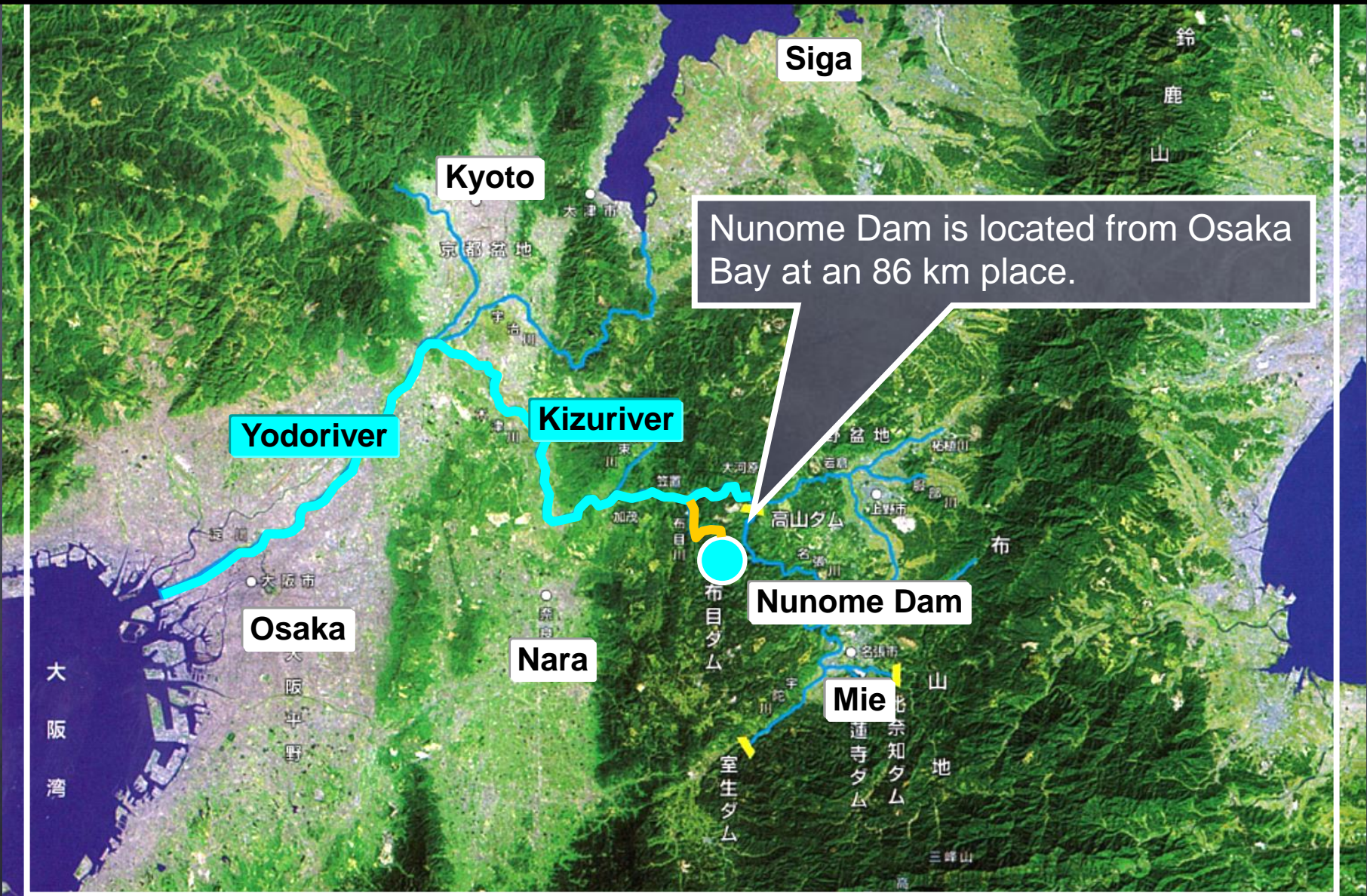


# NUNOME DAM



# The position of Nunome Dam



# Background of the Nunome Dam

## Water Utilization

Urban areas required supply of stable water, in order to maintain the population and the high living standard which increased.

**Especially Nara had a problem in chronic shortage of water service.**

**Then, stable supply of city water was realized in Nunome Dam**

## Flood Control

The Yodogawa basin system has a plan for river improvement.

**Nunome Dam has roles of flood control of whole Yodogawa basin system.**

# Purpose of Nunome Dam

## 【 SPECIFICATION 】

Type : Concrete Gravity Dam

Height: 72.0m

Catchments Area : 75km<sup>2</sup>

Operation Start :1990

## 【 Purpose 】

### ● Additional Water Utilization (water for water supply)

Nara city: 1.1263m<sup>3</sup>/s

Yamazoe village: 0.0097m<sup>3</sup>/s

Source: 2008 fiscal year

Water service business annual report of the Nara  
Waterworks Bureau

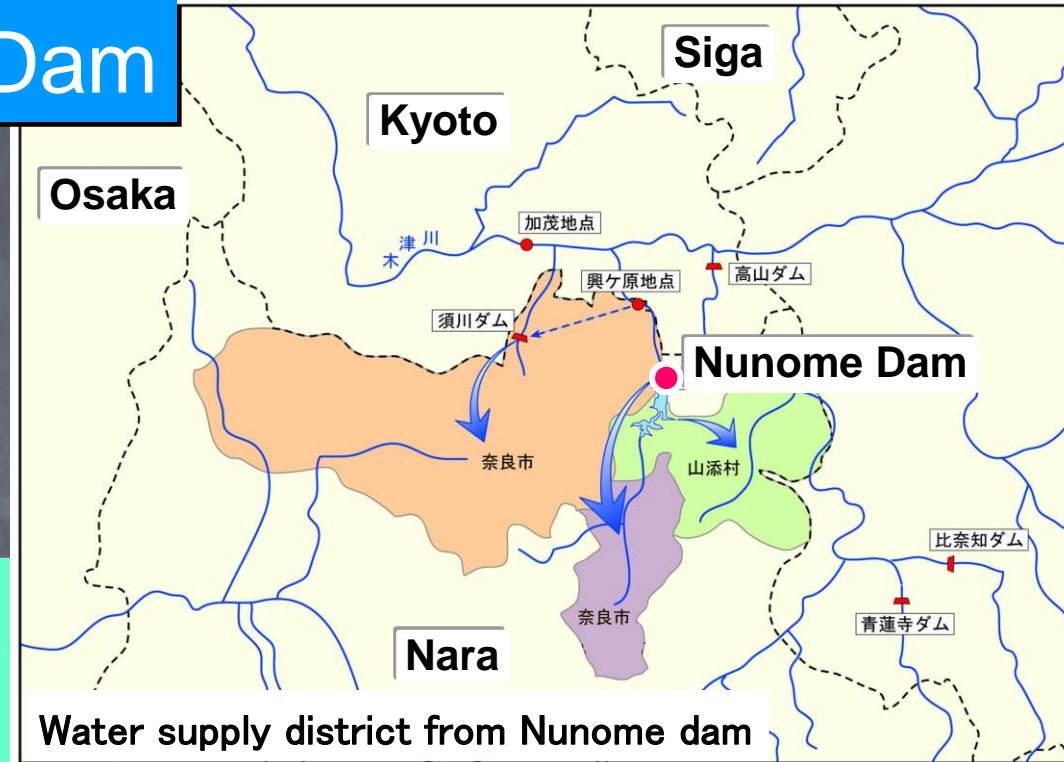
### ● Flood Control

The flood of 460m<sup>3</sup>/s becomes 150m<sup>3</sup>/s in the  
dam lower stream at a dam point.

That is, 350m<sup>3</sup>/s is stored in a dam.

### ● Discharge for flow Maintenance

Preservation of the environment and  
maintenance of normal function of the  
downstream.



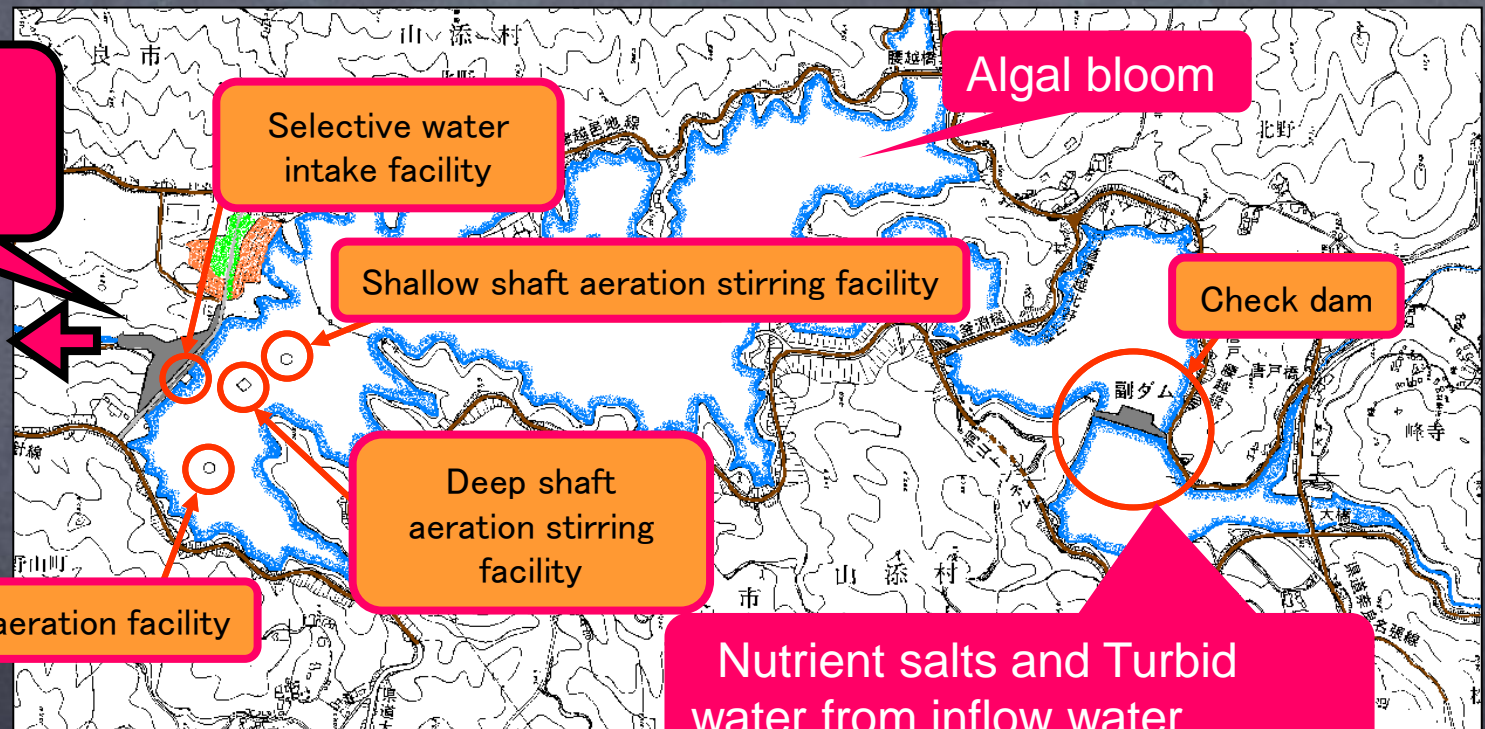
Water supply district from Nunome dam



Flood Control:17times

# Water Quality Preservation

- Selective water intake facility
- Surface aeration facilities (fountain) : Control of plankton algae
- Shallow shaft aeration stirring facilities: : Control of plankton algae
- Deep shaft aeration stirring facilities : Supply oxygen for bed area of reservoir and Control of hydrogen sulfide
- Check dam : Sedimentation of nutrient salts (Phosphorus and Nitrogen of inflow water from upstream)



We are dealing with the facilities operation in cooperation with the related organization.

# Outline water quality preservation facilities

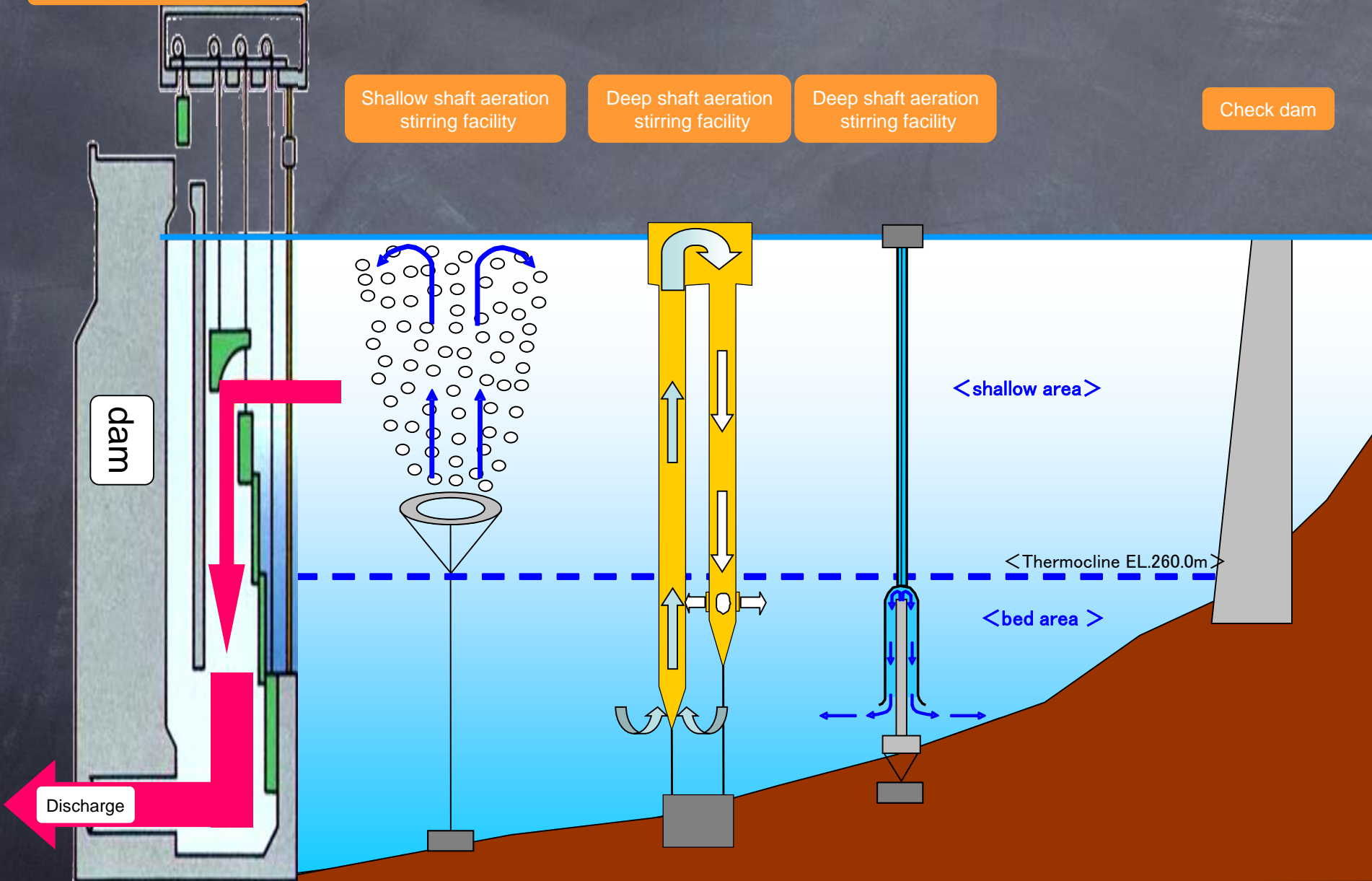
Selective water intake facility

Shallow shaft aeration stirring facility

Deep shaft aeration stirring facility

Deep shaft aeration stirring facility

Check dam



Discharge

<shallow area>

<Thermocline EL.260.0m>

<bed area>

# Check dam

1. Conservation of Water Storage Capacity
2. Conservation of water quality  
Some nutrient salts in inflow water are deposited into the check dam.
3. The reservoir is used as a recreational facility.



# Recent Flood Control



Water level station of Okugahara

Water level station of Okugahara

Normal point



Flush Flood point

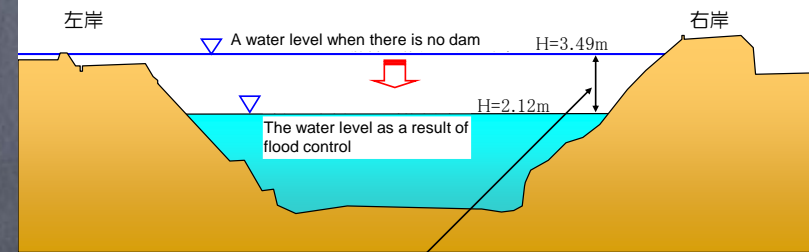


Typhoon No.18 of autumn of last year  
Downstream of Nunome Dam  
(Okugahara Town, Nara City)

After it begins to manage, inflow water 190m<sup>3</sup>/s is the maximum.

0.6km downstream of dam result of flood control

Result of Flood control



The water level of the river in the downstream of a dam achieved the effect of about 1.37m decrease by the flood control operation of the dam.



# Power station incorporated in or adjacent to a Dam

- Hydroelectric power has been carried out by water discharged from dam.(5,000MWh/one year)
- About 950MWh/one year is used for management.
- Trade surplus electricity.
- The income of about 50 million yen during year is obtained by selling the surplus electricity.

Annual Power Generation (MWh)	
1,992	5,620
1,993	5,455
1,994	3,469
1,995	3,589
1,996	3,507
1,997	4,404
1,998	6,596
1,999	4,522
2,000	4,175
2,001	4,799
2,002	4,155
2,003	5,523
2,004	4,858
2,005	4,704
2,006	5,059
2,007	4,959
2,008	5,381
2,009	5,820
Total	86,595
Mean Annual	4,811

Cut Down on Management expense.  
Cut Down on CO2.

Francis Turbine

Generator

# Reservoir area vision

Tour of Japan



## CATCH LINE

Forest and person's  
communications  
spaces by river

Fishing Tournament (check dam upstream)



Marathon rally



# Tour of reservoir area (Facility description)

Elementary school kid of Nara city

Educational Program to children about tap water



Schoolchild's visitor to the dam achieved 40,000 people in May, 2010



# Important matter for Managing Nunome Dam



## Sharing information

We are keeping in mind to offer of information to the organs concerned.

The contents of offer of information are a water quality situation, a storage-of-water rate, etc.

Moreover, if there is construction which influences a reservoir, we will have announced you construction information in detail.



## Exchanged regular opinions

We have an opportunity of exchange of opinions with residents, a river administrator, etc.

And it is striving for the advancement of management.

Especially this exchange of opinions is a thing about the discharge at the time of a flood.



## Communications of water resources area

We had deeply relation by a water resources area region , and have participated positively to the event or the local event.

Thereby, we understood the mutual view and think that we would like to carry out that it is useful for improvement in a water resources area region.



## Information sharing in the whole water mechanism.

Information sharing in the whole water mechanism.

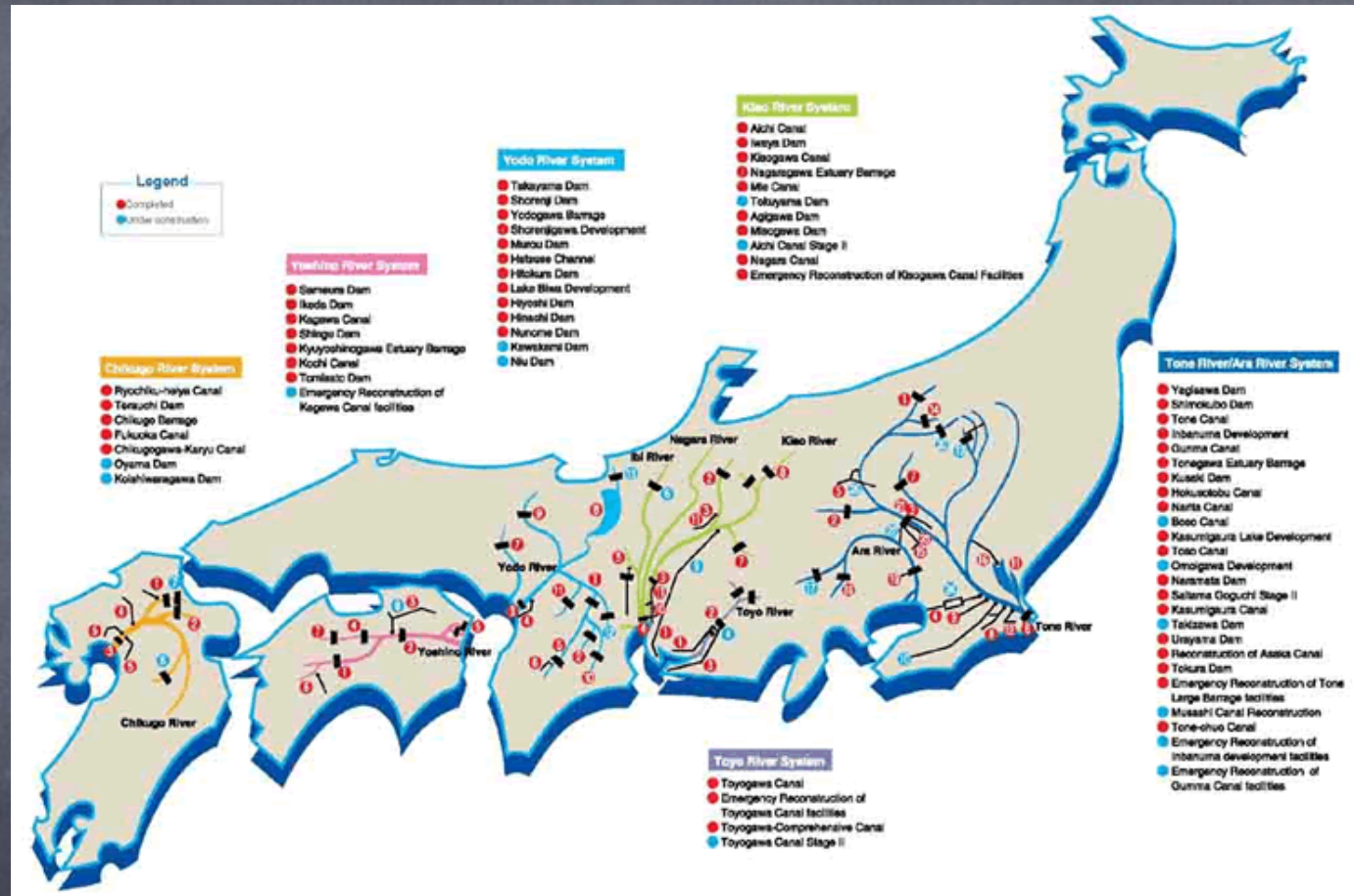
Japan Water Agency has managed many dams.

The management information is shared.

# Project implementation



JWA is managing 48 facilities completed in 53 projects, and constructing for another 15 projects, in the seven river systems designated for water resources development (Tone, Ara, Toyo, Kiso, Yodo, Yoshino and Chikugo River Systems).



# Project implementation



Improving operation efficiency according to the management philosophy

**We provide stable supply of safe and high quality water at a reasonable price.**