

Conservation and Management of Yak Genetic Diversity

Proceedings of a Workshop

29 - 31 October, 1996

Kathmandu, Nepal



Edited by

**Daniel J. Miller
Sienna R. Craig
Greta M. Rana**



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**International Centre for Integrated Mountain Development
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**Conservation and Use of Animal Genetic Resources
in Asia and the Pacific Programme**

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Yak in Khumbu, Nepal, and Yak herder from Sakten, Bhutan

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Foreword

The use of the yak by a variety of pastoral nomad groups, living at high altitudes, as the bases of their economic systems and rich cultures probably pre-dates the dawn of written history. The yak is an excellent example of those early bovines which could provide all the necessary inputs to sustain nomadic peoples. It is a source of deep satisfaction that, although so little research has heretofore taken place on this splendid animal, this workshop on 'Conservation and Management of Yak Genetic Diversity' has brought together so many notable experts on the yak from different corners of the world and that, through pooling our knowledge and recording the proceedings of this workshop, we will be able to disseminate knowledge on the yak beyond the borders of the Hindu Kush-Himalayan Region.

It is essential that we maintain the impetus of interest in the rangelands and herding societies of the Hindu Kush-Himalayas. In seeking to alleviate the persistent poverty in these areas, we must not lose sight of the diverse lifestyles that have sustained its inhabitants in the past. In diversity lies a wealth of knowledge that we should try our utmost to retain. It is only through developing economic opportunities that blend with both the sociocultural and economic aspirations of a people that we can ensure that self-fulfillment lies within their grasp. We cannot deem ourselves to have been successful unless we can devise means to enable them to build a future upon the successes of the past; and herein lies the importance of the yak.

The proceedings of this workshop provide us with much valuable information on yak husbandry and research. The major yak-rearing countries are represented and extra space has been provided for papers from China, because it is in China that the largest herds are to be found, where much of the experimentation on hybridisation with the yak and its succeeding hybrid generations has taken place, and where problems are being addressed concerning winter feed supplements and processing and marketing of yak products. This is not to say that each country represented does not have something of value to provide; the opposite is the case. At the end of the day, however, the problem will remain concerning what best scientists can do to not only maintain but also improve upon the circumstances in which the high altitude nomads live and rear their yaks upon some of the harshest environments on earth.

In closing, I would like to thank all the participants who worked hard to make a contribution to our understanding of the yak during the Regional Workshop on Conservation and Management of Yak Genetic Diversity held in Kathmandu, Nepal, from October 29-31, 1996. Organising this Workshop was made possible through generous financial support provided by the Conservation and Use of Animal Genetic Resources' Programme of the FAO Regional Office for Asia and the Pacific, Bangkok, Thailand. I take this opportunity to express our great appreciation to FAO and, in particular, Mr. David Steane, Chief Technical Advisor, Conservation and Use of Animal Genetic Resources' Programme, for

this generous support to ICIMOD. I would also like to express appreciation of the efforts of Mr. Daniel Miller, ICIMOD's Rangeland Specialist, who organised the workshop. I would also like to thank Daniel Miller, Sienna Craig, and Greta Rana for editing this important monograph. Thanks are also due to the staff of ICIMOD's Publication Unit for preparing this manuscript for publication.

Egbert Pelinck
Director General

Editorial Preface

We are very much aware that there are missing links in tracing the history and development of the yak from the dawn of man until the present day. For this reason we have tried very hard to avoid dispensing with any of the material we received; and this includes references. The reader will note that some references are cited in text, others not, and yet other papers have no references at all - hence we have resorted to calling the lists bibliographies. Another missing link has been in being unable, for the most part, to trace back the documents which are incomplete or for which all author names have not been listed. This mainly applies to documents in Chinese. We hope the reader will bear in mind that most of our authors truly are rangeland specialists and that, unless they are called together for workshops like this one, they are more often than not out following the yaks and their nomadic herders on the high altitude plateaus of the Hindu Kush-Himalayas. Since the document had a certain deadline for publication, we had to be expedient in terms of letting some of the editorial stipulations lapse. Another point which might perplex the reader is the fact that two transliterations have been used, i.e., Dolpo and Dolpa, in the papers on Nepal. HMG/Nepal uses Dolpa, the Tibetan linguistic groups who inhabit the region pronounce it Dolpo. Hence, when including the inhabitants in our considerations, we use the name they give their own district, in all other instances we defer to the government spelling.

This is not to say that much has been detracted from this document. Well aware that most of our readers will have seen a yak but rarely, and others may never have seen one at all, we have followed the yak pictorially through these pages with the excellent photographs taken by Daniel Miller. This way we hope that the reader will capture in sight and in senses the atmosphere of the high plateaus where the devil winds blow and there is nothing between the nomads and infinity; the last frontier on earth.

The Editors

Abstract

This document is divided into three principal sections . Section One contains papers on yaks from Bhutan ,China, India, Mongolia, and Nepal. Topics covered include wild and domestic yaks, conservation of domestic genetic diversity, and production systems. Section Two mainly concentrates on yaks in China, particularly in relation to yak-rearing systems, research, and market development in the Tibetan Autonomous Region and the QuinghaiTibetan Plateau, Xinjiang, Gansu, and Sichuan. This section also includes an absorbing photo essay and a paper on yak cheese production in Nepal; the pioneer country in making and marketing yak cheese. Section Three is devoted to breeding strategies and chromosone evaluation. The Conclusion is also in this section, although recommendations are dealt with in the introductory essay in Part One.

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