

Kamogawa Dam



Kamogawa Dam Management Branch Office
Kamogawa/Okawase Dam Management Station
Kinki Regional Agricultural Administration Office
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Dam overview

1. Comprehensive management project

This project targets the Tojogawa District, the adjacent Kakogawa West District, and the Toban Irrigation District, all of which are state-run districts that together make up a group of core water supply facilities (five dams and three water channels) in the Kakogawa river system. The project aims to optimize water management at these core facilities and effectively utilize their water resources by putting them under centralized and direct control of the national government.

2. History of Kamogawa Dam

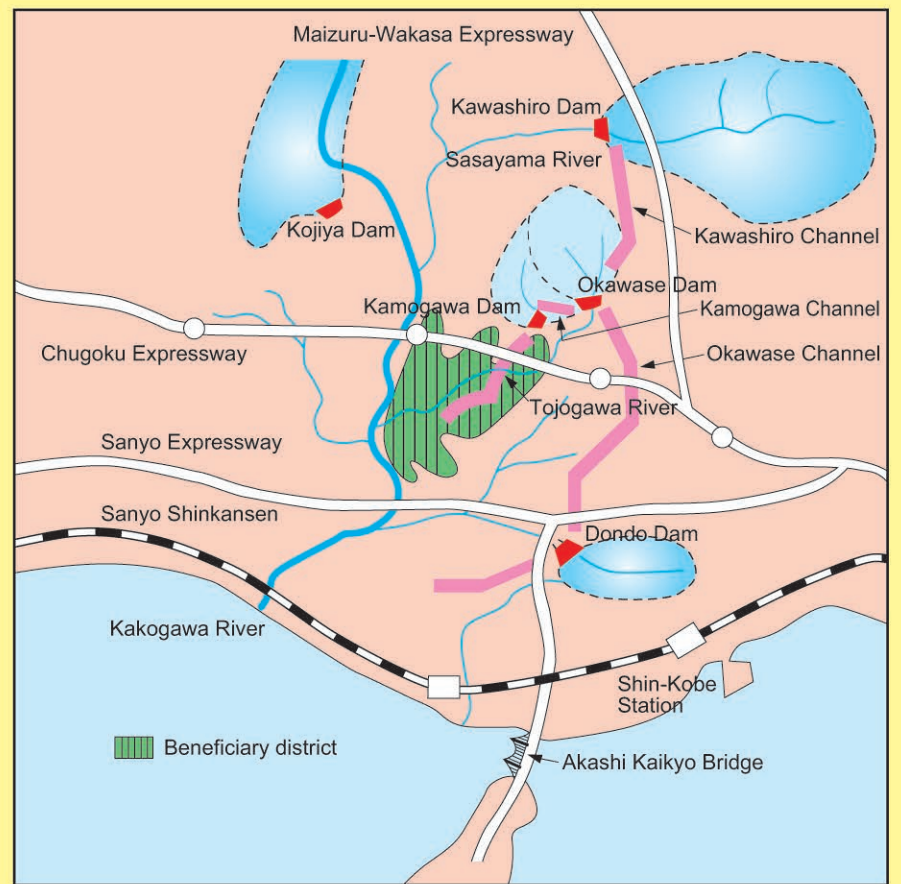
a) Project history

The cities of Miki, Ono, and Kato lie along the banks of Tojogawa River, a tributary of the Kakogawa. The region that includes these three cities falls within the Seto Inland Sea climate zone and has some of the least rainfall in Japan. Droughts are so common here that residents have long relied on countless reservoirs to supplement their water supply. Accordingly, there were desperate calls for the construction of a dam in the region as a way to ensure a steady supply of water for crops during times of drought.

Following the Second World War, Japan made increased food production its top priority in an effort to rebuild the nation. In 1947, the National Tojogawa Irrigation and Water Supply Project was swiftly launched as one of the first projects during this era, resulting in several long-awaited facilities being constructed in the region—among them Kamogawa Dam and Kamogawa Channel.

As time went on, however, aging facilities and changing natural conditions began hindering water management, causing the government to launch the Nationally Developed Land Improvement Facility Project in FY1987. Repair work was carried out on the dams and waterways, bringing them to their current state.

August 1924	Great Toban Drought (Kobe: Annual rainfall 933 mm, irrigation period 161 mm)
March 1938	Toban Regional Resource Development Promotional Alliance formed
March 1939	National Diet adopts Toban regional resource development proposition
1941	Toban development suspended due to escalating conflict
August 1945	World War II ends
July 1947	National Tojogawa Irrigation and Water Supply Project launched
July 1947	Construction begins on Kamogawa Dam
October 1951	Kamogawa Dam completed (passes inspection)
March 1965	Project terminated
April 1987	Nationally Developed Land Improvement Facility Project launched
March 1997	Project terminated



Notes

b) Management history

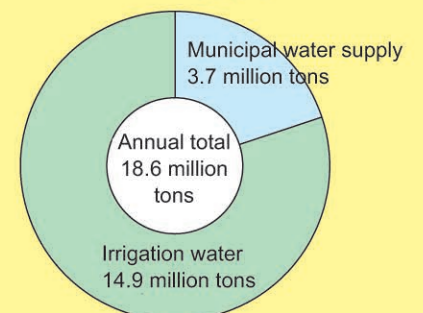
Management of the facilities constructed under the National Tojogawa Irrigation and Water Supply Project was outsourced to the Hyogo Prefecture Toban Land Improvement District immediately following the termination of the project in FY1965. Subsequent shifts in the social and economic landscape made it possible to redistribute a portion of the agricultural irrigation water to the municipal water supply, and the cities of Ono and Kato (formerly the towns of Yashiro and Takino) began receiving water in 1983. Facilities related to this municipal water supply fell under joint management as the common property of these cities and towns.

The Kakogawa River System Area Irrigation and Water Supply Facility Management Project was then launched in FY1990. Of the state-run development facilities in the Tojogawa District, the project placed Kamogawa Dam and Kamogawa Channel under the direct control of the national government.

3. Beneficiary area

Category	Land improvement (ha)	Municipal water supply (m3/day)
City		
Miki	17	-
Ono	1,708	7,000
Kato	1,458	5,500
Total	3,183	12,500

4. Water supply plan



5. Key crops

Paddy rice (famous growing region for Yamada Nishiki Nadagogo brewer's rice)



Abundant water irrigating the Harima Plateau



Ripe, hanging golden ears of Yamada Nishiki rice

Opaque white rice cores used for brewing

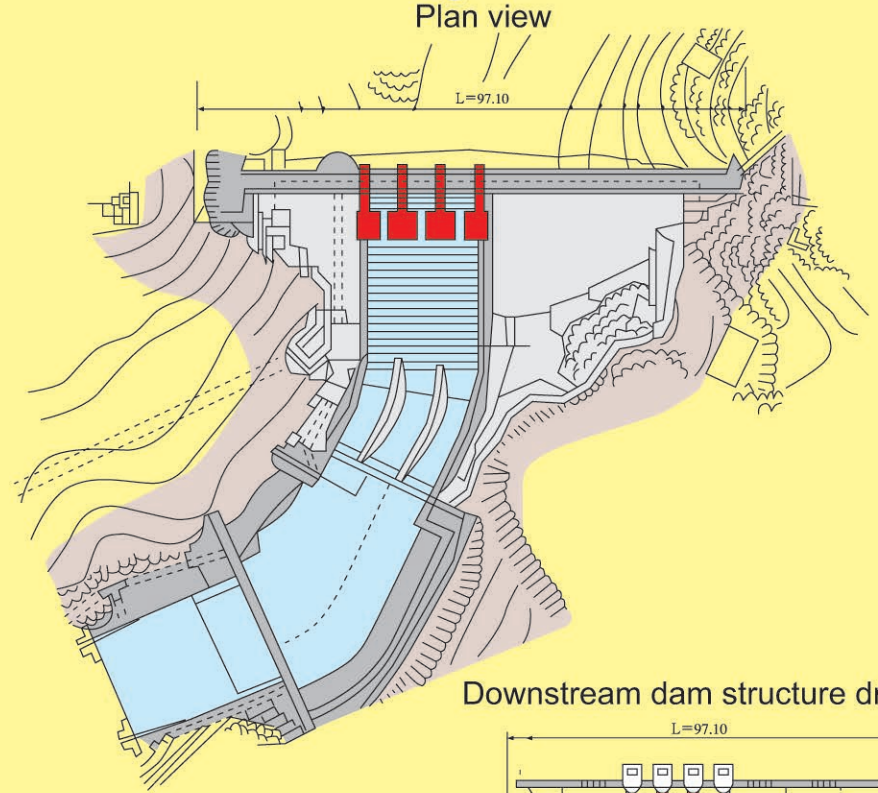
Project-run operations and maintenance facilities

1. Dam

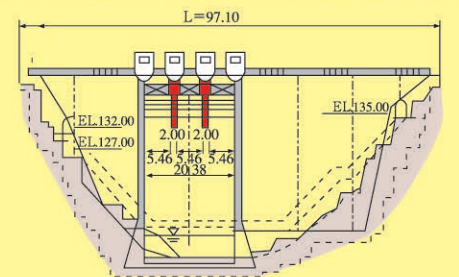
Name of dam	Kamogawa Dam	
Location	Nishiyama-Kurodani, Kato-shi, Hyogo Prefecture	
River	Kamogawa, Tojogawa tributary in the Kakogawa river system	
Basin	Direct	19.2km ²
	Indirect	60.6km ²
Dam structure	Model	Concrete gravity dam
	Height	42.4m
	Length	97.1m
	Volume	48,434m ³
Spillway	Model	Steel radial gate
	Structure	Three 4.57-m (h) x 5.46-m (b) gates
	Design discharge	298.7m ³ /s

Reservoir	Total storage capacity	8,675千m ³
	Useable water capacity	8,380千m ³
	Design high water level	EL 141.77m
	Design flood level	EL 142.77m
	Maximum water surface area	54.3ha
Discharge structures	Model	Cone sleeve valve
	Structure	One 850-φ gate and one 300-φ gates
Intake structures	Model	Stainless steel sliding gate
	Structure	One 750-φ gate and eight 550-φ gates
Control facility	Two telemetry observation stations and one alarm station	

Kamogawa Dam



Downstream dam structure drawing

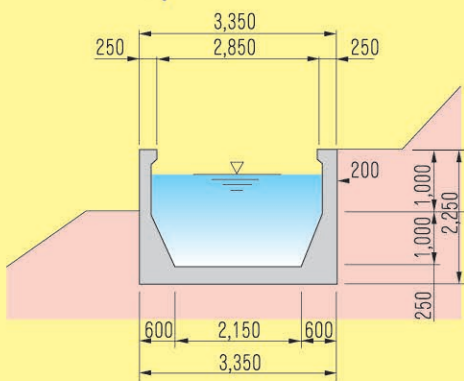


2. Channel

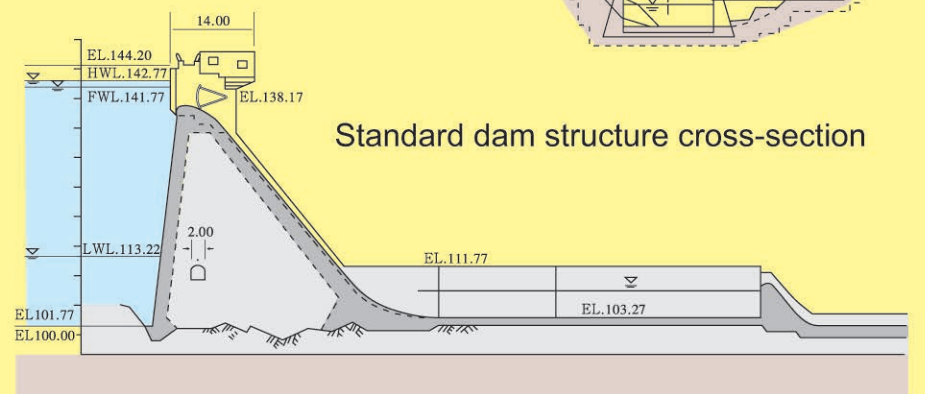
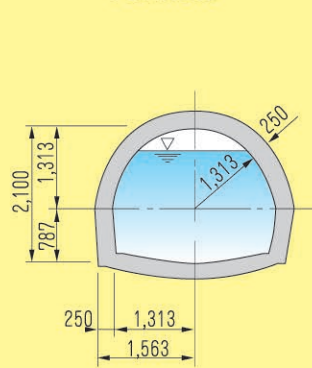
Name of channel	Kamogawa Channel	
Length	4.8km (open channels 2.0 km, tunnels 2.8 km)	
Maximum flow volume	4.8m ³ /s	

Typical cross-sections: Kamogawa Channel

Open channels



Tunnels



Standard dam structure cross-section

Facility management (facility capacity)

1. Dam safety management

The safety of the dam is regularly confirmed through the analysis of dam structure displacement, leakage volume, uplift pressure, and other data. During periods of flooding due to heavy rains and the like, safety checks involve alerting downstream residents and those using the river, while discharge operations are carried out to create conditions similar to what they would be if the dam were not there.

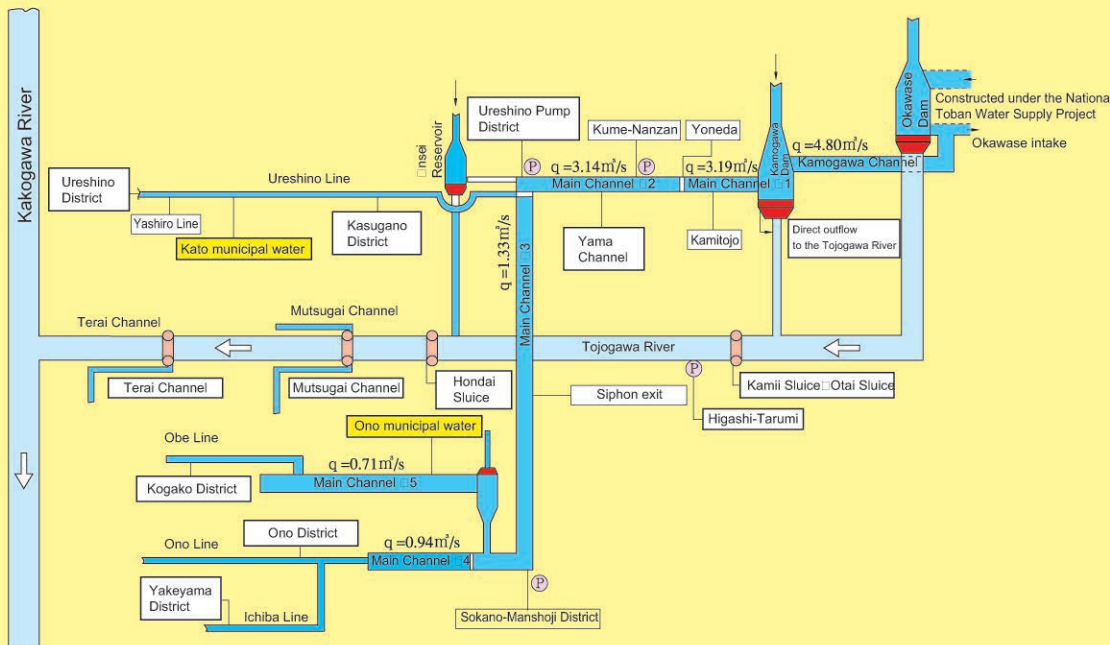
2. Water supply management

Operators work to secure the required water supply, carrying out optimum water operations with adjustments that ensure a reasonable amount of water storage and work with beneficiaries' water utilization plans.

3. Facility management and operations

Dam operators carry out regular maintenance inspections, servicing, and the like to ensure that the dam will continue functioning properly for decades to come.

Water supply diagram (facility capacity)



National Tojogawa Irrigation and Water Supply Project



Treating bedrock (looking downstream)



Pouring concrete for the main dam structure



Kamogawa Channel (open waterway area)



Kamogawa Channel terminus emptying into Kamogawa Dam

Nationally Developed Land Improvement Facility Project



Dismantling the old concrete crown of the main dam structure



Rebuilding the outflow structure