Costs, values, prices and tariffs of water

“Water as an economic good”

■ **Cost of water:**
  - technical,
  - economical,
  - social, and
  - environmental components

NB *Economic* externalities are assumed to be measurable, contrary to *environmental* externalities

■ **Value of water:**
  - Direct use value: as a **final** consumption good for domestic water; consumers’ *utility*
  - Direct use value: as an **intermediary** consumption good for commercial, industrial, tourism and agricultural water; producers’ surplus (i.e. *net revenue*)
  - Indirect use value (livestock watering, micro-hydroelectricity, tourism)
  - Non use value/intrinsic value: amenity value

Cf. private cost vs. social cost

Cf. private value vs. social value
Taking account of opportunity cost

The mere accounting for OC makes a big difference in the ranking of water supply options (SCP and AFD, 2008)

Comparison of water supply options based on tentative evaluation of the full cost of water (DH/m³ – 10 DH = 1 Euro)
Tariffs, taxes and subsidies are of different nature/serve different purposes

- **Cost recovery**
- **Water for all**
- **Sustainability**
- **Others**

- **Tariffs, users’ charges**
  - ‘User pays’ principle

- **Subsidies**
  - (irrigation, drinking water)

- **Pollution charges/taxes**
  - ‘Polluter pays’ principle

- **Abstraction charges/fees/taxes**
  - Resource management, water savings, depollution

- **Royalty**
  - Rent capture (hydropower)

- **Subsidies to water-saving techniques**

- **Shaping sustainable futures**
Costs, values, prices and tariffs of water

“Water pricing”, or: **setting an optimal tariff**
(whic means: “as least sub-optimal as possible”)

- **Domestic water** (and sanitation)
- **Industry and tourism**
  - Commercial uses
- **Agricultural water**
  - Economic/social purposes

- **Um, WTP**
- **Benchmark**
  - 5% of household revenue (WHO standard)
- **Cost recovery**
  - (at least O&M)

- **Vm, WTP**
- **Cost recovery**
  - (inc. Capital)

- **Cost** may remain above tariff

**Net transfer to farmers:**
Lower estimate of implicit social value of agricultural water

*Extra charges for social or environmental purposes may be added*
Economic approach to choices in water supply/mobilization/savings

**BAU¹ cost curve – full set of potential solutions²**

- Agriculture >250 MCM?

1. Business as Usual
2. Solutions with volume potential <15 MCM are not labelled

**Graph details:**
- Cost of additional water supply in JD/m³
- Incremental water availability in MCM

**Legend:**
- Energy
- Agriculture
- Industry
- Municipal
- Supply

Shaping sustainable futures
Contribution and potential of economic instruments for WDM

Mixed results and achievements so far:
- Mainly focused on contribution to cost recovery and access to drinking water
- Better use of water for agriculture through subsidization of water saving irrigation techniques
- Less good at saving water

But do not throw the baby out with the bathwater

Get basic incentives right: first, carefully review subsidies including outside water sector (energy, agriculture) – tackle ‘perverse’ subsidies with harmful effects on water resources

Clarify purposes and objectives: you cannot have your cake and eat it

Go further with already efficient instruments: in particular, consider raising tariffs for commercial uses of water with high marginal value, aquifer withdrawals and recreational domestic uses with high willingness (or capacity) to pay

Think about - and test - innovative instruments: water markets, payments for environmental services, groundwater management contracts
Thank you for your attention!
Public Policies: Typical Intervention Effects

Actions:

- Material: infrastructure investments, input supply…
- Institutional: laws, regulations, contracts, taxes/incentives…
- Informative: awareness, training

Result in changes (effects) in:

- Physical environment, production and consumption functions
- Rules of the game
- Behavior

And further changes (impacts) in:

- Production and consumption patterns
- Distribution of goods and services, revenues, rights
- Stakeholder interactions

From Walliser B.