

Status, challenges, and prospects of biodiversity conservation and sustainability at the Botanical Garden Organization, Thailand

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The Botanical Garden Organization (BGO), located in Chiang Mai Province, Northern Thailand, was established in 1992. The BGO has three core missions: conservation, research, and education, all aimed at preserving Thai flora. Four plant groups are prioritized: rare and threatened plants (577 species), orchids (645 species), gingers (316 species), and medicinal plants (520 species). Currently, BGO hosts the largest living collection of plants in Thailand, comprising 17,510 accessions representing 5,300 taxa in 229 families, while the herbarium houses more than 140,000 plant specimens. To further its mission, six satellite gardens were established across Thailand to engage *in-situ* and *ex-situ* conservation efforts. Since 2008, BGO has been actively involved in the reintroduction of rare and threatened plants. A total of 37 species of threatened plants were reintroduced and monitored in the last five years. The BGO has conducted extensive plant research, focusing on diversity, in-vitro propagation, cryopreservation, innovation, and product development through commercialization. Furthermore, research collaborations at both national and international levels have been undertaken. Moreover, BGO promotes conservation awareness through educational activities and public services such as eco-school programs, school botanical gardens, botanical conferences and journals, and internship and training courses for Thai and international students. However, BGO faces several challenges in conservation, research, and education, including habitat destruction, climate change, funding, and resource limitations. In this presentation, we examine the issues that have prevented us from fully achieving our mission and outline the necessary changes to our approaches. Despite these numerous challenges in a rapidly changing world, we also have significant opportunities to lead in biodiversity conservation, innovative research, and public education. By addressing these challenges through strong partnerships and meeting local and national demands with global expectations, botanic gardens can continue to play a vital role in preserving global biodiversity sustainably.