

Dutch Engineer Johannis de Rijke

An Engineer Hired by the Japanese Government during the Meiji Era

At the beginning of the Meiji era, the Department of Public Works (the present-day Ministry of Construction) of the Japanese Government invited a Dutch engineering team comprising four engineering workers and six engineers - Messrs. Escher, Mulder, Lindo, Thissen, and de Rijke under the direction of Mr. Doorn - to introduce advanced techniques for the development of national land.

Mr. Johannis de Rijke came to Japan on September 25, 1873. During his 30-year stay here until he returned to his homeland in 1903, Mr. de Rijke instructed Japanese engineers in erosion and torrent control as well as river and harbor projects.

Mr. de Rijke's History and Personality

Mr. de Rijke was born on December 5, 1842, the son of a coast and harbor works builder in Colijnsplaat, Zeeland, in the Netherlands. When he was young, he learned public works by helping his father with his work. He was eventually hired by the Canal Union in Amsterdam, and was appointed as chief construction supervisor at the Oranje Lock in Schellingwoude.

Of the six Dutch engineers, Mr. Doorn and the four other engineers were elite engineers who studied at engineering college. Mr. de Rijke, on the other hand, was a construction supervisor who worked his way up from the position of site foreman. He likely achieved this because he was sincere in everything he did, preferred plain clothing that suited his character, and worked hard. These were the foundation of his work-oriented policy and the earnest posture he always demonstrated while in Japan.

Mr. de Rijke's Achievements in Japan

His first project in Japan was hillside erosion control in the upper reaches of the Yodo River. At the same time, he surveyed the tributaries and the mountainous district of the upper reaches at the Yoro Mountain range in the Kiso River basin in order to give direction to the hillside erosion control project. Later, he prepared improvement plans for the Yodo River, the Kiso-

Sansen, and the Shonai, Yoshino, and Tama Rivers. In addition, he undertook harbor planning for the ports of Nagasaki, Hakata, Ujina (Hiroshima), Tokyo and Yokohama.

It was Mr. de Rijke who prepared the Meiji Improvement Plan (improvement of the lower reaches of the Kiso River) and laid the groundwork for the Kiso-Sansen today.

Mr. de Rijke remained in Japan longer than the other members of the Netherlands mission. He became deeply involved with hydraulic and public works planning in Japan. Many of his plans were implemented in Japanese rivers and harbors later, during the Meiji and the Taisho eras.

For his distinguished accomplishments, he was awarded the Second Class Order of the Sacred Treasure by the Japanese Government in 1903, and the Order of the Oranje-Nassau and the Order of the Dutch Lion by the Dutch Government.

His achievements in Japanese public works techniques and projects were no less than those of Mr. Doorn, the chief engineer, who was decorated with the Fourth Class Order of the Rising Sun.

Mr. de Rijke, through his distinguished contributions, is recognized as the father of the riparian work of the Kiso-Sansen.

※the Kiso, the Nagara and the Ibi Rivers



Mr. de Rijke (left) and Mr. Escher (right)
(Photo was donated to the Yodo River Museum by Mr. G. A. Escher, grandson of Mr. Escher, during his visit to Japan in 1981.)

The Kiso-Sansen and Johannis de Rijke

Riparian Works before the Meiji Era

Since ancient times, numerous efforts have been made to control flooding along the Kiso-Sansen that span the vast and fertile Nobi Plain.

In the past, these three rivers resembled a huge net spreading over the plain, and natural levees were formed on which villages sprang up. People living along the rivers cultivated the lowland as paddy fields. About 1,000 years ago, flood-resistant houses known as mizuya were built. And roughly 660 years ago, ring levees known as waju were constructed surrounding each village as a means of flood protection.

In 1610, during the Edo era, Yoshinao Tokugawa, the feudal lord of the Owari Clan, constructed the levee called okakoi tei on the left bank of the Kiso River. This aggravated disasters at the confluence of the three rivers. The Tokugawa Shogunate ordered the Satsuma Clan to undertake work to separate the three rivers according to a plan provided by Tamenaga Izawayasoubei in 1753 (the third year of the Houreki period). This was intended to weaken this powerful clan.

This construction work was called "The Flood Control Work in Houreki." It cost 400,000 ryo and resulted in 51 samurai committing hara-kiri. During the Meiji era, the Japanese government invited the Dutch engineering team to devise a plan for full-scale separation of the three rivers.

The Meiji Improvement Plan

Mr. de Rijke undertook on-site surveys in the lower reaches of the Kiso-Sansen from February through March 1878. He summarized his analysis of the state of the Kiso-Sansen and his ideas for river improvement under the title General Statement on the Lower Reaches of the Kiso River (or Outline of the Kiso River) as part of his presentation to the Minister of the Interior.

In the statement, he emphasized that the cause of the repeated flooding was the accumulation of sediment from the Kiso-Sansen in the river channel. This raised the river bed and prevented the sluices arranged at the levee from discharging river water. To improve the situation, he suggested that a separation levee be built between the Kiso and Nagara rivers to ensure complete

division. He suggested the arrangement of a new river channel along the Tatsuta Polder to ensure smooth separation. He also recommended that plants and trees be planted and erosion levees constructed along small tributaries in the mountains to stop sediment flowing into the Kiso River. The Meiji Improvement Plan was prepared in 1886.

Major Improvements in the Plan

1. The Kiso-Sansen shall be completely separated.
2. The Saya River shall be eliminated.
3. The New Kiso River shall be arranged along the Tatsuta Polder.
4. The branch rivers of the Nagara, the Ogure, the Nakamura and the Nakasu Rivers shall be shut off.
5. The New Nagara River shall be arranged along the Takasu Polder.
6. The Aburajima weir shall be completely shut off.
7. A lock shall be provided at Sendohira.
8. Training dikes shall be constructed along the estuaries of the Kiso and the Nagara Rivers.
9. The confluence of the Suimon, the Makita and the Tsuya rivers with the Ibi River shall be lowered.

Effects of the Meiji Improvements

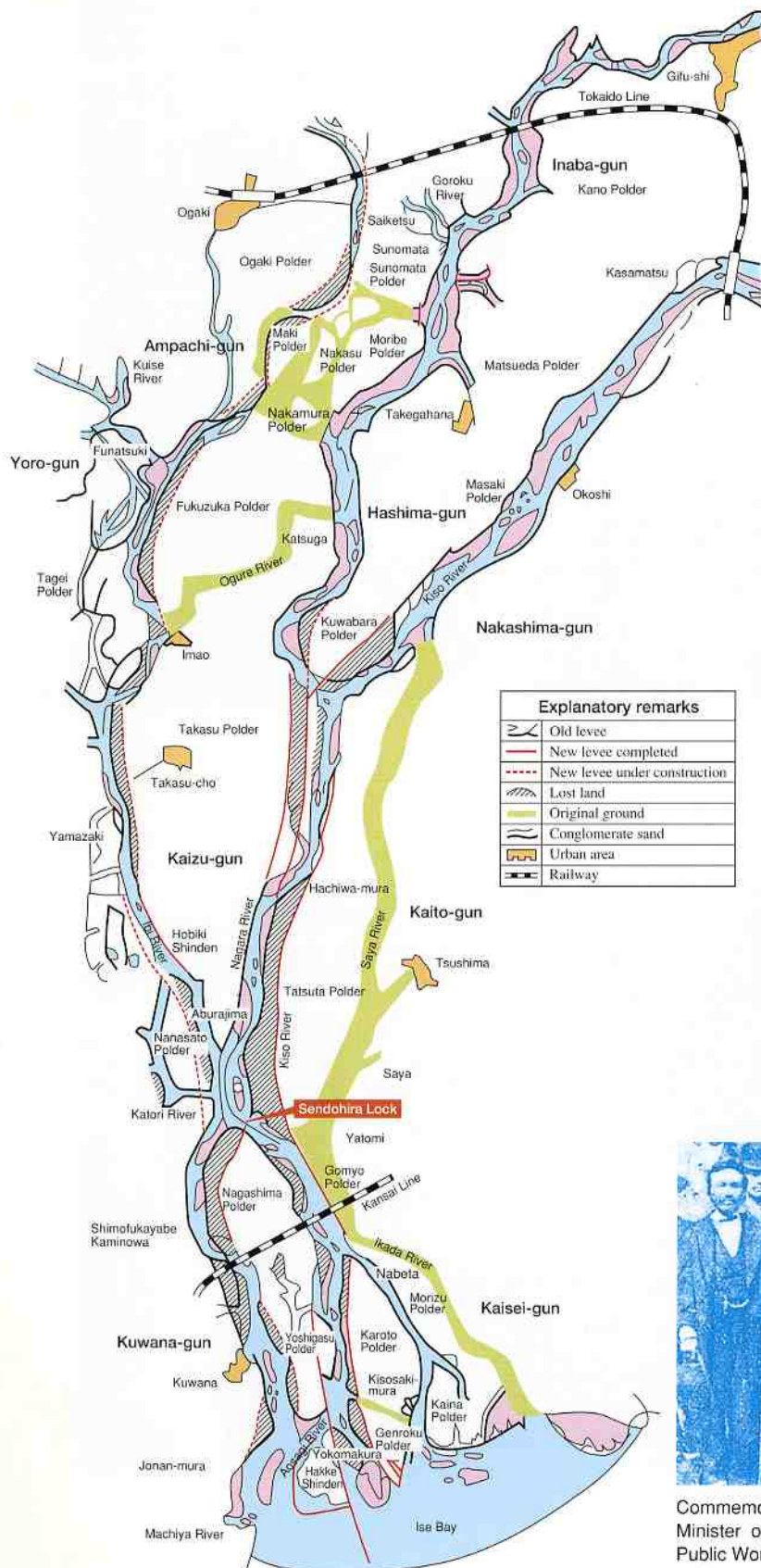
The Meiji Improvements were implemented in four stages over 24 years, from 1887 through 1912, and cost ¥9,740,000.

The greatest achievement of the Meiji Improvements was the reduction of flooding, which resulted in improvement of agriculture in the basins of the Kiso-Sansen.

The second most important achievement was the increase in arable land. As of 1916, the river terraces and levee terraces turned into arable land exceeded the lost land by 139 chobu (340 acres) and 107 chobu (262 acres).

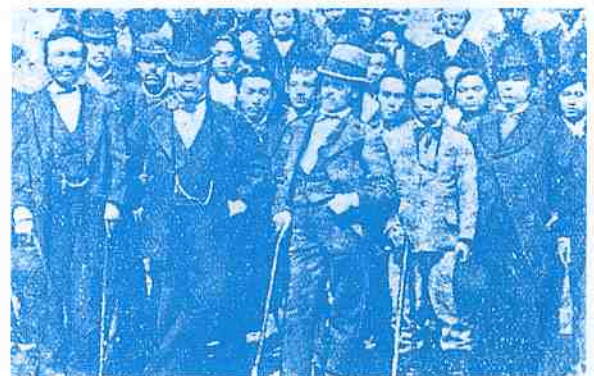
The third achievement was the milestone of promoting river improvements throughout the nation. The success of the improvements of the Kiso-Sansen as the first modern flood control project in the Meiji era promoted river improvements throughout Japan.

Planning Drawings for the Meiji Improvements



Statue of Johannis de Rijke

This statue was built thanks to contributions from many people as part of the Centennial Project in Sendohira Kasen Park (Tatsutamura, Ama-gun, Aichi), a place closely connected with Johannis de Rijke.



Commemorative photo of Mr. de Rijke with Lord Matsukata, Minister of the Interior, and Mr. Ishii, Director-General of the Public Works Bureau. The photo was taken at the erosion control project on the Fudo River in April 1880.



Aerial View of the Kiso-Sansen



Canal and Lock Gate near Rotterdam, the Netherlands
(Photo provided by the Dutch Embassy)

Personal Chronology of Johannis de Rijke

Date	Event
December 5, 1842	· Born in Colijnsplaat, Zeeland, the Netherlands.
September 22, 1873	· Arrives in Nagasaki with Escher and Arnst.
September 25, 1873	· Arrives in Osaka with Escher and Arnst.
October 14,	· Hired by the Public Works Department as a 4th grade engineer with a monthly salary of ¥300. Lives in Osaka while working on rivers and harbors in southwestern Japan.
October 21, 1874	· Installs trial fascine mattresses on the coast of Shokijima, Amijima, Osaka-shi.
June 1, 1875	· Constructs the first full-scale Kellep groin in the Yodo River off Udono-mura, Shimakami-gun, Osaka Prefecture (the present-day Udono, Takatsuki).
March 25, 1875	· Implements the first Dutch-style erosion and torrent project on the Fudo River in Kita-mura, Soraku-gun, Kyoto Prefecture. Completed on June 25.
February 23, 1878	· Explores the lower reaches of the Kiso River.
March 6	
April 6	· Submits the General Statement on the Lower Reaches of the Kiso River.
November 27, 1879	· Submits a report titled Forests along the Kiso River North of Gifu.
April .., 1880	· Is the subject of a commemorative photo of along with Lord Matsukata, Minister of the Interior, and Mr. Ishii, Director-General of the Public Works Bureau, who inspected the erosion and torrent project on the Fudo River.
July 22, 1880	· Mr. Doorn returns to the Netherlands. Mr. de Rijke begins directing river and harbor projects throughout the nation at the Public Works Bureau, Ministry of the Interior in Tokyo.
July 31	
August 11	· Explores the upper reaches of the Kiso River and climbs Mt. Komagatake.
August 23, 1881	· Submits the Construction Costs of the Erosion and Torrent Project in the Kiso River Basin.
October 6, 1884	· Is commissioned to plan the improvement project for the Kiso River.
November ..	· Explores the Kiso River.
November .., 1885	· Completes the plan to improve the Kiso River.
....., 1887	· Begins the Meiji Improvement Project (improvements to the lower reaches of the Kiso River).
January 15, 1889	· Awarded the Fourth Class Order of the Sacred Treasure.
January 1, 1891	· Regarded as an appointed imperial officer.
May 19, 1892	· Awarded the Third Class Order of the Sacred Treasure.
April 22, 1900	· Holds a ceremony to commemorate the success of separating the Kiso, Ibi and Nagara rivers.
....., 1902	· Involved in a project to improve shipping routes along the Whangpoo River in Shanghai.
June 17, 1903	· Awarded the Second Class Order of the Sacred Treasure, and returns to the Netherlands.
....., 1910	· Returns to the Netherlands from China.
....., 1912	· The Meiji Improvement Project is completed.
January 20, 1913	· Dies in Amsterdam.

Let's preserve our local rivers
for future generations.



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