



Pathways Towards a Sustainable Mountain Agriculture for the 21st Century

The Hindu Kush-Himalayan Experience

Robert E. Rhoades

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ROBERT E. RHOADES

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Foreword

The founding of the International Centre for Integrated Mountain Development (ICIMOD) in 1983 was the first time ever that an organisation had been established to address the problems of mountain areas. Since that time, much headway has been made, particularly in the context of conceptualisation of the problems of mountain areas and how they should be addressed. In the early years, ICIMOD was quite successful in promoting the mountain perspective for application to development plans and policies for the mountains. It has also been successful in bringing together an interesting array of dynamic 'mountain thinkers'; viz., men and women who have devoted the whole or most of their professional lives to scientific enquiry into various aspects of mountain development. The author of this book is one of these 'mountain thinkers'.

Dr. Robert Rhoades attempts here to break new conceptual ground in addressing the problems of sustainable agriculture in the Hindu Kush-Himalayas. He commences by revisiting the Himalayan dilemmas and mountain perspectives in the earlier work of mountain professionals. His vision is to think innovatively about old problems and to devise means of involving the very people who benefit or suffer most from development interventions; mountain farmers. Dr. Rhoades' review of past conceptualisations on mountain development is thorough. He addresses the perspectives of all of the previous approaches under the categorisations of 'half-empty', 'half-full', and 'empty', glasses in terms of socioeconomic approaches to mountain problems. This is supported by a thorough examination of the different perspectives of 'sustainability' in general and sustainable agriculture in particular.

Following the inclusion of a mountain chapter in the UNCED (Rio) document (Agenda 21), mountain development and the accompanying concern of mountain scientists have finally come of age. Not long ago, the moun-

tains were marginalised in thought as well as in practice. This is not true today, more and more researchers and development planners are realising and accepting the crucial roles the environment of the mountains and the well-being of their inhabitants play in integrated and sustainable development of vast areas of the earth's surface which are home to the majority of the world's population. This was not so in 1990 when ICIMOD hosted the first international conference on sustainable mountain agriculture. It was in a paper delivered at that conference that Dr. Rhoades first suggested the use of the word **montology** to refer to mountain knowledge. We are all fully aware that work in the mountains involves the use of a variety of sciences, technologies, and skills - no single one of these will ensure a bright future for the majority of rural poor who inhabit these awesome and difficult terrains. However, the very importance of mountain research and development, the marginalisation of the mountains in the past, and the far-reaching effects that circumstances in the mountains have on the populations in the plains and valleys merit a word; a word of their own-the mountains deserve no less, particularly the Hindu Kush-Himalayas which form the youngest and largest mountain chain on earth.

ICIMOD wishes to thank Dr. Rhoades for approaching his assignment with a conscientious and diligent spirit. Conceptualisation of such difficult topics requires utmost commitment to the task at hand. This book was written during a three months' stay at ICIMOD during the second half of 1996. It was part of a larger project on Sustainable Mountain Agriculture, funded by the Ford Foundation. Without its generous support it would not have been possible for ICIMOD to undertake such an exercise. I hope that, in publishing this book, ICIMOD has added to the body of knowledge that will eventually free the mountain people from the seemingly never-ending cycle of poverty and bring them into the light of the 21st century to enjoy the just fruits of their arduous labours.

Egbert Pelinck
Director General

Acknowledgements

Many individuals have been instrumental in the making of this book on sustainable agriculture for the Hindu-Kush Himalayan region. I would like to express my gratitude to the Director-General of ICIMOD, Egbert Pelinck, for his confidence in my undertaking this task and his continuing encouragement during the preparation of this paper. Dr. Mahesh Banskota, Deputy Director, has been especially supportive, both administratively and intellectually. Special gratitude goes to Dr. Tej Partap, friend and colleague, who, as Head of the Mountain Farming Systems' Division of ICIMOD, was a major force in the shaping of my ideas. His staff, especially Neetu Ghale and Sami Joshi, served as kind and professional support as they carried out the processing of many unreadable versions. In the United States, La Bau Bryan also used her word processing skills to shape the manuscript into a more readable version. Greta Rana edited the final copy and Dharma R. Maharjan prepared the layout. Dr. Virginia Nazarea, Department of Anthropology of the University of Georgia, constantly encouraged me and provided new ideas throughout the writing process. I also must acknowledge all of the members of the ICIMOD professional staff who patiently taught me about their mountains. Their ideas are reflected in this final version, although I must take all the blame for errors and misinterpretation. They carefully reviewed the first draft of this report and, in doing so, demonstrated to me their superior knowledge of the region. The photographs provided by Daniel Miller, Anwar Junejo, Suresh Raj Chalise, and Pradeep Tulachan are a testimony of this knowledge. Finally, I dedicate this report to the rural mountain children born during this last decade of the 20th Century, for they—as the mountain farmers of the next century—are the only final judges of the validity of the ideas outlined in this report.

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January 20, 1997

Acronyms

CGIAR	Consultative Group for International Agricultural Research
CIMMYT	<i>Centro Internacional parra Mejoramiento de Maize y Trigo</i>
CIP	<i>Centro Internacional de La Papa</i>
CRSP	Collaborative Research Support Project
DANIDA	Danish International Development Agency
FAO	Food and Agriculture Organisation of the UN
fsr	Farming Systems' Research
GIS	Geographical Information Systems
GO	Government Organisation
HKH	Hindu-Kush Himalayas
HRAF	Human Relations' Area Files
HYVs	High Yielding Varieties
ICIMOD	International Centre Integrated Mountain Development
ICRISAT	International Crop Research Institute for the Semi-Arid Tropics
IITA	International Institute for Tropical Agriculture
IRRI	International Rice Research Institute
IUCN	International Union for Conservation of Nature
MASSIF	Mountain Agriculture and Societies' Information Files
NGO	Non-Government Organisation
SALT	Sloping Agricultural Lands' Technology
SANREM	Sustainable Agriculture and Natural Resource Management

New conceptual ground is broken in this book in addressing the problems of sustainable agriculture in the Hindu Kush-Himalayas. The Himalayan dilemmas and mountain perspectives in the earlier work of mountain professionals is reviewed. The author's vision is to think innovatively about old problems and to devise means of involving the very people who benefit or suffer most from development interventions; mountain farmers. The review of past conceptualisations on mountain development in the early part of the book is thoroughly undertaken, and the perspectives of all of the previous approaches are addressed under the categorisations of 'half-empty', 'half-full', and 'empty' glasses in terms of socioeconomic approaches to mountain problems. This is supported by a thorough examination of the different perspectives of 'sustainability' in general and sustainable agriculture in particular.

Among the innovations suggested by the author are the introduction of a 'Mountain Agricultural Systems and Societies' Information Files' (MASSIF) project which involves computerised mapping of mountain agricultural systems and societies based on government statistics, ethnodata (ethnographic and ethnobiological), grey literature, and non-conventional sources of information. The final chapter of this book contains a number of well thought out recommendations to promote sustainable mountain agriculture in the 21st century. Among the excellent recommendations made, the establishment of a mountain science, a composite of disciplines applied to mountain research and development, namely, **montology**, is strongly recommended by the author as a means of ending for once and for all the marginalisation of this extremely important and endangered ecosystem and all of its inhabitants.

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Comparative Mountain