



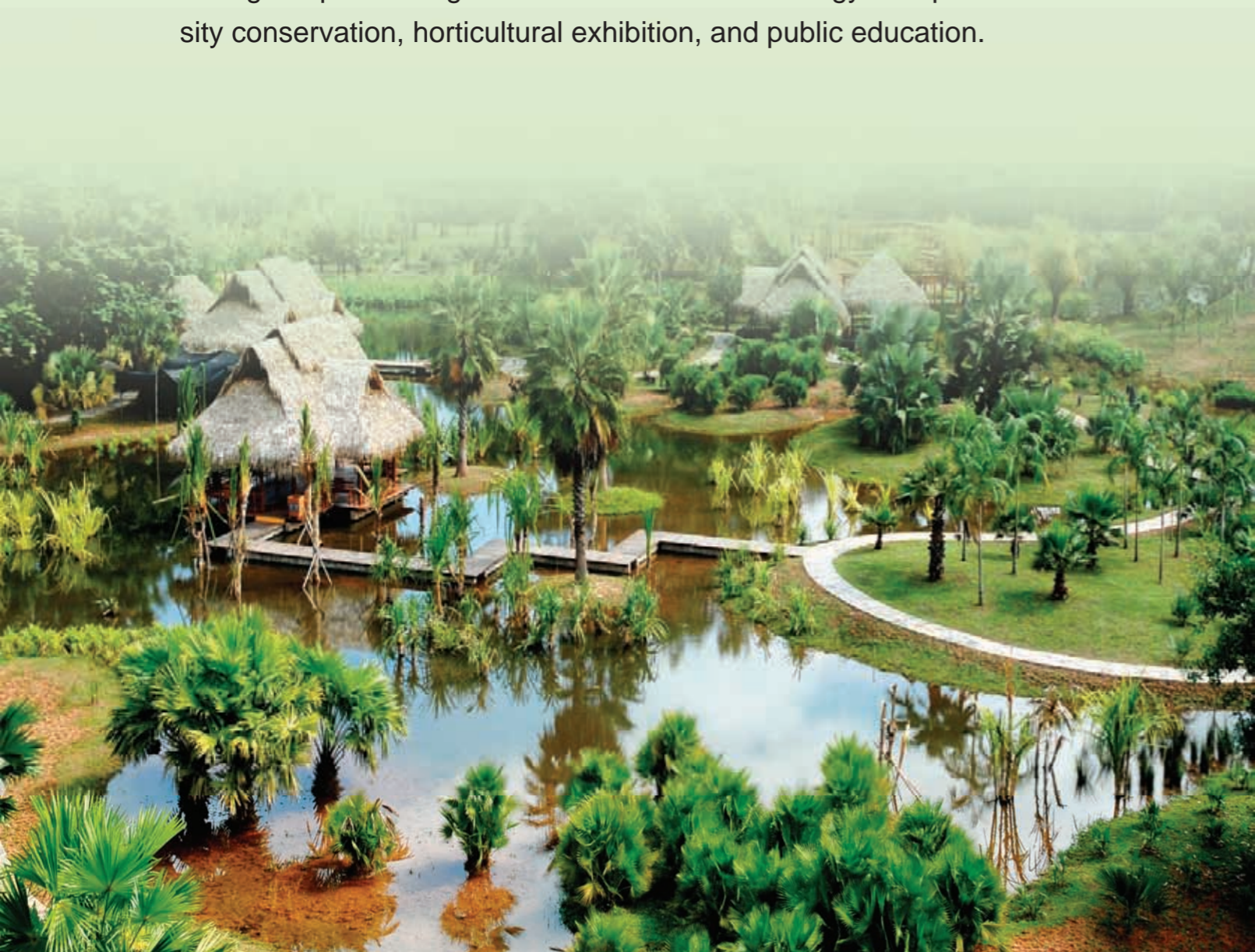
Xishuangbanna Tropical Botanical Garden (XTBG), Chinese Academy of Sciences is a non-profit, comprehensive botanical garden involved in scientific research, plant diversity conservation and public science education, affiliated directly to the Chinese Academy of Sciences.

**XTBG's vision:**

Desirable base for plant diversity conservation and ecological studies.  
Noah's Ark for tropical plants.

**XTBG's mission:**

Promote science development and environmental conservation through implementing scientific research on ecology and plant diversity conservation, horticultural exhibition, and public education.



# Annual Report 2007

**Xishuangbanna Tropical Botanical Garden  
Chinese Academy of Sciences**

**31 March 2008**

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## Message from the Director



As we move into the second year of the 11<sup>th</sup> five-year plan, the year 2007 marked an exciting transition for XTBG with all of our efforts to put those plans into practice. This transition made 2007 a year of ACHIEVEMENT.

The ACHIEVEMENT was indicated by major progress towards many of our stated objectives, including the improvement of academic standards, the expansion of our conservation efforts, and the development of key infrastructure. In 2007, our XTBG scientists published an increasing number of important scientific findings in international journals, totaling about 12 papers in leading journals. This ACHIEVEMENT illustrates the commitment of our academic staff to conduct rigorous experiments and the collection of critical data, often using innovative approaches in order to meet the needs of the rapidly changing global society. A series of publications demonstrated the ecological consequences of large scale conversion of natural forest into rubber plantations in the Xishuangbanna region. The results from three lab groups, led by Professors MA Youxin, LI Qingjun, and ZHU Hua, indicated significant negative impacts upon local environmental quality and biodiversity. These important results were cited by Science magazine (319:1604), the leading international scientific publication. Professor CAO Min's team developed an innovative approach for environmental impact assessment, which was recognized by the State Forestry Administration. Their approach will be adapted throughout Yunnan Province and in other parts of China, as well. Professor ZHU Hua's

proposal to establish a new protected area in Mengsong-Bulangshan, one of few remaining intact tropical forests in China not currently protected, has gained strong support from the Xishuangbanna autonomous government.

The ACHIEVEMENT was further indicated by the successful creation of several new research groups, particularly those focused on the applied sciences. Invasive species is now considered one of the major causes of biodiversity loss. Botanical gardens should be leaders in the study of invasion species as these gardens have been frequently responsible for the introduction of exotic plants and have extensive knowledge and experience concerning the ecology and distribution of these plants. Established in 2006, the Invasive Biology lab, led by Professor FENG Yulong, has made significant progress on this direction. Prof. FENG's work resulted in the publication of a new hypothesis published in *Oecologia* (153: 501-510). Professor FANG Zhen's new group hopes to develop new and efficient mechanisms to convert renewable biomass, especially lignin, into energy or chemical products. Dr. FANG's group has already shown encouraging progress.

The ACHIEVEMENT also included a rapid improvement of the research facilities and general infrastructure. XTBG has enjoyed strong support from the Chinese Academy of Sciences in these activities. The designs for a new research center, including five buildings, were completed by French chief designer Alain HAYS. This new center will create a high-quality environment for research. Additionally, an agreement for a new



long-term ecological research station in the unusual tropical savanna habitat of Yuanjiang County has been signed by the local government and XTBG. Meanwhile, XTBG has continued to support the development of our well-established research groups with separate funds of more than 10 million RMB to renew equipment.

The second phase of XTBG's landscape improvement project, sponsored by CAS, marks another major ACHIEVEMENT. Our public collections have expanded rapidly, including the new tropical brilliant flower garden (23.5 ha), enlargement of the palm collection emphasizing the wetland microhabitat (increased by 5.3 ha), and of the ginger plant collection (increased by 2 ha). On 4<sup>th</sup> December 2007, a committee led by Professor HUANG Hongwei, Chair of the CAS Botanical Garden Working Committee, and Dr. SU Ronghui, Deputy Director General of the Bureau of Life Science and Biotechnology of CAS, conducted an on-site evaluation. The committee was highly appreciative of the progress obtained by XTBG. As our garden becomes brighter and greener with new buds, shoots, and blooming flowers, our hard-working colleagues' faces become darker and browner after spending 600 days outside under the tropical sun to successfully plant and care for these new collections.

As implied in XTBG logo, public education and engagement is one of the supporting foundations of our mission. Proposed and sponsored by XTBG and in cooperation with Xishuangbanna TV station, a documentary program entitled 'Stories from the Tropical Rainforest' formally opened in late September. Each of the 108 episodes lasts 15 minutes and one episode will be shown each week. This program aims to present lovely stories about the tropical rainforest in order to honor the connection between man and nature, our intimate

knowledge of this connection, and to enhance the awareness about preserving natural forest and beauty. These programs are produced in both Chinese and Dai languages, to reach the widest audience. In cooperation with Hong Kong's Kadoorie Farm & Botanic Garden, we jointly held an exhibition about tropical rainforests in Hong Kong, to introduce the wonders of tropical nature to the residents of this island city. On 22<sup>nd</sup> May, the world biodiversity day, XTBG exchanged posters with Royal Botanical Gardens, Kew (United Kingdom), in order to share the efforts of botanical gardens towards biodiversity conservation.

As a research institute of the Chinese Academy of Sciences, ambitious and qualified expertise will be critical for the pursuit of excellent research and for a better understanding of biodiversity and its conservation. For XTBG, a botanical garden located in the remote southwestern border area of China, we like to say, 'XTBG is very far away from Society whereas very close to Nature.' This unique position presents a special challenge in our efforts to collect and maintain a 'critical mass' of talented and enthusiastic scientists. Given that few Chinese scientists currently focus on tropical biology, 'Internationalization' of the XTBG faculty would be a possible solution. In 2007, we are happy to report progress on this objective as well. We have successfully recruited Dr. Chuck CANNON (Texas Tech University) and Dr. Ferry SILK (Leiden University), who together have over thirty years of experience working in the tropical rain forests of Southeast Asia. Dr. FANG Zhen, the leader of the biomass energy group mentioned above, was born and raised in China but he held a research position at McGill University in Canada. The talent recruitment also included Dr. XU Zengfu from Zhongshan University and Dr. LIU Aizhong from University of Georgia. The new faculties also brought more integrated expertise, especially

adding the components of "Evo-Devo" and "Eco-Evo", which is obvious necessity for biological research in today's multidisciplinary times.

With these great ACHIEVEMENTS for 2007, the dream for making the garden both a 'TROPICAL PARADISE' and a 'SCIENCE ISLAND' could actually be realized.

Dr. CHEN Jin  
Director of XTBG