

Participatory Irrigation Management In Japan

25 April, 2005

**Chubu Regional Bureau
Japan Water Agency (JWA)**

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(as a example of PIM)
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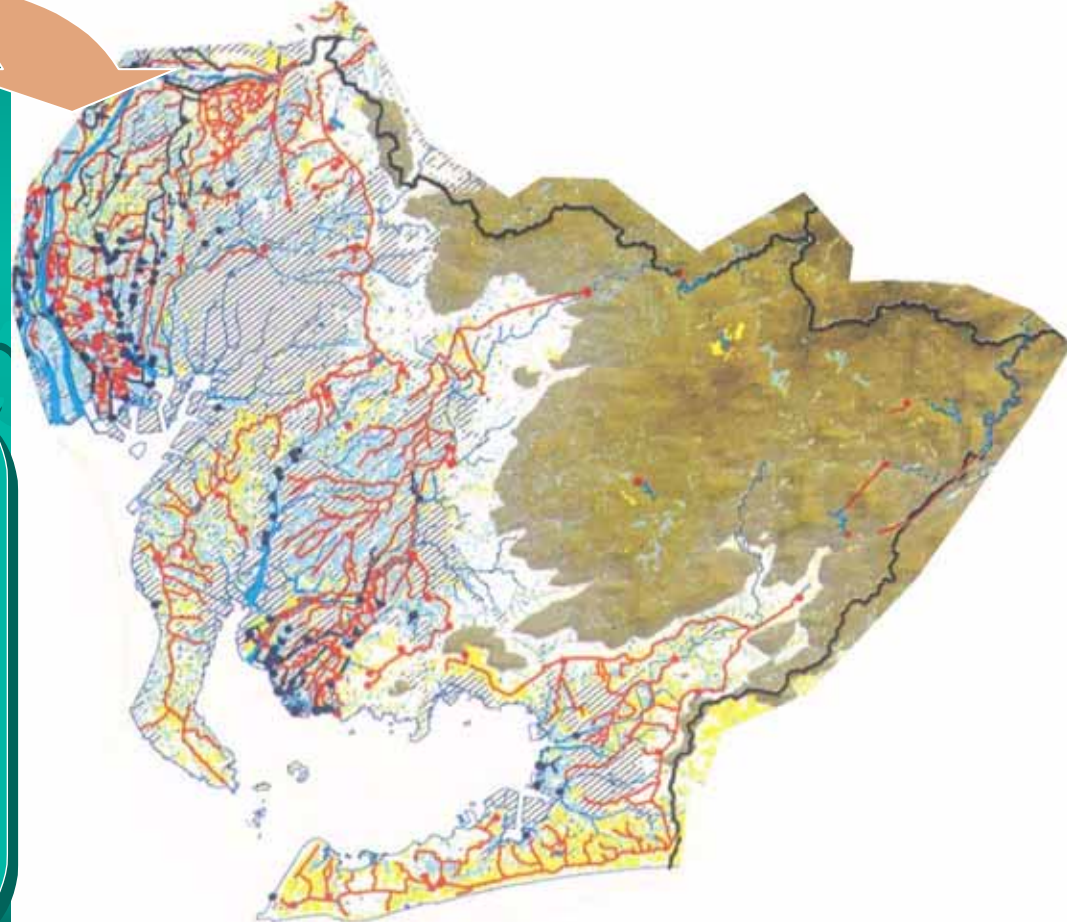
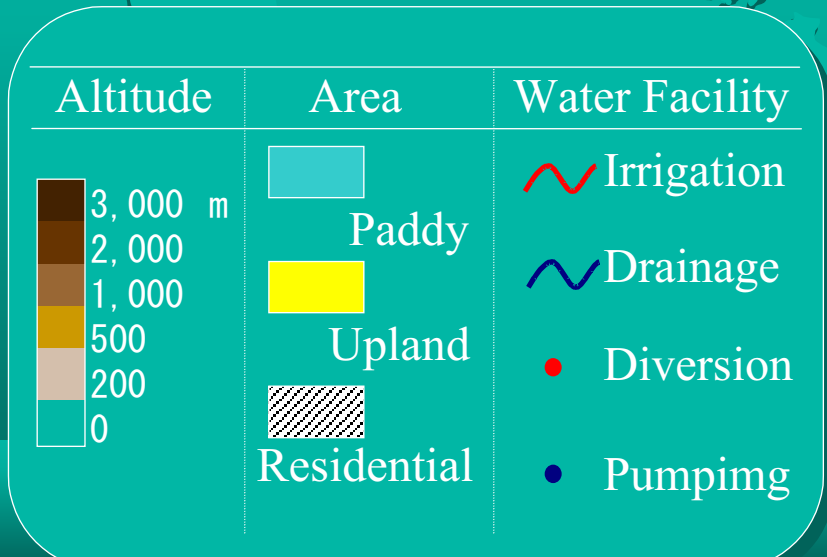


1. Irrigation management by the Land Improvement District in Japan

The Irrigation and Drainage Canals for Agricultural Use In Japan

Japan archipelago

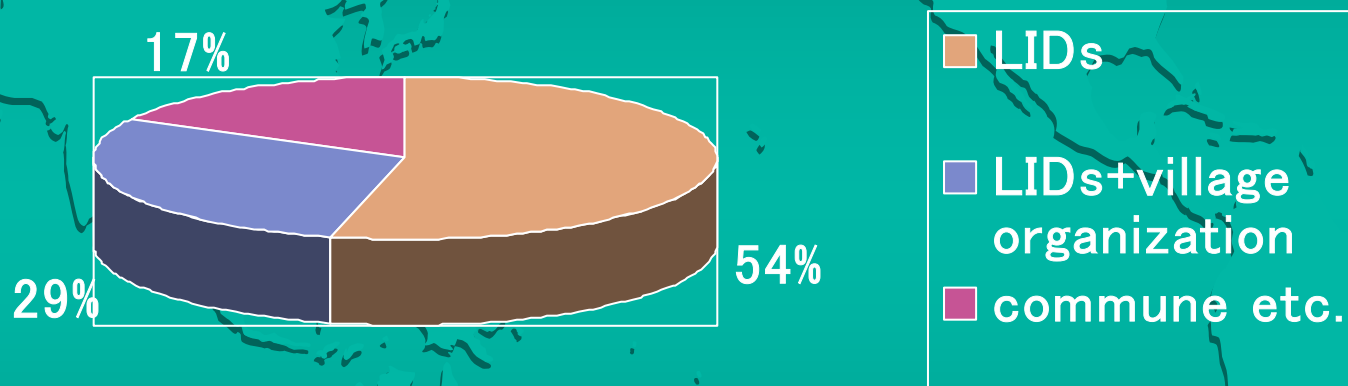
Example : aichi prefecture



Facilities For Agricultural Use In Japan

- Canal about 400,000 km
- Reservoir about 210,000
- Dam about 1,000

Management of Irrigation Facilities In Japan



LIDs:Land Improvement Districts

LIDs manage most irrigation facilities in Japan

Features of Land Improvement District (LID)

- LID is an organization established by farmers
- LID is managed by officers who farmers elect
- LID can levy union dues on membership

Currently there are 6,816 LIDs with membership of 4.26 million people in 2001.

Development of Irrigation System In Japan (1)

Rapid development of new paddy field in Edo period (17 century)



Planning of paddy field irrigation system by farmers, village leaders, or influential merchants.



Construction by the ruling clan or shogunal government.



Development of Irrigation System In Japan



Forming of communal organizations for irrigation management by farmers.



Participatory irrigation management framework became established in all part of the country.



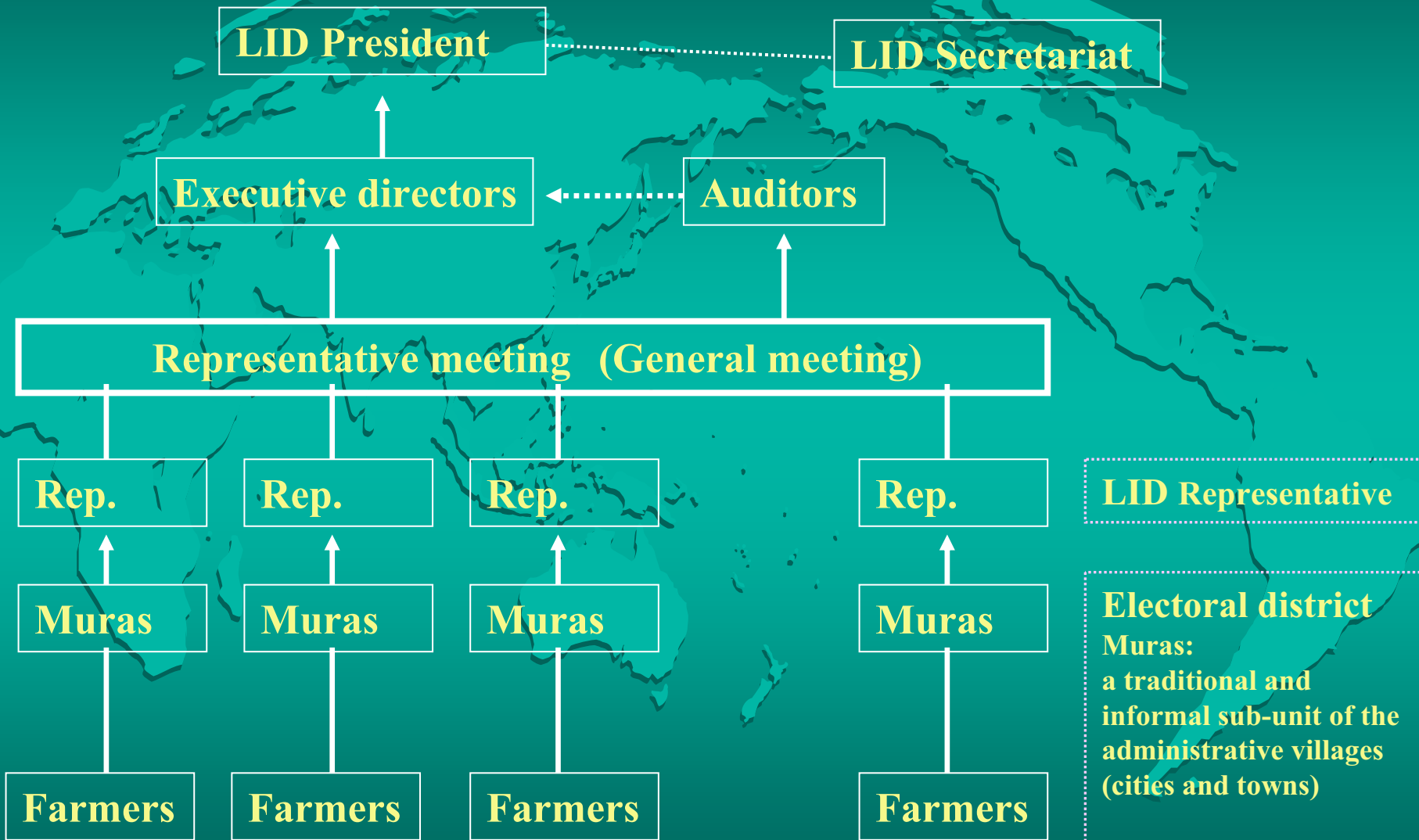
the enactment of the Land Improvement Law in 1949.  establishment of LID

Right and Obligation of LID's Membership

Member Farmers:

- have right to use water
- have to pay a membership fee for water allocation management and facilities' operation and maintenance.
- are required to provide the labor to remove weeds in irrigation canals, to clean, and other tasks.

Management of LID



A sample of periodical leaflet



Membership fees

豊川用水

平成15年度 賦課金のお知らせ

< 賦課金 >

区分	名称	賦課金	賦課開始日	賦課終了日	備考
新年度	普通	2,000	平成15年4月1日	平成15年7月31日	
普通	普通	1,200	同上	同上	
新年度	特別	2,400	同上	同上	農業用
普通	特別	4,525	同上	同上	
普通	特別	2,045	同上	同上	
新年度	事業用	毎年度決定	毎年度決定	毎年度決定	農業用施設
普通	事業用	790	平成15年4月1日	平成15年7月31日	
普通	事業用	659	同上	同上	
普通	事業用	400	同上	同上	
普通	事業用	2,000	同上	平成15年10月31日	農業用施設
普通	事業用	2,750	同上	同上	
普通	事業用	100	同上	平成15年7月31日	
普通	事業用	400	同上	同上	
普通	事業用	100	同上	同上	
普通	事業用	400	同上	同上	

< 管理費負担割合 >

区分	負担割合	負担額	負担額	負担額
普通	3.31%	3,310	4,525	4,225
特別	1.40%	1,700	3,500	3,500
事業用	1.90%	2,000	2,000	
特別			3,000	
普通		600		3,000



Representative meeting



Budget

豊川用水

平成15年度 緊急防災連絡網

水害やアームバンドで遊んでいる子供を見つけたら、注意して頂くようお願いいたします。

田舎管理事務所
電話 0531-22-1702

豊川管理事務所
電話 0532-64-8278

豊川事務所
電話 0533-93-3525

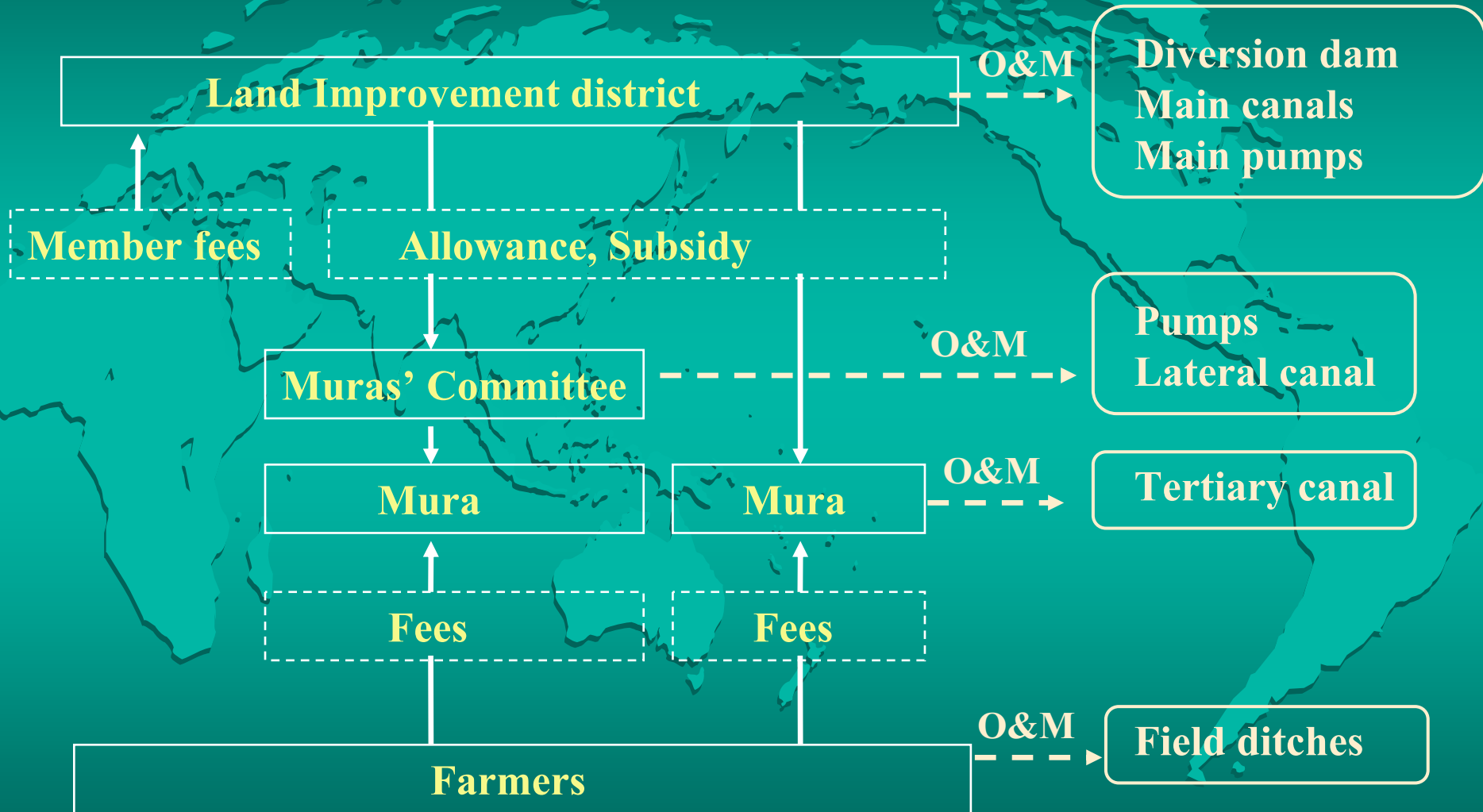
豊川事務所
電話 0532-89-1155

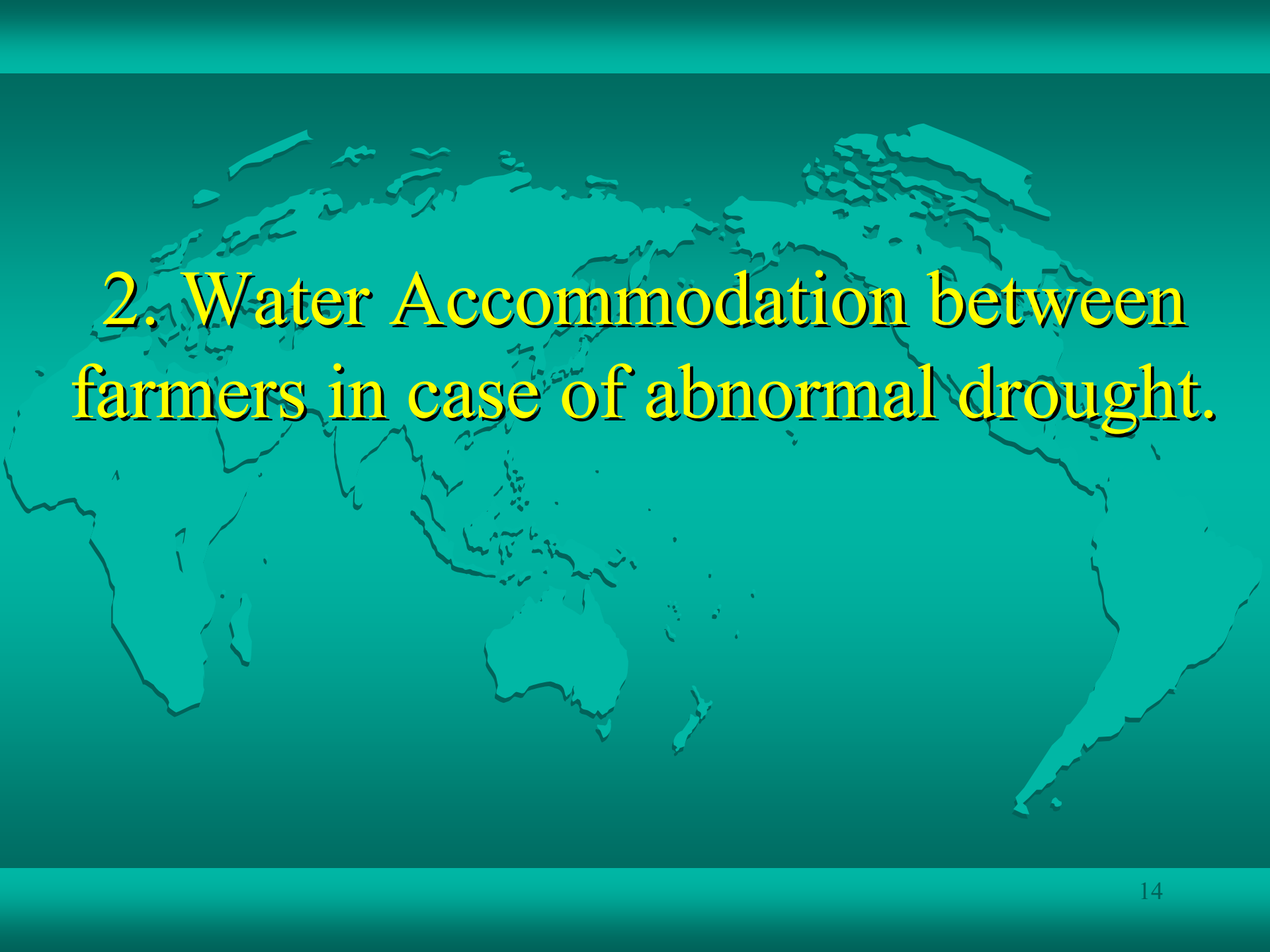
豊川事務所
電話 0536-23-2842

豊川事務所
電話 0536-23-1759

豊川事務所
電話 053-612-9801

Typical Flow of Money for Operation and Maintenance of Irrigation and Drainage Facilities

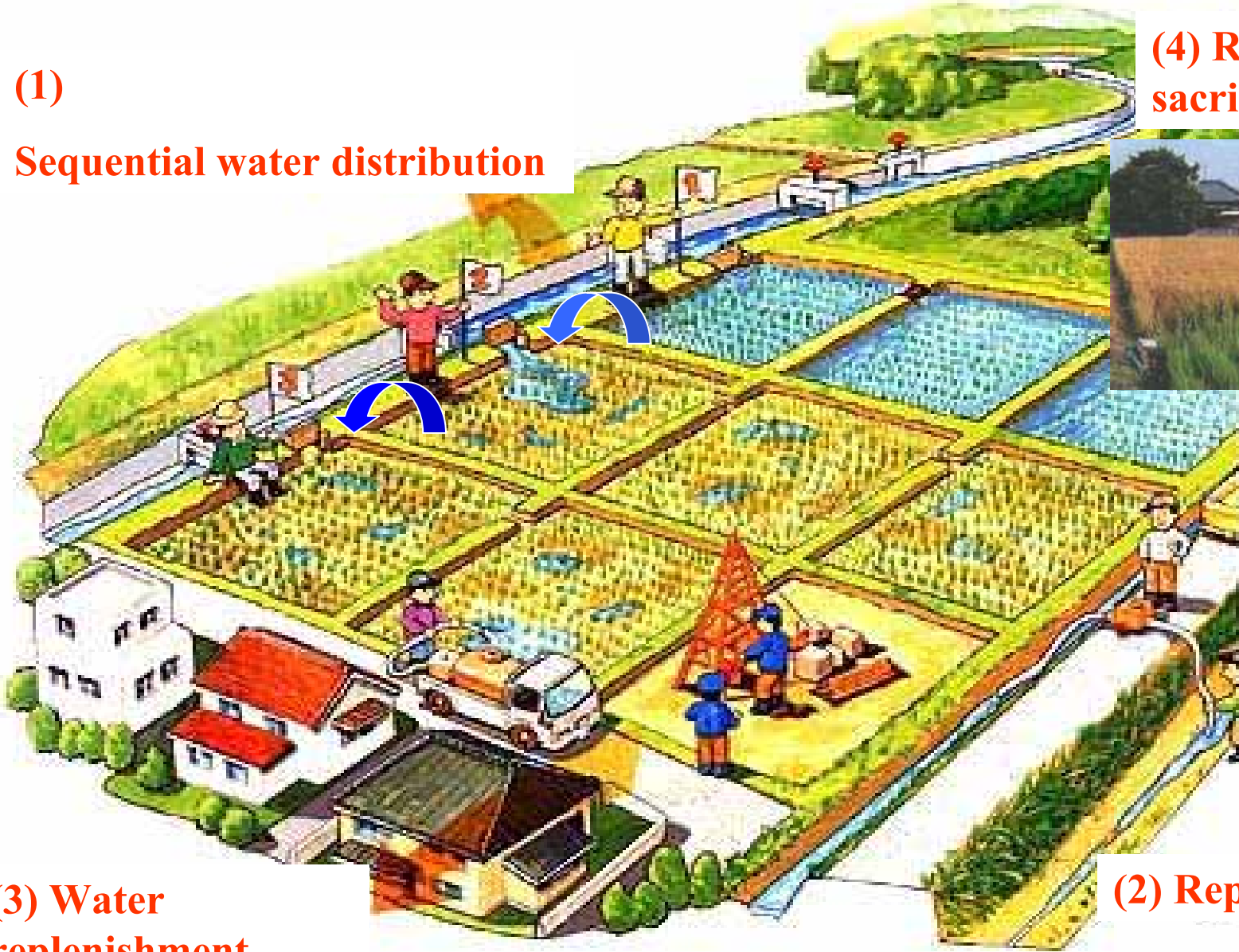




2. Water Accommodation between farmers in case of abnormal drought.

The Forms of Water conservation

(1) Sequential water distribution

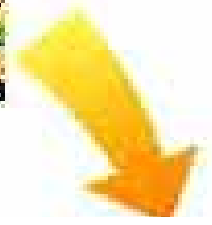


(4) Rice paddy sacrifice



(3) Water replenishment

(2) Repeated usage





3. Irrigation Management in Toyogawa Canal

Collaboration between Japan Water Agency
and Toyogawa Comprehensive Canal Land
Improvement District

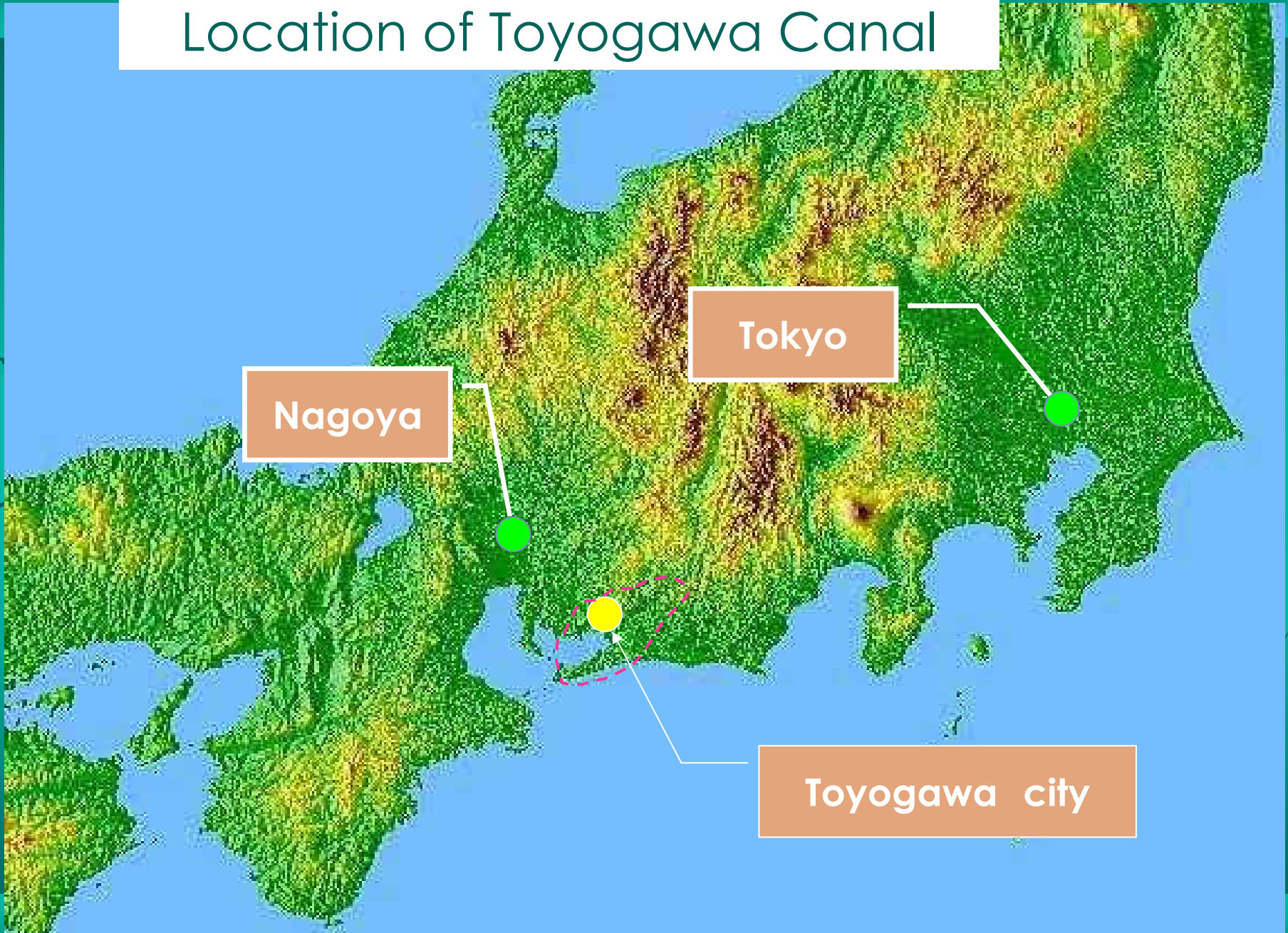
Complex of JWA and Toyogawa Comprehensive Canal LID

Location of Toyogawa Canal

Nagoya

Tokyo

Toyogawa city



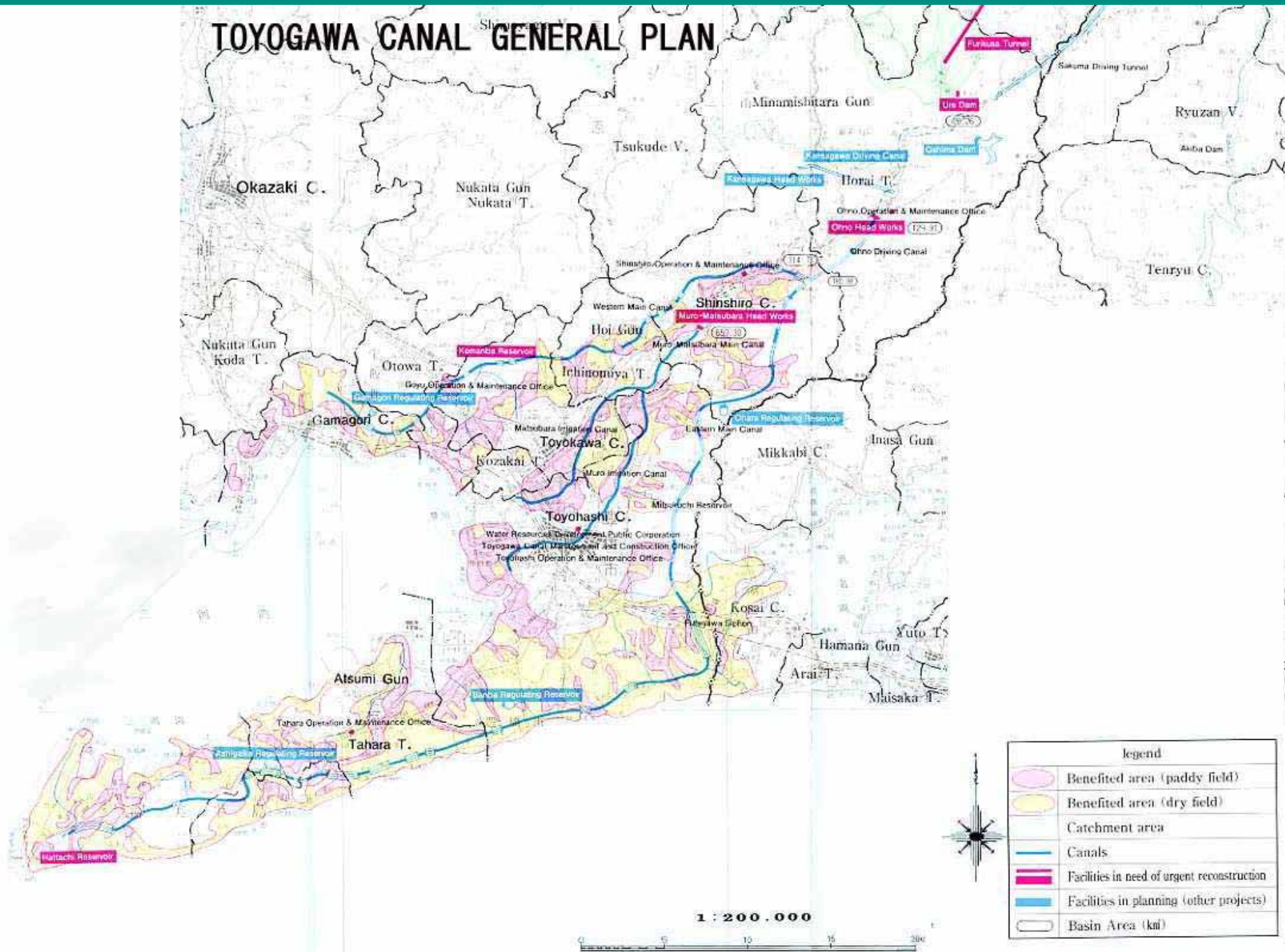
TOYOGAWA CANAL



WATER RESOURCES DEVELOPMENT PUBLIC CORPORATION
TOYOGAWA CANAL MANAGEMENT & CONSTRUCTION DPT.

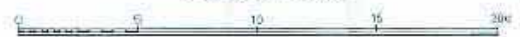
440-0801 IMAHASHICHO 8, TOYOHASHI, AICHI, JAPAN TEL:0532-54-6501

TOYOGAWA CANAL GENERAL PLAN



Legend	
	Benefited area (paddy field)
	Benefited area (dry field)
	Catchment area
	Canals
	Facilities in need of urgent reconstruction
	Facilities in planning (other projects)
	Basin Area (km)

1 : 200,000



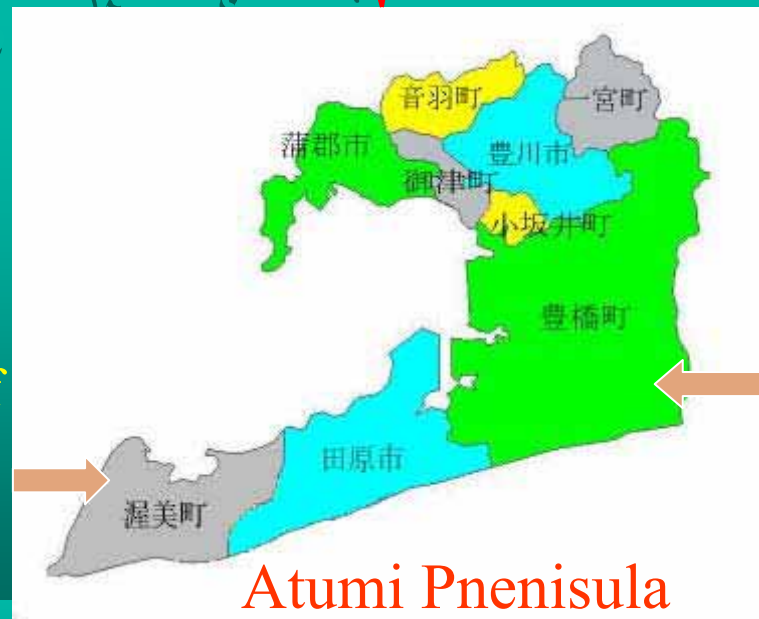
Purpose of the Toyogawa Canal Project

Agricultural
water

Industrial
Water

Domestic
Water

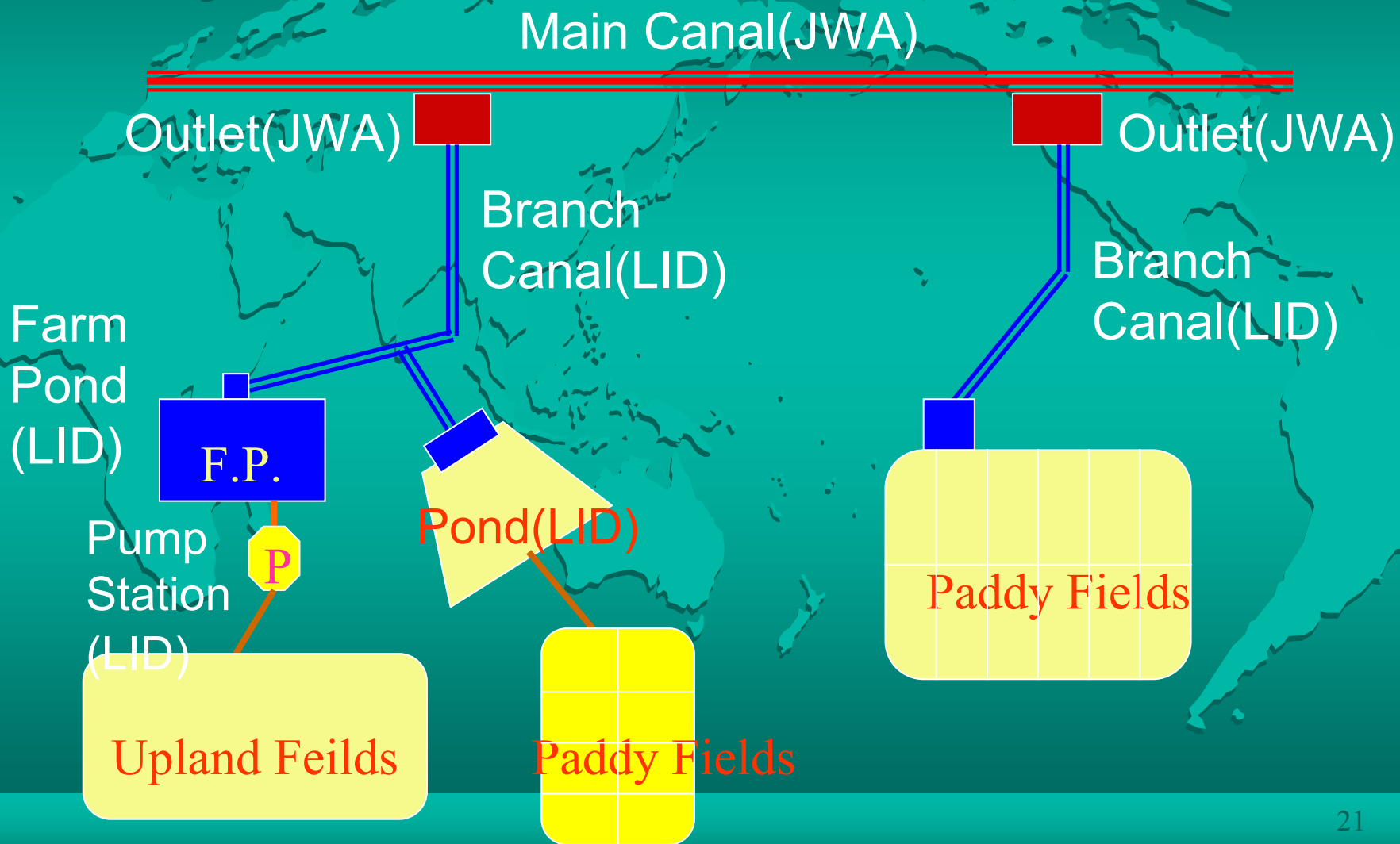
Supply



Atumi-cho is the third of Japan in the amount of agricultural production.

Toyohashi-city is the top of Japan in the amount of agricultural production.

Classification of Toyogawa Canal Facilities and Organization in Charge (1)



Classification of Toyogawa Canal Facilities and Organization in Charge (2)

JWA is operating and maintaining
2 Dams, 5 Headworks, 7 Reservoir,
112 km Main canals

Toyogawa comprehensive Canal Ltd is operating and
maintaining

296 farm ponds, 12 pump stations,
453 km branch canals.

Local LIDs are operating and maintaining
317 pump stations, 2,772 km branch canals.

Outline of Toyogawa Comprehensive Canal LID

- The number of membership → 22,898
- The number of secretariat staff → 36
- Territory → 15,560ha
- History

(2002)

1952 Establishment of Toyogawa Canal LID

1968 Reconstitution as Toyogawa Canal LID Uion

1986 Reconstitution as Toyogawa Comprehensive Canal LID

MAIN SYSTEM

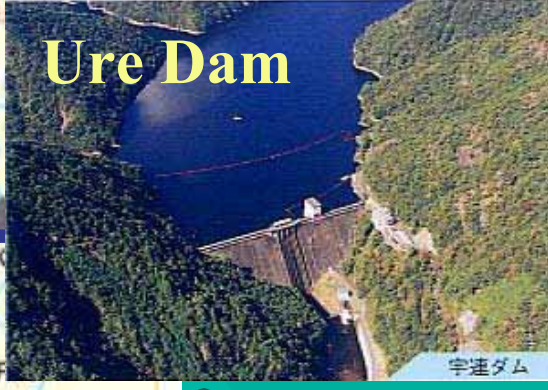
Facilities managed by JWA

Agency in charge

The Public Corporation

Toyogawa Comprehensive Canal L.I.D

Relevant L.I.D



Ure Dam



Ohno Headworks

Hattachi Reservoir

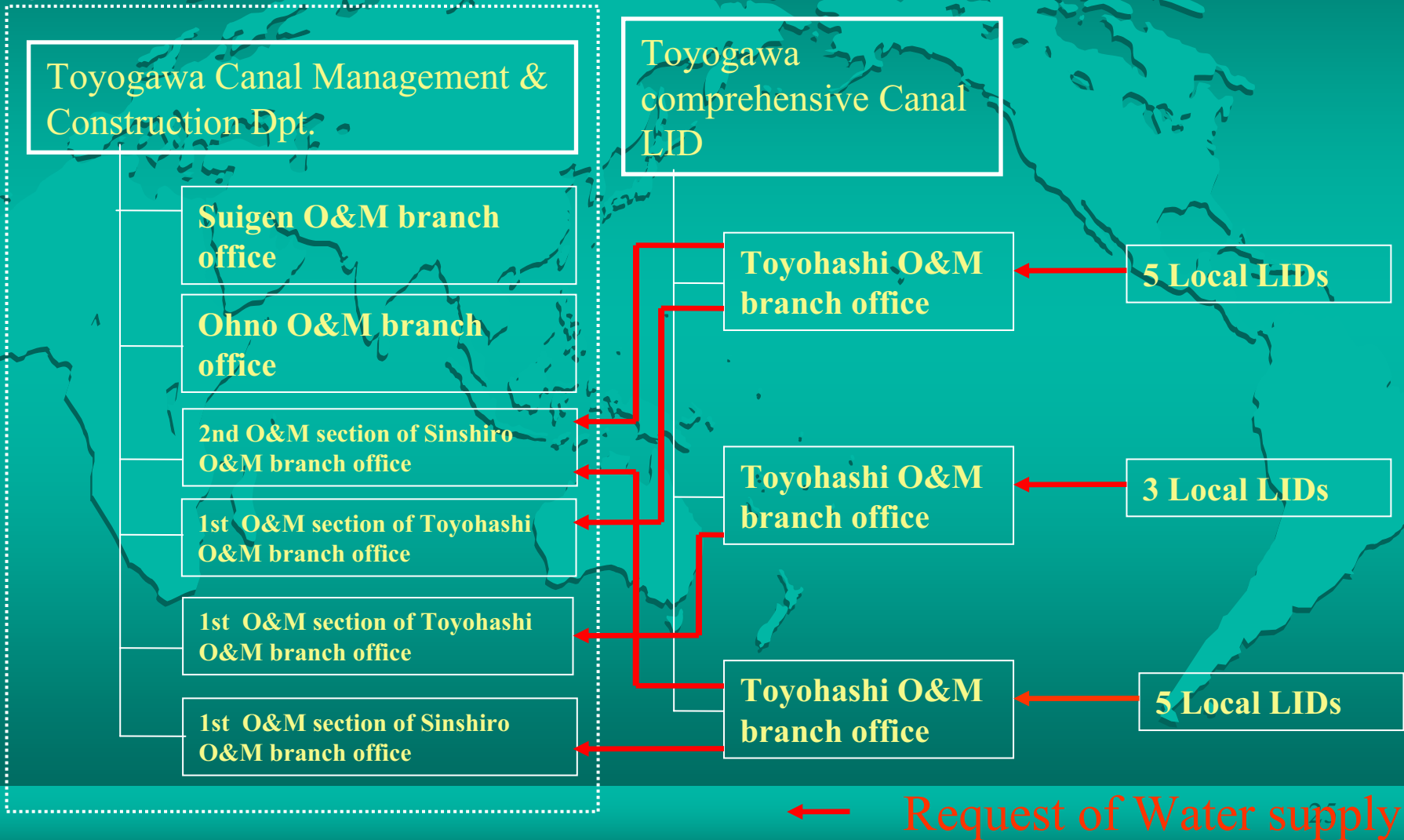


Main Canal

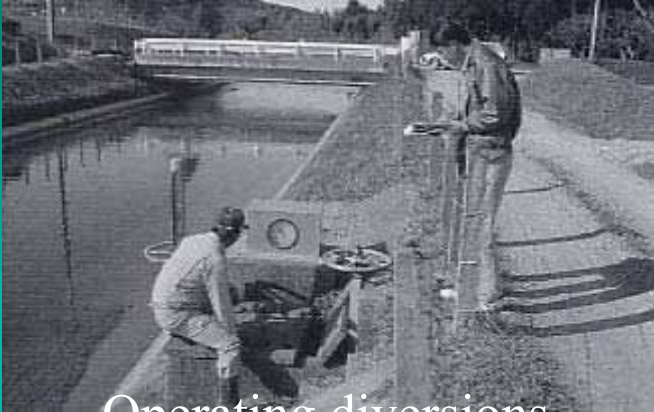


O&M System of Toyogawa canal for Irrigation water use

JWA



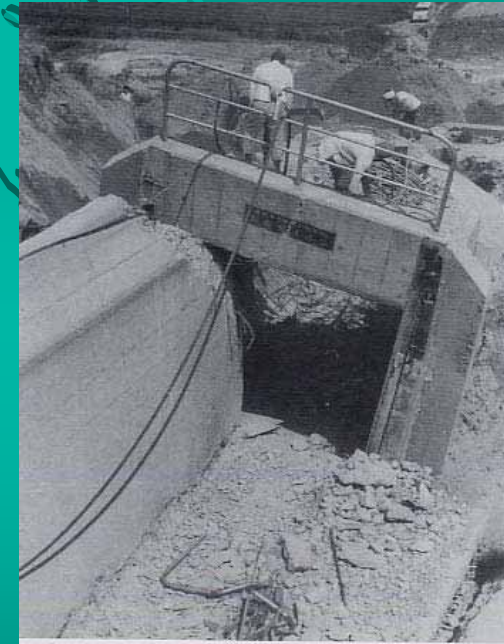
Activities of JWA



Operating diversions
of main canals



Watching for main
facilities and operating



Retrieving main
facilities

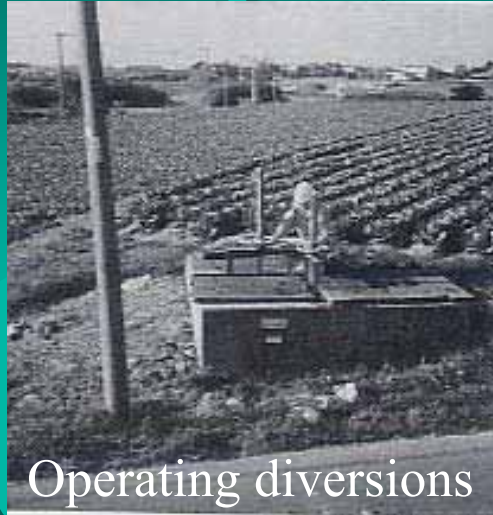


Removing litter
of main canal



Getting weather
information

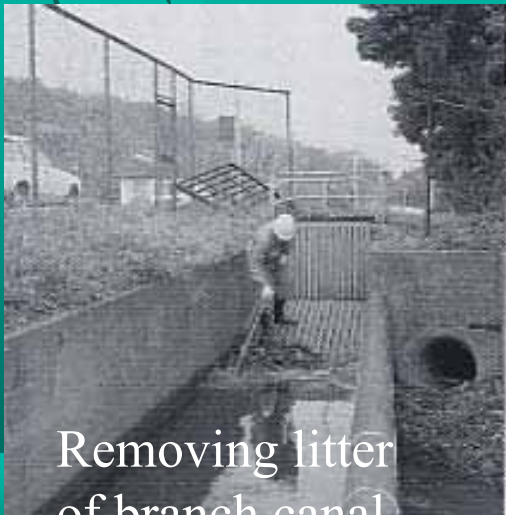
Activities of Toyogawa comprehensive Canal LID



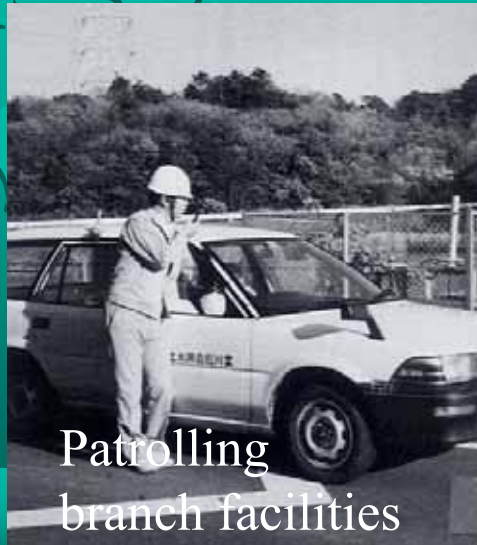
Operating diversions of branch canals



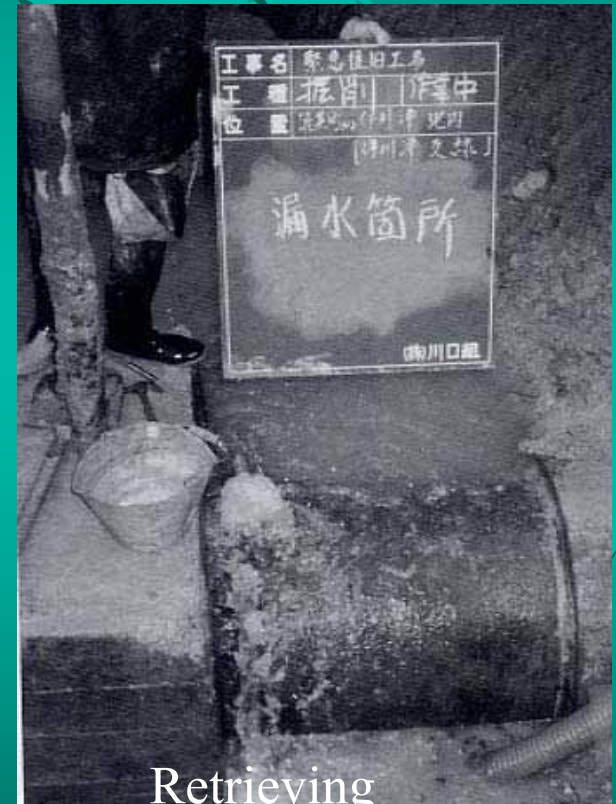
Operating diversions of farm ponds



Removing litter of branch canal



Patrolling branch facilities



Retrieving branch facilities

Deliberation of Important items on Water Management

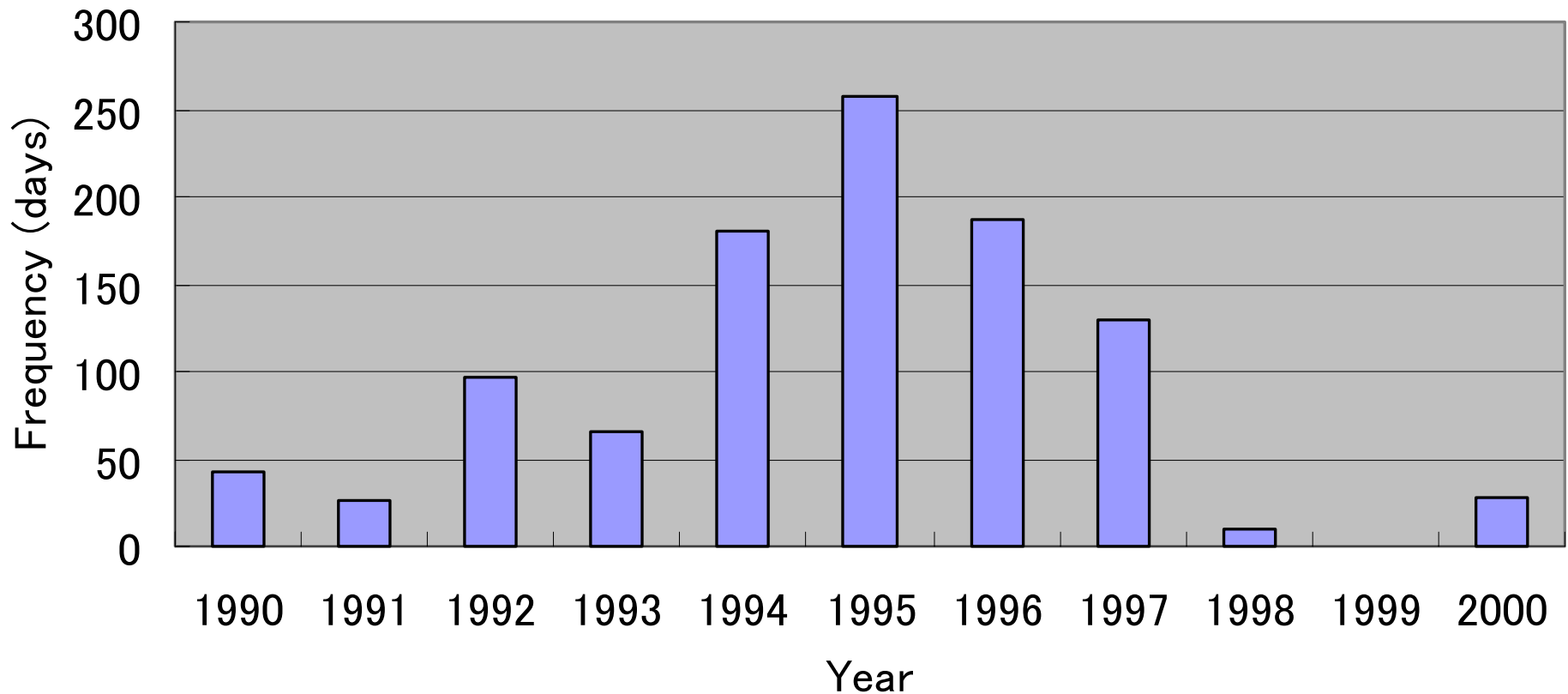
- Important items are deliberated by Toyogawa Canal Management Board
- The Board is organized by
 - ① JWA
 - ② Users of agricultural water, industrial water domestic water.
 - ③ Relative divisions of aichi and sizuoka prefecture office.
 - ④ The competent authorities
 - ⑤ professors

Water distribution at the time of severe water condition

- Toyogawa Canal Water Saving Measures Committee is called at the time of severe condition.
- In this committee. Next items are discussed.
 - ① Water saving measures of water uses.
 - ② Proper water distribution rules.
- This committee is organized by
 - ① JWA
 - ② Users of agricultural water, industrial water, domestic water.
 - ③ Relative divisions of aichi and sizuoka prefecture office.

Current Water Saving Operation

Operation days for saving water



Conclusion

1. The majority of Japan's irrigation facilities are managed by LIDs composed of farmers.
This kind of farmer participation-type irrigation management has made possible a smooth supply of water for agricultural purpose.
2. Based on a “spirit of compromise”,
Farmers strive to conserve water by providing extensive labor and shouldering the economic burden by means such as receiving water in turns, using the same water repeatedly.
3. Toyogawa Canal system is managed efficiently by the collaboration between JWA and Toyogawa Comprehensive Canal LID.

Thank you!

Water resources development volume and JWA's share in each river system (in million cubic meters)

