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# KOREA ARBORETA AND GARDENS INSTITUTE

## ANNUAL REPORT 2021





# KOREA ARBORETA AND GARDENS INSTITUTE

ANNUAL REPORT 2021



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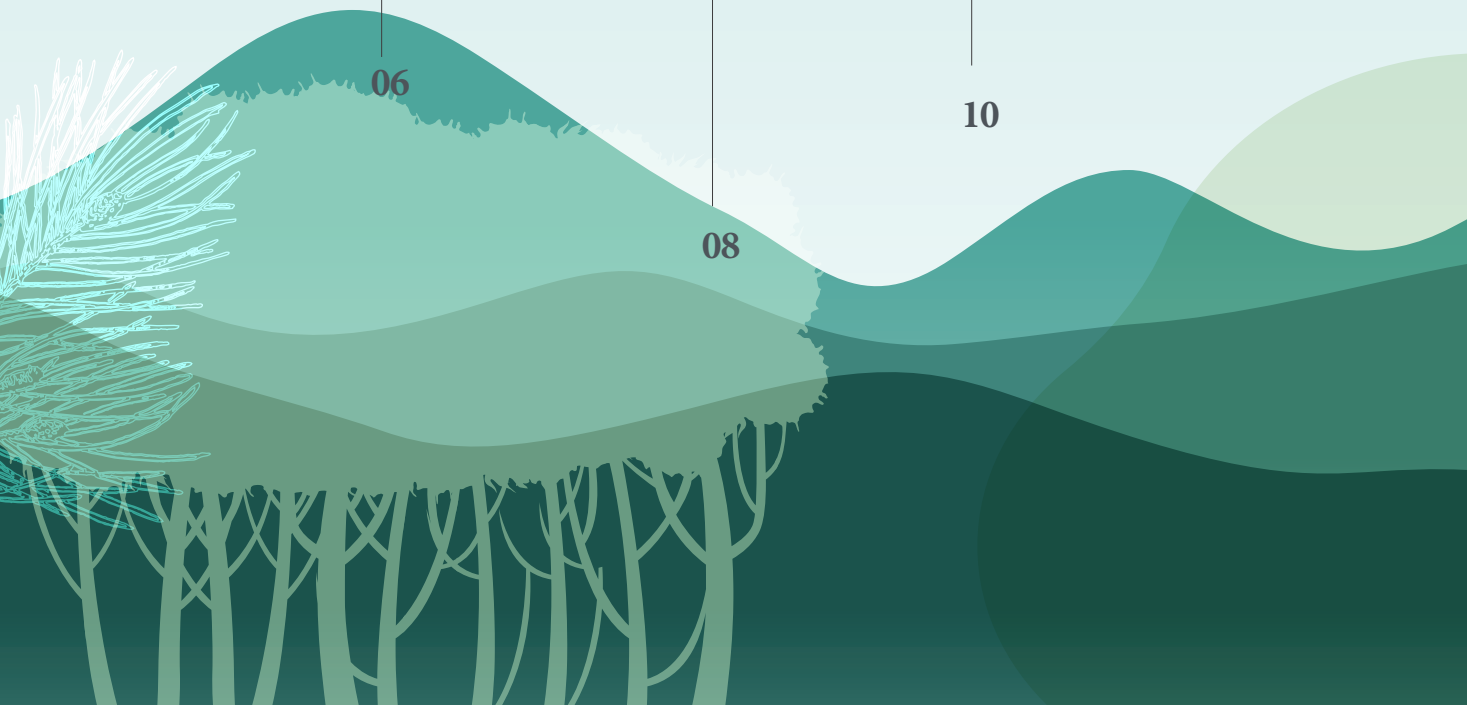
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Reinforce conservation of forest biological resources for the future

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Reinforce conservation of forest biological resources for the future

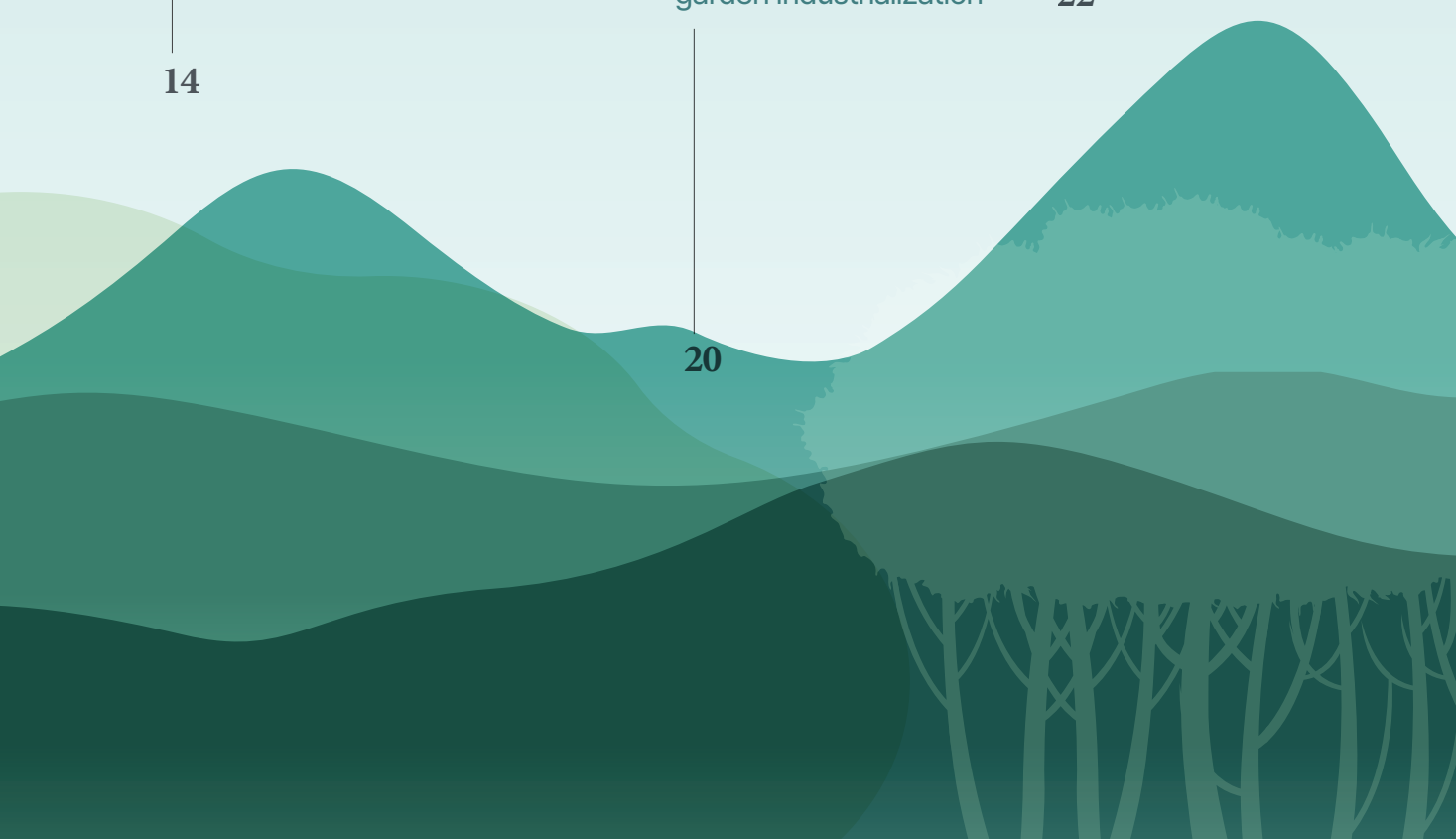
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Promote support for green bio and garden industrialization

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'Climate change' is already so close to becoming a reality that the term 'climate catastrophe' has become palpable in our everyday lives. According to the 7th Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) convention, an average of 6.5 million hectares of forest, an area equivalent to the total forest area of South Korea, has been lost annually worldwide since 2000. It was also discovered that 1 million of the world's 8 million animal and plant species have become extinct. If we do not address the climate crisis, we will face a massive social loss by 2100 as a result of a 25% reduction in global GDP.

Forest biological resources are being significantly harmed as a result of the climate crisis and other developments, and global efforts to safeguard them are being made.

To address these issues, global efforts are being made to strengthen the role of arboreta. In addition, a strategic management system for the arboreta is necessary to accomplish the objectives of the Convention on Biological Diversity (CBD) and the Global Biodiversity Framework (GBF), which are the *raison d'être* of arboreta.

As a public institution that creates social value by enhancing people's quality of life through the exhibition/education functions of arboreta while also conserving forest biodiversity, We preserve forest biodiversity by operating national arboreta according to climate and vegetation zone along the Korean Peninsula's ecological axis.

We began consigned management and operation of the Korea Botanical Garden, first native botanical garden in South Korea, last year. This strengthened the foundation for arboreta role in the temperate northern climate zone by expanding the conservation base. Moreover, a domestic and international seed collection system was established through the establishment of an international network with AFoCo and other Central Asian institutions, and 137,880 accession were stored in the Baekdudaegan Seed Vault through continuous domestic and international seed collection and donation. Through such efforts, our institution is solidifying its role as the world's first permanent storage facility for wild plant seeds, thereby enhancing conservation efforts in response to the climate crisis.

In addition, our institution's scope of garden-related businesses has expanded since the organization's name was changed on June 23, 2021. We are striving to contribute to the



promotion of the garden industry and the vitalization of garden culture through such endeavors as local/private garden monitoring and consulting, smart garden creation management, bringing greenery into everyday life, national garden quality evaluation, trial garden creation, and the establishment of a garden platform where the public can easily access a wide range of information and services related to these gardens.

「Korea Arboreta and Gardens Institute Annual Report 2021」 is a booklet that summarizes and introduces the institution's major accomplishments and the outcomes of key projects for the year 2021. We hope that this booklet helps the public better understand the mission and significance of our institution.

We plans to expand the national arboreta in each region in the future to enhance regional conservation and restoration systems for forest biological resources and urban ecosystems. Moreover, we will expand the spatial framework of arboreta to facilitate the development of a garden promotion platform. We will strive to become an institution that permeates people's lives through consistent practice of social values commensurate with our status as a public institution.

## Ryu, Kwang-su

Korea Arboreta and Gardens Institute  
**Chairperson**

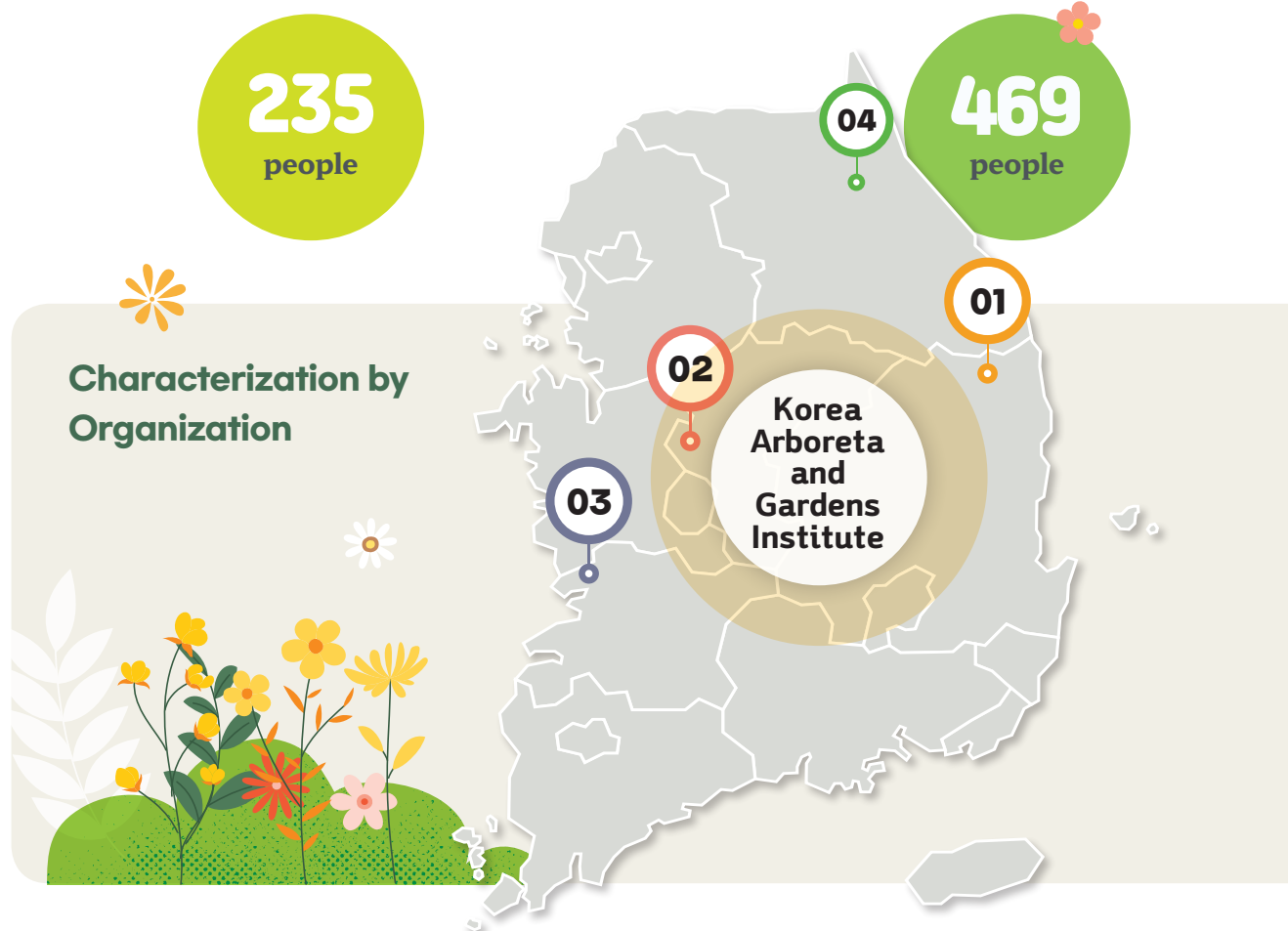


History



Waking phase

Spring



2020

Officially opened Sejong National Arboretum

2021 ~

Change the name of the organization to the Korea Arboreta and Gardens Institute

## phase

Arboretum Management



## Growth phase

Korea Arboreta and Gardens Institute



### 01 BAEKDUDAEGAN NATIONAL ARBORETUM

- Reinforced conservation of forest biological resources (alpine region)
- Storage for conservation of wild plant seeds (Seed Vault)
- A study on industrialization of wild plant

### 03 SAEMANGEUM NATIONAL ARBORETUM

- Reinforced conservation of forest biological resources (coastal region)
- A study of coastal, island areas and halophytes

### 02 SEJONG NATIONAL ARBORETUM

- Reinforced conservation of forest biological resources (temperate forest)
- A study on garden plants in the living area

### 04 THE NATIONAL BOTANIC GARDEN OF KOREA NATIVE PLANT

- Collection and utilization of native plants of the northern Korean Peninsula
- A study on native plant



## Mission

### Contribute to the people's happiness by disseminating sustainable arboretum and garden values

#### Sustainability

The existential meaning of the Institute that contributes to a sustainable future through the cycle of conserving and rendering resources

#### Arboretum/ Garden values

Cultural value through exhibitions and education & economic value through conservation and utilization

#### People

For all visiting/non-visiting citizens

#### Happiness

People's happy life through emotional and physical health & economic value



## Vision

### The best institute specialized in arboretum/garden services and beloved by the people

#### Best

The commitment of the Institute that continuously aims for domestic, Asian and global standards

#### Specialized

Future vision as an expert to nurture regional and national arboretums

#### Arboretum/ Garden services

Arboretum service through research, exhibition, and education of regional national arboretums

#### Beloved

Willingness to grow together by creating arboretums desired by the people

#### By the people

Creating value from supplier-centric to consumer-centric

## Core values

#### Safety

An attitude that prioritizes the physical and mental safety of customers and workers

#### Leadership

Competence to lead customers by focusing on our expertise

#### Innovation

Flexible thinking that creatively adapts to internal and external customer needs

#### Communication

A mindset of cooperating and developing with customers and coworkers

Implementation strategies

MISSION

Contribute to the people's happiness by disseminating sustainable arboretum/garden values



VISION

The best institute specialized in arboretum and garden services and beloved by the people

CORE VALUE

Safety

Leadership

Innovation

Communication



MANAGEMENT GOALS 2030

95 points of customer satisfaction

10,000 plant species under management

1,000 cases of technology dissemination

Excellence rating in Sustainability Evaluation

Higher than 15% financial independence

5 STRATEGIC GOALS

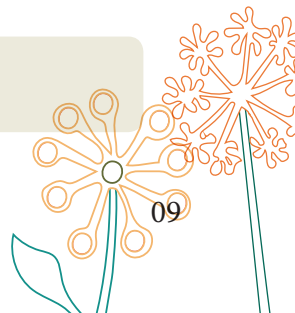
01 Advance arboretum service to connect nature and people

02 Reinforce conservation of forest biological resources for the future

03 Promote support for green bio and garden industrialization

04 Strengthen the ESG management system based on arboretum and garden

05 Innovate the management system for sustainable growth



STRATEGIC  
GOAL

## Advance arboretum service to connect nature and people

MAJOR  
ACHIEVEMENTS

### Number of educated beneficiaries

**TOTAL 282,261**

**2021 94,006**

**2020 68,298**

**2019 69,636**

**2018 33,483**

**2017 16,838**

DESCRIPTION

The Institute tried to contribute to the realization of carbon neutrality and the improvement of the quality of life of the people by expanding education tailored to consumers. We developed carbon-neutral forest education content customized for each target, such as No Plastic and Zero Waste, and developed and operated digital-based educational content. Furthermore, by planning and operating arboretum garden education tailored to the disabled, the Institute's education was implemented in line with the national policy direction and ESG management direction. The Institute tried to contribute to job creation by nurturing professional human resources through strategies tailored to each type of high school, university, office worker, and the underprivileged. In addition, we provided consulting services for public and private arboretums for the first time in Korea and tried to grow together with public and private arboretums by operating cooperative education. In addition, we wanted to share our educational know-how and lead the education revitalization by providing visiting education and consulting for education offices and local governments across the country and realize social value as a public institute based on these efforts.

MAJOR ACHIEVEMENTS

## Training of professional human resources

1,791

683

2021

581

2020

514

2019

13

2018

STRATEGIC GOAL

## Advance arboretum service to connect nature and people

DESCRIPTION

The Korea Arboreta and Gardens Institute is implementing a variety of gardening projects in order to fulfill its role and responsibility as a dedicated garden promotion project, as well as to spread garden culture in daily life, in accordance with the social function of gardens and growing public demand.

MAJOR ACHIEVEMENTS

### Garden infrastructure and quality improvement

We are implementing projects such as establishing living space gardens to restore the natural ecosystem in people's living spaces and urban regeneration, as well as assisting in the establishment of smart gardens to improve the working environment in industrial complexes. In addition, we conduct evaluations and consult on projects aimed at enhancing the quality of public garden services (national, regional and private gardens).



① Living Garden ② Practice Garden ③ Smart Garden ④ Private Garden Conference

### Garden industry ecosystem

To revitalize the garden industry, we have developed a garden information network (platform) and are currently operating a trial garden for the discovery of new garden plants and materials. We are also implementing a variety of support projects aimed at revitalizing the private sector and SMEs.



Trial Garden

Pet Plant Kit Industry Exhibition

## Customized talent development

We offer a variety of specialized training courses based on age and field to nurture gardening professionals. We provide specialized gardening education, including the Garden Dream Project, which involves young people and students, and we are also providing gardening training to middle-aged citizens and those in the employment-disadvantaged class.



Garden Dream Project



Citizen Gardener

## Spreading garden culture

By implementing the pet plant project, we enable the public to visit the garden at anytime, anywhere, and also provide a range of information through online media such as Garden TV (YouTube) and social media.



Pet Plant Clinic



Garden TV

## Establishment of a gardening institution

We founded the Korean Garden and Cultural Center to promote research on K-Gardens, revitalize garden tourism, and cultivate garden professionals, as well as the Garden Material Commercialization Center to promote garden material research and distribution and support business start-ups.



Korean Garden and Cultural Center



Garden Materials Commercialization Center

## Reinforce conservation of forest biological resources for the future

DESCRIPTION

The Korea Arboreta and Gardens Institute carries out various activities to develop an efficient conservation plan for forest biological resources to promote national biodiversity.

Above all, we are researching to expand the forest protection area centering on Baekdudaegan, a treasure trove of biodiversity, and strengthening research on conservation of vulnerable species in a climate crisis, restoration of damaged areas, and urban forests for carbon neutrality.

In addition, a stable conservation management system has been established through ex situ conservation of endangered species, laying the foundation for current and future utilization.

In addition, a Baekdudaegan-centered seed collection is being carried out based on a collection strategy that reflects the mission and vision of the Institute and the characteristics of each arboretum. Furthermore, to efficiently manage it, the management and reinforcement of confirmation samples and collection history information of living organisms and seeds are being strengthened. In addition, we have established networks with several countries such as Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan.

It was intended to prepare a non-face-to-face collection plan to preemptively respond to COVID-19 by collecting seeds and specimens, preparing and distributing on-site collection manuals (English and Russian), and nurturing local experts.



MAJOR  
ACHIEVEMENTS

## Plants in the introduction Arboretum

Baekdudaegan National Arboretum



**Native**  
1,652

**Cultivated**  
2,288

Sejong National Arboretum



**Native**  
738

**Cultivated**  
3,021

MAJOR  
ACHIEVEMENTS

## Endangered / rare endemic plants

Baekdudaegan National Arboretum



**Endemic plants**

**163**

Sejong National Arboretum



**Endemic plants**

**91**



STRATEGIC  
GOAL

## Reinforce conservation of forest biological resources for the future

DESCRIPTION

The Korea Arboreta and Gardens Institute operates Baekdudaegan Global Seed Vault, a 'modern version of Noah's Ark' that permanently stores seeds to prevent the extinction of plants due to global disasters.

Baekdudaegan Global Seed Vault stored 137,880 accession of 4,892 species by 2021 by collecting and donating seeds in parallel. Rare and endemic plant seeds were secured 338 and 186 species, respectively, holding more than half of all species, and rare and endemic plant seeds were secured about 77, accounting for about 84% of the total species.

In addition, we attempted to establish a cooperative system with seed research institutes to diversify the routes for securing domestic and foreign wild plant seeds and expand the foundation of domestic and foreign seed networks by participating in international conferences. Accordingly, in 2021, a network with nine new seed consignment organizations was established, leading to cooperation in seed conservation with the Australian Forest Service for the first time in Korea.



MAJOR  
ACHIEVEMENTS

## Seeds in the Seed Vault

Species

1,365  
Collected

4,528  
Donated

4,892

Accession

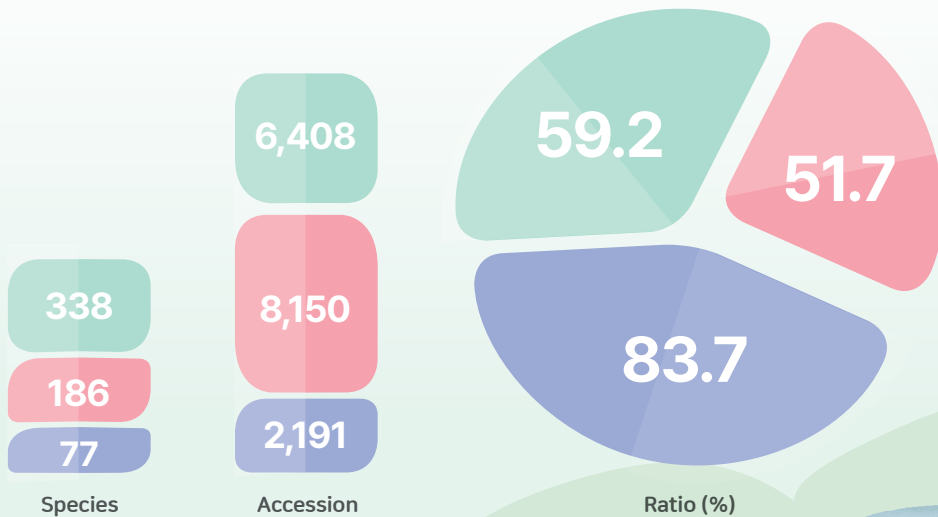
26,859  
Collected

111,021  
Donated

137,880

MAJOR  
ACHIEVEMENTS

## Storage of rare and endemic plants



\* Ratio : Ratio to the entire list of species

\* Based on the list of plants endemic to the Korean Peninsula (Chung et al., 2017)

\* Enforcement Regulations of the Arboretum and Garden Creation and Promotion Act [Annex 1 of 3] Rare Plant Standards (2012)

Seed Vault

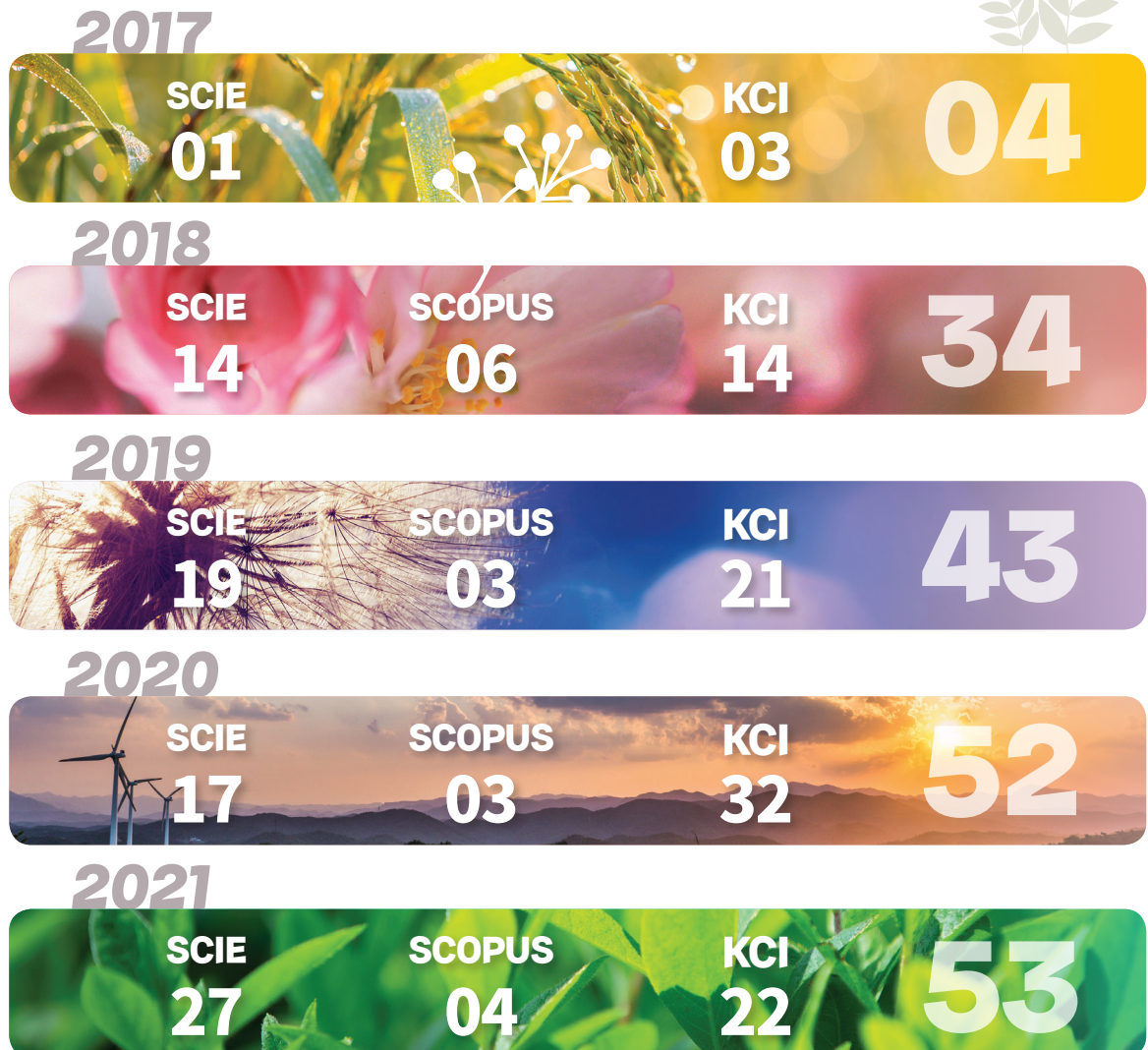
STRATEGIC  
GOAL

**Reinforce conservation of forest biological  
resources for the future**

**Promote support for green bio and  
garden industrialization**

MAJOR  
ACHIEVEMENTS

**Research publication (Unit: Cases)**



DESCRIPTION

The Korea Arborea and Gardens Institute conducts various researches in addition to forest biodiversity conservation research, such as ecology, seed physiology, genetics, and discovery and utilization of forest biological resources. In particular, we are conducting research on discovering, propagating, and distributing materials centered on native plants to consumers to strengthen the resource use of forest organisms. Furthermore due to the expansion of its business this year, we developed garden materials, established a supply system, and systematized the demand-oriented material supply. Through this, the Institute is building the foundation for the industrialization of forest biological resources, creating new values for forest biological resources, and improving industrial utilization. At the same time, we are taking the lead in realizing social values such as win-win cooperation, job creation, and local economy by sharing the research results and technologies acquired in the research process and results with the local community.

MAJOR ACHIEVEMENTS

### Patents and technology transfer (Unit: Cases)

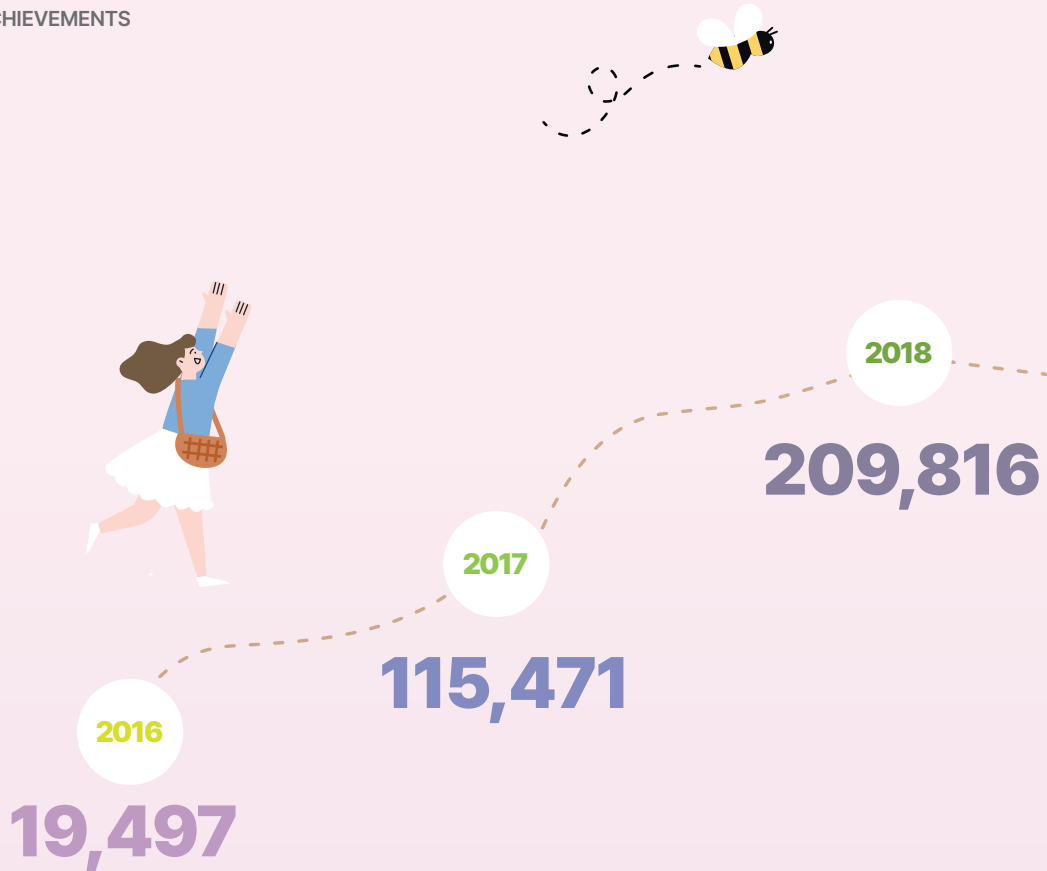


STRATEGIC  
GOAL

## Promote support for green bio and garden industrialization

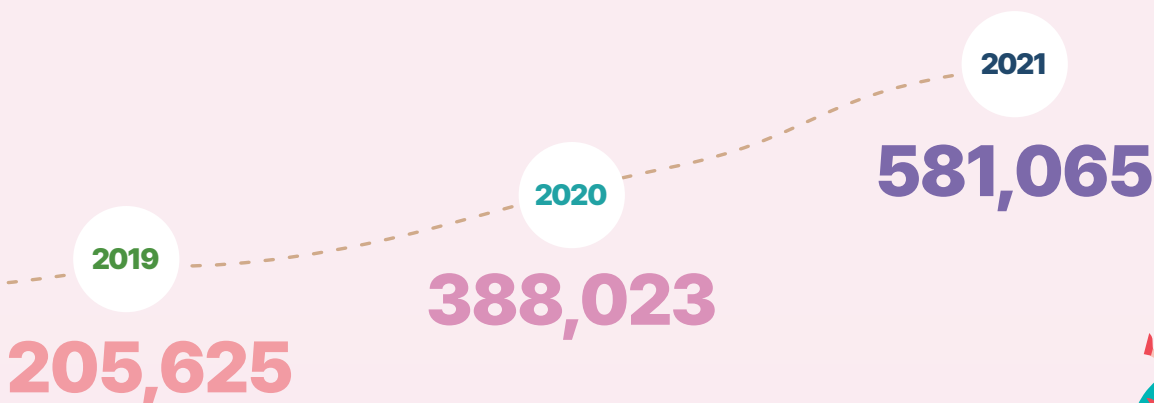
MAJOR  
ACHIEVEMENTS

### Visitors



TOTAL

1,519,497



DESCRIPTION

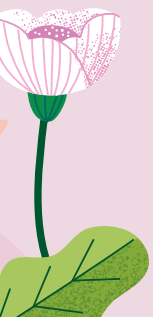
The Institute tried to continuously improve the landscape of the exhibition garden and enhance the exhibition's completeness through the four seasons exhibition greenhouse, the largest glass greenhouse for plant exhibitions in South Korea. In addition, it was intended to provide the highest level of customer-oriented viewing service by collecting, propagating, and displaying plant species that are difficult to access by the general public, such as rare and endemic plants.

In addition, to overcome the restrictions on direct viewing due to COVID-19, we are taking the lead in responding to COVID-19, such as creating a culture of safe viewing in response to COVID-19 and providing special programs to overcome the COVID-19 Blue.

Furthermore, we strived to realize ESG for regional coexistence by increasing the income of farmers and enhancing the industrial value of native plants by producing and supplying plants necessary for the operation and management of the arboretum through contract cultivation and dissemination of technology with local farmers during festivals such as the Bonghwa Native Plant Festival.

Thanks to these efforts, the number of visitors to the Arboretum is continuously increasing, which is expected to increase explosively with the opening of the National Botanic Garden of Korea Native Plant.

In addition, we are constantly moving forward to realize shared values through the spread of garden culture, such as contributing to improving public health and welfare by promoting active garden creation in the people's living areas and installing smart gardens in organizations responding to COVID-19.



Major Gardens



Medicinal Plants Garden (12,323m<sup>2</sup>)



Rainbow Garden (3,960m<sup>2</sup>)



Butterfly Garden (690m<sup>2</sup>)



Baekdudaegan Native Wildflower Garden (13,127m<sup>2</sup>)



Wildflower Hill (26,822m<sup>2</sup>)



Lawn Hill (12,352m<sup>2</sup>)



Rock Garden (16,424m<sup>2</sup>)



Baekdudaegan Native Plant Garden (17,232m<sup>2</sup>)



Alpine House (11,500m<sup>2</sup>)



Alpine Wetland Garden  
(10,329m<sup>2</sup>)



Major  
Gardens



Garden Square (26,822m<sup>2</sup>)



Wild Flower Garden (11,400m<sup>2</sup>)



Aquatic Plant · Garden Walk (57,200m<sup>2</sup>)



Tactile Garden (9,400m<sup>2</sup>)



Korean Traditional Garden (32,100m<sup>2</sup>)



Four Seasons Garden - Special exhibition hall (2,200m<sup>2</sup>)



Four Seasons Garden - Mediterranean Plant Garden (2,200m<sup>2</sup>)



Four Seasons Garden - Tropical Plant Garden (2,800m<sup>2</sup>)



Rare & Endemic Plant Garden (9,500m<sup>2</sup>)



Four Season Conservatory (10,096m<sup>2</sup>)

Major  
Gardens



100th Marathon Garden (2,354m<sup>2</sup>)



Rare Native Plant Conservation Garden (1,450m<sup>2</sup>)



Rare Native Plant Conservation Garden (1,450m<sup>2</sup>)



*Cicuta virosa* Conservation Garden (1,044m<sup>2</sup>)



Endangered Plant Conservation Garden (3,066m<sup>2</sup>)



Eco Plant Conservation Garden (11,207m<sup>2</sup>)



Pine Forest Shelter (1,489m<sup>2</sup>)



Korean Endemic Plant Exhibition and Conservation Garden (1,400m<sup>2</sup>)



# **KOREA ARBORETA AND GARDENS INSTITUTE**

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