

Integrated Water Resources Management System and Response to Drought in Japan

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Climatic and Topographic Condition and Frequent Occurrence of Droughts in Japan

- **Small precipitation per person**
1/3 of the world average

- **Quick runoff to the sea**
due to steep landforms
- **Small reservoir capacities**
due to rugged landforms



Steep and rugged landforms

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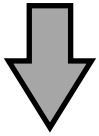
Vulnerability to droughts



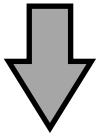
Three Countermeasures to avoid devastating damages

1. Water Resources Planning and Development for each basin

- **Forecast** Future Water Demand



- **Plan** Water Resources Development



- **Implement** Projects
 - Construction of reservoirs
 - Lake development
 - Construction of inter-basin canals
 - Redevelopment of existing dams



Yagisawa Dam



TONE Weir and Canal

2. Promotion of Efficient Water Use

➤ Water Supply System

Reduction of Water Leakage
in Tokyo :

19% (1965) → 3% (2014)



Inspection of Water Leakage
(from website of Tokyo Metro. Gov.)

➤ Industrial Use

Increase in reuse of Industrial Water : 36% (1965) → 79% (2011)

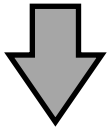
➤ Domestic Use

Spread of Water-Saving Toilet : 20 (1970) → 3.8 (2013) Liters/flush

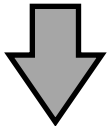
3. Drought Risk Management

Drought Coordination Council for each major river basin

- In case a drought is likely to occur,
Hold the council led by river manager



- **Coordinate**
at the Council



Drought Coordination Council

- Members of the Council
 - River Manager
 - Reservoir Operators
 - Water Users
 - ✓ Water Supply
 - ✓ Agriculture
 - ✓ Industries
 - ✓ Power

- **Reach a Consensus** on water intake restriction for each users

Summary

- Main three measures to address droughts
 - Water resources planning and development for each basin
 - Promotion of efficient water use
 - Drought risk management

- Future challenges
 - Risk assessment of extreme droughts in future, in consideration of climate change impacts
 - Implementation of preemptive measures