

Advanced Technologies for Upgrading Dams under Operation

Many dams under operation have been upgraded with advanced technologies, which enable to reduce COSTs, CONSTRUCTION PERIODs and ENVIRONMENTAL IMPACTs.



Tsuruda Dam

operated since 1966

upgraded since 2006



Water and Disaster Management Bureau
Ministry of Land, Infrastructure, Transport and Tourism, Japan



Points of Upgrading Dams in Japan

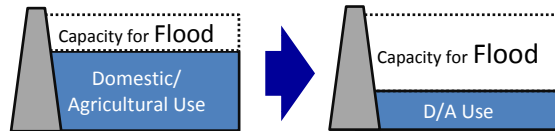
Comprehensive water management realize following activities

Planning

Unity of command for water resources and against floods
Agile and concentrative investment by national expense on large disaster risk management projects.

Coordinating

Change from a part of volume for water resources to for flood control.



Constructing

River projects

- River improvement
- River burdening
- Flood control channel

Dam projects

- Building dams
- Upgrading dams (flood control, hydroelectric power etc)

Accumulating

Accumulating knowledge into National Institute for Land and Infrastructure Management and Public Works Research Institute

Key technologies of upgrading dams

Marine Technologies



Drilling Technologies



Tunnel Technologies



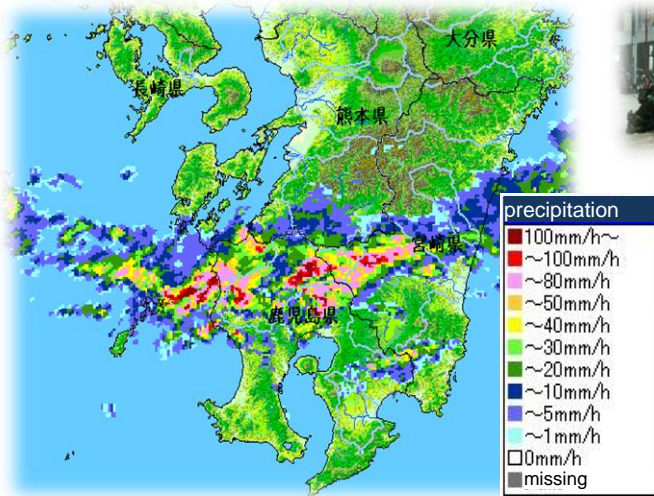
Increasing capacities (flood control, hydroelectric power etc)



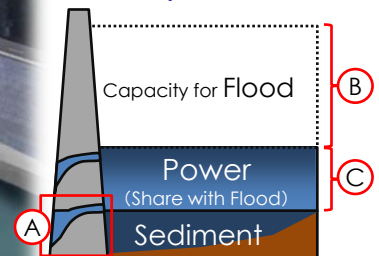
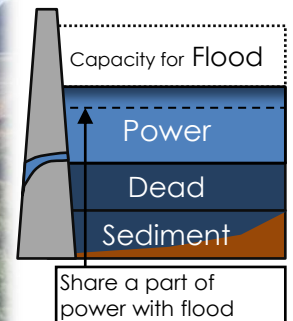
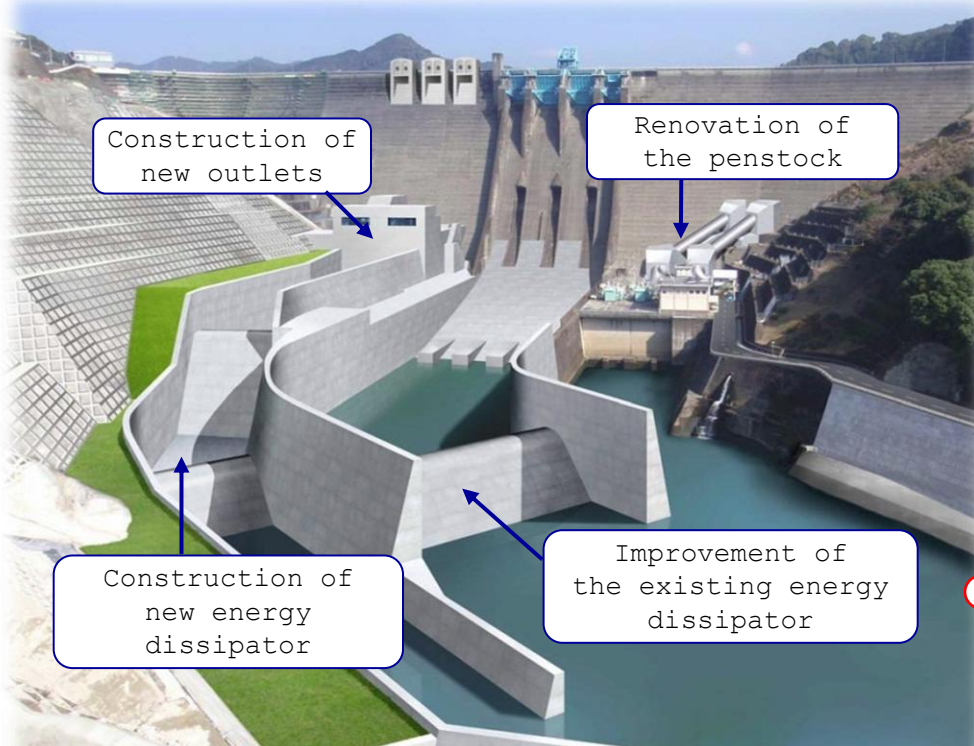
We also have skills to reduce water environment impacts and manage sediment.

Upgrading Tsuruda Dam

A large flood happened in Sendai river(Kyushu) in July, 2006.
About 2,777ha area was flooded and 2,347houses were damaged.



Comprehensive flood control measures were performed within half a year. River improvement projects started within 3 month. Upgrading Tsuruda Dam applied within 5 month.



(A) Adding new outlets

(B) Increasing flood volume
(Buying power volume)

(C) Share power with flood
(Coordinating with water users)

Upgrading under operation
(Exploiting diver skills for marine technology)

Upgrading dams under operation (National Projects)

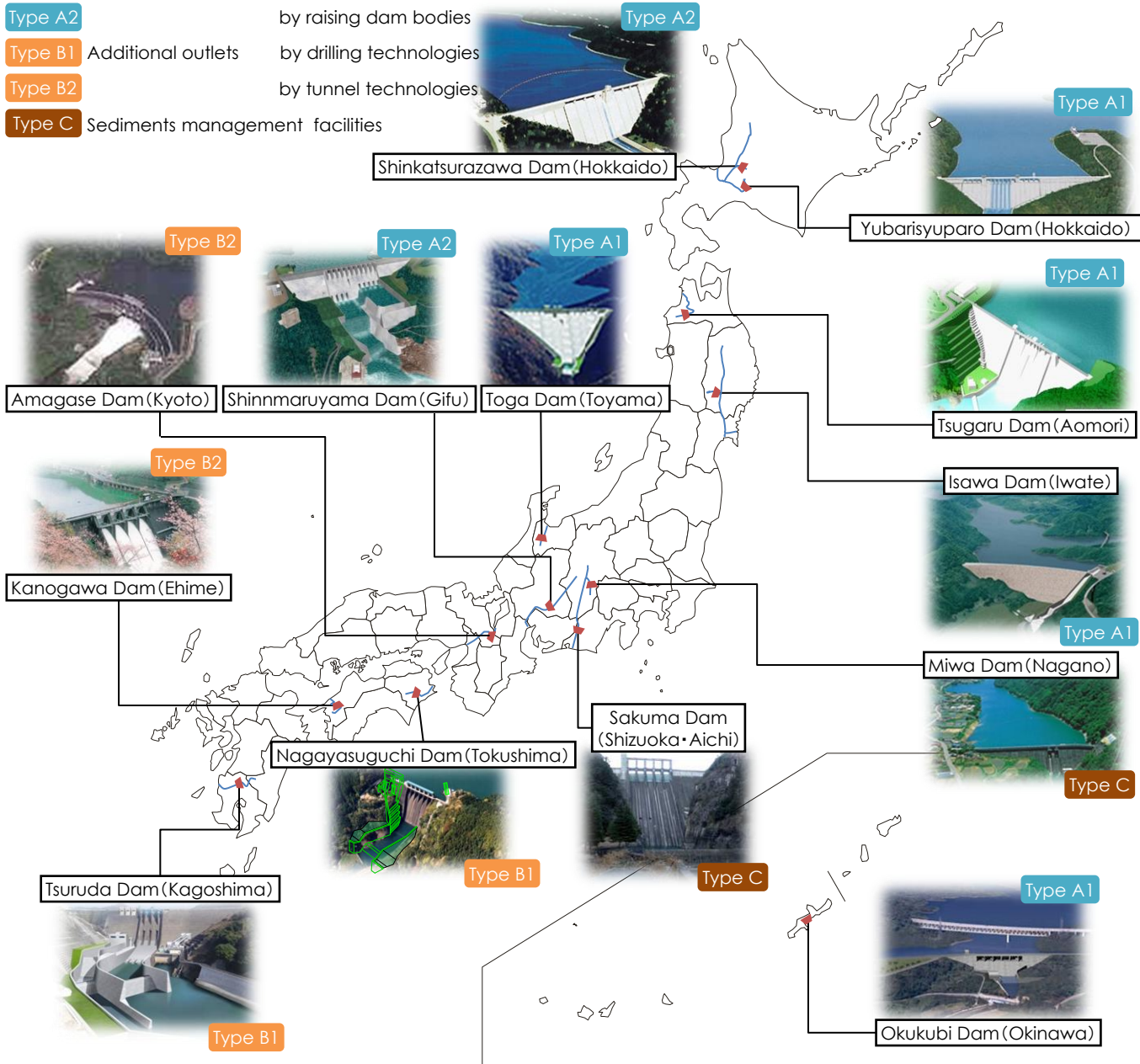
Type A1 Increasing capacities by constructing new dam body

Type A2 by raising dam bodies

Type B1 Additional outlets by drilling technologies

Type B2 by tunnel technologies

Type C Sediments management facilities



(Contact Information)

Tomoo INOUE, Director for Water Management Coordination

Yoichiro IBI, Assistant Manager

River Planning Division,

Water and Disaster Management Bureau,

Ministry of Land, Infrastructure, Transport and Tourism, JAPAN

tel: +81-3-5253-8444 fax:+81-3-5253-1602