

Maintenance and Utilization of a Sabo Facility Designated as an Important Cultural Property - The Shiraiwa Sabo Dam

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INTRODUCTION

Sabo works were begun in the Tateyama region by Toyama Prefecture in 1906. At that time, the construction of structures such as Sabo dams was very difficult and expensive. Consequently, Sabo works were handed to the direct control of the Ministry of Home Affairs (now the Ministry of Land, Infrastructure, and Transport) in 1926. In the 90 years since then, many advances have been made in Sabo construction. The Shiraiwa Sabo Dam (**Fig.1**) was the first Sabo facility built by the Ministry; it is an important Sabo facility that prevents sediment discharge from the Tateyama Caldera. The Shiraiwa Sabo Dam continues to function as an important disaster-prevention measure. In addition, the historical and cultural value of the Shiraiwa Sabo Dam was recognized by the Agency for Cultural Affairs in June 2009, when it became the first Sabo dam in Japan to be designated an Important Cultural Property.

This paper reports on the maintenance and management of the Shiraiwa Sabo Dam and the goal of combining its original disaster-prevention function with the preservation of its value as a cultural property.

THE SHIRAIWA SABO DAM: AN IMPORTANT CULTURAL PROPERTY

The Shiraiwa Sabo Dam is a Sabo facility that was designed to stabilize the bed of the Joganji River in its source area, as well as the adjacent mountainside, to prevent sediment-related disasters in the Joganji River Basin. Based on a plan by Dr. Masao Akagi, a Ministry of Home Affairs engineer, construction of the dam started in October 1929, and it was completed in December 1949. The Shiraiwa Sabo Dam continues to protect the Toyama region from sediment-related disasters as the main Sabo facility on the Joganji River, one of the steepest rivers in Japan (The average bed slope is about 1/30). The Shiraiwa Sabo Dam is a complex Sabo facility that makes full use of large machinery, and demonstrates the technical achievements of a modern Sabo dam.



Fig. 1 The Shiraiwa Sabo Dam

In Japan, Sabo facilities that are more than 50 years old and evaluated as having historical and cultural value are classified as “historical Sabo facilities”.

Among these historical Sabo facilities, the Shiraiwa Sabo Dam has been evaluated as “particularly technically superior” and “very historical”. Since it meets these specification criteria, the Shiraiwa Sabo Dam was designated an Important Cultural Property. The Shiraiwa Sabo Dam includes the main dam, the retention frame, and several counter dams, and the facilities shown in **Fig. 2** have been designated an Important Cultural Property.

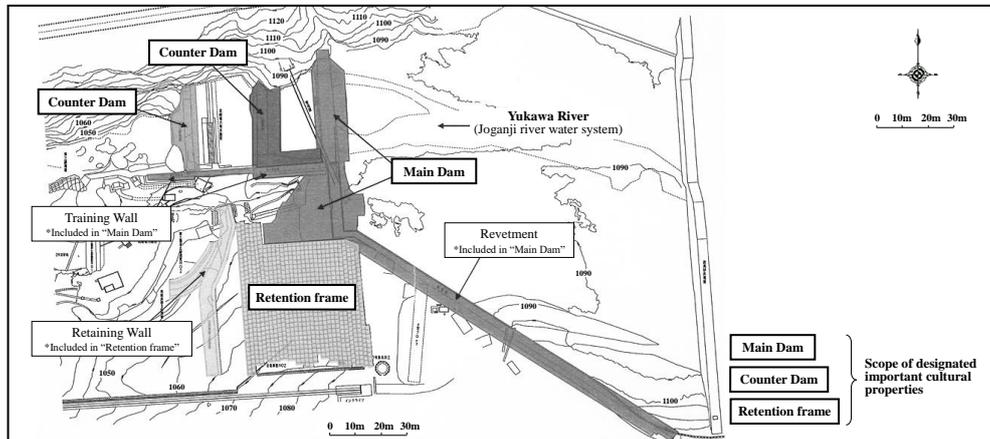


Fig. 2 Sabo facilities designated as an Important Cultural Property

EFFORTS TO MAINTAIN AND MANAGE THE SHIRAIWA SABO DAM

In maintaining and managing historic Sabo facilities, maintenance of their disaster-prevention function must be the main priority. Facility managers are also required to repair, maintain, and utilize facilities while taking into consideration their cultural value.

The Shiraiwa Sabo Dam is a particularly valuable cultural property that requires very careful maintenance to preserve its value. To this end, the Tateyama Sabo Office developed a protection policy in accordance with the “Guidelines for the Preservation and Utilization of Important Cultural Properties (Structures) Preserved by the Agency for Cultural Affairs”.

In consultation with the Agency for Cultural Affairs, the Tateyama Sabo Office developed the “Important Cultural Heritage Shiraiwa Sabo Dam Preservation Management Plan” in March 2014.

The Shiraiwa Sabo Dam is also used as a representative observation facility to explain erosion-control projects in Tateyama and as a teaching site to educate the public about Sabo works and disaster prevention.

CONCLUSION

Historical Sabo facilities were constructed using the materials, designs, and construction methods of the time. These ingenious Sabo facilities were designed to protect people from sediment-related disasters at a time when there were no modern materials or mechanized equipment. These are valuable treasures that must be preserved.

I hope that this report will help guide the maintenance and management of Important Cultural Property Sabo facilities other than the Shiraiwa Sabo Dam.

Keywords: Historic Sabo facilities, Important Cultural Property, Maintenance of Sabo facilities, Maintenance of the disaster-prevention function and cultural value