Case study on „Precaution and Financial Risks in Implementing the Urban Waste Water Treatment Directive: Cities Investing in Water Infrastructures“

Case study introduction

Many European cities are facing the challenge of having to massively overhaul their urban water infrastructures. Ageing and overburdened systems first installed in the 19th century are challenged by increasing environmental standards imposed by European law. This case study deals with the implementation of the EU Urban Waste Water Treatment Directive 91/271/EC (UWWTD). The implementation requires new (innovative) technical, political, organisational and financial solutions in the cities concerned. Our study covers the measures in two European cities, London and Milan, which were sued by the EU for lack of implementation of the UWWTD.

Relevance to the precautionary principle

The UWWTD is part of the European Water Framework Directive (WFD), with direct reference to the precautionary principle, the control at source principle and the polluter pays principle (Art. 191(2) of the Treaty on the Functioning of the European Union). Our case study is unique in that it does not start with a technological innovation that poses risks to humans and the environment and evokes the precautionary principle. **In our case, we investigate the dynamics that occur under an established precautionary principle regulatory regime (the UWWTD). The challenges posed by this regime instigate innovative practices and shift risks to other sectors (e.g. financial risk).**

Potential impact

The Water Framework Directive and the associated Industry Directives (UWWTD, DWD, and BWD) set certain standards that must be met and can result in legal action in case cities fail to comply. This has been the case in the cities of London and Milan. The ensuing situation presents cities with an enormous challenge: the costs associated with the infrastructure investments needed to comply with the increasing standards are so high that they, in themselves, present a challenge to cities. This situation gives rise to different financial solutions that set out pathways for future urban development. These pathways bring their own risks and threats that often go beyond the original risk that was to be regulated by the precautionary principle-based legislation (see Figure 1).

Financial risks as well as mismatched urban infrastructures undermine the future governance ability of cities. As urban research shows, this entails risks for the prosperity and health of citizens.

Key uncertainties

Even though implementation of the European Water Directives differs between Member States, uncertainty as to the effects of environmental impacts is low. In terms of the planning risks taken on by local administrations, complexity is largely due to scientific uncertainty over future challenges such as climate change, infrastructure vulnerability and economic issues. With respect to the financial risks, the 2008 financial crisis has exposed some of the localised effects of urban investment practices, including increased obfuscation and complexity, the exposure of municipalities to market volatility and the socialisation of costs while profits are individualised.

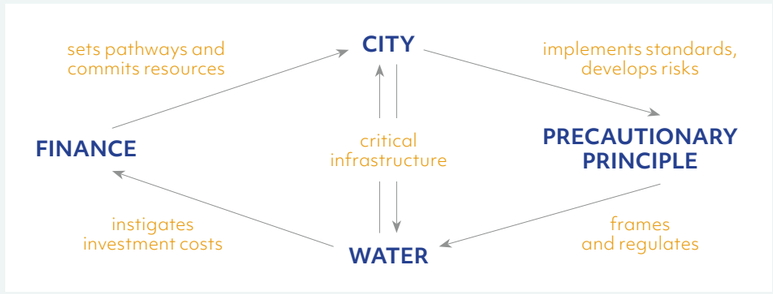

Figure 1: The precautionary principle, finance and urban water

Our case study clearly shows that **technical, organisational and financial solutions are closely linked and interdependent** when implementing the UWWTD. A city like London, which relies entirely on financial innovation, risks a large-scale infrastructure solution with a singular project structure and short-term financing structure (as this is best managed by investors). An integrated local solution like in Milan is preferable (and sustainable). The case study shows that if you take the precautionary principle seriously (in the sense of Responsible Research and Innovation), as in Milan, then you also get the accompanying financial risks under control.

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Interesting link

» European Urban Waste Water Treatment Directive UWWTD: www.ec.europa.eu/environment/water/water-urbanwaste/legislation/directive_en.htm

Further information

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For the **references** used for the case study, please look into the full report available at: www.recipes-project.eu/results/case-study-7-financial-risks-water-infrastructure-planning

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