

## **Global Change, Biodiversity and Livelihoods in Cold Desert Region of Asia**

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Source: Mountain Research and Development, 32(1) : 99-100

Published By: International Mountain Society

URL: <https://doi.org/10.1659/mrd.mm092>

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## Global Change, Biodiversity and Livelihoods in Cold Desert Region of Asia

Edited by K. G. Saxena, Luohui Liang,  
and Xian Xue. Dehra Dun, India:  
Bishen Singh Mahendra Pal Singh,  
2011. xvi + 322 pp. € 35.00, US\$  
50.00, INR 1495.00, direct order:  
bsmps@vsnl.com. ISBN 978-81-211-  
0780-8.

*Global Change, Biodiversity and Livelihoods in Cold Desert Region of Asia* is an interdisciplinary collection of articles on global change in the cold desert areas of China, India, Mongolia, Nepal, and Tajikistan. This region includes high-mountain Himalaya and the Tibetan Plateau, which often are of altitudes >5000 masl; this region is referred to as the “Roof of the World.” The volume is edited by Indian and Chinese authors, and has contributions from Chinese, German, Indian, Japanese, Norwegian, and Tajikistani academics, researchers, and practitioners. It consists of papers presented at an international workshop organized jointly in 2008 by the United Nations University, Tokyo, Japan, Jawaharlal Nehru University, New Delhi, India, Zoological Survey of India, High Altitude Research Station, Solan, India, and the Cold and Arid Regions Environmental and Engineering Research Institute of the Chinese Academy of Sciences, Lanzou, China, to identify knowledge gaps in making regional conservation and development policies more effective.

This volume does indeed make a substantial contribution to filling the knowledge gap in this relatively poorly studied region. The content situates itself well to address the conservation-development nexus and is divided logically into 3 broad sections, each dealing with a theme: (1) climate, soil, and biodiversity, which introduces conservation issues; (2) land use change and livelihoods,

which identifies the challenges; and (3) environmental conservation, which explores the opportunities. The final chapter attempts to present a synthesis. Although this division is logical, the volume could have benefited from an introductory chapter that places the edited work in context, although the preface serves that role to some extent. Some editorial commentary opening and closing each section would also have been beneficial. Notwithstanding the fact that the volume covers a very broad geographic area, maps of the study region are conspicuously lacking. A summary map that indicates the study sites spread across the region as well as schematic maps that indicate the location of study sites considered in each chapter would have been enormously beneficial to readers.

Chapters 1–11 focus on climate, soil, and wild biodiversity. This section includes studies as wide-ranging as the reconstruction of the Himalayan climate over the past 2000 years, by using tree-ring records, to fish and fisheries in the cold deserts of the Indian Himalaya. The section also has studies on classification and characterization of soil resources, perspectives on conservation, and utilization of wild biodiversity of plant communities and some groups of invertebrates and vertebrates. The section introduces the physical environment of this cold desert region and illustrates, with case studies, some aspects of its biota. The methods used by the authors are as wide ranging as the topics themselves and include climate modeling, dendrochronology, species inventories, and soil analysis. Some studies also develop taxonomic classifications for poorly studied organisms, whereas others estimate population sizes of well-surveyed organisms.

Chapters 12–23 form the second section, which focuses on the challenges. These include rapidly changing land use in the region and its implications for sustaining livelihoods and ecosystems. Studies tackle agro-ecosystems and pastoral land-

scapes, and examine issues that surround their management and conservation. References can be found to indigenous knowledge systems, their value for modern-day resource management, and challenges posed by the erosion of this knowledge. This section makes the reader aware of the challenges that face environmental conservation and sustainable development in this region. Methods are wide ranging and include analysis of data from agricultural census, questionnaire surveys, and semistructured interviews, resource assessment, archival research, and ethnographic techniques to understand indigenous knowledge systems. Some studies also use methods that compare landscapes at various scales: farm, village, district, and region.

Chapters 24–30 form the third section, which identifies opportunities for environmental conservation and sustainable development of this region. Studies examine prospects for improving peoples' livelihoods and improving ecosystem management to find win-win solutions for environmental conservation. Case studies include the role of apricot in environmental conservation in cold and arid highlands in Ladakh, where the authors demonstrate that apricot cultivation can enhance the rural economy while apricot trees also provide shelter and food for wildlife. In other chapters, the authors explore new animal husbandry systems to enhance rangeland management in the cold desert of northwest Tibet. Case studies in this section are based on successful examples of resource management that can be replicated elsewhere in the region.

The 31 chapters, on a wide variety of topics, from past climate to future management of rangelands and from rural livelihoods to sustainable tourism, provide an introduction to a wide variety of issues in the cold desert region of Asia. However, this breadth of issues means that the book is not able to go deeply into any of the issues, and its division into 31 chapters makes it somewhat

fragmented. The book is written by more than 60 authors and, as a consequence, there are inconsistencies in writing and referencing styles; some chapters use only a handful of references to outside literature, whereas other chapters provide extensive bibliographies. Furthermore, readers would have benefited enormously from a summary at the beginning of each chapter, along with a schematic map of the region that points to the geographical

location of the study. Despite these minor shortcomings, this volume provides a much-needed baseline inventory of the cold desert region of Asia, or at least parts of this vast geographical region. Although the individual contributions may not be suitable as stand-alone research articles in peer-reviewed journals, collectively, the volume provides a useful reference. For those interested in conducting research in this region on the conservation-development nexus,

this volume is a “one-stop shop” and is worth purchasing for the library shelf.

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