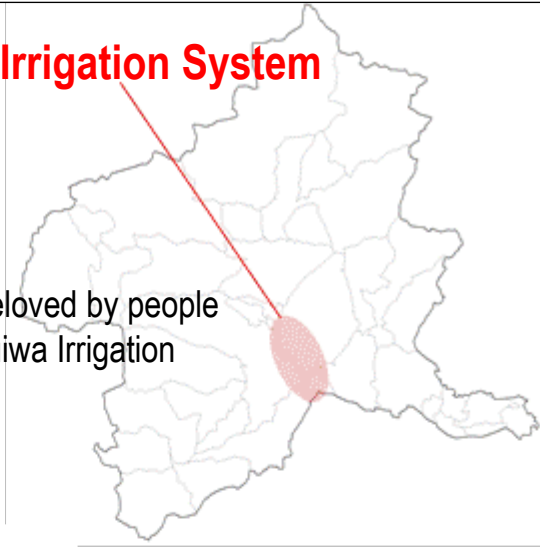


Tenguiwa Irrigation System

[Gunma Prefecture /
Maebashi City, etc.]

Tenguiwa Irrigation System

The lord still beloved by people
and the "Tenguiwa Irrigation
System"



- The lord of the time, Akimoto Nagatomo, planned to open an irrigation canal to reconstruct what was a devastated territory and develop new paddy fields. To draw water to agricultural land in territory higher than the Tonegawa River, an intake had to be set up outside the territory with the consent of the lord of the upstream region. Lord Akimoto promised to exempt farmers from paying annual land tax for three years, spent such period working on the difficult construction with them and completed the Tenguiwa irrigation canal in 1604.
- Subsequently, at the request of the Shogunate Regional Governor in the area downstream of the canal, the expansion of the Tenguiwa intake and the extension of the canal (Daikan moat) were approved, and a total stretch of 23 km of irrigation canal was completed in 1610.
- For the Tenguiwa irrigation system, Lord Akimoto introduced a groyne work called "Etchu-waku", which improved on the conventional construction method and effectively helped prevent damage from repeated flooding until 1906 when it was removed by repair work.
- Even now, some four centuries later, a festival to honor Lord Akimoto is still hugely popular, with all paying tribute.



"Tenguiwa irrigation canal" excavated by Lord Akimoto Nagatomo



The "sluice gate" and "spillway gate" renovated in the irrigation drainage project in 1998



The "etchu-waku" groyne construction method been used near the Tenguiwa intake since times of yore



Lord Akimoto History Festival at Soja Shrine in Maebashi

Bizenkyo Irrigation System

[Saitama Prefecture /
Honjo City, etc.]

- To boost agricultural productivity in areas that were forced to grow unstable rice depending on rainwater and spring water, the main canal was constructed by the government official, Ina Bizennokami Tadatsugu, on the orders of the Shogunate. The excavation of an irrigation canal around 23 km long was completed within just one year in 1604.
- The irrigation canal comes with a tamei-type weir that stores running water while using part of the river channel and utilizes irrigation technology called "Kanto (Ina)" style, such as distributing water to the main canal and branch irrigation canals.
- Even now, there are many non-timbered sections of the canal that retain their original shape as of the time of excavation, making this irrigation canal a valuable visual remnant of bygone days. In modern times, it has established a presence as a valuable local resource such as the lantern festival utilizing hydrophilic revetment constructed using natural stones and the history of the irrigation canal as introduced in the supplementary reader of the elementary school.



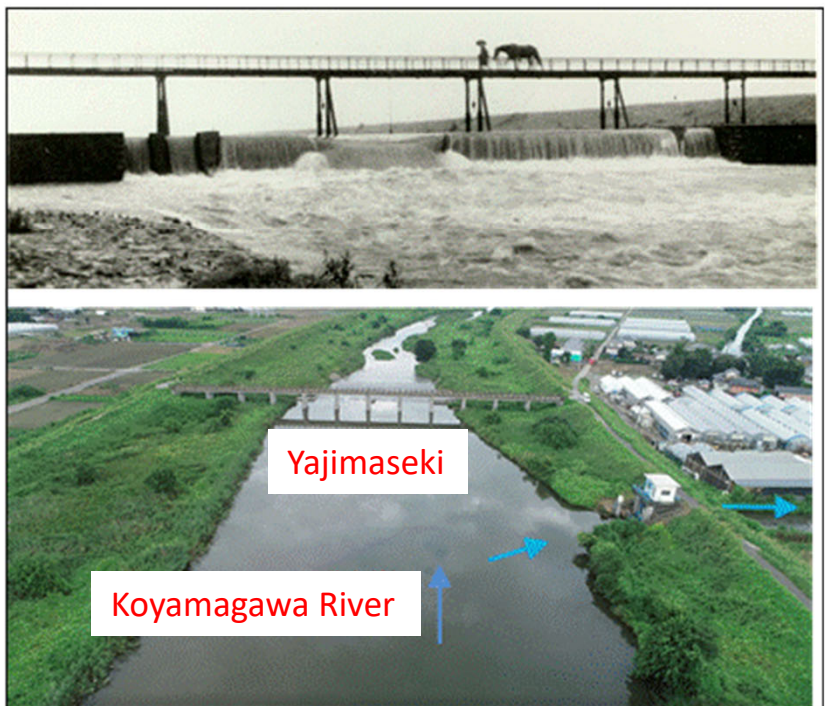
Canal section excavated without timbering that conveys the vestiges of excavation to date

Bizenkyo Irrigation System

The oldest agricultural irrigation canal in Saitama Prefecture, which dates back 400 years and retains remnants of bygone days



Bizenbori bird's-eye view (1831)

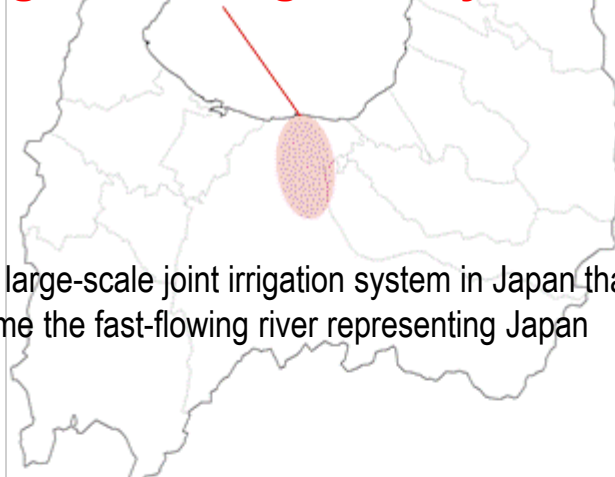


Tamei-Style Yajima Weir (above: in 1951, below: in 2019)

Jyosai-gokuchi Irrigation System

[Toyama Prefecture / Toyama City]

Jyosai-gokuchi Irrigation System



The oldest large-scale joint irrigation system in Japan that overcame the fast-flowing river representing Japan

■ The Joganji River, which is one of the fastest flowing in the world, has many intakes. On the left bank side in particular, where the flow is fast, enormous agricultural damage is caused during flooding, due to an overflow following the collapse of the intake or deposition of soil and sand.

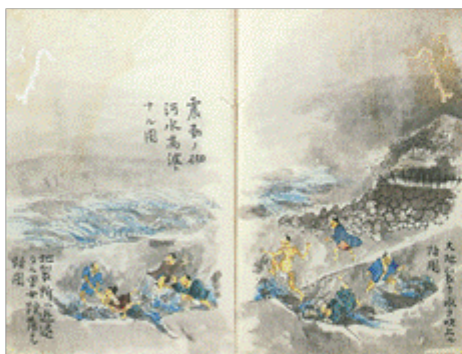
■ To prevent repeated flooding, the Dutch engineer Johannis de Rijke advocated "Gokuchi" (unification of irrigation canals), which involved abolishing the 12 irrigation intakes on the left bank and installing an integrated intake at a safe upstream location in line with the flood control plan.

■ The beneficiary area at the time reached about 5,000 ha and this was the first large-scale Gokuchi project of its kind in Japan, but by utilizing the accumulated records of disasters and more than 10,000 workers, the big project, including a 12km main canal, two tunnels and a sand basin, was completed in 1893 within just two years.

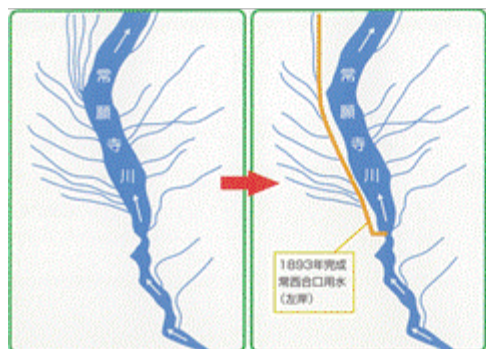
■ Nowadays, the system is used not only for agricultural water but also to supply tap and industrial water, and hydro power generation, helping the region develop. The sand drainage gate, which is constructed of red brick and known as "Shinjo's Akamon," and the promenade along the irrigation canal, which was constructed later, also provide local residents with a relaxing waterside space.



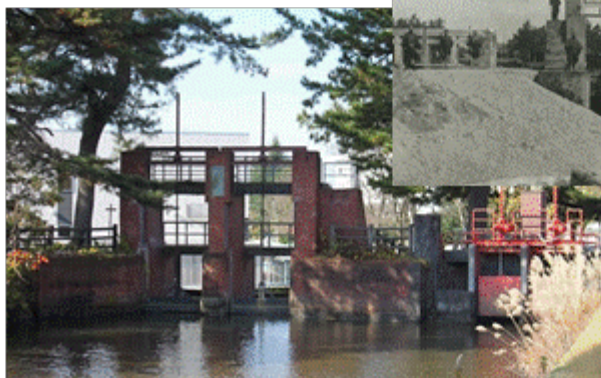
Current Jyosai-gokuchi irrigation canal



Flood damage experience shown in the flood control record (in 1858)



Contrast before and after the Gokuchi project



Sand drainage gate at the time of construction (upper right) and current (lower left)