

Chapter 1

Introduction

General

Mountain agriculture in general has a poor development record. Yet some sporadic pockets have gone through a considerable amount of agricultural transformation in the Hindu-Kush Himalayan (HKH) region. This transformation has brought about several positive changes in terms of production and consumption for mountain people with or without natural resource depletion. Some of these so-called success stories have generated an interest in and an incentive for mountain development.

It is in this context that the **Mountain Farming Systems' (MFS) Division** of ICIMOD established a programme called 'Strategies for Sustainable Development of Mountain Agriculture'. The programme was introduced to examine the sustainability implications of transformed mountain agriculture through analysis and documentation of processes of and approaches to development. One objective of the programme was to identify replicable components that might facilitate similar transformations of a sustainable nature in other mountain areas.

One difficulty is the absence of a conceptual and analytical framework through which a proper assessment of the sustainability of mountain agriculture can be made. ICIMOD has made some attempts to make up for this deficit by developing a conceptual framework at operational level. Based on this framework, an empirical study was carried out in the Ilam district of Nepal.

Background

Sustainability of mountain agriculture is an overriding concern, because it is becoming more and more difficult for mountain people to sustain themselves, despite the overall development of agriculture and natural resource systems over the last two or three decades. Although agriculture is the dominant sector in the mountains, it is generally stagnant. In many cases, the quality of life has declined over time. Evidence of this can be seen in unsustainable trends such as the adoption of inferior options, increased aspirations of the people, and diminished flexibility in carrying out farming and other activities (Jodha 1991, Shrestha 1992).

In Nepal, certain hill and mountain pockets have experienced agricultural transformation. For instance, vegetable cultivation has contributed to tripling household incomes in the Khani Khola area in Naubise, Dhading district, over the last 15 years (Katwal and Shah 1992). Additionally, the per capita food grain availability has increased almost four times in that area. Further, social welfare improvements are reflected in the increased rate of female literacy; women are more self-confident and have better clothing and housing facilities and their participation in decision-making has increased.

Along with increased production and consumption in the community, the resource regenerative capacity of the area has also increased, as indicated by increased biomass production at the farm level and an increase in stall-feeding practices which reduces pressure on forests and other forms of natural resources. These ultimately lead to increased sustainability of mountain agriculture (Shrestha and Yadav 1992). Similar transformations in agriculture and the natural resource base have taken place in some pockets of the Rapti Integrated Rural Development Project Area through the introduction of high-value cash crops and rehabilitation of degraded land (Mellor Associates and IIDS 1995).

Evidence of successes has generated rays of hope in a mountain region which had previously been perceived as a hinterland and therefore an unproductive and uneconomical area for the purpose of development investments. These success stories encourage the conviction that mountain areas do create opportunities as well as generating constraints.

Two scenarios are emerging in mountain agriculture. The dominant scenario is that of general degradation and the emerging one is of transformation of mountain agriculture in localised pockets. In this context, several questions are raised.

- Why has one area undergone such transformations when others with similar biophysical and socioeconomic conditions have not?
- What is the nature of this transformation? Is it 'temporary' or a 'long lasting' or sustainable transformation?
- What are the key factors in promoting sustainable development of mountain agriculture?

A better understanding of the process in terms of both range and quality, identified through different biophysical, socioeconomic, and environmental indicators, would contribute to better design and management of sustainable activities; and this should also include policy and programme formulation for the development of mountain areas and mountain agriculture. In this context, an empirical study based on the operational, conceptual, and analytical framework developed by ICIMOD was undertaken in Ilam district of Nepal. The objectives of this study are described in the following section.

Objectives

The main reason for undertaking this empirical study was to examine a range of production options that might lead to improved quality of life and improved welfare of mountain communities without resource depletion and its associated factors and processes in agriculturally transformed areas. The specific operational objectives of the study are as follow.

- To document the diversification of economic activities, examine their role in transformation, and assess the impact of diversification
- To assess opportunities or production options with reference to long-term implications on the natural resource base, the quality of life, and on equity aspects
- To analyse the mechanisms and processes underlying the adoption of options and identify replicable components in terms of the approaches to and methodologies of activities leading to sustainable mountain agriculture

Human Resources

Though Ilam is a small district, 230 thousand people live in the area. There are 41,561 households with an average family size of 5.5 (CBS 1993). The urban population accounts for 5.8 per cent, and this has grown over the last decade at an annual rate of three per cent, almost of the same rate the district population has grown. The population density is 14.4 persons per sq km. In terms of farmland, each farm hectare has a population of 3.2. The literacy rate in the district is 53 per cent, only six other districts of Nepal have such high literacy rates. About two-fifths of the females and two-thirds of the males are literate. Illiteracy is high among the elderly, but the younger population has a literacy rate of virtually 100 per cent.

Land Resource: Its Use and Productivity

Only 41 per cent of the total land is cultivated. Of 71,032 hectares of cultivated land, 13 per cent is irrigated, and this includes the seasonally irrigated area. The average holding size is 1.7 hectares. The distribution of land is skewed as indicated by a Gini