

WATER RIGHTS AND DUTIES FOR Rational Water Use

1. Water: from Gifts to Rights
2. From construction to management
3. Integration or unification
4. Conclusion
5. Transfer of water rights



APHW

Asia-Pacific Association of Hydrology & Water Resources

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Right or Gift ?



- In many countries, provision of water had been a noblesse oblige of rulers.
- In turn, farmers had to bear tax and/or provision of labor.
- Today, this long term practice of water use has developed to a right of water users, while obligation of water supply remains with the government.
- As time passes, demand of new water for cities and industries has increased.
- Adjustment or re-allocation of water is needed, in addition to development of new water by construction reservoirs.

Right and Duty

- In modern society, any right must be guaranteed by relevant duty.
- There is No right without Duty.
- To implement rationalization and/or re-allocation of water, clarification of contents of rights and duties is a premise.
- Because, change of contents/conditions or transfer of water rights require clear definition of rights and duties of existing water use.

Historical position of the Water Right System in Japan

Current of the times

Remote past

Present day

Feudal period

Market economy



Gift from rulers

Perfect ownership



Imperfect ownership

under subsidy and control
of government

Restriction of water right trading

MERIT

- Water resources development projects were promoted.
- Abandonment of agriculture was restricted.
- Irrigated water that return to rivers is contributing in conservation of healthy water cycle.

Restriction of water right trading

DEMERIT

- Excess water in agricultural sector was not transferred to other sectors facing deficiency.
- Deteriorated sense of self-control/reliance of water users.
- Sorting out of the historically established water rights (customary rights) delayed.
- No system was established to transfer the abandoned water to new users under appropriate control by the government.

From Gift to Right: CONCLUSION

Under the recognition of:

Water is a common asset of the nation/people

Water is an uncertain resource

Water is used repeatedly

Water is an essential element of natural environment

Water right system is a key factor

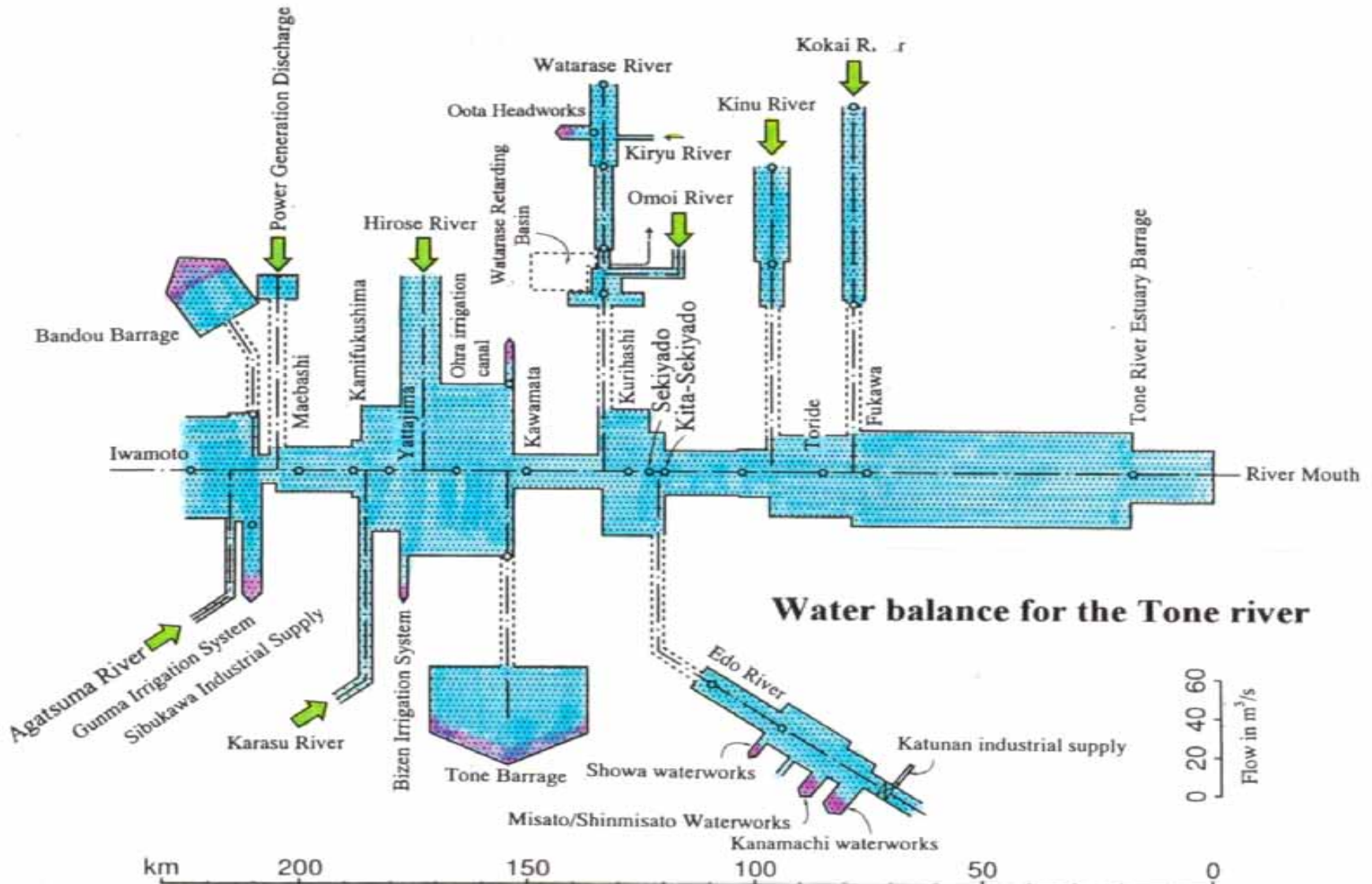
- Establishment of water use license system.
- Collecting water fee to control/avoid abuse of water.
- Allow trade of water license under appropriate control of the government.

(compensation for investment, reasonable price of license, tax/fee for transfer the title, etc.)

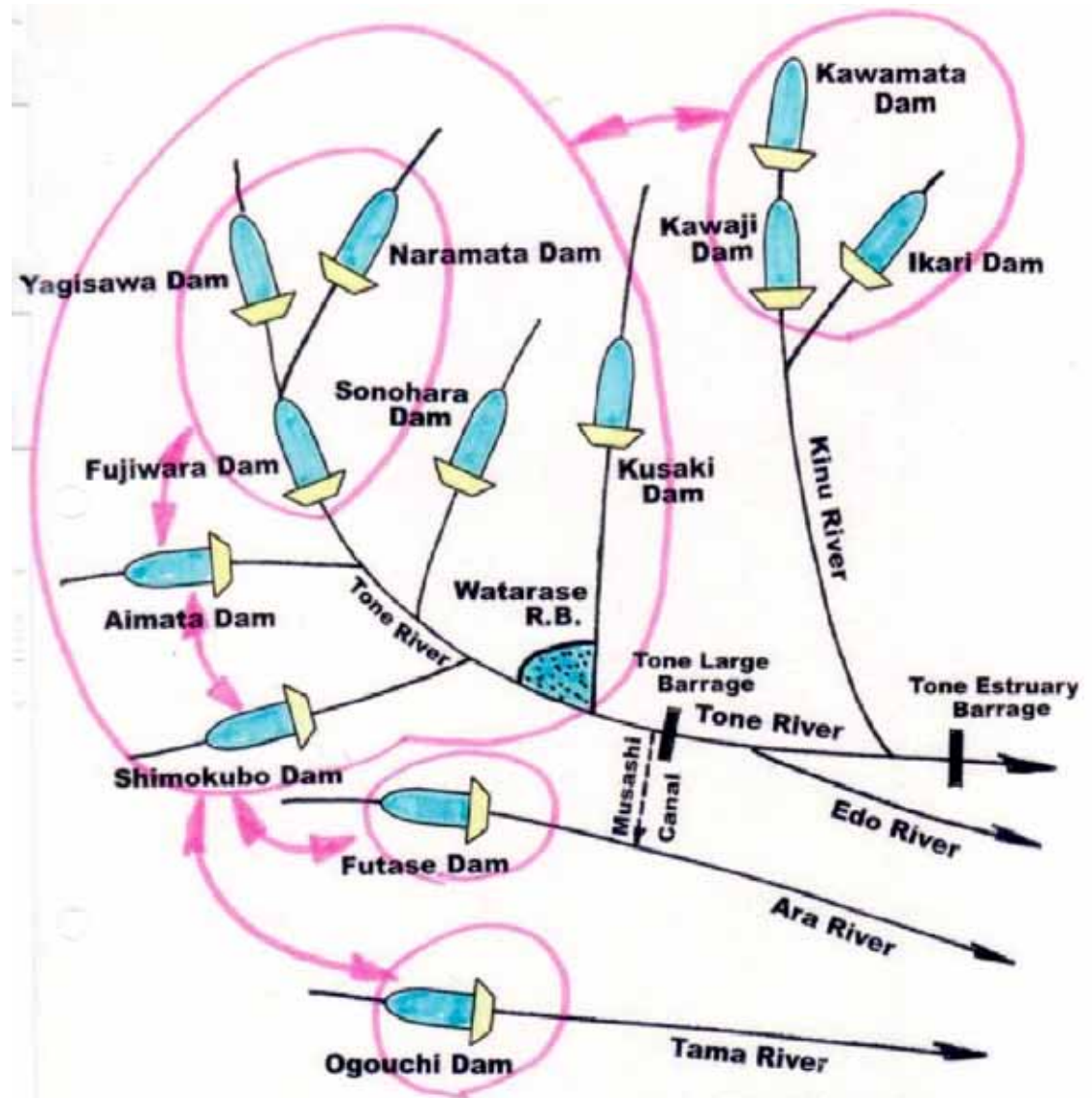
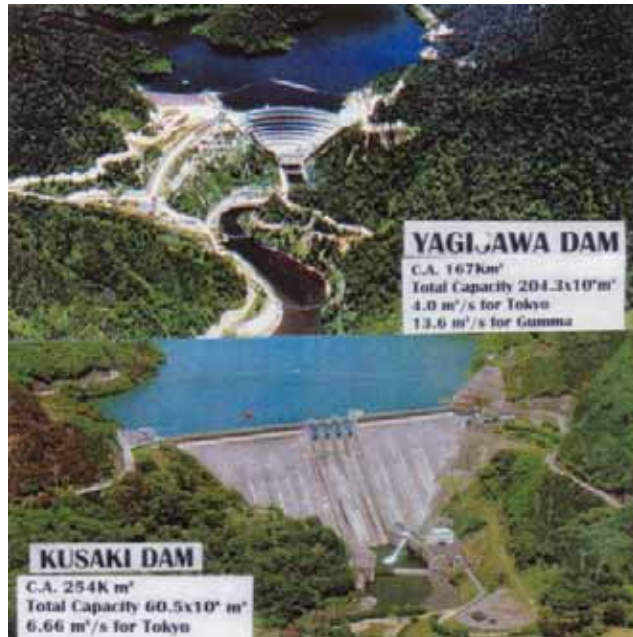


From Construction to Management

- This figure illustrates the water balance of the Tone river.



From Construction to Management

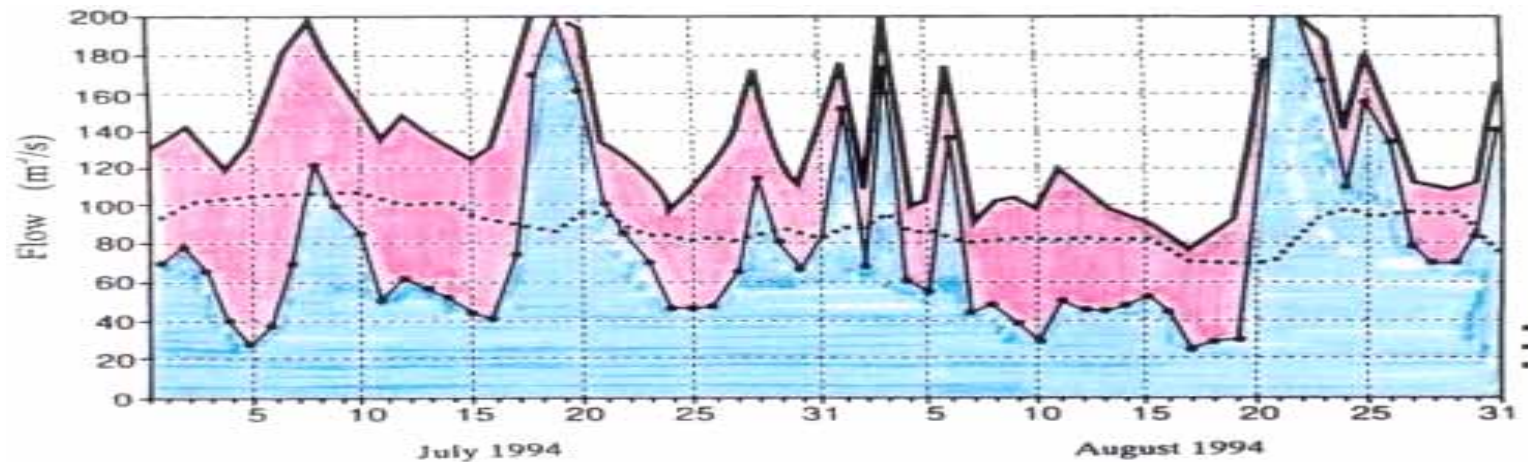


To support Tone River's important role, various water resources development projects have been implemented

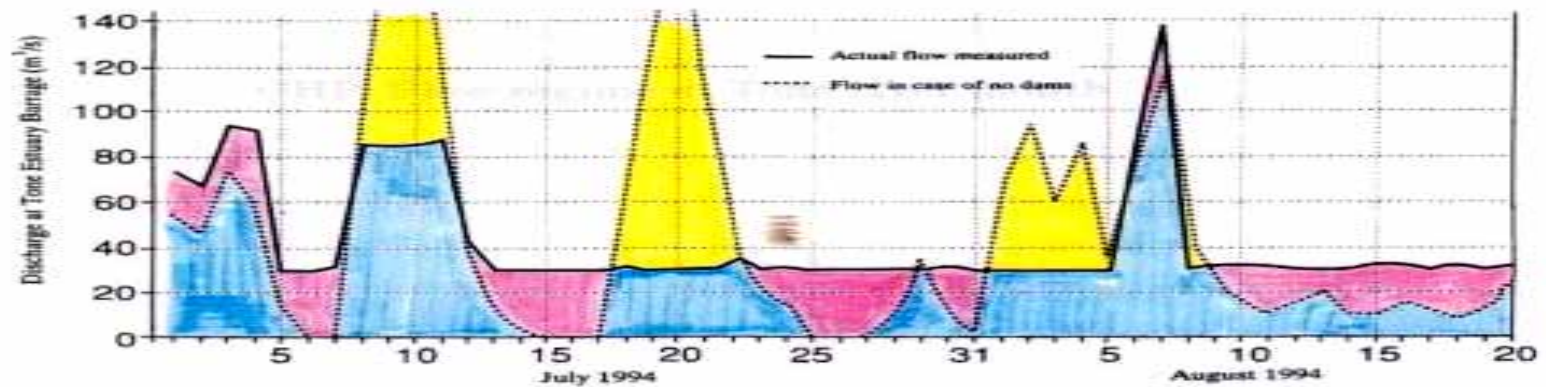
Replenishments by Reservoirs

1994 Summer Drought

At Middle reaches (Tone Large Barrage)



At River mouth (Tone River Mouth Barrage)



Cooperation through DROUGHT CONCILIATION COUNCIL

WATER USERS

Mutual Consultation with
Mutual Respect at
Conciliation Council

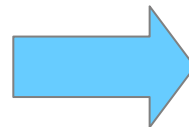


AGREEMENT on
Intake Restriction



if no agreement

Request from Water Users
or Deemed Necessary



RIVER ADMINISTRATOR

Provide Necessary
Information



Reservoir operation
Intake restriction
Water saving



INTERMEDIATION
by
River Administrator

This chart shows drought conciliation procedure stipulated in the article 53 of the River Law. In the Law, intervention by the River Administrator is allowed only when no agreement is reached among the water users, but the realities are that the River Administrator is involved from beginning and provide a plan of water saving for the users' consideration

From Construction to Management

- In 1994, almost 500 million m³ of water was replenished by reservoirs in the Tone River.
- Drought Conciliation Council for Tone River held 6 sessions and decided to decrease drawing water from the Tone River up to 30%.
- As a result destructive damage due to uncontrollable situation of river flow was avoided.



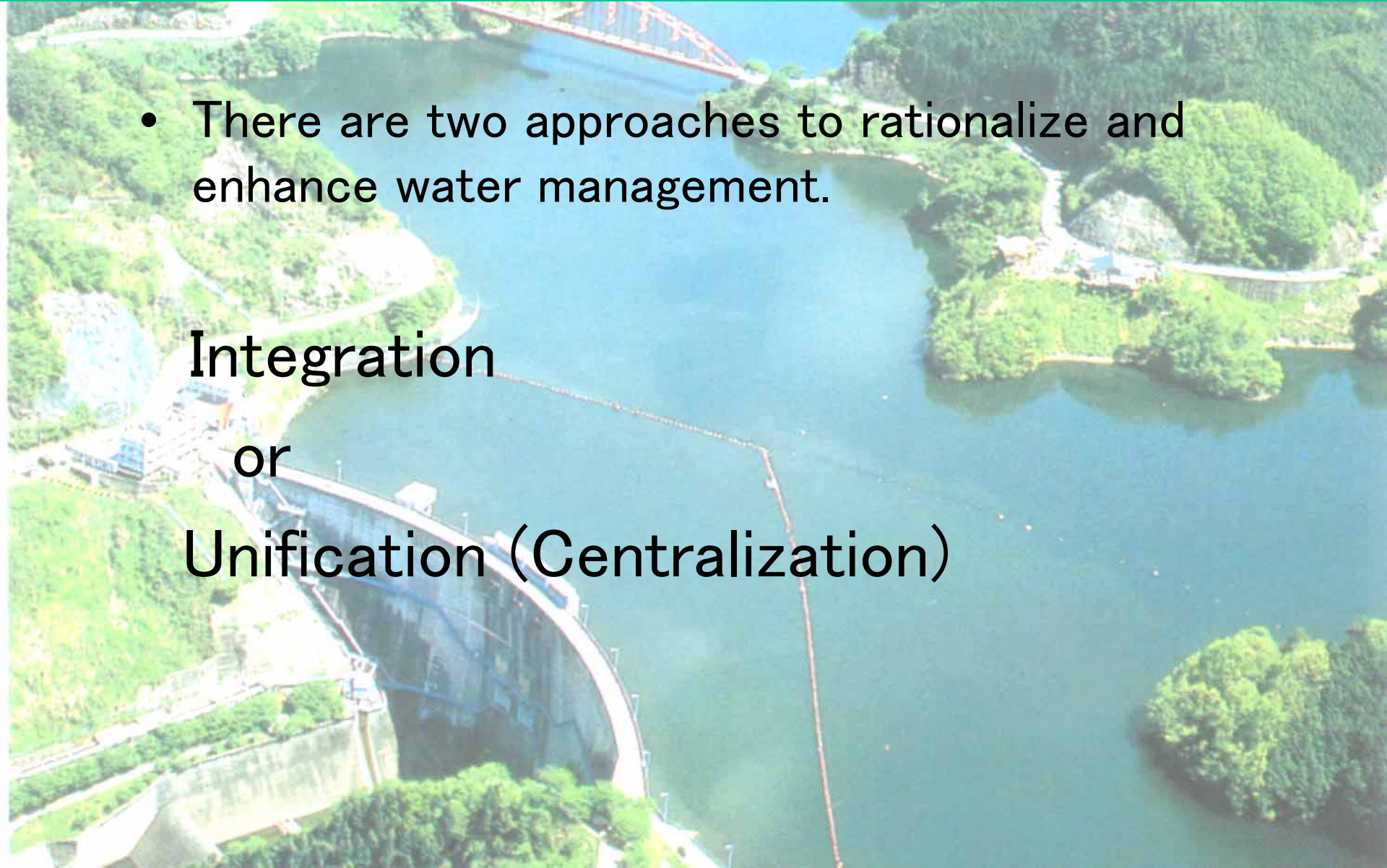
Unification or Integration?

- There are two approaches to rationalize and enhance water management.

Integration

or

Unification (Centralization)



An aerial photograph of a large dam and bridge over a river. The dam is a curved concrete structure with a spillway on the left. A red truss bridge spans the river in the upper left. The surrounding area is lush green with trees and some buildings near the dam. The water is a deep blue-green color.

Unification/ Centralization


- At the age of large scale water resources development projects, centralization of authorities, funds and human resources was essentially needed.
- That's why unification of authority was promoted.

An aerial photograph of a large dam and bridge system. The dam is a curved concrete structure in the lower-left quadrant, with a spillway. A long bridge spans across the reservoir, with a red truss section in the upper-left. The water is a deep blue-green, and the surrounding land is lush green with trees. The word "Today" is written in large black font in the upper-middle part of the image.

Today

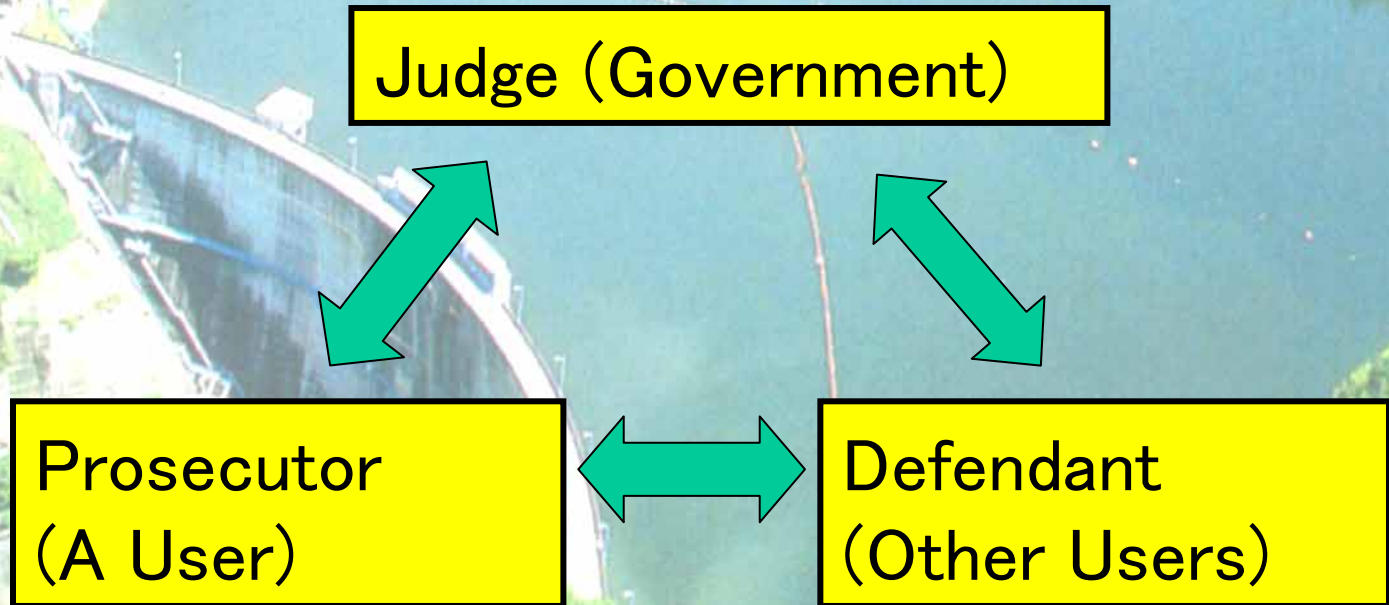
- Although development projects are still needed, certain projects were completed and in operation.
- For better operation of facilities and water management, coordination among different sectors and factors is needed.
- In this regards, the unified system have to be transferred to integrated system.

Issues involved in the Unification of Management and Authorities

- 
- Deterioration in sense of ownership/participation of individual water user
 - Internalization of adjustment of rights
 - ›› Unclear rights and obligation of water users
 - ›› Inflation of demand to operators (Government)
 - ›› Deficiency in internal adjustment

Problems involved in the Unification of Management and Authorities

The Holy Trinity of Defendant, Prosecutor & Judge cannot make impartial judgment objectively.



What Recommended

Formulation of a forum where every stakeholders can participate and speak freely

Conditions required

- (1) Impartial participation of interested parties or their representatives
- (2) Acquisition and sharing of scientifically sound information
- (3) Mutual understanding and respect
- (4) Fair and disinterested judgment



CONCLUSION: For More Reliable Water

- Dams & Reservoirs as essential for effective & reliable water use.
- Utilization of all available facilities.
- Hydrologic observation as a base of water management.
- Importance of publication & dissemination of information and role of mass media.
- Encouragement of sense of self and mutual reliance.
- Understanding & cooperation of End Users.
- Emergency water resources(groundwater, emergency reservoir, etc.).
- Mutual water accommodation among users.
- Accumulation of experience and improvement.
- From construction to management.

CONCLUSION

for better water use and conservation of water environment :

- Efforts to control unstable flow (construction of reservoirs etc.) shall be continued.
- Efforts in institutional and legal arrangement is needed,



END

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Transfer of Water Rights

- Principle (River Law article 2)

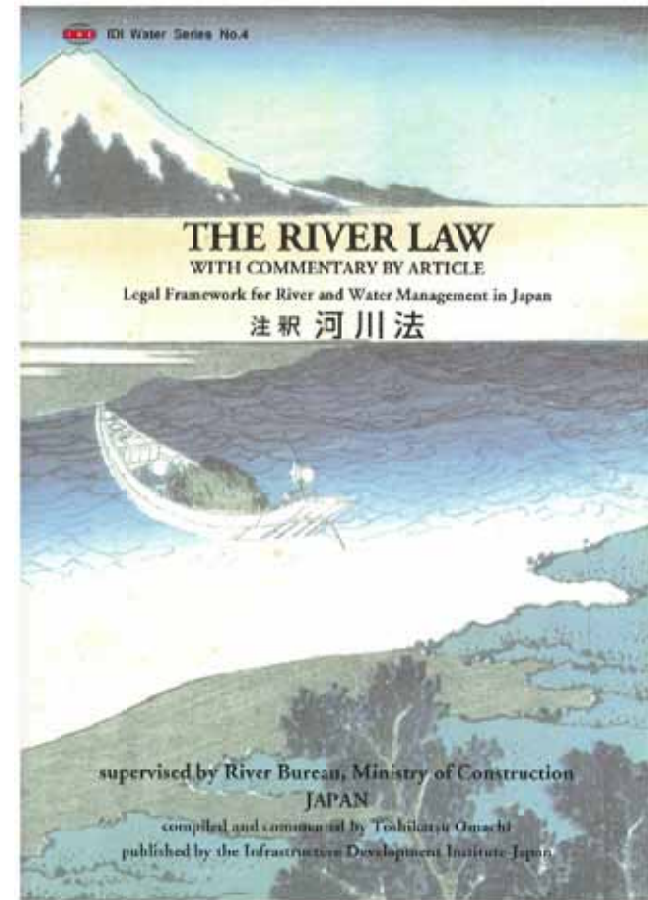
Water in river cannot be the subject of private right.

1. River Law article 34

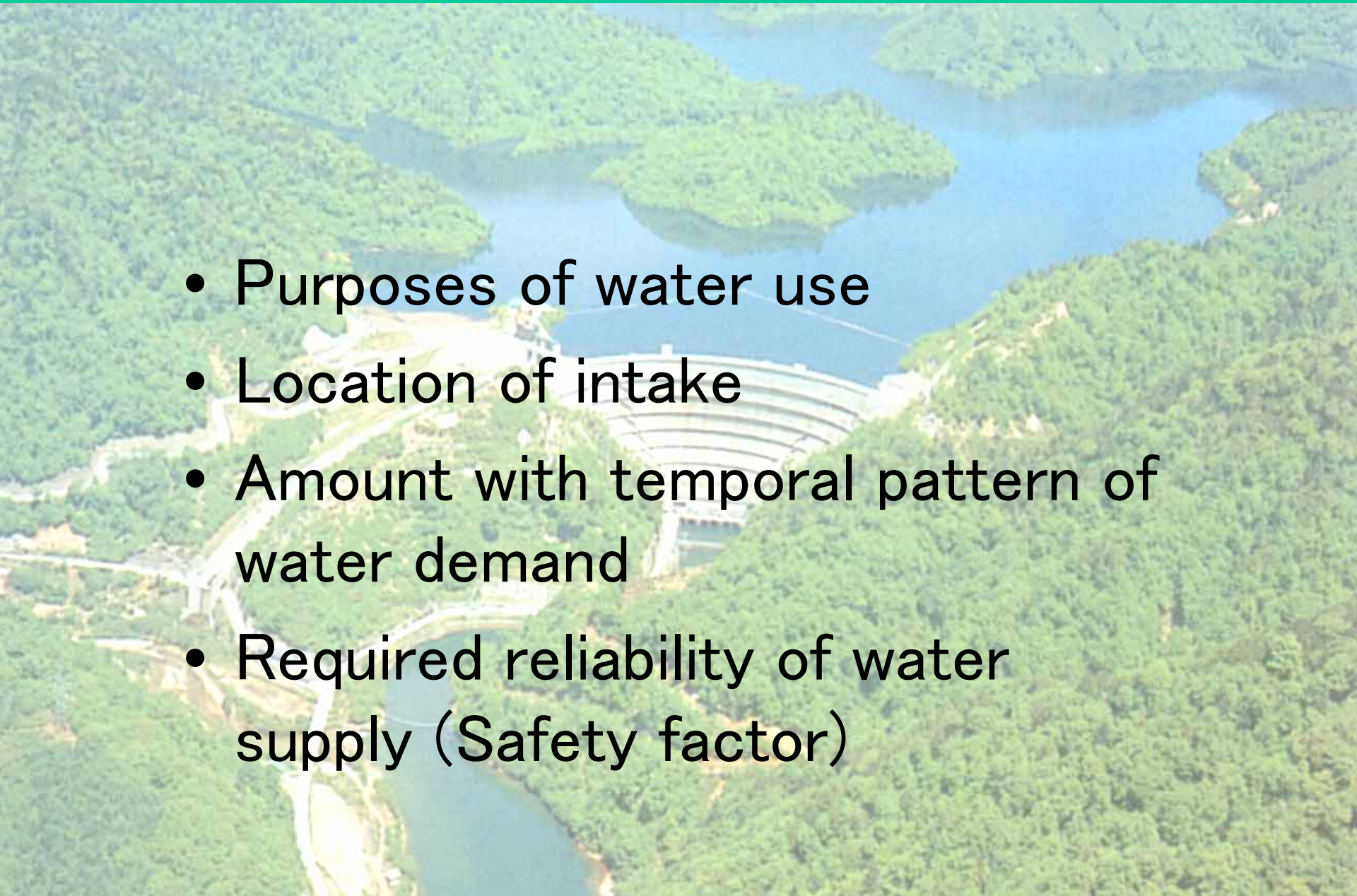
Transfer of right among the same purpose

2. River Law article 23

Transfer of water right among the different purposes.



Contents of Water Rights

- Purposes of water use
 - Location of intake
 - Amount with temporal pattern of water demand
 - Required reliability of water supply (Safety factor)
- 
- An aerial photograph of a large dam and reservoir. The dam is a long, curved concrete structure with multiple spillways. The reservoir is a large body of blue water surrounded by dense green forest. The surrounding landscape is hilly and covered in trees. The image is used as a background for the text.

Transfer of water right among the different purposes

Case A: Simple diversion:

Reduction of farm land, change/reduction of production, etc.

Case B. Rational diversion:

Water saving by improvement of facilities and diversion of that amount to others.

Case C:

Re-allocation of storage capacities of reservoirs

- Full use of reserved storage capacity
- Transfer of storage capacity

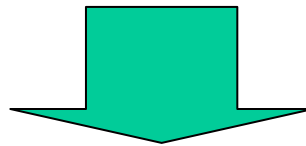
General Procedure

Concept and procedure:

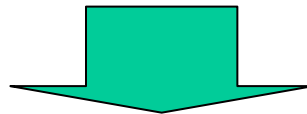
Step-1: Reduction or Extinction of the right, and

Step-2: Awarding of New right

- Study on the existing water use system
- Confirmation of amount of saved/reduced water use
- Determination of amount of water to be newly permitted



- Reduction/abolition procedure
- Application new water use



Simultaneous Permission

- However, the conditions of the water right such as temporal pattern, safety factor, location of intake, etc., between existing right and newly awarded is different in most cases.
1. Determination of the quantity and temporal pattern of the existing water use shall be determined in advance.
 2. And the amount and temporal pattern of the newly permitting water right shall be determined after simulation and assessment of available flow.

Issues in the Diversion of Irrigation Water

- **Difference in Temporal Pattern of Water Use**

Since most of the irrigation water is supplied for paddy in Japan, demand of irrigation is concentrated in the period from April to August.

- **Net Consumption and Return Flow**

Most of water supplies for paddy field is not consumed, they return to river. In the contrast, water for cities and industries never return or return after polluted to the river system.

- **Customary Right–Quantity is not determined**

For the customary water right, intake facility and area is determined but the quantity and temporal pattern are not determined. Therefore quantity with temporal pattern shall be determined in advance for diversion.

How to resolve Concerns and Opposition of Farmers

For Determination of amount & temporal pattern of existing water use

1. Assessment of unit water consumption in testing field.
2. Simultaneous observation of flows in the mainstreams and tributaries.
3. Assessment of damage caused by droughts in the past.

For Smooth Negotiation

1. Financial assistance for the cost of water saving measures by government and by the beneficiaries.
2. Cooperation with agricultural sector in local administration as an agent of the farmers.
3. Guarantee of water replenishment during unusual drought (improvement of reliability).



Duties of water users

- Respect normal functions of rivers and other water/river users

Other water users (irrigation, hydropower, navigation, etc.)

Environment (water quality, eco-system, landscape, etc.)

- Bear cost for water use

Cost for Water Resources Development & Use

COST FOR WATER

(Japanese Practice)

Sector		Hydropower	Irrigation	Domestic Water	Industrial Water	Normal Function
Type of cost						
Initial Investment	Exclusive facility	○	○+ Sub	○	○+ Sub	Government
	Common facility	○	○+ Sub	○	○+ Sub	Government
Operation/ Maintenance	Exclusive facility	○	○+ Sub	○	○	Government
	Common facility	○	○+ Sub	○	○	Government
License fee		○	Exempt	Exempt	Exempt	Not applicable

○ : **Cost borne by beneficiaries**

Sub : Subsidy

Exclusive facilities : ex. Irrigation canal, Power house, etc.

Common facilities : ex. Dam, Sluice, etc.

Normal function: Environment (sanitation, eco-system etc.), Navigation, Water level, etc.

Why Cost Allocation is Important

- Clarification of relation between right and obligation is essential for water re-allocation and re-adjustment of water right.
- No right for No duties and No cost bearing.

Factors in Cost Allocation

Cost: Compensation, Construction, Operation,
Maintenance.

Benefit: Increase of Production,
Reduction of Damage.

Flow of Money

Projects of Japan Water Agency

Budget request by MLIT > Assessment by Ministry of Finance > Approval of Diet > Allotment of Budget to MLIT > Transfer budget to Ministries concerned (M. Agri., M. Social Affairs, M. Economy & Industry) > Japan Water Agency

WHY: Bureaucracy ??

but this procedure Crystallize the structure of the Cost Bearing.

Concerned Ministries represent rights and duties of relevant beneficiary sectors

Cost bearing by Agricultural Sector (farmers)

- Construction cost for reservoirs, barrages, gates, canals etc.
- Operation and maintenance cost of facilities
- Cost for obtaining permission (exempted)

Minimum conditions for water saving in agricultural sector

Bearing of construction, operation & maintenance cost

> Enhancement of sense of ownership

> Enhancement of motivation for water saving

and

> Concurrence on diversion of excess water

Example of a Forum

DROUGHT COUNTERMEASURES COORDINATION COUNCIL FOR THE TONE RIVER

ESTABLISHMENT

The Council was established as a permanent body in May 1974 in the wake of the two consecutive drought years of 1972 and 1973

OBJECTIVES

The purpose is to bring about **more efficient and rationalized uses** of river water through proper coordination and consultation among all concerned in an effort to introduce adequate drought countermeasures.

MEMBERS

Ministry of Land, Infrastructure & Transport, Japan Water Agency, Tokyo Metropolitan Government, Prefectures of Chiba, Saitama, Ibaraki, Gunma and Tochigi