

Preface

Diversifying and enhancing livelihood options for reducing poverty and securing livelihoods is an essential activity. It has greater relevance in areas where subsistence agricultural practices dominate the economy. About 70 % of the world's economy is based upon the cultivation of subsistence cereal crops. This practice is a major characteristic feature of mountain regions. Mountains constitute about 20 % of the total earth's land-surface and comprise of underdeveloped economy. Here, agriculture and its allied activities are the main occupation of the people. Agriculture is largely carried out on narrow patches of terraced fields. Cultivation of subsistence cereals dominates the cropping pattern. Production and per ha yield of cereal crops is considerably low and does not meet even the two-times food requirements of the poor and marginal farmers. The case study area, 'the Alaknanda Basin' constitutes one of the major sub-systems of the Ganges. It has five vertical landscapes (zones) from the valleys to the highly elevated Himalayan ranges, i.e. the river valleys, mid-altitudes, highlands, alpine meadows and the perpetual snow-clad mountain peaks of the Himalayas. Human settlements and high population density are largely concentrated in the mid-altitudes and in the valleys, while the highlands are sparsely populated. The highland areas are used for grazing animals through seasonal migration mainly during the summer. The alpine meadows remain covered with snow for up to 6 months during the winter, and during the summer an abundance of flowers and medicinal plants grow naturally. Medicinal plants are collected by the local people and widely used for health care through the traditional system.

The Himalayan region is ecologically fragile, tectonically and seismically active, geologically unstable, economically backward and geographically remote. So far, the waves of modern civilization could not influence the whole region because of its remoteness and distance from mainstream development. High growth in population and less availability of arable land further accelerates the human pressure on the agricultural land. Intensive agricultural practices are carried out on the fragile and narrow terraced fields, which are located in the mid-altitudes and the highlands. In the valley regions, wherever narrow patches of terraced fields are found, agricultural practices are carried out. Extension of arable land towards the fragile mountain niches poses severe threats to the landscape stability as the

entire region is highly vulnerable. Suitability in the agro-climatic conditions for growing cash crops such as fruits and off-season vegetables in particular, leads to sustainable development of the Himalayan region. Similarly, an abundance of economically viable forests with rich agro-biodiversity manifests to diversifying livelihoods at a larger scale. Multiple uses of timber and non-timber forest products such as bees and bee keeping, natural dyes, bamboo and bamboo-based products, herbs, wild fruits and their products, oak bark and its products, and a number of other products can enhance the livelihood options of the people.

The book constitutes ten chapters. In the [Chap. 1](#), research problems, questions, objectives and hypotheses are illustrated. Literature review, methodology and tools and techniques of the research, which were used to carry out this study, are well elaborated in this introductory part. [Chapter 2](#) deals with the geographical background. It further elaborates the climatic conditions and natural resources availability. [Chapter 3](#) discusses *Socio-Economy and Population Profile* of the study area. *Sustainable Livelihoods: Diversifications and Enhancements* are discussed in [Chap. 4](#). Agricultural intensification and diversification through cultivating cereals and cash crops and use of timber, non-timber and biodiversity resources are widely illustrated in this chapter. *Livelihood Analysis* viz. income–expenditure analysis of the households is carried out in [Chap. 5](#). [Chapter 6](#) examines the potential of development of tourism and hydroelectricity in the Himalayan region and illustrates how they are useful in terms of enhancing livelihoods. Case studies of the Khanda Gad sub-watershed of the lower Alaknanda basin and the Kewer Gadhera sub-watershed of the Pindar basin are discussed in [Chap. 7](#). Household level survey of the villages of these two sub-watersheds was carried out. [Chapter 8](#) discusses *Mountain Ecosystems* and impacts of anthropogenic activities on it. *Sustainable Mountain Development and Livelihood Enhancement: Challenges and Opportunities* are examined in [Chap. 9](#). Finally, conclusions and suggestions are given in [Chap. 10](#) that also describes the major problems and prospects of sustainable livelihoods. Illustrations exhibiting the natural and cultural landscapes of the Himalayan region and appendices that give numerical information further enrich the manuscript.

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