

# Acknowledgements

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## Foreword

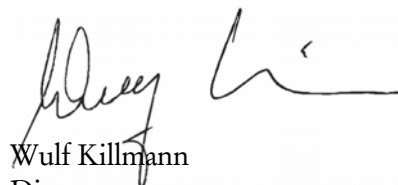
Bamboo is a major non-wood forest product and wood substitute. It is found in all regions of the world and plays an important economic and cultural role. Used for housing, crafts, pulp, paper, panels, boards, veneer, flooring, roofing, fabrics, oil, gas and charcoal (for fuel and as an excellent natural absorbent), it is also a healthy vegetable (the bamboo shoot). Bamboo industries are now thriving in Asia and are quickly spreading across the continents to Africa and America.

In spite of bamboo's importance worldwide, global statistics on its resources, production and trade remain rather scarce and inconsistent. Lack of reliable, comprehensive data on bamboo resources and utilization hampers their sustainable development and limits their potential to contribute to poverty reduction. In the past, both FAO and INBAR, under their respective mandates, have addressed the issue of bamboo resources assessment through various activities and studies. The present thematic study on bamboo was developed by FAO and INBAR jointly in the framework of FAO's *Global Forest Resources Assessment 2005* (FRA 2005), with the aim of filling the gap in global information and providing a first, comprehensive assessment of the world's bamboo resources. The study was officially launched during a joint FAO/INBAR workshop in Thailand in November 2004, preceded by much preparatory work, regional consultations and pilot testing. The study is thus the result of a three-year process of data collection and validation, involving many partners from participating countries and international organizations, in line with the FRA 2005 philosophy of global partnership.

It is hoped that the information and knowledge generated by this study will be used by national policy processes and that, conversely, feedback from users will serve to improve future global resources assessments.



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## Acronyms and abbreviations

<b>ABS</b>	American Bamboo Society
<b>DNA</b>	Deoxyribonucleic acid
<b>FRA</b>	Global Forest Resources Assessment
<b>HS</b>	Harmonized System (WCO)
<b>INBAR</b>	International Network for Bamboo and Rattan
<b>ITTO</b>	International Tropical Timber Organization
<b>IUCN</b>	World Conservation Union
<b>KEFRI</b>	Kenya Forestry Research Institute
<b>NFI</b>	National Forest Inventory
<b>NWFP</b>	non-wood forest products
<b>SFA</b>	State Forestry Administration (China)
<b>UNEP</b>	United Nations Environment Programme
<b>UNEP-WCMC</b>	World Conservation Monitoring Centre (UNEP)
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>USGS</b>	United States Geological Survey
<b>WCO</b>	World Customs Organization
<b>WWF</b>	World Wide Fund for Nature



## Executive summary

Bamboo is an ancient woody grass widely distributed in tropical, subtropical and mild temperate zones. It is a major non-wood forest product. There are about 1 200 species of bamboo in some 90 genera. Bamboo taxonomy poses certain difficulties for science, owing to the plant's often long flowering cycles, thus taxonomists still debate the total number of bamboo species and genera.

Bamboo is an integral part of forestry, but it is also widely spread outside forests, including farmlands, riverbanks, roadsides and urban areas. It is quickly changing its image from the "poor man's tree" to a high-tech, industrial raw material and substitute for wood. Bamboo is an increasingly important economic asset in poverty eradication and economic and environmental development. It has always played an important economic and cultural role across Asia. Now the use of bamboo is growing rapidly in Latin America and Africa as well. In some countries, the processing of bamboo is shifting from low-end crafts and utensils to high-end, value-added commodities such as laminated panels, boards, pulp, paper, mats, prefabricated houses, cloth and bamboo shoots.

The rapid growth in the use of bamboo is bringing concern about the sustainability of global bamboo resources. Despite the successful bamboo trade, very little is known about the actual status and dynamics of the bamboo resource base. One of the first attempts to assess bamboo resources on a global scale was carried out by FAO and the United Nations Environment Programme as part of the Global Forest Resources Assessment 1980 (FRA 1980) – it covered 13 countries known to possess substantial bamboo resources.

There are a number of national, regional and international studies on different aspects of bamboo resource development. Most provide rough, broad expert estimates instead of baseline statistics based on field observation. In the absence of reliable data, INBAR developed an innovative approach to quantify a possible range of bamboo resources in known forest types. An INBAR study matched bamboo species to site characteristics and mapped potential global distribution of species. INBAR's regional production-to-consumption studies attempted to link bamboo resources to supply-chain development. However, hypothetical maps and expert estimates cannot substitute for a proper resource assessment. Comprehensive data on bamboo resources are still missing, which threatens their sustainable development.

The present study is the result of a joint effort by FAO and INBAR to launch a systematic assessment of bamboo resources and their dynamics. It was undertaken as one of seven thematic studies within the FRA 2005 process.

The reporting format generally follows the structure of the main FRA 2005 assessment and includes tables, maps and lists of native and introduced bamboo species. Four joint FAO/INBAR workshops were organized in the course of the study to encourage and assist countries in providing bamboo statistics.

A total of 22 countries responded to the FAO/INBAR call for information and submitted national reports. The country reports confirmed data availability, although data quantity and quality varied significantly. Asian countries presented the most advanced resource statistics, while Latin America and Africa used primarily remote sensing and expert estimates.

Sixteen countries in Asia reported a total of 24 million hectares of bamboo resources for this study. Five African countries reported 2.8 million hectares. It is estimated that ten Latin American countries may have over 10 million hectares of bamboo resources, taking the world total to some 37 million hectares or roughly 1 percent of the global forest area. However, the figures represent only rough estimates and include pure bamboo forests, bamboo mixed with other species (in which bamboo is not necessarily predominant) and bamboo on other land (also pure or mixed with other trees or crops). Monopodial species normally prevail in the subtropics, while sympodial bamboo is much more common in the

tropics. The present study also addresses issues of bamboo resource ownership, naturally regenerated and planted areas, growing stock, biomass, species biodiversity, removals, products and trade.

One of the main conclusions of the report is that bamboo statistics are often poor, inconsistent, fragmented and based on different definitions, methodologies and assumptions in different countries. A common methodological approach is missing. The study results are, therefore, essentially preliminary and should be treated with caution. However, this does not diminish the importance of the initiative, whose main value is that it has established a systematic methodology and has launched the most comprehensive assessment of global bamboo resources to date.