

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 Seed Vault newsletter in cooperation with CABCN

Greetings from Director General of the Baekdudaegan National Arboretum (BDNA)

Dear colleagues and friends!

I am happy to greet you and congratulate with the first Issue of Newsletter, which could be unifying platform for the researchers of our countries in the field of conservation of plants genetic resources. Biodiversity changes affect ecosystem sustainability and functioning, resulting in significant disruptions of ecosystems, loss of life sustaining ecosystem goods and services. That is why it is important to consolidate our efforts in protection and preservation of unique biodiversity of wild plants.

I would like to introduce to you the Baekdudaegan Seed Vault located in the center of the Baekdudaegan National Arboretum in Bongwa province of the Republic Korea. The Baekdudaegan Seed Vault represents one of the biggest in the world storage facility built to store seeds of wild plant species. It is an ultimate insurance policy for the world's wild plants supply, offering options for future generations to avoid ecological crises and overcome the challenges of climate change and disasters.

The Seed Vault has the capacity to store 2.0 million accessions of the wild nature species. As for 10th October 2018, the Vault holds more than 47,271 accessions of 3,243 species from 21 institutions including Korea National Arboretum and Korea University, and other organizations, mainly from Korea. The Baekdudaegan Seed Vault will give its service at global level and conserve world diversity of plant genetic resources without any charge for depositing organizations.

In establishing of the Baekdudaegan Seed Vault, Republic of Korea is making a unique contribution to the preservation of the planet's most important wild plants' biodiversity. In 2018, BDNA signed Memorandum of Understanding with 8 prominent organizations from Central Asia. I am happy that our efforts in biodiversity conservation through seed storage are supported by CABCN member organizations. I believe that only strong partnership will help us to protect flora's unique biodiversity for prosperity of our future generations.

Director General, PhD

KIM YONG HA

The Baekdudaegan National Arboretum.

The Baekdudaegan Mountains are the core of biodiversity, are the nest of a great variety of flora and fauna. It is one of 102,000 protected areas registered under the International Union for Conservation of Nature (IUCN), and it is highly recognized as well-managed areas with an effective protection system.

The Baekdudaegan National Arboretum is established on the Baekdudaegan Mountains to exhibit, educate and preserve native plants of the Baekdudaegan Mountains, rare, endemic and alpine plants of Korea by collecting and multiplying them. The arboretum not only contributes to strengthening biological sovereignty addressing climate change, but also plays key role in the development of the regional communities in Korea.

The total area of the Baekdudaegan National Arboretum is 5,179 ha. It is the biggest arboretum in Asia. The main construction site is 206 ha, including 37 ha of gardening area. It has 27 different gardening themes: Rock Garden, Rhododendron Garden, Flowering Trees Garden, Medicinal Garden, Native Plants Garden and etc. Every year more than 130 000 visitors come here.

The arboretum is open from 9.00 till 18.00 all week days with except of Monday when arboretum is closed. The Baekdudaegan National Arboretum welcomes visitors to enjoy beautiful autumn season of Korea.



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Baekdudaegan Seed Vault depositors

-  Baekdudaegan National Arboretum
-  Korea National Arboretum
-  Korea National University
-  Chollipo Arboretum
-  Andong National University
-  Gyeongnam Arboretum
-  Key-Chungsan Botanical Garden
-  Botanical garden in Ulleung County
-  Pulsatilla tongkangensis preservation
-  Daegu Botanical Garden
-  Wando Botanical Garden

Baekdudaegan Seed Vault:

LONG TERM TRAINING ON SEED CONSERVATION IN CENTRAL ASIA



The Baekdudaegan National Arboretum (BDNA) and Korea National Arboretum (KNA) conducted long term training course for specialists from CABCN member organizations in the frame of Korea Forest Promotion Institute (KoFPI) education programme. Totally 6 people arrived from Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan.



The training course includes seed research and use of modern techniques and tools, seed conservation through storage in Seed Vault. Specialists from BDNA and KNA share their knowledge and experience with the specialists from Central Asia. The trainees had opportunity to visit a number of Botanical Gardens and arboreta, including Shingu Botanical Garden, Chollipo Botanical Garden and etc.

Institute of Botany and phytointroduction, Republic of Kazakhstan

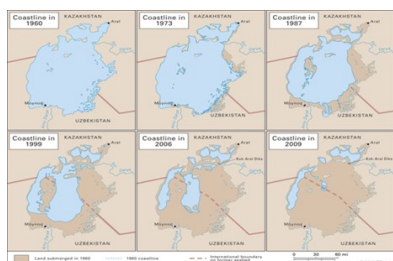
SEED LABORATORY in ASTANA BOTANICAL GARDEN IN ASTANA

New Botanical Garden in Astana was opened on the 1 July 2018. Astana Botanical Garden is one of the branches of Institute of Botany and Phytointroduction of the Republic of Kazakhstan. Director General academician Sitpayeva G.T. puts much hopes on new branch of the Institute.

New seed laboratories will start working in Astana Botanical Garden. They will focus the research on local flora of Kazakhstan and establish seed exchange with other Botanical Gardens.



Almaty branch of the Institute of Forestry and Agroforestry, Republic of Kazakhstan
SEED RESEARCH of *Haloxylon aphyllum* (Minkw.) PHYTOMELIORATION OF THE BOTTOM OF THE ARAL SEA



Almaty branch of the Institute of Forestry and Agroforestry has a number of important projects directed at reforestation and forests ecosystems restoration. This project has aimed to utilize the bottom of the Aral sea with the use of *Haloxylon aphyllum* (Minkw.). This species is able to decrease the level of ground water and by this way, to decrease soil salinity.

Seeds of *H. aphyllum* are the subject of research in Almaty branch of the Institute of Forestry and Agroforestry. They are small and hygroscopic. Special conditions should be provided to store these seeds. Even in optimal conditions these seeds lost their viability and do not germinate. It was defined that the seeds of *H. aphyllum* are capable to keep their viability first 3 months after ripening, and the viability considerably decrease on the 4th month and lost in 6 months after ripening.

Scientific Research Institute Gareev Botanical Garden, Kyrgyz Republic
ABOUT GAREEV BOTANICAL GARDEN in BISHKEK (new member of CABCN since 2018)

The pride of Bishkek is the huge Botanical Garden, one of the most beautiful places in the city. The Botanical Garden is named after a famous Kyrgyz biologist, Anvar Gareev, and now it is a part of the National Academy of Sciences. Established in 1938, the Botanical Garden is one of the largest and most diverse in Central Asia and CIS countries (124 he). There are 2,500 species of trees and shrubs, 3,500 species of flowers and greenhouse species, and over 8,000 species of fruit plants in the Botanical Garden. There are also 4 laboratories, one of which is seed laboratory. Gareev Botanical Garden has established seed exchange with more than 140 Botanical Gardens from 37 countries.



Department of Forest Ecosystems Development of to State Agency on Environment Protection and Forestry
SEED RESEARCH AND EDUCATION

One of the main functions of the Department of Forest ecosystems development is to conserve and protect forest resources of the Republic of Kyrgyzstan. Scientific — production center for Sustainable Management and Education is one of the divisions of the department. The Center conducts inspection of the viability of the seeds of several valuable tree species, generally, of the species from forest ecosystems. The chairman of the Center is Dr. Seydaliev Almaz. Annually, the Center conducts education programs for the students on seed conservation of the forest tree and shrub species. Also education programs include propagation of the planting material for use in the programs of forests restoration and regeneration. The seeds of the forest species from Issyk-kul, Naryn and Chuy regions were studied for their capability to conserve viability in Standard storage conditions.

The Department specialists are involved into Cooperation project with Shingu Botanical Garden, Republic of Korea on seed collection and conservation. Annually the specialists from Shingu Botanical Garden and Department of Forest Ecosystems have join expeditions for seed collection in the most genetically diverse regions of Kyrgyzstan.



Contact information and announcements

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Global mission of Baekdudaegan 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

Conference and Workshop events.

1. Bishkek, Kyrgyz Republic, May, 2019. International conference devoted to 100th anniversary of professor Tkachenko V.I. "The role of the Gareev Botanical Garden in enrichment and conservation of the natural and cultural flora of Kyrgyzstan".

Organized by Gareev Botanical Garden, Kyrgyz Republic.

2. Khorog, Tajikistan, November 2018. International conference devoted to 90th anniversary of the first Director of Pamir Biological Institute named after Yusufbekov.

About CABCN



CABCN

The 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 hopes this cooperation will be beneficial not only for partner organizations and countries, but for nature conservation as well.

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