

Mountain Farming Systems



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Mountain Agricultural Transformation Processes and Sustainability in the Sikkim Himalayas, India

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Mountain Agricultural Transformation Processes and Sustainability in the Sikkim Himalayas, India

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Applied research on sustainability and unsustainability of mountain agriculture has been an important undertaking for the Mountain Farming Systems' Programme of ICIMOD since 1988. It has been made possible, to some extent, through the constant support of Ford Foundation to the MFS Programme for the project on 'Strategies for Sustainable Mountain Agricultural Development', which was implemented in three phases.

The objectives of the last phase of the project (1994-96) focussed on improving the understanding of the transformation processes and sustainability of mountain agriculture in the Hindu Kush-Himalayan (HKH) region, especially in the Indian Himalayas and Nepal. This was accomplished by carrying field studies and collecting empirical evidence on cash-crop dominated farming systems in the Indian Himalayas of Himachal Pradesh and Sikkim, and the mountain district of Ilam, Nepal.

This is second in the series of publications of the findings of case studies conducted by ICIMOD on Agricultural Transformation Processes and Sustainability in the HKH. The first is on Himachal Pradesh (MFS 96/2). This publication presents findings of the case study carried out in the Sikkim Himalayas.

This study has attempted to document the processes of change and sustainability indicators in the farm households under two different farming systems: one, the maize-potato dominated and, two, the large cardamom-dominated. The large cardamom farming system option has contributed to the well-being of local farmers and has harnessed the local niche which is consistent with the mountain specificities in Sikkim.

The study was carried out by a two-member team, a farm economist, Dr H.R. Sharma of Himachal Agricultural University, Palampur, and an ecologist, Dr Eklabya Sharma of the GBP Institute of Himalayan Environment and Development, Sikkim Unit. Both professionals have accomplished excellent results by combining the economic and ecological concerns, in the same way as the mountain farmers would in their livelihood operations. ICIMOD expresses its appreciation for the cooperation extended by the two institutions namely, the Himachal Agricultural University and the GBP Institute of Himalayan Environment and Development, for consenting to undertake this ICIMOD study in Sikkim.

This study is expected to add to the understanding of sustainability processes in mountain agriculture.

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The present study was undertaken in the northern and southern districts of Sikkim, India.

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TABLE ABSTRACTS

The present study was undertaken in the northern and southern districts of Sikkim, India, in order to examine the effects of mountain agricultural development processes on livelihood options and their implications on sustainability. Sikkim presents a good example of harnessing a local mountain niche by adopting cardamom farming, which is compatible with the mountain specificities. The purpose of the study was to document the range and quality of livelihood options of households under maize-potato dominated and large cardamom-dominated farming systems and, more specifically, to assess the sustainability of large cardamom farming options.

The large cardamom was found to be the most important farming option. Both ecological and economic evidence indicate positive sustainability implications of this cash crop with attributes such as low-volume, high-value, non-perishable; and being less infrastructure intensive, less labour intensive, and less dependent on external inputs. Large cardamom cultivation also provides ecological benefits such as soil conservation, soil fertility maintenance, and extension of forest cover with intact tree biodiversity in the existing farming systems. A number of problems, e.g., viral diseases, inadequate post-harvest technology, and marketing facilities beset the crop. For a majority of the Sikkimese farmers, the sustainability of this crop as a livelihood option is extremely important. Apart from economic considerations, the crop also needs to be protected as a valuable genetic resource. If this crop has to be sustained, it should no longer be neglected and marginalised. Therefore, concerted efforts need to be made on this crop with necessary investments to strengthen physical, institutional, and social infrastructures. The study shows that harnessing local niche by growing large cardamom is consistent with the mountain specificities, and it tends to be sustainable by having positive effects on the quality of life, equity, and the natural resource base.

1. Introduction and General

Household Assets

Livestock Holding Patterns

Land-Use Patterns

Cropping Patterns

Crop Yields

Input Use

2. Comparative View of Range and Quality of Farming Options

Range of Farming Options

Quality of Farming Options

Economic Sustainability of Options

Quality of Life of Farm Families

Equity Concerns of Existing Farming Systems

TABLE OF CONTENTS

Preface

Acknowledgements

Abstract

1. Diversification of Mountain Agriculture	1
Diversifying the Options	2
Objectives	2
Hypotheses	3
2. General Economy of Sikkim	5
Demographic Features	5
Land Utilisation, Cropping Patterns, and Crop Yields	8
Distribution of Landholdings	12
Livestock Population	12
Trade Flows	13
State Domestic Product	14
The Role of the State in Economic Transformation	15
3. Study Methodology and Socioeconomic Profile of Farm Households	19
Study Area and Sample Size	19
Data Collection and Analysis	20
Demographic Features	22
Education and Gender	22
Household Assets	24
Livestock Holding Patterns	24
Land-Use Patterns	24
Cropping Patterns	27
Crop Yields	30
Input Use	30
4. Comparative View of Range and Quality of Farming Options	33
Range of Farming Options	33
Quality of Farming Options	37
Economic Sustainability of Options	42
Quality of Life of Farm Families	43
Equity Concerns of Existing Farming Systems	49

5. Large Cardamom Farming: An Indigenous Sustainable Production Option in the Sikkim Himalayas	51
History of Farming	51
Ecological Sustenance	51
Influence of <i>Alnus</i> as a Shade Tree	55
Performance of <i>Alnus</i> and Cardamom on Aging	56
Biodiversity for Sustenance	57
Cardomom Processing and Constraints	58
6. Summary & Conclusions	63
Farming Prospects for Cardamoms	65
References	67
Annexures	
1. Annex I : The General Economy of Sikkim in Tables	69
2. Annex II : Tables Depicting Livelihood Options in Sikkim	87
3. Annex III : Survey Questionnaire	93