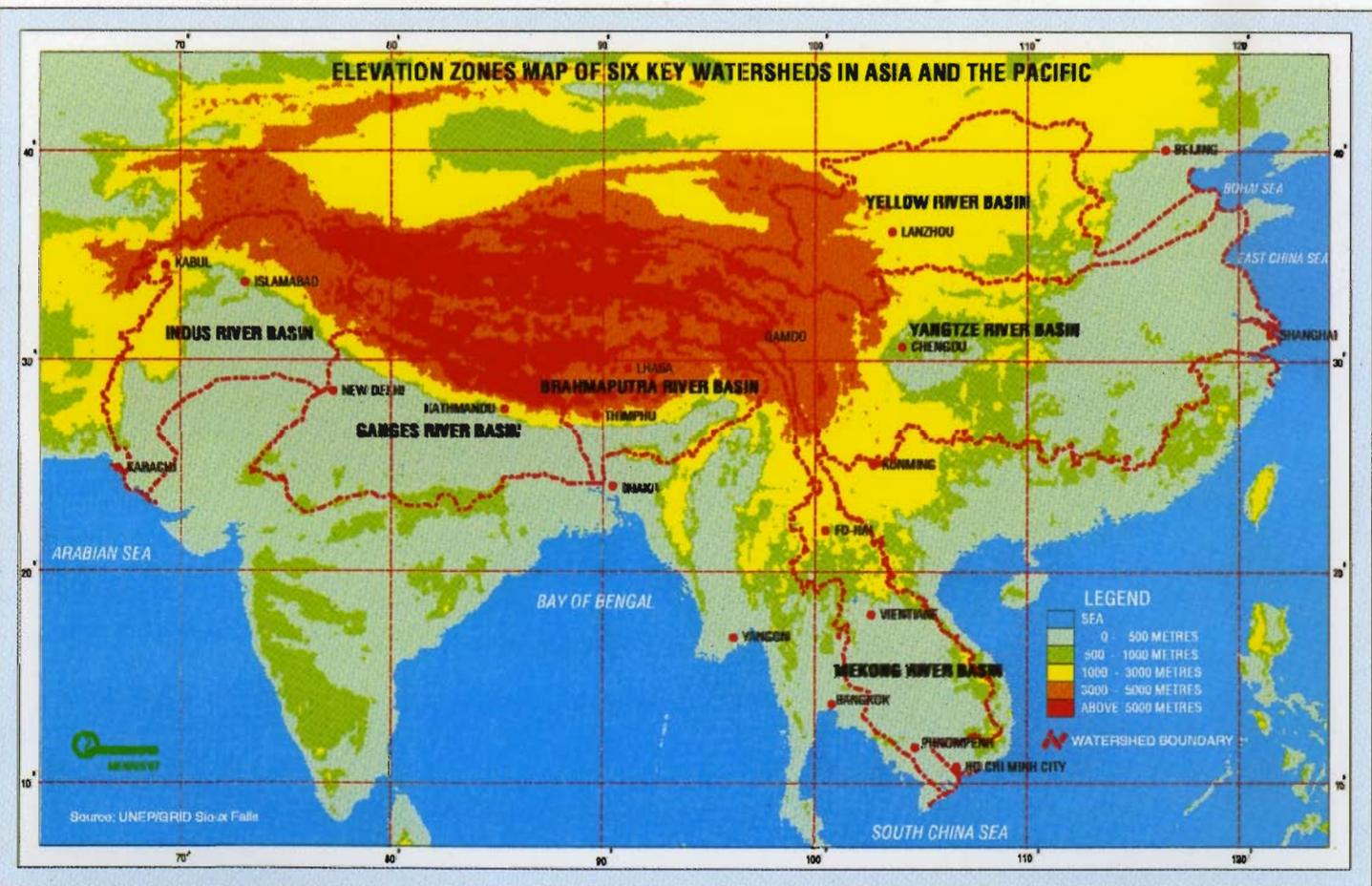


Forestry and Key Asian Watersheds



**A. K. Myint
and
T. Hofer**

**International Centre for Integrated Mountain Development
Kathmandu, Nepal**

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Cover Page: Map of Elevation Zones of Six Key Watersheds in Asia and the Pacific

Published by
International Centre for Integrated Mountain Development
G.P.O. Box 3226
Kathmandu, Nepal

ISBN 92 9115 760 0

Typesetting at
ICIMOD Publications' Unit

Maps by
Govinda Joshi, Senior Cartographer

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Forestry and Key Asian Watersheds

A Paper Prepared as Background Document for
the Asia-Pacific Forestry Outlook Study of
the Food and Agriculture Organization
with Financial Support from
the Canadian International Development Agency (CIDA)

by
A. K. Myint
Forest Resources' Specialist
and
T. Hofer
Hydrologist

With Inputs from Four Background Documents
'Yangtze River Basin Forestry'

by
Prof. Li Wenhua, Chinese Academy of Sciences

'Yellow River Basin Forestry'

by
Prof. Li Wenhua, Chinese Academy of Sciences
Prof. Shen Guofang, Beijing Forestry University
Prof. Chen Guangwei, Chinese Academy of Sciences

'Indus River Basin Forestry'

by
Dr. Ghazi Marjan, Forest Management Centre, Pakistan

'Brahmaputra River Basin Forestry'

by
Prof. D. C. Goswami, Gauhati University, India

Maps were Prepared by
Mr. Govinda Joshi, Senior Cartographer, MENRIS, ICIMOD

International Centre for Integrated Mountain Development
Kathmandu, Nepal

Foreword

Six of the largest river basins in the world originate from the Tibetan Plateau, far above the tree line, and cover downstream areas with the highest population density in the world, no longer allowing for any substantive areas of forest. In between, these rivers flow through mountains and hilly areas, where millions of people over the ages have been highly dependent on forests for their daily needs for fuel, fodder, timber, and numerous other non-timber forest products and services. Forest also play an important role in protecting soils and regulating water flows.

While over the last 40-50 years, many studies have been carried out on the role of forests in watersheds of small and medium sizes, in Asia no comparative studies had been undertaken at the time the Asia Pacific Forestry Commission decided to prepare the Asia Pacific Forestry Sector Outlook study in 1996. As part of this study, ICIMOD was asked to prepared a background document analysing the role of forestry in key Asian watersheds. It was a new challenge for ICIMOD to go beyond the centre's usual focus on the Hindu Kush-Himalayan Region, and in particular to areas below 300 metres, areas inhabited by hundreds of millions of people who are largely dependent on irrigated agriculture fed by the rivers that had collected their waters in rugged terrains and high forests upstream.

The present document is a first attempt to synthesise the information that could be collected in a relatively short period. This has only been possible by combining the information available from satellite imagery with the considerable knowledge and experience of five consultants who prepared background documents on four of the watersheds. An earlier draft had benefitted from comments by the Forestry Outlook Study Steering Committee, which met at ICIMOD in Kathmandu in November 1997.

We are grateful to FAO for giving us this opportunity to look at the broader picture of forestry and large watersheds and to the Canadian International Development Agency which provided financial support for the study, as well as for the meeting of the steering committee. The authors of the background documents deserve a special mention for their timely submission of highly useful information. Prof. A. K. Myint, Dr. T. Hofer and ICIMOD's editorial and desktop publishing staff have been particularly helpful in processing the document in time for the next session of the APFC in Yogyatarta, Indonesia.

The present study provides some of the answers to the questions raised two years ago. It also points out that more detailed analysis and collection of data, focussing on specific areas in these watersheds, would be particularly helpful in determining the types of interventions and support mechanisms needed in the forestry sector and beyond. The people and environment of these lifelines of development deserve this much attention.

Egbert Pelinck
Director General

Acknowledgements

This case study was made possible by the support and collaboration of the Canadian International Development Agency (CIDA) and FAO. The authors thankfully acknowledge the constant support of these organizations.

The authors would like to acknowledge with sincere appreciation the contributions of Professor Li Wenhua, Chinese Academy of Sciences, Professor Shen Guofang of the Beijing Forestry University, and Professor Chen Guagwei of the Chinese Academy of Sciences to work on the Yangtze and Yellow River basins. For contributions on the Indus River Basin, we would like to acknowledge the valuable contributions of Dr. Ghazi Marjan of the Forest Management Centre, Pakistan. Without the contributions of Professor D.C. Goswami of Gauhati University, India, the sections on the Brahmaputra River Basin would have been incomplete. We also benefitted from the wealth of knowledge of Dr. V. N. Pandey of the Forest Survey of India with respect to information on the Ganges' Basin.

We here would like to acknowledge the continual encouragement and support provided by the Director General of ICIMOD, Mr. Egbert Pelinck. His valuable suggestions and guidance have been persistent throughout.

The document was prepared for publication in a very short period of time. We here acknowledge the contributions of the Senior Editor, Greta Rana; Cartographer, Asha Kaji Thaku; and Desktop Publisher Sushil Man Joshi. The original maps were prepared by Govinda Joshi of MENRIS, ICIMOD.

Prof. A. K. Myint
Dr. T. Hofer

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Six major rivers of Asia are studied for the forestry situations in their watersheds: the Indus, Ganges, Brahmaputra, and Mekong are international rivers, whereas the two other rivers studied are the Yangtze and Yellow rivers of the People's Republic of China. Basic information on the geography, climate, hydrological conditions, sediment and water quality, land cover, and socioeconomic conditions of these river watersheds are described. The importance of hydropower potential in the areas is mentioned, while the amounts of erosion and sediment loads are pointed out. Forest resources in each individual watershed are discussed. The main driving forces affecting the forest cover, which include national policies, population growth and poverty, economic development and industrialisation, infrastructure and hydropower production, climate change, and highland lowland interactions are classified and deliberated upon. Prospects for forestry towards the year 2010 assuming the various scenarios are predicted. The implications for future action are assessed concerning the elevation zones between 300 to 3,000 m; forestry management for and by local communities; integrated approaches in planning; economies based on forestry and environmental conservation; development of other sectors; international conventions; measures for mangrove forest improvement; the reimbursement of highland societies for benefits received in the lowlands; and the assistance of the global community in conserving biodiversity are emphasised. Recommendations for assessment of forest cover and analysis of the role of forestry in selected meso-watersheds are made.

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