

# Chapter I

## Introduction

The United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992 provided impetus and commitment to international activity focussed on the world's forests by defining Chapter 11 of Agenda 21 as 'Combating Deforestation'. In Chapter 13, 'Managing Fragile Ecosystems: Sustainable Mountain Development', the forests receive considerable attention, too.

The annual loss of tropical forests in South Asia and Continental South East Asia was reported as 0.6 million ha and 1.3 million ha respectively during the periods from 1980-90 (FAO 1995a and 1995b) and 0.14 and 1.16 million ha respectively for the period 1991-95 (FAO 1997b and 1997c). FAO (1995c) carried out a comprehensive study on tropical forest plantation resources and reported that nineteen tropical Asian countries had annual plantation rates averaging 2.112 million ha during the period from 1980-90.

In view of these figures there is no doubt that the Asia-Pacific region is undergoing changes brought about by rapid economic growth and the continuing increase in its population. In order to assess these various changes, the FAO has proposed an outlook study for the forestry sector with the time horizon of 2010. This proposal was agreed to by the Asia-Pacific Forestry Commission at its sixteenth session in Yangon. The Asia-Pacific Forestry Outlook Study has the overall function of assessing the status, trends, and outlook for the forestry sector up to 2010. Implementation will involve the collection of specific studies which will then be jointly analysed and blended into the overview report.

As one component of the Asia-Pacific Forestry Sector Outlook Study, ICIMOD was asked to provide an in-depth analysis of forestry development and key Asian watersheds. The purpose of the study, entitled 'Forestry and Key Asian Watersheds', was to present a summary assessment of the current situation, trends, and prospects up to the year 2010 of mountain watersheds/ecosystems, the significance and roles of forests and trees in them, pressures and potentials on these forest resources, and the main uses by local and external beneficiaries of the productive environmental and social roles of forests in these areas. The specific topics to be covered by the study include the following.

- The key mountain/watershed systems of Asia-Pacific and their significance in the region. Economic and social significance singly and in the context of downstream benefits.
- The situation; main situation of forests and trees in mountain/watershed regions, with a focus on observed patterns of degradation and/or rehabilitation and the institutional and policy environment for conservation, sustainable management, and use of forest resources in these zones.
- The main driving forces influencing the state and continued survival of the forests in key mountain/watershed areas.
- Implications of future scenarios for policy and action - including necessary investments.

The present study covers the watersheds of the Yellow River, the Yangtze River, the Mekong River, the Ganges River, the Brahmaputra River, and the Indus River. The six basins selected for this study represent the major, largest and most important river systems in Asia and the Pacific region. In order to procure background information for the study, national professionals were consulted, and their reports were brought together into this report. Various other studies were available and used: studies on the Ganges and Brahmaputra River basins and the upper reaches of the Yangtze River Basin were carried out by Bruijnzeel and Bremmer (1989) and Jizheng (1993). The Mekong River Commission reported on the analytical situations of the riparian countries of the Mekong River (MRC 1997) and published the proceedings of the Mekong watershed classification and forest cover seminar (MRC 1995). Hofer and Messerli (1997) have discussed the flood characteristics of Bangladesh in the framework of Himalayan highland-lowland interactions.

For this study some very important general comments have to be made. Generalisations have to be made in order to achieve the goals of the study.

- The watersheds discussed in this report are huge. There is a lot of variation within and between the six watersheds which can not be given sufficient attention in this report. Many, in part risky, generalisations have to be made in order to achieve the goals of the study.
- The aim of this study is not to provide complete, detailed information, this would be impossible to do. The approach we have taken is to highlight a number of striking key issues, typical of the six watersheds, on a highly aggregated level.
- The data situation is very difficult. Comprehensive data sets are either not available or not comparable. Only the 1992-93 NOAA satellite data provide a basis for comparison in a broader sense. Therefore, many statements in the report are generalisations.
- The first part of the report provides an overview of the physical conditions in the six key watersheds. In the second part the forests are at the centre of the discussion.