

Country Report on Red Listing of Plants in India

M. Ahmedullah

INTRODUCTION

The Indian flora comprises about 45,000 plants spread over the entire country, but mainly concentrated in the hotspot areas of the Eastern Himalayas, Western Ghats, and to some extent in the Andaman and Nicobar islands. Out of these 45,000 plants, about 17,000 species form the vascular plant component and more than 15% are feared to be under threat.

The impetus to listing of threatened plants of India was first provided by the Eleventh Technical Meeting of the IUCN (1969). For the first time, Indian botanists working in different phytogeographical zones met to discuss the problems of threatened plants. The Botanical Survey of India (BSI), a research organisation under the Ministry of Environment and Forests, took the initiative to publish the preliminary list of threatened plants under the title of *Threatened Plants of India: A State-of-the-Art Report* (Anon, 1980). The listing of threatened plants received the necessary fillip when the US Fish and Wildlife Service sponsored the 'Project on Study, Survey and Conservation of Endangered Species of Flora' in the early eighties. The project resulted in the listing of about a thousand threatened Indian species. A project on the enumeration of 'endemic plants of the Indian region, with special reference to conservation' was initiated by the Botanical Survey of India in 1985. This resulted in the publication of the first volume of *Endemic Plants of the Indian Region* (1987). The book enumerated as many as 1932 peninsular Indian endemic plants, many of which were listed as rare and threatened.

The earlier Red Lists provided the baseline data for preparation of Data Sheets for inclusion in the Red Data Books of Indian Plants published by the Botanical Survey of India. The first three volumes of the Red Data Book (Nayar and Sastry, 1987, 1988, 1990) accounted for 619 threatened plants. The fourth volume of the Red Data Book of Indian Plants (Ahmedullah *et al.*, 1999) detailing 230 threatened plants is under publication, while the fifth volume with data sheets of 205 threatened species is being edited. The Red Data Books of Indian Plants together provide data on 954 threatened plants, with information on status (following the earlier IUCN Red List criteria), distribution, habitat and ecology, conservation measures taken, conservation measures proposed, biology and potential value, cultivation (if any), and taxonomic description.

The BSI project on endemic plants further resulted in the publication entitled, Conservation Status of Endemic Plants in Peninsular India: An Evaluation (Ahmedullah, in press). Following the earlier IUCN Red List criteria, this work evaluates 1,402 endemic taxa, of which more than 50 percent fall under various categories of threat. It also identifies the 'hotspot' areas of threatened endemic plants to help develop conservation action plants for these micro-centres of plant diversity.

The above Red Lists / books on threatened species including the Red Data Books, helped provide a lead to other conservationists, scientists, and conservation agencies, including NGOs, for conservation through a scientific and participatory mode approach; helped identify gaps in knowledge so that they can be filled and supplemented through research; and encouraged biologists to conserve threatened species through *in situ* or *ex situ* means and rehabilitate them in their natural habitats.

APPLICATION OF THE NEW RED LIST CRITERIA: THE FRLHT-CAMP INITIATIVE

There is indeed an urgent need for a rapid and reliable threat assessment process that can serve as a guide to an appropriate conservation programme. One of the most popular rapid assessment processes is the Conservation Assessment Management Plan (CAMP) developed by the Conservation Breeding Specialist Group (CBSG) of the SSC, IUCN. The CAMP workshops provide a systematic assessment of the threat status of selected plant taxa. They also form a means for testing the applicability of the new IUCN Red List Criteria. In India, the Foundation for Revitalisation of Local Health Traditions (FRLHT) has successfully used the CAMP process for assessment of medicinal plants.

The CAMP process is intensive and interactive. It brings together a broad spectrum of experts, like forest managers, specialist group members, ecologists, taxonomists, field biologists, cultivators, and even persons related to industry, to evaluate the threat status of species. This can be done for a country or geographic region, to set the conservation action and information gathering priorities.

The first CAMP workshop for medicinal plants of southern India was held at Bangalore in February, 1995. This was jointly organised by FRLHT, Bangalore and the Zoo Outreach Organisation, Coimbatore. In this workshop 36 medicinal plants were assessed and threat status assigned as per the IUCN Red List Criteria. This was followed by a CAMP workshop for the medicinal plants of southern India in February, 1996 and 44 species were assessed during this workshop. Subsequently, a third medicinal plants CAMP workshop was held for assessment of 53 medicinal plants of south India, in January 1997. As a result of these three CAMP

workshops, a total of 112 taxa were assigned Red List/ conservation status ranging from Lower risk but Near Threatened (LRnt) to Extinct (Ex).

Based on the experience gathered through the above three workshops and field studies relating to these taxa, it was felt necessary to undertake a review of the status of the entire list through a rigorous reassessment exercise. The fourth CAMP workshop for the medicinal plants of the southern India was, therefore, organised by FRLHT at Bangalore during March 1999. It was decided to do this exercise for two sets of taxa. The first set of “endemics” were assessed for global Red List status, while the second set of “non-endemics” were assessed regionally (State-wise i.e, for the South Indian states of Karnataka, Kerala and Tamil Nadu) for Red List status.

More than 45 participants from 16 different research institutions, universities, and forestry departments participated in the three-day CAMP workshop. The deliberations involved updating the data sheets for each taxon, reviewing as well as making corrections to the Red List categories assigned to them earlier. The entire list of candidate taxa was split into two sets, viz. endemic and non-endemic. The endemics, i.e, only those species occurring in the Western Ghats of peninsular India, were assessed for Global List status. A total of 58 such endemic medicinal plants were assigned revised Red List categories following the new IUCN Red List criteria, 1994. The non-endemic taxa, totaling 52, were individually assessed for Red List status in respect of each state of this region.

ISPSG/ SSC/IUCN INITIATIVES

The Indian Subcontinent Plant Specialist Group (ISPSG), with its network of botanists working in the different parts of the Indian subcontinent, has initiated work on database development (threatened species list, bibliography of threatened species) prioritisation, and preparation of conservation action plans. Prioritisation of taxonomic groups is based on conservation and biological values. Action plans on the top hundred endangered plants, the insectivorous plants, the poppies (genus *Meconopsis*) and ceropegias are under preparation. The ISPSG is in the process of undertaking intensive field studies to evaluate threatened species, taking into account - to the extent possible - population size and population numbers. Field evaluation of the Ceropegias of Western Ghats has been fruitful, and the results have shown that most of the Ceropegias in the region are under severe threat.