Sado Island Gold Mines

Sado koban,
large-denomination
oval gold coins

“Doyu-no-Warito,” a V-shaped crack in a large rock formation, has become a symbol of Sado Island. Created as a result of manual digging for gold.

worthy of World Heritage status?

Sado Island Gold Mines in the Mining history of the humanity

Ancient Era

15~16 century

Post-16th century

Manual Operation

Las Médulas(Spain)

Roșia Montană (Romania)

Age of Discovery:15th and 16th centuries

Mechanised Operation

Banská Štiavnica(Slovakia)

Potosí (Bolivia)
UNESCO HP ©A.Sandoval-Ruiz

Ouro Preto (Brazil)
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■The history of human mining can be divided into two major eras: pre-mechanisation, when mining was carried out by manual operations, and post-mechanisation, which began in Europe after the Age of Discovery in the 15th and 16th centuries.

■The Tokugawa Shogunate (1603-1867) strictly limited technological exchange with other countries under a policy of national seclusion. As a result, an unmechanised system of gold production developed that was based solely on traditional techniques.

Manual Operation

©Nishiyama Hoichi

Sado Island Gold Mines（Japan）

■*Sado Island Gold Mines* represents the final advanced development stage of the unmechanised gold production system in history.

What's special about *Sado Island Gold Mines?*

■*Sado Island Gold Mines* is the only gold mining site in the world where the following features can be found in one place:

1) gold mine;

2) mining by manual operation only until the middle of the 19th century;

3) not only mining zone but also settlement zone remains which illustrates its social systems.

■There are evidence of both **the technical systems**, such as mining and drainage tunnels, and **the social systems**, such as mining villages and the magistrate's office site, have been preserved in excellent condition.

Why is *Sado Island Gold Mines*

Overview of *Sado island Gold Mines*

Sado Island is located 40 kilometers off the coast of Niigata Prefecture in the Sea of Japan. With a land area of approximately 855 square kilometers, it is a little larger than the island of Singapore. Sado Island possessed remarkable concentrations of rich gold deposits.

Sado Island was long the center of Japanese gold production. The property comprises two areas of different mine types: the Nishimikawa placer gold mine and the Aikawa-Tsurushi hard-rock gold-silver lode mines. **Many well-preserved mines and mining villages still exist on the island today.**

Sado Island Gold Mines **operated without the use of mechanical mining equipment:** gold production was carried out entirely by hand until the middle of the 19th century. **Despite this limitation, the island led the world in the volume and quality of its gold production during the 17th century,** thanks to the unique social and technical systems that evolved around its mining industry.

How *Sado Island Gold Mines* meets UNESCO's criteria

Sado Island Gold Mines

Social System

Long-term, strategic mining management by the Tokugawa Shogunate

Culture based on mining created by the local community

Technical System

The world' s largest amount and highest purity, exceeding that of mechanised mines

Advanced excavating and surveying or refining technologies

Aligned

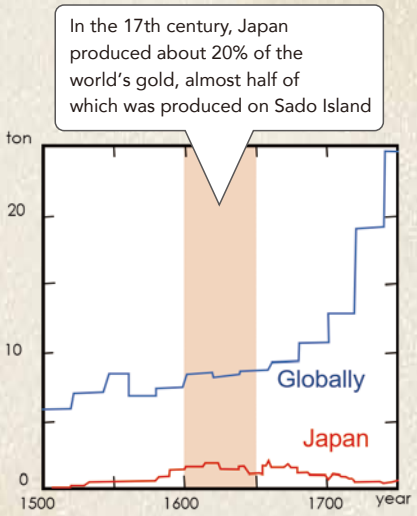
UNESCO World Heritage Criteria

(iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared

(iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history

The influences of *Sado Island Gold Mines* to the world

■In the 17th century, Sado Island became the leading gold producer in the world.
■Sado Island gold was formed into koban, large-denomination oval gold coins, which circulated in Japan and around the world, leading to global recognition for Sado as a gold mine.



Changes in global gold production


Sado koban

Sado Island gold: a foundation for Japanese art and culture

■Large amounts of Japanese gold flowed into Asia beginning in ancient times. In the early 14th century, the Venetian merchant and traveler Marco Polo introduced lavish gold decorations in Japan to Europeans. His book, *The Travels of Marco Polo*, created a reputation for Japan as a "land of gold" .

■Gold produced on Sado Island helped drive a shift in Japanese artistic styles during the Edo period (1603-1867). **Extravagant gold decoration came to be used on everything from shrine gates to traditional wall paintings.**


Toshogu Shrine (1636)


Nijo-jo Castle (1626)

Representative example of Japan's sophisticated manual industry

Sir Rutherford Alcock's description of Japan's technically sophisticated traditional manual industry, in *The Capital of the Tycoon* (1863)

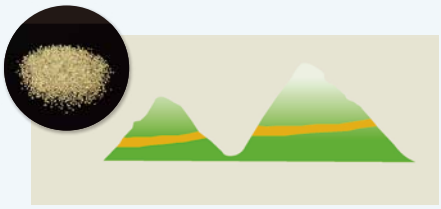
"I should say that theirs was a material civilisation of a high order, in which all the industrial arts were brought to as great perfection as could well be attainable without the aid of steam-power and machinery."

Sir Rutherford Alcock,
The Capital of the Tycoon, a Narrative of a Three Years' Residence in Japan,Volume 2
p.301, first published 1863
*British Minister to Japan at the end of the Edo period

Socio-technical System for Gold Pro

Long-term strategic mining management by the Tokugawa Shogunate and settlement formation

Social System (Criterion iii)

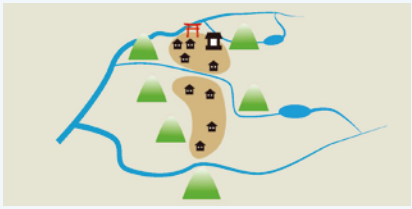


Nishimikawa Placer Gold Mine：
Placer gold deposit

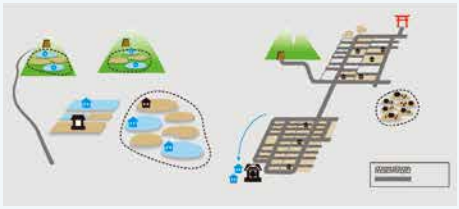
Aikawa-Tsurushi Gold and Silver Mine：
Lode deposits

■The Tokugawa Shogunate placed Sado Island under its direct control and established the **Sado Magistrate's Office, which organized a large-scale social system** that united the production systems of two different types of ore deposits for long-term, strategic mining management.

＊The Tokugawa Shogunate:
a long-term stable government of samurai who ruled Japan from 1603 to 1867



Unspecialized small-scale production system where villagers to work cooperatively for gold placer mining



Specialized large-scale production system for high level and intricate mining on lode deposit

Nishimikawa settlement zone
(Small scale and unregulated structure)

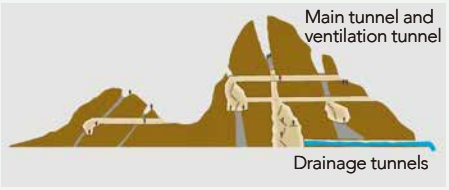
Aikawa settlement zone
(Large scale and planned structure)

■Structure of settlement zones reflects characteristic of the production system

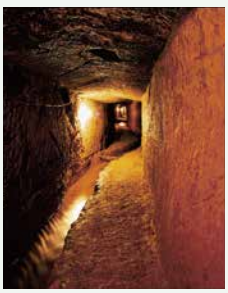
Advanced excavating and surveying or refining technologies

Technical System (Criterion iv)

At the placer gold deposit, the "*O-nagashi*" method was used to extract gold by washing it away with a flow of artificially stored water.



In lode deposits, excavating and surveying technologies were further developed to solve problems such as drainage and ventilation, while dressing, smelting and refining techniques evolved to efficiently process ore.



Drainage tunnel

©Amano Takashi

This 922-meter tunnel was divided into three sections and excavated simultaneously from six locations, with just over 1 meter difference at each confluence.

©Nishiyama Hoichi
Toramaru-yama site

Doyu-no-warito Opencut site

Mining tunnel

Parallel tunnels for air circulation

oduction of *Sado Island Gold Mines*

Culture based on mining created by the local community

■A large number of skilled mining experts came to Sado Island from all over Japan. Cultural practices and beliefs, including faiths, performing arts and festivals, flourished among these people. Traditional songs and rituals of the mine that are still being passed down today.

Property of National Museum of Nature and Science

"*Yawaragi*," a performing arts ritual sung by mining professionals to please mountain deities and pray for the discovery of softer ores containing gold and silver.

Property of Aikawa Oyamazumi-Jinja Shrine

Noh play was originally an expensive pastime for samurai class, but it became popular entertainment among the general public in SADO, thanks to the wealth brought about by mining.

Property of Funazaki Library

The festival of the Uto-jinja Shrine in Aikawa is believed to have begun in the middle of the 17th century, the peak period of Sado gold mining. The *Ondeko* Dance, a popular attraction in such local festivals, has roots in miners dancing with chisels in their hands.

The world's largest amount and highest purity, exceeding that of mechanised mines

1. Mining

2. Dressing

3. Smelting & Refining

4. Minting

■The entire production process was conducted on the island. The process had been continuously sophisticated. As a result, **the purity of Sado's gold rose to 99.54%, higher than that of gold produced at mines that used machines and chemicals.**

Images from *Sado no kuni kanahori no maki*, First half of the 19th century

Property of Aikawa Folk Museum

A wealth of historical documents support the value of the site

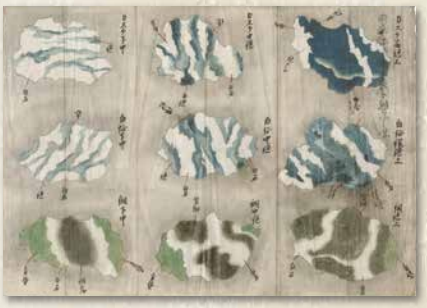
■A large number of picture scrolls and other historical documents remain to this day, giving a detailed perspective of gold mining on Sado Island.

Property of Niigata Prefectural Museum of History

Property of Aikawa Folk Museum

Picture scroll of the mine

Picture scroll of Sado Gold and Silver Mine, early 18th - mid 19th century



Property of the Art & Natural History Museum of SADO

Technical Book on mining

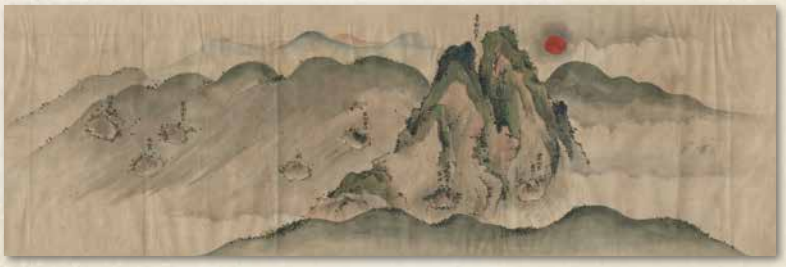
Outline of Gold and Silver Mine, 18th century

■Mining sites have become a symbol of Sado Island and been depicted in drawings from the Edo period.

Property of National Diet Library

"Sado Kanayama"

Ukiyo-e depicting the scene of gold mining in Nishimikawa Late 19th century



Property of Aikawa Folk Museum

"Drawing of Doyu"

Sado no kuni kanahori no maki
First half of the 19th century

Agency for Cultural Affairs,
Government of Japan

Agency for Cultural Affairs,
Government of Japan
3-2-2 Kasumigaseki, Chiyoda-ku, Tokyo 100-8959
+81-(0) 3-5253-4111 (Reception)