Sculpture by Mitsuaki Tanabe in Far Northern International Seed Vault

Osamu Ito, film director

The 1 year anniversary of the opening of the Global Seed Vault Photo : Osamu Ito

1. Prologue: An International Seed Bank and a Japanese Sculptor

The Arctic is far from Japan. In Longyearbyen, a town on the Svalbard Islands northwest of the Scandinavian Peninsula, the ground is permanently frozen. This is the location of a global seed vault, a large storage facility for seeds that plays the role of a Noah's ark in modern times, buried in a mountain covered by permafrost. This seed vault was constructed by the Norwegian Government, the United Nations Food and Agriculture Organization (FAO), and the Global Crop Diversity Trust with the cooperation of Bioversity International, an international research organization, and NordGen (Nordic Genetic Resource Center). This international seed bank, which was made as secure as possible with current technology, was established to ensure the survival of humankind.

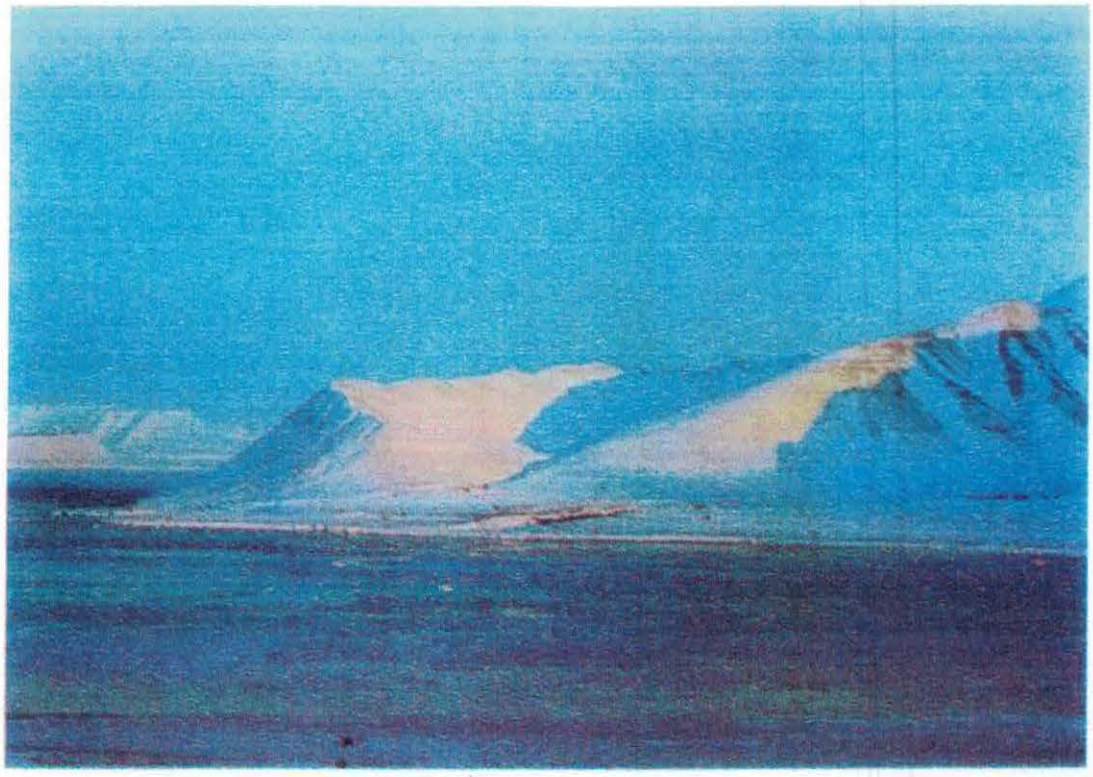
The Svalbard Global Seed Vault celebrated its first anniversary on February 6, 2009, and work is going ahead to collect and preserve as many kinds of food crop seeds as possible. A commemorative ceremony was held on this occasion to make a public report of current progress and make an appeal for further international cooperation in ensuring biodiversity and providing basic support for agriculture. The ceremony was attended by Norwegian government officials, including the Minister of Agriculture, as well as representatives from the United Nations, participating countries, and international research organizations. And during this ceremony, the permanent installation in the vault of a sculpture by Tanabe Mitsuaki, a Japanese sculptor living in Yokohama, was announced. Tanabe was

present at the unveiling ceremony. The title of the work was The SEED 2009 / MOMI IN SITU CONSERVATION. Other works by Tanabe have been installed in international agricultural research facilities all over the world, where they have been seen by many scientists and visitors and earned the artist an international reputation. Tanabe is known for his passionate concern with agriculture, the environment, and food supplies as well as his achievements in art. Recognizing the value of his work, the Norwegian government and the Global Crop Diversity Trust made the decision to exhibit his work and invite him to the ceremony.

The installation of the work of a Japanese sculptor in an international facility with this kind of historical significance is a major event, a cause for celebration for the Japanese and all other rice-eating Asian peoples as well as an honor for the artist. THE SEED 2009 / MOMI IN SITU CONSERVATION is a strong work of art made of cast stainless steel. It portrays a seed of wild rice, a motif that Tanabe has pursued for the last 20 years. It weighs 7 kilograms, is 120 centimeters long, and took two months to fabricate. Primitive wild rice is notable for the long whisker coming out of the husk. People attending the ceremony praised the sculpture for its artistic impact and effective treatment of the motif. THE SEED - MOMI is the only work of art to be permanently displayed on the wall of the VIP room in the depths of the Svalbard Global Seed Vault. Tanabe gave a speech at the ceremony, proclaiming that "it is important for humanity to make a strong case for preserving biological diversity by in situ conservation of wild seeds, maintaining cultivated species, and establishing seed banks through international cooperation." He called for "a rediscovery of biodiversity" through a blend of art and science.

2010 is the "International Year of Biodiversity." Why is it so important to build an underground Noah's ark in the harsh environment of the Arctic at this time? What are the ideas and emotions behind Tanabe's artistic contribution to an understanding of biodiversity and genetic resources? Rice is a staple food in Japan and research on rice is more advanced here than anywhere else in the world. What is the background against which THE SEED - MOMI should be seen in this country? Comprehensive solutions are required today for the problems of food shortage, environmental destruction, and excessive population growth. It is important for Japanese people to examine the systems in place for preserving and using seeds and genetic resources for agriculture. Such an examination should lead us to rethink our usual ways of farming and eating and consider the future of humanity at a planetary level. This seed vault in the far north and the Tanabe sculpture displayed there are based on issues that have been the subject of a great deal of thought. Because of my interest in the message transmitted by the cast stainless-steel SEED - MOMI, I decided to visit the Svalbard Islands in the Norwegian Arctic.

2. What Is the Svalbard Global Seed Vault?



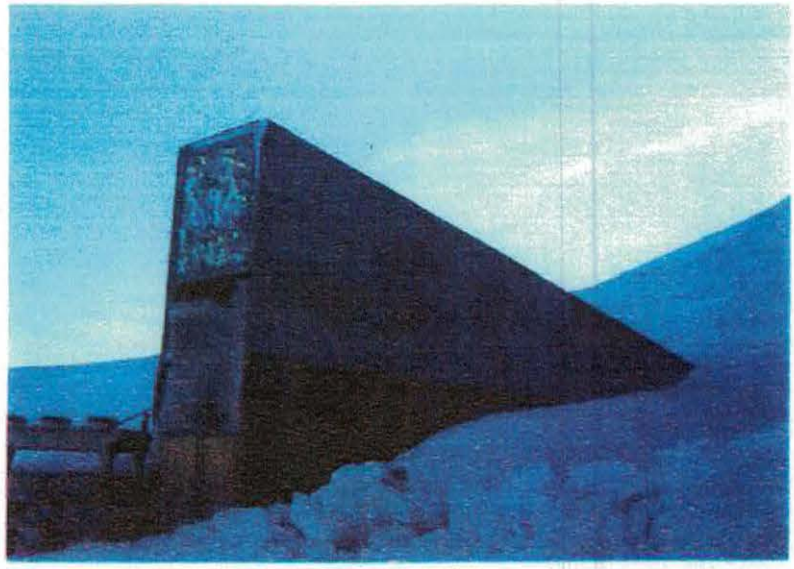
a. Where is the global seed vault?

The Svalbard Islands are located in the Arctic Ocean 1000 kilometers northwest of the Norwegian mainland. From Narita Airport in Japan, I flew to Copenhagen and from there changed planes to Oslo and then to Longyearbyen. The trip took 20 hours altogether. The Svalbard Global Seed Vault is on Spitzbergen, one of the islands in the Svalbard chain. Located in the Arctic, the island is covered with permafrost and the temperature is always below freezing. In winter, there are many days when the temperature stays below −20C. The far northern location means white nights in summer and dark days in winter. In February, the sun shines only a short time each day. This is a bleak, largely unihabited place where wild polar bears wander about freely. The most northerly international seed bank in the world, it was constructed in the depths of a low mountain at the end of a gently sloping tunnel extending 120 meters into the hillside at a place 130 meters above sea level on Spitzbergen Island.

b. What is a seed vault?

Today, multinational corporations are engaged in a fierce battle over seeds. Improvement of plant varieties and maintenance of genetic diversity by preserving ancestral, wild, and native species are essential factors in both conventional crossbreeding and genetic reconstruction. It is important to maintain certain characteristics such as resistance to disease, insect damage, temperature change, drying, and salt damage as well as increasing the size of harvests and stabilizing flavor in primitive, wild, and other non−cultivated plants as well as in cultivated plants. That is why both advanced and developing countries are collecting the seeds of wild plants as well as major crops, creating facilities to preserve them, and studying them scientifically.

In addition to public seed banks, private seed companies and agribusinesses are collecting and conducting research on seeds as part of their corporate strategy for the future. It has been said that "whoever controls seeds controls agriculture."



c. Are current seed banks insufficient? Why is the Svalbard Global Seed Vault called "Noah's ark?"

Radiation from the unprecedented nuclear accident at Chernobyl in the old Soviet Union in 1986 affected agriculture and seeds as far away as the Scandinavian peninsula. More recently, a national seed preservation facility in the Philippines was destroyed by flooding after torrential rains. In the future, in addition to global warming and planet-wide climate change, we can expect many unpredictable events that may destroy seeds or wild plant habitats, including electrical blackouts resulting from depletion of energy resources (the seed banks of most countries are operated by electricity generated with fossil fuels), damage to facilities due to natural disasters or wars, extinction of ordinary crop species, forest reduction, and urban development. That is why the Global Seed Vault is compared to Noah's ark, the ship loaded with pairs of animals, male and female, in anticipation of a great flood described in the Book of Genesis in the Old Testament.

The Global Seed Vault is built in permafrost in the far north where seeds can be preserved in a low temperature environment even if electrical power fails. The thick bedrock will maintain conditions in which the seeds will be capable of germination up to 200 years even if the surface is contaminated by nuclear fallout. The vault provides backup and a safety net for genetic information. Perhaps we do not need to be entirely pessimistic about the future of humankind, but in any case the vault provides excellent "survival insurance" and gives reason for hope. It is easy to see why leading geneticists, agriculturists, and politicians of many countries express both hope and anxiety about the future when they discuss seed banks and predict the dangers that we face.

d. System for collecting and using seeds

Plans have been made to collect seeds of more than three million crop species in the Svalbard Global Seed Vault to prepare for global crises and possible extinction of species. The seed data is recorded in analogue form as well as bar code, sealed and marked with letters in case the reading equipment malfunctions. IRRI (International Rice Research Institute) of the Philippines has provided 70,000 species of unhulled rice seed (momi in Japanese), and containers of seeds continue to arrive from institutions in many different countries, including Thailand, Switzerland, Korea, the United States, and Africa as well as NordGen, which is based in Norway. Seeds are being collected for all species used in agriculture, including wheat, corn, potatoes, bananas, cereal grains, vegetables, fruit, and forage as well as rice. At present, approximately 500,000 species have been stored in one of the three rooms in the vault. The vault temperature is −18C, low enough to maintain the possibility of germination. If some sort of crisis occurs on the planet, preserved seeds can be supplied to all affected countries and regions to

help restore cultivation.

The collected seeds are sealed in containers which cannot be opened except in cases of emergency. Strict rules are in place to prevent arbitrary use of genetic resources for the profit of a particular country or corporation. When a container is opened in an emergency, a responsible official from the country that provided the seeds must be present. World nations are concerned about the current conditions of seeds and conflicts over copyrights and anxious about losing profits. The rule against opening containers except in emergencies was intended to alleviate this anxiety.

e. Establishment, management, and support of the Svalbard Global Seed Vault

The Svalbard Global Seed Vault is operated by the Norwegian government, NordGen, and the Global Crop Diversity Trust. GCDT is an international institution established by the Food and Agriculture Organization of the United Nations and Biodiversity International, a research institution headquartered in Rome. The project has also received support from the Bill and Melinda Gates Foundation. Dr. Cary Fowler, executive director of GCDT says, "Along with saving all the native species, species in danger of extinction and primitive species that are useful for agriculture in developing nations, the vault helps us prepare for major world-scale disasters and provides a living record of biological diversity. At the same time, it can contribute to the supply of food required by the world's poor." Fowler also expressed his appreciation for the message conveyed by Tanabe's sculpture, The Seed – Momi.

3. Sculptor Mitsuaki Tanabe and His Work Located Throughout the World

f. A remarkable Japanese sculptor

Mitsuaki Tanabe lives in Yokohama and is 70 years of age. Since 1991, he has been involved in an international campaign for in situ conservation of wild rice, and this has become the main theme of his art. To find the places where his work has been shown or installed it is necessary to spread out a world map. These locations include the rice growing areas of Asia, international agriculture research facilities, national research institutes, art museums, natural history museums, and United Nations organizations. Some of the main sites are the IRRI (International Rice Research Institute) of the Philippines, the Pathum Thani Rice Research Institute of Thailand, the Central National Central Rice Research Institute of India, the He Mu Du Ruins Museum of China, Taiwan University, and the United Nations Food and Agricultural Organization (FAO) in Rome. Most of the sculptures are part of the Seed – Momi series. They are vital, energetic representations of a wild rice seed with its characteristic long whisker. The materials of these sculptures range

from wood, stone, and bamboo to steel, but the finest of them are made of cast stainless steel, formed by the technique of arc air gouging at temperatures up to 3000C. The rough, uneven surface of the seed body and the thorn-like projections on the whisker are features that protect wild rice from predators and help it survive. The inclusion of these features makes us think about how they have been removed in the process of creating new varieties of cultivated rice, recalling the operation of human intelligence as well as the problems that it has created.

g. Agriculture, wild rice, biological diversity, and in situ conservation of natural habitat

Tanabe stands out from ordinary sculptors because of the tremendous significance of his subject matter. While working with the special theme of in situ conservation of natural wild rice habitat, he has obtained a knowledge of the subject similar to that of an expert in the field. Believing that "the genetic resource of wild rice ensures sustainable use of cultivated rice in agriculture and food production," he continues to study ways of conserving it. He is part of an international network that extends beyond Japan and includes famous geneticists and scientists working to improve plant species around the world. Dr. Klaus Lampe, former director of IRRI (International Rice Research Institute) of the Philippines and internationally renowned agriculturalist Dr. Gurdev S. Khush are great supporters of Tanabe's current work.

Tanabe states, "Preserving the natural habitat of wild rice means protecting the rich genetic resource of rice along with all the plants and animals living there. It is linked to basic protection of the diversity of all life, including fish, insects, reptiles, and amphibians." He argues convincingly for three measures: 1. Preservation of existing species through conservation by farmers. 2. Preservation of natural habitat through in situ conservation. 3. Preservation and storage in institutions or ex situ conservation (using general seed banks). According to Tanabe, "Future biological diversity will be protected when these three measures are carried out." He not only produces bold and creative works of art but is a strong advocate for the in situ conservation movement and promotes it enthusiastically. When he donated a sculpture to Princess Sirindhorn of Thailand, he had an opportunity to speak directly to the princess about the importance of this approach. As a result, she designated a 12-hectare site for in situ conservation of wild rice in Prachin Buri on the outskirts of Bangkok as a Special Royal Project. This project was later expanded and six more sites were established in the Thailand, the largest measuring 100 hectares. Conservation is still being carried out in these areas today, and they have become important research sites for scientists around the world, including those of Japan.

h. A Don Quixote

Of course, Tanabe's has not always been able to make his work or show it exactly where he wished. Comparing himself to Don Quixote, he says that his activities sometimes been almost laughably unsuccessful. "It has been 50 years since I was an art student. I have traveled to fifty countries around the world, and visited all sorts of remote regions. In those places, I experienced the diversity of humanity so intensely that it was imprinted on my body. I first visited Norway some forty years ago." "I traveled a road of thorns characterized by trial and error....This path led to the 120-meter tunnel of Noah's ark." Tanabe is that sort of person who never gives up. His art stimulates the imagination, creating links between people and between people, agriculture, and food. Most food problems are agricultural problems that require the application of environmental science. They are also related to population problems, which also depend on agriculture as well as the life sciences for a solution. The social sciences are also important because the factors of distribution, economics, and welfare are relevant to the problems of starvation and poor nutrition. What role can be played by Tanabe as an artist in concert with experts in these fields? Renowned Indian agricultural scientist, Professor M. S. Swaminathan says, "Problems of food, agriculture, and the environment cannot be solved from a narrow point of view that emphasizes

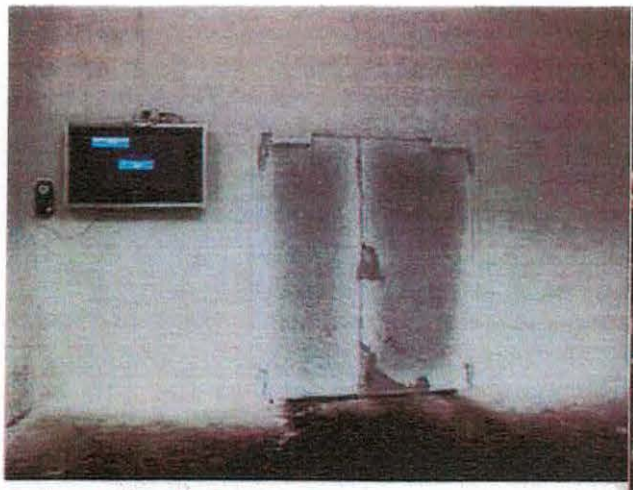
nothing but science. This task fundamentally extends to the broader and deeper area of people's hearts and minds. That is why the role played by Tanabe is so significant. For we Asians, who consume rice as our staple food, his group of Seed-Momi sculptures expresses our own life and culture and gives us courage. I am very thankful for it."

No matter how enthusiastic a painter or sculptor may be about exploring a certain motif, he is ordinarily compelled to follow the policy of the person who commissions the work or, after it is completed, the art museum where it is shown. Tanabe gives great importance to the place where the work is installed. In the project for the Pathum Thani Rice Research Center, he refused to use the excellent location at the laboratory entrance and chose a more appropriate site, installing the sculpture outdoors in a 160-hectare experimental field. The sculpture, titled Seed - Momi (part of the series based on the motif of wild rice), is a 20-ton mass of stainless steel. The whisker section is unusually long so the total length is 33 meters. Placed in the largest rice-growing area in the world, the monsoon area of Asia, it has become a landmark for local farmers, a silent and majestic monument of stainless steel. In 2008, a new version of Seed - Momi was placed in the entrance hall of the Global Crop Diversity Trust, an international organization associated with FAO.

i. As the Global Diversity Year of 2010 approaches

All of the seeds and genes of the diverse plants presently used in Japanese agriculture (and thus directly connected to the food supply) can be said to depend on the biodiversity developed on the planet Earth over the last 4.6 billion years. In terms of human history, they are the heritage of our ancestors' struggles to create better varieties of plants. Agriculture is an economic activity, an important industry that produces food for our daily survival, but in pursuing it we should not forget fundamental issues related to our beginnings and our destiny. An active 70-year old artist, Tanabe will use all his remaining strength to promote biodiversity, the continuation of agriculture, and the survival of humanity. He has obtained permission from the Aboriginal Areas Protection Authority to carve a sculpture into a great rock in a sacred area near the northern Australian city of Darwin.

Dr. Emile Frison, an eminent agricultural scientist at the headquarters of Biodiversity, an international research organization in Rome, has urged Tanabe to "look at the genetic resource of bananas, a major agricultural product of the tropics, as well as rice and wild rice." He has promised, "We will assist your work as much as possible." As a result, Tanabe has recently begun a dialogue with bananas. His solid, durable sculptures, permanently installed throughout the world, pose questions about farms and the dinner table in Japan. Our grandchildren may ask questions about these sculptures sometime in the distant future: "Who made this artwork? When and why?" The Seed - Momi series of installation works created on a global scale will naturally provide strong, clear answers to questions about seeds and food in the future, just as the artist Mitsuaki Tanabe is doing in the present.



A door to Gem Bank

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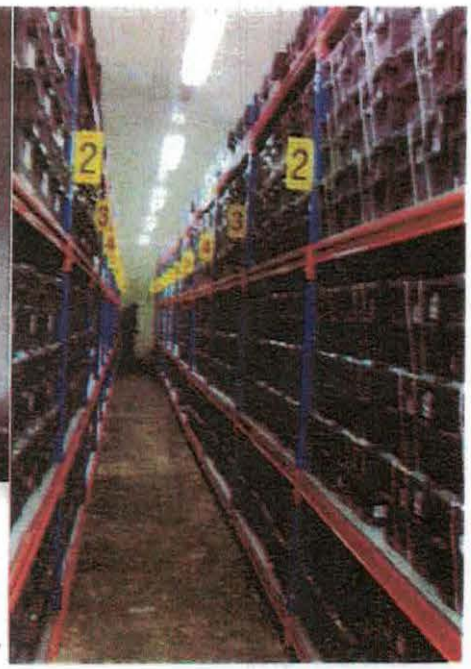

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