Cost recovery and drinking water pricing (experience within the EU and internationally)

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Structure of Presentation

• Introduction
• Definition of Full Cost Recovery
• Water charges and tariff calculations
• Importance of integrated planning
• The case for independent regulation
• Provisions for the poor
• Country examples
• Summary
• Questions for Croatia
Introduction

- Without full (sustainable) cost recovery, water services go into decline
- General subsidies are rarely sufficient, are unreliable and benefit the ‘rich’ more than the poor
- With a declining service there is no money for investment to extend services to the unserved, who are generally the poor
- In most parts of the world sustainable cost recovery is the exception, not the norm
- Many countries are having to recover from decades of infrastructure neglect
Vicious Circles of Decline

- **Consumer Circle**
  - Bad Service
  - Low Revenue
  - Discontented Consumers

- **Salary Circle**
  - Bad Service
  - Low Revenue
  - Low Salary
  - Low Performance
  - Low Motivation

- **Subsidy Circle**
  - Bad Service
  - Low Revenue
  - Low Motivation
  - Dependence on Subsidies
  - State Control
  - Low Initiative
  - Low Motivation
  - State Control
Sustainable Cost Recovery

• IWA Definition – Costs that are recovered so that a water services undertaking can achieve and maintain a specified standard of service, both for present and future generations.

• In practice, water service charges should include
  – Operating and maintenance costs
  – Capital financing costs of the refurbishment of existing infrastructure, but
  – One-off costs on building new infrastructure can be from grants or government subsidies
Price Fixing Processes

• Yardstick Regulation - the regulator uses information on one utility to regulate the others in the group of utilities

• Rate of Return Regulation - Utilities are allowed to charge prices equivalent to a competitive market

• Price-cap regulation - The regulator calculates limits (caps) on tariffs using the formula CPI-X (ie Consumer Price Index less an efficiency factor)

• Revenue-cap regulation

• Efficient firm regulation – ‘perfect utility’

• Most common is some CPI-X formula
Economic/Quality Planning

• Needs to be an integrated process in which
  – Deliverables including quality improvements are defined
  – The investment in the refurbishment of the existing infrastructure is included
  – Performance targets are set
  – Efficiency requirements are specified
  – Funding is put in place and water prices are set

• All within a periodic review process

• This requires expertise usually beyond capability of local authorities
The Case for Independent Regulation

• A regulator responsible for a whole country’s price determinations can be staffed with the necessary expertise

• An independent regulator will determine water prices (charges) based on need not political expediency

• But independent regulation and the associated transparency are dependent upon political will
The Poor

• Are often paying more for non-tap water than others

• General subsidies give greatest benefit to the ‘rich’

• Need assistance on connection charge
  – Easy instalments as in Chile
  – Subsidised through charges on other users

• Asst. on charges – the poor cannot save
  – ‘Lifeline’ tariff for basic usage
  – ‘Pay as you go’
  – Easy payment methods – mobile ‘banking’
  – Subsidised bills - Chile
Country Examples

- England and Wales
- Germany
- The Netherlands
- Belgium
- Victoria, Australia
- South Africa
- Chile
- Cambodia – Phnom Penh
- Croatia
England and Wales

• Full-cost recovery from charges, no subsidies
• Price caps (Ks) set every 5 years as part of periodic reviews
• Integrated process managed by the economic regulator, Ofwat
• Quality regulators involved on quality matters
• Government cannot overrule Ofwat but can change the requirements to be met over the 5-year period
• Pricing model based on formula for K
Periodic Planning Process

- The periodic planning process
  - Every 5 years
  - Government publishes requirements
  - Regulators turn requirements into deliverables
  - Water companies prepare draft business plans based on those deliverables
  - Business plans include water company ‘bids’ on allowable charges as K numbers
  - Ofwat reviews plans and issues draft determinations on Ks
  - Discussions with each company
  - Ofwat publishes final K figures
  - Companies can appeal to the Competition Commission which will carry out complete review
  - Process takes about 18 months
  - Government cannot change determinations but can change requirements
Price Cap

• Ofwat calculates and allows each company a price cap (K) which is the maximum allowed increase in average of a tariff basket

• Tariff basket made up of
  – Industrial tariffs – all metered
  – Commercial (eg Offices) tariffs – all metered
  – Domestic metered tariffs (only 38% metered)
  – Domestic unmetered charges based on a measure of relative property value called ‘rateable value’.
Calculating K

- \( K = RPI - X - Po + Q + S + V \)
- \( K \) is cap on annual increase in tariff basket
- For each company an allowable \( k \) for each year
- RPI – retail price index - inflation
- \( X \) is efficiency factor
- Po is adjustment from previous 5 years
- \( Q \) is cost of capital for quality improvements
- \( S \) is cost of service improvements
- \( V \) is cost of providing additional supply volume
- Based on need related to government objectives
Period Review for 2010-2015

• Process was completed in Nov 2009
  – Government paper on requirements included
    • Reduction in per capita consumption
• The companies’ draft business plans – Ofwat’s website gives details
  – Average K factor bid for 2011-12 was 4.5%
  – Range was -2.2% to 16.2%
• Ofwat final determinations
  – Average K factor over 5 years = -0.8%
  – Range is -8.6% to 4.6%
## Period 2010-2015

<table>
<thead>
<tr>
<th>Item</th>
<th>Water Company Bid</th>
<th>Ofwat Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Rate of Return</td>
<td>?</td>
<td>4.5%</td>
</tr>
<tr>
<td>Average H/hold Bill for water and sewerage</td>
<td></td>
<td>£344</td>
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<tr>
<td>Bill - Average Change Over Period</td>
<td>+£31</td>
<td>-£0.7</td>
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<tr>
<td>Capital Investment over period</td>
<td>?</td>
<td>£21 billion</td>
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<tr>
<td>Metered Bills</td>
<td>€/m³</td>
<td></td>
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<tr>
<td>--------------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Lowest Rate</td>
<td>1.07</td>
<td></td>
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<tr>
<td>Highest Rate</td>
<td>2.45</td>
<td></td>
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<tr>
<td>Average</td>
<td>1.6</td>
<td></td>
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</tbody>
</table>

England and Wales
Water Only Bills
Germany

- Largely municipal water service providers
- No independent regulatory body - tariff increases requested by municipality, reviewed by independent auditor, decision by Lander
- With City-States (eg Hamburg) same body so potential conflict of interests
- Private utilities - tariffs are set by a mutually agreed arbitrator based on the professional opinion of an auditor
- High tariffs but good infrastructure – Low non-revenue water levels
- High charges challenged in Court – process review
The Netherlands

- 25 Water Boards responsible for Water Resources, Flooding etc. - levy taxes
- 11 water companies – all public covering a number of local authorities
- Companies have private sector structure with management and supervisory boards
- Have of Supervisory Board members are independent – some form of regulation
- Tariffs proposed by Supervisory Boards and approved by Local Authority ‘shareholders’
- Very efficient – established benchmarking – low non-revenue water - but one of the highest tariffs in the world
Structure of Companies in The Netherlands

Local Authority Shareholders

Board of Supervisory Directors

Board of Executive Directors
Belgium

• An interesting example due to specific provisions for the poor and use of block tariffs

• Around 70 municipal-owned water companies plus around 100 municipal operations across the three regions of Brussels-Capital, Flanders and Walloon

• Policy of cost recovery through charges

• Varying approaches to ‘water as a right’ reflected in block tariffs with the initial block free or low ‘lifeline’ tariff

• Social Fund to assist poor

• High average tariffs – 2nd highest in EU
State of Victoria, Australia

- Australian reform of public sector
- Each State to meet defined criteria including ‘full’ cost recovery
- Prior to the reforms, Victoria, with a population of 5 million people, had 400 water utilities, mainly small
- Now a total of 24 corporatised water companies
- Initially tariffs set by State but unwilling to raise tariffs to achieve full cost recovery
- Responsibility for tariff setting now with the independent Essential Services Commission
South Africa

- Local Authority operations but tariff policy set by National Government. Use of block tariffs.
- First 6000 litres/month per household (about 200 litres/day) is free
- The total cost of water supply has to be recovered from the additional volume used
- Cut off for non-payment – considered essential to avoid large part of population not paying

- There was a big question on whether such a policy would produce financial sustainability – interesting study in Johannesburg
Johannesburg

- City implemented the ‘Free Basic Water Policy’ as part of a reform programme
- Study by Oxford student showed enhanced performance in comparison with electricity
  - Increased access for the poor – up to 98%
  - Willingness to pay for water consumed above 600 litres a month with a significant reduction in household debt for water
  - Johannesburg Water making positive margin
  - Too early to say whether the operation will become financially self-supporting
Chile: The Tariff Law of 1998

• The Law
  – Established an economic regulator Superintendencia de Services Sanitarios (SISS)
  – Reformed the approach to setting water charges

• The new tariff framework was based on four principles
  – Economic efficiency
  – Full cost recovery
  – Non-discrimination between consumers
  – Clarity on managing demand and consumption to encourage conservation
Chile - Regulatory Approach

• SISS responsible for all tariff setting
• Some similarities with Ofwat in UK with incentive-based comparative-competition approach to improved efficiency
• SISS establishes the ‘perfect utility’ as a benchmark
• Sustainable cost-recovery
• Chile probably has the best water utilities in South America
Chile - Social Policy

• Priority given to access for the poor
  – Between 1987-1995 half of all new connections for poor in urban areas
  – Municipalities fund extensions to distribution systems
  – Poor people can pay for their access charge in up to 60 instalments

• Subsidies on water bills
  – Means test – register of people eligible for subsidy
  – Consumers receive full normal bill
  – Bill taken to Local Authority where consumers pay their agreed amount with the remainder paid by LA
Chile - Privatisation

- Government retained 35% of the equity and created veto powers on conveyance of assets.
- Later, with a change of government, the form of privatisation was changed to concession contracts with the assets remaining in government ownership.
- But the privatisation programme has raised $1 billion capital – one motivation was EU trade requirement related to sewage treatment.
Cambodia – Phnom Penh

- Turnaround following fall of Khmer Rouge
- Following the Paris Accord of 1993: Some initial capital and technical support from the French Government
- Development led by the remarkable manager, Ek Sonn Chan, backed by a supportive government and with effective public consultation
- After just 13 years, transformation into a very efficient water utility with sustainable cost recovery
## Success in Phnom Penh

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>1993</th>
<th>2006</th>
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<tbody>
<tr>
<td>Coverage Area %</td>
<td>25</td>
<td>90</td>
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<tr>
<td>Number of Connections 000s</td>
<td>27</td>
<td>147</td>
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<tr>
<td>Supply Duration hours/day</td>
<td>10</td>
<td>24</td>
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<tr>
<td>Revenue Collection %</td>
<td>48</td>
<td>99.9</td>
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<tr>
<td>Non-revenue water %</td>
<td>72</td>
<td>8</td>
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<tr>
<td>Staff per 10,000 connections</td>
<td>22</td>
<td>4</td>
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<tr>
<td>Financial Situation</td>
<td>Subsidy</td>
<td>FCR</td>
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</table>
Croatia

• Principle of full cost recovery established
• Currently, it is reported that O&M costs are fully recovered from charges
• New developments funded separately from charges
• There is a form of independent regulation by the Council for Water Services (CWS)
## Country Comparison

<table>
<thead>
<tr>
<th>Country</th>
<th>E&amp;W</th>
<th>G</th>
<th>Net</th>
<th>Bel</th>
<th>Vic</th>
<th>Chile</th>
<th>Ph P</th>
<th>Cr</th>
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<tr>
<td><strong>Situation ↓</strong></td>
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<td>Cost Recovery – O&amp;M</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
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<td>O&amp;M + Refurbishment</td>
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<td>√</td>
<td>√</td>
<td>√</td>
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<td>+ New capital charges</td>
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<td>+ Envn charges</td>
<td>√</td>
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<td>√</td>
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<td>Independent Regulation</td>
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<td></td>
<td></td>
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<td>√(CWS)</td>
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<td>Provisions for poor</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Average tariff €/m³</td>
<td>1.6</td>
<td>2.5</td>
<td>2.5</td>
<td>2.9</td>
<td>2.5</td>
<td>1.6</td>
<td>0.3</td>
<td>1.53</td>
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</table>
Notes to Comparison Table

The difficulties of establishing meaningful comparative charge figures should be recognised

1. In England and Wales, provisions for the poor are a matter for Social Services, although the government is considering assistance to consumers in the highest charge region

2. Phnom Penh has a recently refurbished system with new extensions

3. Phnom Penh now capable of self-financing new developments – no need for grants or subsidies

4. Croatia charge figure includes some element of sewerage charge
Summary

• Full (sustainable) cost recovery essential for sustainable water services
• General subsidies tend to be unreliable and benefit the ‘rich’ more than the ‘poor’
• Various approaches to determining tariffs
• Most developed tariff-setting systems have an independent regulator: UK, Chile and Victoria
• Other approaches involve an independent auditor, or autonomous committees
• Tariffs should be based on need not political expediency
• Various approaches to assisting the poor.
Croatia - Questions

• Are the current water operations too small for financial sustainability? Could there be economies of scale? Examples of The Netherlands, Victoria and UK.

• Does the current planning approach encourage integration and innovation?

• Should the Council for Water Services manage an integrated planning and tariff setting process?

• Is it planned to remove cross-subsidies?