

How do living collections support the development of botanical gardens: an example from Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences

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Botanical gardens are institutions committed to collecting, introducing, domesticating, preserving and promoting plants, as well as performing plant-related scientific research and science education. Xishuangbanna Tropical Botanical Garden (XTBG) is on a mission to become the Noah's Ark for plants. This report introduces XTBG's mission, which includes species conservation, performing scientific research, and science education covering tropical China toward southwest China and southeast Asian countries in major disciplines such as forest ecology, resource botany, and conservation biology for sustainable development. XTBG aims to become a world-class botanical garden, a high-level plant diversity conservation and ecological research and development base, and a national strategic tropical plant resources conservation and research and development base. Thematic collections or gardens refer to a collection of plants under a particular theme or topic that comprises plants of the same quality type (species, family, ecological habits, ornamental characteristics, utilization value, etc). It is organized as a landscape element to display plants conserved via *ex-situ*, either for ornamental purposes or centered around production and scientific research goals. This report also highlights the genesis and development of the thematic collections/gardens, the development course of the XTBG living collections, the overview of the current situation of the living collections, and the supporting role of the plants living collections surrounding the aspects of species conservation (diversity of plant germplasm resources), scientific research (platform function), garden landscape (enriching plant landscape, strengthening garden theme), and popular science tourism (popularization of popular science, tourism income).