

Case Study 2.4 Southwest China Wild Germplasm Bank

In response to the serious loss of China's biodiversity and the extinction of some key species that will have major impacts on national sustainable development, Kunming Institute of Botany of the Chinese Academy of Sciences, in collaboration with 105 relevant institutions across China, took the lead in establishing South China Wild Germplasm Bank. As a result of the efforts over 13 years, this bank now becomes the internationally first-class system of collection and preservation of wild germplasm resources, including those of a large number of rare, endangered and endemic species of important value in China, with comprehensive sharing of relevant resources and information. This bank plays an important role in China's implementation of the CBD and contributes significantly to China's socio-economic development and building an ecological civilization.

(1) A world-class wild germplasm resources bank has been established. In Yunnan-a biodiversity hotspot, a comprehensive germplasm preservation system has been established, with plant germplasm bank as main component and involving animal and micro-organism banks as well, including seed bank, plant in-vitro library, DNA library, animal germplasm bank and microbial gene bank. 72 technical standards and norms for preservation have been developed so that the safety of important strategic biological germplasm resources in China is effectively guaranteed.

(2) A large number of important wildlife germplasm resources in China have been rescued and preserved. By the end of 2017, 225,522 possessions of a total of 21,666 species germplasms have been collected, including plant seeds, plant in-vitro materials, plant DNA, animal cell lines and microbial strains. Among them, there are 74,738 copies of 9,837 species of wild plant seeds belonging to 229 families and 1990 genera (one-third of the total number of flowering plant species in China); 20,810 copies of 1850 species of plant in-vitro culture material; 49,815 copies of 5,642 species of plant DNA molecular material; 1,985 copies of 292 animal species of cell lines; 56,274 copies of 1,825 species of animal DNA molecular material; and 22,200 copies of 2220 species of microbial strains. The bank made outstanding contributions to protecting the safety of China's strategic biological resources.

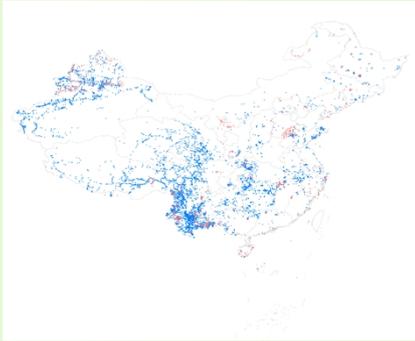
(3) The social sharing of resources and information has been fully achieved. Through hierarchical sharing and social orientation, the physical objects, data, equipment, facilities and technologies stored in the bank are fully shared. As of the end of 2017, a total of 76,000 plant collection data and related plant images were published online. 11,716 copies/443,515 seeds were distributed; and consultancy was provided for the establishment and operation of similar banks by more than 10 peer units. It provided advanced seed treatment equipment, cold storage facilities and experimental platform for major national special projects. The bank successfully organized 12 national training workshops on seed collection and management and 1 international training workshop on seed preservation technology, which effectively promoted the conservation and research of China's biodiversity, and made important contributions to China's ecological civilization construction, biodiversity conservation, sustainable use of biological resources and industrial development.



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GPS distribution of seeds collected



Long-term preserved seeds in cold storage