

Introduction

The Himalaya is well known for eternal snow, for the mysterious abode of the abominable snowman, and for adventures offered by its majestic heights. A sharper focus on the Himalaya, however, reveals that it is also an abode of deprived people, millions of whom have an integral social relationship with the mountains. The interplay between human activities and mountain resources has emerged as a critical factor in sustaining the mountains and the people living in and around the region.

This pronounced need to search for social and economic objectives with ecologically sound management prompted the establishment of ICIMOD in December 1983. Among its various activities, the Senior Research Fellowship Programme provided special opportunities to the scientists of this region to participate in the endeavour of integrated mountain development. The present study on the "Development Ecology of the Arun River Basin in Nepal" was undertaken as the first fellowship programme of the Centre.

The Arun river is an antecedent river with respect to the Himalaya. The entire basin covers some 36,500 sq km in China and Nepal. The area of the present study lies largely on the south of the main Himalayan range in the territory of Nepal. It covers some 5,000 sq km of eastern Nepal in the Kosi zone. Such a large area of mountainous terrain would require a huge effort of research and exploration to arrive at quantifiable results for management options. Besides, a complete study of an ecosystem could conceivably have no end. Therefore, attempts have been made in this study merely to elucidate the principal features of physiography, geomorphol-

ogy, vegetation, fauna and flora, vis-a-vis the human population of the basin. Observations have also been made on (i) how peasants obtain their subsistence, (ii) what is their calendar of operation in their field, and (iii) what factors determine their choice of site for raising crops, grazing animals, and utilizing vegetation resources. The role of different natural communities eg., forests, shrublands, grasslands, and meadows was examined in the context of environmental management. Attempts were made to extract lessons from the self-recovering system of nature, through regeneration of vegetation on degraded slopes. The study has reaffirmed the need to protect the Makalu-Barun area from further human encroachments, in order to preserve some of the pristine areas of natural wilderness. The biological resources of the basin have been duly outlined, without going into detailed academic exercises.

The need for incorporating environmental concerns into the management of water resource development has been discussed in the context of the proposed Arun III hydroelectric project and its approach road. This project will have a profound effect on the ecosystem of the basin, which has not yet been adequately anticipated.

Information on natural as well as transformed ecosystems is as yet either too meagre or much too uncoordinated to define sound guidelines for better management systems. The disconformity of available data further aggravates the problem. Besides, quite a few of the available data, specially on ecology, need to be reprocessed so as to make them compatible for an integrated approach. The study has been aimed primarily :

- o to discuss the area in biophysical terms, to provide the basis and background for further studies;
- o to integrate the available information on natural and transformed ecosystems; and
- o to identify issues related to development ecology.