

International Water Summit
Abu Dhabi, 21st Jan 2014

Advancing Water Reuse in Japan

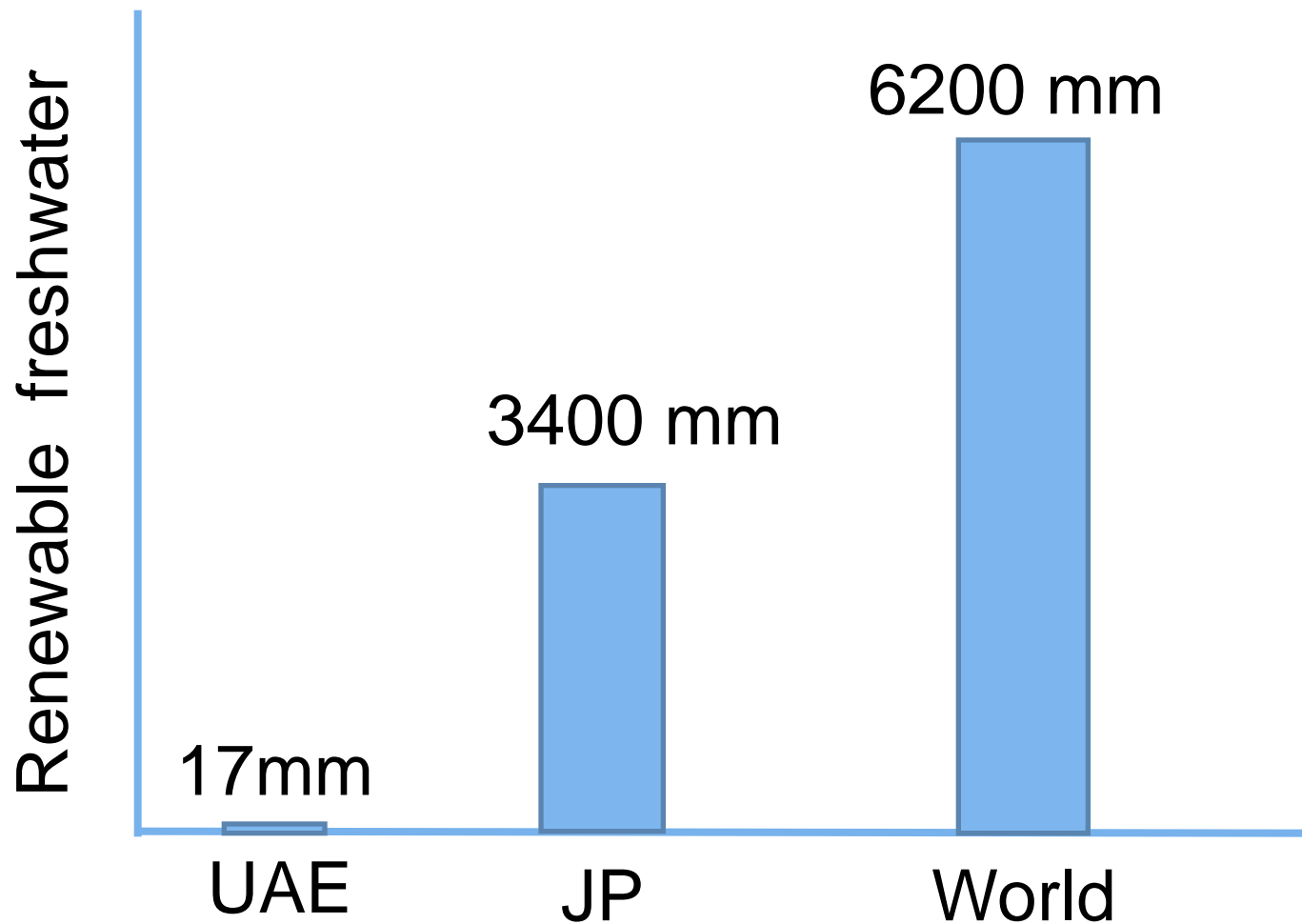
Yosuke Matsumiya

Why JP needs reuse

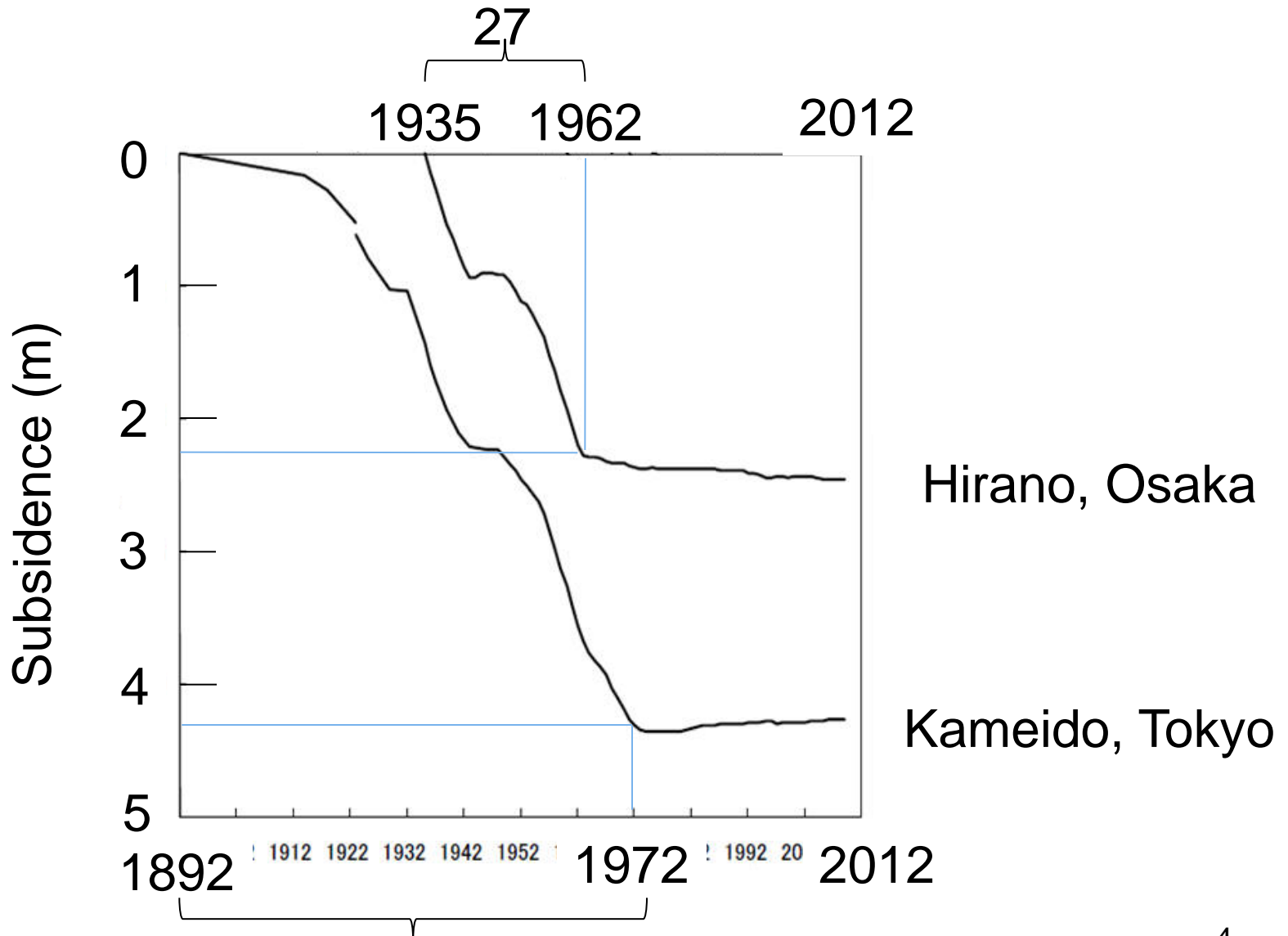
Current reuse

For further reuse

Water Resource per capita



Unsustainable Groundwater Use

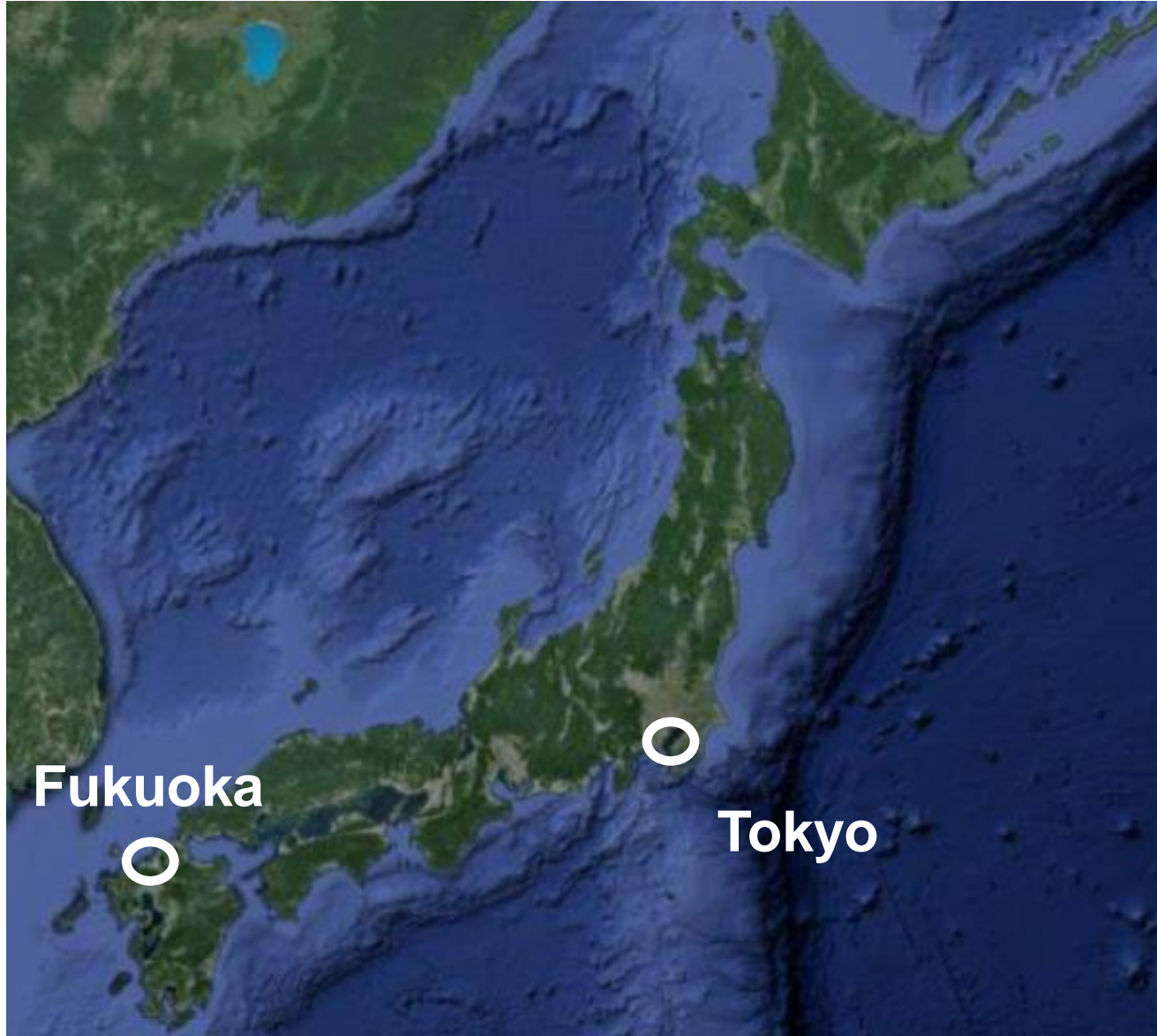


From MLIT website

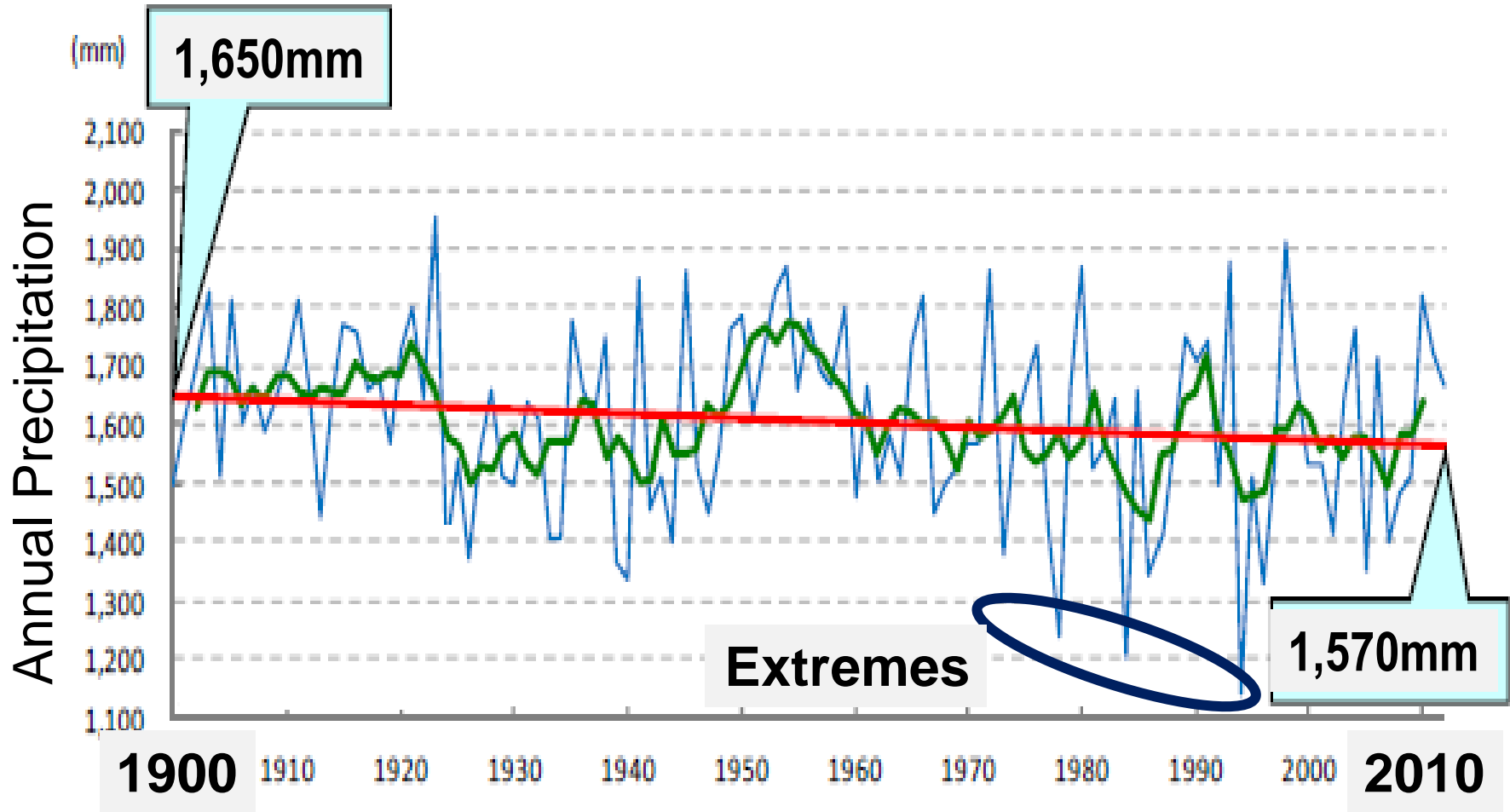
80 years



Uneven distribution of Pop. & Preci. Hotspots of Shortage at Urban Cities



Climate change affects surface water



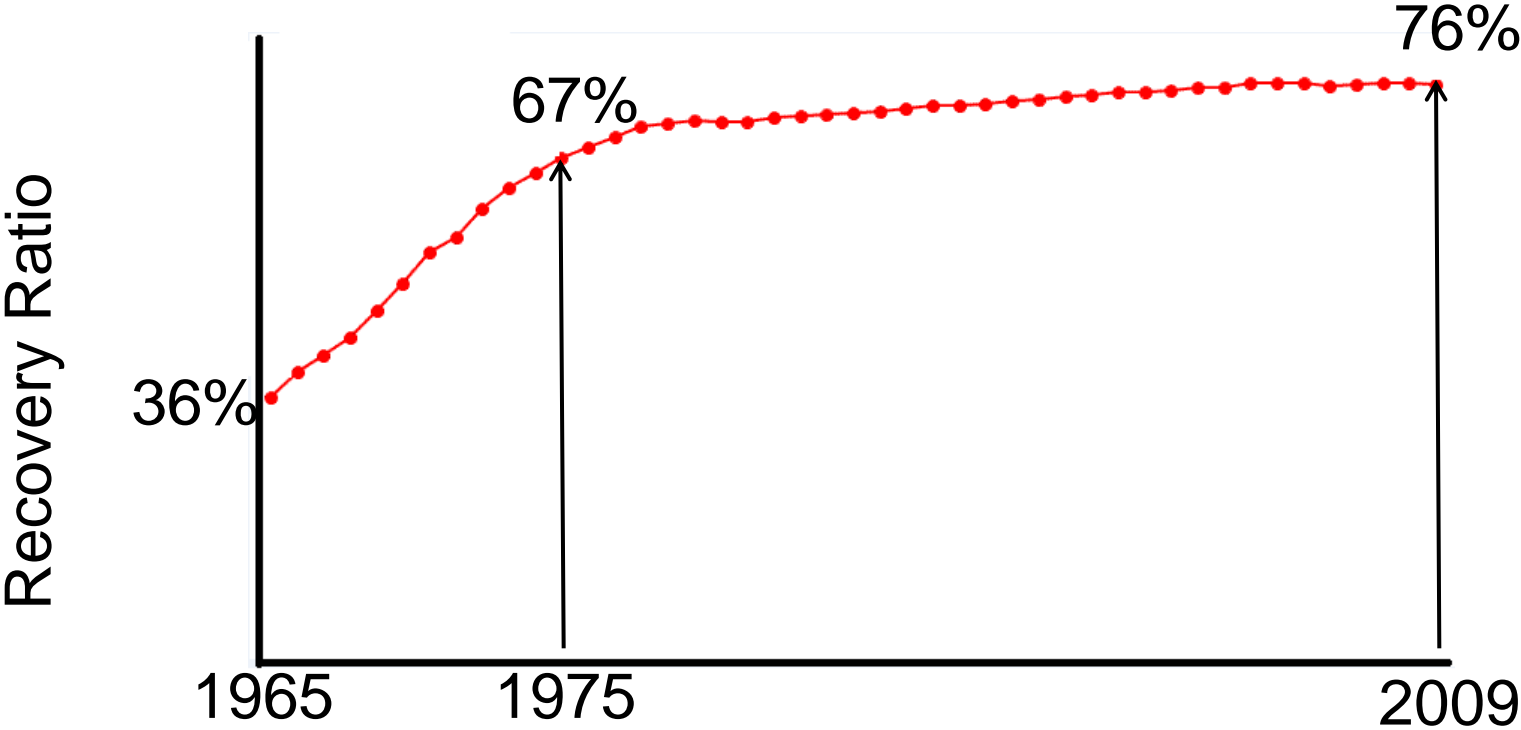
Current Reuse

Manufacturing Sector

Commercial Property Owner

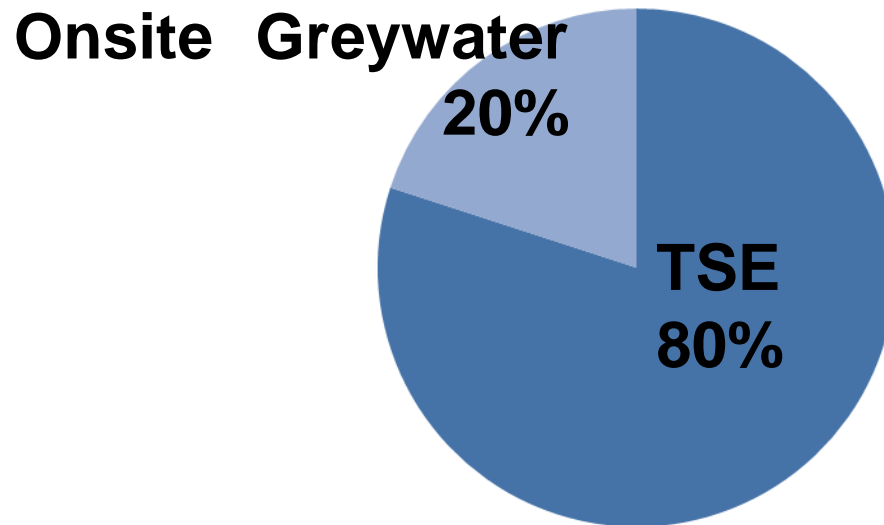
Government Sector

Manufacturing sector water recovery



Commercial property owner's water reuse for flushing toilets & irrigation.

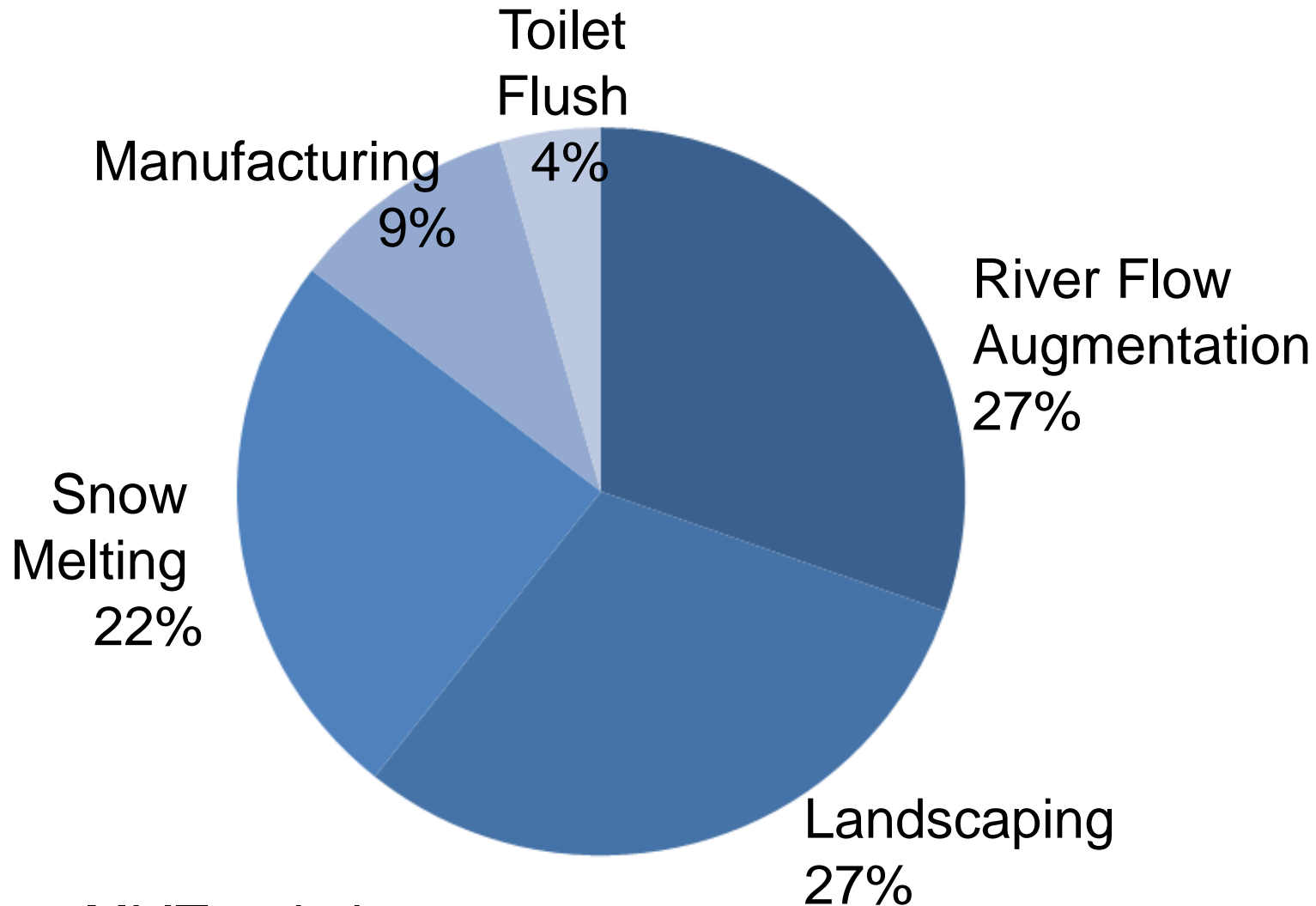
- Intensive at H.S. as water conservation
- Breakdown by source



Government role on water reuse at commercial property

- LGs mandates developer to reuse
- MOH regulate in-building reuse by law.
- TSE Reuse PJ operated by LGs (=Utility)
- MLIT Subsidze LGs for TSE reuse PJ.
- MLIT issue technical guidelines for TSE reuse.

Usage of TSE



Exp-1 Onesite greywater reuse, Tokyo Ebisu Garden Place, cont.



- Urban re-development PJ
- Office, retail, hotel, culture...
- Use: Toilet & Irrigation
- Reuse Cap.: 880m³/d
- Storage Cap.: 1,000m³



From MLIT website etc.

Treatment Processes

- Graywater & Kitchen Wastewater goes separate pretreatment.
- GWPT: Screen, Sedimentation
- KWPT: Screen, Bioreactor 1st, 2nd.
- After PTs, goes to BF, GAC, CL
- Dewatered Sludge taken away as solid waste.



Screening for GW



Screening for KW

Exp-2 River Flow Augmentation, Tokyo

Government Sector Reuse

- A STP of A2O, 250,000 m³/d pumps 40,000 m³/d.
- Add-on Processes for polishing are SF + OZ.
- 30 km revived.



For Further Reuse

Typical Scene of TSE Reuse



Safe water to Kids & Fish is necessary.

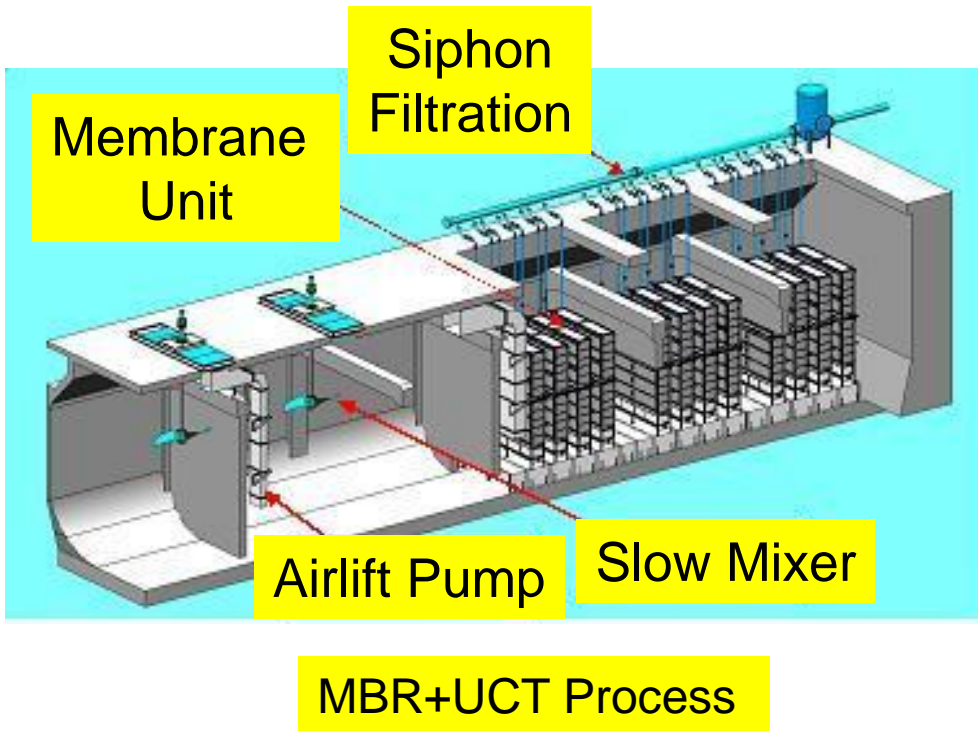
MLIT Research Project on MBR

- Advancing TSE reuse
- Rehab and Upgrade of Existing STPs
- International Contribution
 - “Guidelines for Introducing Membrane Technology in Sewage Works”

<http://www.mlit.go.jp/common/000213616.pdf>

- Based on the research outcome.

MBR Energy Reduction



MBR energy use was reduced to the same level as BNR+SF, 0.4 kwh/m³.

Thanks!

This presentation was made possible with courtesy of MLIT office of wastewater.