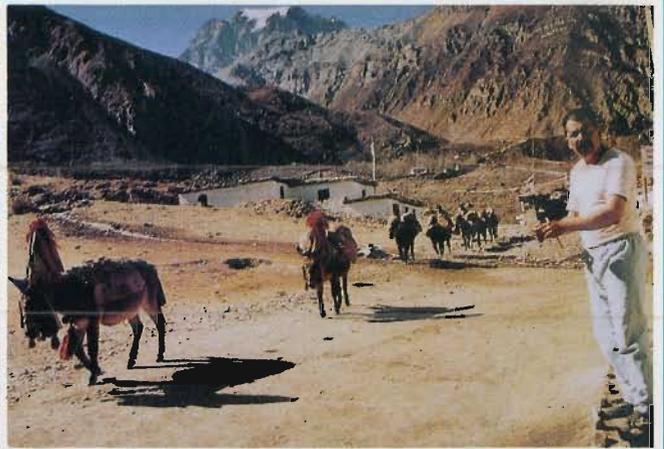


OFF-FARM EMPLOYMENT AND MOUNTAIN DEVELOPMENT

Report of the International Workshop on Mountain Off-farm Employment



Organised by ICIMOD with support from the
International Development Research Centre, Canada

Kathmandu, NEPAL
17-20 February, 1992

ICIMOD Workshop Series

The International Centre for Integrated Mountain Development began professional activities in September 1984. The primary concern of the Centre is to search for more effective development responses to promote the sustained well-being of mountain people. One of the continuing activities of ICIMOD is to review development and environmental management experiences in the Hindu Kush-Himalayan Region. Accordingly, International Workshops are organised in major fields to review the state of knowledge and practical experiences and also to provide opportunities for the exchange of professional expertise concerning integrated mountain development. The reports published in this series are given below.

- o **International Workshop on Watershed Management in the Hindu Kush-Himalaya**
14-19 October, 1985, Chengdu, China
- o **International Workshop on Planned Urbanisation and Rural Urban Linkages in the Hindu Kush-Himalaya Region**
25-29 March, 1986, Kathmandu, Nepal
- o **International Workshop on District Energy Planning and Management for Integrated Mountain Development**
3-5 May, 1986, Kathmandu, Nepal
- o **International Workshop on Off-farm Employment Generation in the Hindu Kush-Himalaya**
17-19 May, 1986, Dehra Dun, India
- o **International Workshop on Mountain Agriculture and Crop Genetic Resources**
16-19 February, 1987, Kathmandu, Nepal
- o **International Workshop on Women, Development, and Mountain Resources: Approaches to Internalising Gender Perspectives**
21-24 November, 1988, Kathmandu, Nepal
- o **International Expert Meeting on Horticultural Development in the Hindu Kush-Himalayan Region**
19-21 June, 1989, Kathmandu, Nepal
- o **International Expert Meeting on Apicultural Development in the Hindu-Kush-Himalayas**
21-21 June, 1989, Kathmandu, Nepal
- o **Regional Workshop on Hydrology of Mountainous Areas**
11-15 December, 1989, Kathmandu, Nepal
- o **Consultative Meeting on Mountain Risk Engineering**
20-22 February, 1990, Kathmandu, Nepal
- o **International Workshop on the Role of Institutions in Mountain Resource Management**
1-4 May, 1990, Quetta, Baluchistan, Pakistan
- o **Seminar on Rural Energy and Related Technologies in Nepal**
26-28, March, 1991, Kathmandu, Nepal

These Workshops were attended by experts from the countries of the Region, in addition to concerned professionals and representatives of international agencies. A large number of professional papers and research studies were presented and discussed in detail.

Workshop Reports are intended to represent the discussions and conclusions reached at the Workshop and do not necessarily reflect the views of ICIMOD or other participating institutions. Copies of the reports are available upon request from:

The Publications' Unit
International Centre for Integrated Mountain Development (ICIMOD)
G.P.O. Box 3226
Kathmandu, Nepal

OFF-FARM EMPLOYMENT AND MOUNTAIN DEVELOPMENT

FOREWORD

All rights reserved

CHAPTER 1: INTRODUCTION

Background

Workshop Objectives

OFF-FARM EMPLOYMENT IN MOUNTAIN DEVELOPMENT

Workshop Participants

Report of the

International Workshop on Mountain Off-farm Employment

CHAPTER 2: WORKSHOP FINDINGS AND CONCLUSIONS

The Operating Environment
Regional Development

The Role of Off-farm Employment in Mountain Development

The Role of Off-farm Employment in Mountain Development

COMMON DEVELOPMENT STRATEGIES FOR OFF-FARM EMPLOYMENT

Case Studies and Policy Perspectives

Findings from Wenchuan County, China

Policy Perspectives from China

Findings from Dhaulagiri and Manang Districts, Nepal

Policy Perspectives from Nepal

Findings from Drought-Prone Sub-districts, Pakistan

Policy Perspectives from Pakistan

Policy Perspectives from India

CHAPTER 3: PRINCIPAL ISSUES AND GUIDELINES FOR THE PROMOTION OF OFF-FARM EMPLOYMENT IN THE MOUNTAINS

Principal Issues

Guidelines for the Promotion of Off-farm Employment

Guidelines for Human Resources' Development and Skill Training

Guidelines for Support Service and Infrastructure

Guidelines for Marketing and Credit

Guidelines for Macro-economic Policies

International Centre for Integrated Mountain Development

Kathmandu, Nepal

ANNEXES

Annex 1: List of Participants
Annex 2: List of Participants
Annex 3: List of Participants
Annex 4: List of Participants
Annex 5: List of Participants
Annex 6: List of Participants
Annex 7: List of Participants
Annex 8: List of Participants
Annex 9: List of Participants
Annex 10: List of Participants

Copyright © 1992

International Centre for Integrated Mountain Development

All rights reserved

Cover photographs: Top Left : Roofing Slates Mined in Naubise, Dhading, Nepal

Courtesy: Tej Partap

Bottom Left : Timber Harvested in Shangla Par Sub-division, Swat District, NWFP, Pakistan

Courtesy: Sanaullah Khan

Top Right : Mule Caravan Transporting Goods to Jomsom, a Major Trekking Destination in Mustang District, Nepal

Courtesy: Tej Partap

Bottom Right : High Altitude Medicinal Plants (Vladimtia soulieiling) in Miyi County, W. Sichuan, China

Courtesy: MFS Division, ICIMOD

Published by

International Centre for Integrated Mountain Development
G.P.O. Box 3226,
Kathmandu, Nepal

Typesetting at ICIMOD Publications' Unit

In the preparation of this report, an attempt has been made to reflect the views and interpretations expressed by the participants at the workshop. These views and interpretations are not attributable to the International Centre for Integrated Mountain Development (ICIMOD), and do not imply the expression of an opinion concerning the legal status of any country, city, or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

CONTENTS

	Page
FOREWORD	
CHAPTER 1: INTRODUCTION AND OBJECTIVES	1
Background	1
Workshop Objectives	2
Off-farm Employment in the Mountain Context	3
Workshop Participants and the Programme	4
CHAPTER 2: WORKSHOP PROCEEDINGS	5
The Opening Session	5
Regional Overviews	7
<i>The State of Off-farm Employment in the Mountains of Pakistan</i>	7
<i>The State of Off-farm Employment in the Chinese Mountains</i>	10
<i>The State of Off-farm Employment in the Nepalese Mountains</i>	14
Case Studies and Policy Perspectives	18
<i>Findings from Wenchuan County, China</i>	18
<i>Policy Perspectives from China</i>	20
<i>Findings from Dhading and Mustang Districts, Nepal</i>	22
<i>Policy Perspectives from Nepal</i>	25
<i>Findings from Shangla Par Sub-division, Pakistan</i>	26
<i>Policy Perspectives from Pakistan</i>	28
<i>Policy Perspectives from India</i>	29
CHAPTER 3: PRINCIPAL ISSUES AND GUIDELINES FOR THE PROMOTION OF OFF-FARM EMPLOYMENT IN THE MOUNTAINS	31
Principal Issues	31
Guidelines for the Promotion of Off-farm Employment	36
Guidelines for Human Resources' Development and Skill Training	36
Guidelines for Support Service and Infrastructure (including extension, marketing, and credit)	38
Guidelines for Macro-economic Policies	40
ANNEXES	
1. Workshop Programme	44
2. List of Participants	46
3. List of Workshop Papers	48
4. Summaries of Papers	49

FOREWORD

INTRODUCTION AND OBJECTIVES

A major issue in mountain development is the creation of conditions that would help to enhance the carrying capacity of the mountain resources and provide opportunities for sustainable improvements in the living standards of mountain communities without degrading or depleting the resource base. This is why the promotion of off-farm employment, based on comparative advantages, assumes such crucial significance in strategies for the development of the mountains. The critical issues, interlinkages, and options in off-farm employment in the HKH have therefore been one of the primary areas of focus in ICIMOD's programme on Mountain Population and Employment. As part of the programme, ICIMOD collaborated with institutions and professionals from China, Nepal, and Pakistan in undertaking regional overview studies on the current state of off-farm employment. This was followed by area-specific case studies on prominent and potential off-farm activities. The regional overview studies are available as part of the Discussion Paper Series of the Mountain Population and Employment Division (MPE Series 12-14). The case studies will also be shortly available in this series.

The International Workshop on Mountain Off-farm Employment held in Kathmandu, Nepal, from 17-20 February 1992, was the culmination of the studies noted above. These studies provided the basic material for the Workshop. The Workshop provided a forum for discussing the findings of the studies and allowed researchers and policy-makers to share their perceptions and experiences. This Workshop Report contains the highlights of the presentations and discussion, as well as principal issues and guidelines that emerged during the course of the deliberations. I am confident that these will be of interest to a larger audience.

I want to express my thanks to the International Development Research Centre, Canada, which provided the grant to execute the programme. Thanks are also due to the research collaborators from China, Nepal, and Pakistan who contributed to the studies.

Dr. Pitamber Sharma not only coordinated the Workshop but also prepared this Workshop Report with the help of Mr. Suresh Sharma, Mr. Sugandha Shrestha, and Mr. Bikash Sharma. Thanks are due to them and to other ICIMOD staff, both professional and administrative, who provided support during the Workshop and in the preparation of this report.

Dr. E.F. Tacke
Director General

INTRODUCTION AND OBJECTIVES

Background

Subsistence agriculture, based on crops, livestock, and forestry, has until now been the predominant economic activity in the Hindu Kush-Himalayan Region. The erstwhile stable linkages of the mountain population with the environment and the economy have begun to break down under increasing population pressure on a declining resource base. Population growth rates in most countries/regions of the Hindu Kush-Himalayas, for example, are in excess of 2 per cent per annum. Labour force growth rates have remained around 3 per cent per annum. The capacity of the traditional agricultural sector to absorb the existing and potential supply of labour and to satisfy even the minimum subsistence requirements of a large proportion of the rural population remain severely limited. In most mountain areas, the problem is exacerbated by declines in the amount of cultivable land per person, declines in land productivity beyond sustainable cultivation capacity, and cultivation of land of lesser quality. In the absence of sufficient and gainful employment, mountain communities are continually faced with increasing poverty which reinforces rapid environmental deterioration, declining productivity, and consequent migration from the hills.

Generation of gainful employment in traditional activities for an increasing labour force has become an increasingly impossible task, given the sluggish changes in technology and productivity. Given the nexus between poverty and environmental degradation, the generation of gainful employment opportunities outside traditional, subsistence agriculture becomes the single most important task in poverty alleviation and in arresting the process of environmental deterioration. The significance of off-farm employment in the mountains in such a context needs hardly be overemphasised. It is in this sense that throughout the Hindu Kush-Himalayan mountains the sustainability of the environment and economy appears to be contingent upon the development of off-farm employment and income. While this recognition is not new, and is reflected in the emphasis given to off-farm employment in the policy documents of the countries of the region, the fact remains that off-farm employment in most mountain areas has not really taken off.

The constraints that inhibit the growth of off-farm activities in the diverse context of the Hindu Kush-Himalayan mountains have not been adequately understood and appreciated. There has therefore been a growing realisation that efforts at integrated mountain development should pay particular attention to the development of a systematic perspective on mountain off-farm employment. Such a perspective needs to take into account the implications of off-farm activities on the environmental, demographic, spatial, equity, and gender concerns, on the one hand, and the specific operational characteristics of off-farm activities on the other. Such an effort, further, should ensure that:

- o the potentials of mountain resources (physical and human) and infrastructural development are identified and directed towards the promotion of off-farm employment and income;
- o the use of resources and infrastructure is made compatible with the protection of fragile mountain conditions;

- o mountain people and communities are sufficiently organised and trained to become net beneficiaries in the wider market economy; and
- o technological innovations and support services are adequately provided and properly managed in accordance with the imperatives of mountain conditions.

ICIMOD's programme on population and off-farm employment is an outcome of this realisation. The programme is based on the premise that promotion of off-farm employment and income generation in mountain communities is imperative in order to promote sustainable relationships between population, economy, and environment.

It is with this background that, in May 1990, ICIMOD, with the support of the International Development Research Centre (IDRC), Canada, started a project to undertake an assessment of critical issues and options in off-farm employment in selected mountain regions of China, Nepal, and Pakistan. The area-wise coverage includes the Hengduan Mountains of Sichuan Province, China; the Hill and Mountain regions of Nepal; and the North-West Frontier Province of Pakistan.

The general objectives of the studies were to identify viable off-farm alternatives and promote practical approaches to employment generation, income enhancement, and sustainability of mountain environments. The specific purpose was to synthesise experiences from different mountain regions of the Hindu Kush-Himalayas and develop institutional and organisational guidelines, as well as investment and implementation options, for the promotion of environmentally sound off-farm employment activities.

The country studies were divided into two phases. In the first phase, the current state of off-farm employment in each selected region in each country was analysed. The analysis was focussed on the structure and the process of labour force transformation, the current state of off-farm employment in the region, the review and assessment of policies that have a bearing on off-farm employment, and a review of some prominent and potential off-farm activities through the use of an analytical framework.

Based on the activities identified in Phase One, a series of case studies were conducted as part of Phase Two. The location-specific case studies included horticulture and small-scale enterprises in the townships of Wenchuan County, Sichuan Province (China), tourism and vegetable production in Mustang and Dhading districts (Nepal), and forest-related activities in Shangla Par Sub-division, Swat (NWFP, Pakistan).

The case studies analyse and assess the current state of off-farm employment in the respective socio-economic and resource contexts, identify factors that have inhibited or enhanced off-farm employment and income-generating opportunities, trace the linkages of off-farm activities with agriculture and other sectors, and present guidelines for the future development of potential off-farm opportunities.

As part of the programme, ICIMOD collaborated with professionals from the Institute of Mountain Disaster and Environment at the Chinese Academy of Sciences, Chengdu, and the Institute of Rural Development, the Chinese Academy of Social Sciences, Beijing in China, the Agricultural Projects Services Centre (APROSC), Kathmandu, in Nepal, and the Centre for Applied Economic Studies, the University of Peshawar, in Pakistan.

Workshop Objectives

The workshop objectives were as follows:

- o to discuss the implications of the research findings for the promotion of off-farm employment opportunities in the HKH Region;
- o to share the research experiences of ICIMOD professionals, and national research collaborators with development practitioners and decision-makers from the region; and
- o to develop practical institutional, organisational guidelines as well as investment and implementation options for the promotion of off-farm employment in the mountain areas of the HKH.

Off-farm Employment in the Mountain Context

One of the important characteristics of economic development is a shift in the use of resources from low-productivity to high-productivity activities. In the context of the mountain areas, increased productivity is needed in both the agricultural and non-agricultural sectors. However, the prospects for productively employing the rapidly increasing population in traditional hill agricultural activities are not at all encouraging. This is the stark background against which the importance of generating off-farm employment emerges so clearly.

The concept of off-farm employment, as used in the present context, therefore implies a shift from low productivity, distress type, and subsistence-related activities to those that have a higher level of productivity (higher value-added), are more market oriented, and are sustainable in terms of local resource endowments and market interactions. These shifts are very important in the process of the overall economic transition that is beginning in the mountain areas and fundamentally more relevant for poverty eradication and sustainable use of natural resources. Off-farm employment activities in the past have been extremely important for the poorer groups because of their limited access to agricultural land. The need to develop gainful off-farm activities for these poorer groups by appropriate choices of products, technologies, and resource use patterns will therefore go a long way to transform off-farm activities from a mere survival activity in a subsistence setting to a more remunerative and sustainable activity in a dynamic economy.

The role of remunerative off-farm activities in transforming subsistence agriculture must also be underscored because agriculture is still and will continue to be the backbone of the mountain economy for a long time to come. One of the major constraints in the progressive transformation of hill agriculture has been the extremely limited capacity of the hill farmers to use the high payoff inputs needed to improve agricultural productivity. With increased incomes from off-farm work, hill farmers can afford greater investments for agricultural development. Thus the linkages between on-farm and off-farm are very strong and real and cannot be considered in isolation. If rising incomes create a demand for urban goods and services, increasing off-farm activities also creates opportunities for rural households to diversify their incomes and hence sustain agricultural development.

An added consideration in this context is the interrelationship of off-farm activities with mountain specificities. Traditionally, mountain economies have remained more or less self reliant, although obviously at a relatively low level of development, as a result of inaccessibility and remoteness. As many of the mountain areas are still and will continue to remain relatively inaccessible, the choice of activities and products becomes very critical. This point is further underscored by the fragile resource base, where inappropriate use or misuse of resources can lead to irreversible damage to the resource base and thereby destroy the basis of remunerative off-farm work for the people. The conditions of diversity, created by wide micro-environmental variations, also have implications both in terms of comparative advantages and relative disadvantages. This needs to be carefully considered while promoting off-farm activities.

In view of the wide range of issues, constraints, and possibilities underlying the central question of generating remunerative off-farm employment in mountain areas, the focus of this review and discussion has been on the following activities:

- market-oriented production and processing in agriculture,
- small enterprises, crafts, and traditional off-farm activities,
- tourism and trekking,
- rural public works, and
- service sector activities.

Workshop Participants and the Programme

Twenty-nine participants took part in the workshop. These included (i) research collaborators from China, Nepal, and Pakistan who were involved in the regional overview studies as well as case studies, (ii) researchers, development practitioners, and policy-makers from China, India, Nepal, and Pakistan, (iii) selected participants from donor agencies, and (iv) ICIMOD participants.

The workshop lasted for four days from 17th to the 20th of February, 1992. After the opening session, on the first day (17 February), overviews of the regional studies on Mountain Off-farm Employment were presented from Pakistan, China, and Nepal. The second day (18 February) was devoted to the presentation of case studies from China, Nepal, and Pakistan. The case study presentations from each country were followed by commentaries on the policy experiences and positions of respective governments which were presented by a senior policy-maker from each country. This provided an opportunity for interaction between researchers and policy-makers. The third day (19 February) was mainly devoted to group discussions.

The principal issues emerging from the case studies were presented as a basis for the group discussions. The presentation of the guidelines for the promotion of off-farm employment by the different groups brought to an end the substantive aspect of the workshop. Details of the discussions that took place during the different sessions are presented in Chapter 2. The principal issues and guidelines that emerged from the workshop appear in Chapter 3 of this report. The workshop programme is given in Annex 1 and the participants are listed in Annex 2. The list of papers presented in the workshop are included in Annex 3 and their summaries in Annex 4.

Following the workshop on February 20, the participants visited the Patan Industrial District and the Bhaktapur Industrial Area to look at some of the initiatives taken by government as well as private entrepreneurs in the development of off-farm employment and income-generating opportunities in the Kathmandu Valley.

THE WORKSHOP PROCEEDINGS

The Opening Session

Dr. E. F. Tacke, Director-General of ICIMOD, opened the workshop with a note of welcome to all participants. He traced the development history of the mountain regions of the Hindu Kush-Himalayas and noted that the increasing rate of population growth had generated unprecedented pressure on the fragile natural resource base of the region. Consequently the economic and environmental sustainability of the region was seriously threatened. The agricultural sector was the major source of income and employment generation in the region, but its potential for absorbing a growing labour force in the face of economic and environmental problems was seriously constrained. The abundance of forests in the mountain region was a thing of the past and the mountain people had to spend more and more time and effort looking for forest resources which remained the major, and often the only, source of domestic energy. Consequently, potentially productive labour was spent in unproductive activity. Dr. Tacke observed that inadequate physical and social infrastructures were other problems faced by mountain communities. Decreasing access to resources and the deterioration of the resource base had a direct impact on the levels of poverty, nutrition, and health of the mountain people. The prevailing conditions in the mountains clearly pointed at the need for concrete action to reverse these trends of unsustainability. Further, such action needed to incorporate all segments of the mountain population and had to be of the integrated variety.

Dr. Tacke noted that it was this realisation at the international level that had led to the founding of ICIMOD. He elaborated on the major functions of ICIMOD as (i) a multi-disciplinary documentation centre, (ii) a focal point for applied and problem-solving research, (iii) a focal point for training on integrated mountain development, and (iv) a consultative centre for providing expert services to countries of the HKH Region. Generation of knowledge specific to mountain regions and its dissemination on a wider scale to assist the Governments of the region in improving the lot of the mountain people was, therefore, included in the mandate of ICIMOD. He elaborated on the four major thematic research areas of ICIMOD, one of which was population and off-farm employment. The knowledge gained through the research findings in the main thematic areas was to be disseminated through workshops, training programmes, and information exchange. The present workshop was one such activity.

Dr. Tacke concluded his opening address by observing that the subject of the workshop, off-farm employment, was very much a central theme of mountain development. Therefore the deliberations that would take place within the next few days were important as they would identify the main issues for action and suggest measures to address them. Dr. Tacke wished the participants every success in the workshop deliberations and hoped that the interaction would prove to be useful to all concerned.

Dr. Pitamber Sharma then introduced the objectives of the workshop and the background work that preceded it. He observed that the economic and environmental problems in mountain regions and, particularly, the issues of poverty alleviation, enhancement in the quality of the environment, enhanced productivity, and a sustained increase in the living standards of mountain people hinged on the expansion of off-farm sources of employment and income. While this realisation was not new, off-farm opportunities in the mountains had not been expanding; the environmental effects of many off-farm

activities had not always been positive; and often the net beneficiaries had not been the mountain people. There was, therefore, a need to bring to bear a systematic perspective on off-farm employment so that the present economic and environmental trends in the mountains could be reversed and sustainable off-farm opportunities promoted.

ICIMOD's work in this area started in the mid-eighties when a series of reviews on off-farm employment was conducted. This provided the basis for the Mountain Off-farm Employment Project. The Project, which was started in 1990 with the support of the International Development Research Centre, Canada, has four major objectives, namely:

- o to develop and apply a comprehensive analytical framework to assess the critical issues and options in off-farm employment;
- o to develop the qualitative and quantitative criteria of "success" and identify "constraints" in the promotion of prominent and potential off-farm activities, based on the examination of experiences from different countries;
- o to examine the experiences of different countries with respect to the types of policy interventions in the promotion of specific off-farm activities; and
- o to synthesise experiences from different mountain regions of the HKH in order to facilitate the development of institutional and organisation guidelines as well as investment and implementation approaches for the promotion of environmentally sound off-farm employment activities.

For analysis of the critical issues and options in off-farm employment, regional overview studies, as well as detailed case studies, were conducted in China, Nepal, and Pakistan. The area-wise coverage for the overview studies included the Hengduan Mountains of Sichuan Province, China, the Hill and Mountain regions of Nepal, and the North-West Frontier Province in Pakistan.

Area-specific detailed case studies were conducted on a few prominent/potential activities identified in the overview studies. The case study areas and the activities were chosen to elucidate the use or otherwise of available comparative advantages. The location-specific case studies were conducted in the townships of Mianchi, Shuimo, and Weizhou in Wenchuan County, Sichuan Province, China. The major off-farm activities in these townships related to horticulture, vegetable cultivation, and small rural industries. In Nepal, the case studies elucidated off-farm activities, based on vegetable production in Naubise Village Development Committee (VDC) in Dhading District, in a relatively accessible situation. The other case study in Marpha and Jomsom VDCs in Mustang District was intended to exemplify the spontaneous growth of off-farm employment linked to trekking tourism in a relatively remote and inaccessible area. The Pakistan case study was chosen to elucidate the potentials of forest-based, off-farm activities in the three villages of Alpuri, Lilowani, and Shahpur in Shangla Par Sub-division of Swat District in the NWFP.

A common analytical framework was used for the overviews as well as the case studies. Under this framework the off-farm activities were assessed with respect to a number of broader concerns, including:

- o the implications for the environment and the resource base,
- o the implications for population and spatial processes,
- o the linkages with the farming system and infrastructure,
- o the implications for employment generation, and
- o the gender perspectives and implications for the poor and marginalised segments of the population.

Similarly, at the enterprise level, five major elements were considered. These included (i) the type and scale of activity, (ii) organisation and management, (iii) technology and technical innovation, (iv) market, and (v) extension and support services. The rationale behind the use of the analytical framework was to identify the areas of "success" and "failure" and to determine the points of commonality as well as areas of divergence that would be facilitated by giving practical lessons and guidelines for the future.

Although significant flexibility was provided to research collaborators from different countries, the general approach to the studies, the basic questions posed, and the general methods used in the studies were agreed upon during the programme discussions and review meetings held in Chengdu, China, and Peshawar, Pakistan.

Regional Overviews

The first session of the workshop was devoted to presentations and discussions of regional overview studies on the state of off-farm employment in the North-West Frontier Province of Pakistan, the Hengduan Mountains of Western Sichuan in China, and the Hill and Mountain regions of Nepal. The presentations highlighted the general features of the regional economy; the processes of labour force transformation, particularly in the rural economy, the major off-farm activities and their current state in terms of their linkages, the review of government policies that have a bearing on off-farm employment, and the critical issues and options with regard to the promotion of off-farm employment within the regional context. The first session was chaired by Dr. Mahesh Banskota, Acting Director of Programmes at ICIMOD.

The State of Off-farm Employment in the Mountains of Pakistan

Professor Main M. Nazeer, the Team Leader for the Pakistani Study, presented a regional overview of the state of off-farm employment in the NWFP, Pakistan. The North West Frontier Province, with a population of about 11.1 million in 1981, is essentially a mountainous region. The great degree of diversity is reflected in the fact that six out of the ten agro-ecological zones of Pakistan are in the NWFP. The population growth rate is perhaps the highest in the Hindu Kush-Himalayan Region and is currently estimated to be 3.32 per cent per annum. In addition to its own population there are also three million Afghan refugees, concentrated mostly in urban areas, who compete with local labour for the market and wages in the NWFP. About 23 per cent of the geographical area of 7.45 million hectares is under agriculture. The NWFP has a relatively better base of forest resources : around 28 per cent of Pakistan's total forest area is in the NWFP.

The socioeconomic indicators show that industrially the NWFP is a backward region. Urbanisation is low, only 15 per cent. Literacy levels are also low (17 per cent). Yields of all major crops are lower than the national average. The NWFP generates 31 per cent of Pakistan's electricity, but per capita power consumption is only 75 per cent of the national average.

The need and, indeed, the urgency to promote off-farm employment in the NWFP was evident from a number of concerns. The rapidly increasing population was exerting an increasing pressure on shrinking farmlands. The need for off-farm employment activities (OFEA) was therefore inversely related to the household farm size (OFEA). With the present trend of pressure on land resources, per capita cultivated land would be less than 0.1 ha by the end of the century. While there was an increasing demand for food, fuel, and fodder, the rate of degradation and the rate of depletion in forest resources were increasing. Mountain agriculture, with small and fragmented farms, could scarcely absorb a growing labour force. Further, the lack of infrastructure and the steep terrain made certain areas inaccessible.

The consequence of these processes was that out-migration from the region - seasonal, temporary, and intra and inter provincial, and international-was increasing.

The presentation then highlighted the state of off-farm employment in the NWFP. The latest figures showed that 51 per cent of the labour force was employed in agriculture. The participation rate in the labour force, as per the 1981 census, was 49 per cent for males and about 2 per cent for females. Census data did not portray a true picture of female participation in the labour force. Therefore women were the invisible workers in the NWFP. Within the off-farm sector, livestock and poultry contributed about 30 per cent and fisheries and forests together about 4 per cent of the total employment. According to labour force surveys, about 16 per cent of the total off-farm employment was created in manufacturing industries. Construction (21 per cent) and trade (23 per cent) were other important avenues for employment. Employment trends indicated that, with the exception of mining and quarrying, employment in all off-farm sectors was on the rise. The fastest growing sectors were the transport, electricity, gas, and communication and services' sectors. Tourism was an important off-farm employment sector as employment in sectors such as services, hotels, and restaurants was recorded to have increased substantially. In 1981 around 1 million people were reportedly engaged in the off-farm sector.

Off-farm employment in the informal sector, particularly in unregistered industries, showed that almost 74 per cent of the total employment in manufacturing was created by unregistered small-scale industries. However, the productivity of labour, as reflected in the wage rate, was the lowest in the NWFP. In the rural sector, food processing, textiles and leather, and wood and furniture had substantial employment potential.

There is significant regional variation in off-farm employment within the NWFP. In the manufacturing sector, the largest concentration of industries was in Peshawar. Tobacco, paper, sugar, and flour mills were largely located in Peshawar, Mardan, Abbottabad, and Kohat. This concentration of industries was due largely to the existence of infrastructure and markets, the availability of skilled labour, transport facilities, and the existence of industrial estates.

Within the agricultural sector, off-farm opportunities existed in livestock, dairy, poultry, sericulture, apiculture, and traditional crafts, although exact estimates of their contribution to employment and income were difficult to arrive at. Employment linkages among different off-farm activities indicated that the food, sugar, paper, tobacco, and hydro-electricity industries provided considerable backward and forward linkages.

Among potential off-farm employment activities, the following were identified: mining and quarrying and mineral-based industries; food, furniture, and wood-based industries; leather and footwear industries, particularly in urban centres; tobacco and sugar industries; tourism-related opportunities, particularly in Swat, Chitral, and Hazara; and public construction and transportation. In the agricultural sector, there were prospects for off-farm employment in livestock, poultry, horticulture, sericulture, and apiculture. In the informal sector, skill-based activities, such as carpet-making, weaving, and leather work, had considerable prospects.

A brief policy review bearing on off-farm employment was then presented. It showed that Pakistan's industrial policy throughout the post-independence period, except for a brief period during the seventies, was heavily biased in favour of large-scale manufacturing industries. Until the 1970s, the small-scale industrial sector, despite its low capital and high labour intensity, was largely ignored. It received no licenses to import raw material nor did it enjoy other concessions. Some concessions were provided after the 1970s, particularly to industries in the NWFP, as it was recognised as an underdeveloped region. Industries located in the NWFP were made exempt from income tax and sales' tax for 8 years. Also, machinery imports were totally exempt from customs' duty. Concessions were granted with respect to

loans for industrial development. The devaluation of the Pakistani rupee in 1972 had a salutary effect in lowering the prices of Pakistani products. This induced the growth of small-scale units. Further, the rise in labour exports to the middle east, and the ensuing remittances, helped the expansion of small-scale industrial units. However, a major obstacle to the growth of industries in the NWFP is the existence of an underground economy.

A number of other policies bearing on off-farm employment was also noted. These included population and human resource development policies which still remained to be effectively implemented. Among sectoral policies, the efforts in the agricultural sector to improve crop productivity were beset with a number of problems that included the small size and fragmentation of land holdings, inaccessibility, and preponderance of marginal farmers. The role of industrial estates in the provision of essential infrastructure and services remained limited, because of the lack of an adequate number of such estates. It was noted that rural development and anti-poverty programmes, some of which were also implemented in the NWFP, had not had much effect and this was due primarily to the inconsistency of policy over time.

Government programmes on the creation of off-farm employment related to (i) provision of inputs, training, and agricultural extension, (ii) infrastructural development, (iii) trade, fiscal, and industrial policy, and (iv) provision of credit. In this context, the roles of the Agricultural Development Bank and the Small Industries' Development Board of Pakistan were highlighted.

It was noted that, in the mountain context of the NWFP, the imperatives of mountain specificities such as inaccessibility, the fragility of the environment, the marginal nature of the rural economy, and diversity and ensuing comparative advantages had not received as much attention in the formulation of policies for off-farm employment as these deserved.

Finally, six critical issues with regard to the promotion of off-farm employment in the NWFP were presented. The first issue was that of the rapid population growth. It was suggested that the population growth rate had to be curbed through appropriate population programmes as well as appropriate policies with regard to human resource development and the transformation of the occupational structure of the labour force. The second issue was that of migration which required the creation of expanded employment opportunities on the one hand, and careful guidance with regard to the investment of remittances on the other. The third issue centered around the exploitation of the natural resources and comparative advantages of the mountains. The fourth issue was with respect to the ruralisation of industries and the need to target industrial development outside favoured regions and areas such as Peshawar, Mardan, and Hazara. The fifth issue was that of environmental protection. This was particularly relevant to the exploitation of mineral resources, forest resources, and the location of polluting industries. The seventh critical issue was pertinent to human resource development and the need to bring the gender perspective to bear on development initiatives. The development of human resources and attention to gender issues could be instrumental in the transformation of the labour force.

When the floor was opened for discussion several observations were made, questions asked, and clarifications sought from the speaker. It was enquired whether the wage rate correctly reflected labour productivity and whether gender biases did not discriminate against female labour. Questions were raised regarding the state of environmental legislation in Pakistan and who, in fact, benefitted from it.

It was observed from the floor that development of horticulture was not entirely free of environmental problems. In Himachal Pradesh, in India, the increase in the production of apples, which brought income and employment into the area, also brought in environmental problems as a result of the demand for wood as a packing material. A search for non-wood packing materials was underway but a substitute cheap enough to compete with wood had not been found yet.

Comments were made on the issue of the ruralisation of industries. While it was important to promote industries in rural areas, there should be concerted efforts to guard against the indiscriminate location of toxic and highly polluting industries in rural areas. Rural industrialisation policies, therefore, should be free of misuse by vested interests.

The floor discussions also touched upon the need to pursue environmental rehabilitation measures when large-scale mining operations were carried out in mountain areas. At present such measures were not in existence and mining operations degraded the whole area. Similarly, in areas where there were small-scale mining operations, it was important to train people to reclaim the area after mining was finished.

In response to queries, clarifications, and suggestions from the floor, the speaker noted that the wage rate was market determined but it was true that the wage rate thus determined did not necessarily reflect the real productivity of labour. Lack of market integration, labour mobility, and information on the market's demand for labour all contributed to the establishment of a wage rate that did not truly reflect the productivity. The speaker noted that the market discriminated against female labour, but at present no corrective measures were being pursued.

Regarding environmental legislation, it was noted that Pakistan was moving towards environmental legislation but as yet did not have a codified law. He added that environment-friendly legislation could encourage labour-intensive technology and bring about an increase in employment opportunities.

On the question of horticulture, the speaker noted that the observations made it clear that horticulture alone did not guarantee the environmentally sound use of resources. Appropriate measures had to be taken to minimise the undesirable side effects of such development.

On the issue of rural industrialisation it was explained that rural industrialisation should lead to the promotion of industries that were suitable to rural settings. Industries which were based on local raw materials were, in general, suitable for promotion in the rural areas.

Regarding extractive mining operations, the speaker agreed that there was a need to follow an environmentally-friendly approach to mining operations. Smaller areas could be reclaimed by promoting social forestry programmes and quick growing tree plantations.

The speaker observed that in the NWFP of Pakistan, horticultural development received a boost after the implementation of the World Food Programme in the area. Now apples are marketed fresh and because of the lack of an adequate transport and storage infrastructure almost 60 per cent of the crop is wasted. There is no programme at present for apple drying and processing. There was, therefore, the need to develop a comprehensive programme.

The State of Off-farm Employment in the Chinese Mountains

Professor Chen Guojie, the Team Leader for the Chinese Study, presented the regional overview of off-farm employment in the Hengduan Mountains of West Sichuan. He introduced the theme by observing that off-farm employment as a research and development topic in China had attracted attention only since the 1980s. It was only after policies of economic reform were introduced in the late 1970s that the problem of disguised unemployment in the rural sector was recognised.

The Hengduan Mountains, the focus of the study, covered three prefectures and one municipality and had an area of 306,000 square kilometres and a population of 4.9 million in 1988. Much of the land was mountainous and displayed enormous bioclimatic variations. The region consisted of four agro-ecological

zones ranging from the high plateau in the north-west to the middle mountains in the south-east. Economically, the links with the Sichuan Basin were stronger, while culturally it formed part of the Qinghai-Xizang Region. The region was relatively sparsely populated and was rich in natural resources which remained to be exploited. It was also a region inhabited mainly by minority nationalities. The population growth rate was much higher than in other regions of China as family planning was not rigidly enforced on minority nationalities.

The population growth rate for the 1950-90 period was about 1.85 per cent per annum. The level of urbanisation, which remained at around 5 per cent in the 1950s, had risen to 21 per cent at the present time.

Agriculture was the predominant occupation and involved 74 per cent of the labour force. Manufacturing employs about 11 per cent. However, regional differences were notable. In the three prefectures of Aba, Ganzi, and Liangshan nearly 90 per cent of the population were in agricultural occupations, while in Panzhihua Municipality only 28 per cent depended on agriculture. There had been a relatively low development of commerce and service trades. Women were mainly employed in agriculture and the level of occupational mobility among women was low.

The main transformation process in terms of the labour force involved a move from cropping to other farm-related activities and from cropping to rural off-farm activities. Three periods, with respect to the structural change process, can be discerned. Between 1950-57, a slow change from farm to off-farm occupations was perceptible. Between 1957 and 1978 the growth of off-farm activities stagnated because of a greater emphasis on grain production. From 1978 to the present, the economic reforms had helped in the creation of off-farm opportunities. The pace of this transformation, however, remained sluggish.

The demographic prognosis suggested that the population growth would continue to increase more rapidly in the Hengduan Mountains than in other parts of China. As a consequence, per capita cultivated land was likely to decline below 0.1 ha by the turn of the century.

In highlighting the current state of off-farm employment in the Hengduan Mountains, it was observed that many farmers in the region undertook multiple activities. Off-farm employment was mainly pursued within the local area on a seasonal basis. The major off-farm activities were related to non-traditional agriculture. About 11 per cent of the labour force in 1988 were engaged in off-farm activities. This proportion was only 3.2 per cent in the early eighties. About 70 per cent of off-farm workers had farm jobs concurrently. About three-quarters of the off-farm workers were engaged in individual enterprises of various types. Although off-farm activities had increased considerably since the early eighties the productivity was still low. The output value from off-farm work was about 29 per cent of the total output value in 1988. This was much lower than that for Sichuan Province. The largest proportion of off-farm employment was in rural industries, followed by transportation, the tertiary sector, and construction. Regional variations were notable, particularly between Panzhihua and the three prefectures of Aba, Ganzi, and Liangshan.

The linkages of major off-farm activities were also highlighted in the presentation. Major rural industries in the region consisted of extractive industries such as mining and logging. Hydro-electricity was also an important source of employment and also of power. The positive effect of these extractive industries were that these provided raw materials to State-run enterprises, were based on comparative advantage, and helped in the development of agriculture. The negative effects were manifest mainly in the damage and degradation of the environment, environmental pollution in the case of cement plants, and deforestation, particularly due to logging. Industries in general had induced the growth of the construction sector, development in infrastructure, and the growth of towns. In recent years there had been a noticeable decline in collectively-owned enterprises.

Regarding the construction sector, it was noted that there had been a boom in construction associated with the rise in income of farmers after the introduction of economic reforms. Construction required relatively low skills and technical competence. However, it was difficult to maintain the tempo of growth in this sector.

In the transport sector the relative growth in employment had been accompanied by the rise in individually-run transportation services. The slack in construction had influenced the growth of transportation in addition to the problem of fuel availability and poor road conditions.

In the trade and commerce sector a rapid rise had been observed since 1980. The lifting of restriction on private investment and rescindment of the State monopoly on marketing had a salutary effect on the growth of this sector. However, the growth in the tertiary sector was limited to small towns and existing market centres. It was also noted that tourism in the area had great substantial potentials which remained to be exploited.

Within the agricultural sector, livestock, horticulture, sericulture, and sideline activities provided avenues for off-farm employment. However, the forward and backward linkages of these activities had not developed adequately. In horticulture, fruit production (basically apples), cultivation of pepper, and vegetable growing had been on the rise. In suitable areas, sugarcane and tobacco were important cash crops.

The impact of government policies had been considerable in the development of off-farm employment in China. At least four policy phases could be recognised. Between 1950-56 marketing was State controlled but urban off-farm employment was encouraged. The period between 1957 and 1965 was the period of the Great Leap and the People's Commune. All commercial activities were brought under State control, enterprises were set up through the communes, but the progress in off-farm employment was sluggish. The period of the Cultural Revolution and after (1966-79) was a period of tight control when all enterprises were brought under communes and brigades. There was virtual stagnation in OFE. The rapid growth of OFE took place only after the policy reform took place in 1978. The Contract Responsibility System provided incentive and flexibility. The rural free market came into being and this led to the diversification of economic activities. At present, although township enterprises exist, there is also scope for the development of individual enterprises. There is a coexistence of State and non-State-owned enterprises. In West Sichuan, in particular, the new policies have meant a change from the early emphasis on grain production. Several programmes with implications for the growth of OFE had commenced in the mean time. These included a development fund for underdeveloped areas, a targeted programme for the development of horticulture, and an anti-poverty programme. Training of specific personnel, a special financial policy, and encouragement to outside investments were other policies that affected OFE development in the Hengduan Mountains. Consistency and stability in government policy was of primary importance for promoting OFE.

The presentation then touched upon the elements of success and failure in a few major off-farm activity areas, including mining, logging, and horticulture, which are prominent activities at present. Finally, some of the issues critical for the promotion of OFE in the Hengduan Mountains were noted. These included the need to safeguard the environment in the promotion of OFE related to extractive mining, the maintenance of a balance between off-farm activities and traditional agriculture, and the need to pay attention to the gap between the rich and the poor, which was increasing as a result of the introduction of the Contract Responsibility System.

Some areas of concern were also pointed out. These included the need to increase the pace of agricultural development, to promote small towns and market centres, and to provide impetus for the growth of township enterprises based on the use of local resources. On the institutional front there was a need to

disseminate market information, promote marketing cooperatives, and provide impetus for the development of tertiary activities. Similarly, the assurance of food sufficiency, land deeds for households engaged in off-farm activities, social stability, and reform in pricing policies were also deemed necessary for the promotion of off-farm employment.

After the presentation, the floor was opened for discussion. It was pointed out from the floor that the promotion of OFE in China had been possible as a result of many policy decisions taken by the Government. Elaboration was sought regarding the most important policies affecting the growth of off-farm employment. A query was made regarding the management of medicinal plants. It was pointed out that the collection of medicinal plants had reached unsustainable proportions, for example, in Nepal. Questions regarding the potentials of tourism and the dangers from the increasing scale of mining activities were raised. The marketing problem, in view of the growth of horticultural production, was highlighted and queries were made regarding storage, transportation, and packaging. In view of the importance of logging in the Hengduan Mountains, the issue of forest management was raised particularly in the context of State ownership. Questions were also asked regarding the involvement of women in off-farm activities.

In response to the queries and observations, the speaker responded that three policies had had the most profound impact on the development of OFE in the Hengduan Mountains. These were the system of Contracting Production Responsibility to Households, marketing policies, and policies for encouraging rural enterprises. After 1978, when the Household Responsibility System was introduced, people were motivated to produce for the market. Surplus products could be sold in the markets at prices determined by the market itself. This led to greater private initiative and household surplus labour could engage itself in productive OFE. The new marketing policy permitted private individuals to engage in selling products. This encouraged entrepreneurs to exploit the market potential. The emphasis on rural industrialisation meant that the private entrepreneur could play an important role. These policies contributed to the rapid expansion of OFE activities. The three policies went together as a package and progress would not have been possible if these measures had been implemented in isolation from one another. The main virtue of the package was that it encouraged people to produce beyond their subsistence requirements and use the market mechanism to reap the benefit of hard work.

On medicinal plants, the speaker noted that the area was more important for mushrooms and that there was the danger of over-exploitation, as in Nepal, because there was no special policy regarding the collection of plants or mushrooms in the area.

Regarding tourism, the speaker observed that it had good prospects in the long run but, at present, because of the difficulty of access, the tourism sector was quite small. Moreover, the local economy hardly derived benefit from tourism as all the benefits at present accrued to people from outside the region.

Regarding mining, the speaker noted that since mining was on a small scale and limited to surface mining, large-scale degradation problems had not arisen. However, even small-scale operations disturbed the environment and there was a need for programmes for the rehabilitation of degraded areas. On horticulture, it was noted that the demand for horticultural products was high and currently the farmers faced no marketing problems. The products were consumed fresh and bamboo, which was in plenty in the area, was used as packaging material.

Regarding forest management, the speaker reported that forests in China had generally been managed by the State. However, some forest areas had been transferred to the people of the area for management under a contractual system. However, it was too early to evaluate the effectiveness of this system of management.

On the issue of women's involvement in OFE, it was noted that women were mostly engaged in agriculture. Most women involved in OFE were engaged in the tertiary, basically trade, sector.

The State of Off-farm Employment in the Nepalese Mountains

The third presentation in the first session was on the current state of off-farm employment in the Hill and Mountain regions in Nepal. The presentation was made by Dr. Govind Koirala, a team member from the Nepal study.

The presentation was organised into five major areas: the structure of population and labour force, the current employment situation, the potential areas for off-farm employment, major issues and constraints in the promotion of off-farm employment, and the areas requiring policy attention.

The Hill and Mountain regions in Nepal covered about 77 per cent of the land area and in 1981 had a population of around 8.5 million, which was about 56 per cent of the total national population. The average annual population growth rate in the period from 1971-1981 was 2.66 per cent for the whole country and 1.62 per cent in the Hill and Mountain regions. The low growth rate of the hill-mountain population was a consequence of migration from the highlands to the *Terai* lowlands. The labour force of about 4.2 million in 1981 grew at a rate of 2.46 per cent between 1971-81. The level of urbanisation, often considered as a proxy of employment opportunities outside agriculture, was 6.3 per cent for the whole country and 5.9 per cent for the region. Literacy rates, an indicator of the potential for skilled manpower, was only about 24 per cent in 1981. The female literacy rate was much lower, at about 12 per cent only.

The pressure of population on land had been on the rise in Nepal, particularly after the 1950s. Each hectare of cultivated land in the Hill and Mountain regions was shared by about 9 persons in 1981. This was expected to rise further because the potential for population growth remained high, as about 40 per cent of the population were below the age of 15. Agriculture was the major occupation for about 95 per cent of the labour force. Around 59 per cent of the GDP was derived from agriculture. The transformation of the labour force structure from the primary to secondary and tertiary sectors had more or less remained static for the last two decades. There were considerable barriers to this transformation, reflected mainly in the declining productivity of agriculture, the lack of diversification in agricultural and farming systems, the lack of infrastructure for the exploitation of comparative advantages, and the slow pace of human resource development.

A large proportion of the population engaged in off-farm activities in the hills and mountains was involved in what might be termed "distress employment". Estimates showed that about 64.5 per cent of the population in the region were below the level of absolute poverty in the early eighties. The open unemployment rate in the rural and urban areas of the hills and mountains was estimated at 2.9 and 4.8 per cent in 1984. But underemployment in the agricultural sector, the major economic sector of the country, was pervasive. Around 46.4 per cent of the labour force in the agricultural sector were estimated to be underemployed. Further, there had been an increasing trend in the participation of females in the labour force. Therefore, while the growth in the labour force would remain at around three per cent in the coming decades, the expansion in employment opportunities would hardly be a fraction of this growth rate. By the year 2010, the labour force in the hills and mountains was expected to increase by 2 million. This would require the creation of about 100,000 additional jobs per year. It was quite clear that the traditional agricultural economy could not assume this burden.

A number of adaptive mechanisms had been used by the population of the hills and mountains in response to the lack of employment opportunities. The ever-decreasing size of small farms; seasonal, temporary,

and semi-permanent migration; and expansion of the labour market had been some of the most notable adaptive mechanisms. These mechanisms were unlikely to work for long. The lowland migration option, in particular, would remain severely restricted as the population carrying capacity of the *Terai* was beginning to dwindle.

An analysis of the current state of off-farm employment was then presented by categorising the sector into three groups: the formal sector, the informal sector, and OFE within agriculture. While some information existed in the formal, particularly manufacturing, sector, the picture in the informal sector and in agriculture-related OFE activities could only be surmised on the basis of micro-level surveys. In 1986/87 the survey of manufacturing establishments made by the Central Bureau of Statistics showed that, in 9,400 establishments employing 10 or more persons, about 153,000 persons were employed in the whole country. Thirty-seven per cent of this employment was in the hill-mountain region and was mainly concentrated in the Kathmandu Valley in the Central Development Region. Estimates based on sample surveys showed that, in 1990, about 500,000 persons were seasonally employed in the construction sector in the Hill and Mountain regions. Tourism was also an important sector of off-farm employment. About 266,000 tourists visited Nepal in 1989. A survey of employment in the tourism sector showed that in 1989 about 11,200 persons were directly employed in this sector. Potentials for growth in tourism were considerable, as Nepal remained an attractive destination for trekking tourists. The linkages of tourism, particularly its effect on the environment, had, of late, been an area of major concern.

Public service was also an important area of employment. In 1989/90 the Government employed about 96,000 people in the civil services, 75,000 in the army and police, and about 40,000 in parastatal agencies. Most of these opportunities were for literate persons.

Other employment avenues were in trade, transport, and services, particularly along major roads and in urban areas, markets, and administrative centres. This sector in 1990 employed about 150,000 persons. Mining and quarrying employed only about 3,000 people.

In the informal sector, cottage industry was the major source of off-farm employment. An estimated 130,000 persons were seasonally employed in this sector. Skills and craft-based activities reported employment of about 175,000 people in the country as a whole in 1985. About 98 per cent of this employment was in the hills and mountains. However, these activities were on the decline, mostly as

a result of competition from cheap manufactured products. In the informal sector, portage and small businesses were other important avenues of employment.

Within the agricultural sector there was considerable scope in the expansion of off-farm employment opportunities in livestock (particularly dairy-related activities), vegetable production, horticulture, medicinal plants, hand-made paper, sericulture, and beekeeping. Some of this potential was exploited in some selected areas, particularly with regard to vegetable production and horticulture (basically apples and other temperate fruit production).

Among the prominent off-farm activities in the formal sector were, garment and carpet-making, public construction, tourism and trade, and transport services. Not all of the currently prominent activities, however, would be sustainable in the long run. Garments, for example, were dependant upon an unpredictable external market. Carpet-making consumed fuelwood which had to be substituted by other energy forms. Mountain tourism, in addition to environmental problems, could not be the vehicle for rural employment generation unless the benefits could be retained in tourist areas.

Areas of off-farm employment potential included opportunities made available through the diversification and intensification of agriculture (vegetable and vegetable seed production, sericulture, medicinal herbs,

and cut-flowers), agro-based processing industries, tourism, construction, community forestry, and, to some extent, livestock development.

Issues related to the current state of and policies pertaining to off-farm employment were then presented. Government policies, with very few exceptions, had neither direct nor positive bearing on the expansion of off-farm opportunities. The major issues and constraints discussed related to the lack of physical and human infrastructure, a fragmented market, a situation of "distress" employment, the concentration of major activities in the public sector, and the need to assure that off-farm employment was generated in sectors that augment the resource base. It was noted that Nepalese farmers were moderately risk averse and, therefore, there was a need to enhance entrepreneurship abilities so that contingent markets could be developed. Government policies, in general, emphasised the development of traditional cereal crops and the subsidies and other concessions meant for the rural farmer never reached the farmer or else had effects other than those intended by government policies. It was also noted that food security was a major problem in the pursuit of off-farm employment augmenting activities based on comparative advantage.

Critical areas for policy attention were then identified. These included an effective population programme, removal of barriers for industrial growth, emphasis on vocational education, carefully supervised privatisation, and a carefully planned tax and transfer regime. On the institutional front there was a need to increase the Government's capacity to effect legislation and curb rent-seeking behaviour. Land reform and the problem of an open border with India were also discussed. The need to promote the organisation of group and commodity associations for reducing transaction costs in service delivery and receipt had also been increasingly felt. A system of sub-contracting particular activities to small enterprises, largely by city-based firms, development of contingent markets to share and absorb risk, decentralisation of industries from urban centres, and the development of alternative energy sources were other areas needing policy attention. In order to promote agriculture-related, off-farm activities it was suggested that the government extension programme be diversified to cater for the needs of such areas as vegetable production, horticulture, and sericulture, among others.

After the presentation by Dr. Koirala, the floor was opened for questions, comments, and observations. Since the tourism sector offered considerable scope for OFE the discussion centred on how to maximise such benefits. It was also pointed out from the floor that the estimated employment in the tourism sector, as reported in the paper, was an underestimate. A more recent survey showed that about 29 thousand persons were directly employed in the tourism sector. The discussion also centred on the carrying capacity of the mountains and the need to regulate tourist inflow within a reasonable range of the carrying capacity. Examples were cited of areas where disregard of carrying capacity had led to severe environmental degradation. Inquiries were made regarding the National Statistical Act. It was suggested that in most countries such acts provided the national statistical offices access to, and even control of, statistics that were of importance for the planning and execution of development plans. The floor also discussed the issue of the risk aversion behaviour of the majority of farmers. The issue of privatisation of public undertakings also came up for discussion. It was observed that, while there could be little disagreement on the need for privatisation, this should be pursued on the merits of each case. It was equally important to guard against excessive concentration of national resources in the hands of a few monopoly houses. The Government had to ensure that there was a more even spread of resources.

In his response the speaker agreed that the carrying capacity issue was important and that many of the problems seen today were a result of the neglect of this vital aspect in policy formulation in the past. On the question of the National Statistics' Act, the speaker noted that there was an act empowering the Central Bureau of Statistics (CBS) to obtain, process, and publish data, even those collected by agencies other than itself. The question, however, was regarding the accuracy and validity of statistics published by the CBS itself. CBS, it was noted, suffered from a variety of problems, including deficiencies in orientation, organisation, and support.

The speaker also remarked that the risk averse nature of hill farmers was primarily due to the need to ensure food security. Most of the farmers acted as risk averters, particularly when a shift was needed from cereal crops to non-cereal crops. If they were convinced that their food demands would be met, and that there was a market for their produce, then farmers had been observed to diversify their farming systems.

On the issue of privatisation, the speaker observed that it was the duty of the Government to act as a watch-dog in the process of privatisation. The basic issue was that the Government should not take upon itself the kind of role that could easily and more efficiently be performed by the private sector.

Dr. Mahesh Banskota, Chairman of the session, in his concluding remarks, drew the attention of the participants to a number of commonalities with regard to the problems and prospects of OFE in the Hindu Kush-Himalayas. He prefaced his comments by pointing out that integrated mountain development, conceptually, required each problem to be looked at from several perspectives or windows. The Off-farm Employment Programme of ICIMOD was one window, among many such windows, through which problems specific to the mountains could be studied and lessons drawn.

He noted that interest in the mountain areas in each of the participating countries was relatively new. For long periods in the past very little attention had been given to the problems of the mountains and their inhabitants. Consequently, there was a big gap in knowledge and information about the mountains, and policy planners were quite often ignorant of the objective conditions in the mountains. These objective conditions that were unique to the mountains needed to be internalised by policy planners before a meaningful strategy could be developed.

It was also important to reflect on the objectives of development in the mountain context. Could they be the same as those applicable elsewhere? For example, conventional theory suggested that employment per se was not an important objective as it was only a means to attain the end, which was income. But, in the mountain context, if people were to be provided with a living with human dignity then employment had to be an important objective by itself. Very little attention had been given in the past to incorporating employment as one of the development objectives. A shift in perspective was therefore required in the future.

Summarising the common lessons emerging from the presentations, the Chairman observed that there were four basic pre-conditions that had to be met for the sustained promotion of off-farm activities. These were as given below.

- (i) **Food Support:** Promotion of OFE required food support to the rural people. The support was to be both in terms of availability and affordability. Food support was a vital mechanism to induce farmers to take some risk and move towards OFE activities in the mountains of Nepal, China, and Pakistan.
- (ii) **Training, Education, and Skill Enhancement:** Successful promotion of OFE necessitated the implementation of relevant training, education, and skill enhancement programmes in the area. Traditional skills were, in many instances, inadequate to meet the demands of modern times.
- (iii) **Infrastructure:** Appropriate infrastructure linking urban centres and rural townships was important to foster OFE activities. Wider market system linkages boosted demand for off-farm products, and thus, in turn, led to enhanced OFE. Infrastructural needs, such as storage facilities and energy, were also important in promoting OFE.

- (iv) **Organisation:** It was important to organise the poor in mountain areas. Benefit sharing through group activities provided an initial boost to OFE. Similarly, groups could organise cooperative ventures and take advantage of government financing and credit policies.

Dr. Banskota concluded the session by observing that these issues and many others would come up again in the presentations and discussions of the case studies. He hoped that the participants would come up with suggestions and guidelines which were practical and implementable by the governments in the region.

Case Studies and Policy Perspectives

The **second, third, and fourth** sessions of the workshop were devoted to the presentation of area-specific case studies from China, Pakistan, and Nepal. The case study presentations were complemented by policy perspectives provided by a senior policy-maker from each of these countries.

Findings from Wenchuan County, China

The **second session**, in which the findings from Wenchuan County, China were presented was chaired by Mr. M. Parabrahmam, Advisor in the Ministry of Environment and Forests of the Government of India. The case studies were presented by Mr. Yu Side, team member from the Chinese Study.

First, the backgrounds to the three case study areas were presented. All the case study townships (equivalent to former communes) were located in Wenchuan County which bordered the Sichuan Basin in the east. However, the three areas showed distinct differences in terms of location, accessibility, and the dominant type of off-farm activity. Weizhou was located just next to the county capital, was crossed by two major highways, and had a higher level of per capita income, as well as per capita income from off-farm activities. Horticulture was the dominant off-farm activity. Mianchi township was located about 18 km from the county capital along the Chengdu-Aba road; had a per capita income level about 30 per cent lower than that of Weizhou; and the predominant off-farm activity was a mix of horticulture, livestock, and sideline activities. Shuimo township, in contrast, was the most remote from the county capital, had the lowest level of per capita income from off-farm activities, and the predominant activity was related to livestock and medicinal plants. All three townships were at elevations ranging from 900 to 2,500 metres and fell into the semi-dry monsoon regime. Compared to other townships, Shuimo was the wettest. Minority nationalities were the dominant groups in Weizhou and Mianchi. All were subsistence agricultural communities, producing mainly maize, wheat, and potatoes among other crops. All townships were reportedly food sufficient and the major staple, rice, which was not a major crop in the townships, was exchanged for the locally-produced maize through the Grain Purchasing Station maintained by the State.

The predominant employment opportunities in the off-farm sector were in rural enterprises, transport, construction and hydropower generation. All the township villages were electrified. Variations in off-farm activities were notable in all townships, particularly among villages in the valley and in the mountains. While off-farm opportunities were relatively more abundant in the relatively accessible valley villages, the mountain villages mostly suffered from problems of inaccessibility and lack of sufficient intra-village markets. All the township centres had basic institutions for development such as extension and outreach offices related to rural enterprises, livestock, horticulture, and health. Basic educational institutions existed in most villages and the level of literacy ranged from 27.5 per cent of the economically active labour force in Weizhou to 42 per cent in Shuimo township, with Mianchi lying in

between. The pressure of population on cultivated land, as reflected in the per capita availability of cultivated land, ranged from 0.09 hectares in Weizhou township to 0.12 hectares in Shuimo township. The population growth rate in the townships was between 0.9 per cent to 1.85 per cent per annum. The principal resources in the townships, other than agricultural land, were water, minerals, and forests in Weizhou and Mianchi townships and forests in Shuimo township.

A detailed analysis of different off-farm activities and their resource bases and linkages was then presented in the case of each township. Although each township had a few major industries, employment in these enterprises was mostly seasonal and involved around 10 per cent only of the total labour force (13 per cent in Weizhou, 10.5 per cent in Shuimo, and 11.2 per cent in Mianchi). Almost all off-farm activities, apart from agriculture, were dependent on mining (quartz, barite in Mianchi, limestone, marble, and jade in Weizhou), logging (Shuimo), construction (Shuimo), and a variety of individual businesses-including transportation, catering, petty trade, and small business and sideline activities (e.g., odd jobs, carpentry, and embroidery). Mostly accessible, valley-located villages had these employment advantages. It was shown that mining, in particular, although of small scale, had considerable potential for degrading the environment as was evident by the presence of rock slips and increased incidences of soil erosion. Not much attention had currently been given to this aspect. Also, certain industries, although based on local comparative advantages, had had a negative effect on the environment (such as the cement plant in Weizhou). Among the relatively "successful" cases of off-farm employment generation were the Xiaosuoquia Hydro-electric Power Station in Mianchi and the paper plant in Shuimo. An important aspect of township-run rural enterprises was that all the employment created went to the locals.

In recent years, individual transport had emerged as an important avenue for self-employment. The construction sector had also grown. In both cases, however, it was difficult for such ventures to maintain a stable growth pattern as both depended on sustained increases in farmer income. The case study presentation brought out clearly that non-farm employment was mainly a male preserve and the gender perspective in the promotion of off-farm opportunities was lacking. This was in spite of the fact that, in all townships, female literacy and levels of educational attainment were almost at par with those of males.

The analysis revealed that it was in agriculture-related, off-farm activities that prospects of growth were evident. The policy of economic reforms introduced in 1978 had far-reaching repercussions on agriculture-related, off-farm employment. Major policy innovations influencing such growth were: the introduction of Contracting Production Responsibility to Households (CPRH), permits to open individual and collective-run businesses, preferential credit for agricultural product processing, storage, transportation and marketing, and credit priority and tax concessions for rural mining and other resource exploitation endeavours among others. The CPRH system involved the contracting of land to individual households on a per capita basis. Under this policy even barren hilly land was also contracted out to households. Farmers were, therefore, in a position to search for off-farm opportunities based on local comparative advantages in spite of the constraints of capital and technology. Although the policies had differential effects on different townships (those near the county capital had derived advantages and extension support from the county government much earlier and more effectively than those far away), the changes brought about by these policies were more or less evident everywhere. The remarkable development of apple and Sichuan chilli pepper production by farm households in Weizhou townships; the rapid growth of vegetable production for local and county markets in Mianchi; and the prospects of "moyu tuber" and medicinal plants that were being established in Shuimo township were all a result of the policy changes introduced in the early eighties. It was shown that income from off-farm activities contributed about 67 per cent of the household income in Weizhou township; about 68 per cent in Mianchi township; and about 53 per cent in a relatively remote township such as Shuimo. Given the emphasis on apples and Sichuan chilli pepper, and the number of trees that had not yet reached the

production stage, horticulture would be a major activity and employment source in Weizhou. Similar, albeit lesser, prospects were sure to be exploited in other townships in other areas.

It was also shown that the off-farm activities within agriculture, noted above, formed part of an integrated activity system. Most households were engaged both in grain production as well as horticultural, livestock, sideline, and other gainful activities. Broadly, the labour demand in agriculture did not conflict with the labour requirements in other activities such as horticulture, livestock-raising, and so on. Because of the intimate involvement with agriculture, the presence of women was more pronounced and their contribution not less than that of men in areas such as horticulture, livestock raising, and sideline activities. In many instances, the workload of women appeared to have increased because of these agriculture-related, off-farm activities.

A number of factors affected the growth of employment in off-farm activities. Apart from policy changes, access to market was the predominant concern. Qiang embroidery in Mianchi exemplified the promotion of an activity as a result of external markets. The case of medicinal plants and "Moyu" in Shuimo, and apples and pepper in Weizhou were other examples. However, as production increased and the search for regional markets became imperative, processing and quality control would assume new significance. The case studies in all the three townships showed that food availability and affordability was a major factor influencing the farmer's decision to specialise in off-farm activities. Also activities that had practical and economic linkages with traditional activities tended to be easily taken up. It was shown that the most innovative promoters of off-farm opportunities were those who were not only better educated but who also had developed a better comprehension of the market and the social and economic world about them. Some of the constraints to the promotion of off-farm activities were also noted. Chief among these constraints were capital, technology, training, and infrastructure. In each case guidelines for the promotion of off-farm activities were suggested. The need for a stable policy and assurance that the present policies would continue, preferential treatment with respect to loans from financial institutions, extension support from county and township government, timely information on markets, provision of autonomy to township-run enterprises in terms of decision-making, and the need to pursue special policies for low income farmers were among the common suggestions derived from the case studies.

Policy Perspectives from China

The policy perspective from China, with focus on the economic development of poor areas, was presented by Professor Cui Jun from the Leading Group for the Economic Development of Poor Areas under the State Council. His presentation covered three main aspects: the state of poverty in rural, particularly mountainous, areas; the approaches pursued by the Government in dealing with the problem of poverty; and experience gained, mainly after the introduction of new economic reform policies, and its relevance to off-farm employment. It was reported that the problem of poverty in rural China was recognised as a major problem in 664 counties in 22 provinces and autonomous regions. In 1985, persons with a per capita net income of less than 200 *yuan* were regarded as poor. A total of 102 million people fell into this category, of which 38.4 million people or 4.4 per cent of China's rural population had a per capita net income of less than 150 *yuan* per annum. Many of the poor areas were not easily accessible. Consequently, the prerequisites for economic development remained at a low level. In many areas economic and environmental problems existed and reinforced one another. Most of the poor, mountainous areas also had excessive population growth.

To deal with the issue of rural poverty a 'Leading Group for the Economic Development of Poor Areas' was established at the Centre. Under this umbrella other organisations were established such as the 'China Development Foundation for Poor Areas', the 'China Cadre Training Centre for Poor Areas', and

the 'China Services' Centre for the Economic Development of Poor Areas'. The Leading Group has its offices and groups at the provincial, prefectural, and county levels. The major tasks of the leading group were to organise, coordinate, and supervise economic development in poor areas through investigations and studies; through the development of appropriate policies and programmes, supervision and support in their implementation; and through the exchange of experiences. The Leading Group also sets the short-term and medium-term targets for the development of poor areas.

From 1986 onwards the approach in developing poor areas has been guided by the principle of helping these areas to help themselves. Initiatives for local economic development through mobilisation of local resources and people, rather than the provision of aid, were emphasised. The focus was also on targetting aid and services to the real poor. An "aiding-the-poor responsibility system" was launched through the leadership at various levels. Agricultural development; training in specific productive/potential areas; popularisation of appropriate technologies through the involvement of research and science-related institutions; and efforts at controlling the population growth rate were areas that received priority in the established programmes. The achievements of these programmes in the last five years have been remarkable. As a result the magnitude of poor people with less than 200 *yuan* per capita income has gone down from 102 million in 1985 to 35 million in 1990.

The need to orient policy initiatives towards the promotion of off-farm employment to absorb the growing surplus labour force in rural areas has been realised at all levels. For this purpose the Government formulated preferential policies to facilitate the growth of rural industries. Labour intensive industries, agro-based industries, and high-value industries, have been promoted in rural areas. The policy was to create a situation where "farmers can leave the land but not the countryside. They can become workers, but can not enter the city". In the case of resource exploiting rural industries the policy was to ensure "economic, social, and environmental benefit".

After presentation of the case studies and policy perspectives the floor was opened for discussion. Questions were raised regarding the type of activities that would attract low income families and the major hurdles for the poor in taking up off-farm activities. Explanations were sought regarding the main factors contributing to the development of horticulture and vegetable farming in the case study areas. The relation of farm size to the generation of cash income from cropping and the environmental impact of the promotion of mining activities in mountain areas also came up in the discussions.

Explanations about the role of the China Service Centre for Poor Areas and the involvement of women in the Leading Group for the Economic Development in Poor Areas were sought from the floor.

Responding to the queries and observations, the speaker on the case studies suggested that horticulture, pig-raising, and sideline activities were perhaps the most attractive types of off-farm activity for low income families for a number of reasons; viz., these activities required relatively little investment and technical training and the risk involved was also minimal. However, efforts at changing the traditional notions of low income households had to be made and more market information had to be provided to make these activities practically attractive. Lack of experience and the low level of education and training were among the major hurdles for the poor in taking up off-farm activities. Referring to the main factors for the development of horticulture, it was suggested that government policy (particularly the Responsibility System), natural and seasonal advantages, the existence of a large fruit and vegetable market in Chengdu, and technical guidance had contributed to the development of horticulture. On the question of farm size, it was reported that in China there were no differences in farm size among households in a village because all cultivated lands and hilly lands were contracted out on a per capita basis. Low income households were therefore not low farm size households. The speaker acknowledged the problem of environmental degradation caused by the increase in mining activities and suggested that it was essential to develop and implement adequate safeguards.

On the role of the China Service Centre for Poor Areas, it was reported that the Centre provides backup support on technology, training, and investment services among others. For example, in very poor areas with low agricultural output the Government provided seeds and polythene through the service centres.

Regarding the representation of women in the Leading Groups it was reported that at all levels concerned government officials, financial institutions, and representatives from organisations, including women's organisations, formed part of the composition of the Leading Groups.

Mr. M. Parabramham, the chairman of the session, summarised the presentation and the ensuing discussions and noted that afforestation itself can be an important source of off-farm employment. The Chinese example of developing hydropower stations owned by the local people was an innovation that could be replicated elsewhere in the Hindu Kush-Himalayas. The chairman emphasised three basic areas of concern in the promotion of OFE, namely, the increased involvement of women, information about and organisation of marketing, and the need to plan for processing industries based on agricultural and horticultural produce.

Findings from Dhading and Mustang Districts, Nepal

In the **third session** of the workshop, two case studies from the Dhading and Mustang districts of Nepal were presented. The case study of Naubise Village in Dhading was intended to elucidate the prospects of off-farm employment, based on vegetable farming, in a relatively accessible context. The case of Jomsom and Marpha Village Development committees in Mustang District in the Trans-himalayan geographical region of Nepal were chosen as an example of off-farm employment based on trekking tourism. The case studies were presented by Dr. Janardan Khatri-Chhetri the Team Leader of the Nepal study. The session was chaired by Mr. Mukhtar Ahmed, Chief Economist of the Planning and Development Department of the Government of the NWFP, Pakistan.

In the Naubise, Dhading, case study, the socioeconomic profile of the study area was presented first. This was followed by an inventory of off-farm activities and an analysis of the linkages of off-farm activities. Finally, a number of critical issues and options for the promotion of off-farm employment was indicated. The case study was based on a survey of 70 households chosen from among the wards known for vegetable cultivation. In addition to a household survey, rapid rural appraisal and information from key informants were used in the case study.

The study area lies just west of the Kathmandu Valley, the major urban complex of Nepal, along the major highway that links Kathmandu with the southern and western regions of Nepal. The area is a relatively accessible area characterised by a high population growth rate, moderate literacy, and cultivated land of about 0.12 hectares per capita. In the Village Development Committee, as a whole, the ratio of cultivated land to total land was very high because of the favourable location. The majority of farmers were owner cultivators.

An analysis of the source of cash income in households revealed that wages within agriculture were the major source for marginal farmers while vegetable sales provided substantial cash incomes for small, medium, and large-scale farmers. Marginal farm households were defined as households with less than 0.3 hectares of farmland. Large farm households were defined as those with over 1 hectare of farmland. Other off-farm activities contributing to the cash income of households were trade and business, wages outside agriculture, government and other salaried employment, and cottage industries and livestock production.

An analysis of labour use in various activities showed that on an average about 24 per cent of labour time was devoted to traditional agriculture and about 15 per cent to agriculture-related off-farm activities such as vegetable farming, wage labour, and so on. Subsistence and household-related activities took up about 15 per cent of the labour time in households. On an average 46 per cent of the labour time in households remained unutilised. A comparison of labour time use among males and females revealed that household chores and traditional agriculture-related activities took up more of the female labour time. The burden on women was clearly greater than that on men. In terms of household farm size, almost 50 per cent of the labour time of marginal households remained unutilised. This clearly revealed the implications of off-farm activity for households.

Among the off-farm activities in Naubise Village, vegetable farming was the most important and prominent one. Commercial vegetable farming started in the area in the early 1970s. However, it took off only in the early 1980s when farmers began to be trained in vegetable production and credit assistance and when the demand for vegetables in the urban areas of Kathmandu began to grow.

The linkage of vegetable production with other sectors also remained an important consideration. Vegetable residues are fed to animals and also used for compost. Vegetable cultivation also led to increases in the yield of traditional crops, partly due to the increased capability of households to purchase agricultural inputs. The environmental implications of vegetable production thus far had not become adverse, although increased use of chemical fertilizers had the potential to deplete the productive capacity of the land.

Some of the problems arising out of vegetable production were also presented. These included the lack of a favourable and well-coordinated policy, particularly with regard to credit, extension, transportation, and marketing. Storage facilities were lacking, the problem of timely transportation plagued many farmers, and marketing was not well organised. Because of these problems farmers were sometimes forced into distress selling. The production of vegetable seeds, storage, and processing of vegetables were areas where prospects existed. Establishment of a vegetable collection centre and a cold storage through the joint efforts of the Government and the private sector and strengthening the institutional and organisational initiatives of the farmers were suggested as priority areas for attention.

The Marpha-Jomsom Mustang District case study was then presented. In contrast to Naubise in Dhading the Marpha-Jomsom area was not easily accessible as there was no motorable road and it takes about 6-8 days from the nearest urban centre of Pokhara to reach Jomsom. The area is connected to Kathmandu and Pokhara by air.

However, during the last one and a half decades the area had been the major attraction for trekking tourists to the Annapurna region. The study area lay on the northern side of the Great Himalayan range, had insular conditions, and, because of altitude and climate, had very little cultivable land. It was also the home of one of the most enterprising ethnic groups of Nepal, namely, the Thakalis.

The methodology used for the case study was similar to that of Dhading. Information was collected from 54 sample households and through key informants and surveys of different off-farm enterprises.

The area, in spite of its remoteness, had a high literacy rate. Migration, both seasonal as well as temporary, was characteristic of the area. However, migration had visibly declined in recent years because of the new prospects opened up by the development of tourism. Agriculture remained the major occupation supplemented by a variety of off-farm activities. Naked barley, buckwheat, maize, and potatoes were major traditional crops. Since the late 1960s, horticulture had emerged as a major activity in households. The major fruits produced were apples, apricots, peaches, and walnuts. Also some temperate vegetables were grown. Both these developments had taken place through the extension efforts

of the Marpha Horticultural Farm. Livestock also played a major role in the household economy. About 19 per cent of the total land owned by sample households was under fruit farming. Around 58 per cent of the households were engaged in vegetable production for the market. Among rural cottage industries, the major activities included production of dried apples, home made liquor distilled from apples and apricots, production of small petty woollen goods, and metal utensils.

Sources noted above contributed to the cash income of households. Wage earning jobs outside agriculture, salaried jobs, trade and business, and the sale of fruits and liquor were major off-farm sources of cash income. The household sample survey also revealed that the Jomsom-Marpha area had a higher level of household cash income than the relatively accessible Naubise area in Dhading. An inventory of off-farm employment activities in the area showed that there were about 27 hotels and lodges catering for tourist needs in the area. While shopkeeping was an important activity, transportation through mules provided employment and was the major mode of transportation for many of the import needs of tourists as well as locals.

Almost all off-farm activities in Jomsom-Marpha revolved around or were linked with trekking tourism. Over 11,000 foreign tourists visited the Jomsom-Marpha area each year, chiefly attracted by the natural landscape and the unique culture, society, and lifestyle of people. The growth in tourism had provided the impetus for the local people to invest in new economic activities. As a consequence, the hotel/lodge business had grown. The growth of horticulture and vegetable production had received a boost from trekking tourism as fresh fruits were in demand both from tourists and the hotels/lodges, and vegetables were much in demand in hotels and restaurants catering to the tourists. The need to import food and fuel had encouraged portage as well as mule-based transportation. The rise in household income had created demand for metal utensils which were fashioned by occupational caste groups out of imported raw materials. One of the innovations introduced in the area was the drying of apples. This had reduced the imperative for "distress sales" during the apple season and had provided employment opportunities on an extended scale in many households. Although tourism had provided the initial push, apple production in the area had been growing annually, thus making the search for new markets essential. As a result new and novel ways of storage, packaging, and transportation were being tried. The extension support provided by the Marpha Horticultural Farm had remained crucial to the growth of horticulture and vegetable farming.

In spite of these "successes" a number of problems emanating from trekking tourism were also evident in Marpha-Jomsom. A major concern was that of environmental degradation as a result of the depletion of forests to supply the energy needs of tourists and of hotels and lodges set up to cater for tourist needs. Forest depletion, accelerated erosion, and landslides were evident in the area. Also, the carrying capacity of trekking routes in particular seasons had emerged as a major concern in view of the problem of garbage/littering, sheer congestion and density of tourists at particular destinations, and the lack of enforcement of the regulations for the use of alternative energy sources. The lack of adequate supplies of alternative energy, such as solar heating, electricity, and kerosene, were other problems.

Other issues of concern were related to grazing practices, afforestation, and management of camp sites. Similarly, the need for training and orientation in the management and operation of hotels and lodges and institutional support for strengthening the activities of the Trekking and Hotel Association of Mustang (THAM); awareness and incentives for the wider and effective dissemination of appropriate technologies and innovations; the need to search for potential markets for increasing horticultural produce; improving mule transport technology; and institutional support in areas such as credit, technology transfer, training and skill development, and marketing were other critical areas requiring attention. While clarity was needed in government policies, an "integrated" approach for institutional support to tourism-related activities needed to be developed through consultation with local entrepreneurs, financial institutions, and community organisations. Problems in the preservation of cultural and historic heritage were also pointed

out together with the need to make local organisations active in these areas. It was noted in conclusion that the sustained development of trekking tourism required the development and extension of physical infrastructure and mechanisms to ensure that the gains from tourism were widely distributed.

Policy Perspectives from Nepal

After the presentation of the case studies from Nepal, a brief policy perspective with regard to off-farm employment in Nepal was provided by Dr. B.N. Chalise, Joint Secretary in the Ministry of Industries, His Majesty's Government. Dr. Chalise's presentation was intended as a critique of government policy.

He observed at the outset that government plans and policies in the past had been guilty of treating the whole question of off-farm employment as a "residual" issue. OFE programmes were often treated as social programmes like health or family planning. The programmes were thinly spread and lacked an orientation towards the market. He cited the case of Jumla apples and cotton weaving as examples of the lack of market orientation. Nepal's experience also showed that a basic minimum rural infrastructure was required in order to promote as well as take advantage of potential OFEs. These infrastructures include transport, market, and rural services.

A feature of off-farm activity related policies in Nepal was that while the output aspect was duly emphasised, questions of commercialisation of output, its linkage with the market, and the structure of demand were ignored. Apiculture and apple production were cited as examples.

It was observed that a number of distortions had been evident in macro-economic policies pursued by the Government in the past. In the case of carpets, for example, the Government provided foreign exchange for the import of raw wool. As a result raw wool worth 3 billion rupees (US\$ 1=42.60 NR) was annually imported, chiefly from New Zealand. There was no sectoral programme for sheep raising in the country, as a result, the dependency on foreign wool remains. The other distortion reflected in the fact that the Government subsidised credit for capital intensive industries. There was, therefore, a built-in and systematic bias against labour.

In the mountain context of Nepal, certain dilemmas in the promotion of OFEAs were evident. Infrastructure was required but roads also had contributed to the demise of traditional crafts. Rural wage rates were extremely low and, therefore, to make off-farm employment remunerative, the differentials in wage rates between rural and urban areas had to be minimised. One way of taking advantage of the situation would be to encourage the production of value-added commodities in rural areas. The emphasis on extension and support for the promotion of OFEAs was well placed but, in remote mountain regions, this was often expensive and therefore inefficient. The role of urbanisation was therefore crucial to promote off-farm activities. He also remarked that subsidies served the purpose only in very specific and target-focussed cases.

Finally, several suggestions were made. These included the need to develop regional packages of extension programmes by differentiating programmes between urban, semi-urban, and rural areas. While extension programmes in urban areas should be run on strictly commercial lines, those in semi-urban and rural areas could be run on a "no-profit, no loss" and "some subsidy" basis respectively. As a matter of principle, the emphasis should be on non-price measures, such as human resources' development. Production of marketable surplus under a commercial framework should be the objective of the promotion of off-farm activities.

After this presentation the floor was opened for discussion and comments. The conflict between sustainability and economic viability was pointed out with regard to vegetable cultivation. It was

observed that urban demand rather than support from the Government had been crucial in the promotion of vegetable farming in Naubise area. This was contested by others who reiterated that the role of the Government in the promotion of vegetable farming had remained crucial. The roles played by JICA and HMG's vegetable support, demonstration, and farmers' training programmes were highlighted. Climatic advantage, an urban and outside market (Lhasa, Tibet), and international efforts had all contributed to the achievements made. Reinvestment was a crucial issue. It was also noted that the increase in cash income tended to lead to alcoholism and gambling and, hence, an increase in the exploitation of women.

The two case studies, from Nepal, some participants observed, were not representative of a typical situation in the Hill and Mountain regions of Nepal. It was also pointed out that increase in cash income alone did not ensure sustainable off-farm employment. Opportunities and avenues were required for alternative investment as incomes rose.

It was also observed from the floor that the issue of entrepreneurship development was crucial for the successful promotion of off-farm activities. An example of the efforts at entrepreneurship development in Tharpu (Tanahun District) under the aegis of the Small Business Promotion Project and FAO was provided to show how poor, illiterate women had been able to establish small off-farm activities when they were linked with appropriate credit and extension activities.

In response to the queries and suggestions, the speaker said that the choice of Naubise and Marpha-Jomsom as case study areas had not been to elucidate the typical case of off-farm employment in Nepal. These were selected as examples of what might be termed relatively "successful" cases and the intention had been to learn about the factors that had contributed to the "success" and the "constraints" inhibiting the further growth of off-farm employment. The speaker also noted that sustainability and economic viability were not necessarily incompatible. In Naubise, for example, the farmers had started to change their production system from a vegetable/ cereal-based farming system to a vegetable/ cereal/ legume-based farming system. On the issue of reinvestment there was general consensus that this should be an important concern. It was suggested that the entrepreneurship development aspect could play a role here. It was also observed that there was a definitive role for the Government in the promotion of off-farm activities.

Concluding the session, the chairman noted that government intervention was necessary to nullify the disadvantages and check the undesirable economic effects in the operation of certain off-farm activities. He noted that extension activities using local personnel was a better way of promoting OFEAs.

Findings from Shangla Par Sub-division, the NWFP, Pakistan

The **fourth session** of the Workshop was devoted to the presentation of a case study from Shangla Par Sub-division, NWFP, Pakistan. The presentation was jointly made by Professor Mian M. Nazeer, the Team Leader of the Pakistan Study and Mr. Sanaullah Khan, a team member. The session was chaired by Mrs Prabha Thacker from ICIMOD.

The Shangla Par Case study was chosen as an example of the problems of off-farm employment in an inaccessible and underdeveloped context. Shangla Par Sub-division lay on the eastern side of Swat District in the NWFP and was one of the three sub-divisions of Swat. The altitude ranged from 500 to 4,500 metres. The climate ranged from temperate to alpine. The average annual precipitation was about 1,000 mm. The winter rainfall (November - April) was mainly in the form of snow. The area had a dissected mountainous terrain. Rainfed agriculture was predominant. Most of the area had around 50 per cent slope. About 28 per cent of the area was cultivated, and 27 per cent was forested. About a fifth of the forests of Swat lay in this sub-division.

The sub-division had an estimated population of 344,000 in 1991. The population growth rate exceeds 3 per cent per annum. Agricultural income accounted for 37 per cent of household expenditure. Forests were the major source of income. The earnings from forests were distributed between the public and the State at a ratio of 60:40. There were grazing rights as well as rights to lopping for fodder, firewood, and domestic timber. The public share of forest revenue was distributed according to the proportion of land owned by individual households adjacent to existing forests.

The sub-division in general had a poor physical, social, and economic infrastructure and presented a classic case of an agro-pastoral subsistence economy.

The case studies were conducted in three villages of Alpuri, Lilowani, and Shahpur. A sample of 50 households was chosen from each of the villages for the household survey. In addition, rapid rural appraisal and interviews with key informants were other sources of information.

The socioeconomic profile of the study villages was then presented. It showed that the area had a predominately agro-pastoral economy and that the structure of production was based on largely small-scale owner cultivators. Share tenancy was also prevalent. Most households had little or no marketable surplus; only about 15 per cent of the households reported some sale of agricultural crops, fruits, or vegetables. Maize was the main crop and the productivity was quite low. Much of the exchange was based on barter. Land, water, forests, and minerals were the major resources of the three villages. The potential for the exploitation of hydropower remained considerable. Marble, soapstone, china clay, zinc, and lead were the major minerals. The first two had been mined already to some extent. Because of the lack of alternatives and opportunities cereal crops, such as maize, were cultivated even on steep slopes. Horticulture, as yet, was not an important activity.

Major off-farm activities in the study area included employment in the formal sector (government offices and other formal institutions) shopkeeping, daily wage labour (mainly in crop production, poultry, and livestock), petty contracting, afforestation activities, timber harvesting (logging, loading, sawing), collection of medicinal herbs, mushrooms, firewood, livestock and poultry raising, and mining and various avenues for self-employment such as pottery. For those whose main source of earning was off-farm work, government employment was the major source of income. This was followed by wage labour as a source of income.

Off-farm activities followed a particular spatial pattern. Employment in formal institutions was more equally distributed throughout all the study villages. Mining was carried out on the mountain slopes while forest nurseries were in the valleys. Afforestation and activities related to forest harvesting and collection of forest products were mainly carried out in the mountains. Private businesses and shopkeeping were present in valley villages, mostly those that had a road connection.

Migration for work, both seasonal and temporary, outside the study area provided an important source of cash income in many households. Among those involved in off-farm activities, 52 per cent were in the formal sector, 17 per cent were daily wage labourers, 14 per cent were self-employed, and the remaining 17 per cent were engaged in a variety of activities.

Off-farm income, in spite of the predominance of subsistence agriculture was the major income source in the study villages. The contribution of off-farm income to households varied from Rs 15,000 per annum to over Rs 75,000, depending upon the size of landholdings.

Among the potential off-farm employment opportunities in the area which remained to be exploited were: horticulture, tourism, cottage industries, sericulture, fisheries, and hydropower generation. The factors that had contributed to the prevailing situation could be placed in four categories: (i) past history of the

area, (ii) government policies since 1969, (iii) geographical location, and (iv) low level of human resource development. Until 1969, Swat District was a princely state and the interest in Shangla Par was motivated mainly by its forest resources. Things had not changed much in terms of development priorities up to this point. Inaccessibility (even the motorable road linking Alpuri to the Swat Valley remained closed during winter because of snow) was a barrier to private investment. The lack of area-specific skills also remained a great obstacle as skilled labour had to be imported even for the relatively simpler operations in forest harvesting and related activities. Demand for labour in the area, in the informal sector, was highest during April and October. Much of the labour remained idle during winter. Division of labour was based on gender, whereby females contributed their labour to the livestock sector and household chores and males were mainly engaged in crop production.

The linkages of prevalent off-farm activities showed that forest-based activities and mining impinged on the resource base and many area-specific attractions (particularly horticulture, tourism) remained to be exploited.

Finally, a number of critical issues and options were identified for the promotion of off-farm activities in the study area. These included the lack of physical and social infrastructure and the need to develop technology packages for the development of different sectors such as rainfed farming, minerals, livestock development, forestry, and horticulture. Other areas of concern identified were development of livestock production to promote ghee and cheese processing; increasing agricultural productivity; planned and environmentally benign exploitation of mineral resources; taking advantage of the increasing tourist trade in Swat District through the development of family-based tourist services; and enhancement of the role of the forest sector in the provision of diverse employment opportunities. A plea was also made for the establishment of the Shangla Par Integrated Development Project, not as a megalithic structure but as a catalyst organisation to sponsor and coordinate development activities.

Finally four major concerns were highlighted: firstly, was the need for a deliberate attempt to make a break with the past and secure the focus of development attention in the area; secondly, to pay particular attention to the forest and land resources of the area before it was too late for action; thirdly, to evaluate any action in the area in the context of the fragile environment; and finally to make low income groups, small farmers, and women the central focus of all development efforts, since these groups have often been by-passed in the development process in the past in Pakistan. This required the formulation and implementation of programmes designed to arrest deteriorating trends in the short run and develop alternative opportunities in the medium and long term.

Policy Perspectives from Pakistan

After the presentation of the Pakistan case study, a brief overview of the development situation and the problem of off-farm employment was presented by Mr. Mukhtar Ahmed, Chief Economist in the Department of Planning and Development in the Government of the NWFP.

He presented a few basic indicators of development in Pakistan and said that, according to government policy, 80 per cent of the development budget was to be disbursed in rural areas. A high priority was accorded to education, health, roads, and drinking water. Among the major development sectors that had implications for off-farm employment in rural areas were agriculture, non-metallic mineral resources, sericulture, and tourism. The growth of the agricultural sector had suffered in regions like the NWFP because of the lack of investment. The prospect for the exploitation of non-metallic minerals was considerable but the problem of expertise and technology had hindered the growth of this sector. Among the steps taken by the Government to encourage off-farm activities was the recent setting up of the Tourism Development Board. One of the activities of the Board was to promote different forms of

tourism in accordance with the comparative advantage of different regions. He noted that off-farm activities could not be properly developed because of the lack of physical and social infrastructure. Therefore, the Government was launching a Social Action Programme, particularly in the areas of education and health. There was, however, a great need to develop focussed programmes in the area of off-farm employment.

After this brief presentation the floor was opened for discussion. The observations made from the floor dealt with the issue of open and uncontrolled grazing in the case study areas. It was suggested that uncontrolled grazing would damage the regeneration capacity of pastures. Therefore, there was a need to encourage rotational grazing and/or stall feeding. The case of Sikkim in India was highlighted to show that rotational grazing could lead to a scientific and sustainable use of grazing land. Stall-feeding could also have the same effect. However, the issue of stall feeding was debated by other participants. The submission was that, whereas stall-feeding had its merits, it would only increase the drudgery and work load for women. The issue of the exploitation of the mineral potentials in the area and the best way to exploit this comparative advantage also came up for discussion. It was suggested that such resource exploitation should be for the greater benefit of the "disadvantaged" groups of people. In the study areas, marble was extracted and supplied to urban areas but it was not benefitting the local people. Some participants highlighted the potential of fisheries and wildlife tourism. It was suggested from the floor that logging in the high mountains was disastrous because regeneration was difficult at high altitudes. Therefore, off-farm activities based on logging needed rethinking in the mountains. On the policy aspect, for the development of social infrastructure, it was suggested that the emphasis on drinking water needed to be complemented by an emphasis on sanitation.

In response to the comments and suggestions made, the speaker concurred with the need for proper and scientific management of range land and the need to promote environmental safeguards and ensure that the local economy benefits from the exploitation of mineral resources. Regarding logging in the mountains, the speaker remarked that logging was not a serious problem under proper and scientific management.

In her closing remarks, the chairperson of the session summarised the presentation and noted that off-farm employment would not have much meaning unless the employment created was sensitive to the needs of women and helped to increase and enhance their social and economic status, on the one hand, and reduce their drudgery on the other. She noted that this was an often ignored but vital aspect of development in the Hindu Kush-Himalayan Mountains.

Policy Perspectives from India

Mr. M. Parabrahmam, Joint Secretary in the Ministry of Forests and Environment, Government of India, presented a perspective based on Indian experience in mountain development and off-farm employment in the fifth session of the workshop. The presentation was based on an experience in multi-sectoral mountain development in Himachal Pradesh, India.

An introduction to the Indian Himalayan Region and Himachal Pradesh was first provided. It was reported that the Himalayan Region in India covered an area of 446,000 sq. km. in eleven states and had a population of about 16 million in 1981. The urban population of the region made up about 16 per cent. Over 80 per cent of the economically active workers were cultivators or agricultural labourers. Himachal Pradesh had a population in 1981 of about 4.2 million; the literacy rate was slightly higher than that for India as a whole. The population was distributed over 16,900 villages and the decadal growth rate was about 22 per cent. About 17 per cent of the agricultural area was irrigated and the per capita net area sown per cultivator was 1.8 ha. About 49 per cent of the villages were electrified but the per capita

power consumption was a little over one-third that of the whole nation. Road length per 100 sq. km. of area was 43 km, slightly lower than that for India as a whole. In basic indicators the situation in Himachal was at a lower level than that for India as a whole, although in some cases the State had made creditable achievements.

Horticulture had emerged as a major sector for off-farm employment in Himachal. The total production of apples, which was only about 1.2 thousand tons in 1950, had approached a million metric tons in 1986. Some development had occurred in the area of livestock products, mainly milk, eggs, and meat, but the achievements were not as spectacular. Significant developments had taken place in sericulture also.

Off-farm employment in Himachal was supported by two major programmes: the Integrated Rural Development Programmes (IRDPs) and the National Rural Employment Programme. The focus of these programmes was the promotion of the agricultural, horticultural, and industrial sectors. A number of other associated activities included an entrepreneurship development programme and a programme for fiscal incentives such as concessional infrastructural facilities. Special institutions for both research and training had been set up to create the data base needed for the planning of mountain development. In India, special considerations for hill areas were introduced during the Fifth Plan in 1975. Special areas were identified in terms of their need for special development assistance. The integrated rural development strategy was based on recognition of the problem of accessibility and the difficult terrain, the diverse agro-ecological conditions, the historical backwardness of these areas, the environmental impact of activities in the mountains on the plains, and the comparative growth potentials. The emphases of the programmes were securing sufficient food, work, fuel, and fodder.

As an example of such a programme, Mr. Parabrahmam presented a profile of activities and strategies in a multi-sectoral development project in Upper Binwa Catchment Area in Himachal. The Project, known as the Indo-German Dhauladhar Project (IGDP), had as its goal the integration of elements of ecological balance with the carrying capacity of the area through land use planning at the integrated watershed level for satisfaction of the basic needs of food, fuel, fodder, and gainful employment. The objectives of the project were to improve the living conditions of the population through ecological rehabilitation of the project area and to evolve a replicable approach to mountain development in the Western Himalayas. The principal activities were in agriculture, forestry, horticulture, animal husbandry, alternative energy, soil and water conservation, and various social development schemes. The project area was at elevations of between 900-4,500m and covered about 6,300 households. Only 3 per cent of the working population had permanent non-agricultural jobs. High altitude forests and pastures were the predominant types of land use in the area. Overexploitation of natural resources, land scarcity, and increasing pressure on the land were the main problems.

Project activities were based on a two-pronged strategy of (a) reducing the demand for natural resources while, at the same time, (b) increasing the supply of natural resources. In the former, emphasis was on the rehabilitation of the ecosystem, intensification of agricultural and horticultural production, and alternative energy and, in the latter, afforestation and pasture improvement, creation of off-farm employment through horticulture and vegetable growing, and institutional and organisational aspects received emphasis.

It was noted that, after nine years of external inputs and support (1980 to 1989), the project activities were now sustainable and a development course based on a multi-sectoral mountain development strategy had been planned. The creation and sustenance of off-farm employment, particularly in livestock, horticulture, and through the enhancement of locally-required skills and entrepreneurship, was an integral part of the strategy. The elements of replicability of this experience in similar mountain areas were now being examined.

PRINCIPAL ISSUES AND GUIDELINES FOR THE PROMOTION OF OFF-FARM EMPLOYMENT IN THE MOUNTAINS

Principal Issues

The regional overviews, case studies, and policy perspectives presented and discussed during the workshop not only put the current state of off-farm employment in different regions and areas of the Hindu Kush-Himalayas into perspective, but also brought forth various experiences, approaches, and practical problems involved in the promotion of off-farm employment in the mountains. In spite of the diversities apparent in the physical, social, and economic setting of the Hengduan Mountains of China, the mountains of Nepal, the North West Frontier Province of Pakistan, and the Himalayan Region of India, a number of common concerns and issues emerged during the discussions. The principal issues that emerged from the various papers and discussions were summarised by Dr. Pitamber Sharma, the coordinator of the Mountain Off-farm Employment Project. The issues were intended to facilitate the preparation of guidelines for the promotion of OFE in the mountains. The session was chaired by Dr. B.N. Chalise, Joint Secretary in the Ministry of Industry, HMG, Nepal.

In all the case study areas, it could be seen that off-farm employment was a dominant pattern. Indeed it was often the only source of cash income. Also, invariably, the off-farm activities remained supply-determined because of the imperative of complementing household income in situations of increasing population pressure. Wage labour, sundry skill-based activities, and resource advantage-based activities formed, more often than not, the basis of off-farm employment. A distinction, therefore, had to be made between gainful and non-gainful off-farm employment.

In most mountain areas, off-farm employment could be seen as a household strategy, determined largely by the resource situation. "Distress" employment in local areas (as wage labourers or those engaged in other activities that may not be very remunerative) and seasonal or temporary migration to areas outside the locality, were often the most common strategies in the mountains of Nepal or Pakistan. Gainful off-farm employment in the locality presumed upon a number of prerequisites, the principal among them being access to capital, technology, knowhow, and basic infrastructure, including the existence of and knowhow about the market. Without these preconditions, skill-based occupational mobilities, resource-based value-added possibilities, and specialisation could not be realised. The question of promoting off-farm employment in the mountain context could therefore be perceived as the creation of conditions that facilitated the household's moving from a strategy of survival to a strategy of enhancement in living conditions.

The case studies also brought into focus the utility of the mountain paradigm and its analytical framework in the consideration of off-farm employment. While accessibility and remoteness, fragility of the environment, and marginality in the mountains acted as constraints to be overcome, sometimes, these very constraints, if properly and wisely exploited, could provide the basis for sustainable off-farm employment. The diversity of the mountain environment, in particular, afforded a number of comparative advantages. It was, therefore, not inaccessibility, fragility, and marginality in an absolute sense but the relative degrees of these characteristics that acted as constraints. However, the scale-sensitive nature of mountain environments, particularly the fact that carrying capacities were reached rather quickly (as in the case of tourism or mining), and that there were limits to specialisation (the dangers, both ecological and

economic, of monoculture and the whole issue of biodiversity) merit careful assessment and attention in the promotion of off-farm employment in the mountains. Because of the interplay of objective conditions in the mountains, the issue was not simply one of the promotion of remunerative or gainful off-farm employment in the mountains but more importantly one of the "type" of gainful employment to be promoted and the effect it would have on the environment and on the economic sustainability of the mountains.

Experiences from the case studies indicated a number of lessons of relevance in the promotion of off-farm employment. The following were some of the principal issues and lessons emerging from the case studies.

- o Off-farm and Non-farm Employment. In the case studies, a distinction was made between off-farm and non-farm employment. The former included all employment outside traditional agriculture, while non-farm employment indicated employment outside the agricultural sector as a whole. The case studies brought out clearly that the search for employment in the mountains had to start from the non-traditional agricultural sector. In the initial stages of off-farm employment promotion, the links with the farming system remained crucial, not only in terms of the complementarity or otherwise in the demand for labour, but also in terms of minimising the risk associated with a move from farm to non-farm employment. The links with the farming system remained important also because income earned from off-farm activities could contribute to increases in agricultural productivity through access to inputs and knowhow. Also, because of the commonalities in agricultural activities, in general, off-farm activities related to agriculture could be more attractive to mountain farmers in the initial stages of development.
- o Recognition of Comparative Advantage. All the case studies showed that this recognition, in the context of the regional, national, or international market, was an essential prerequisite for the take-off of any off-farm activity. Also, it was in this area that extension efforts could play a major role. These comparative advantages were based on certain skills (Qiang embroidery in Mianchi township, for example), on natural resource advantage (the bamboo based-paper plant in Shuimo township; potential forest-based activities in Shangla Par; water resources in Mianchi), scenic beauty (in Jomsom and Marpha VDC), or on advantages derived from microclimatic conditions (vegetable cultivation in Naubise VDC). In many areas the comparative advantages might not have been as explicit or evident. It was then the role of the "intervention" mechanism to delineate and create conditions for the exploitation of the comparative advantages.
- o Food Security. The case studies from China, in particular, elucidated the role of food security in the promotion of off-farm employment opportunities. It was indicated during the discussions that the risk-averse nature of mountain farmers was fundamentally related to the risk associated with a move from cereal-based to non-cereal based agriculture. Availability and affordability of food grains was therefore an important pre-condition for the growth of off-farm employment.

While the role of the "food market" was important, reliance on the market alone could create problems in conditions of inaccessibility and remoteness. The Grain Purchasing Stations operated by the State for the marketing and exchange of a local produce, maize, with the preferred staple, rice, in all townships of Wenchuan County appeared to have played a major role in the promotion of off-farm employment in the respective context of each township.

- o Infrastructure and Accessibility. The role of infrastructure and accessibility in the promotion of off-farm employment can hardly be overemphasised. Infrastructure, however, appeared to be more a question of the 'level' and 'type' than a catalogue of physical structures that entailed large initial investments and subsequent maintenance costs.

For bulky produce, such as vegetables and fresh fruit, ready access to market was essential. While earthen roads served the purpose of transportation in the initial stages, a better road infrastructure would be required at a later stage. Therefore roads, in particular, needed to be perceived in terms of the stages of growth of off-farm employment.

The case studies also brought into focus the role of the forms of relative accessibility in the promotion of different types of off-farm employment. In the case of Naubise, Dhading (Nepal), and Weizhou (China) accessibility to major urban markets had been a definite advantage for the growth of vegetable farming and the development of horticulture. Inaccessibility appeared to be a major bottleneck for the growth of horticulture, in particular in Shangla Par (Pakistan). Relative inaccessibility, however, appeared to be an advantage in the growth of trekking tourism in Jomsom-Marpha VDCs in Mustang (Nepal) and this was the catalyst for the spontaneous development of other off-farm opportunities. It was difficult to say whether Jomsom-Marpha would have had the same attraction for trekking tourists had these areas been connected with a motorable road, or had these areas not been opened to air transportation.

The role of institutional infrastructure was also brought out clearly in the case studies. Supporting institutions were essential for the promotion of many off-farm activities. The role of the office of Township Enterprises, in supporting small rural industries in the townships of Wenchuan County, and the crucial significance of the Horticultural Farm in Marpha, in promoting temperate fruits and vegetables in Mustang, elucidated the importance of supporting institutions. The lack of exploitation of natural resource-based comparative advantages in Alpuri, Lilowani, and Shahpur villages in Shangla Par could be attributed partly to the absence of supporting institutions.

Energy infrastructure and its crucial role in alleviating fuelwood-related environmental degradation problems was brought out in the case of Jomsom-Marpha. Community-owned hydro-electricity generation facilities, as seen in the example of Mianchi township, had the potential of being a considerable community asset both in terms of providing employment as well as providing a source of revenue and power. In such contexts, off-farm employment should be perceived in terms of diversifying the end uses of energy, particularly those of hydro-electricity.

- o Market and Market Information. The current situation of off-farm employment in the mountain regions of the HKH showed that one of the reasons for the pervasiveness of "distress" employment was the lack of access to markets; both labour and product markets. However, while the market provided an outlet for produce, the market also introduced competition. The demise of many of the traditional crafts in the hills of Nepal was attributed precisely to the inability, for various reasons, of traditional craft production to compete in a market flooded with cheap, manufactured produce. It was also observed that, whereas local markets, particularly in products such as vegetable and fruits, were not sensitive to the quality of the produce, the situation changed as the market was spatially expanded. Regional markets entailed greater competition and therefore a certain quality of produce had to be maintained in order to remain competitive. It was here that market information became vital.

The case studies, while emphasising the important role of the market in the promotion of off-farm opportunities, brought-out the importance of timely market information in many off-farm activities. The case of "moyu" tuber and medicinal trees in Shuimo township was a case in point. These traditional produce had almost disappeared from the scene, but for the impetus provided by the information on the demand for these products in other regions of China and in South-east and East Asia. The crucial role of market information also emerged from the problem of Weizhou cement plant in the Weizhou case study. The development of dried apple production

in Mustang, basically catering to the needs of trekking tourists, was another example of the role of market information.

Modern communication facilities can come in handy in providing market information even in remote, inaccessible areas. The lack of these facilities appeared to be a major problem in most case study areas. The role of support institutions and extension agents in providing market information was also emphasised by the case studies.

The case studies also highlighted the role of small towns and market centres in the promotion of off-farm activities. Proximity to the market was an essential prerequisite for the success of many off-farm ventures. The establishment and provision of infrastructure, such as roads and electricity, in emerging towns and market centres should therefore be considered in the context of OFEAs.

- o **Institutions and Organisations at the Local Level.** It was pointed out during the discussions that the promotion of off-farm employment in the mountains required the formation of groups and organisations to be able to take advantage of government financing and credit policy and to share benefits.

In addition, local organisations provided much-needed impetus to off-farm employment in four major ways, as outlined below.

- Local organisations could act as the defenders of community interests while at the same time ensuring that benefits were reaped by local people. The case of THAM (Trekking and Hotel Association of Mustang) was instructive because, on the one hand, it had strived to enhance and upgrade the quality of service in the hotels and lodges in the Mustang area and, on the other, it had also created a framework for creating spontaneous "barriers to entry" of big businesses from outside the region. The benefits, therefore, were largely retained in the local economy. In the case study of townships in China, most local governments ensured that the jobs created through community investment went to the local population.
 - Local formal and informal organisations also acted as mechanisms for local resource mobilisation. Some mountain communities (like the Thakalis of the Mustang area of Nepal) had evolved innovative ways of resource mobilisation. The rotating fund, *Dhikuri*, among Thakali groups was a major source of organisational credit to potential entrepreneurs.
 - Local organisations, formal as well as informal, also acted as mechanisms for "knowledge sharing" and sharing of experiences. Such organisations worked very effectively as informal extension networks and as mediums of technology transfer. This role was important and needed to be strengthened because in many mountain areas dependence on external sources of extension was a major problem.
 - Last, but not the least, the role of local organisations in promoting the interests of the poor and of women in particular was also an important one. This role became more crucial particularly because these groups had generally been bypassed in the development initiatives in the past as evidenced by the case of Shangla Par.
- o **Human Resource Development.** The need for training, education, and skill enhancement, geared towards the generation and promotion of off-farm employment, was brought out time and again

during the discussions. It was also found, in the case study areas, that literacy, in general, and levels of educational attainment, in particular, had a significant correlation to the proclivity for off-farm activity. While the need to promote formal education could not be denied, in most mountain areas, as indicated from the China case studies, the relevance of education per se to off-farm activity skills remained quite remote. There was, therefore, a need to relate education to the skill requirements of prominent/potential off-farm employment in the locality or the region. The emphasis on local resource-based, skill-enhancing vocational education appeared more relevant to the objective conditions in mountain areas.

The other area in human resource development was that of developing and nurturing the entrepreneurial capabilities of individuals and households. The basic skills in assessing and running small enterprises and perceiving latent opportunities could, experience suggests, be enhanced through entrepreneurship training. This was an area requiring attention.

A major emphasis in human resource development must be on women. Women, as the case studies suggested, had been marginalised in the concern for off-farm employment. However, creation of sustainable off-farm employment had to focus on the gender issues involved. The notion that increases in household income would automatically raise the status of women or make them equal beneficiaries of new opportunities was not borne out by experience.

An area of major concern in off-farm employment, particularly in extraction activities, was the lack of an environmental perspective. It was, therefore, necessary to make mountain communities aware of the environmental impact of off-farm activities like mining, logging, and livestock-based activities. The issue of the environmental impact of mining activities, in particular, was brought out several times during the discussions and was evident in the case studies from China as well as in those from Pakistan. Formal and informal education, training, and skill enhancement had to inculcate the need, therefore, to promote environmentally friendly off-farm employment.

- o Government Policy. The regional overviews and the case studies and discussions brought into sharper focus the role of government policy and the areas in which government policy had to be innovative and to learn from past experiences. While the form of polity often determined the efficacy and effectiveness of policies at the community and household level, it was generally seen that, at least in the policy context of Nepal and Pakistan, off-farm employment was often treated as a "residual". In most cases government policy was either not consistent over time or did not pay enough attention to enhancing the crucial linkages with the farming system or the linkages within different off-farm activities. Ad hoc policy decisions were often made with respect to extension, credit, and fiscal measures without regard to region, resource, or activity-specific variations. Region, resource, activity, and target-group specific policies had to be formulated and implemented if off-farm employment was really to be effectively promoted.

The conventional form of government "intervention" in the off-farm related sphere was questioned in the presentation of the case studies as well as in the discussions. Subsidy, per se, was not always effective, particularly when the beneficiary groups and the mechanisms through which they would be impacted were neither identified nor understood. While subsidies under specific conditions had a role to play, the emphasis needed to be on non-price measures and incentives, for example, training, skill enhancement, and information.

Location of industries was an area in which government policy had the potential to be effective. The case for ruralisation of industry, for example, could be effectively translated into practice through innovative fiscal concessions and through sub-contracting specific jobs to rural areas.

Extension and technology transfer were other areas where the Government could play an innovative role, depending upon the specifics of the activity. The idea of government policies and programmes should be to create conditions for the creation and promotion of sustainable off-farm employment opportunities rather than to make such opportunities perennially dependent on government grants or support.

Off-farm employment planning at local levels with local community groups and organisations appeared to be non-existent in most mountain regions. This was an area where significant breakthroughs could be and needed to be made.

After presentation of the principal issues, the floor took up the issues of policy improvements and effective policy implementation. Experience indicated the need to foster the development of farmers' organisations and cooperatives so that the collective bargaining position of the producers was increased. This would help to reduce the exploitation of farmers by middlemen and other vested interest groups. In this context, the role of local government was seen as that of a facilitator. To farmers, the Central Government was an abstract entity whose arm might never reach out to help them but the local government was visible and could take effective steps to help. The floor also reiterated the need to follow an integrated approach for the betterment of the lot of the people in rural areas.

The roles of local informal organisations, such as THAM and *Dhikuri* in Nepal, were seen to be effective in guarding the interests of the people. They might not always have functioned optimally but were certainly beneficial to the community at large.

The Chairman of the session, Dr. Chalise, concluded by highlighting the role of the Government in terms of creating a suitable environment for the promotion of OFE. However, it could not be claimed that the governments in the region had been very successful in this respect. Much more remained to be done in translating policy pronouncements to actual work on the ground. Similarly, the financial institutions needed to develop a new outlook and new thinking in promoting OFE. There were numerous small entrepreneurs who required small capital to get going and the commercial banks hardly reached them. Market information was important, but lacking at present. Fundamentally there was lack of a strategy for promoting OFE. Such a strategy must be developed if the increasing labour force was to be provided with gainful employment in the HKH Region.

Guidelines for the Promotion of Off-farm Employment

After the presentation and discussions on the principal issues emerging from the case studies, the workshop participants were divided into three groups for the purpose of developing guidelines for the promotion of off-farm employment in the mountains.

The first group deliberated on the guidelines for human resource development and skill training. The second group was concerned with the issue of support services; including extension, credit, and marketing; and the third group dealt with macro-economic policies. In order to orient the deliberations, major issues pertaining to each theme were provided to the groups.

Major guidelines emanating from each group are summarised below in the following sections.

Guidelines for Human Resources' Development and Skill Training

1. Many mountain areas do not have the adequate infrastructure for formal education. The lack of free and compulsory education, at least up to a certain minimum level, has impeded the

development of off-farm opportunities even in areas where potentials are evident. Efforts at human resource development should therefore begin from the introduction of free and compulsory education and the creation of conditions where such a system could be effective.

2. Traditional skills in mountain areas need to be upgraded, improved, or adapted through means of a careful assessment of potential areas. To that end:
 - an inventory of traditional skills has to be established;
 - the principal criteria in upgrading or adapting traditional skills should be the criteria of environmental and economic soundness; and
 - the ethno-botanical knowledge of women and farmers and traditional skills (for example, those of potters and blacksmiths among others) should be adapted to contemporary requirements in order to enhance off-farm opportunities.
3. New skills with relevance to mountain areas need to be inventoried, assessed, and disseminated in areas of economic advantage or ecological need. Some of the environmentally sound new skills are, for example, fibre cement tiles to replace wood, or mud block bricks that do not need firewood. New technologies relevant to the mountains need to be inventoried and integrated with the search for off-farm employment opportunities. These technologies can be mini- or micro-hydel for electricity and irrigation; technologies for the preservation and storage of fruits and vegetables; transport technology such as gravity ropeways; technologies based on solar and wind power in appropriate areas; and technologies in the field of construction.
4. In mountain areas the range of skill training for women has been quite limited. This range has to be enlarged in view of women's potential contribution to environmentally regenerative, off-farm employment activities.
5. Skill enhancement and training has to be based on ecosystemic characteristics and methods of imparting skills have to be:
 - based on a systems' approach,
 - based on participatory methods,
 - activity-oriented, and
 - use a variety of innovative methods.
6. All skill training programmes designed to induce self-employment should be linked with entrepreneurship development. This is essential to inculcate a sense of business and economics into the activity.
7. The role of institutions for human resources and skill development was not adequately realised in mountain areas because the number of institutions for training remained quite limited. Whereas the number of people who required skill upgrading ran into tens of thousands, only a tiny fraction was actually trained through conventional institutions using conventional methods. Also, centralised institutions often did not develop enough links with the realities on the ground nor could this rapidly expand their training capabilities. Therefore:
 - training institutions and programmes have to be expanded,
 - training has to be of relevance to the realities in the area, and

- there must be allowance for the growth of autonomous, independent, locally-controlled formal and informal institutions. Such institutions have to be strengthened and encouraged. The Government has to act as a facilitator for the growth of such institutions.

Guidelines for Support Service and Infrastructure (including extension, marketing, credit)

1. Accessibility was of prime importance in mountain areas particularly for getting products to the market. However, good roads could not be feasible in all mountain areas because of the investment required as well as the environmental implications of road construction in fragile areas. A prioritised programme to enhance accessibility should therefore be developed keeping the magnitude and significance of potential off-farm activities in mind. A stage-wise upgrading of the road network might be appropriate in most cases. Due to the constraints of accessibility, a major policy thrust would need to diversify production with emphasis on high-value, low-volume products.
2. A major problem in most mountain areas was that financial institutions did not have the needs of small, off-farm activity-oriented borrowers in mind. Therefore:
 - the style of lending of financial institutions has to be responsive to the needs of small and marginal farmers;
 - the process of acquiring loans should be simple and activity-dependent; those promoting off-farm activity/employment should receive priority;
 - the need for collateral has to include in its scope items such as livestock and standing crops;
 - priority has to be accorded to environmental regeneration programmes; and
 - community pressure mechanisms have to be created to take care of the problem of defaulting on loan repayment.
3. In most mountain areas, extension has a major role to play in terms of disseminating ideas and techniques, in terms of backstopping, in terms of providing selective inputs, and in terms of educating as well as learning from the farmers. Formal extension channels have a role to play but have remained mostly distant from farm households. The emphasis, therefore, should be on:
 - linking formal extension to informal, local personnel based extension activity;
 - creating a framework for planning local extension activity through the involvement of community groups;
 - involving women in extension activities; and
 - developing a "package" of extension activities that integrates training, tools of the trade and implements, necessary inputs, and marketing of produce.
4. One of the bottlenecks in the promotion of off-farm activities was the paucity of information and advisory services. Mechanisms and processes, therefore, had to be developed to provide

information and advisory services on financial aspects and on aspects of technology and marketing. Such mechanisms could be developed through formal agencies and disseminated down to the local levels through financial agencies, associations, and NGOs.

5. Marketing was often a major problem in the promotion of off-farm activities and employment. Three basic elements are important in marketing. These are:

- dissemination of product and price information,
- creation of local "benefit sharing" organisations for marketing the produce, and
- creation of marketing organisations at different levels.

Local cooperatives and NGOs can play a role in disseminating information and in helping local producers organise themselves to gain advantage in the market.

6. In many mountain areas there is a role for industrial "districts" in promoting off-farm, particularly non-farm, activities. This role could be geared towards:

- organising groups of industries,
- using local raw materials and labour and creating a pool of skilled labour,
- coordinating the flow of private investment,
- controlling pollution and promoting environmentally friendly industries, and
- developing ancillary industries

However, it is important for the industrial "districts" to operate on a cost recovery basis, particularly with regard to rendering basic services. The idea of establishing local industrial areas in rural townships with potential raw material bases needs to be explored.

7. The role of export processing zones (EPZs) was important for:

- better use of manpower resources,
- exploration of national/international markets,
- quality control and improvement of product quality,
- development and encouragement of potential, export-oriented industries and private investment,
- development of new product designs and packaging, and
- promotion of high value-added products.

However, EPZs have a role to play only in a relatively closed economic system and their utility in promoting rural off-farm employment remains quite limited.

8. A more immediate concern should be that of harmonising industrial and agricultural development policies. Agricultural policy is a matter of great relevance to small rural industries. Policies regarding agricultural inputs, credits, and the mobilisation of savings have a direct bearing on many support services. In this context, the idea of the *Gramin Bank* (Village Banks) for mobilising savings and promoting small-scale, agro-processing ventures is worth replicating in participating countries.

Guidelines for Macro-economic Policies

1. Macro-economic policies in mountain areas should be geared towards the generation of employment and income, reduction of poverty, and enhancement of the natural resource base. Considering the objective conditions in the mountains, special policies with regard to:
 - budgetary allocation for mountain area development, and
 - formulation of special concessions/incentives for the promotion of economic activities in mountain areas.
2. To nullify the locational disadvantages of mountain areas the following incentives and concessions need to be considered.
 - Concessions/incentives in the form of reduced taxes for activities with comparative advantages. Such concessions would induce the generation of economic activity and increase the marketability of products. However, while providing tax breaks and incentives, guidelines should be developed to ensure the preservation of the environment and the regeneration of damaged environmental assets. Tax concessions should be commensurate with the magnitude of employment that is expected to be created through the use of comparative advantage. Hotel taxes, for example, could be reduced in areas with tourist potential.
 - Foreign exchange regulations need to be relaxed to favour imports for the development of mountain areas. This should apply in cases such as the import of raw material, machinery, spare parts, and tourism promotion.
 - Import policies should ensure that the imported items help reduce the pressure on mountain resources.
 - Macro-economic policies should be formulated in such a way that they discourage the concentration of landholdings in a few hands. Tax policies should be oriented towards redistribution of large landholdings and environmentally sound and better use of land resources.
3. Rethinking is required regarding the policies concerned with industrial location in mountain areas in view of the fact that mountain areas are naturally in a disadvantageous position with respect to the import, export, and marketing of products. Therefore, industries having a comparative advantage in mountain areas should be provided specific locational incentives which may include:
 - availability of industrial plots at cheaper rates,
 - provision of infrastructural facilities such as power, roads, communication facilities, drainage, and so on, on a priority basis,
 - concessional transport tariffs for the import of machinery and raw materials and for the export of goods, and
 - other industry-specific concessions.

The merit of such an approach would be that it would help in the reduction of market distortions.

4. A multi-sectoral and integrated approach is required for the development of off-farm employment in the mountains. Economic policies should ensure and facilitate the following measures.
- (i) Inducement to increase per hectare yield and cultivation of higher value cash crops and horticultural crops. These require appropriate extension services, credit, and supply of inputs such as seeds, storage facilities, and research. Financial institutions should be encouraged to provide credit in the form of a package deal in order to safeguard their lending.
 - (ii) Encouragement to undertake activities that help regenerate environmental resources, such as social forestry, through participation of the local community.
 - (iii) Provision of skill training, to meet specific local demands tied to an incentive structure and entrepreneurial development.
 - (iv) Assessment of the quantity and quality of mineral reserves that can be exploited for commercial purposes. However, mineral exploitation should not be at the cost of other sectors and should not degrade or deplete the environment and other resources.
 - (v) Encouragement to the development of female entrepreneurial skills, because women form the backbone of the economy in mountain areas.

During the concluding session, the participants agreed that the guidelines should help in the promotion of an integrated policy package.

Dr. Mahesh Banskota, who chaired the concluding session, observed that the utility of studies and workshops like the present one not only lay in bringing the issues and approaches to a wider audience, through the dissemination of related publications, but also in developing practical action-oriented programmes. An area of significant importance was the development of a training programme on the promotion of OFE for middle level (district level) functionaries. The outputs of the current phase of the Mountain Off-farm Employment Project could provide the background material and help in the development of an appropriate curriculum. At the same time, the current work could be extended to an action-research phase. Dr. Banskota observed that ICIMOD could be effective in carrying out its mandate only when it shared the knowledge generated through programmes like this among the researchers, policy-makers, and programme formulators and implementors in the countries of the region. ICIMOD's role was essentially that of a catalyst and in this role ICIMOD looked to its partners for continued cooperation in the future. He hoped that the linkages developed between ICIMOD and participating institutions, as well as individuals, for the promotion of off-farm employment in the mountains would continue.

Annexes

Workshop Programme

18 February, 1992	17 February, 1992
<p>Session Two 19 February 1992</p>	<p>Registration 17 February 1992</p>
<p>Case Study Presentations</p> <p>Chairperson: M. Parsharam, India</p> <ul style="list-style-type: none"> Case Studies from China Policy Perspectives from China Discussion Chairman's remarks 	<p>Opening Session</p> <ul style="list-style-type: none"> Welcome Address Introduction to the Workshop Mountain OR-lam Employment Project
<p>Session Three</p>	<p>Session One</p>
<p>Case Study Presentations</p> <p>Chairperson: Shubhan Ahmad, Pakistan</p> <ul style="list-style-type: none"> Case Studies from Nepal 	<p>Overview of Regional Studies</p> <p>Chairperson: M. Bankole Acting Director, Programme, CIMOD</p> <ul style="list-style-type: none"> Pakistan Presentation

Workshop Programme

17 February, 1992	18 February, 1992
<p>Registration</p> <p>Opening Session</p> <ul style="list-style-type: none"> o Welcome Address <ul style="list-style-type: none"> - E. F. Tacke, Director General, ICIMOD o Introduction to the Workshop <ul style="list-style-type: none"> - P. Sharma, Coordinator, Mountain Off-farm Employment Project, ICIMOD 	<p>Session Two</p> <p><u>Case Study Presentations</u></p> <p>Chairperson: M. Parabrahmam, India</p> <ul style="list-style-type: none"> o Case Studies from China <ul style="list-style-type: none"> - Yu Side o Policy Perspectives from China <ul style="list-style-type: none"> - Cui Jun o Discussion o Chairman's remarks
<p>Session One</p> <p><u>Overviews of Regional Studies</u></p> <p>Chairperson: M. Banskota Acting Director, Programme, ICIMOD</p> <ul style="list-style-type: none"> o Pakistan Presentation <ul style="list-style-type: none"> - Mian M. Nazeer o Discussion o China Presentation <ul style="list-style-type: none"> - Cher. Guojie o Discussion 	<p>Session Three</p> <p><u>Case Study Presentations</u></p> <p>Chairperson: Mukhtar Ahmed, Pakistan</p> <ul style="list-style-type: none"> o Case Studies from Nepal <ul style="list-style-type: none"> - Janardan K.C. o Policy Perspectives from Nepal <ul style="list-style-type: none"> - B. N. Chalise o Discussion o Chairman's remarks
<ul style="list-style-type: none"> o Nepal Presentation <ul style="list-style-type: none"> - Gov. nd Koirala Janardan K.C. o Discussion o Chairman's remarks 	<p>Session Four</p> <p><u>Case Study Presentations</u></p> <p>Chairperson: Prabha Thacker, ICIMOD</p> <ul style="list-style-type: none"> o Case Studies from Pakistan <ul style="list-style-type: none"> - Mian M. Nazeer Sanaullah Khan o Policy Perspectives from Pakistan <ul style="list-style-type: none"> - Mukhtar Ahmed o Discussion o Chairman's remarks

<p>Kalikasthan, P.O. Box 3254, Kathmandu Phone: 410075, 416392</p> <p>19 February, 1992</p>	<p>Lalitpur, Phone: 472</p> <p>20 February, 1992</p>
<p>Session Five</p> <p>Chairperson: B. N. Chalise, Nepal</p> <ul style="list-style-type: none"> o Issues Emerging from the Case Studies - Pitamber Sharma, ICIMOD o Perspectives from India, Bangladesh - M. Parabrahmam o Discussion o Chairman's remarks o Formation of Working Groups <hr/> <ul style="list-style-type: none"> o Meeting or Working Groups <hr/> <ul style="list-style-type: none"> o Meeting of Working Groups <hr/> <p>Session Six</p> <p>Chairperson: M. Banskota, ICIMOD</p> <ul style="list-style-type: none"> o Presentation of Working Group Reports o Discussion o Chairman's remarks o Conclusion of Workshop 	<ul style="list-style-type: none"> o Visit to Patan Industrial District o Visit to Bhaktapur Small Industries Area o Visit to Dhulikhel

Annex 2

List of Participants

CHINA	
Cui Jun Vice-Chief of the Comprehensive Division, State Council Leading Group for Economic Development of Poor Areas, No. 11, Nong Zhan Guan Nanli, Beijing Phone: 5003567	Chen Guojie Professor, Institute of Mountain Disaster and Environment, Chinese Academy of Sciences, Chengdu, Sichuan Province Phone: (028) 581 581260-553
Yu Side Research Associate, Institute of Mountain Disaster and Environment, Chinese Academy of Sciences, Chengdu, Sichuan Province Phone: 581260-395	
INDIA	
R. C. Sundriyal Scientist, G.B. Pant Institute of Himalayan Environment and Development, Sikkim Unit, P.O. Tadang Gangtok, Sikkim 737102, Phone: (03592) 3335	M. Parabrahmam Advisor, Ministry of Environment and Forests, C.G.O. Complex, Lodi Road, New Delhi 110003 Fax: 011-360678 Phone: (0) 360783
NEPAL	
P. M. Chitrakar General Manager, Patan Industrial District, Lalitpur Phone: 521367, 521627	Indra Raj Pandey Deputy Vegetable Development Officer, Vegetable Seed Production Centre, Khumaltar, Lalitpur Phone: 523141
Bhola Nath Chalise Joint Secretary, Ministry of Industries, HMG, Tripureswor, Kathmandu Phone: 227174	G. D. Awasthi Under Secretary, Women's Development Division, Narayan Bhawan, Jawalakhel Phone: 523827, 522050

Govinda Dev Pandey
Executive Director,
Cottage and Village Industries
Development Board,
Kalikasthan, P.O. Box 3254,
Kathmandu
Phone: 410075, 416592

Krishna Ram Amatya
General Manager,
Herbs Production and Processing
Co. Ltd.,
Koteswar, Kathmandu/Sundhara,
Lalitpur,
Phone: 472232, 474452

Dipendra Purush Dhakal
Director General,
Department of Tourism,
Tripureswor,
Kathmandu
Phone: 221306

Bina Acharya
Advisor,
Satighatta Tea Estate/Nepal
Ayurvedic Society,
33 Kamalpokhari, Kathmandu
Phone: 416243

Janardan Khatri - Chhetri
Statistician/Economist,
P.O. Box 1440,
APROSC, Kathmandu
Phone: 215971

Govind Koirala
Section Chief,
Agricultural Development Bank/Nepal,
Baneswar, Kathmandu
Phone: 473961

Udaya Gurung
Director,
Agricultural Projects Services' Centre,
P.O. Box 1440,
Kathmandu
Phone: 521971

Bharat Krishna Sharma
Chief,
Cottage and Small Industries' Project,
Nepal Rastra Bank
Baluwatar, Kathmandu

Rudolph Gothier
GTZ Team Leader,
Small Business Promotion Project,
P.O. Box 3676
Malla House
Tahachal, Kathmandu

Prithvi Raj Legal
Member,
National Planning Commission,
His Majesty's Government,
Singha Durbar,
Kathmandu

PAKISTAN

Mian M. Nazeer
Professor & Director,
Centre for Applied Economic Studies
University of Peshawar,
Peshawar
Phone: 521/41882

Mukhtar Ahmed
Chief Economist/Additional Secretary
Planning and Development Department,
Government of the NWFP,
Pakistan

ICIMOD

Sanaullah Khan
Alpuri Forest Division,
Forest Department,
Govt. of the NWFP

E.F. Tacke
Mahesh Banskota
Pitamber Sharma
Suresh Sharma
Sugandha Shrestha
Bikash Sharma
Prabha Thacker

Annex 3

List of Workshop Papers

- | | |
|---|--|
| 1. Off-farm Employment in the Hengduan Mountain Region of Sichuan Province, China. | Chen Guojie et al. |
| 2. Off-farm Employment in the North West Frontier Province of Pakistan. | Mian M. Nazeer and Saiyeeda Zia Al-Jalaly |
| 3. Off-farm Employment in the Hill and Mountain Regions of Nepal. | Janardan Khatri-Chhetri and Bhimendra Katwal |
| 4. Off-farm Employment in Weizhou Township in the Hengduan Mountains of China. A Case Study. | Xiyi Huang and Chen Guojie |
| 5. Off-farm Employment in Shuimo Township in the Hengduan Mountains of China. A Case Study. | Wang Fei and Chen Guojie |
| 6. Off-farm Employment in Mianchi Township in the Hengduan Mountains of China. A Case Study. | Yu Side and Chen Guojie |
| 7. Off-farm Employment in Nepal: A Case Study of Marpha-Jomsom VDCs Mustang District | Janardan Khatri-Chhetri et. al. |
| 8. Off-farm Employment in Nepal: A Case Study of Naubise VDC, Dhading District | Janardan Khatri-Chhetri Maheswor Yadav |
| 9. Off-farm Employment in the NWFP. A Case Study of Shangla Par/ Alpuri Subdivision in Swat Division. | Saiyeeda Zia Al-Jalaly and Mian M. Nazeer |

Summaries of Papers

**OFF-FARM EMPLOYMENT IN THE HENGDUAN MOUNTAIN REGION OF
SICHUAN PROVINCE, CHINA**

**Chen Guojie, Chen Zhijian, Huang Xiyi,
Wang Fei, Yu Side, Zhang Jun**

The purpose of the study was to review and assess the off-farm employment situation in the Hengduan Mountain Region of Sichuan Province, China. Off-farm employment was an area of major concern in China's policy formulation process, particularly after the economic reforms introduced in the early 1980s.

China is a country of enormous regional contrasts. There are imbalances in economic and social development among provinces and the Western region, of which the Hengduan Mountains of West Sichuan are a part, has the largest proportion of labour force engaged in agriculture. This is also one region that has not benefitted from the collective economy in the past.

The Hengduan Mountains of Sichuan cover three autonomous prefectures (Ganzi, Aba, Liangshan) and one municipality (Panzhihua). It has an area of 306,000 sq. km. and a rural population of 4.86 million. This region accounts for 53.1 per cent of the provincial area and 5.4 per cent of its population. Elevation in most areas is above 3,000m. The region exhibits enormous bioclimatic diversity within small vertical distances and is comprised of four agro-ecological zones ranging from the high plateau in the north-west to the middle mountains in the south-east. It is also an area with abundant natural resources that are as yet unexploited. Economically West Sichuan, is linked to the Sichuan Basin, but culturally it is similar to the communities of the Qinghai-Xizang Plateau.

The population of West Sichuan has grown rapidly from around 3 million in 1950 to 6.2 million in 1990 with an average annual growth rate of 1.85 per cent. About 34 per cent of the population is below the age of 15. The ratio of the old to the young is 1:6 and the population between 15-64 accounts for 62 per cent of the total population. Among the three prefectures and one municipality, the population density is 120 per km² in Panzhihua but less than 10 in Aba and Ganzi. There are only two cities in West Sichuan. Panzhihua is a new industrial and mining municipality which came into prominence because of iron mining. Apart from Panzhihua and Xizang cities there are another 66 small towns. The proportion of urban to total population in West Sichuan has been rising steadily. In 1954 the level of urbanisation was 5.3 per cent. In 1987 it was assessed at 21 per cent.

According to the eight-fold occupational classification used in the 1987 sample survey, 74.2 per cent of the labour force were classified as agricultural labourers. Workers in manufacturing and transportation accounted for about 11 per cent. Between 1982 and 1987 there had been only a slight decline in the proportion of the labour force engaged in agriculture. In contrast to the situation in Aba, Ganzi, and Liangshan, only 28 per cent of the labour force in Panzhihua were engaged in agricultural occupations. Workers in manufacturing and transportation accounted for one-third of the total labour force. The

involvement of females in non-agricultural occupations was much lower than that for males in West Sichuan in general.

According to the 1987 sample census, about 80 per cent of the labour force was employed. In rural areas the surplus labour force was estimated to be one-third of the total rural labour force in West Sichuan.

Historically, the transformation of the structure of the labour force in West Sichuan has been from cropping to other farming activities and then to rural non-farm activities. The incentives provided under the Responsibility System introduced in 1978 led to an increase in the agricultural labour force. This was largely due to the fact that the system encouraged farm households to procure household contracts and thus retain a large part of the benefits. The structural change in the labour force from 1950 onwards can be divided into three stages. The change from farming to non-farming activities was very slight between 1950 to 1957. From 1958 to 1978 the structure of the rural labour force remained abnormally steady because of the emphasis on cropping (mainly cereal grain production) activities. Migration from rural to urban areas was reversed during the Cultural Revolution. Since 1978, because of pursuance of the policy of economic reforms, the rural-urban migration has started to pick up. The introduction of the system of non-agricultural IDs for urban residents (to be eligible for receiving state allocations of grain, edible oil, and accommodation) in 1980 is example of the regulatory mechanism used to discourage large-scale rural-urban migration.

In West Sichuan, in-migration for forest exploitation was phenomenal between 1956 and 1960. In-migration caused by economic problems was high between 1960-65. There was an inflow of immigrants between 1966 and 1976 particularly because of the Panzhuhua Project. The region therefore has witnessed phenomenal population mobility over the last 4 decades.

The typical labour demand profile in agriculture in West Sichuan suggests a high seasonality of farming activities. There are two busy farming seasons in a year: the spring sowing season in April and the winter harvesting season in September/October. Animal husbandry, forestry, mining, and other off-farm activities are integrated into the annual schedule of farming activities.

Most off-farm employment in the Hengduan Mountains is seasonal in nature and is mainly within local areas. In the last decade, after the introduction of the Responsibility System, OFE within agriculture as well as non-farm employment have been growing steadily. About 11 per cent of the labour force in 1988 was reportedly engaged in off-farm activities. This proportion was only 3.2 per cent in the early eighties. The relation between off-farm work and agriculture is noted from the fact that about 70 per cent of the off-farm workers are engaged concomitantly in farming activities. Also, a series of favourable loan and taxation policies have been adopted. A condition has been created where by the collective, State, and individually enterprises run side by side. Gradually, individually run enterprises have been gaining prominence. In 1988, 64 per cent of the off-farm labour force were engaged in individually-run enterprises.

Rural industries in the Hengduan Mountains include extractive (mining, forest-felling) industries and heavy industries consisting mainly of construction material and light industries. Rural industries employed about 132,000 persons or 58.9 per cent of the total non-farm labour force in 1988. Natural resources provide the major basis for the development of rural industry. Rural industries have had a positive impact on several sectors. They provide incentives to agricultural development. Extractive industries provide raw material for State-owned industries. Agro-based processing industries have provided incentives for the growth of horticultural production. The exploitation of hydropower, in addition to generating employment, provides power to various other economic sectors. Some rural industries, however, have had a negative effect on the environment because of inappropriate use and the lack of environmental safeguards. Mining and logging industries fall into this category.

The construction sector is also a major employer in the Hengduan Mountains. Most construction enterprises are township run and in 1988 employed about 7 per cent of those employed in off-farm activities. The rural construction sector boomed when the State and local governments adopted the policy to speed up basic construction. A subsequent change in policy affected the sector adversely. Also, an initial rise in farmers' income as a result of the Responsibility System resulted in a higher level of construction. Skill requirements for the construction sector have remained, as yet, quite simple. As the required technical level rises, there will be a need to increase the skill level of construction workers.

In the transport sector there was tremendous progress during the last decade. Workers in this sector account for 12.5 per cent of the total labour force in the off-farm sector. As a result of economic reforms, individually-run transportation dominates in the Hengduan Mountains. In contrast, township and village run transportation appears to have declined both in terms of the number of employees as well as in output value. The rising transport demand, resulting from economic development, contributed to the growth of this sector. Loans from financial institutions and private savings have been most influential in the growth of transportation. Limited oil supplies (oil ration per vehicle) and the limited traffic capacity of the roads are the two major constraints in the growth of this sector.

Rural tertiary industries have grown rapidly since the early 1980s. These include trade, catering, and related services. About 21 per cent of the labour force in the off-farm sector are engaged in tertiary activities. The lifting of the restriction on private investment and rescindment of the State monopoly on the purchase and marketing of most materials have had a salutary effect on the growth of this sector. Tourism, as a tertiary industry, has great potential in the area. Jiuzhaigou, Hailuoguo, and Huanglong temple in Ganzi and Aba prefectures are noted for the scenic beauty as well as for the culture and tradition of minority nationalities. The case of Jiuzhaigou area typifies the potential impact of the growth in tourism. Tourism here has raised the local farmers' incomes almost threefold in about 5 years.

Off-farm activities within agriculture are emerging as important sources of employment and income in the region. The Hengduan mountain region is one of the three largest forest regions in China. It is also an important source of fruits and wild medicinal plants in Sichuan Province. Favourable micro-environmental and macro-economic policies have resulted in the development of horticulture, livestock, and sideline production. In 1988 about 67 per cent of the total output value in agriculture was realised from these sources. Livestock raising is a major activity in Ganzi and Aba prefectures and the number of livestock raised for commercial purposes is increasing. The policy of linking forestry with livestock since 1980 has had a favourable impact on the development of livestock. Also State prices of livestock products were raised after 1978. This encouraged the farmers to raise livestock, mainly pigs and poultry. The linkages of the livestock sector with other sectors, however, need to be strengthened. Also livestock development has given rise to negative environmental effects, mainly due to overgrazing.

Fruit growing, mainly apples, Sichuan peppers (*Xanthoxylum nitidum*) and vegetables also have great prospects in the Hengduan Region. West Sichuan produces 11 per cent of all fruits in the Sichuan Province and nearly 50 per cent of all apples. Aba and Liangshan prefectures are noted for apple production. In 1988, 600 households were reported to have specialised in horticultural production in the Hengduan mountains. Thirty-six of the 49 counties of West Sichuan have suitable natural conditions for fruit production.

Sericulture is another potential off-farm activity. However, the marketing of silk cocoons is still a State monopoly.

Sideline production (including traditional, craft-based off-farm activities and collection of wild plants and mushrooms) is also emerging as an important activity, particularly in Ganzi and Aba prefectures which are very rich in these resources. There are reported to be over 3,000 species of wild plant in the

Hengduan Mountains. Medicinal herbs, in particular, are in considerable demand domestically and internationally. The collection of wild plants is attractive to the farmers because of low cost, high profit, and simple skills. This has resulted in the depletion of some rare medicinal plants such as *Fritillaria thunbergii* and *Cordyceps sinensis*.

A review of policies affecting off-farm employment shows that policies pursued by the Centre have had an enormous impact on the development of off-farm employment activities (OFEAs) in China, in general, and in the Hengduan Mountains in particular. At least four policy phases can be recognised. Between 1950 and 1956 the State policy was to encourage off-farm employment in urban areas. During the period of the Great Leap and the People's Communes (1957-65) all commercial activities were brought under the purview of the State. Off-farm activities could only be set up through the communes. This resulted in a sluggish growth of OFEAs. During the period of the Cultural Revolution and after (1966-78) all enterprises were brought under the control of the communes and the brigades. There was virtually no growth in off-farm activities. The policy of economic reforms after 1978 provided fresh impetus for the growth of OFEAs. The Contract Responsibility System, relaxation on the marketing of produce, and favourable fiscal policies and tax credits led to a rapid rise and diversification in off-farm activities. In West Sichuan, in particular, this meant that the early emphasis on cereal grains was relaxed by the State. The scope for individual enterprise was expanded. Various government policies and programmes, such as a Development Fund for Under-developed Areas, targeted programmes for Horticultural Development, and anti-poverty programmes, have had a salutary effect on the growth of OFE. Food security has remained an important element that has encouraged the farmers to move towards off-farm sources of income and employment. The experience thus far shows that consistency and stability in government policy under the initiatives of the economic reforms will remain a cornerstone for the promotion of off-farm employment in China, in general, and in the Hengduan mountains in particular.

Analysis of rural mining industries, rural logging, horticulture, sericulture, and food-processing industries shows that with the exception of rural mining and logging industries, other off-farm activities can be termed relatively "successful" in the mountain context. The environmental implications of rural mining and logging have tended to be negative. Off-farm activities and their promotion in the Hengduan mountains have affected only the male population. In this sense there is a need to look at the gender issues more closely.

An activity-level analysis was undertaken for three enterprises dependant on different resource bases. Weizhou Cement Plant exemplifies the problems ensuing from the lack of management autonomy, lack of understanding of the market needs, and lack of skills in the process of modernisation. The Lixian Tibetan Printing House, an enterprise managed by the Lixian Buddhist Society, exemplifies the "success" in adapting to new technologies to cater to a latent market, both domestic and foreign. Nonajiale Hydropower Station exemplifies that the comparative advantages in the mountains can be exploited to generate power as well as to create lasting assets.

Finally, some critical issues and options, with regard to off-farm employment in the Hengduan Mountains, have been highlighted. One fundamental problem is that of safeguarding the environment in the promotion of off-farm employment related to natural resource extraction. The second issue concerns the need to link labour force transfer with the tempo of economic development. The third issue is to ensure that off-farm activities provide more benefits than traditional activities. Also, the transferral of the labour force from agriculture to off-farm activities needs to enhance both the labour force utilisation rate and its production efficiency.

The proposed strategy for off-farm employment promotion makes note of five features : (i) that labour transfers need to be within local areas; (ii) that off-farm employment and its promotion should be guided by developments in agriculture; (iii) that small towns and market centres need to be developed as bases

OFF-FARM EMPLOYMENT IN THE NORTH WEST FRONTIER PROVINCE OF PAKISTAN

Mian M. Nazeer
Saiyeeda Zia Al-Jalaly

The study is basically a review and assessment of the off-farm employment situation in the North-West Frontier Province of Pakistan. The NWFP is a mountainous region which contains 6 of the 10 agro-ecological regions of Pakistan. The total population of the NWFP was about 11 million in 1981. The NWFP is characterised by subsistence to semi-subsistence agriculture with small landholdings, a high population growth rate, a high dependency rate, a low literacy rate, low level infrastructural and industrial development, and low levels of urbanisation. A rich cultural heritage and beautiful natural scenery has made tourism an important sector of its economy. The high population growth rate and the inflow of Afghan refugees have put a strain on the environment leading to increasing encroachment on forest land and the overgrazing of range land. Very small landholdings and a low level of agricultural yield make it imperative for most farmers to have some other sources of family income. This region is rich in forests, water, and mineral resources, and, therefore, the prevalent types of off-farm employment in this region are centered around wood and wood-processing, metal industries, mining, quarrying, and hydroelectricity generation.

The demographic picture of the NWFP shows increasing population growth rates. During 1972-81 the population growth rate was 3.32 per cent. The population is very unevenly distributed. The growth rate of the urban population has tended to be higher than that of the rural population. The labour force participation rate rose between 1951 and 1961 but has been on the decline since 1961. Male participation rates also show decline. Female participation rates have consistently declined over the past 30-year period from 6.65 per cent in 1951 to 1.77 per cent in 1981. The unemployment rate, however, stood at 2.9 per cent in 1961 and was confined almost entirely to the male civilian labour force. The situation was reversed in 1981. The rate of open employment in the country in 1989/90 was 3.13 per cent. When disguised unemployment is included the unemployment rate works out at 13.45 per cent (4.3 million persons).

The share of off-farm employment in the NWFP went up from 31 per cent in 1951 to nearly 40 per cent in 1973 but fell slightly in 1981 to about 38 per cent. Agriculture is the principal occupation of a large number of workers and accounted for as many as 60 per cent and 51 per cent of the total workers in 1981 and 1987/88 separately. Between 1981 and 1987/88, employment in clerical occupations, sales, service, and production rose considerably while employment in professional, technical and related fields, and administration remained almost static. In rural areas, employment is mainly concentrated in agriculture, animal husbandry, forestry, and related activities. Production and related activities, as well as construction and tertiary activities, predominate in urban areas. The construction sector is an important sector in the NWFP but the wages are lower than in other sectors.

The inability of the economy to generate growth and alternative forms of employment has been the main reason for migration outside the NWFP. Between 1972 and 1981 almost every seventh person in the NWFP changed the place of residence. Of the total migrants, 11 per cent were migrants within the province, 12 per cent were in-migrants to the province, and the rest were international migrants outside the region. The NWFP lost over one million people to other provinces and the international labour market in the nine years between 1972 and 1981. Intra-provincial migration is basically from rural to

rural areas. The influx of Afghani refugees and the consequent pressure on the limited resource and employment base has also tended to induce out-migration. About 591,000 international migrants were recorded in the 1981 census. The reasons for the greater out-migration are: a very low level of agricultural activities, a low level of industrial development, higher incomes outside the country, and government policy. The remittances that are sent by international migrants tends to distort the development of the area. The money is neither invested in the agricultural sector nor in industry. The impact of the inflow of Afghan refugees (2.5 million persons) has a negative effect on the environment and on the available off-farm employment positions.

The demographic prognosis shows that the population of the NWFP will reach approximately 20 million by the year 2000. The labour force will more than double from the 1981 level. The cultivated land per person will go below 0.09 hectares. The need for the promotion of OFEA is therefore clear.

Permanent off-farm employment is normally found in the formal sector. Seasonal off-farm employment is also more pronounced in the NWFP, as in most agricultural economies. The off-farm sector accounted for about 75.5 per cent of the provincial output value in 1985/86. Manufacturing, transport and communication, services, trade, and construction were the most important subsectors in terms of off-farm employment. The labour force surveys show that about 16 per cent of the total non-farm employment was created in the manufacturing sector. Construction (21 per cent) and trade (23 per cent) were other important avenues for employment. The trends in employment show that, with the exception of mining and quarrying, employment in all non-farm sectors was on the rise. The fastest growing sectors were transport, electricity, gas, water, communications, and the services' sectors. Substantial increases were also recorded in tourism-related areas such as services, hotels, and restaurants. Around 1 million people were reported to be engaged in the off-farm sector in 1981. The annual growth rate in employment in the off-farm sector was 6.7 per cent. The very rapid growth of employment in the small-scale sector (at a rate of 24.6 per cent as against 14.0 per cent for the total industrial sector and 1.0 per cent in the large-scale sector) was observed between 1976/77 and 1983/84. Food manufacturing, especially in the informal sector emerged as the leading employment generation sector in 1983/84, followed by textile and tobacco manufacturing. Female participation in the informal sector is also significant.

The highest increase in the, number of establishments and employment levels is found in the community, social, and personal services' categories followed by the manufacturing sector, electricity, gas, and agriculture-related sectors. In the rural areas, food processing, textiles, leather, tobacco, wood, and furniture show the highest employment potentials whereas in urban areas other manufacturing industries and handicrafts, footwear, metal products, machinery and equipment, food manufacturing, wood and cork, textiles and tobacco, and furniture and fixtures are sub-sectors with substantial employment potential. Studies on the participation of women in off-farm activities indicate an increasing trend in knitting and embroidery, weaving, spinning, canning, tailoring, leather work, and teaching.

Relatively inaccessible mountain areas have low employment opportunities. The NWFP being a backward industrial region, it is already at a disadvantage in terms of being able to attract investment from outside the province. The active black market renders locally-produced goods non-competitive pricewise, and this acts as a further disincentive for additional investments.

Potential off-farm activities in the region are the mining of marble, gypsum, and limestone; the manufacture of phosphatic fertiliser; the manufacture of paper and hardboard, based on cane and forest products; fruit and silk processing on a commercial scale; and the production of carpets, mats, and rugs from animal hairs. Similarly, the tobacco and sugar industries are labour absorptive and have the potential for further development. Tourism is an important industry in mountainous areas such as Swat, Chitral, Hazara, and the northern areas. Construction and public works are important labor absorptive activities which provide backward linkages to cement, steel, bricks, and other related industries and

forward linkages to the transportation sector. Agriculture-related sub-sectors, especially livestock, poultry, horticulture, sericulture, and beekeeping have the potential for further expansion. Organised production and marketing outlets for the output of informal sector activities would greatly enhance off-farm opportunities for women.

Pakistan's industrial policy throughout the post-independence period, apart from a short period during the seventies, was heavily biased in favour of the large-scale manufacturing sector. The small-scale industrial sector, despite its low capital intensity and high labour intensity was largely ignored until the early seventies. However, the nationalisation of many large-scale industries and the provision of privileges and concessions to those industries located in backward regions have attracted industrialists to invest in small-scale industries in the NWFP. The devaluation of the Pakistani Rupee in 1972 helped in the expansion of small and household manufacturing industries that used local capital and raw materials for production. The rising level of remittances from the Middle East raised the demand for consumer goods, and this has helped the expansion of the small-scale industrial sector.

Despite government efforts, the population of the NWFP has been increasing rapidly. Because of the small and fragmented nature of landholdings and other biophysical characteristics, the agricultural sector is beset by a host of problems. Despite the provision of income tax holidays, exemptions for customs' duty, exemption from sales' tax, access to bank loans, development of industrial plots/estates, guidance to potential/intending entrepreneurs, and non-formal education, the pace of industrialisation in the NWFP has not picked up nor is spatial diversification in industries evident. Rural development and anti-poverty programmes have hardly attained their stated objectives. Other government programmes for off-farm employment, such as small industries and village agricultural and industrial development programmes, have been largely ineffective because of the scarcity of funds and lack of expertise. The Agricultural Development Bank, which provides credit to the agricultural sector, has not been able to reach the majority of farmers. The Small Industries' Development Board in Peshawar has helped to increase the pace of industrialisation by setting up small-scale and cottage industries and by providing training facilities and advisory services. However, spatial coverage of the programme is limited.

The topography and the climate of the NWFP provide comparative advantages for the development of food-processing industries - which is a labour-intensive activity. Forest-based industries can provide employment to a large number of persons. Wood and wood-based products have backward linkages to the forest areas for their raw materials and forward linkages to the transport sector, housing, and services. Social forestry has attained prominence and needs to be propagated for the sustainable development of this sector. The cottage and small-scale industries' sector is the most responsive and robust sector in terms of employment generation. These industries are mainly in the private sector and absorb about 81 per cent of the industrial labour force. Because of the growth of the tourism sector, a lot of activities in the handicraft sub-sector have been developed simultaneously. Women's participation is high, especially in the handicraft and carpet industries.

The Pak-German wood-working centre and Pak-Holland metals are two noticeable enterprises in the region which are involved in improving the quality of industrial products and in skill development activities. The impact of the training and technology transfer programme of these enterprises has had salutary effects.

The magnitude and growth of employment must be matched with the resource base and its usage. In this context some of the critical issues have been identified. The population is increasing rapidly and mountain specificities marginalise the farmer. Thus the agricultural sector releases surplus labour that needs to be employed elsewhere. The policy options are to create off-farm employment, either in the livestock and poultry sub-sectors or through the use of natural resources that exist in the province such as forests, minerals, tourist spots, cottage and small-scale industries, and food-processing. Also, the

productivity of agriculture needs to be improved. Effective population control measures and the development of urban areas will widen the base for off-farm employment opportunities, slow down the out-migration of young adults, and lead to the investment of remittances through proper guidance and direction. Moreover, the Afghan refugee problem needs to be settled so that many more workers can be absorbed in off-farm employment.

The NWFP is very rich in mineral resources such as soapstone, silica, China clay, marble, gypsum, precious stones, and forest resources. These resources can be exploited by locating industries close to them. However, overexploitation, such as in the case of forest resources for example, in areas where deforestation is taking place at a rapid pace, should be avoided.

The policy option is to undertake afforestation schemes, provide incentives to private individuals to grow trees, introduce scientific management and harvesting of forests, and conserve wildlife for the sustainable development of forest-based industries. There is an urgent need to control overgrazing and undertake reseedling, the plantation of fodder trees, and the establishment of shelterbelts. Policies for investment in hotels/services/transport would help to develop the tourism industry in the region and to promote employment generation. Industrial trade policies and the functioning of the Small Industries' Development Board should be targetted at high growth and high labour absorptive industries. It is necessary to target industrial development by concentrating on regional specificities and the socioeconomic structure of the province. The promotion of identified spatial growth points in different districts would ease the access to market and also reduce transport costs. Concentration of industries and employment in a few places like Peshawar, Abbottabad, Mardan, and Hazara has tended to distort the process of spatial development by attracting investment, skilled labour, and all facilities towards these areas at the expense of other regions. The desirable option is to spread out the industries by improving the necessary infrastructure through training, skill development, and area development. Currently, excessive exploitation of mineral resources and deforestation are creating environmental problems in a fragile resource situation.

Activities that harm the environment should be controlled. The environmental protection agencies that have already been set up need to be made functional and active. The policy option for addressing the problems of human resource development is to increase educational facilities, make primary education compulsory for all sexes, establish more vocational and training centres for skill development, and open workshops, all over the province and not just in a few urban centres. Moreover, women must be targetted for development and any development package must include components for the development of this section of the population to encourage their participation in economic development.

OFF-FARM EMPLOYMENT IN THE HILL AND MOUNTAIN REGIONS OF NEPAL

Janardan Khatri-Chhetri
Bhimendra Katwal

The purpose of the study is to review the current state of off-farm employment and assess critical issues and options in the promotion of prominent and potential off-farm employment activities in the hills and mountains of Nepal.

Nepal is a predominantly mountainous country. The Hill and Mountain regions cover about 77 per cent of the total geographical area, 51 per cent of the total cultivable land, and 46 per cent of the total cultivated area of Nepal. In 1981, the Hill and Mountain regions accounted for 56 per cent of the total population and 39 per cent of the total cereal grain production. Almost all of the 55 hill and mountain districts are food-deficit areas. Each hectare of cultivated land in the hills and mountains supports 8.6 persons, approximately 6 large cattle, and 4 small animals.

The population of the country was around 15 million in 1981. The population growth in the Hill and Mountain regions was 1.62 per cent per annum as against an annual increase of 4.2 per cent in the *Terai* lowlands. The average annual growth rate for the country as a whole was 2.66 per cent between 1971 and 1981. The alarming rate of growth in the population of the *Terai* is largely due to migration from the hills and mountains. Therefore, off-farm employment generation has intrinsic relevance in the context of mountain development.

Since 1952/54, when the first scientific census was undertaken, trends in population growth have shown a consistent rise. At the 1971-1981 growth rate of 2.66 per cent the population of the country has the potential to double every 26 years. Around 40 per cent of the population are below the age of 15. The sex ratio until 1981 was in favour of males. In 1981 there were 89 dependents for every 100 of the working population. Over the years, the share of the hill and mountain population in the total population of the country has consistently declined from about 65 per cent in 1952/54 to 56 per cent in 1981.

In 1990 there were only 33 municipal areas in the country and about 9 per cent of the total population were urban. The urban hill population accounted for about 52 per cent of the total urban population. However, the growth rate of the urban hill population remained lower than the national average. About 73 per cent of the urban population lived in the three towns of the Kathmandu Valley in 1981. About one third of the adult population in urban areas is engaged in primary activities.

Between 1971 and 1981, the economically active population in the Hill and Mountain regions increased from 3.3 to 4.2 million - indicating a growth rate of 2.54 per cent, higher than the growth rate of the hill and mountain populations. In recent decades the participation rate of females in economic activities has risen much faster than that of males.

Agriculture has remained the principal occupation in the Hill and Mountain regions. In 1971 and 1981, agriculture was the principal occupation for 94.4 and 91.4 per cent of the employed population respectively. Of the population engaged in non-agricultural occupations almost half was engaged in production and related work followed by services, professional, and technical and related activities.

Lack of sufficient and consistent information over time creates problems in the analysis of unemployment and underemployment. A sample survey by the Rastra Bank in 1984/85 showed an open unemployment

rate of 4.1 per cent in the labour force. This rate was 8.2 per cent for urban areas as a whole and slightly higher than average for females. The estimates of the rate of underemployment in rural Nepal vary from 46.4 per cent to 63.5 per cent. The data on the labour force structure show that the proportion of the labour force in the primary sector has remained more or less static since the 1950s, although some decline has been noted since 1971. It may be noted that the share of agriculture in the GDP was about 62 per cent in 1980.

Migration in search of gainful employment has been a traditional household strategy in the hills and mountains. While low agricultural productivity and limited off-farm opportunities have pushed people out of the hills, the availability of non-agricultural and agricultural opportunities in the *Terai* have tended to attract people to the lowlands. Census information shows that the migration pattern in Nepal is predominantly rural to rural. In 1981 the *Terai* lowlands net recorded 700,000 life-time migrants from the Hill and Mountain regions. The volume of emigration to India is also considerable. In recent years immigration from India to Nepal, particularly to the economically dynamic areas in the *Terai* and urban areas, has been estimated to be on the rise. Seasonal migration from the hills and mountains, both internal and external, has remained an established feature of population mobility in Nepal.

Although some variations, attributable to the availability of cultivable land, are observed, the region and resource-specific variations in the labour force structure within the Hill and Mountain regions are not remarkable.

Estimates made from different studies indicate that in the hills alone there was, in 1990, a surplus labour force of 98 million mandays. The demographic prognosis for the hill-mountain region shows that the hill-mountain labour force would reach around 7.2 million in 2010. The urban share of the labour force would rise from 5.9 per cent in 1990 to 11.2 per cent in 2010. This addition would create a need, on an average, to create 100,000 new jobs per year in the Hill and Mountain regions alone. This indicates that the challenge to create off-farm employment opportunities in Nepal is not only critical but also urgent.

The current state of off-farm employment in Nepal has been analysed by categorising OFE into three sectors: the formal sector, the informal sector, and OFE related to agriculture.

The formal sector includes employment in manufacturing, mining, government, construction, utilities, trade, and transport. However, consistent data are only available for the manufacturing sector.

In 1986/87 manufacturing employed about 66,000 persons in the hills and mountains. Kathmandu Valley accounted for nearly 90 per cent of the total employment. The principal establishments were grain mills, carpet works, leather works, garment factories, textile factories, structural clay (brick), furniture works, paper mills, and printing works. Carpets and garments are largely dependent on the import of raw material and inputs. Constraints related to infrastructure, a fragmented market, and an unskilled labour force have inhibited the growth of the manufacturing sector. Garment and carpet industries are dependent on export to the European and US market.

In Nepal as a whole, the construction sector (roads, irrigation, hydropower, social infrastructure) was estimated to employ about 375,000 in 1986/87 in both the formal and informal sectors. Public works have major potentials for generating off-farm employment. The lack of a national strategy for the mobilisation of labour has remained a major problem.

Tourism is a rapidly growing sector in Nepal and is a major source of foreign exchange earnings. A survey by the Rastra Bank in 1987 showed that this sector employed about 11,000 people directly, mostly in the hills, and that the potentials for increased employment in this sector are considerable.

The government sector employs about 210,000 persons in the civil service, military, and police. But its capacity for providing further employment remains limited.

It is estimated that the trade, transport, and services' sectors employ about 180,000 persons and the scope for further growth remains considerable due to the expected growth in infrastructure.

Mining is reported to employ about 3,000 persons. While the scope for employment expansion exists, the environmental consequences of mineral exploitation have caused concern.

In the informal sector, the major employment opportunities are in cottage industries, skill and craft-based activities, carpet weaving, portage, and small businesses. While the nature and employment potential of these activities have yet to be properly assessed, the available information indicated that most of these activities have linkages with the agricultural sector. Estimates indicated that cottage industries employed 1.2 million persons, on a part-time basis, in 1981/82 in the whole country. About 171,000 persons, again part-time, were reported to be engaged in craft-based activities in 1985. The informal sector off-farm employment was motivated by the seasonality of agriculture and, in all likelihood, was "distress" employment.

Considerable scope exists for expanding employment opportunities outside of traditional agriculture in areas such as livestock and poultry, horticulture, vegetable farming, harvesting and processing of medicinal plants, hand-made paper, sericulture, and beekeeping. Although some attempts have been made to exploit employment opportunities in these sectors, extension support in terms of training, provision of credit, and marketing appeared to have inhibited potential growth.

The analysis of the current state of off-farm employment revealed a number of prominent/potential off-farm activities that could be promoted in Nepal. Among the most prominent off-farm activities in the formal sector were garment and carpet manufacturing, public construction, tourism, and trade and transport services. Carpet manufacturing and small businesses appeared prominent in the informal sector. In the case of OFEAs within agriculture the prominent activities were horticulture, vegetable farming, and, to some extent, livestock-rearing. Not all of the currently prominent activities would, however, be sustainable in the long run. Garments, for example, depend upon an external market and do not always employ native labour. Carpets, in addition to the export-led market, has the problem of consuming fuelwood that needs to be substituted by other forms of energy. Mountain tourism, similarly, has brought about a problem of environmental degradation caused by excessive fuelwood use, garbage and littering along the trails; lack of linkages with the production structure in most tourist areas; and the problem of retention of benefits.

Some off-farm activities have considerable "success" potential, although these are not prominent OFEAs at present. These were related mainly to medicinal herbs and sericulture, among other activities.

A review of policies with respect to OFE reveals that the policy on rural development, land reform, and regional development that provided the major thrust in development planning at different periods did not have an explicit focus on off-farm employment, although employment was supposed to be a major concern. Explicit policies affecting OFE in Nepal are related to trade and tariffs, industrial policies, and policies related to subsidies. Trade and tariff arrangements and the structure of tariffs have not explicitly promoted OFE in Nepal. The industrial policy, in spite of changes made from time to time, has not brought about employment-oriented growth. The subsidy programmes also (particularly with respect to inputs and transportation have not had the desired effect on the promotion of OFE, although potentials exist on certain areas.

Off-farm related programmes in Nepal can be categorised into five major types.

1. Poverty alleviation programmes which include the Small Farmers' Development Programme and the Production Credit for Rural Women Programme. Both SFDP and PCRW have had some positive impact on OFE by increasing the income of poorer households.
2. Integrated Rural Development Programmes, in spite of their wide coverage, do not seem to have made any discernible impact on the socioeconomic status of rural people.
3. Programmes to foster rural industrialisation under the Cottage Industries' Development Board and the Cottage and Small-scale Industries' Project have been, by and large, helpful in providing input support, training, and extension and the employment potential remains considerable.
4. Programmes under the priority sector such as the Intensive Banking Programme, seem to have affected large landholders rather than small and marginal farmers.
5. Other employment-oriented programmes such as the Special Public Works' Programme and the Food for Work Programme do not have a wider spatial coverage, although localised impact in project areas has remained encouraging.

Analysis of existing policies and programmes, in light of the objective conditions in the mountains, revealed that the programmes needed to be tailored to make them more responsive to mountain conditions.

The broader concerns of the analytical framework used in the study (i.e., the implications of the OFEA on the environmental, demographic, and spatial processes; the linkages of the activity with the farming system, and the implications for poor, marginalised groups and for women) have been traced with respect to three prominent and potential activities; namely, mountain tourism, sericulture, and dairy farming. This analysis showed that the environmental and distributive impact of mountain tourism was not always positive. Sericulture appeared to respond well to all the concerns in the mountains, although it is not at present a major activity. Dairy farming is an area for potential growth but can exacerbate environmental problems and may be biased in favour of the rich.

Activity-level analyses of carpet-weaving and vegetable cultivation were presented as two brief case studies. These analyses pertain to activities that were prominent in some areas and could be made sustainable with proper appreciation of their problems and prospects.

Some critical issues with respect to the promotion of off-farm activities were identified. These were related to the need to check the population growth rate; the need to pursue regional and resource specific policies to raise the productivity of agriculture, on the one hand, and to facilitate the generation of seasonal off-farm activities and reduce the seasonality in labour demand on the other; the need to expand employment opportunities in the manufacturing sector through appropriate industrial location and protection policies; and the need to take advantage of export possibilities through the promotion of specific industries. Critical areas of attention with respect to the construction sector and mountain tourism and cottage industries were also identified. Training and the role of vocational education is an area where government programmes can play a major role in the promotion of off-farm activities.

Several issues were raised in the context of government policies, particularly with respect to input and output subsidy. Ad hoc provision of subsidies is thought to be counter-productive because of the need of an effective distribution mechanism to reach the intended beneficiaries. Employment-generating programmes, to date, remain largely within the government domain. The experience suggests the need to gradually involve the NGOs and the private sector in programmes to promote OFEAs.

OFF-FARM EMPLOYMENT IN WEIZHOU TOWNSHIP IN THE HENGDUAN MOUNTAINS OF CHINA: A CASE STUDY

Xiyi Huang and Chen Guojie

The objective of the case study is to analyse and assess the current state of off-farm employment in the socioeconomic and resource context of Weizhou township, identify factors that have inhibited or enhanced off-farm employment opportunities, trace the linkage of off-farm activities with relevant sectors, and present guidelines for the future development of potential OFE in Weizhou.

Weizhou, the capital of Wenchuan County, is located in a mountainous area with a semi-dry monsoon climate. Two major roads link it to Chengdu, the major urban centre of Sichuan Province. The principal natural resources of the area are water and forests.

The basic infrastructure of the township consists of extension offices related to enterprises, forestry, agriculture, and livestock. It also has basic health and education facilities.

Weizhou township has 12 villages, three of which are in the valley. Over 90 per cent of the population is of Qiang nationality. The total population of the township was about 5,000 in 1990. About 47 per cent of the population constitute the active labour force and 27.5 per cent of the labour force are illiterate. The average per capita landholding is about 0.09 hectares. Corn, soyabeans, wheat, and potatoes are the major crops. The principal horticultural crops are apples, Sichuan pepper (*Xanthoxylum nitinidum*), cherry, and walnuts.

Since 1981 when the system of 'Contracting Production Responsibility to Households' was introduced the farming system has diversified and the income of farmers has also increased.

Government policies have had considerable impact on the development of off-farm activities. The Responsibility System and ensuing changes that included permits to run individual business, preferential credit for off-farm related activities, and encouragement to extractive industries have provided the impetus for steady growth of the off-farm sector.

The principal off-farm activities are of three categories: rural enterprises, family business, and activities based on forestry, horticulture, and livestock.

Out of the 11 rural enterprises, 7 are township run. Industries in the area include a cement plant, a farm machine factory, an oxygen plant, marble and jade mines, plaster, and a lime factory. These enterprises together employ 435 local persons. Construction-related industries are the leading rural enterprises. Family-run businesses employ about 8.3 per cent of the total labour force and include catering, repair shops, transportation, and small-scale, agro-based processing.

Off-farm activities related to agriculture are the major income source of farmers and contribute about 67 per cent of the total household income. These mainly involve the production and sale of apples, Sichuan pepper (S-pepper), livestock, and poultry. Apple and S-pepper production take advantage of favourable natural conditions. Out of the gross production value of fruits and forest products, apples alone accounted for 60.5 per cent. Almost every family has apple trees and the proportion of the labour force involved in this activity is about 75-80 per cent.

The nature and extent of off-farm activities are dependent on geographic location. Over 70 per cent of collectively-owned enterprises were located in the valley villages with better access and infrastructure. Mining mostly took place in the mountains. Horticulture was common on the hill slopes.

The impact of off-farm activities on the employment and income structure of households was assessed through a household survey of 20 farm households in Binli village, a typical village 25 km from the central town. The average per capita income here was 732 Rmb in 1990. Corn, wheat, and buckwheat are the major crops. Horticulture is a major source of off-farm income. A major factor contributing to the growth of off-farm activities, particularly in horticulture, was the introduction of the Contracting of Production Responsibility to Households' (CPRH) System. In this system the cultivated land as well as the hill slopes are contracted out to households on a per capita basis. This has provided the motivation to produce high value crops. Relatively low capital and technology requirements, existence of a market in the locality, and relatively better access to the regional market are other factors influencing the development of horticulture. The contracting of hill slopes to households encourages the plantation of fruit trees. The rapid expansion of apple and S-pepper cultivation has been a spontaneous phenomenon that picked up because of the success achieved by a few pioneer farmers.

Comparison of earnings in agriculture and off-farm activities shows that off-farm work yielded higher returns. In the sample households, the average annual earning per capita from traditional agriculture is 114 Rmb¹, while it is 1,148 Rmb from off-farm work. For off-farm activities the output/input ratio is highest for Sichuan pepper, followed by apples and livestock. The main livestock-related activity is pig raising. Also, it has been found that the output/input ratio is higher in the case of individual farmer or household run off-farm businesses than in the case of township enterprises. Many collective enterprises are running at a loss.

Linkages of off-farm activities are particularly stronger with agriculture. Since apples and S-pepper are not cultivated on prime arable land, the rapid expansion in horticulture has not negatively affected the cropping sector. Horticultural development in particular has encouraged or has the potential to encourage the growth of processing industries, marketing, transportation, and water conservation.

In terms of employment, about 13 per cent of the labour force are engaged full time in rural industries and about 8 per cent in business. Off-farm activities in horticulture, in particular, involve 75-85 per cent of the labour force, mostly part-time. It is estimated that off-farm activities absorb about 40 per cent of the total rural labour force in Weizhou and about 25 per cent of the labour force are on the look out for off-farm jobs. Households have apparently developed an integrated activity system whereby labour time in agriculture, horticulture, and family business is divided in such a way that there is minimum conflict. The example of labour days used by typical farm families, however, shows that almost half of the annual labour days remain unused. This indicates the need to introduce more off-farm activities in Weizhou.

The background of persons engaged in off-farm activities shows that educational attainment, prior employment, experience, and training seem to be important variables. The gender-specific nature of off-farm activities in Weizhou also are quite clear. Women mostly engage in off-farm activities related to horticulture. Picking, transportation, and marketing of horticultural crops are mainly the domain of women. All told, women's contributions to income-generated from off-farm work are considerable.

Existing off-farm activities in Weizhou are based mainly on comparative advantages. The implications of the OFEAs show that horticulture has mostly positive effects as it has expanded the carrying capacity of resources. The extractive industries also provide employment, but indiscriminate mining has damaged

1

The conversion rate between the U.S. dollar and RMB yuan was 3.75.

the environment and has also created problems of environmental pollution. Environmental safeguards are non-existent.

A detailed case study of the Weizhou cement factory elucidates the situation with respect to organisation and management, technology, and marketing and extension. This case shows that the Plant, which was an example of a relatively "successful" rural raw-material based industry until the expansion of its production capacity and modernisation, has run into problems because of the lack of improvements in management, lack of expansion into regional markets, and lack of adequate skill upgrading commensurate with the factory's modernisation process.

A cautious approach to the development of an off-farm strategy in Weizhou is proposed. Apple and S-pepper are recommended for further expansion. However, corrective measures are needed to address the harmful effects on ecology and on the environment. The construction material industry needs to be rectified with built-in environmental safeguards. An emphasis on off-season vegetables for the Chengdu market, improvement in transportation, development of Qiang embroidery, an employment-oriented environmental regeneration programme, and development of processing facilities for horticultural crops, such as apples, are some of the guidelines indicated for the future. Also, a number of policies for the future are suggested. These include incentives to farmers to undertake off-farm work, promotion of farmers' organisations, and provision of information on markets and entrepreneurial development.

OFF-FARM EMPLOYMENT IN SHUIMO TOWNSHIP IN THE HENGDUAN MOUNTAINS OF CHINA: A CASE STUDY

Wang Fei and Chen Guojie

Shuimo township lies about 79 km from Weizhou, the capital of Wenchuan County. It is a mountainous area drained by the Shoujiang River, a tributary to the Minjiang. Altitude ranges from 900-2,200m. The township consists of 14 villages, 7 of which are in the mountains. Compared to other townships in Wenchuan, it receives rather heavy rainfall, the maximum average being 1,450 mm. Shuimo is linked to the Chengdu-Aba road by a 11 km narrow dirt road. Most of the population in Shuimo is Han although a number of minorities, including Qiang, Tibetan, and Hui, are also found. Unlike other case study areas Shuimo does not have favourable natural conditions for horticulture. Construction and livestock-raising activities are relatively more important. Maize, wheat, and potatoes are major crops. The area is basically an agricultural area. Shuimo is linked to Xiankao which is a major town and marketing centre for its produce and is the second largest town in Wenchuan.

A survey of 48 households representing both mountain and valley villages was undertaken to investigate the role of off-farm activities in the household economy.

In 1990 Shuimo had a population of around 7,000, 47 per cent of which were part of the labour force. About 57 per cent of the population lives in valley villages. The population growth rate in recent years has remained around 1.9 per cent. The population of valley villages has risen because of migration also. About 42 per cent of the population are illiterate, although Shuimo has the basic infrastructure expected of a minor township in China.

Per capita cultivated land is about 1.82 *mu* (15 *mu* = 1 ha) and is higher in the mountain villages than in the valleys. Because of harsh socioeconomic conditions in the mountains there has been considerable migration from mountain villages, mostly on account of male migration related to marriages. Shuimo is known for its traditional cultivation of the "moyu" tuber (*Amorphophallus rivieri*) and traditional Chinese medicinal plants. Natural resources basically consist of land and forests. Prospects for minerals as well as hydro-electricity are limited. Bamboo groves are a major resource in the valley.

Off-farm activities in Shuimo can be placed into two principal categories; those outside agriculture and those related to agriculture.

In the area of non-farm employment there are 76 rural enterprises employing about 10 per cent of the labour force. All are non-agricultural establishments and 65 are privately owned. (This is a phenomenon that started in China only after the introduction of the Responsibility System in 1978). Eleven enterprises are collectively owned. The principal rural enterprises consist of construction, paper plants, brick factories, sand quarrying, and prefabrication. The Building Team of Shuimo, managed by the township government, is quite a renowned construction team in the area and employs, seasonally, about 150 people. Most of the industries located in Shuimo have strong "localisation" factors. Transportation enterprises are all individually run. Tertiary activities consist of retail trade, catering, and services. The common features of these enterprises are that they are small, have low profits, and are diverse. Most enterprises are in the valleys. Income from these non-agricultural enterprises comprised about 22 per cent of the total rural income of the townships, according to township records.

Off-farm activities related to agriculture are relatively more important and include livestock-rearing, sideline, and some horticultural activities. About 50 per cent of the total agricultural income comes from these sources.

Livestock-rearing is a traditional off-farm activity. The principal activity here is pig raising. Pig raising has strong linkages with the farming system and contributes over one-third of the income derived from non-cropping sources. Cattle are mainly used for draft power. About 46 per cent of the total pork produced enters the market.

Horticulture has possibilities only in mountainous areas. Tea is traditionally a main crop, but has suffered after the introduction of the Responsibility System because gardens are contracted out to households who do not see it as a profitable business. Natural conditions favour timber and bamboo. Shuimo is the base for afforestation activities in Aba Prefecture. Because of the Responsibility System, contracted hill land can be used for private forests. Timber harvesting is a major activity.

For medicinal plants, particularly certain species of traditional Chinese medicine - *Phellodenidron*, *E. ulmoides* and *M. officinalis* - the biological conditions in Shuimo are ideal. Since the profit margin in these medicinal plants is quite high, there is an increasing enthusiasm for the cultivation of these plants. In 1990, over 480,000 saplings were planted in Lianshanpo village alone.

Lacquer and "moyu" tuber are other cash crops. The production of "moyu" received impetus because it was in demand in other regions of China, as well as in Southeast and East Asia. However, the emphasis on cereal grains, since the 1950s, has led to the demise of "moyu" cultivation.

Among sideline activities - odd jobs, bamboo weaving, and professional trades are important activities. These together are reported to have contributed 9.3 per cent of the agricultural income.

Spatial variations in off-farm activities are notable between mountain and valley villages. Mountain villages are noted for the cultivation of medicinal plants while valley villages have most of the enterprises as well as the prospects for sideline activities.

Labour demand in major activities reveals some conflict between cropping and off-farm activities. This is, however, not serious. Among the existing off-farm activities, pig-raising is the most labour intensive. Medicinal plants and "moyu", in general, do not demand much labour except during planting time. The problem with medicinal plants is that they require long-term investments as it takes between 5-6 years for these plants to yield the bark from which traditional medicine is extracted.

Other potential off-farm activities, apart from livestock, "moyu", and medicinal plants, include tea plantation, bamboo, pear, lacquer, and grapes.

Among the factors that have influenced the growth of off-farm activities are the Responsibility System; support to livestock development by the county government; support from the construction sector, particularly the Seventh Construction Bureau; and limited access to regional and international markets. Food grain security, ensured by Grain Purchasing Stations set up by the State and some access to capital and technology, as a result of reform policies, are other factors that have contributed to the growth of off-farm activities. However, poor infrastructural facilities, limited extension facilities, and restricted access to capital have been the factors inhibiting potential growth.

Spatial variations between mountain and valley villages are notable. The valley areas are reported to have more "surplus" labour than the mountain villages. Shortage of labour is felt in the mountain villages because of migration.

Off-farm income contributes significantly to household income, according to the sample household survey. The income structure of sample households reveals that only 45 per cent of the total income and only 12.4 per cent of total cash income are derived from the cropping sector. About 21 per cent of the

total income was contributed by sideline activities. Livestock-rearing contributes about 37 per cent of the total income and 48 per cent of the cash income in the household economy.

As in other townships of Wenchuan County, the linkages of all off-farm activities are stronger with the farming system. The growth of livestock is a prime example as this sector provides manure and fodder to traditional agriculture. Horticulture, including medicinal plants, has both positive and negative influences in the farming system. While "*moyu*" and medicinal plants are interplanted with traditional crops, some evidence of declining soil fertility is noted. On hill slopes, however, horticulture has been beneficial to the environment.

Off-farm activities within agriculture have helped in employing "surplus" labour as evidenced by the household survey. OFEA within and outside agriculture together use about 30 to 45 per cent of the labour time.

The implications of off-farm activities on women and low income groups were also traced. The household survey shows that women undertake almost all of the livestock-related work and contribute at par with males in farming and horticulture-related activities. As a consequence, women are more tied to land-based activities. Regarding low income groups, it was found that the introduction of the Responsibility System has widened the gap between the "rich" and the "poor". The household survey also found that the members of low income households in general are reluctant to take up off-farm activities.

Medicinal plants, fruit trees, and "*moyu*" are based on comparative advantages and the overall impact on the environment and economy remain positive.

Shuimo paper plant, located in the township, was used in the analysis of a major off-farm enterprise. The paper plant is based on local resources, is collectively-owned, and employs 31 persons. It elucidates the case of an enterprise that has been able to create a regional market for its special quality paper known as "Huangquian paper". Since 1986, the plant has been renovated considerably. Current problems relate to a lack of long-term planning, creation of a sustainable raw material base, and management autonomy.

Finally, guidelines for the future development of off-farm activities are presented. These include the need to encourage expansion of medicinal plants and "*moyu*" and processing based on these crops; a greater emphasis on extension support for livestock; greater need for technical training and skill development; timely provision of market information; assurance of the continuity of the Responsibility System; and provision of inputs such as "*moyu*" seed.

OFF-FARM EMPLOYMENT IN MIANCHI TOWNSHIP IN THE HENGDUAN MOUNTAINS OF CHINA : A CASE STUDY

Yu Side and Chen Guojie

Mianchi township lies about 18 km from Weizhou, the capital of Wenchuan County, along a major highway that links it to Chengdu. The altitude ranges from 1,500 - 2,500 metres. The climate is semi-arid with annual rainfall of about 519 mm. There are nine villages in the township, all of which depend primarily on agriculture. About three-quarters of the population belong to minority nationalities. Maize, wheat, and potatoes are the principal crops. Mianchi provides an example of a mix of off-farm activities, all of which are undertaken concurrently with traditional agricultural activities.

A survey of about 30 households representing different income groups was undertaken to investigate the role of off-farm activities in the household economy.

In 1990 Mianchi had around 4,600 people of which about 50 per cent formed part of the labour force. The household size was 5.1. Past records showed that the population growth has tended to decline and the current growth rate is around 1 per cent per annum. However, the labour force growth rate is in excess of 3 per cent. About 31 per cent of the labour force is illiterate. The literacy rate of females is almost at par with that of men.

Per capita land availability is about 1.56 mm (0.1 ha). Arable land per capita is higher in mountain villages and lower in valley villages. Only about 26 per cent of the total cultivated land is in the valleys. The pattern of land use in the township shows that only about 4 per cent is arable land and about 21 per cent is under forests. Since 1988, hill slopes have also been contracted out to households. About 38 per cent of cultivated land is irrigated.

Although the economy is predominantly agricultural, cropping accounts for only one-third of the household income. Reliance on livestock, horticulture, and sideline activities is greater. The average income per capita is about 531 Rmb and is lower than the county average.

Water is a major resource as the township lies along the Minjiang River. However, only about 10 per cent of the hydropower potential remains unused. Minerals, mainly quartz, barite, mica, and marble are exploited on a small scale. The township has the basic infrastructure for extension, education, and health and is electrified. However, fuelwood and crop residues remain the principal energy sources, particularly for cooking.

As in other townships in China, the system of Contracting Production Responsibility to Households was introduced here in 1981 and had a tremendous impact on the growth of horticulture and afforestation.

Off-farm activities outside agriculture include rural industry, transportation, and services. These activities contribute about 21 per cent of the total output value and about 11 per cent of the labour force. Rural industries in Mianchi are extractive in nature (sand-quarrying, quartz and barite mining, and logging). Individually-run transportation and tertiary services are the other off-farm activities outside agriculture. Construction of the hydropower station has provided a boost to the individual transport business. Almost all of these off-farm opportunities are in the valley villages.

A sample survey of households shows that off-farm activities related to agriculture contribute about two-thirds of the total output value from agriculture. Livestock-rearing, horticulture, and sideline activities

are the major avenues for OFE. In the livestock sector, pig raising is the most common activity and 18 per cent of the labour days in agriculture-related activities are devoted to it. About 14 per cent of the produce enters the market. Major horticulture-related activities include growing vegetables, fruits, and other cash crops such as pepper and walnuts. These activities contribute around 17 and 14 per cent respectively of the total income and employment from agriculture-related activities. Vegetable cultivation for the market is not a new phenomenon in Mianchi, as it was regarded as the vegetable centre of Wenchuan County even before 1978. Vegetable cultivation expanded considerably after the introduction of the Responsibility System. About 72 per cent of the time spent in horticultural activities is devoted to the cultivation of vegetables.

The comparative advantage of Mianchi in the production of pepper, walnut, and raw lacquer has been realised only since 1983. The contracting of hill slopes to households has accelerated the growth of fruit plantations.

Sideline activities include odd-jobs, Qiang embroidery, and craftwork. About 13 per cent of the total agricultural income comes from sideline activities. Qiang embroidery now has a regional as well as an international market and is sold through the Bureau of Foreign Trade. However, in terms of household income, odd jobs contribute the most income. But these activities are not always dependable as sources of income.

Spatial variations in agriculture-related, off-farm activities are notable, particularly among valley and mountain villages. Vegetable-related activities are mostly concentrated in valley villages.

In terms of labour demand, some conflict was noted between vegetable farming and cereal crops in the months of May-June and September-October.

Among the factors that affect off-farm employment in Mianchi are policy attention from the county government, access to markets, comparative advantages, food security, access to capital and technology, and training and skill development.

The survey of sample households reveals that income from sources other than cropping accounts for about 75 per cent of the total household income and 92 per cent of the total cash income. In the surveyed households, sideline activities, horticulture, and services are the major sources of off-farm income in order of importance.

The nature of off-farm activities in Mianchi clearly shows strong linkages with the farming system. Vegetable growing, in particular, enhanced land use. Most vegetables are interplanted with crops such as maize and beans. Cropping intensity, therefore, has increased. In some cases intensive cropping results in declines in productivity. The linkages of livestock with cropping and vegetable growing are also evident as livestock provide manures as well as fodder.

One of the problems of the higher output-input ratio of off-farm activities is that the younger generation are reluctant to carry out farm activities. The contribution of women to horticulture, pig-raising, and poultry rearing are significant and in some cases greater than those of men. The growth of off-farm activities seems to have increased the burden on women as cropping and household chores are mostly carried out by women.

The sample survey shows that the participation of low income groups in off-farm activities is relatively low. The factors that have contributed to this are the low investment capacity, the inability to take risks, the reluctance to undertake activities not tried by their neighbours, and the lack of requisite skills. Low-income households mostly take up activities related to horticulture and livestock. Among the off-farm

activities in Mianchi, the ones with the most negative impact, particularly on the environment, are related to mining. Signs of a decrease in soil fertility caused by vegetable growing, declines in the production of cereal crops because of the emphasis on horticulture, the lack of female participation in transportation, and the demand for fodder and grazing for livestock emerge as some of the major concerns for future development.

An enterprise-level analysis was made of Xiaosuoqiao Hydroelectric Power Station owned by Mianchi township. This enterprise generates 420 kw of power and a revenue of 187.6 thousand *yuan* annually. It has 16 permanent employees, all local, has no marketing problems (as all power is sold to the State owned Chaopo Hydro-electric Station), and is a major revenue earner for the township. The Power Station is an example of asset creation through the use of comparative advantage. The plant was constructed for the most part with a loan from the Agricultural Bank and the compensation paid by the State for the land that was taken away from the farmers to construct the State-owned Chaopo Station nearby.

Although Mianchi has not been able to make fuller use of its comparative advantage, particularly in fruit and vegetable, cultivation, traditional skills, and use of water resources, it demonstrates a move towards the creation of sustainable off-farm employment.

The guidelines suggested for the promotion of potential off-farm opportunities include the following.

1. A continued focus on the development of off-farm activities related to agriculture, particularly vegetables, horticulture, and Qiang embroidery is recommended. Scope for the expansion of each of these activities appears significant.
2. Among non-farm activities, mining should be very cautiously taken up.
3. The scope for the further exploitation of water resources is immense because there are a number of sites in the area for small-scale water conservation projects for the generation of energy as well as irrigation.
4. In terms of policy, the consistency and stability of the Responsibility System would encourage farmers to go for long-term investments, particularly in horticulture and afforestation. This would also require preferential loans from financial institutions as well as extension support.
5. Training, not only in production but also in quality control, grading, and packaging, is another area that merits priority attention. Also, in some cases, such as the establishment of processing units based on horticultural production, there may be a need to attract outside expertise and entrepreneurs.

OFF-FARM EMPLOYMENT IN NEPAL

A CASE STUDY OF MARPHA-JOMSOM VDCs, MUSTANG DISTRICT

Janardan Khatri-Chhetri

Ishwori Neupane

Bimal Sharma

The objective of the study is to examine the employment and income potentials of trekking tourism-related opportunities in the Jomsom-Marpha VDCs in Mustang District. The study area is a major destination for trekking tourists in Nepal. It is not accessible by road, and the growth in tourism has brought about visible economic changes in the area. The effects of trekking tourism on environmental issues are also emerging as an important concern.

Four villages in Jomsom-Marpha were selected for the study and information was collected from a sample survey of 55 households categorised by landholding. Rapid Rural Appraisal methods and key informants were other methods used to collect information.

Jomsom-Marpha VDCs lie in Mustang District where two-thirds of the area is in the High Himal belt and only 1.1 per cent of the total land area is cultivated. Both VDCs lie in a Trans-Himalayan valley and fall in the rain shadow of the monsoon. The density on agricultural land is 3.7 persons per hectare. The main crops are naked barley, buckwheat, potatoes, and wheat. It is a food deficit district. Cultivation of vegetables and temperate fruits has been on the increase in recent years. The population of the study area is about 3,000 and over 50 per cent of the population belong to the Thakali ethnic group.

Small and marginal farms (less than 0.3 hectare per household) dominate the area. Subsistence farming is the norm. The dependency ratio is only 40, which is much lower than that for Nepal as a whole. The average household size is 5.0. Migration played a major role in the household economy in the past. Seasonal migration is motivated by trade and business and takes place between the months of December and March. The household survey revealed that about 10 per cent of the household members migrate seasonally. Also seasonal in-migration takes place in the area. This is motivated by opportunities for portering and the vending of different merchandise. Temporary migrants (those away for more than 6 months) constitute 10 per cent of the sample household population. Female migration in this category is high. Permanent migration, a distinct feature in the past, has declined because of new opportunities opening up in the area.

Overall literacy in the area is around 57 per cent, comparable to that of major urban areas in Nepal. Literacy is high among the Thakalis and low among the occupational castes. Female literacy in the area is also quite high.

In the study area the economically active population above the age of 10 makes up 75 per cent of the total population. The refined activity rate, therefore, is lower than that reported by surveys for the hill and mountain regions of Nepal. The female activity rate is higher than the male activity rate. This is consistent with other findings in the mountain region.

Of the economically active population, about 77 per cent have agriculture as their main occupation. The proportion of females is found to be higher in agriculture and trade/business occupations, whereas the proportion of males is higher in service-related occupations.

The land ownership pattern, according to the sample survey, indicates a skewed distribution. The medium and large-scale farmers account for only 28 per cent of the sample households but own 53 per cent of the total land. The average landholding in the sample households is 0.38 ha. About 72 per cent of the land owned by households is under cultivation. Horticulture is the second dominant land use in the households. The distribution of operational landholdings shows that an average marginal farmer cultivates less than one-third of the land cultivated by an average medium and large-scale farmer. About 19 per cent of marginal farmers are pure tenants.

The yield of most crops in the study area is better than the district and national average. In spite of the limited agricultural area most of the land is irrigated and fertile. Use of chemical fertilizer is minimal. Buckwheat occupies 40 per cent of the total land under cultivation. Crop productivity shows a negative relationship to farm size. The cropping pattern is largely determined by climatic conditions.

Commercial fruit farming in the area began after the establishment of the Horticultural Farm at Marpha. About 72 per cent of the sample households report that some of their land is under fruit cultivation. About 40 per cent of the medium and large-scale farmers are involved in commercial fruit farming. The main fruits grown are apples, apricots, and peaches. The average annual income of households from fruit sales is estimated at NR 5,250. A percentage of households report fruit sale increases with the size of landholding.

Vegetable farming is another major activity of the area and has been encouraged as a result of the growth in tourism. An increase in demand for vegetables from hotels and lodges has brought about changes in the traditional cropping pattern. Nearly 67 per cent of the sample households are vegetable growers and 58 per cent are commercial producers.

Livestock-rearing is another important activity. *Jhopa*² and bullocks are extensively used for agricultural operations, and to some extent for transportation. Mules are kept mainly for transportation. The livestock holding pattern is guided by climatic conditions and tourism activities in the study area. Apart from mules, other livestock holdings are positively correlated to farm size.

Small-scale cottage industry is an important rural household activity. The principal cottage activities include the production of dried apples, home-made liquor (again from fruits such as apples and apricots), woollen goods, and metal utensils; the latter being based on imported raw materials.

The pattern of cash income and expenditure of sample households shows that the average household income of NR 31,805, is higher than for other mountain areas. Cash income increases with the size of landholding. About 90 per cent of the cash income is generated from off-farm activities. For all categories of household, wages outside agriculture account for the largest source of cash income. For marginal households, cottage industry and liquor sales are important sources of cash income. The share of horticultural production in cash income increases with farm size. The major items on which cash is spent are clothing, food and beverages, and meat.

The inventory of off-farm employment in the Jomsom-Marpha area shows that there are 27 hotels and lodges, about 20 shops, and 800 transport mules. Construction, cottage activities, carpet-weaving, utensil-making, distilling, apple drying, fruit and vegetable production and marketing, and the incense industry are major avenues for off-farm employment. About 96 per cent of sample households are involved in at least one major off-farm activity.

2

A *Jhopa* is a cross between a yak and a cow.

The sample survey shows that about 80 per cent of sample households are involved in vegetable and fruit production. The contribution of off-farm employment can be appreciated by the fact that only 12 per cent of labour days are used for agricultural activities; about 17 per cent are used in non-agricultural activities. On an average about 60 per cent of household labour days remain unutilised. Labour usage for agricultural activities is high between June to August and again in November and December. During these months there is some conflict in labour demand between agricultural and non-agricultural activities. In general, labour utilisation is over 30 per cent in the months of June to August and November and December. It is lowest during February.

Almost all of the off-farm activities noted in the Jomsom-Marpha area have a very strong linkage with tourism. The area receives over 10,000 foreign tourists every year. The growth of hotels and lodges is a direct result of tourism. Both horticultural and vegetable products are in demand because of tourists. Mule transportation and portering are the main mechanisms for transporting food, fuel, and other imports to the region. Comparatively, although cottage activities do not have as strong links with tourism, some components, such as liquor production and apple drying, have been induced through tourism. Jomsom-Marpha now produces about 1000 mt of fruits and 700 mt of cabbage, and the production is expected to go up as more fruit trees reach the fruit-bearing stage. The problem now is searching for new regional markets. Storage, processing, and transport-related problems remain. Some institutional support in terms of financing has been made available but it has been far from adequate.

The hotel/lodge business has been expanding rapidly with 2-3 new additions each year. The hotel capacity during the peak season (September-October) is saturated and facilities are far from satisfactory. THAM (Trekking and Hotel Association of Mustang) is currently trying to regularise as well as standardise the facilities in different grade hotels through training, skill development, and quality control. Most hotels are run on family lines and institutional support for skill development, particularly with respect to the management aspect, is a felt need.

Carpet-weaving, another activity, is declining in terms of importance, because of several reasons: the competitive market, high cost of production, lack of technological innovations, and lack of quality consciousness.

Apple-peeling and drying has emerged as a potential activity which currently involves about 50 households. This has reduced the compulsion for "distress" sales and contributes to easy and long-lasting storage and employment generation for an extended period of time to farm families, particularly women. Institutional support for this activity is lacking at present.

Manufacturing metal utensils has emerged as a commercial enterprise, particularly in the Marpha VDC of Mustang. The growth of this activity has been encouraged by income increases, and the consequent increases in the demand for utensils, cultural factors, and the development of tourism. However, this activity is limited to occupational castes and value-added is also relatively low because the raw material has to be imported, mostly from India.

Transportation by mule is another activity that has increased. This activity, however, requires considerable investment but has also received some institutional support. However, transport technology needs to be made compatible to the requirements of apple transport.

Other potential off-farm activities are seed multiplication, poultry and pig-raising, renting of trekking and related equipment, and cheese production.

These various off-farm activities have critical interlinkages with the environment. Environmental degradation, due to the increased demand for fuelwood on the part of hotels/lodges, as well as individual

tourists, is a major problem. There is no effective enforcement and regulation of laws regarding the use of alternative energy sources. Free range grazing practices have contributed to the loss of the regeneration capacity of pastures. Garbage disposal and littering along the trails is another problem. Restriction on free use of fuelwood, promotion of alternative energy, controlled grazing practices, afforestation, and enforcement of the code of conduct for tourists are identified as areas of action.

The critical issues with respect to the operation of hotels and lodges relate to the lack of adherence to THAM regulations, sanitation, and overcrowding during peak seasons. Training, skill development, and institutional support are areas where action is needed.

On the technological innovation front, considerable scope exists for improving fruit storage facilities, processing, and the production of woollen goods and transportation. Technology packages need, therefore, to be developed and institutional support mechanisms need to be strengthened. Improvement in mule transport technology, the operation of local markets, and the search for potential markets outside the area, particularly for horticultural produce, are areas identified for future attention. In addition, preservation of the cultural and historic heritage of the area, improvement and expansion of the infrastructure, and creation of conditions that would lead to a wider distribution of the gains from tourism are other areas of concern. All of these issues have to be addressed in time if tourism and the consequent promotion of off-farm activities is to be sustainable in the long run.

OFF-FARM EMPLOYMENT IN NEPAL

A CASE STUDY OF NAUBISE VDC, DHADING DISTRICT

Janardan Khatri-Chhetri and Maheshor Yadav

This case study of off-farm employment in the Naubise VDC of Dhading District in Nepal assesses the critical issues concerning vegetable production and marketing, the factors that have helped or hindered this OFE activity, and identifies critical areas in promoting vegetable farming in an environmentally sound and sustainable manner. The study uses both secondary and primary data sources. The latter was in the form of a household survey supplemented by group interviews and participatory observation.

Naubise VDC is one of 50 VDCs in Dhading District and has a total population of about 11,000. The principal ethnic groups are *Tamang* (27 per cent), *Brahmin* (26 per cent), and *Chettris* (16 per cent). Agriculture is the main occupation for more than 90 per cent of the households. About 50 per cent of the households own less than 0.5 ha of land, another 28 per cent own between 0.5 ha to 1 ha, and the rest own more than 1 ha of land.

Naubise lies about 28 km from the Kathmandu Valley along the Prithvi Highway and the Tribhuvan Rajpath. Even though all the households do not have access to electricity, Naubise town has two micro-hydro stations which generate electricity during the night for distribution to private households (about 200). Electricity is used for milling operations during the day. Kerosene and fuelwood are the main energy source. There are a number of primary schools, at least one in each ward, one secondary school, a health centre, a post office, a sub-branch of the Agricultural Development Bank, and a Livestock Development Office. There is a government horticultural and vegetable development farm located in Khani Khola.

The sample survey of the households shows 69 per cent of the households to be either medium-scale or small-scale farmers (as per the definition of NIC). The dependency ratio is 48. The average family size is 6.8 and is positively correlated to the farm size. About 3.4 per cent of the population temporarily migrate in search of employment, some as far as Saudi Arabia. The migrants are predominantly male. Although land use figures show variations by source, about 68 per cent of the land area is cultivated and 26 per cent of this is irrigated. Forests account for about 24 per cent of the land area.

The population density is 8 persons per hectare of cultivated land. The average per capita cultivated land, about 0.12 ha, is slightly smaller than the corresponding figures for the Nepalese hills.

The majority of farm households (68 per cent) in the study area are owner cultivators. Only some farmers are reported to be landless. The average landholding per household is 0.71 ha which includes 0.26 ha irrigated, 0.39 ha unirrigated, and 0.06 ha non-cultivated land. In the case of large-scale farmers the average landholding per household is 1.62 ha whereas that for the marginal farmers' group is 0.11 ha. The proportion of irrigated land to the total land is higher in Naubise than the average hill VDC.

The literacy rate in Naubise is 41.5 per cent, which is higher than the hill average. Literacy is positively associated with farm size. Less than two per cent of the population in the sample households have completed 10 years of schooling.

The average annual cash income per household is estimated to be Rs 24,968, and this includes remittances (Rs 1,070) and loans (Rs 3,213). Income for marginal, small, medium, and large farm households is Rs 13,240, Rs 19,399, Rs 26,169, and Rs 39,781 respectively. This figure is much higher than that estimated by the Nepal Rastra Bank for households in the middle hills of Nepal. The higher level of income is a result of the commercialisation of agriculture brought about by commercial vegetable production and other cash-generating, off-farm activities. Traditional food grain production receives low priority in Naubise VDC. Vegetable cultivation and sales are the most important cash-generating activities for households in the large farm size category, whereas wage labour brought in most cash in the case of marginal and small households. Sources of cash income indicate that the smaller the farm size the higher the contribution of non-agricultural activities to household cash income.

The expenditure pattern shows that marginal and smaller farm households spend proportionately more cash income on food than medium and large farm households. The latter produces food grains for home consumption. Proportional expenditure on modern inputs (for agriculture) are much higher for large farmers than for small and marginal farmers.

In the sample households, 64 per cent of the population are economically active. The Refined Activity Rate is 83.4. Both these indicators are higher than those observed for average Nepalese hill conditions. This is indicative of the higher level of economic activities in the area.

In traditional agriculture, the demand for labour shows pronounced seasonality. The demand for labour in traditional agriculture and vegetable cultivation overlaps in the month of April. In most of the other months this is not so. Data on labour demand show that the peak demand periods are April, June, July, October, and November, followed by February and March. This shows that non-conventional OFE should be promoted during the slack season so that labour can be gainfully employed all the year round.

An overview of off-farm and on-farm activities in the Naubise VDC shows that the activities are basically concentrated in four broad areas. These are the agricultural sector, the non-agricultural sector, occupational activities, and the service sector. The principal off-farm activities are vegetable cultivation, agricultural wages, vegetable nurseries, quarrying, milling, and other miscellaneous home activities such as tailoring, blacksmithing, cobbling, masonry or carpentry, and services as well as wage labour. While quite a few of the above-mentioned activities are related to the agricultural sector they are treated as off-farm activities because of the commercial nature of the activity.

Crop-raising is still a dominant agricultural practice. Maize is a major crop in the area. Yield rates for all crops show a negative relationship to the farm size, a relationship consistent with a surplus labour situation. Some evidence of the increasing diversification of the cropping pattern over the last ten years has been observed. Areas used for wheat and millet in the past and areas that were previously left fallow are now used for vegetable farming. The cropping intensity is 157 and is negatively related to farm size. Cropping intensity is highest on marginal farms and lowest on large farms.

Horticulture, especially fruit growing on a commercial scale, is in the initial stages. Most of the fruit-growing households fall either into the medium or large farm category. Guavas, lemons, and mandarins (oranges) are the major fruits grown. The present contribution of horticulture in terms of employment and income is small. But the future potential is high.

Vegetable farming, which has picked up in recent years, is a major activity in the area. About 33 per cent of the population is engaged in vegetable cultivation. Tomatoes, beans, capsicum, and cucumbers are the main vegetables grown in the area. Most vegetable farmers have medium or large farms. Most of the production is for sale.

Livestock rearing is another activity in the area. A positive relationship was observed between the farm size and the number of livestock and poultry maintained by the farmers. The farmers have increasing problems in finding sufficient grazing land and fodder for their livestock. Milk is sold by relatively few households and the quantity sold is less than 15 per cent of the total output.

Rural and small-scale cottage industry activities are undertaken by about 14 per cent of the total population. These are part-time subsidiary activities which do not provide much employment in terms of labour days used (less than 2 per cent of the available days are used).

Twenty-five per cent of the sample population are engaged in small-scale trade and business (retailers, shopkeepers). Wage labour involves 22 per cent of the people. None of these activities take up a substantial number of labour days.

About 39 per cent of those involved in OFEA within agriculture are female. Similarly, females account for about 40 per cent of the total persons engaged in the Cottage Industry Sector and about 35 per cent of the labour force are engaged in small trade and business and 24 per cent in wage labour. In occupational activities and services their participation is relatively low.

While the participation rates of females in OFE activities are not inconsequential, the actual number of labour days used for these activities is fairly low compared to male participation rates.

OFEA provides much needed cash income in the area. Per household income from OFEA within agriculture ranges from Rs 2,838 to Rs 13,458 per reporting household. Business and trade (small, retail) brings in Rs 2,301 to Rs 15,358 per reporting household, whereas for occupational activities the figures range from Rs 772 to Rs 7,112. Services bring in Rs 19712 per reporting household. Wages outside agriculture amount to Rs 2,833. Service and wage labour are the main sources of income for marginal households. Medium-scale and large-scale farmers derive most of their income from vegetable farming, nurseries, and small businesses and retail trade.

Vegetable growing in Naubise, which initially started in the late 1970s with the help of a Japanese volunteer, has, of late, emerged as a fairly important activity in the area. The government policy is to support this activity through extension and through the distribution of seeds. But actual support in the field leaves much to be desired. Timely delivery of inputs is a major problem and the farmers mostly have to turn to the market for supplies.

While farmyard manure is still the main nutrient, chemical fertilizers are also used in vegetable cultivation. Access to extension agents and services is more readily available to large-scale farmers. Institutional credit for vegetable farming accounts for almost all credit needs. But the repayment rate is quite low.

Vegetable storage for sales in the lean season is uncommon. Potatoes are stored, but are for consumption purposes. Bamboo crates (local material) or jute sacks are used for packing.

The transportation and marketing systems are rudimentary. It takes a great effort and a lot of stamina and time to transfer the produce to Kathmandu. The Government has erected a shade in Kalimati for sales by Dhading farmers but it hardly meets their specific needs. To strengthen the bargaining position of growers the Government supports the creation of informal marketing groups. These groups are promised transport facilities at subsidised rates by the Government but this has not materialised as yet. Vegetable farming has a number of linkages with other farming systems as well as ancillary industries. The linkages with the livestock sector, small tool and equipment manufacturers as repair workshops, transport sector, and the processing sector are clearly visible in the area.

The critical issues and options for vegetable farming in Naubise VDC can be classified into 4-5 main categories. First and foremost the government policy and support to this activity. While policies per se are supportive to vegetable cultivation, their effective implementation leaves much scope for improvement. The main problem is the unresponsive nature of the bureaucracy. Be it provision of transport and other infrastructural facilities or extension and marketing support, timeliness has never been one of the virtues of government operations.

Timely and adequate supplies of quality vegetables, seeds, chemical fertilizers, and agro-chemicals are crucial to the success of the endeavour. Soil quality testing could be done in a more systematic and regular manner in order to avoid environmental degradation. Private nurseries need to be encouraged.

The adequacy of credit and the high non-transaction costs of credit supply need to be looked into. The gradual introduction of crop insurance is also warranted. The present concentration of vegetable cultivation is in a few pocket areas; ways of promoting vegetable cultivation in the interior of the VDC should be looked into. An increase in the frequency of training programmes by Dhunibesi Horticultural Farm as well as an increase in the number of trainees could be one way of bringing about this dispersal.

OFF-FARM EMPLOYMENT IN THE NWFP

A CASE STUDY OF SHANGLA PAR/ALPURI SUB-DIVISION IN SWAT DISTRICT

Saiyeeda Zia Al-Jalaly
Mian M. Nazeer

Shangla Par/Alpuri sub-division is one of the three sub-divisions of Swat District. The area is mountainous with great diversity in topography and comes broadly under the influence of the monsoon with an average annual precipitation of around 1,000mm. Climate ranges depend upon altitude and are from temperate to alpine. The estimated population of the sub-division is 344,000. The growth rate of the population is high, around 3.2 per cent per annum. In the division as a whole, around 28 per cent of the area is cultivated and about 27 per cent of the area is under forests. Shangla Par has about one-fifth of the total forests of Swat District. Annual agricultural income makes up only about 37 per cent of the household expenditure. The rate of out-migration is therefore high. Forests are a major source of income as earnings from timber sales are distributed between the public and the State at a ratio of 60:40.

Rainfed cultivation is the norm for agricultural production. Seasonal migration during lean seasons is also considerable as the unemployment trend has remained on the rise. The literacy rate in rural Swat is around 7.6 per cent, in Shangla Par it is much lower, only around 5 per cent.

About 81 per cent of the Shangla Par population are dependent on agriculture, livestock, and forestry. The area suffers from the absence of basic infrastructure; physical, social, and economic. The principal physical infrastructural facility is a highway that passes through the area.

For an investigation of the off-farm employment situation and potentials in the Shangla Par area, 50 households were interviewed from the three villages of Alpuri, Shahpur, and Lilowani. Rapid rural appraisal techniques and key informants were also used to elicit the required information. The total population of the three villages is 22,000.

The three study villages reflect a picture of a classic agro-pastoral economy. They have no connection by road and have much less infrastructure than the rest of Shangla Par. In the study villages over 69 per cent of the area is under cultivation. Most of the cultivated land is on sloping areas. Maize and wheat are the principal crops. Petty trading, mostly on an exchange basis, takes place in the major settlements. The joint family system prevails and 60 per cent of the farmers own their own land. Electricity and water facilities are available in only about a quarter of the households.

The production structure of the households reveals the typical characteristics of a subsistence economy with very little marketable surplus. Productivity is low as irrigation facilities and use of improved inputs are minimal.

The main sources of cash income in the households come from (i) sale of agricultural crops, fruits, and vegetables; (ii) sale of livestock, poultry, and handicrafts; (iii) income from shopkeeping; and (iv) earnings from wage labour and government employment. The household survey reveals that only 15 per cent of households sell agricultural produce and only 4 per cent sell other commodities. Shopkeeping and small businesses are the major sources of cash earnings for 22 per cent of the respondents and the

service sector was identified as a source of cash earning by 32 per cent of the households. This sector includes wage labourers, domestic help, catering, and so on. About 42 per cent of the household heads have government jobs, mainly as clerks, school teachers, or other such employment.

Earnings in kind are an important form of earning in the surveyed households. For example, about 68 per cent of the respondents use agricultural produce for payment of services.

The major resources of Shangla Par are land, water, forests, and minerals. Nearly 70 per cent of the households have between 1-5 acres of land. Over 25 per cent of the land area in each village is under forests. The forests are communal property but protected and the people have the right to use the forests for grazing, collecting brushwood, firewood, and timber for domestic use, as well as the right to a share in the earnings from timber. Pastureland and grazing land are also common property.

Water and minerals are the other resources in the area that have not been optimally used. Prospects for irrigation and hydro-electricity generation are considerable. The known mineral reserves in the area are marble, soapstone, chromite, barite, lead, and zinc. At present, soapstone and marble are being extracted.

The factors that govern current land use include geographic location and terrain, absence of the supply of inputs, and lack of infrastructure. Given attempts to deal with these constraints through provision of access, input supply, and proper management, more of the hill slopes could be converted to forestry and horticultural use; they could also be used for dairy farming.

The trends in man-land relationships in the study area indicate that the incidence of landlessness has risen. Forty per cent of the respondents stated that their landholding position had declined in the current generation.

The major off-farm activities identified in the study area are formal sector employment (in government and related agencies), shopkeeping, wage labouring in agriculture and livestock-related activities, afforestation and forest-related activities (nursery, logging, transportation of timber), collection of medicinal herbs and mushrooms, livestock and poultry raising, mining, and cottage crafts.

In the study area, off-farm employment complements household income considerably. Forty-two per cent of the respondents have government jobs, 17 per cent are wage labourers, and the rest are self-employed in a variety of activities. The contribution of off-farm income to households by size of landholding shows that for households with less than 5 acres of land, wage labour and government jobs are the major sources of off-farm income. The contribution of off-farm income to households ranges from Rs 15,000 to Rs. 75,000, depending upon the size of landholding.

Off-farm activities in the study villages show a particular spatial pattern. While employment in formal institutions is more or less well distributed throughout all villages, mining takes place on the mountain slopes and shopkeeping and other self-employment as well as wage labour opportunities are found in the valleys.

A number of off-farm opportunities have potential in the area. These are identified as horticulture, cottage industries and handicrafts, dairy, beekeeping, fisheries, tourism, power generation, and forest-based industries.

The lack of major enterprises and infrastructure in the area has been largely determined by the development history of the area. The past history, government policies since 1969, geographical location, and low level of human resource development are the four factors contributing to the current state of off-

ICIMOD BOARD OF GOVERNORS

Regional Members

Bangladesh

Mr. Mahmudul Hassan (**Chairman**)
Chairman of Chittagong Hill Tracts
Development Board

Bhutan

Dasho (Dr.) Kinzang Dorji
Director General
Department of Agriculture
Royal Govt. of Bhutan

China

Prof. Liu Dongsheng
Institute of Geology
The Chinese Academy of Sciences

India

Mr. R. Rajamani
Secretary, GOI
Ministry of Environment and Forests

Myanmar

U. Soe Kyi
Director of Planning and Statistics Division
Forestry Dept, Myanmar

Nepal

Dr. I.P. Upadhyaya
Secretary
Ministry of Education and Culture

Pakistan

Mr. A.Q. Kazi
Joint Scientific Adviser
Ministry of Science and Technology

Independent Members

Mr. Remo Gautschi (**Vice Chairman**)
Vice Director
Swiss Development Cooperation (SDC)
Bern, Switzerland

Dr. Klasjan Beek
International Institute for Aerospace Survey
and Earth Sciences (ITC), Rector
Enschede, Netherlands

Dr. Harka Gurung
New Era Consultants
Kathmandu, Nepal

Dr. Li Wen Hua
Senior Training Advisor
FAO Regional Watershed Management
Project, Kathmandu, Nepal

Dr. A.N. Purohit
Director
G.B Pant Institute of Himalayan
Environment and Development
Almora, U.P. India

Prof. Winfried Von Urff
Institut für Agrarpolitik
Technische Universität München
8050 Freising, Germany

Director General, ICIMOD
Dr. E. F. Tacke (Ex-officio)

Founding of ICIMOD

The fundamental motivations for the founding of this first international centre for Integrated Mountain Development were widespread recognition of the alarming environmental degradation of mountain habitats and the consequent increasing impoverishment of mountain communities. A coordinated and systematic effort on an international scale was deemed essential to design and implement more effective development responses to promote the sustained well-being of mountain communities.

The establishment of the Centre is based upon an agreement between His Majesty's Government of Nepal and the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) signed in 1981. The Centre was inaugurated by the Prime Minister of Nepal in December, 1983, and began its professional activities in September, 1984.

The Centre, located in Kathmandu, the capital of the Kingdom of Nepal, enjoys the status of an autonomous international organisation.

Participating Countries of the Hindu Kush-Himalayan Region

- **Afghanistan**
- **Bhutan**
- **India**
- **Nepal**
- **Bangladesh**
- **China**
- **Myanmar**
- **Pakistan**

**INTERNATIONAL CENTRE FOR INTEGRATED
MOUNTAIN DEVELOPMENT (ICIMOD)**
4/80 Jawalakhel, G.P.O. Box 3226, Kathmandu, Nepal

Telex : 2439 ICIMOD NP
Telephone : 525313

Cable : ICIMOD, NEPAL
Fax : (977-1) 524509