

introduction

The Context

The Hindu Kush-Himalayan Region possesses both a great natural diversity of agro-ecosystems and an equally great variety of farming communities that represent a multitude of socio-cultural groups spread across eight countries. The HKH encompasses very disparate levels of poverty, varying risks to agriculture in different agro-ecological zones, and very different speeds with which development is being adopted and implemented. In spite of this great diversity it is not uncommon to find very similar agro-ecological zones located in different countries and different sociopolitical settings, and as a result similarities in agricultural systems, land use, and agricultural practices. The presence of very strong similarities in available natural resources does not automatically translate into the same level of agro-productivity throughout agro-similar regions, but it does indicate that there is scope for the regions within the HKH to learn and benefit from each other's experiences through exchange of information on social, economic, environmental, development, and other levels. In particular, there is a great potential for learning from and replicating successes in agriculture and income generation at geographically widely separated sites. Access to knowledge and information are key. When the question first arose more than half a dozen years ago the search began for both success stories and niches in the HKH region with a view to transplanting these approaches to similar areas. At that time, however, it became apparent that the major obstacle was the lack of systematic data and tools that could be used to identify and map mountain farming niches and resources as a basis for planning and further action.

The Ecoregional Fund

In the search for appropriate partners for this project ICIMOD approached the Fund for Methodological Support to Ecoregional Programs. This 'Ecoregional Fund' was established in 1995 to support the development of methodologies (1) for research that is ecoregional in scope and (2) for enhancing the implementation of new approaches to natural resource management and rural development in ecoregions. It is managed by the International Service for Agricultural Research (ISNAR). Its objectives are set and its operations are guided by an International Scientific Advisory Committee (ISAC). The Fund was developed with a view to filling a need identified by

the Consultative Group for International Agricultural Research (CGIAR) for tools that would support the work of diverse ecoregional programmes, aiming at the development and implementation of sustainable, productive agriculture, rural development, and natural resource management. The programmes supported by the Fund are characterised by a focus on specific ecological and geopolitical regions and by a balanced emphasis on production, natural resource management, and social equity. The Fund's focus on major agro-climatic zones with a homogeneous ecology coincided well with the work that was envisioned by ICIMOD.

The ICIMOD Ecoregional Project

So far the Ecoregional Fund has supported ten programmes covering areas as diverse as the humid and sub-humid tropics of sub-Saharan Africa, to tropical Latin America, and the mountainous regions of the Andes. Four of the ecoregional projects have a focus on mountain areas, two are located in the Andean region (DME-NOR and DME-SUR), one is a part of the African Highlands Initiative, and the last is the ICIMOD project: **'Methodologies for Assessing Sustainable Agricultural Systems in the Hindu Kush-Himalayan Region: An Eco-Regional Framework'**. The ICIMOD project started in 1999 with support from FAO in the form of a full staff member under the 'Associate Professional Officer' scheme. The basic aim of the project was to develop a methodology for systematically mapping the complexity of the HKH agricultural ecosystem; it is referred to in the following as the MASIF Ecoregional Project.

The MASIF Project has taken an ecoregional approach to facilitating the sharing, retrieval, and analysis of useful information on the Hindu Kush-Himalayan region. It has made clear progress towards developing tools that can capture, integrate, and use the existing data in order to identify islands of success and niches of opportunity. At the centre is a state-of-the-art relational database that contains biophysical and socioeconomic data, and relevant textual literature; this is MASIF (mountain agricultural systems information file). MASIF is used in conjunction with an interactive 'land use analyst' toolkit (LUA) that has been developed to show simple models of agro-meteorological and socioeconomic aspects of agricultural systems. Together the MASIF database and the land use analyst toolkit form the basis for a decision support system that will assist planners and decision-makers. The software was designed to contribute to the enhanced understanding of the different aspects involved in improved planning for mountain agricultural development. The project has worked with ICIMOD partner institutions in order to test and refine methodologies. Three pilot areas were selected to test the system, the pastoral and agro-pastoral counties in Tibet, China; farming systems based on horticulture (cash crops) in Himachal Pradesh, India; and hill farming systems in the Kabhre and Sindhupalchowk districts of Nepal.

The Workshop

As the MASIF project neared completion it was considered a good time to take stock of the progress to date and to share the results with other ecoregional groups also working in mountain areas. The workshop whose proceedings are summarised in this report was designed with this purpose in mind. The aim of the workshop was not only to share the MASIF perspective but also to compare and contrast the approaches taken by these other groups. This was considered very important since other

The MASIF approach

Essentially all available land use, production, socioeconomic, and geophysical data for the region are entered into a single data base, using a georeferencing approach to locate each piece of data to its geographical location (the unit scale used is approximately district level). The database and toolkit can then be used to select and display the data sets in the form of a map in any combination appropriate for the purpose. For example, all areas in the HKH with a certain altitude, soil type, and rainfall could be selected and overlaid with selected poverty indicators to see whether there is any correlation that could be used to derive poverty risk factors. Or the system can be used to identify potential areas for niche crops: for example, the areas producing seed potatoes could be shown in terms of classes of average productivity; the biophysical parameters of those areas where seed potato productivity is high can then be identified; and other areas with similar characteristics can be selected and investigated as potential areas for successful introduction of seed potato production. Various practical examples are shown in the boxes.

mountain ecoregions share similar challenges of biophysical conditions but each has its own socioeconomic specificities. Further, the MASIF approach is designed to be transferable to other mountain areas and a possible long-term goal is to create MASIF type tools for these areas. Thus the workshop provided an excellent venue to learn more about the similarities and differences which exist between the three ecoregions.

The flowchart for the workshop is shown in Figure 1. The first presentations set the tone of the conference by stressing the importance of working by ecoregions and the aims and focus of the Ecoregional Fund. The groundwork was laid by subsequent presentations that explored mountain perspectives and understandings. The participants from each of the three mountain ecoregions then presented successes and challenges in their particular mountain areas. Following this, as part of the learning process, the participants formed groups for in-depth discussions to identify the challenges and to suggest strategies to effectively meet the special needs found in mountain ecoregions. Here everyone benefited by the sharing of not only the similarities but also the diversity that can exist among approaches to mountain agricultural development. The next segment explored different methodologies and tools as support to decision-making. Here the two other mountain ecoregional teams (AHI and DME-SUR) presented the methodologies and tools implemented in their projects. The aim was not to present these two projects in their entirety but rather to focus on those aspects of the work that pertained to the discussion of methodologies and tools. The sessions concluded by sharing experiences on managing knowledge and information for mountains. The issues raised by the various speakers, the findings of the group discussions and the summary of ideas, comments, and suggestions compiled from all the participants was prepared by the session chairs and used as a guide in drafting the final recommendations for the conference, and preparing these proceedings.