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Bamboo biodiversity

Information for planning conservation and management in the Asia-Pacific region

Nadia Bystriakova, Valerie Kapos, Chris Stapleton, Igor Lysenko

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The UNEP World Conservation Monitoring Centre is the biodiversity assessment and policy implementation arm of the United Nations Environment Programme (UNEP), the world's foremost intergovernmental environmental organization. UNEP-WCMC aims to help decision-makers recognize the value of biodiversity to people everywhere, and to apply this knowledge to all that they do. The Centre's challenge is to transform complex data into policy-relevant information, to build tools and systems for analysis and integration, and to support the needs of nations and the international community as they engage in joint programmes of action.

The International Network for Bamboo and Rattan (INBAR) is a non-profit, international organization established in 1997 by Treaty. As of June 2002, INBAR's Establishment Agreement had been signed by 26 countries. INBAR's mission is to improve the well-being of producers and users of bamboo and rattan within the context of a sustainable bamboo and rattan base by consolidating, coordinating and supporting strategic and adaptive research and development.

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Foreword

The bamboo plant supports an international trade which (even according to our currently imperfect trade statistics) is worth more than US$ 2 billion per year. Yet international trade represents only a small proportion of total bamboo usage – domestic use is estimated to account for at least 80 per cent. Bamboo is thus a major world commodity.

Despite this, very little is known about the distribution and resources of bamboo. Certain bamboo species (e.g. Chinese Moso bamboo, *Phyllostachys edulis*) have formed the basis for major industrial development and have been domesticated into plantations. Perhaps 50 or 100 bamboo species are preferred for use and are undergoing some degree of domestication. However there are estimated to be nearly 2 000 species in total. The vast majority of these occur only in their native ranges, and many may have uses of local or wider significance that have yet to be documented. Unfortunately, as obligate components of forested ecosystems, their futures are bound up with the survival of their forest habitats. This publication indicates that as forest ecosystems shrink under human pressure the survival of many potentially important bamboo species may be threatened.

This work is a first step towards quantifying bamboo resources in the world. It presents an innovative approach to quantifying the likely range of the various bamboo species. It also, through the aggregation of overlapping ranges, has something to contribute to knowledge about bamboo biodiversity.

The innovative approach used here can be applied to the study of other species associated with mapped ecosystems.

This study would not have been possible without the collaboration between INBAR and UNEP-WCMC. It was the detailed map-based databases of UNEP-WCMC that made the development of the methodology possible. Thus, this study is an excellent example of two organizations working together to combine their strengths.

Ian Hunter
Director General
International Network for Bamboo and Rattan

Preface

Bamboo – an intriguing name for a quite extraordinary group of plants! Essentially a family of giant woody grasses, they are used for every conceivable purpose, from scaffolding to boats, cooking utensils to furniture, for food, fuel, landscaping, ornamental display and a thousand other uses. Their direct and widespread importance to our social and economic well-being may be self-evident but, surprisingly, we still know relatively little about most bamboos in the wild. Although their importance to a few threatened species, such as the giant panda, is legendary, the distribution and conservation status of bamboos themselves largely remain a mystery.

The results described in this publication expand our knowledge base substantially. Information drawn from a wide range of botanical and other sources has been treated with sophisticated analytical tools to generate a new overview of the distribution of bamboos in the Asia-Pacific region. By providing insight into centres of diversity and the amount of habitat remaining for individual species, it will help to identify priorities for planning and management of bamboos. They are essentially forest plants and their future is linked to the survival of forest habitats – under pressure worldwide from the expansion of agriculture, plantation forestry and climate change.

Conservation of biodiversity is a necessary step towards solving the problems of poverty alleviation and sustainable development – this message is clear from the Johannesburg World Summit on Sustainable Development. But conservation in today's world means the adoption of an overarching, ecosystem approach that takes into account species, their habitats and the landscapes in which they occur. The mapping approach used in the analysis undertaken here facilitates building this bigger picture for conservation. This report will help range states to recognize, and value, the bamboo genetic resources on their own doorsteps, and to conserve them for future generations.

I welcome this opportunity to collaborate with INBAR, the world's bamboo and rattan trade network. I hope that our first analysis will form the basis for future assessments of bamboo resources and their conservation status. Bamboos are a fascinating group of plants that bring benefits to people everywhere; they should be conserved as an important resource for all our futures.

Mark Collins
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