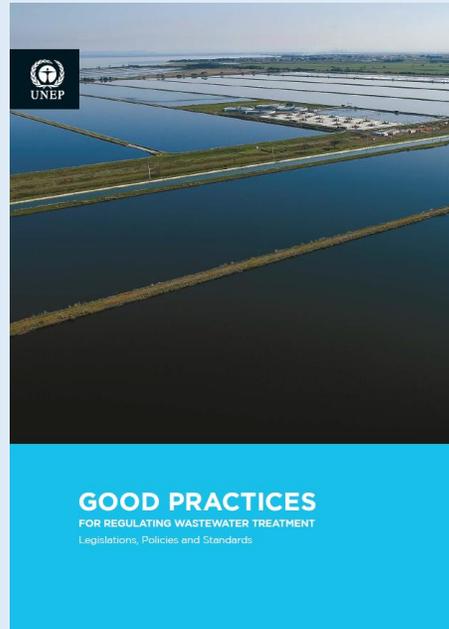




Good Practices for Regulating Treatment: Legislation, Policies and Standards



Florian Thevenon



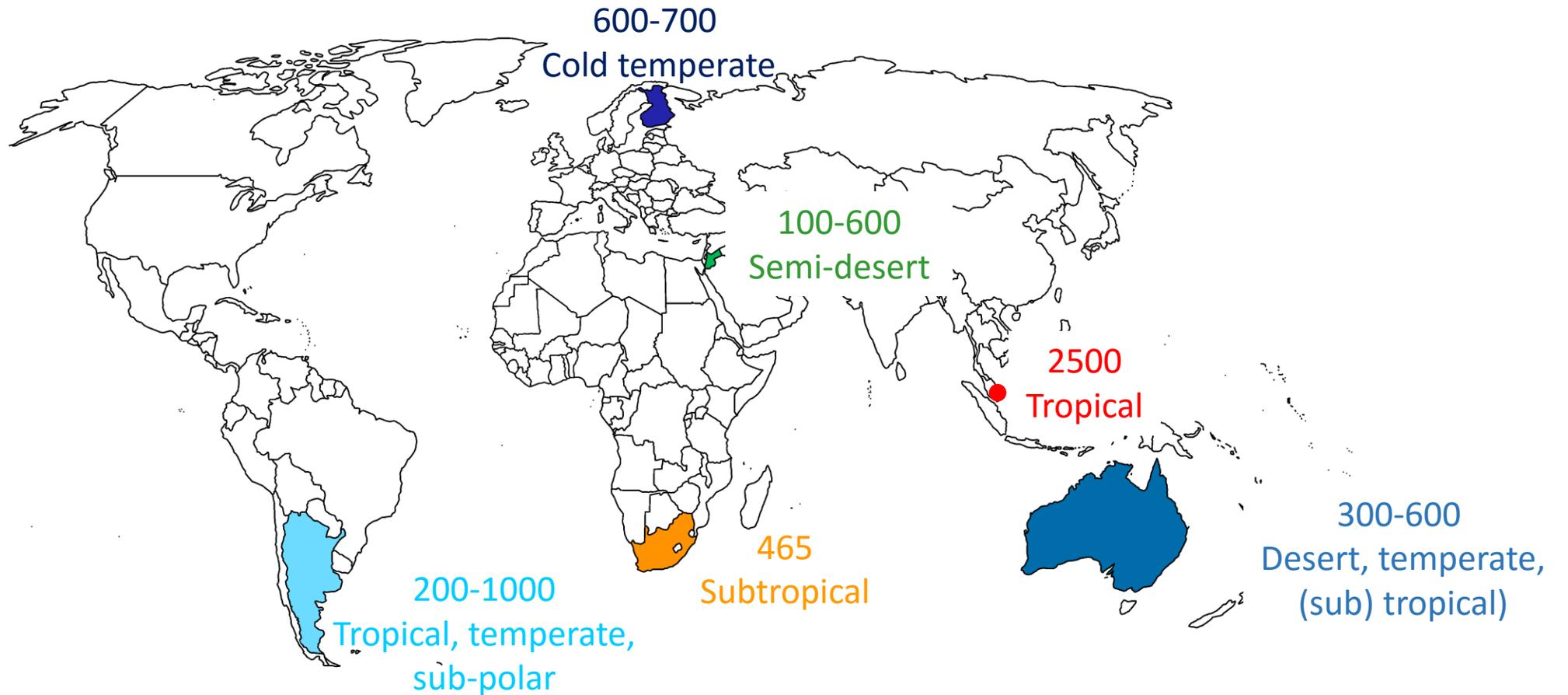
Main Objectives

- 1) To provide an overview of **wastewater legislation** adopted by **6 developed and developing** countries
- 2) To make local lessons in WWT, disposal and reuse for **reforming wastewater** management practices
- 3) To contribute to the exchange of wastewater **legislation** knowledge and **best practices**

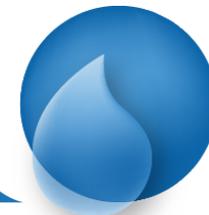
Argentina, Australia, Finland, Jordan, Singapore, South Africa



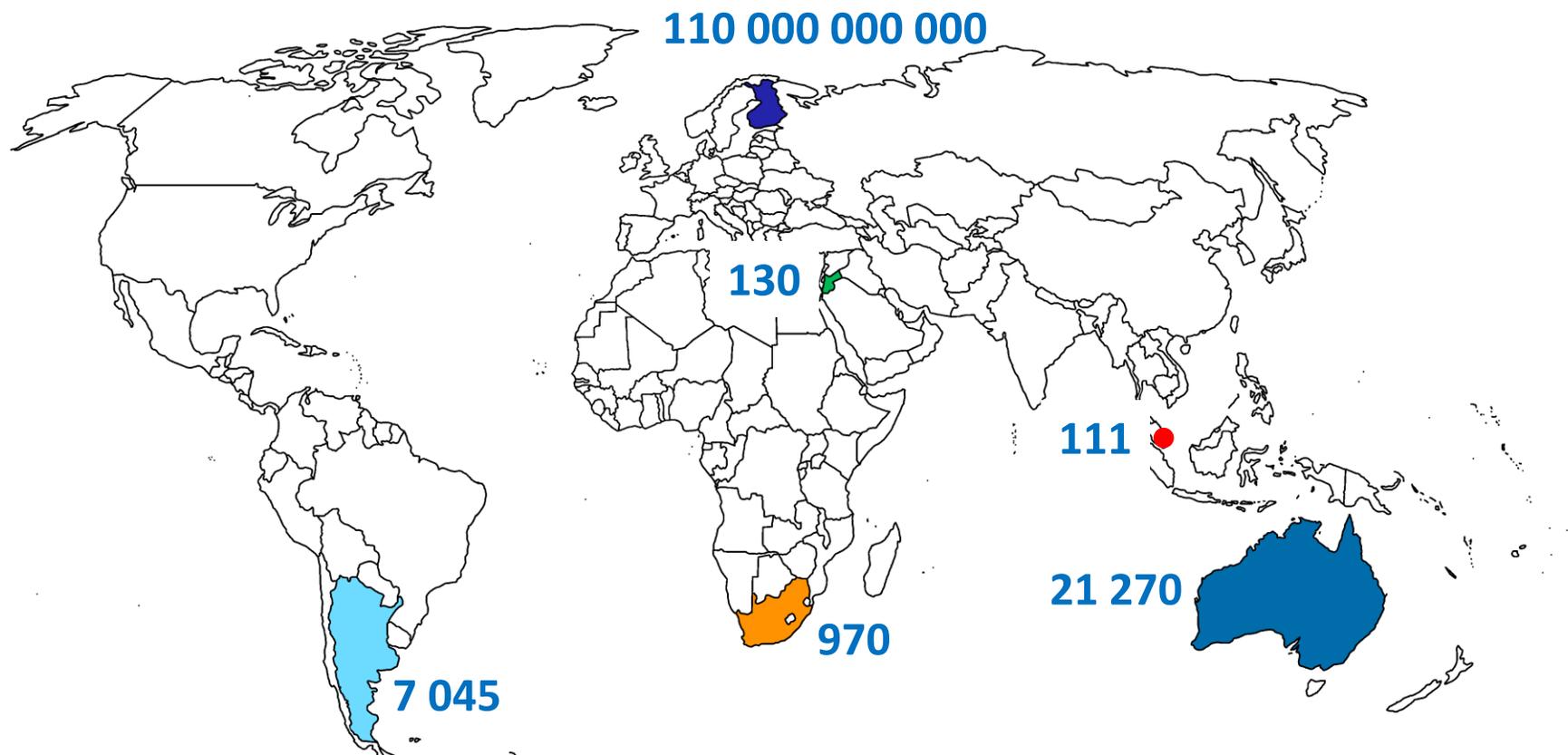
Precipitation (mm/year) & climate



Argentina, Australia, Finland, Jordan, Singapore, South Africa



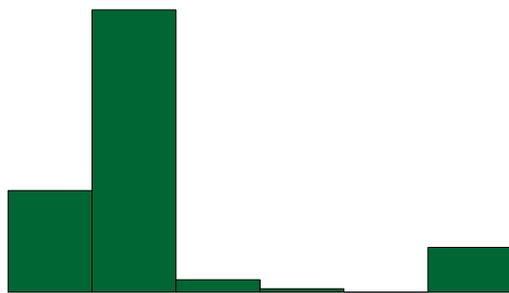
Renewable water resources (m³/year/capita)



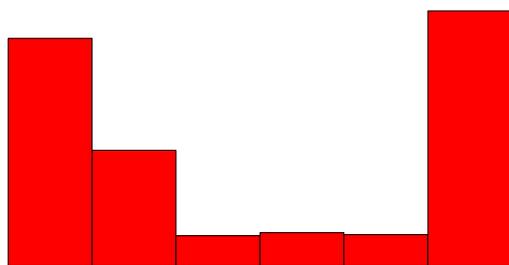
Argentina, Australia, Finland, Jordan, Singapore, South Africa



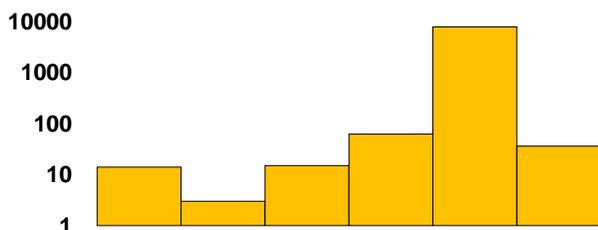
Area
(km²)



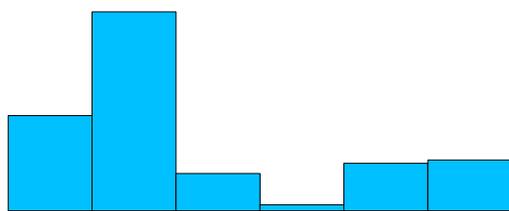
Population
(million)



Density
(inhabitants/km²)



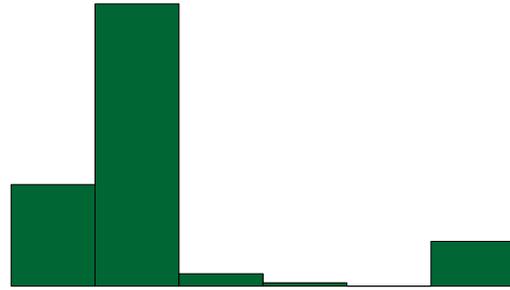
GDP
(USD millions)



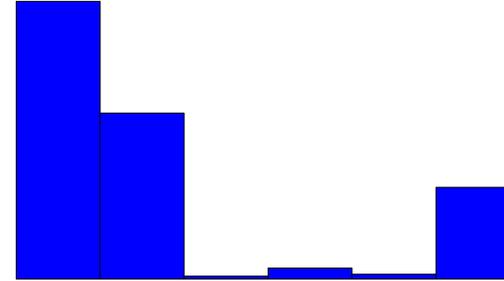
Argentina, Australia, Finland, Jordan, Singapore, South Africa



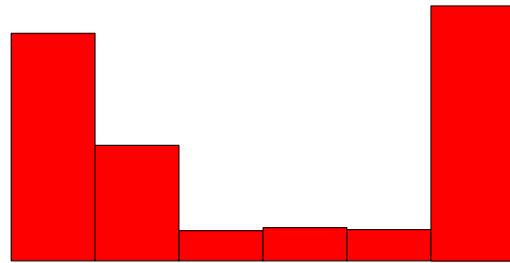
Area
(km²)



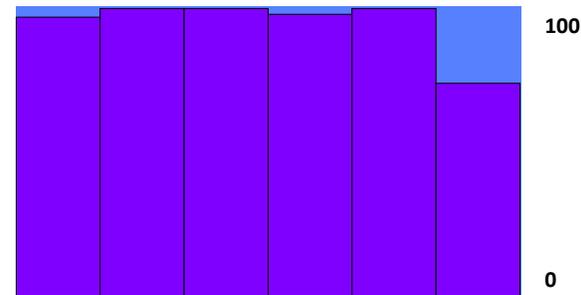
Water withdrawal
(Mm³)



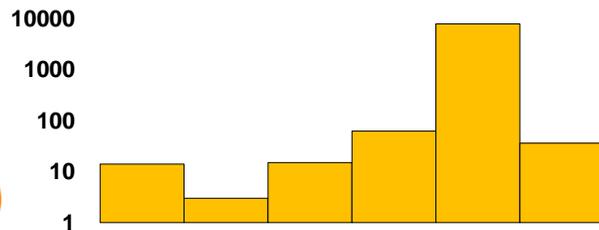
Population
(million)



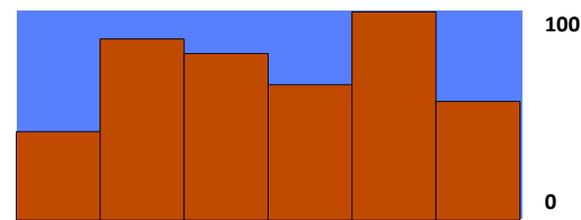
Access to improved
sanitation facilities



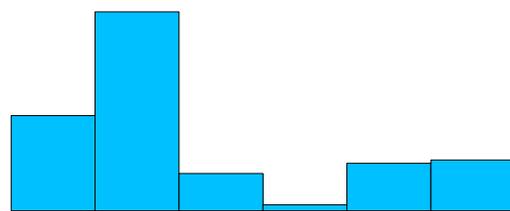
Density
(inhabitants/km²)



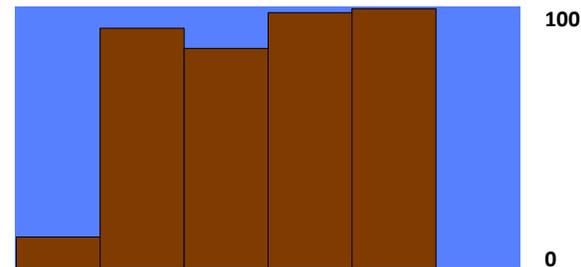
Connected to
wastewater system



GDP
(USD millions)



Wastewater
treatment rate

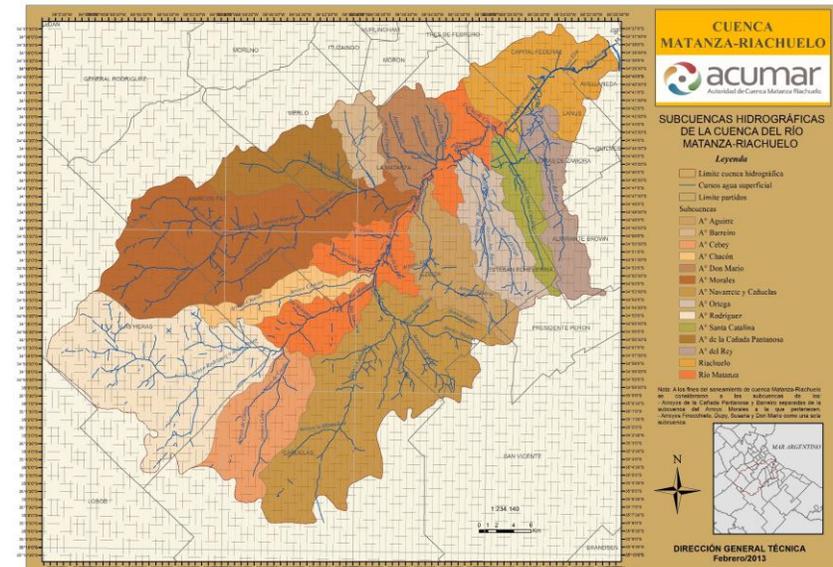




1. Argentina: Human rights obligations & civil society commitments



- 92% of the **population is urban**, high access to improved water and sanitation, but **only 10% of collected sewage is treated**.
- The highest concentration of **urban poor** is in the **Matanza-Riachuelo** River basin (6 million inhabitants). With only 5% of the Buenos Aires City's wastewater being treated, this river basin is **one of the 30 most polluted** in the world.
- River clean-up was initiated after a group of citizens used **Constitutional Article 41 on the right to a healthy environment** to bring the case to the **High Court**. A Ruling requested the government authorities and the private companies to **restore and prevent further deterioration** of the basin.
- The clean-up plan focused on: **Public information**, industrial pollution, solid waste dumps, water supply, drainage, and sewerage networks, public health, and enforcing and **monitoring the implementation of the Court ruling**.





2. Australia: Environmental awareness & lagoon-based WWTPs



➤ Australia is the **driest inhabited continent** and **water scarcity** is worsening with growing population and climate change effects. The country recently managed to reduce water consumption by 40% (per capita between 2000 and 2009).



➤ Although **historically, agriculture** represented the biggest demand for recycled water, future projections show a dominating demand for municipal, industrial and commercial use, as well as for environmental protection.



➤ The National Water Initiative (signed in 2004 by all of Australia's state) ensures a **homogeneous approach** across this Federal country and promotes the **use of recycled water**.



➤ The City of **Melbourne** treats half of its wastewaters in one of the world's largest **lagoon-based wastewater treatment plant** (11,000 ha). The area around hosts thousands of birds and is listed as a wetland of international importance under the **Ramsar Convention**.

3. Finland: Local & transboundary cooperation for wastewater management



- Many **lakes and rivers** (10% of the country) but the Gulf of Finland is part of one of the most polluted seas in the world (**Baltic Sea**), overloaded in nutrient and toxics pollutants from industries (e.g. steel and paper).
- Finland has a comprehensive and participatory approach to wastewater management at the **national & regional level** (e.g. **EU Directives**, **UNECE Conventions**). High level of technological development and investment, e.g. twinning programme with **St. Petersburg**, to share its expertise and legislative practices and help to improve the quality of the waters in the Gulf of Finland.
- Finland has been very active through the work of the Helsinki Commission (**HELCOM**) to protect the Baltic Sea & in the implementation of **international** (e.g. **Basel** and **Stockholm**) and **bilateral conventions** (Russia, Sweden, Norway).
- Finland has a variety of **small-scale** wastewater treatment systems for rural areas. And 1,400 water **co-operatives** which were first established for water supply, and then expended their services to sewerage and WWT.





4. Jordan: Policy effectiveness & increasing treated wastewater reuse



➤ One of the lowest levels of water availability (per capita in the world). The **Syrian crisis**, the population increase, and changing precipitation patterns further aggravate the water scarcity impacts.

➤ The **Wastewater Management Policy** (1998) articulates around: Sanitation utilities, public health, pollution control, and **treated effluents which must be here considered as a water resource** (~ 90 % reused in agriculture).

- The **National Water Strategy** (2008-2022) aims
- To provide adequate wastewater collection and treatment facilities
 - To protect groundwater aquifers from contaminated wastewater
 - Tariffs for wastewater collection are rationalized
 - All treatment plants are operated according to international standards



5. Singapore: Unique holistic approach to water resources management



- Small city-state with the second highest population density in the world and limited natural freshwater resources.
- Water identified as a national priority in 1971.
- The water strategy is based on the “**Four National Taps**”:



Institutional axis

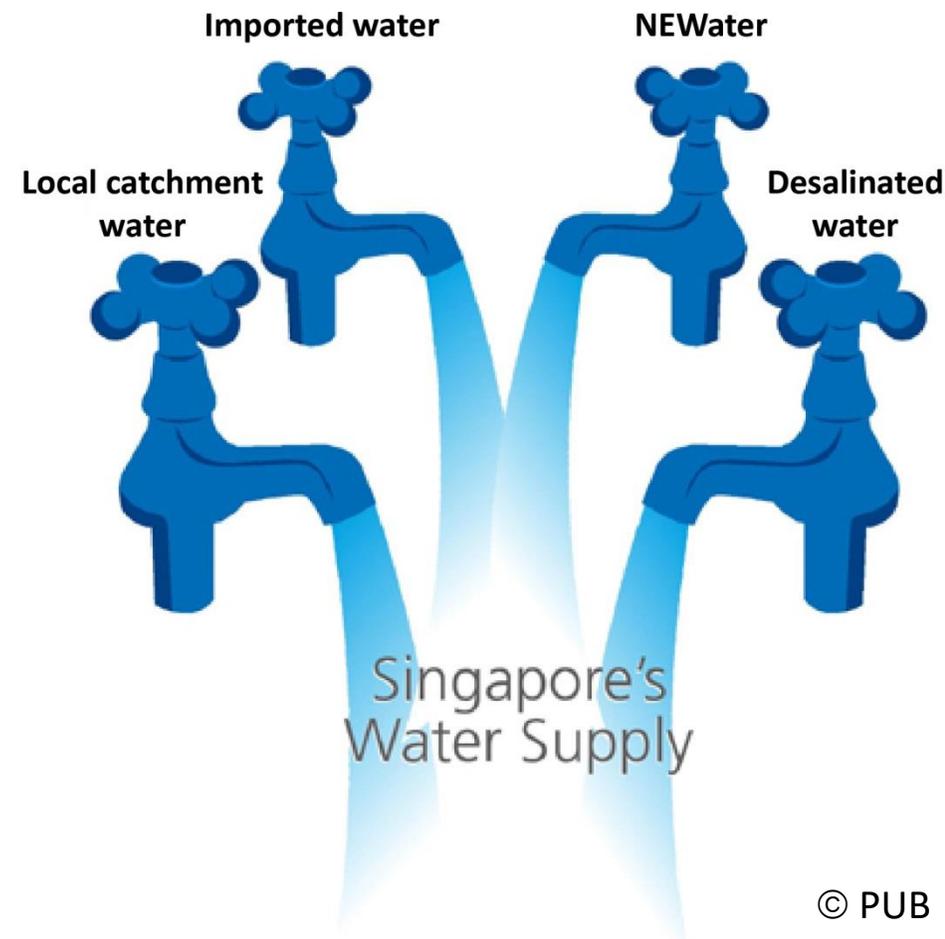
The Public Utilities Board is in charge of all water and wastewater-related services (**coordinated institutions**).

Policy axis

Long-term planning and **integrated public policies**, water pricing (to cover full production and supply costs), technological research, and public education and involvement.

Legislation axis

Strict laws, regular monitoring and enforcement.



6. South Africa: A Human Rights-Based Approach to wastewater management



► Until the fall of the **apartheid** regime (1994), public policy and the legal framework were based on racial segregation, with ~ 20 million South Africans living without adequate sanitation.

► **Policy** regarding wastewater management is based on a **human rights-based approach**, i.e. in accordance with international human rights criteria (e.g. right to information and public participation) and directed to promote, protect and implement them.

► Recognition of the **human right to water and sanitation** occurred before these rights were officially recognized by the **UN General Assembly** (2010) and even before the **General Comment No 15** (2002) on the right to water!

Ex. The **Free Basic Sanitation Implementation Strategy** allowed a number of municipalities to provide essential and basic **sanitation services free of charge for poor households**.



► Implementation of water reuse projects, the upgrading of WWTP, and the reduction of sewage production.



DATA

Institutional stakeholders, legal texts & laws,
wastewater & sanitation data & technologies, etc.

Main outcomes:

- 1) Wastewater regulation and implementation is **highly context specific**
- 2) Through: **Governmental institutions, laws & local regulation, but also transboundary collaboration**
- 3) Results in a **culture of wastewater management** called governance ⇒ **Good governance principles & human rights-based approach**

