

How to Integrate Social Objectives into Water Pricing

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EAU&3E: Sustainable WSS Management in Large Cities
[http:// eau3e.hypotheses.org](http://eau3e.hypotheses.org)



Are hydrodinosaurs sustainable ?



Centennial drought in Barcelona: Why not transfer water from the Rhone ?



The 'membrane' answer

- In 2010 AGBAR started a desal plant and even wastewater reuse
- Low investment costs, high o&m costs translated into pricing
- Desal water incentivates conservation !



But! Water war in the 1990's on price issue

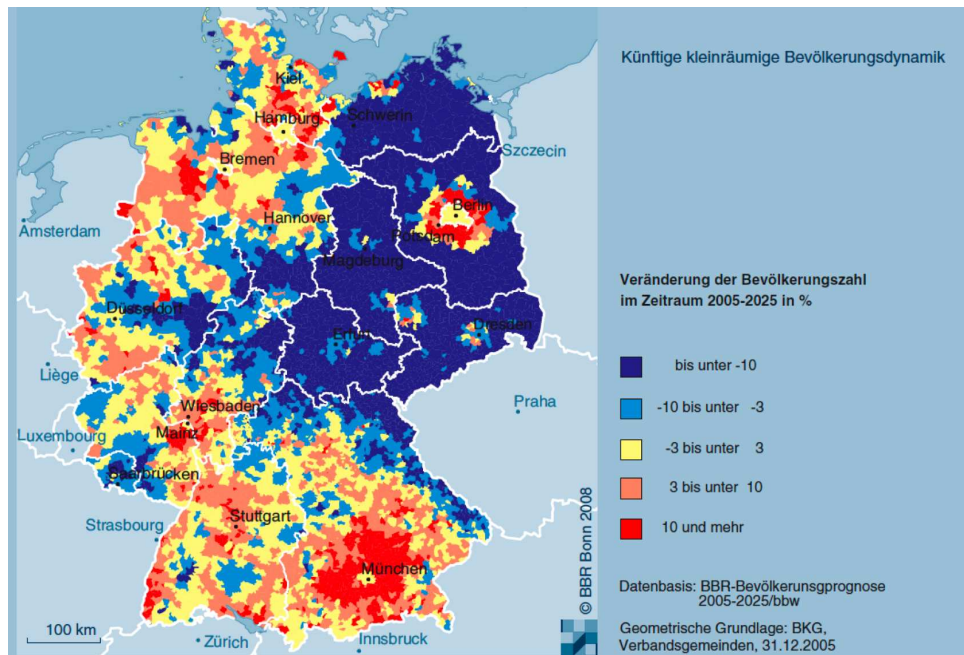
Germany: shrinking cities,

water demand decline, territorial solutions

Demographic Change



Population dynamics at a small scale



Local integration of public services (*Stadtwerk*)

But increasing financial integration at regional level

Eco-neighbourhoods for water food energy nexus

Cooperative agreements with farmers against diffuse pollution in drinking water

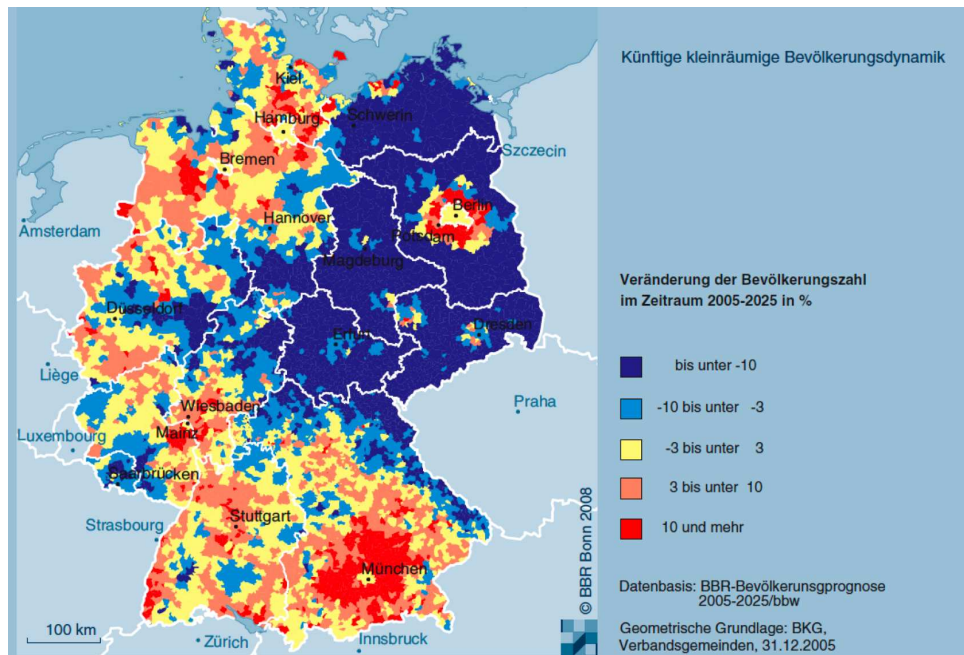
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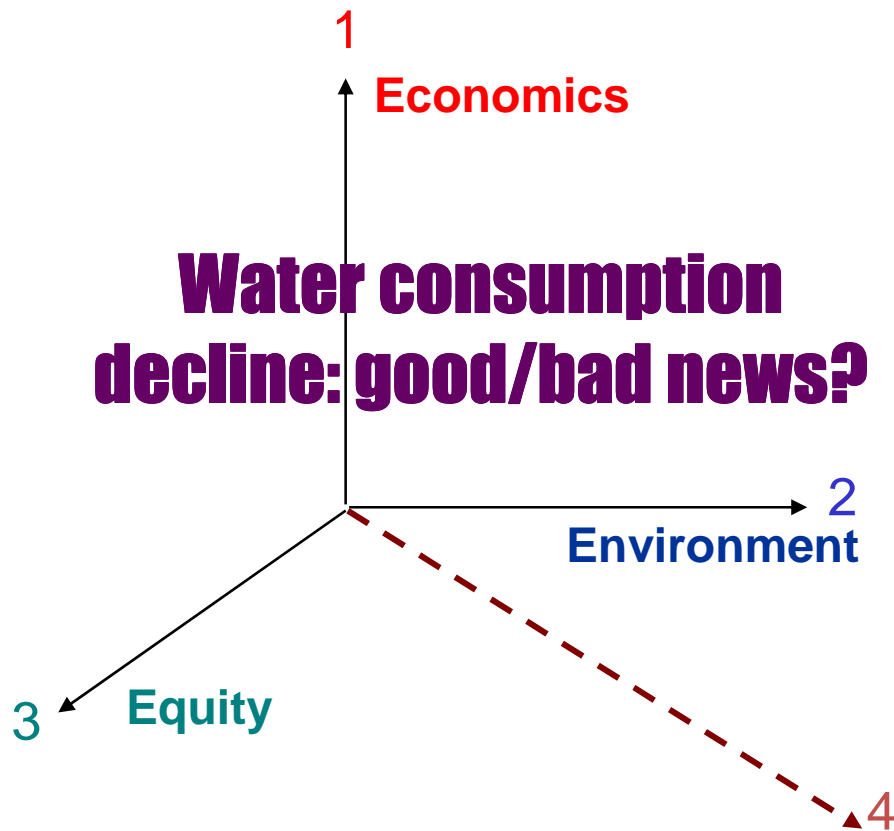
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Are WSS sustainable? The EAU&3E Project

Europe has some of the best WSS in the world. High connection rates, moderate consumption, pollution control; Yet looming crisis



- 1 – Enough investment to renew the decades' old heavy infrastructure?
- 2 – How much more needed to improve environmental performance (EU Directives, national laws, etc.)
- 3 - If 1 and 2 are met, is water price still socially acceptable? Social tariffs? Why not return to citizens (taxes) on top of sole consumer-pays?
- 4 – And politically? Need of a 4th axis, on governance and re-territorialization

Analytical Framework

- **Specificity of water services** hard to grasp by usual economic toolbox: e.g., antinomy between water conservation and cost recovery
- Need to develop **New theoretical tools** to analyse water consumption decline : « macro » surveys are insufficient (cf. recent work by Jay Lund & coll.)
- **Redistributive effects** of tariff formulas result being **counter-intuitive** : need for socio-economic «before-after» field surveys
- Future WSS services resilience tends to imply **multi-level governance** relying on a triple evolution : « up-scaling » & « down-scaling », and technology innovation

Here focus on social sustainability

- Water poverty was supposed to be a developing countries' issue, but backlashes on occidental public services:
- Including sewage collection in water bills more than doubles the total
- Consumption decline brings operators to raise unit prices, and this hits large poor families which cannot invest in water conservation
- Privatized utilities are accused to make undue profits and to make water unaffordable (Britain, France, Italy)
- But the social dimension is the least studied among the 4 axes of sustainability: public utilities shelve the 'water poor' question

OECD's synthesis

- Proposes a macro-affordability index: average water bill as % of average income,
- and a micro-affordability index: % of revenues spent on water by various income groups
- OECD supports volumetric metering and billing, and thinks it is possible to combine incentive tariffs (water users are the payers) with protected access for the poor
- Two broad types of solutions: reducing the poor's bill, or support their income to pay unchanged bills

Reducing the bills

- First possibility is to offer rebates on bills: if done by the operator alone, support comes from other customers; but can also come from benefits systems
- Second possibility is to design an increasing blocks tariff where the first blocks are quite cheap; ideally the blocks should take into account family size (e.g. Belgium), but data not accessible everywhere
- It is also possible to combine both and give a rebate on the first block for identified poor families (France: Dunkerque)
- Lastly, operators can help families reducing their consumption: reducing pressure, prepayment cards etc. (e.g. England) But hurts the conception of water as essential good.

Supporting income

- Consists in giving vouchers or water cheques to identified families (SEDIF in Paris suburbs; Chile; AWWA's « Think outside the bill »)
- The problem is to identify potential beneficiaries, and there usually is a lot of under-reporting; beneficiaries reluctant to claim support
- A quite different possibility is to withdraw some elements from the water bills, and to transfer them onto (local) taxes, which are more redistributive than water bills: In the Netherlands, sewer in local taxes, and sewage treatment = flat family rate to the *waterschappen*
- This type of solution is fit for situations where water consumption is low and inelastic to price (European down town areas), but it hurts all those who defend 'consumer justice'
- It also requests the will of local politicians to raise taxes in proportion

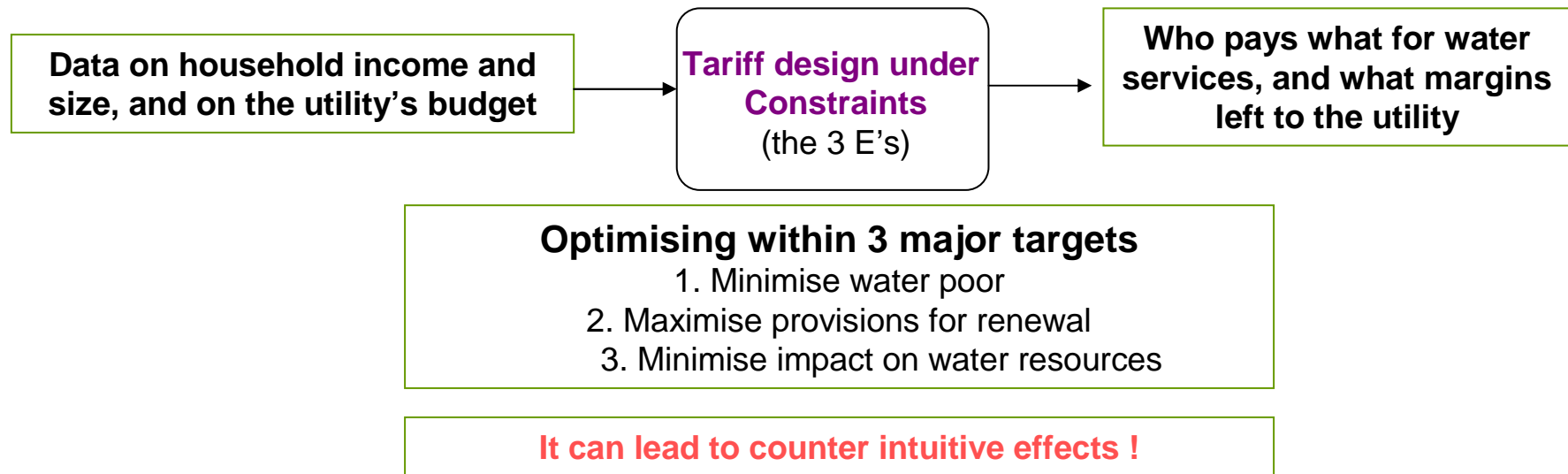
Widening the reflection

- In most occidental countries water utilities form a club good with very specific assets (heavy investments depreciating on the long run)
- The other specificity is that for public health reasons, everybody should be connected to water and to a safe waste disposal system
- So water consumers and the operator are bound together to share the cost of the service: if some pay less, others pay more ... **social justice is at odds with consumer justice (not only in Third World)**
- Or the utility abandons its self financing capacity (infrastructure long term maintenance) => IBTs frequently 'compensated' by raising the fix part !!
- The complexity calls for a specific tool to assess tariff redistributivity

Social tariff design

We develop a tool to evaluate the distributive effects of any tariff system, based on 'water poverty index' :

Multi-purpose solidarity model (TSMO)



Water as % income before



Water as % income after



Specific issue of condominiums

- In many European cities, only one meter for a whole building: the manager is client of the club good, but what's happening on the other side of the meter?
- Families form a community: they have to share the bill equitably; frequently on the basis of apartments' surfaces; but once divided by the number of apartments, the fix part is quite small
- It is cheaper for the thrifty ones to pay for the hedonists, than to pay for a separate meter...^with a single-family single part
- **Thanks for your attention**
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