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Historical Lessons for Resiliency in Water Services



The main question is, can historical experiences and lessons be used for finding resilient solutions for water services?



The research carried out so far

- ▶ The following conclusions can be made on the development in Europe:
- ▶ Surface water was initially taken from nearby sources, and as these became contaminated, from farther away. The utilisation of groundwater started later, and artificial groundwater will likely be produced in the future.
- ▶ Wastewaters polluted the water systems until their efficient treatment started relatively late. The industry began to protect waters later by increasing co-operation with the waterworks when the time was ripe.
- ▶ When the increase in the water consumption levelled off, the emphasis shifted to water quality.

Mistakes have been made, but lessons have also been learned

- ▶ It is better to do something than nothing.
- ▶ Political will, consensus, is needed and plays a key role in problem solving. Money is also an issue, but not the key one.
- ▶ Many early decisions were path dependant. It is good to know the historical background of early water supply and sanitation systems because they still affect our available options.

Same patterns everywhere

- ▶ The growing cities of developing countries seem largely to be repeating the same patterns in building their water supply as Finland did earlier.
- ▶ First, they build a water pipe to replace wells, then sewerage to replace ditches when diseases like cholera and, especially typhoid fever, plague most of them. The excessive use of water, the assessment, the lack of maintenance, etc. also cause problems.
- ▶ Only after the occurrence of these problems are the systems built to guarantee good quality of water, and only lastly – usually after yet further problems – a wastewater treatment plant is built.

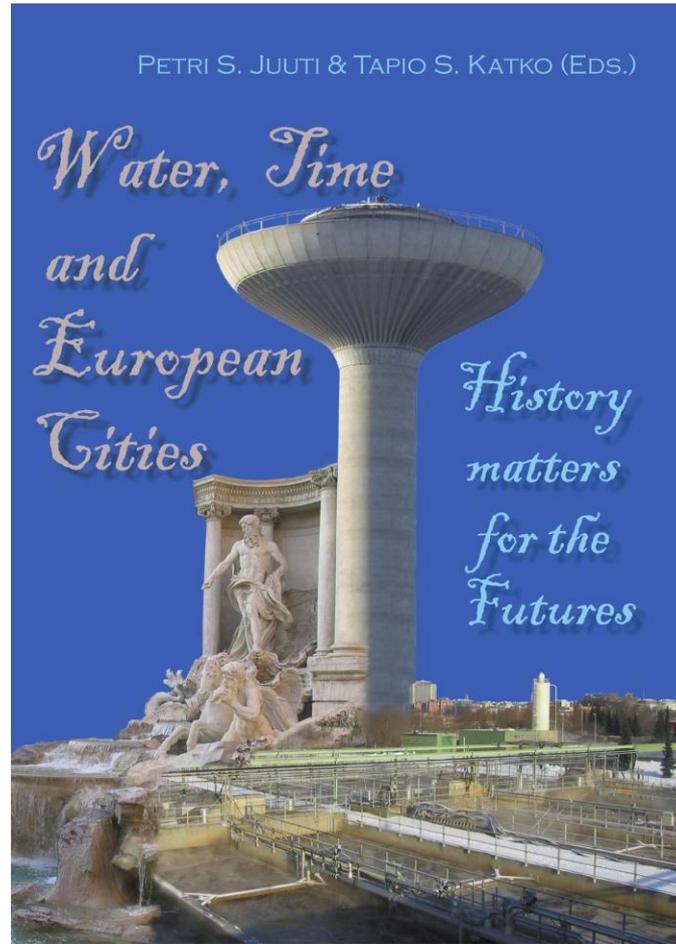
“Water question“ and governance

- ▶ When residents of for example Finnish – and also South African – cities spoke about water and sanitation in the early urbanisation phase, they generally referred to the "water question".
- ▶ The transition to modern water supply was a **demanding process for the municipal administration**: many decisions demanding special knowledge had to be made.

How local governments made their decisions?

...in EU: parallel research carried out so far

- Comparative information from 29 cities in 13 countries.
- Each has a different administrative and service supply history.
- There are also indications of different styles of design strategies and outcomes.
- www.WaterTime.net



**SPECIFIC WATER CONSUMPTION AND ANNUAL CONSUMPTION
(CONSUMPTION OF THE CITY DIVIDED BY INHABITANTS)**

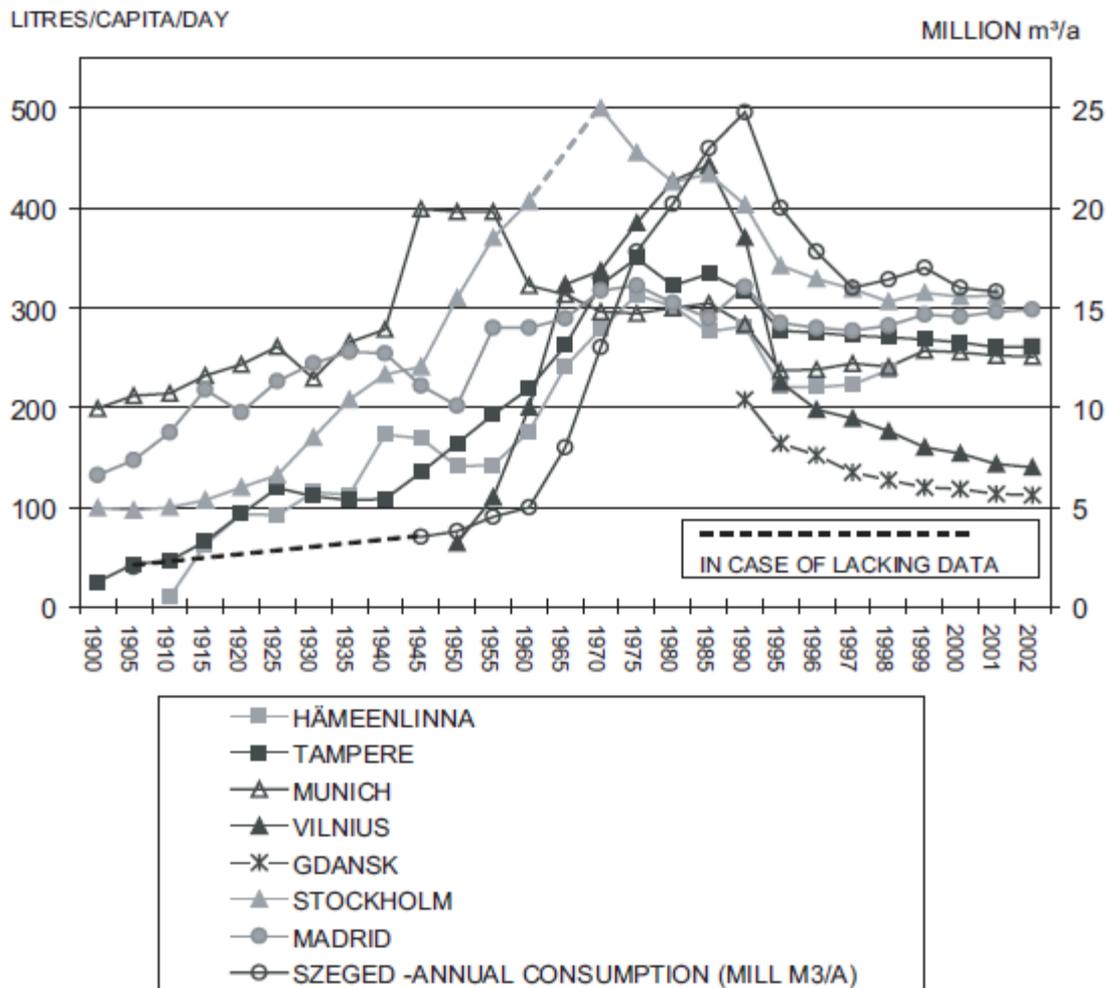


Figure 17. Specific water consumption in relation to time in the case cities
(Note: Most of the data are calculated by dividing the total water use by the number of people, while some show only the consumption of those connected)

A few long-term trends and past decisions limit potential future development paths:

- 1. WC versus dry toilet vs. bucket system**
- 2. combined sewer system vs. separate system**
- 3. Surface water vs. ground water**
- 4. Pressure levels of water network**
- 5. Sewage water treatment plant / no**
- 6. chlorination & water treatment /no**
- 7. etc**

The main question is, can historical experiences/lessons be used for finding resilient solutions for water services?

- ▶ **YES WE CAN!** In the light of **historical study** it is highly possible.
- ▶ Recognizing historical development and long-term trends and path dependencies are very good starting point for developing more resilient water services.
- ▶ **Strong political will and good water governance** are, however, needed to solve these issues.