that water-pricing policies provide adequate incentives to use water resources efficiently

- an adequate contribution of different water uses to the recovery of the cost of water services......

Disaggregated into at least industry, households and agriculture

... having regard to

- the social, environmental and economic effects of the recovery

- the geographic and climatic conditions of the region