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**Restoration of Environment  
after the High Economic Growth  
in Japan**

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# 1. Introduction

- After the loss of the War in 1945, Japan **renounced war** and constructed a peace-loving country.
- **The High Economic Growth** after the war was successful.
- However, It was achieved **without sustainability** and at the **sacrifice of environment**.
- In 21st century, we, Japanese civil engineers are taking actions for the **sustainable infrastructures** and for the **restoration of the environment**.
- Civil Engineers must collaborate in stopping the **Climate Change**.

# Post-War Reconstruction, Recovery from Disasters

- Dams
  - Water supply      Ogochi Dam
  - Irrigation      Ishibuchi Dam
  - Power Generation      Sakuma Dam
  - Flood Control      Ikari Dam
- Road Network
  - Five-Year Plan  
for Road Construction



Ogochi Dam

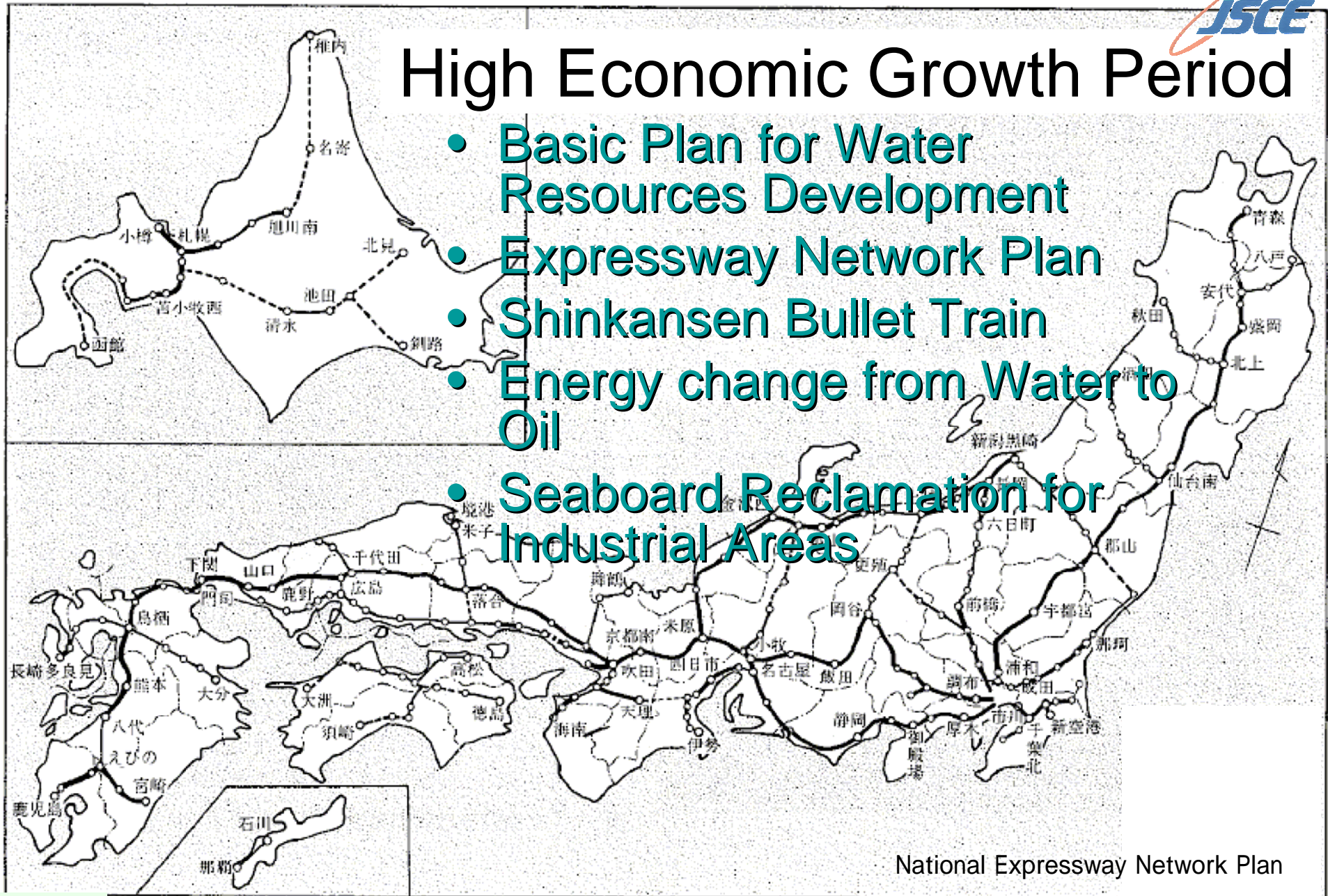
Source : “100 selections of modern water system in Japan”  
issued by Japan Chronicle on Community Improvement

## 2. High Economic Growth brought Prosperity

- The National Comprehensive Development Plans
  - Express Highway Network
  - Shinkansen Railway
  - Large Dams for flood control and water resources
  - Reclamation of seaboard industrial zones
  - Development of urban areas
- 
- Tokyo Olympics in 1964 was the start gun.
  - The economic growth realized the unprecedented Prosperity.

# High Economic Growth Period

- Basic Plan for Water Resources Development
- Expressway Network Plan
- Shinkansen Bullet Train
- Energy change from Water to Oil
- Seaboard Reclamation for Industrial Areas



National Expressway Network Plan



## Environmental Degradation and Pollution

- In the course of the growth, Environmental Degradation became serious.
- water and air pollution
- traffic congestion and noise
- damaged landscape and scenery
- pollution related diseases
- **Examples** of Environmental Degradation as below

# Mt. Fuji, the Spiritual Symbol of Japanese People is surrounded by Chemical Plants



Courtesy: Utsukushii Keikannwo Tsukurukai



**A beach along the Japan Sea protected by concrete blocks used to be covered with white sand and green pines**

Courtesy: : Utsukushii Keikannwo Tsukurukai





## Tokyo Metropolitan Highway once a shopping mall



Courtesy: utsukushii Keikannwo Tsukurukai



## Urban sprawl near Tokyo for residential area

Courtesy: : Utsukushii Keikannwo Tsukurukai



Kanda-gawa river, downtown Tokyo is merely a ditch, not a river.



Courtesy: CTI Engineering



# Nihonbashi Bridge by ANDO Hiroshige

Courtesy: Tokaido Hiroshige Museum





**Nihonbashi Bridge, Central Tokyo, in '30s , was constructed in 1911 as the Starting Milestone of National Road Network**



Source : Nihonbashi Souran



## **Nihonbashi Bridge and River covered by Highway constructed in 1964 for Tokyo Olympics**

Courtesy: Utsukushii Keikannwo Tsukuru Kai





## **Nihonbashi Bridge and River are covered by Highway constructed in 1964 for Tokyo Olympics**

Courtesy: Utsukushii Keikanwo Tsukuru Kai



## Cars, not water, flow in the Tsukiji River, downstream of Nihonbashi





### 3 . Reasons of Destruction of Environment

- The **reasons** why Japan destroyed their environment
- The nature of Japan was ‘**generous**’ enough to cover the human activity up to a certain extent.
- Japan placed first priority to economic growth due to the **limitation of finance and time**.
- Japanese civil engineering was **construction-oriented** but not environment-oriented.

## 4 . Successful Preservation of the Landscape and Scenery

- Some infrastructure projects were implemented in consideration of preservation of the natural and built sceneries through the modernization and high economic growth.
- Some are valuable and operative heritages today.
- Some are fully operative.

## Operative Inherited Assets since the pre- WW

- Transportation
  - Railways, Roads, Ports
- Energy
  - Water Power Stations
- Water (River)
  - Flood Control Works,
  - Water Supply, Sewage



The First Water Power Station at Kyoto

Source: Waterworks and Sewerage Bureau, Kyoto City HP

**Biwako Water Supply Canal in Kyoto, 1890.  
A tourist spot and operative structure.**



Courtesy: Utsukushii Keikannwo Tsukuru Kai





**A National Heritage**  
**Kiyosubashi Bridge in downtown Tokyo constructed in 1926,**  
**withstood air raids in War II**

Courtesy: Utsukushii Keikannwo Tsujuru kai



**A Symbol of Peace, Heiwa-Oohashi Bridge in Hiroshima after the war  
Designed by Isamu Noguchi, a Japanese-American artist**



**In 1963, Tomei Expressway was so designed as to preserve the scenery of Mt. Fuji.**

Courtesy: Utsukushii Keikannwo tsukuru kai



## 5. End of High Economic Growth, Change to Moderate Growth

### People recognized

- Pollution-related Diseases
- Environmental Degradation
- Oil Shocks in 1970's
- Limit of Growth



## 6 . Fore-runners of Environment Restoration

- While Japan was in the midst of high economic growth, some civil engineers recognized the importance of environment and **pioneered in restoration projects.**
- **Furukawa “Shinsui: Water Amenity “ River Restoration**
- Revival of **Yanagawa River Cruise**
- Resuming **Sumidagawa Regatta**

## The Furukawa river, eastern Tokyo, in '60s before restoration

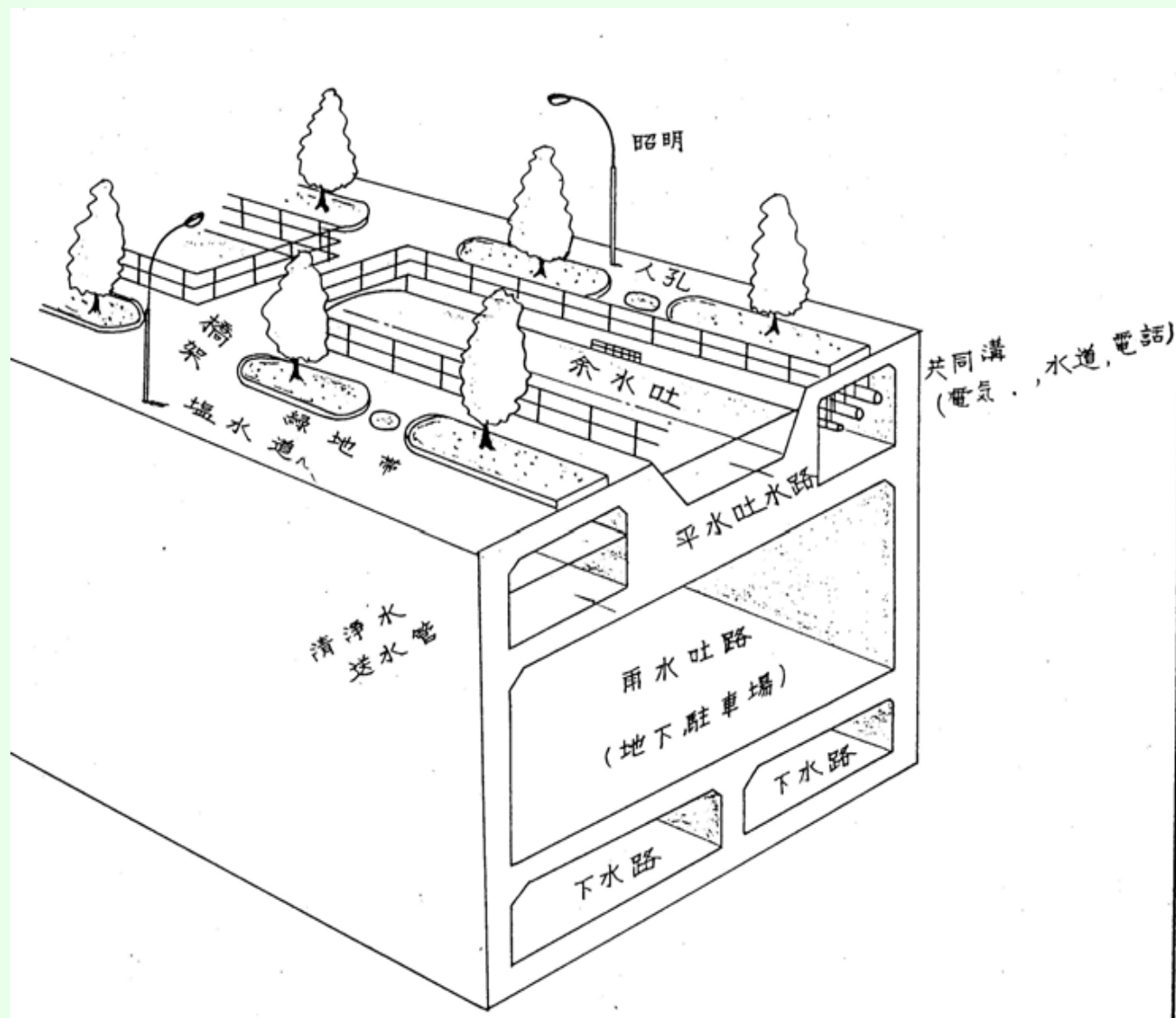


Courtesy: CTI Engineering



## A Restoration Plan of urban river in '70s

Courtesy: CTI Engineering





## The Furukawa Shinsui River restores the river and the surrounding areas



Courtesy: CTI Engineering





# Revival of Yanagawa River Cruise

Courtesy: CTI Engineering



# The Sumidagawa Regatta resumed after a long suspension



Courtesy: Executive Committee for Water Fair





## 7 . Restoration of Degraded Environment

### - Scenery as a symbol -

In 1990's, importance of the environment was socially recognized.

Concept “ Infrastructure shall include environment” obtained the national consensus.

Purposes of infrastructure are Safety, Convenience and Environment.

Landscape and scenery became the symbol of environment and infrastructure.

River Law was so amended in 1997 as environment preservation clause were provisioned.

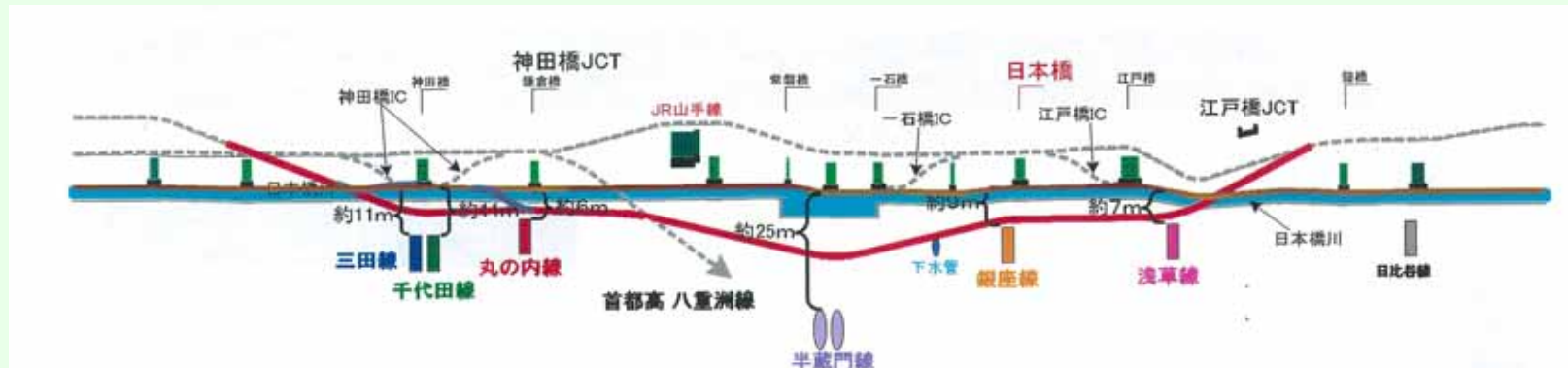
Landscape Preservation Law was enacted in 2005.

Restoration of Nihonbashi has become the symbol of environment preservation.

- Since 1990s, number of new restoration projects have been delivered

# Restoration Project of the **Nihonbashi** Bridge and Area, 2005 Relocation of 2.2km Trunk Highway with 100,000 cars/day

Courtesy: Nihonbashigawani Sorawo Torimodosu Kai





# Nihonbashi Restoration Project

## Proposal of Nihonbashi Renaissance Committee

全体鳥瞰図（江戸橋方面から）



## Proposal of Nihonbashi Renaissance Committee





# Nihonbashi Restoration Project

Courtesy: Nihonbashi Renaissance Committee



## Restored Meganebashi Bridge in Nagasaki

attracts many tourists all over the country





## The Diversion Tunnel : Meganebashi Restoration Project, Nagasaki



## Restoration of Momochi-hama Beach, Fukuoka by beach nourishing



## 8. Nature-Oriented River Management



- “Nature-Oriented River Works”

Implementation of river projects for good habitats provided by a natural river

Preservation and creation of scenic natural environment.

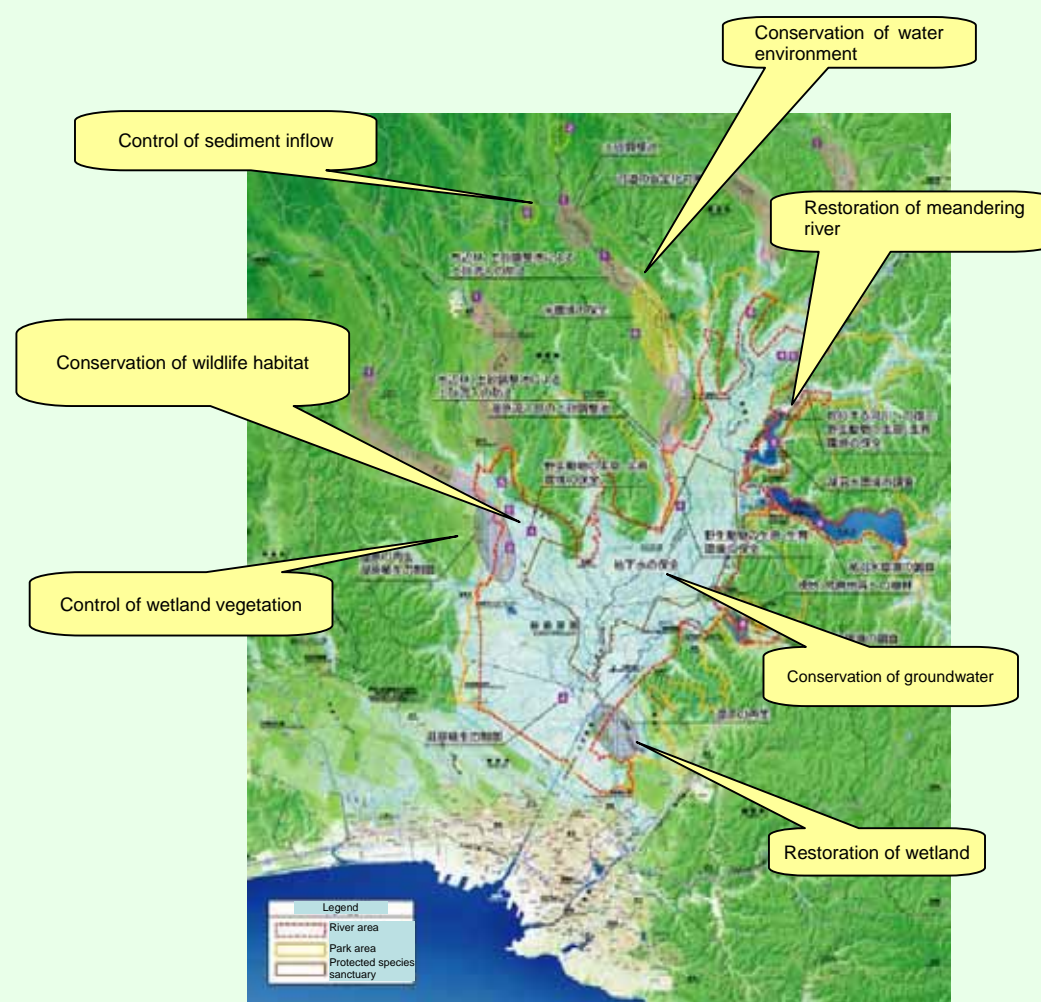
- “Nature-Oriented River Management”

New concept of river management involves the harmony with the history and culture of community



# 【Expanded field of view in river management】

## River system restoration taking the entire river basin into consideration



Example: Kushiro Wetland nature restoration project



# Izumigawa: Grand-Prix, JSCE Infrastructure Scenery Design 2005

Courtesy: YOSHIMURA Shinichi  
Shinichi Yoshimura IZUMI River



SEKIGAHARA waterside



HIGASHIYAMA waterside



# Restoration of Ishi-Ibi Intake Weir on the Kase River, Saga





# Kids are studying Ishi-Ibi Restoration plan



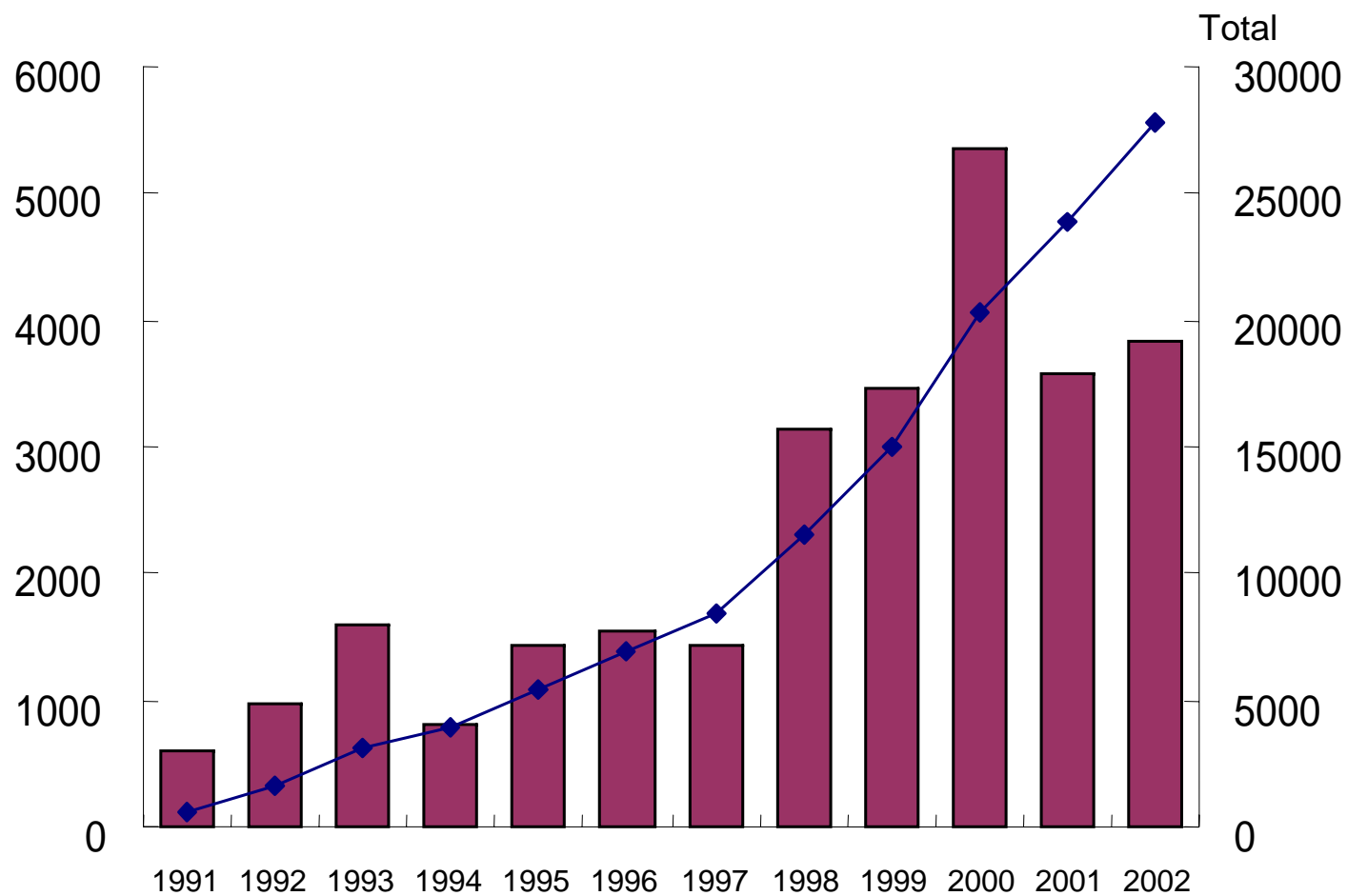
Courtesy: CTI Engineering



# Present state of nature-oriented river works

Courtesy: FRIR

Number of nature-oriented river projects (national projects + subsidized projects)





# 9 . International Cooperation for **Restoration of Environment** against **Climate Change**



## **Restoration**

A key measure of  
Sustainable Development

JSCE will offer our experience to the colleagues for  
**not to repeat the same failure.**

## Japanese Civil Engineers' Slogan of Restoration:

- *The last Tokyo Olympics degraded the Nihonbashi Bridge and the River*
- *The Next Tokyo Olympics restore the Nihonbashi*
- **Mabuhay !**