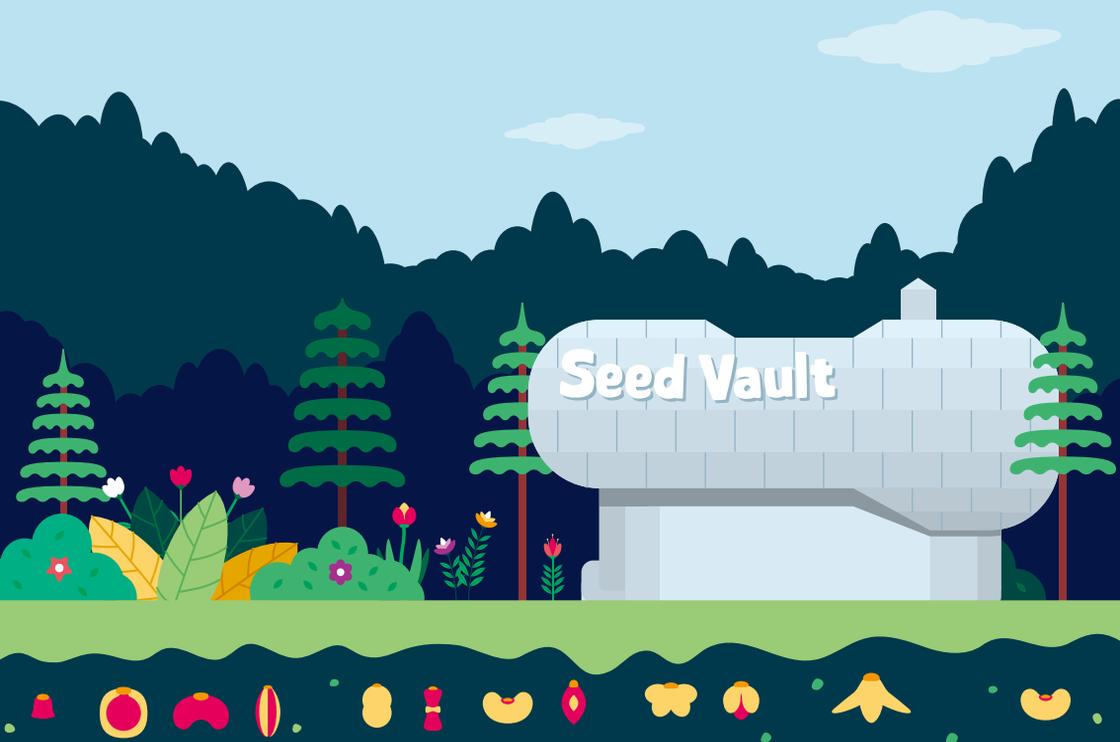


Baekdudaegan Global Seed Vault

KEEP YOUR SEED



Baekdudaegan Global Seed Vault



Plants share and provide ecosystem functions on which all living things can depend. Plants have direct benefits as resources such as food and medicine; they also have cultural and historical values.

The International Union for the Conservation of Nature (IUCN) reports approximately 420,000 plant species worldwide. It is estimated that at least 25% of these species are endangered due to human activities and industrialization. Moreover, the climate crisis is driving the extinction of plant species at a rate approximately 1,000 times faster than during the Industrial Revolution. To conserve plant diversity, many countries have signed the Convention on Biological Diversity and are jointly promoting the global plant conservation strategy. Conservation of plant diversity is an important role of botanical gardens and arboreta, however, seed conservation is considered the most efficient means for ex-situ conservation of plants under persistent biodiversity loss due to climate change.

Here, we introduce a concept that will powerfully enhance global seed conservation capabilities. The Baekdudaegan Global Seed Vault (BGSV) is the world's only wild plant seed storage facility that can withstand natural and anthropogenic disasters, and therefore provides a safe alternative for conserving seeds for the future.

BGSV is the world's first wild plant seed repository for the safe and permanent storage of seeds in preparation for global disasters, including the climate crises. The goals of the BGSV are to (1) contribute to the maintenance and promotion of plant diversity by storing plant seeds from around the world and (2) conserve seeds owned by arboreta, botanical gardens, institutions, and/or countries. In addition, BGSV aims to support cooperation among the global community to alleviate the plant crisis resulting from climate change and to maintain plant diversity through joint efforts by facilitating ex-situ conservation of wild plant seeds.

BGSV is the ultimate insurance policy for the world's wild plant supply, a means of averting ecological crises for future generations, and will contribute to overcoming the challenges of climate change and disasters.

Vision

To be the leading seed storage facility in the world

* Storage of 10,000 species of wild plant seeds until 2030.

Mission

- To secure plant biodiversity against climate change impacts, anthropogenic disturbance, and natural disasters.
- To support the sustainability of humankind by ensuring it will be possible to restore plant biodiversity.



What BGSV can do

Permanent storage

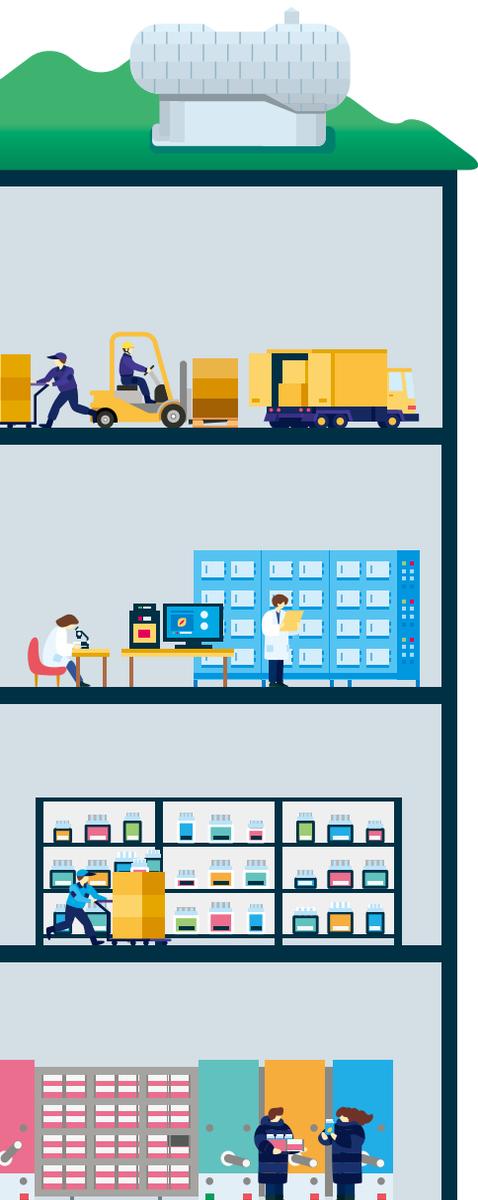
Ex-situ conservation of wild plant seeds

Back-up copy

Duplicate conservation of seeds owned by arboreta and botanical gardens



Seeds are always stored under uniform conditions within the safe facility of the BGSV



This is a fictional picture, not real.

Location

It is located at an altitude of 600 m above sea level.

: Will not be affected by sea level rise, which is one effect of the climate crisis.

It is located deep underground.

: Protected from external physical shocks (e.g., earthquakes) and accidental damage because it is a secure and earthquake-resistant facility

It is designated as an important national facility by the Korean Government.

: The State is responsible for safety and security

Seed Storage Conditions

All seeds are always stored at $-20\text{ }^{\circ}\text{C}$ and 40% relative humidity

Storage conditions are checked every day, and a thorough inspection of the entire facility is performed twice a year

Qualification for storing seeds

No qualifications are required for store seeds.

Seed types that can be stored

All seeds of domestic wild plants of an institute or seed bank in your country can be stored in the BGSV.

Costs for storing seeds

- There are no fees for storing, protecting, and conserving seeds in the BGSV
- The costs of shipment and storage equipment such as the black box, bags, sealed labels, are to be covered by the BGSV

Black box system for storing seeds

- The depositor must guarantee the condition of the seed
- BGSV guarantees the storage conditions



Special ability

BGSV was selected as a success story among the country reports of 52-member states of the United Nations Forestry Forum in 2021 (UN Global Forest Goals Report, 2021).

International partnerships with

Global Seed Conservation

[Nordic] Nordic Genetic Resource Center & Svalbard Global Seed Vault

International Organizations

[AFoCO] Asian Forest Cooperation Organization

Arboreta and Botanical Gardens

[UK] Royal Botanical Garden, KEW
[Georgia] National Botanical Garden
[Georgia] Batumi Botanical Garden
[China] Beijing Botanical Garden
[Uzbekistan] Rusanov Botanical Garden
[Kyrgyz Republic] Gareev Botanical Garden

Research for Seed Conservation

[Cambodia] Institute of Forest & Wildlife research and Development of the Forestry Administration
[Tajikistan] National Biodiversity & Biosafety Center
[Tajikistan] Pamir Biological Institute
[Kazakhstan] Scientific-Research Institutions
[Austria] University of Innsbruck



Procedures for depositing and storing seeds in the BGSV

STEP-1.

Application for Seed Deposit

Let us know your institutional or national intention of storing seeds in the BGSV by e-mail or phone (seedvault@koagi.or.kr ; +82-54-679-2768, 2770).

STEP-2.

Mutual Confirmation on Seed Inventory

- BGSV will provide a "Seed Inventory Form" for storing seeds. You should fill out the form and send it to BGSV using the email address provided above.
- BGSV will perform a preliminary check of the seed inventory based on the quarantine list of the Korean government.
- You should carry out quarantine according to your country's quarantine laws against this list which has been checked by BGSV.
- You should send BGSV a "Seed Deposit Request" for the seed list with a "Quarantine Result Certificate"

STEP-3.

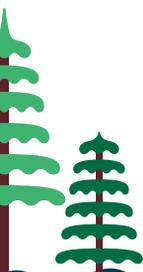
Transport of Seeds Using a Black Box

- BGSV will send you all items of the black box for storing seeds. You should pack the seeds in a black box.
- The sealed black box should be shipped to BGSV and the quarantine certificate issued in your country must be attached.

STEP-4.

Seed Conservation in the Seed Vault

- Once BGSV receives the black box from the Korean Quarantine Headquarters, BGSV will immediately proceed with the storage procedure for the seed vault.
- Then, your black box will be permanently stored in the seed vault.
- Finally, you will get the "Seed Conservation Deposit Certificate" with all storage information. The certificate will be sent to you via e-mail and post.





Meta Vault

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