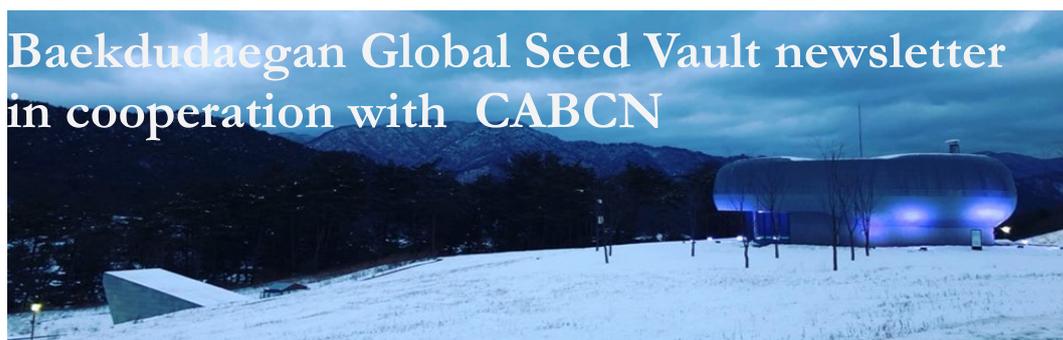


CABCN members:

- **Republic of Korea**
 - Korea National Arboretum
 - Baekdudaegan National Arboretum
- **Republic of Kazakhstan**
 - Institute of Botany and Phytointroduction of the Committee of Science, Ministry of Education and Science
 - Almaty branch Scientific Research Institute of Forestry and Agroforestry Limited Liability Corporation (LLC) of the Ministry of Agriculture
- **Kyrgyz Republic**
 - Department of Forest Ecosystems Development of the State Agency on Environment Protection and Forestry
 - Scientific Research Institute Gareev Botanical Garden of the National Academy of Sciences
- **Republic of Uzbekistan**
 - Institute of Botany of the Academy of Sciences.
 - Botanical Garden named after acad. Rusanov F.N of the Institute of Botany of the Academy of Sciences.
- **Republic of Tajikistan**
 - National Biodiversity and Biosafety Centre of the Committee for Environmental Protection under the Government of the Republic of Tajikistan
 - Pamir Biological Institute named after Yusufbekov Kh. of the Academy of Sciences

Baekdudaegan Global Seed Vault newsletter in cooperation with CABCN



Greetings from the staff of the Baekdudaegan Global Seed Vault (BGSV)

Dear colleagues and friends!

Conservation of the global biodiversity can be achieved only with the united efforts of the scientists and forestry workers at national and multi-national levels. We are proud to be a member of the CABCN network which strengthened the efforts of the prominent Academic and Forestry organizations in Central Asia and Republic of Korea. The Baekdudaegan Global Seed Vault directed its efforts at conservation of native plant species. It includes two divisions — Seed Conservation division and Seed Vault Management division.

The Seed Conservation division directs its efforts on studying of seeds longevity by researching their viability in different storage conditions, supports work of Seed Vault by managing storage and conservation processes. The manager of the division is Dr. Bae Kee Hwa. The Seed Vault Management division is focusing on conservation of local flora of Korea, mainly native plants of the Baekdudaegan Mountains, expanding cooperation with National Institutions and organizations, and strengthening International partnership. The manager of the Seed Vault Management division is Dr. Jang Jeong Won.

The Seed Vault possess a number of modern technology and tools and invites overseas partners to collaborate in such spheres of science as seed research and plants conservation. We believe that together we conserve the diversity of native plants and sincerely wish to strengthen our partnership within CABCN for prosperity of our countries.

Sincerely yours,
Baekdudaegan Global Seed Vault staff.



Baekdudaegan Global Seed Vault staff, May, 2019

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- International conference "The role of botanical gardens in enrichment and conservation of natural and cultural flora" devoted to 100th anniversary of professor Tkachenko V.I. Gareev Botanical Garden, Kyrgyz Republic* 3
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Baekdudaegan Global Seed Vault Depositors workshop 2019.



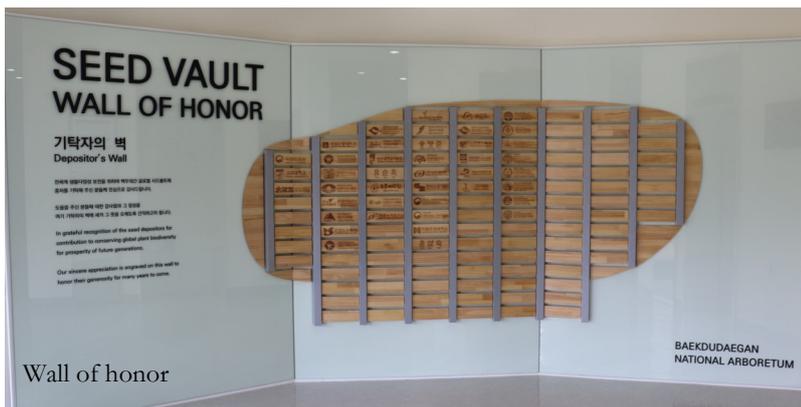
Baekdudaegan Global Seed Vault Depositors workshop. March, 2019.



On the 27th March 2019, the 1st Workshop of the Depositors was held by the Baekdudaegan National Arboretum. The representatives from 27 National organizations which deposited seeds to the Baekdudaegan Global Seed Vault participated at the workshop. The purposes of the workshop were sharing of expertise and knowledge in seed storage and discussing future plants and perceptivities in conservation of native plants of Korea.

The Wall of honor, where the names of all depositing organizations are presented, was officially opened by Director General of the BDNA, Dr. Kim Yong Ha, and representatives of the donor organizations.

The CABCN organizations are also represented on the Wall of honor to respect their contribution in preserving native plants biodiversity for present and future generations.



Wall of honor

BAEKDUDAEGAN NATIONAL ARBORETUM



Institute of Botany, Academy of Sciences, Republic of Uzbekistan **Conservation of the seeds of native plant species of Uzbekistan.**



The flora of the Republic of Uzbekistan includes 4,383 vascular plant species (including 4,155 native and 228 naturalized aliens), of which 1,095 species are endemics, 321 vascular species and 3 fungi are Red Data book species (4th ed., 2009). But only 166 species of flora of Uzbekistan are assessed by IUCN, 17 species are included in the IUCN Red List as threatened (CR, EN, VU), of which only 5 are red-listed at the national level.

At present time the staff of the Institute of Botany is establishing Seed bank of native plants of the Republic of Uzbekistan to preserve, first of all, rare and disappearing native plant species. The Institute of Botany received new equipment, including refrigerators, drying chamber and others, allowing to fulfill researches. The morphological research and germination ability of some species from Uzbekistan flora, mainly rare and disappearing species, are being conducted now.

Gareev Botanical Garden of the National Academy of Sciences, Kyrgyz Republic

International conference "The role of botanical gardens in enrichment and conservation of natural and cultural flora" devoted to 100th anniversary of professor Tkachenko V.I.



Gareev Botanical Garden invites to participate at the conference **"The role of Botanical Gardens in enrichment and conservation of natural and cultural flora"** dedicated to the 100th Anniversary of professor Tkachenko V.I.

- ◆ Conference mode: by correspondence (distance participation).
- ◆ Date: 20 September, 2019.
- ◆ Venue: Gareev Botanical Garden, Bishkek, Kyrgyz Republic.
- ◆ Thematic directions of the conference: 1. Introduction and conservation of native plants (including seeds conservation). 2. Plants genetics and breeding. 3. Greening and its issues. 4. Plants protection. 5. Education in Botanical Gardens.

The proceedings will be published until 20th September 2019.

Conference requirements to the materials are available from www.botanica.kg.

The publication cost is 50\$US.



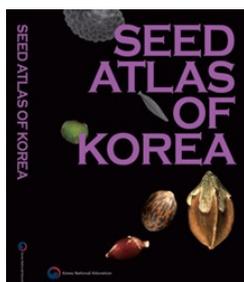
Korea National Arboretum

Ex-situ Seed Conservation of Rare Plants in the Republic of Korea: a Key Role of Seed Bank, Korea National Arboretum



An effort to stockpile native plant species has currently been increasing as many botanical gardens began to establish seed banks for the purpose of conservation. It expends effort to collect seeds of mostly wild, medicinal and ornamental species. Seed banks provide an efficient plant conservation strategies and storage capacity for genetic resources and have taken their largest role in the ex situ conservation. In the Korean peninsula, there are 4,179 plant species (2019, Korea Plant Names Index) including 360 endemics and 571 rare plants categorized at the national level by the IUCN criteria: EW 4, CR 112, EN 199, VU LC 70, and DD112 (2009, Korea National Arboretum). The KNA has established various *in-* and *ex-situ* conservation programs in practice for GSPC goals.

During the past decade Korea National Arboretum Seed Bank (KNASB) has being the subject of detailed collecting, reporting, management, quality control and preservation of seeds of native plants. This aims to store more than 60% of native plant species (until 2021), mainly targeting rare and endemic plants of Korea. Present conservation status comprises 2,222 species (53% of the total) belonging to 861 genera of Korean domestic plant and over 1,000 species from other Asian countries. The collected seeds are being conserved, 432 species (75% of the total) of rare plants by EW 1, CR 100, EN 96, VU 108, LC 68 and DD 60 in KNASB. The collected seeds are first subjected to cleaning and inspection (full seed rate, initial viability test and quantity measurement), immediately followed by drying for short/long-term storage. There are two major storage facilities, long term (-18°C, 40% RH) stock orthodox seeds and short term (4°C, 40% RH) stock unorthodox seeds such as *Machilus* seeds. The seeds in long term storage are monitored for viability and germination at least every 10 years. The seed viability is tested to ensure effective management and whether seeds have enough potential for germination. For utilization and re-introduction of rare and endemic plants, the data stored in KNASB not only provide information on seed storage behavior, but also accumulate morphological feature, germination and dormancy information through ongoing research.



Contact information and announcements

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Global mission of Baekdudaegan Global Seed Vault is to store seed samples from the world's most diverse ecoregions and natural communities, and by this way, to harbor the most of the Earth flora biodiversity, which will be potential to survive in the events of natural disasters and anthropogenic catastrophes not only to human being, but animals, birds, insects and other creatures.

Announcements

Incoming Conference and Workshop events.

- 1. Incheon, Republic of Korea. 19 June, 2019.** International conference "Ex-situ Conservation Strategy for Wild Plant Seeds in the Asia-Pacific region, advancing forest landscape restoration through retention of biodiversity" organized by BDNA & AFoCO
- 2. Bishkek, Kyrgyz Republic. 20 September, 2019.** International conference devoted to 100th anniversary of professor Tkachenko V.I. "The role of botanical gardens in enrichment and conservation of natural and cultural flora" organized by Gareev Botanical Garden, Kyrgyz Republic.
- 3. Republic of Korea. 17-20 October, 2019.** Symposium and short term training course within "1st Central Asia Green Road project"
- 4. International conference** in Astana, Kazakhstan. (information will be available later)

About CABCN

Central Asia Biodiversity Conservation Network (CABCN) is an initiation of Korea Forest Service (KFS) and Korea National Arboretum (KNA). The network serves as platform for flora research and biodiversity conservation projects based on comprehensive Agreement between the Republic of Korea and Central Asian countries concerted during the 7th Korea-Central Asia Cooperation Forum held in Bishkek in 2013, and 8th Korea-Central Asia Cooperation Forum in Seoul in 2014.

The KNA and Central Asian Forestry and scientific-research prominent organizations strengthened their efforts in biodiversity conservation through the "Central Asian Green Road" and "Research of the Tien Shan flora" projects.

The projects also contribute to biodiversity conservation activities at global level through trainings and education programs, knowledge and expertise sharing.

CABCN welcomes new organizations to the network and their valuable contribution into biodiversity conservation and hope our cooperation will be beneficial not only for our organizations and countries, but for nature conservation as well.

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