

# Outline of the Water Policy Review in Japan



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6<sup>th</sup> of June, 2006

- **1. Governmental organs related to water matters**

# **Governments Related to Water in Japan**

## **Ministry of Health, Labour and Welfare**

**Water Supply for Domestic Use, Quality Preservation of Water Source, etc.**

## **Ministry of Agriculture, Forestry and Fisheries**

**Water Supply for Agricultural Use, Forest Development for Headwaters Conservations, etc.**

## **Ministry of Economy, Trade and Industry**

**Water Supply for Industrial Use, Hydropower, etc.**

## **Ministry of the Environment**

**Water Quality, Environmental Preservation, etc.**

## **Ministry of Land, Infrastructure and Transport**

**Sewerage, River Improvement for Flood Control and Environment, Reservoir Area Development, Water Supply and Demand Planning, etc.**

# Mandate affairs regulated in the Law Concerning the Establishment of Ministries

Ministry of Health,  
Labour and Welfare

- Matters related to water supply

Ministry of Agriculture,  
Forestry and  
Fisheries of Japan

- Matters related to securing of the agricultural use of land, water and other resources
- Matters related to agricultural irrigation
- Land reform business (i.e. irrigation and drainage, land readjustment, land reclamation, disaster restoration of agricultural facilities or facilities necessary for agricultural land or its conservation, or projects for maintaining and promoting the agricultural use of land)
- Matters related to forestation and flood control of forest land, forest road construction and improvement, and other forest developments

Ministry of Economy,  
Trade and Industry

- Matters related to the promotion and supervision of industrial water supply
- Matters related to planning, designation and implementation of basic policies concerning power resources development

Ministry of Land,  
Infrastructure and  
Transport

- Matters related to planning, designation and implementation of the Water Resources Development Basic Plan and other comprehensive and basic policies concerning water demand and supply
- Matters related to planning, designation and implementation of the measures for reservoir areas
- Matters related to sewage system
- Matters related to management of development, utilization, conservation, etc. of river systems, water flow and water surface
- Matters related to construction and management of facilities used for development or utilization of water resources
- Matters related to designation and implementation of the policies concerning regional flood control and water utilization

Ministry of the  
Environment

- Matters related to establishment of environmental standards
- Matters related to regulation for pollution prevention
- Matters related to the treatment of human waste and drain water by water-purifier tank
- Matters related to regulation and designation of standards, guidelines, policies, and plans concerning businesses and projects (such as treatment of drain water by sewage system and other facilities, conservation of rivers, lakes and marshes, and environmental impact assessment) from the environmental conservation viewpoint

# Governments Related to Water in Japan

## Ministry of Health, Labour and Welfare

**Water Supply for Domestic Use, Quality Preservation of Water Source, etc.**

- Matters related to water supply

# Governments Related to Water in Japan

## Ministry of Agriculture, Forestry and Fisheries

### **Water Supply for Agricultural Use, Forest Development for Headwaters Conservations, etc.**

- Matters related to securing of the agricultural use of land, water and other resources
- Matters related to agricultural irrigation
- Land reform business (i.e. irrigation and drainage, land readjustment, land reclamation, disaster restoration of agricultural facilities or facilities necessary for agricultural land or its conservation, or projects for maintaining and promoting the agricultural use of land)
- Matters related to forestation and flood control of forest land, forest road construction and improvement, and other forest developments

# Governments Related to Water in Japan

## Ministry of Economy, Trade and Industry

### Water Supply for Industrial Use, Hydropower, etc.

- Matters related to the promotion and supervision of industrial water supply
- Matters related to planning, designation and implementation of basic policies concerning power resources development

# Governments Related to Water in Japan

## Ministry of the Environment

### Water Quality, Environmental Preservation, etc.

- Matters related to establishment of environmental standards
- Matters related to regulation for pollution prevention
- Matters related to the treatment of human waste and drain water by water-purifier tank
- Matters related to regulation and designation of standards, guidelines, policies, and plans concerning businesses and projects (such as treatment of drain water by sewage system and other facilities, conservation of rivers, lakes and marshes, and environmental impact assessment) from the environmental conservation viewpoint



# Governments Related to Water in Japan

## Ministry of Land, Infrastructure and Transport

**Sewerage, River Improvement for Flood Control and Environment, Reservoir Area Development, Water Supply and Demand Planning, etc.**

- Matters related to planning and implementation of the Water Resources Development Basic Plan and other comprehensive and basic and policies concerning water demand and supply
- Matters related to planning and implementation of the measures for reservoir areas
- Matters related to sewage system
- Matters related to management of development, utilization, conservation, etc. of river systems, water flow and water surface
- Matters related to construction and management of facilities used for development or utilization of water resources
- Matters related to planning and implementation of the policies concerning flood control and water use in river basins

# (1) Duties of the Water Resources Department

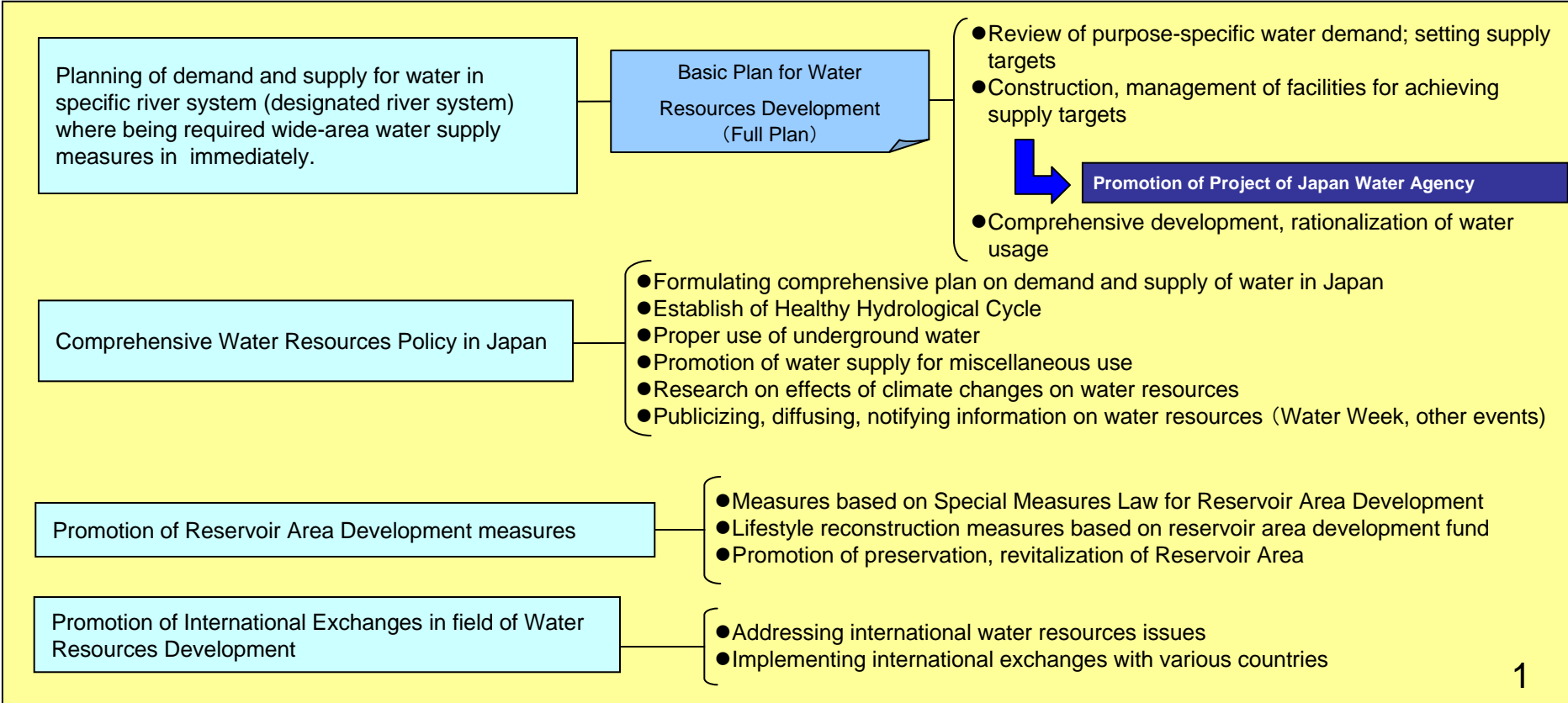
## Duties (Article 6 of MLIT Organizational Ordinance)

Planning, promotion of the Water Resources Development Basic Plan, other comprehensive and basic policies concerning supply and demand for water

## Laws Under Jurisdiction

Water Resources Development Promotion Act, Japan Water Agency's Act, Special Measures Law for Reservoir Area

## Current Duties (Four Major Pillars)

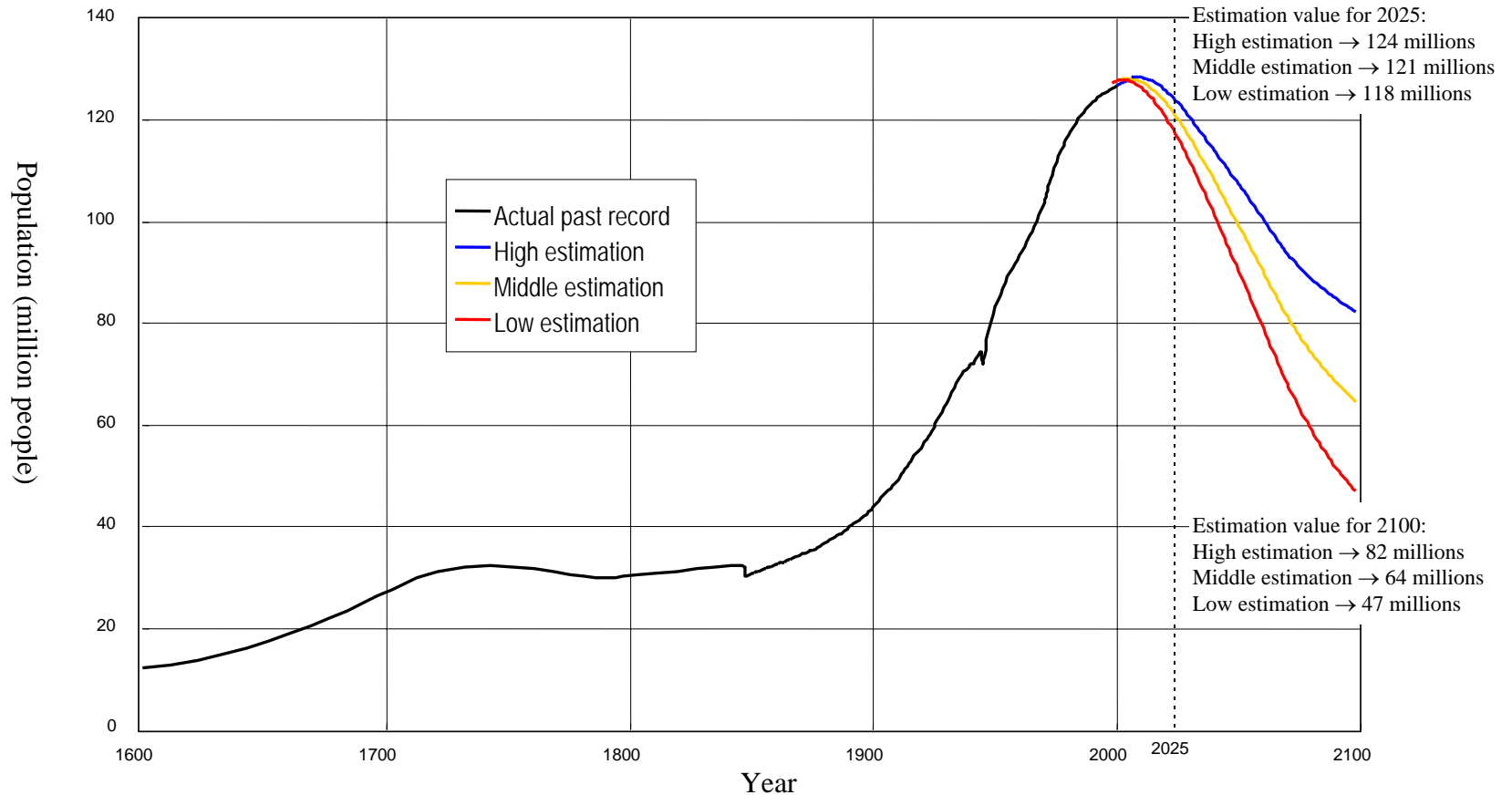


- **2. Review of Japanese Water Policy**

# Transition and estimation of Japanese total population

Japanese total population is expected to reach its peak in a short time and take a downward turn thereafter

## Japanese total population



Source: “Japanese history read from population” Kito Hiroshi (until 1846), “Analysis of the population growth” Morita Yuzo, Nippon Hyoron Sha (1847- 1870) “Our country’s population in from 1872” (1872-1919), “National Census” and “Annual Report on Current Population Estimates” (1920-2000), Statistics Bureau

# Postwar Reconstruction Period (1945 - 1960)

Urgent issues: national land conservation, increase of food production, expansion of industrial production, power development, etc.

- Confusion and period of reconstruction following the end of the Second World War
- "It is no longer the postwar period" (1956 Economic White Paper)

Stable food supply to cope with the sudden increase in population



Land Improvement Law (1947)

Promotion of power development (hydroelectric power, etc.)



Electric Power Development Promotion Law (1952)

Measures to cope with the increased demand for water for domestic use



Waterworks Law (1957)

Measures to cope with the increased demand for industrial water



Industrial Water Supply Business Law (1958)

Promotion of nationwide national land development



National Comprehensive Development Law (1950)

Promotion of comprehensive regional development centering on the Chita Peninsula



Aichi Canal Public Corporation Law (1955)

Comprehensive implementation of flood control measures and measures to meet demand for municipal water and other new water uses



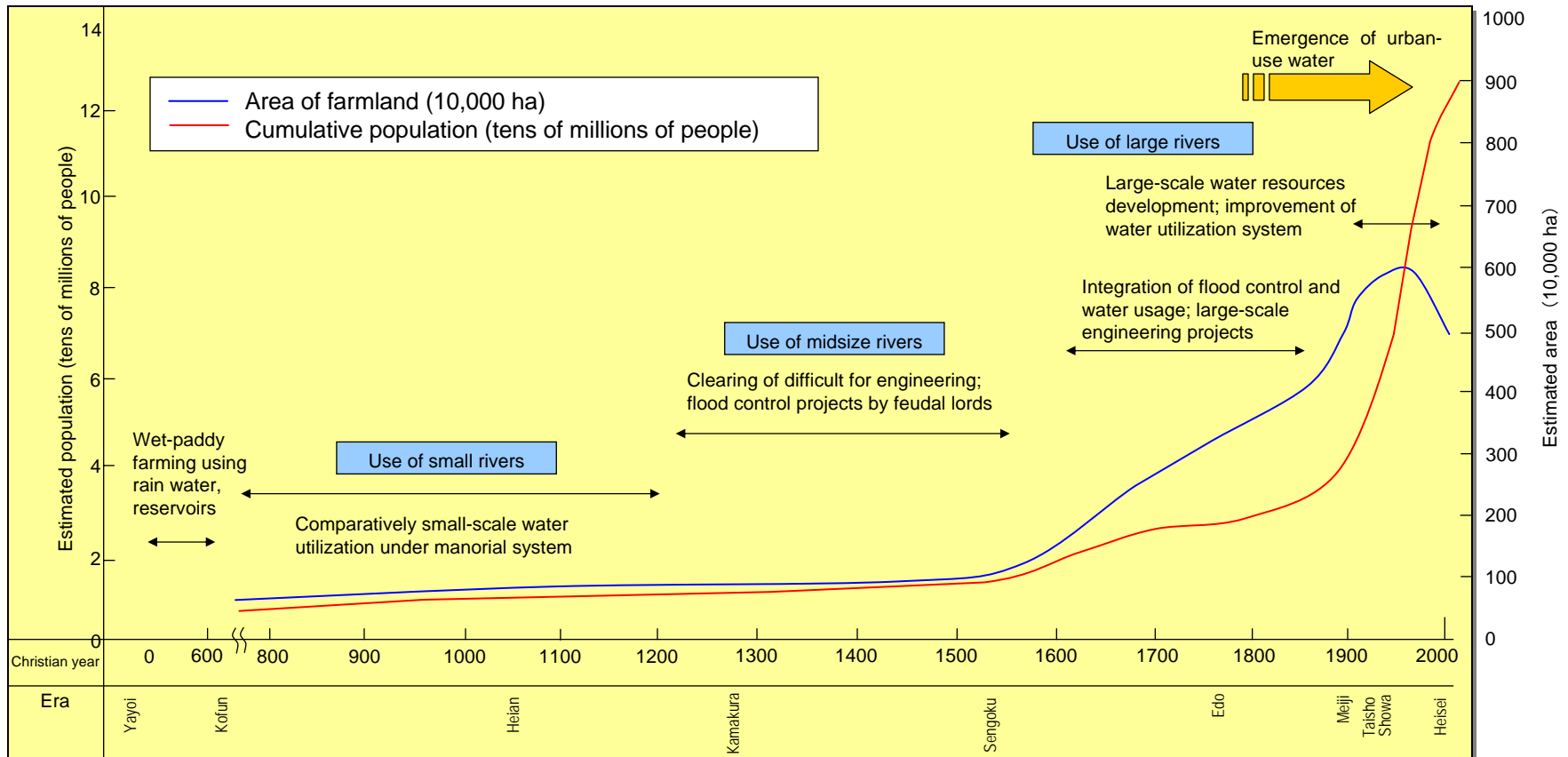
Specified Multipurpose Dam Law (1957)

Fig. 2-1-1 Situation During the Postwar Reconstruction Period (1945 - 1960)

# History of Water Usage

- Rice cropping developed from ancient times, using river water for irrigation
- Population has tripled over the past century
- Large-scale water resources development projects have been promoted in response to increase in domestic and industrial use of water
- Population growth has slackened and farmlands have tended to decrease in recent years

## Changes in Population, Area of Farmlands in Japan



# Period of High-Level Economic Growth (1960 - 1973)

In the course of promoting development to meet the sudden increase in water demand, new issues arise (need to conserve water quality, measures to cope with ground subsidence etc.)

- Plan for Doubling the National Income (1960), Tokyo Olympics (1964)
- Minamata disease, "itai-itai" disease, etc.

## Promotion of water resource development

Legal and organizational mechanisms for promotion



Water Resources Development Promotion Law (1961)  
Water Resources Public Corporation Law (1961)

Established a mechanism for the rapid development of water resources in the Tokyo metropolitan area, Kinki area, Kita-Kyushu area and other areas with a particularly large increase in water demand



Coordination with new water use  
Promotion of integrated flood control and water use measures for the entire river system



Basic Plan for Water Resource Development (Full Plan)

Established in sequence for Tone River / Ara River, Toyo River, Kiso River, Yodo River, Yoshino River and Chikugo River

Revision of River Law (1964)

## Measures to prevent ground subsidence

Industrial Water Law (1956)

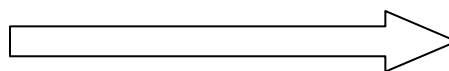
Restrictions on the pumping of groundwater for industrial water use in designated regions (approved by prefectural governor)

Building Water Law (1962)

Restrictions on the pumping of groundwater for building water use in designated regions (approved by prefectural governor)

## Measures to preserve water quality

Water Quality Conservation Law /  
Factory Effluent Control Law (1958)

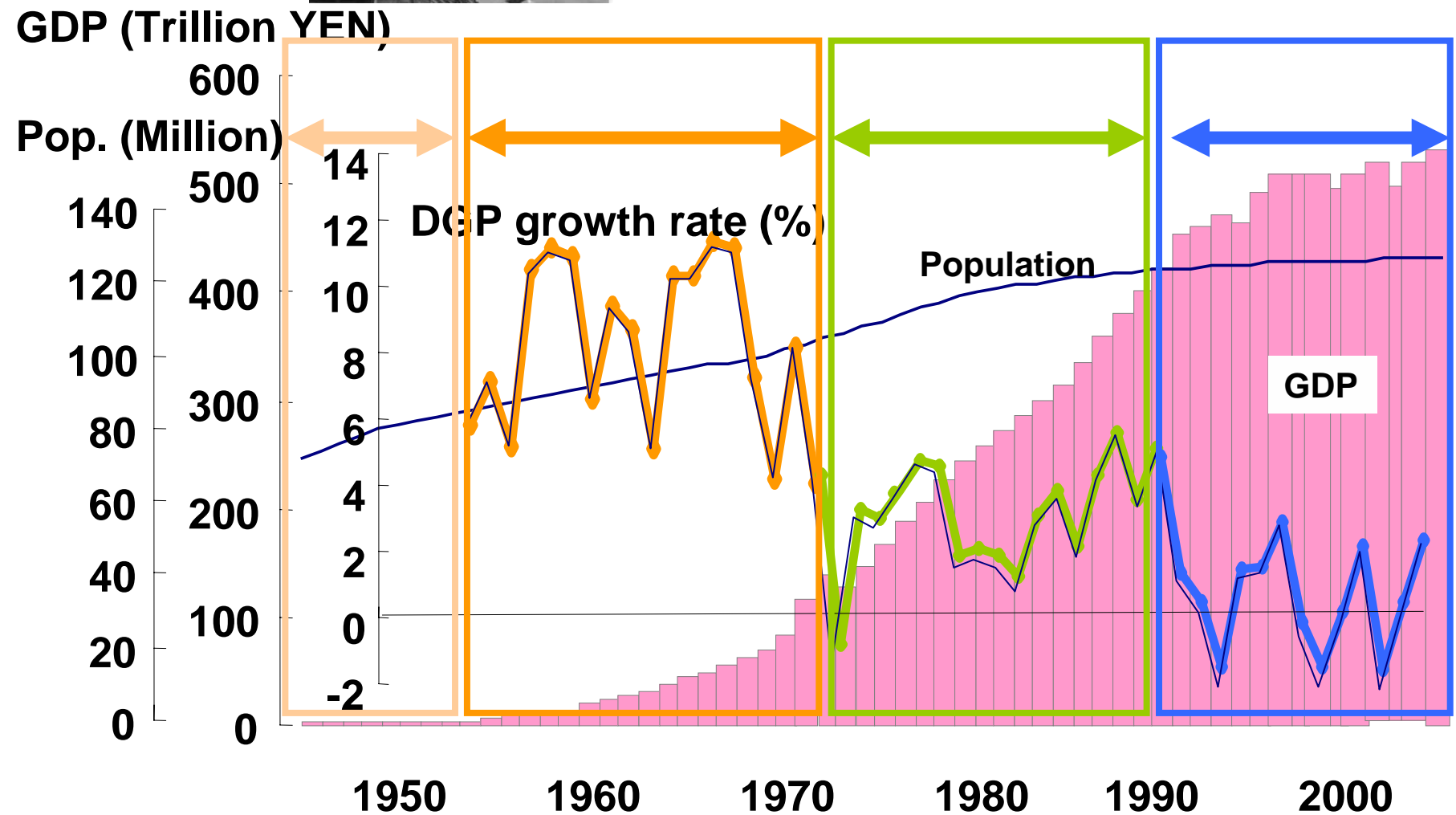


Water Pollution Control Law (1970)

Basic Law for Environmental Pollution (1967) ->  
Revised in 1970 (Diet session devoted to pollution issues)

Revision of Sewerage Law (1970) Law for  
Environmental Pollution (1967)

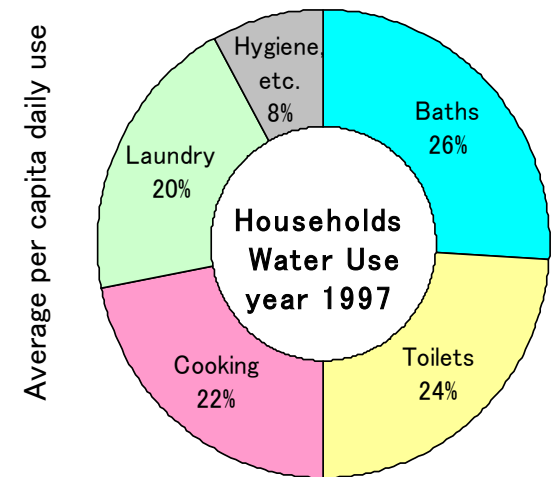
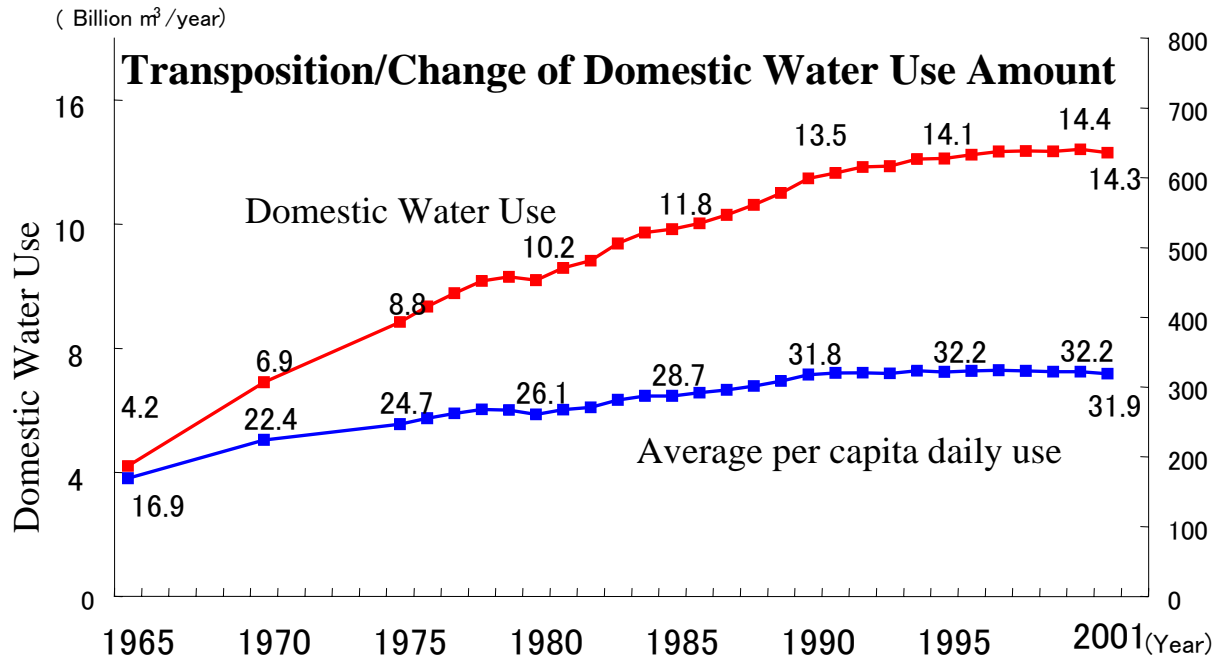
# Changes of Economic Condition





# Water for Domestic Use

- 1) **Increase by roughly three times** due to the population increase and expansion of economic activities over 35 years in the period **between 1965 and 2001**,
- 2) Roughly **doubled of the daily per capita amount of domestic water** in the same time due to changes in the lifestyle (e.g. dissemination of flash toilets and baths in each family),
- 3) Recently, the trend of “households” remained static, and
- 4) Main proportion of households is by **baths, Toilets, Cooking and Laundry**.

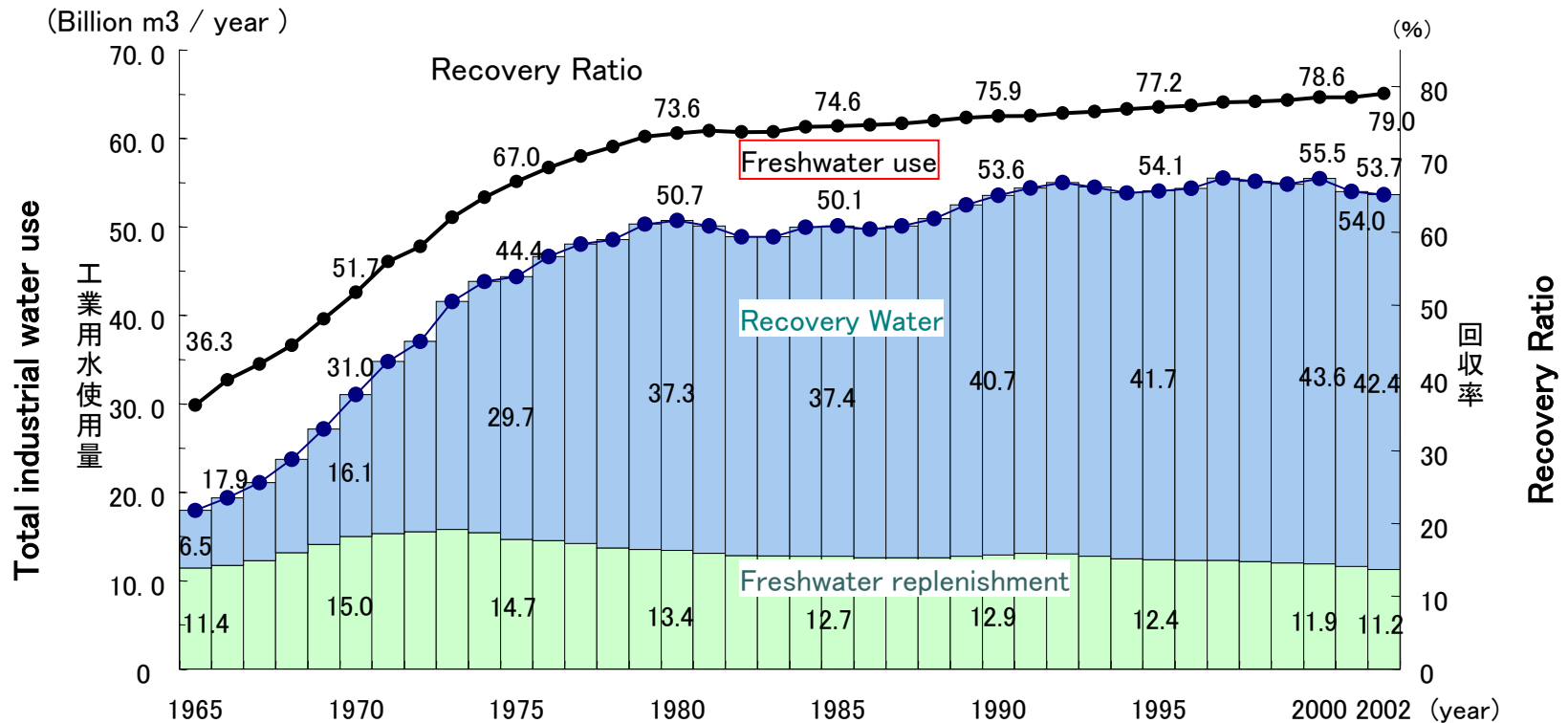


Note) Data from the survey by bureau of Waterworks, Tokyo gov.

Note) 1. Figure after 1975 were surveyed by Water Resources Department, MLIT  
 2. Based on effective water volume

# Water for Industrial Use

- 1) Increase roughly by three times between 1965 and 2002 for 37 years due to expansion of economic activities
- 2) Due to **advances in Water recycling**, the amount of water, required to be newly taken in from rivers etc. has been **decreasing or remained static in trend since 1973**.
- 3) Proportion of **recovery ratio** per the amount of water for the recycling use of water is **79 %**.

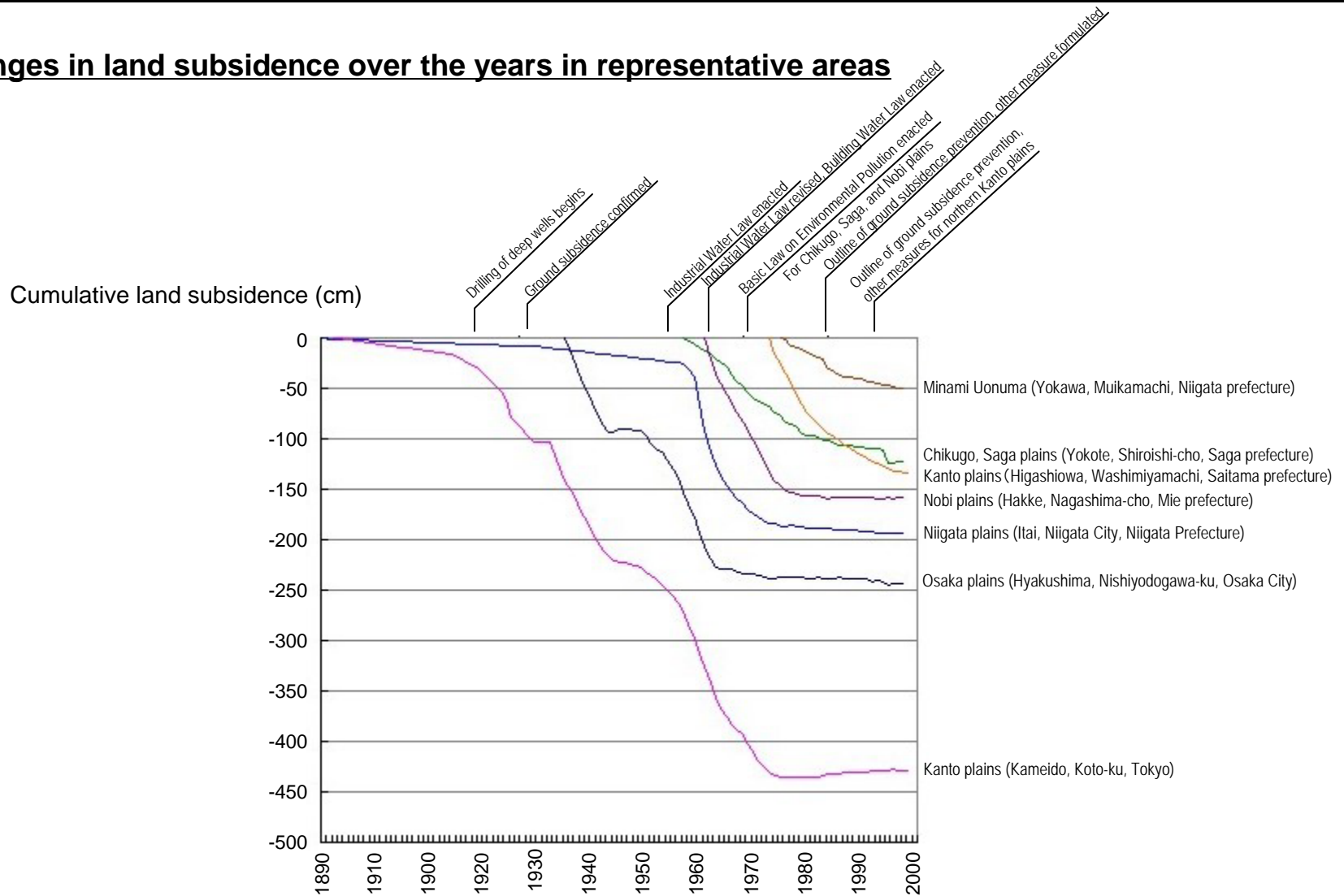


Note) 1. "Census of Manufactures" by Ministry of Economy, Trade and Industry  
 2. Figures are for businesses with 30 or more employees

# Situation of Land Subsidence

- Land subsidence progressed during the era of rapid economic growth, but has now basically subsided

## Changes in land subsidence over the years in representative areas



# Period of Stable Growth and "Bubble" Economy (1973 - 1990)

Coping with increased demand for municipal / domestic water and water shortages, etc.

- First "oil shock" (1973)
- Second "oil shock" (1979)

## Streamlining of water resource development through dam construction, etc.

Special Measures Act for Reservoir Area (1973)

Compensation for property rights as well as upgrading of reservoir area revitalization measures and measures to help residents rebuild their lives

## Need for a national water demand and supply plan based on a comprehensive, long-term perspective

Long-Term Water Demand and Supply Plan (1978)

Basic approach and prediction of water demand and supply in 1985 and 1990 with a view to 2000

Water Demand in the 21st Century (1982)

Estimates of water demand and supply in 2000 and 2010

National Comprehensive Plan for Water Resources (1987) (Water Plan 2000)

- 3 objectives:
  - (1) Creation of a stable water supply mechanism
  - (2) Improvement of the safety level relating to water shortages
  - (3) Creation of new water use society
- Prediction of water demand and supply with approximately 2000 as the target year

## Measures to deal with frequent water shortages

Frequent water shortages within a short period of time

["Takamatsu Desert" (1973), Fukuoka Drought (1978), National Winter Drought (1984), Western Japan Winter Drought (1986), Tokyo Metropolitan Winter Drought (1987)]



Government Offices Conference on Water Shortages (1987)

Fig. 2-1-3 Situation During the Period of Stable Growth and the "Bubble" Economy (1973 - 1990)

# Measures Based on Special Measures Law for Reservoir Area Development

▪ **By coping with increase of the difficulty of a life at Dam Construction area, mitigate the influence of Reservoir Area**

## ○Purpose

Promote the dam construction by creation of plans for living environments, industrial bases at reservoir area

## ○Projects designated by plans

24 products, including land improvement, landslide control, flood control, roads, small water supply systems, sewerage, forest roads, and sports and recreation

## ○Main measures

- Mediation of resettlement measures
- Burden of works projects on other local governments
- Measures against disparate property taxation, etc.
- Special rates, including national subsidies
- Measures to vitalize water-resource areas

## State of Construction

### **Specification of dams, etc.**

94 dams and 1 lake water level regulation facility (Kasumigaura)

### **Construction plans finalized**

84 dams and 1 lake water level regulation facility (Kasumigaura)

### **Scale of construction plan**

Project expense: ¥1,200 billion

Percent completed: about 70%

(As of end-June 2004)

# Post-"Bubble" Period (1990 -)

New issues: coping with diversification of public attitudes and socioeconomic changes

- Collapse of the "bubble" economy
- Economic globalization
- Sluggish economic growth and reduced rate of population increase

## Dealing with diverse needs

Increased interest in the environment



Basic Environment Law (1993)  
Environment Impact Assessment Law (1997)  
Revision of the River Law (1997)

Interchange among water uses  
Effective use of existing facilities



- Optimization of facility management
- Diversion of water use rights to different applications
- Reuse of reclaimed water and other new efforts to secure water resources

## Measures to meet new demand

New National Comprehensive Plan for Water Resources (Water Plan 21) (1999)

Decreased safety level for water use due to medium and long-term fluctuations in climatic conditions



Aimed at constructing a sustainable water use system by building water resource development facilities, ensuring effective use of existing facilities and providing for interchange among water uses

## Need for comprehensive efforts

Government Offices Conference on the Establishment of a Healthy Hydrological Cycle (1999)

Interim report on basic matters pertaining to the approach to future liaison / cooperation, etc.

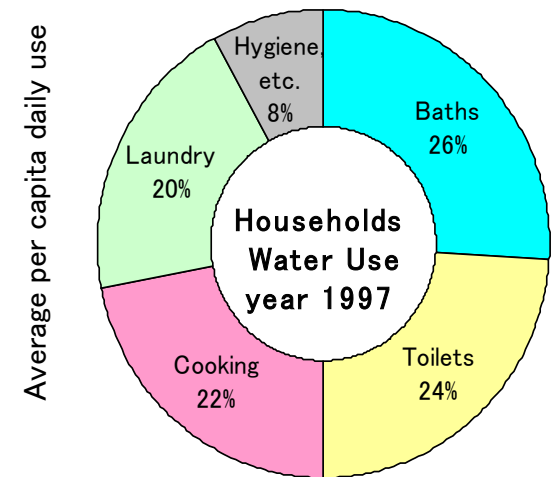
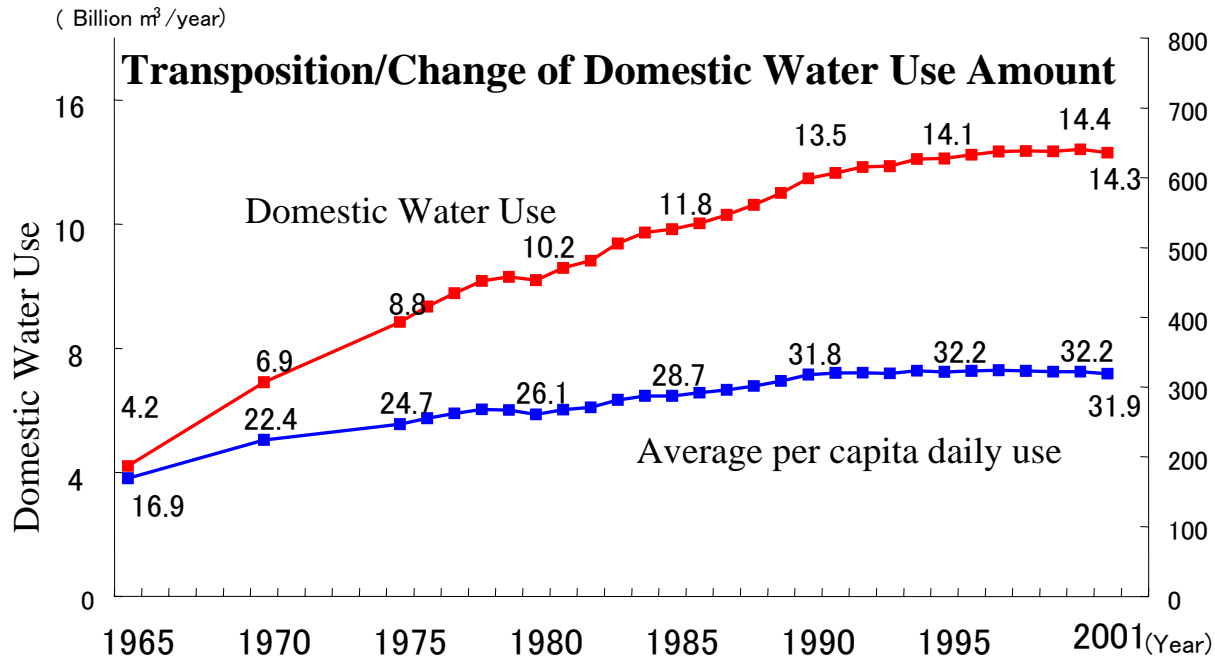
## Other

Law for the Focused Planning of Social Infrastructure Improvement (2003)

Revision of the National Comprehensive Development Law (2005) → National Land Formation Planning Law

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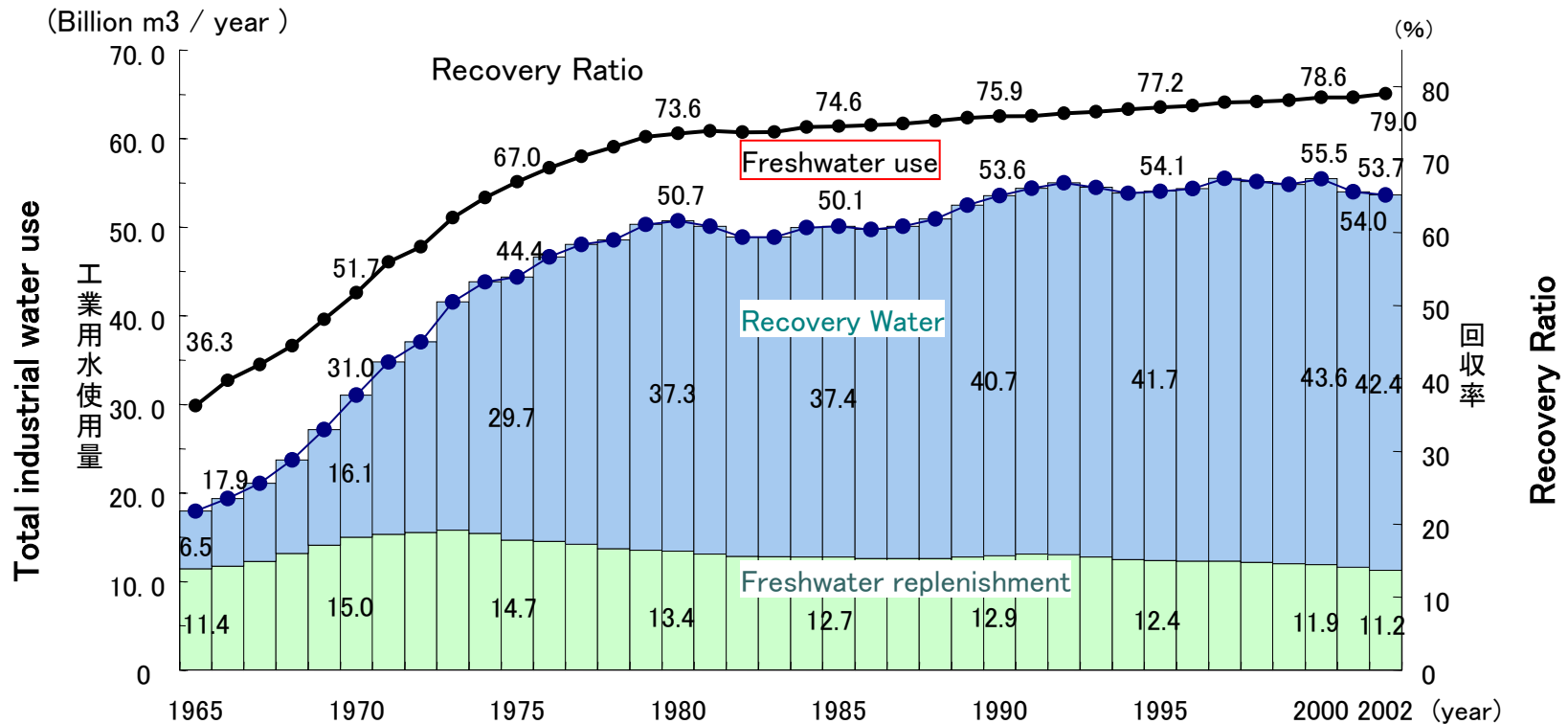


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# Promotion of Measures Aimed at Establishing Healthy Hydrological Cycle

- Various problems involving hydrological cycles are caused by the activities of people who use water.
- Causes of the problems are intertwined in a complicated manner, and problems thus cannot be resolved by addressing them individually.

## Issues regarding hydrological cycles

