

Integrated Management Project for Wide-Area Farm Irrigation Facilities
at Reservoirs along the Kako River

Okawase Dam



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◆◆◆Summary of Okawase Dam◆◆◆

1. Purpose

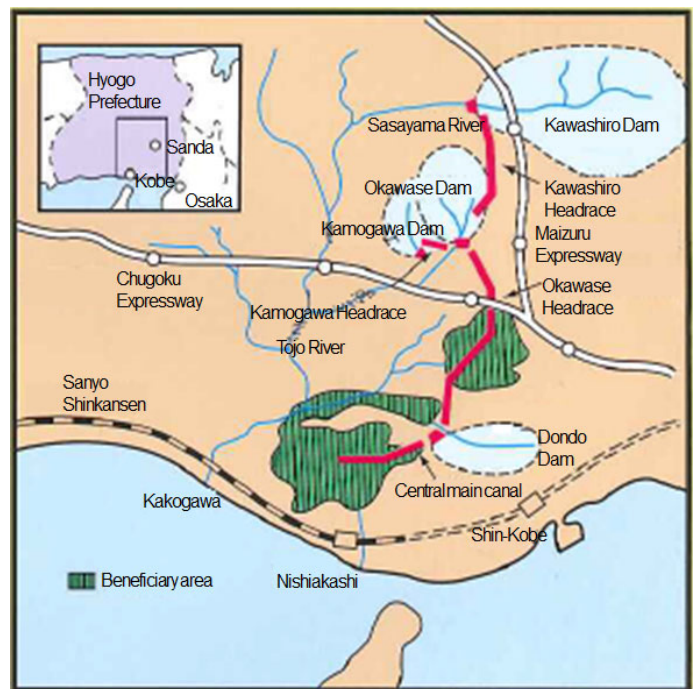
Water for agricultural use is supplied via a dam to properly control, operate and manage the key water facilities including the Kawashiro Dam, Okawase Dam and Dondo Dam constructed under the national farm irrigation project for Toban water and to help stabilize farm management at the Harima Plain located in the eastern Kakogawa as well as the northern Kobe area. The joint project also supplies city water to cities and towns located in the Tojo resin, Toban inland areas, Toban waterfront areas and lower Kakogawa region.

In these wide-area irrigation facilities, the Okawase Dam aims at proper management of water in collaboration with related dams.

2. Month and Year of Groundbreaking and Completion

Groundbreaking: October, 1984

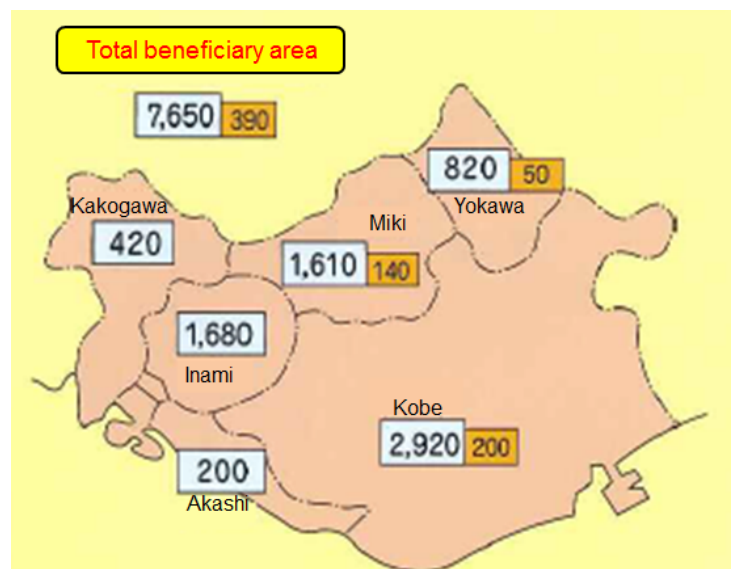
Completion: July, 1991



3. Beneficiary area

(Unit: ha)

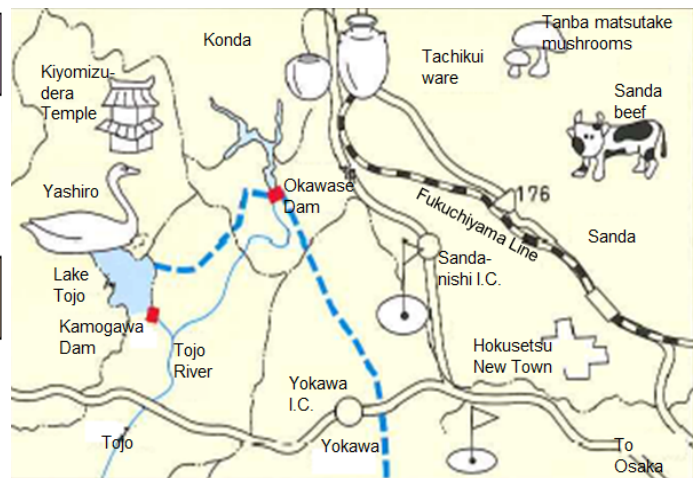
City/town	Project	Farm irrigation and drainage	Reclamation	Total
Kobe		2,920	200	3,120
Akashi		200	-	200
Kakogawa		420	-	420
Miki		1,610	140	1,750
Yokawa		820	50	870
Inami		1,680	-	1,680
Total		7,650	390	8,010



4. Water Utilization Program

Overall 211	Rivers and reservoirs 113		Dams 98	
Agricultural 123	Rivers and reservoirs 84		Dams 39	
City water 88	Rivers 29	Dams 59		
Breakdown for the amount of water for dam development Dams 98	Kawashiro Dam 45	Okawase Dam 17	Dondo Dam 36	

Areas around dams



◆◇◆ Roles of Okawase Dam ◆◇◆

Constructed at the Tojo River (in Okawase, Sanda), a branch river in the middle part of the Kako River, the Okawase Dam is located in the center of the three dams under this project and plays roles in:

1. Developing the sources of water:

The Okawase Dam has the functions not only to develop around 17 million tons of water from its own basin (60.6 km²) annually but to reserve about 45 million tons of water supplied from the Kawashiro Dam through the Kawashiro Headrace annually and pour water into the Dondo Dam through the Okawase Headrace depending on the situation of the Dam. Also, the Okawase Dam was constructed as the key transfer facilities with the function to supply water developed otherwise to the Kamogawa Dam at the Kamo River through the Kamogawa Headrace.

2. Supplying water for agricultural use:

The Okawase Dam supplies water for agricultural use directly to around 2,900 ha of rice paddy and land under perennial crops located in the northern Kobe area (Kobe, Miki and Yokawa) through the Okawase Headrace or Kita-Kobe main canal.

The major amount of water supplied from the Dondo Dam to around 5,140 ha of agricultural land extending across the Harima Plain runs through the Okawase Dam.

3. Supplying city water:

The major amount of city water supplied from the Kamogawa and Dondo Dams also runs through the Okawase Dam.

◆◆◆Management of facilities◆◆◆

★Safety management of dams

Dam bodies, instruments implanted in dam bodies, and data like the amount of leakage from dams are monitored to ensure the safety of dams.

In case of a flood as a result of heavy rainfall, the safety of residents in downstream areas and people by rivers are ensured by alerting them and then the amount of water equal to dam inflow is directly released downstream to create the state close to a natural river.

★Water management

Water necessary for irrigation is ensured to aim at sound utilization of water while coordinating reasonable water storage with beneficiaries' water utilization programs.

★Management of facilities

Facilities are properly controlled, operated and managed to keep them functioning for a long period of time.

◆◆◆Properties swamped in the Okawase Dam◆◆◆

No. of houses swamped	4
Housing land	4.8 ha
Paddy field and other upland field	Paddy field: 1.5 ha Other upland field: 6.5 ha
Mountains and forests	55.8 ha
Roads rebuilt	City roads: 3.8 km Town roads: 0.4 km (including four bridges)

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◆◇◆ Summary of operation and maintenance facilities ◇◇◆

1. Dam

Name		Okawase Dam
Location		Okawase, Sanda, Hyogo
River		Tojo River in the basin of Class A Kako River
Basin	Direct	60.6 km ²
	Indirect	219.1 km ²
Dam body	Type	Gravity concrete dam
	Height	50.8 m
	Length	164.0 m
	Volume	145,000 m ³
Reservoir	Total storage capacity	9,280,000 m ³
	Available storage capacity	8,150,000 m ³
	Designed full supply level	EL 177.65 m
	Full water area	68 ha
	Effective depth	EL 177.65 to 154.000 m (23.65 m)
Discharging facilities	Type	Jet float gate
	Structure	Sluice gate (1) Flow control gate (φ2.200 mm)
Spillway	Type	Radial gates (3)
	Clear span	8.0 m x 3 gates
	Height	8.057 m
	Design flood discharge	1,050 m ³ /S
Intake facilities	Type	Three-stage roller gate (1)
	Intake method	Surface intake or selective intake method
	Clear span	4.0 m
	Effective height	23.65 m
	Max. amount of water intake	9.4 m ³ /S

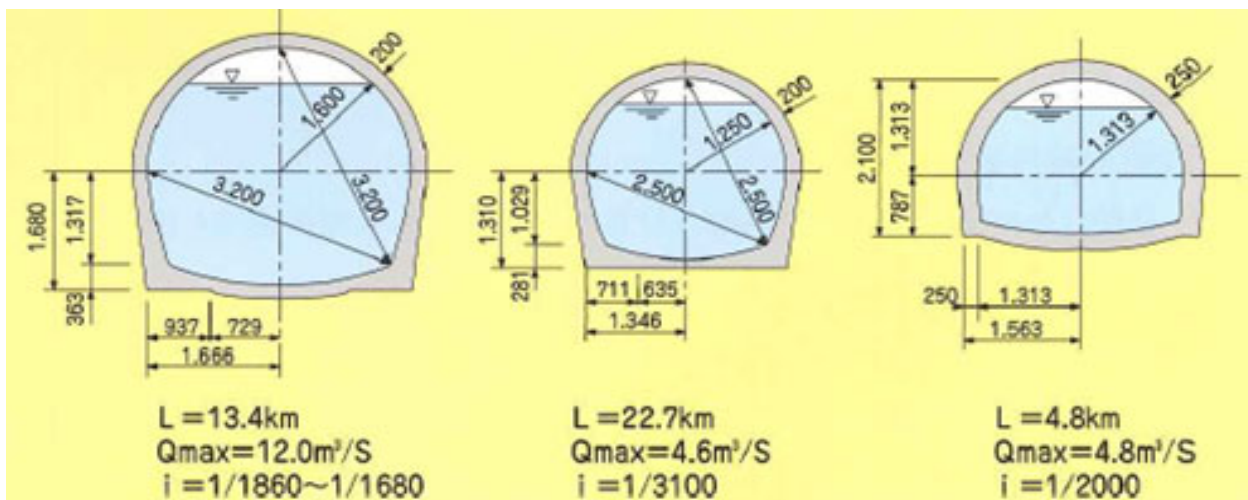
2. Headraces

Kawashiro Headrace	Max. flow volume	12.00 m ³ /S
	Length	13.4 km
Okawase Headrace	Max. flow volume	4.60 m ³ /S
	Length	22.7 km
Kamogawa Headrace	Max. flow volume	4.80 m ³ /S
	Length	4.8 km

■ Typical cross-section of Kawashiro Headrace

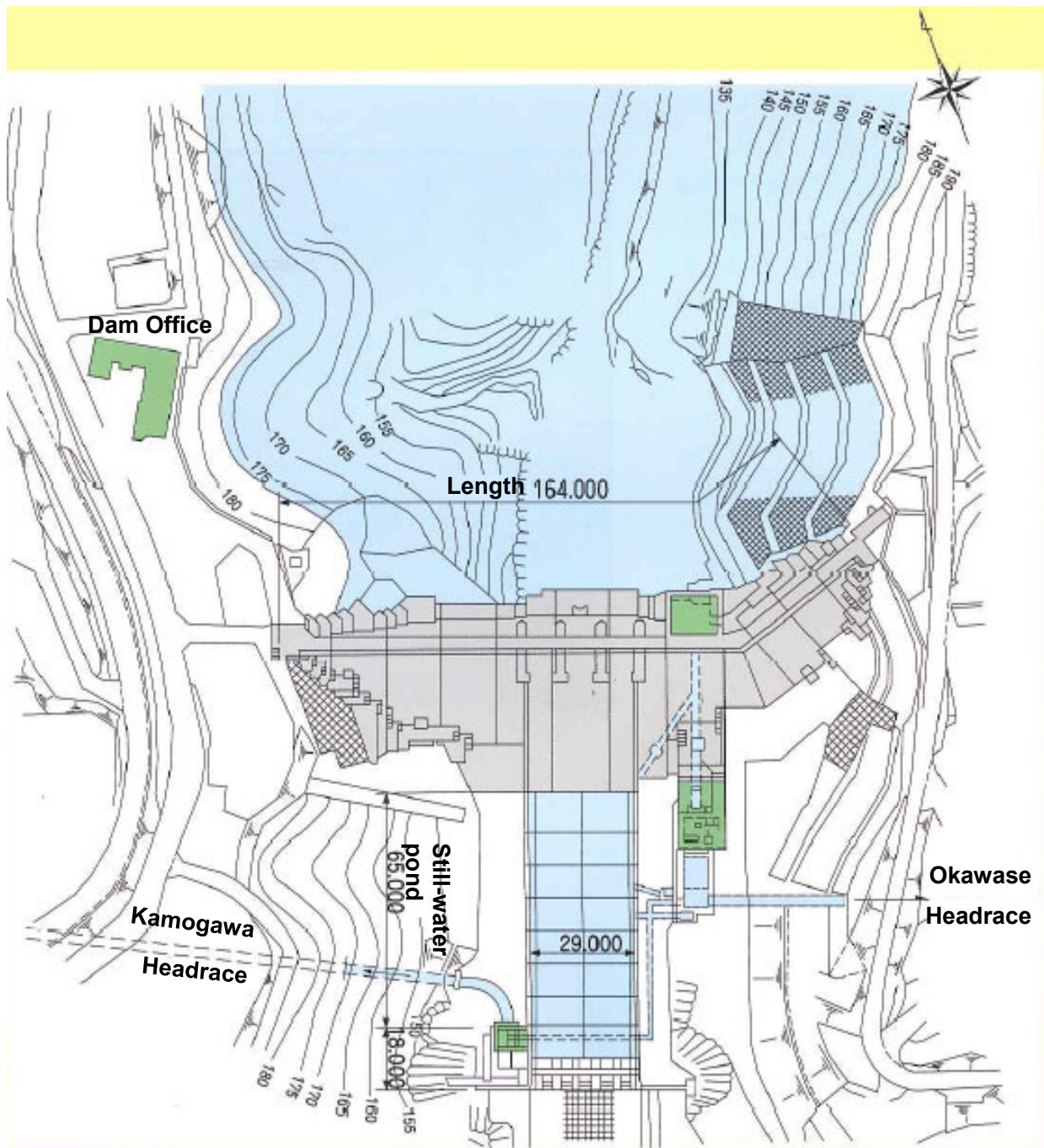
■ Typical cross-section of Okawase Headrace

■ Typical cross-section of Kamogawa Headrace

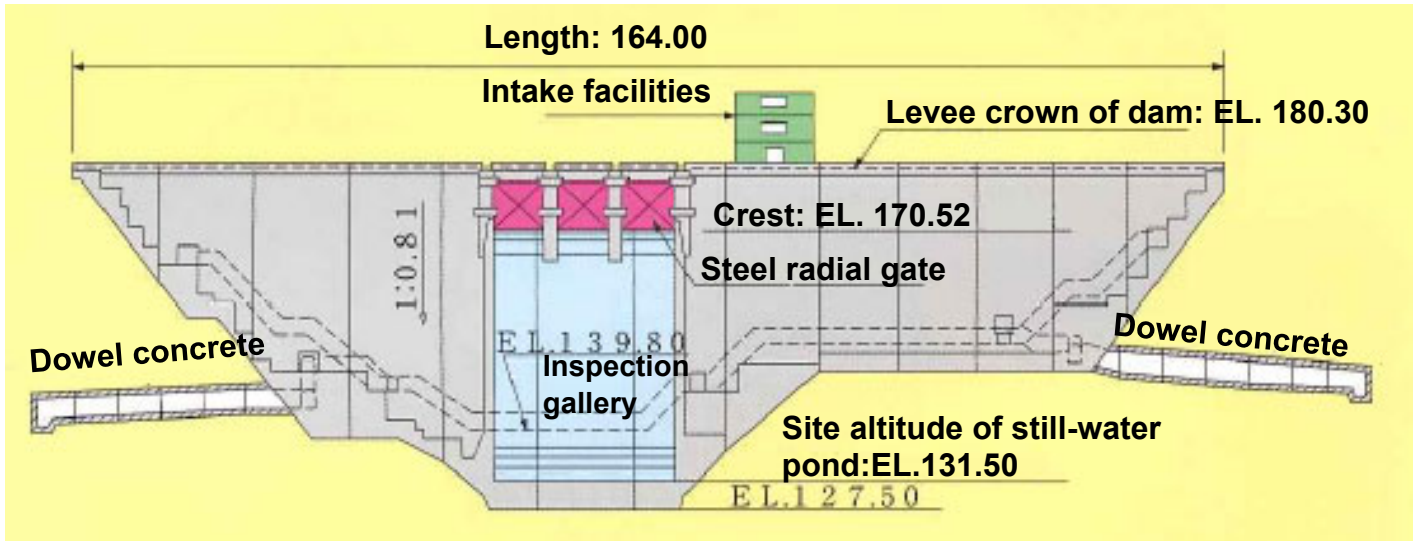


Okawase Dam

Plane view



Front view (downstream side)



Cross-sectional view

