GENE CONSERVATION OF TROPICAL TREE SPECIES

State of the Art Review on Conservation of Forest Tree Species in Tropical Asia and the Pacific. International Tropical Timber Organization, Tokyo, Japan and the Regional Centre for Forest Management, Kuala Lumpur, Malaysia, 2000, 98 pp., ISBN 983–9518–08–9.

Technical Guidelines for the Establishment and Management of *in situ* Conservation Stands of Tropical Timber Species. International Tropical Timber Organization, Tokyo, Japan and the Regional Centre for Forest Management, Kuala Lumpur, Malaysia, 2000, 52 pp., ISBN 983–9518–09–7.

Technical Guidelines for the Establishment and Management of *ex situ* Conservation Stands of Tropical Timber Species. International Tropical Timber Organization, Tokyo, Japan and the Regional Centre for Forest Management, Kuala Lumpur, Malaysia, 2000, 116 pp., ISBN 983–9518–10–0.

Operational Plans for the Conservation of Tropical Timber Species in Southeast Asian Countries. International Tropical Timber Organization, Tokyo, Japan and the Regional Centre for Forest Management, Kuala Lumpur, Malaysia, 2000, 111 pp., ISBN 983–9518–11–9.

The International Tropical timber Organization (ITTO) is dedicated to sustainable development of tropical forests through trade, conservation and proper forest management. One of such projects aimed at sustainable development and management was "Planning practical and cost-effective strategies for genetic-resource conservation of commercial tree species in tropical Asia and the Pacific". This project was funded by the governments of Japan and the United States and implemented by the Regional Centre for Forest Management.

The first volume describes state-of-the-art of the gene conservation status in the following five countries Brunei Darussalam. Indonesia, Malaysia, Philippines and Papua New Guinea. It is based on country reports and reveals the progress in the gene conservation of commercial tree species. One chapter is aimed at comparison of the legal rules for forest conservation in the respective countries.

Valuable insight gives the comparison of *in situ* and *ex situ* measures carried out in individual countries, which define the target species as well as listing the gene diversity investigations using gene markers (Malaysia). Public awareness programs, the lists of reserves, breeding populations and experimental areas are given in appendices.

The second volume is aimed at *in situ* conservation strategies for target species within the natural or original ecosystems. Main attention of this chapter is paid to the families of Dipterocarpaceae and Leguminosae for which the main conservation method applied is the Protected Area System which already exists in these five countries in some forms. Technical guidelines for *in situ* conservation consider except the protected areas also a system of managed production forests (forest management units) which will be implemented by operational plans.

The nation-wide strategy presupposes the implementation on national level including the definition of national priorities (target species), location of conservation stands and definition of management of production forests.

The aim of the third volume is the formulation of the technical guidelines for *ex situ* conservation. Besides the general discussion of seed banks and the role of arboreta, botanical gardens and gen conservation stands, the main attention is aimed at the role of seed production areas for *ex situ* conservation. Detailed recommendations are given for establishment and management as well as for the vegetative propagation (macropropagation and grafting). Significant attention is paid to seed bank establishment and maintenance and *in vitro* propagation methods including cryopreservation.

The fourth, volume gives an outline of operational plans for *in situ* and *ex situ* gene conservation. Operational plans (current status, proposed future actions, time frames and implementing agencies) are given for the above mentioned five countries.

The conservation of genetic resources both at the species and intra-specific levels in natural tropical forests (usually with high species diversity) depends on maintaining the essential functions of forest ecosystems. Besides the species interactions this presupposes the proper functioning of all the processes running on population level (mating system, pollination, gene flow both via pollen and seed, etc.) However, the size scale and diversity of tropical forests and the continuing anthropic pressure make the conservation more complicated.

Thanks are due to the ITTO and the funding governments for launching and finishing this project on the development of gene conservation strategies for tropics and the publication of this valuable quatrology of manuals. They will serve as a very valuable tool not only for the above mentioned five countries but also for other countries in tropics and subtropics.

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