



4th UNECWAS Seminar 31 March, 2016
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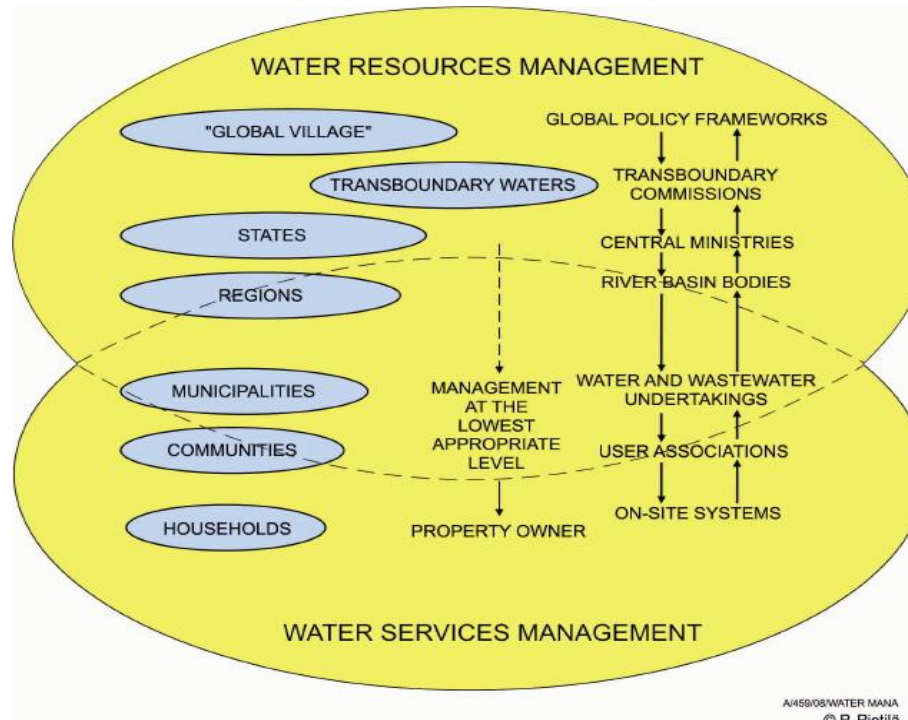
Challenges of Education and
Research on Water Services



CADWES

Capacity Development in Water and Environmental Services
Research Team at TUT, IEEB

Water Resources vs. Services (Pietilä 2006)



- Integrated Water Resources Management
- Integrated Urban Water Management
- **Water Services:** Water Supply, Wastewater, Stormwater

Water and Sustainable Development

- Water - a **key** element in the 17 Sustainable Development Goals (not only no. 6): sector but also a connector



Some findings

- Water services not only necessary but **invaluable**
- Recent study: Water services linked strongly to the **Built Environment** (new location for the team)
- Networks account for **80%** of the expenditure in water **infrastructure**
- Current Education and Research is strongly focused on treatment and artefacts: ignoring largely management, institutions, policies
- Biggest challenges:
 - **Aging** water services **infrastructure**
 - **Aging** staff
 - **Education** and **RDI** efforts

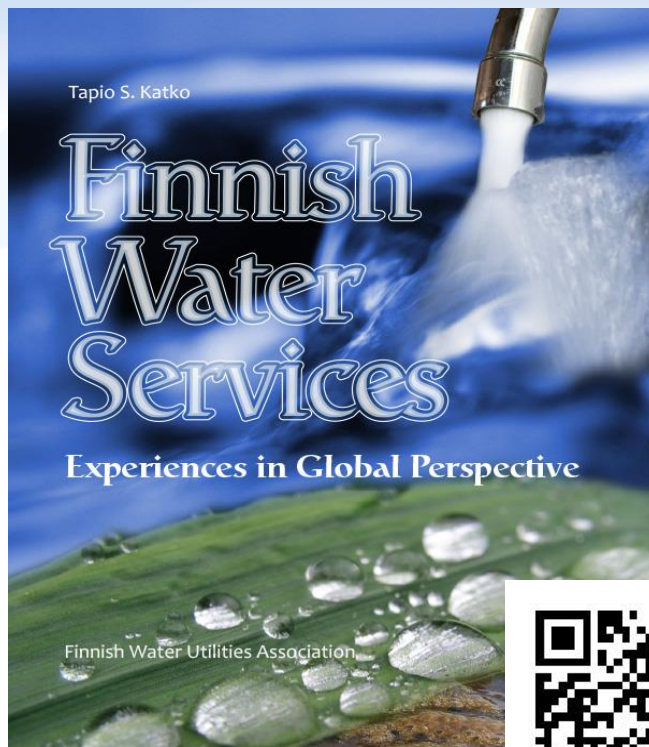
OECD- countries: Examples on investment gaps of water services infrastructure of water

Country	Population	State of water services infrastructure	Estimated gap (USD/hd)
Canada	35 182 000	Good (Very good-very poor)	2 050
Finland	5 426 000	7 (10-4)	1 210
Norway	5 043 000	Water networks 3; sewers 2 (5-1)	3 590
USA	320 051 000	D (A-E)	1 740



Long-term development of water services

Forthcoming Oct 2016



Selected findings

- Demand driven approach
- Water pollution control required proper "rules of the game" - So will require the challenge of aging infra
- Aging staff and competence needs for the futures
- More efforts on R&D&I
- www.finnishwaterservices.fi

Selected sources

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