



Korean Society of Civil Engineers Conference 2007

October 11, 2007 Daegu

**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**.
- All 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

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

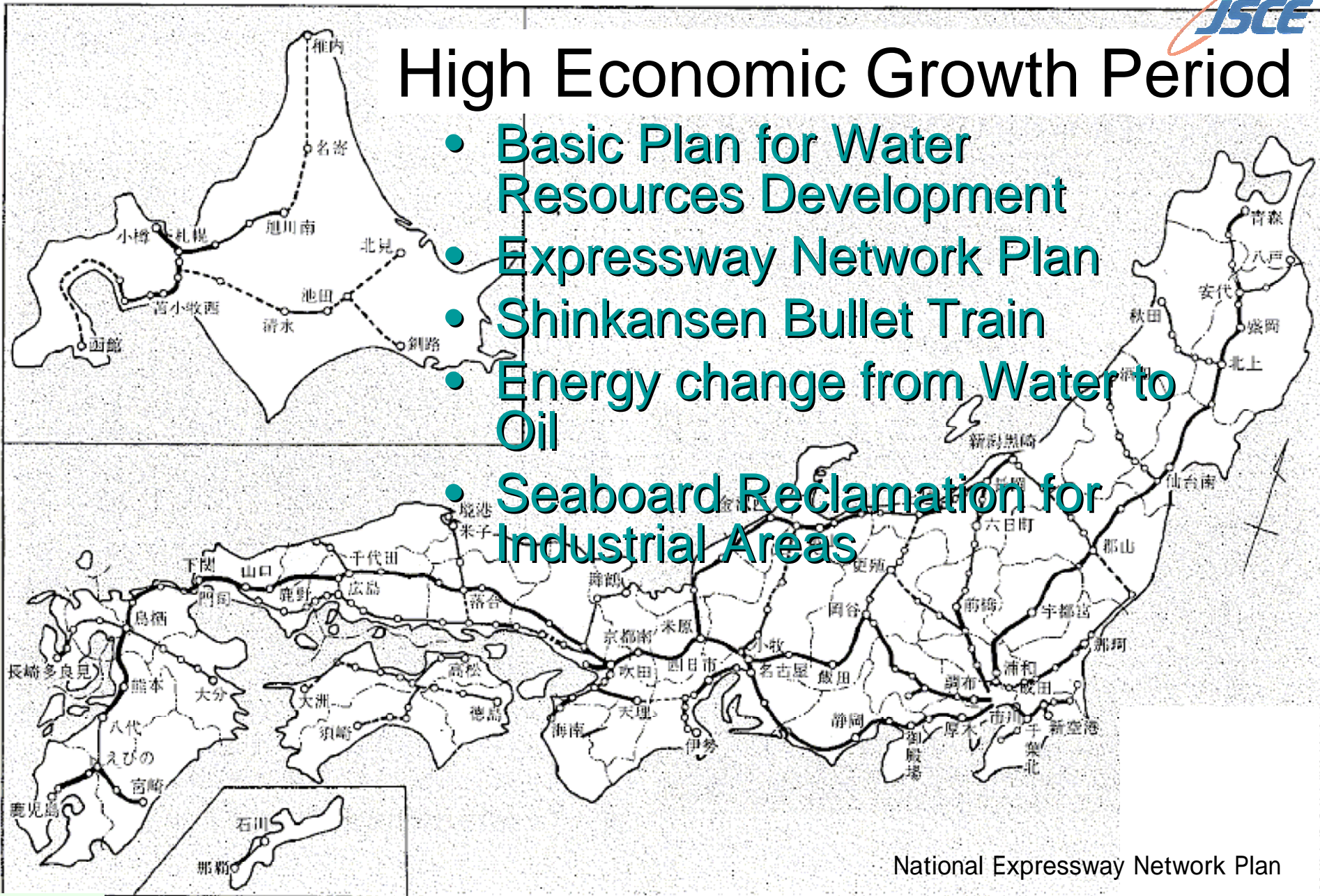
2. High Economic Growth brought Prosperity and Destruction

- The National Comprehensive Development Plans
- Express Highway Network,
- Shinkansen Railway,
- Large Dams for flood control and water resoucese ,
- 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



Courtesy : 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 '64 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 man-made 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

Reference: 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 reserve 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

- Infrastructure Investment increased till 1998

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

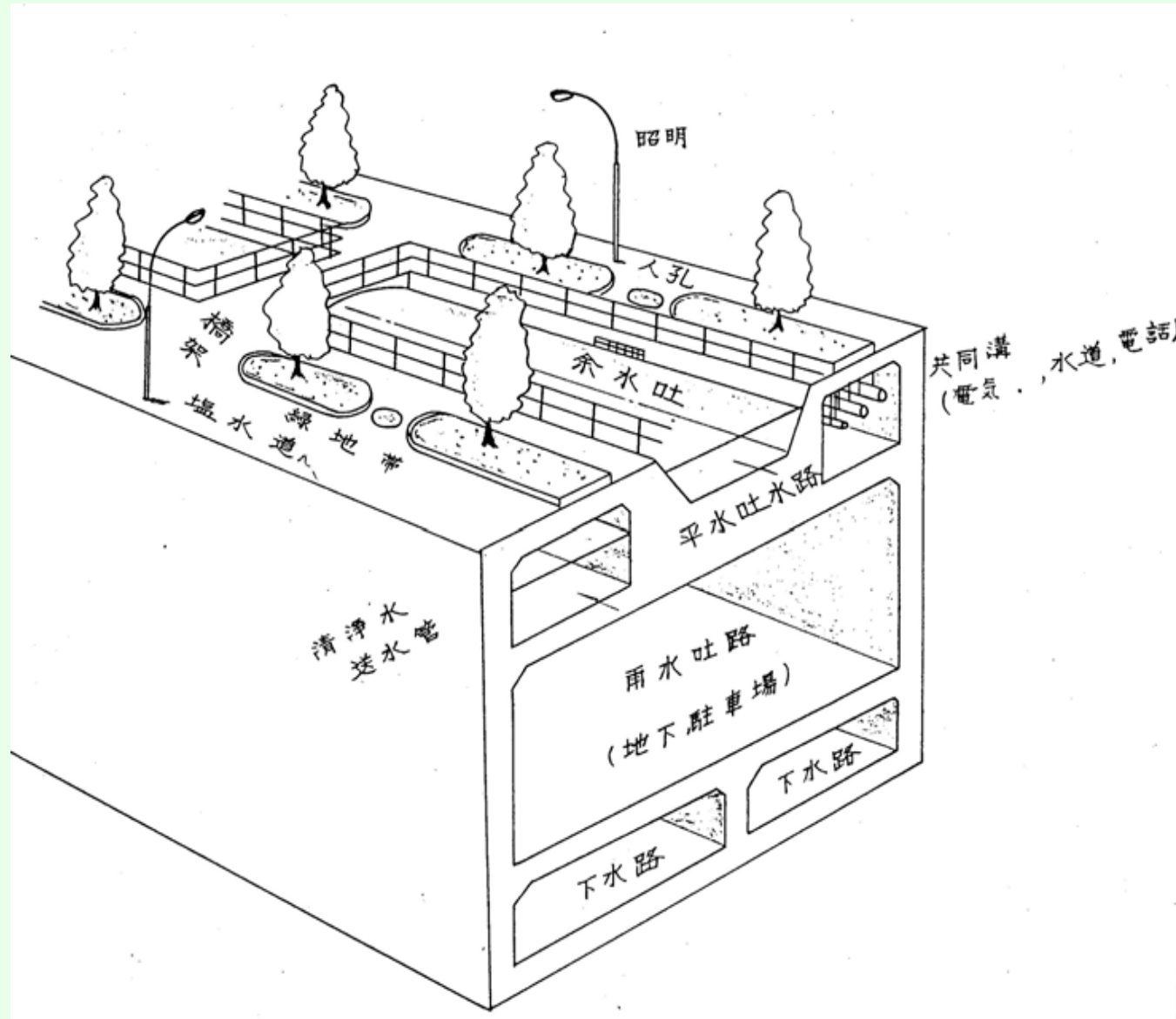


Courtesy: CTI Engineering



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

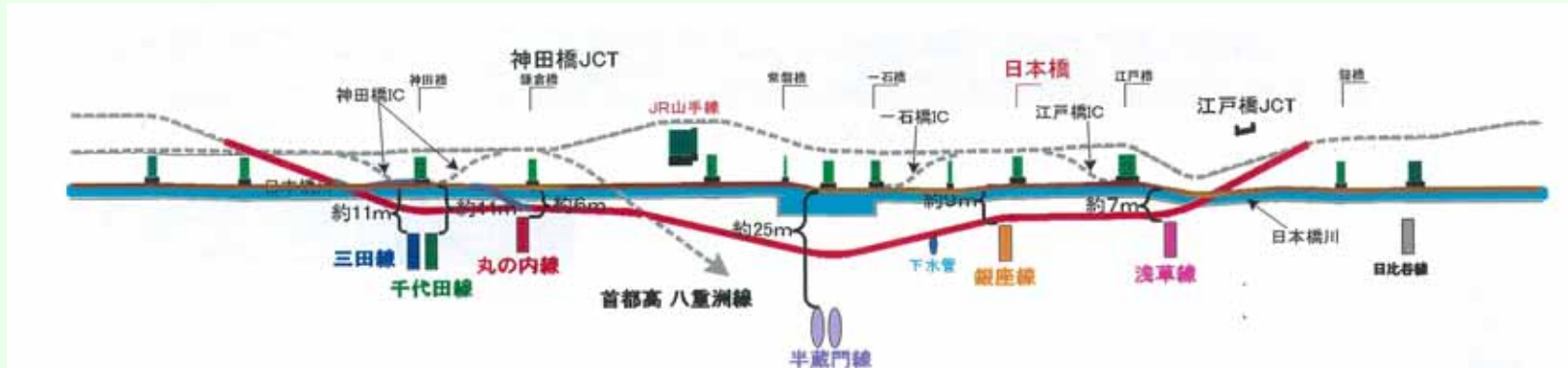
Restoration of Nihonbashi has become the symbol of environment preservation

- 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”

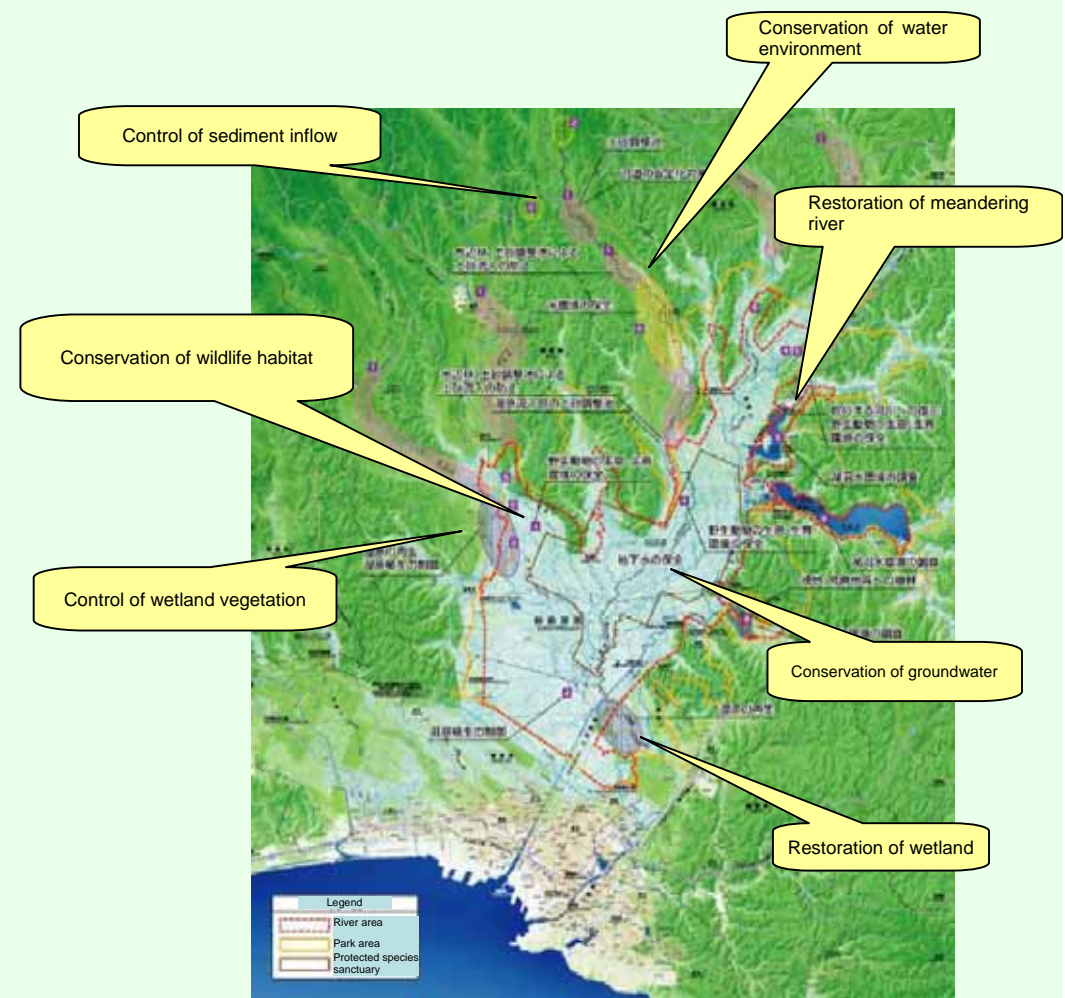
the implementation of river projects for good habitats provided by a natural river and preserves and creates a scenic natural environment.

- “Nature-Oriented River Management”

the 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

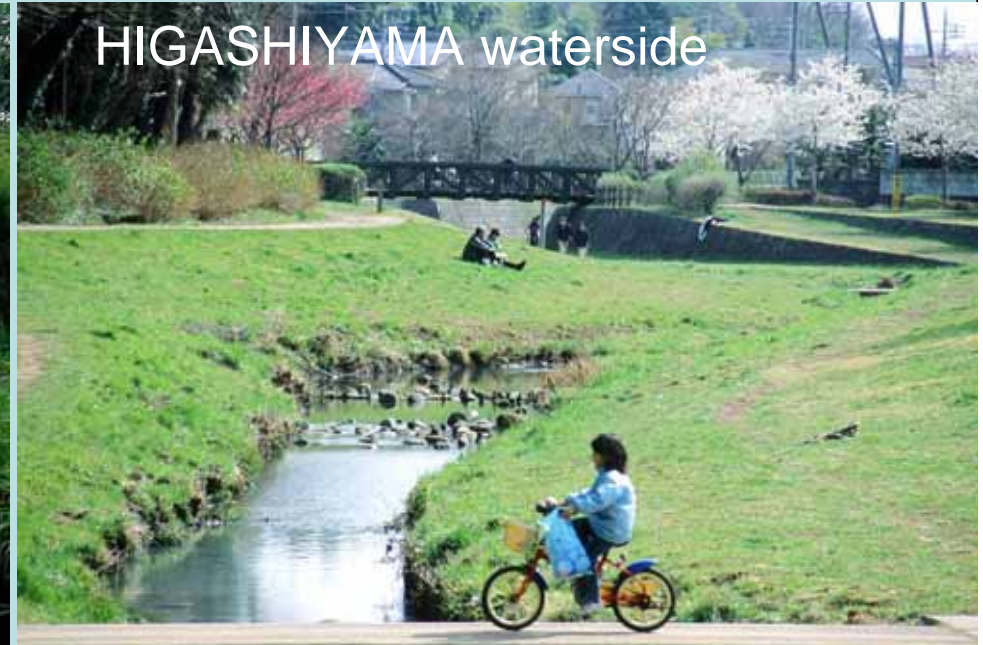
IZUMI River



SEKIGAHARA waterside



HIGASHIYAMA waterside



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

Courtesy: MLIT



Kids are studying Ishi-Ibi Restoration plan



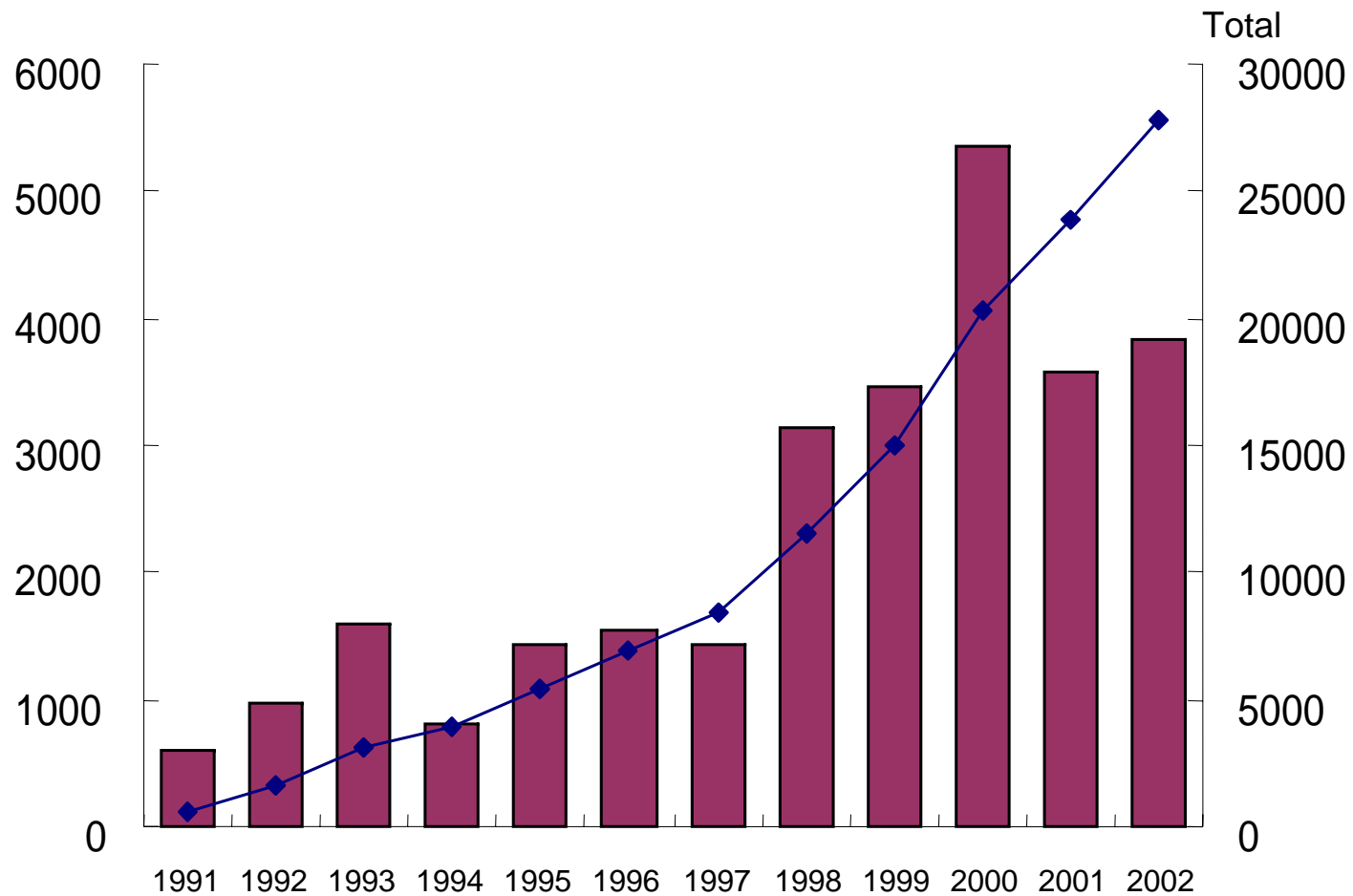
Courtesy: CTI Engineering



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- 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*
- **Thank You !**