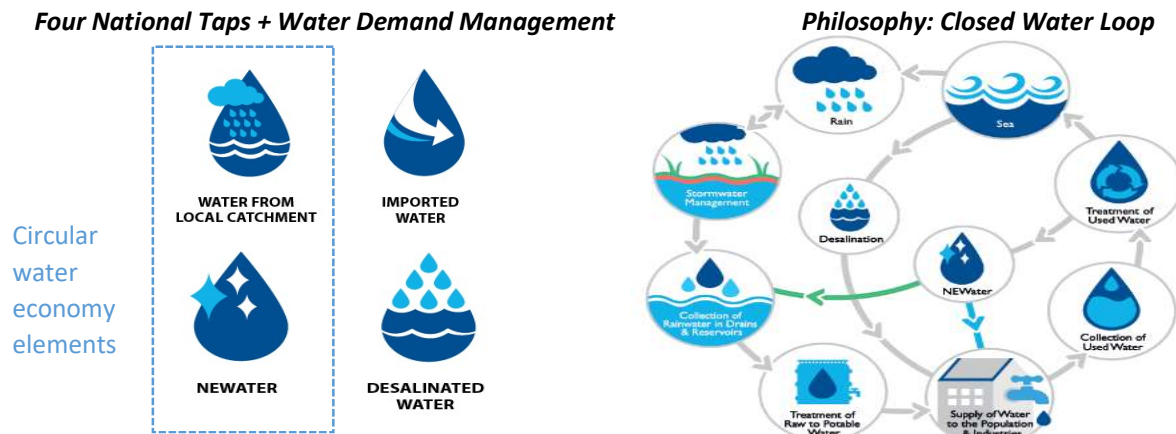


Quantifying the Circular Water Economy: The Case of Singapore

OBJECTIVE: To quantify the economic value of furthering & strengthening the circular water economy in Singapore. Thereby better informing policy makers, water managers and urban planners on costs and benefits of transition to more sustainable urban water management.

1. SINGAPORE'S URBAN WATER SYSTEM



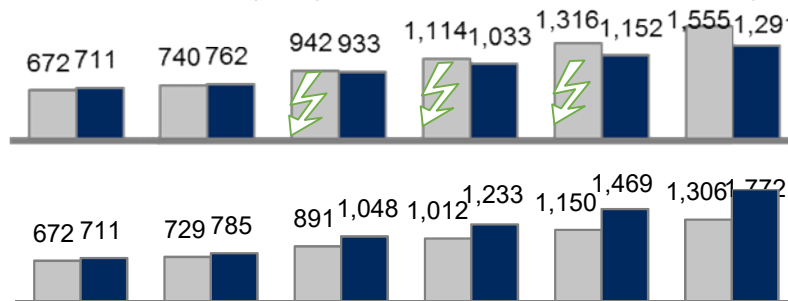
2. REDUCE, REUSE, RECYCLE: WATER SUPPLY AND DEMAND TARGETS

Lever	2060 target	Demand	Supply
Reducing water demand	- Reduce per-capita water consumption to 124 liters - Today's consumption at 148 liters per-capita	↓	
Water reuse	- Secure 55% of Singapore's total water supply by NEWater - Today, up to 30% of total supply from NEWater		↑
Retention of water	- Build of additional reservoirs - Already 17 reservoirs in place today		↑

3. LINEAR WATER ECONOMY (LWE) VS. CIRCULAR WATER ECONOMY (CWE)

LWE leads to supply-demand gaps.

CWE creates surplus of available water and lower overall consumption.



CWE water savings: Reduced demand + additional NEWater + additional water retained

CWE cost savings: Less cost to buy and/or treat water and wastewater + Savings on infrastructure investments (e.g. desalination plants, water treatment plants, etc.) + Economic growth by avoiding water scarcity

4. POLICY RECOMMENDATIONS FOR SINGAPORE (AND BEYOND)

Continue Previous Strategies

- **Collect every drop of water.** – Increase water catchment are from 2/3 to 90%.
- **Reuse water endlessly.** – Increase water recycling rate through different technological measures.
- **Desalinate more seawater.** – Continue R&D for more efficient & cost-effective technologies (e.g. energy

Further Policy Strategies

- Undertaking additional **water efficiency measures** (e. g. implementing strict water efficiency standards for relevant home appliances).
- Investing in **additional research** to further reduce costs of NEWater.
- Campaign promoting installation of **green roofs**.

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reduction).