

Chapter 3

Poverty in Mountain Areas of the Hindu Kush-Himalayan Region

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INTRODUCTION

Poverty is a multidimensional and complex concept. It encompasses aspects such as deprivation in wellbeing, lack of freedom and empowerment, exclusion, risk, and vulnerability (World Bank 2001; Henninger 1999; DFID 2000; Papola 2002b). It is a manifestation of lack of access to resources, information, technology, markets, social services such as education and health, employment opportunities, socioeconomic security, and decision-making processes. Because of their increasing population density and pressure on productive land resources, poor access to infrastructure and services, and fragile ecosystems, mountain areas generally show a higher incidence of poverty than the adjoining plains. The process of impoverishment has been accelerated due to increasing vulnerabilities, risks, and hazards associated with local as well as global processes like climate change and globalisation (Jodha 2001; ICIMOD 2001). However, the pace of impoverishment is not equal throughout the HKH region. Some areas have managed to reduce poverty through harnessing the comparative advantages of mountain ecosystems, while others have undergone further declines in living standards. It is pertinent to address questions regarding the present status of poverty in different areas of the HKH region, how poverty has changed over time, and what lessons have been learned so far.

This paper attempts to highlight the present status of poverty and its process in the HKH region. It is organised into five sections. The first section presents an overview of the HKH region, the second presents the status of poverty,

and the third highlights some issues of the poverty process. The fourth section reviews major policy and programme initiatives for poverty alleviation in the region, and the last highlights issues that need to be addressed in efforts to alleviate poverty and ensure improved livelihoods for mountain people.

THE HINDU KUSH-HIMALAYAN REGION

Rugged topography

The Hindu Kush-Himalayan region extends from Afghanistan in the west to Myanmar in the east (Figure 1). It consists of four distinct mountain systems. These include the Hindu Kush Mountains in the west, the Karakoram in the north-west, the Himalayas in the east, and the Hengduan mountains, linked with other important mountain ranges such as the Kunlun range, in the north-east. There are other smaller ranges such as the Salt, the Suleiman, the Bugh, the Kirthar, and the Mekran in the west; and the Assam, the Manipur, the Chittagong Hill Tracts, the Arakan Yomas, the Regu Yoma, and the Tenassram Yoma in the east.

The topography is extremely rugged. The highest peak in the Hindu Kush is Tirich Mir (7690m). The eastern Hindu Kush is a cold desert highland without vegetation. The Karakoram range forms the divide between drainage into the Indian Ocean and into the deserts of Central Asia. There are more than 33 peaks exceeding 7325m, and K-2/Godwin-Austin (8611m) is the second-highest peak in the world. These mountains are heavily glaciated. Much of the area is wild and rugged. The area is linked by the 753 km Karakoram Highway.

The Himalayas are the highest mountain chain of all and they extend from the Indus River in the west to the Brahmaputra River in the east. There are 31 peaks exceeding 7600m. The extreme elevation and rugged topography are the result of rapid mountain-building forces and very high erosion processes. The Himalayas are a series of east-west mountain ranges. These include the Siwalik in the south, the Lesser Himalaya in the middle, and the Great Himalaya in the north. The Himalayas are also classified into three sections from west to the east. These include the Western Himalayas (Jammu and Kashmir, Himachal Pradesh, and Uttarakhand), the Central Himalayas (Nepal), and the Eastern Himalayas (Sikkim, Bhutan, and Assam). The climate of the Western Himalayas is influenced by westerly cyclones and is markedly dry, whereas the Central and Eastern Himalayas are influenced by the monsoon. Of the world's 14 peaks exceeding 8000m, eight are in the Central or Nepal Himalayas (Gurung 1999).

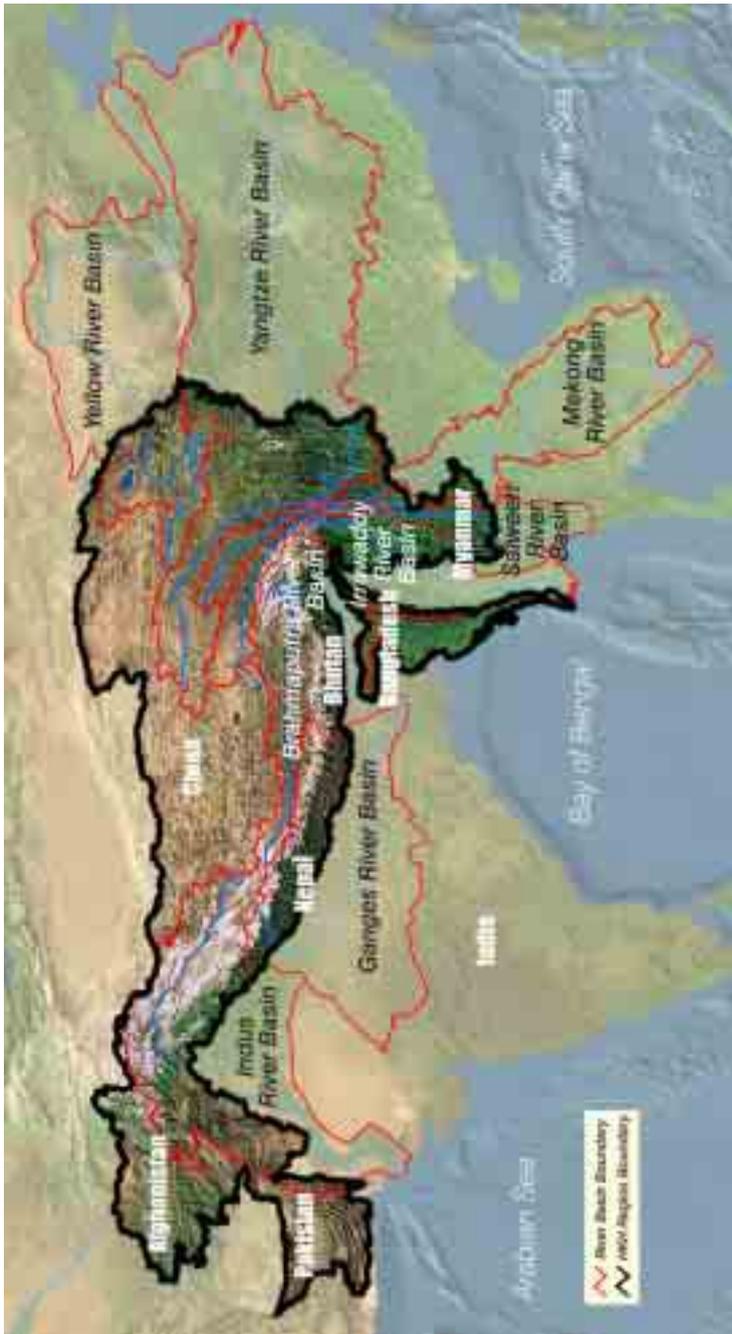


Figure 1: The Hindu Kush-Himalayan Region

The great Arakan range extends along the Indo-Myanmar border. The ridges rarely exceed 2000m. The Quinghai-Xixang (Tibet) Plateau, the Hengduan mountain range, and other mountain ranges such as the Kunlun lie in China.

Six of the major rivers of Asia—the Indus, the Ganges, the Brahmaputra, the Mekong, the Yangtze, and the Yellow—originate from the Hindu Kush-Himalayas. These rivers are part of a vast life-supporting system, but occasionally they also cause substantial loss of life and property by flooding. The HKH region has a very large number of glaciers and glacial lakes. These glaciers are retreating rapidly due to global warming, increasing the risk of both glacial lake outburst floods and regional shortages of fresh water.

Diverse settlement patterns – isolation and remoteness

Although data regarding detailed settlement patterns are scarce, the gross population density varies considerably across the eight member countries (Annex I). The sparsely inhabited Tibetan Plateau can be contrasted to the higher densities of population in the middle mountains of the southern Himalayas, although there are considerable variations among the southern, eastern, and western Himalayas themselves. The general pattern of settlement may be described simply as dispersed and remote, which makes it very hard to provide physical and socioeconomic access to markets and service delivery systems. Dispersed and remote settlements also mean that many settlements are isolated from mainstream development processes and are therefore exposed to greater physical, social, and economic vulnerabilities.

Development issues and prospects

Traditional subsistence systems and unsustainability

Most of the economic activities are based on natural resources. Population growth is consistently high in the mountain areas of the HKH region. Several different farming systems have been observed among these mountains. Specialised pastoralism is common in high mountain areas and the trans-Himalayan region that includes Tibet; mixed agropastoralism dominates in the high hills; and cereal-based hill farming in the middle hills and valleys below 2500m. Shifting cultivation is common in the eastern parts of the HKH region (Chand 2000). Most of the economic activities are subsistence oriented. There is not enough to meet increasing demand for cash income for basic services such as education and health, although changes have been observed in many areas. Some changes in the patterns of use of natural resources and the environment have been noticed. In

some cases crop productivity has increased. An analysis of time-series data of mountain regions in Bhutan, China, India, Nepal, and Pakistan shows an increasing trend in crop diversification towards horticultural and cash crops. Most of these diversified activities are taken up on marginal lands. The livestock population in general has been declining in the region. However, the number of stall-fed buffaloes and goats is rising with the increased use of external inputs and purchased feed as well as marketing of their products. In the Himalayan subtropics there is room for greater development of dairies with improved buffaloes (Tulachan 2001). Development of urban areas (market towns), tourism, hydropower, transportation network, growing extent of external linkages, and growth in institutions are other changes taking place in the HKH region.

Degradation of natural resources

Degradation of mountain natural resources—land, forest, pastures, and water—is one of the negative changes in the region. As a consequence, productivity has declined. In turn increasing labour shortages due to out-migration of a large proportion of the economically active male population, landlessness, food deficit, indebtedness, and an increasing burden on women are some of the other changes observed (Banskota 2000). Fallow cycles of shifting cultivation systems have been drastically reduced, resulting in serious declines in soil fertility (Shelley 2000). Similarly, the environmental risks of construction activities that are not properly planned to suit mountain areas are increasing. Some areas have been facing serious problems of unrest and insurgency, largely due to the growing disparity of incomes.

Potentials and opportunities

The experiences from this region show that the development potentials of agriculture, horticulture, livestock, hydroelectricity, and tourism activities are very high and related to improvement in basic infrastructure and communication, urbanisation, entrepreneurship development, and building human resource capacities. These mountain areas are characterised by great agroecological diversity, resulting in substantial comparative advantages in various products and services like horticulture, herbs and spices, medicinal plants, forestry and livestock systems, and tourism.

POVERTY SITUATION

Poverty in the mountains: concepts and controversies in measurement

Poverty is a complex and highly debated issue (Reardon and Vosti 1995; Rhoades 1997; Banskota 2000; Papola 2002b). Mountain people may be poor in terms of capital, but they are rich in other aspects such as

natural resources and cultural knowledge about resources and their management. They also possess specialised knowledge and technologies as well as social institutions and strategies for dealing with mountain problems. Thus conventional indicators are misleading, particularly those based on economists' 'welfare concepts'. It has been well argued elsewhere that 'welfare concepts' and the poverty indicators based on them do not account for the range and complexity of mountain communities' assets indicated above (Pitt 1986; Ives and Messerli 1984 and 1989; Rhoades 1997; Papola 2002b).

Different approaches have been developed and used so far—for example minimum standard of wellbeing, food security, vulnerability of sustainable livelihoods (UNDP 1997; DFID 2000; WFP 2001; Papola 2002b). Economic indicators like income, consumption and production are often used to assess poverty, but it is debatable whether the commonly defined poverty line is appropriate for assessing poverty in mountain areas where high variations in requirements for minimum energy and caloric intake exist (Papola 2002b). Moreover, complete information on poverty disaggregated for mountain areas is not available. Within these limitations, we will attempt here to assess the level of poverty based on Gross Domestic Products at national level among the HKH countries and the percentage of population below the poverty line in some of the mountain areas.

Economic background

The economic achievement of many HKH countries is very poor, and the per capita GDP in these countries in 1998 ranged from US\$ 197 in Nepal to a maximum of US\$ 777 in China (Annex II). Nepal, Bhutan, Myanmar, and Bangladesh all have per capita GDPs of less than US\$ 300. Afghanistan, Pakistan, and India have per capita GDPs between \$422 and \$523. Per capita GDP and GNP measured at PPP is comparatively low in countries that are landlocked and have high proportions of highly rugged mountain terrain, (Afghanistan, Bhutan, and Nepal) or are smaller in area (Nepal, Bhutan, Myanmar, and Bangladesh). Annual variation in growth rate is evident in most of the countries in the region (Annex III). Such variation in the growth rate could well indicate that the economic performance in these countries is highly influenced by internal and external shocks both natural and manmade.

Poverty statistics—an incomplete picture

The data currently available on the percentage of population below poverty line at the national level, for rural and mountain areas, are presented in Table 1. These data were generated with different objectives using different approaches, which limits their usefulness, but they still provide a basis

from which to discuss poverty processes in the mountain areas of the HKH region.

Data on the ratio of population below poverty line are not available for HKH member countries like Afghanistan, Bhutan, and Myanmar. Among the other countries, the ratio of poverty ranges from 42% in Nepal to 36% in Bangladesh, 36% in India, 31% in Pakistan, and 4.6% in China. The level of poverty in rural areas is higher than the national average. In general the level of poverty is higher in mountain areas than the national average, though some areas show less than the national average. Significant spatial variation is found in the mountain areas within different countries. The mountain areas of Nepal have a comparatively higher rate of poverty (56-62% in the mountains and 41-50% in the hills) than in the mountain areas of other member countries. The corresponding rate is 8-48% in India, 23-36% in Pakistan, and 7-19% in China. In India some mountain states, such as Himachal and Jammu & Kashmir in the west and Manipur and Mizoram in the east, have ratios lower than the national average. Similarly, Gilgit in Pakistan also has a lower ratio than the national average.

Rural poverty in China declined from about 24% in 1979 to 4.6% in 1998. In Bangladesh, it declined from 46% in 1991-92 to 40% in 1995-96. In India, it declined from 44 to 37% between 1992 and 1994. Nepal is in a very precarious position. Rural poverty increased from 37% in 1976-77 to 47% in 1996, though there was a slight decline to 44% in 1997.

The poverty ratio in the Qinghai-Tibet Plateau declined from 30% in 1979 to 19% in 1995 (Ruizhen 2000). Similarly, in the south-western mountain provinces, it declined reduced from 21% in the 1980s to 11% in the 1990s. In rural Sichuan, it declined from 20 to 7% during this period (Papola 2002a). In Himachal Pradesh, India, it declined from 35% in the 1980s to 8% in 2000 (Papola 2002a). In Pakistan, the poverty ratio declined from 42 to 23% in Gilgit, 61 to 33% in Balochistan, and 43 to 36% in Chitral between 1991 and 1997. Such a reduction in poverty ratios in mountain areas is mainly due to diversification in economic activities.

The experience of Nepal is quite discouraging. The poverty ratio increased in the mountain areas from 44% in 1984-85 to 62% in 1995-96 (Table 1). It remained constant in the hills during this period. The 1997 data show a decline in both the mountain and hill regions, but it is still very high compared to the ratio of the mountain areas in other countries in the

Table 1: Percentage of population below the poverty line in the HKH region

Country/Source	Percentage of population		Mountain Areas
	National	Rural	
Afghanistan	NA	NA	NA
Bangladesh			
1991-92 (World Bank 2001)	42.7	46.0	
1995-96 (World Bank 2001)	35.6	39.8	
Bhutan	NA	NA	NA
China			
1979 (Ruizhen 2000)		24.4	
1980s (Papola 2002a)			Qinghai-Tibet Plateau (30.0%)
1990s (Papola 2002a)	6		South-western mountain provinces (20.5%), rural Sichuan (20%)
1995 (Ruizhen 2000)	14		South-western mountain provinces (10.5%), rural Sichuan (7%)
1996 (World Bank 2001)	6.0	7.9	Qinghai-Tibet Plateau (19.2%)
1998 (World Bank 2001)	4.6	4.6	
India			
1980s (Papola 2002a)			Himachal Pradesh (35%)
1992 (World Bank 2001)	40.9	43.5	
1994 (World Bank 2001)	35.0	36.7	
1993-94 (Joshi 2000)	36.0		Arunachal (39.4%), Himachal (28.4%), Jammu & Kashmir (25.2%), Manipur (33.8%), Meghalaya and Nagaland (37.9%), Mizoram (25.7%), Tripura (39.0%), Sikkim (41.4)
1993 (Papola 2002b)			Arunachal (40%), Meghalaya (38%), Nagaland (48%), Sikkim (41%), Himachal (39%)
2000 (Papola 2002a)	36		Himachal Pradesh (8%)
Myanmar	NA	NA	NA
Nepal			
1976-77 (NPC 1992)	36.2	37.2	
1984-85 (World Bank 1999)	41.4		Mountain (44.1%), Hill (50.0%)
1984-85(NRB 1985)	42.6	43.1	
1992(NPC 1992)	49.2		
1995-96 (World Bank 2001)	44.6		Mountain (62.4%), Hill (50.0%)
1996 (CBS 1996)	45.0	47.0	
1997 (NPC 1998)	42.0	44.0	Mountain (56.0%), Hill (41.4%)
Pakistan			
1991 (World Bank 2001)	34.0	36.9	
1991 (Zia 2000)			Gilgit (42.0%), Balochistan (61.0%), Chitral (43.0%)
1997 (Zia 2000)			Gilgit (23.0%), Balochistan (33.0%), Chitral (36.0%)

Source: NPC 1992, 1998; Upadhyaya 2000; World Bank 1999, 2001; Joshi 2000; Zia 2000; Ruizhen, 2000; Papola, 2002a, 2002b.

region. Though quite a few accessible mountain areas, linked with major market towns such as Ilam, have been experiencing diversification in economic activities and improvement in livelihoods in recent years, the majority of the people in the mountain areas are impoverished. Larger parts of the mountain areas in Nepal have been experiencing high rates of population growth, rapid degradation of natural resources, poor infrastructure and service facilities, and increasing risk of natural as well as human-induced hazards. Efforts at poverty alleviation have had little success. Mitigation and management of risks of natural hazards, development of mountain infrastructure, and promotion of relevant technologies and market facilities are often neglected, while attempting poverty alleviation in the country. Being landlocked, small in size with a large proportion of inaccessible rugged terrain, Nepal has less opportunity to benefit from the complementarities that exist between highland and lowland areas. The highland areas in countries with larger lowland areas and more fiscal space have benefited from increased demand for goods and services in lowland areas and have performed better in economic growth and poverty alleviation (Parvez and Rasmussen 2002).

Poverty mapping—the need of the hour

The poverty situation, although well understood as serious in mountain areas, has not been assessed in a scientific and systematic manner. A continuous monitoring of poverty and related dynamics will help us understand the poverty phenomena of the HKH region. Thus ‘poverty mapping’ becomes an essential part of the learning process that can lead to better strategies for poverty alleviation in the HKH region.

Given the lack of continuous time series/spatial data, descriptions of the poverty process in the HKH can only be impressionistic and general at present. However, even so, it is important to go through the exercise so that we may also be able to evolve a strategy for mapping poverty and its dynamics in the HKH region and ultimately to evolve mountain development strategies for the region. It is well understood that data gaps can be compensated for through the application of modern remote sensing and GIS methods (Rhoades 1997; Papola 2002b).

POVERTY PROCESSES

In describing poverty processes in the HKH region, it is useful to revisit the mountain specificities described by Jodha (1992). As described in ‘The Poverty of Development Economics’, the theories of development have not evolved to a point where one can claim to fully understand the poverty process and hope to counter it effectively (Lal 2000). Given the lack of a

good and acceptable general theory of poverty and development, one may be forced to be simplistic. In this context, the 'mountain perspective' evolved at ICIMOD looks at the mountain specificities—inaccessibility, fragility, marginality, diversity, and niche—and their imperatives influencing the poverty process in mountain areas (Jodha 1994). These are described below.

High energy, dynamics, and fragility

Mountain areas in the HKH region are very dynamic and fragile. Vulnerability caused by the fragile environment is accentuated by fragmentation of available resources. Because of the land's high energy dynamics (gravitational potential is high due to elevation and rugged topography), mountain areas are susceptible to natural hazards such as erosion, landslides, debris flow, and glacial lake outburst floods that cause loss of life, physical assets, and production base (Khanal 1996; Mool et al. 2001a, 2001b; ICIMOD 2001). Since the poor are exposed to the marginal areas prone to such hazards and they are less capable of coping with, resisting, and recovering from the impact of such hazards, their livelihoods are further impoverished (ICIMOD 2002). The capability for production and regeneration of mountain slopes is much lower than that of lowland areas due to their poor soils and low temperature. So intensification of land use leads to the degradation of the natural resource base, affecting productivity. The use of modern technology to enhance productivity is limited. It also requires more energy and resources to rehabilitate such degraded land. The usable resources are highly fragmented both in space and at household level. As a result, mountain areas have limited advantages for economies of scale, and these are very important for any market economy. Because of the rugged topography and low temperature, mountain people require more energy and resources for their survival and livelihood such as food, clothing, and shelter. Long hours of work, drudgery, and physical strain are some of the other dimensions of poverty in mountain areas (Papola 2002b).

Declining access to natural resources

Though the gross population densities in the mountain areas of the HKH region are low, population density per unit of productive cultivated land is very high. Many areas in this region have been experiencing a steady rise in population growth rates since the 1950s (Sharma and Partap 1994). Most mountain households depend on farming. Their farm size is either very small or marginal with low production potential. The per capita availability of cultivated land has been declining. In the absence of easy access to markets, extension of agricultural land into marginal areas is the only option for increasing food security. Such intensification has led to

the degradation of the forest and pastoral resources and further accentuated food insecurity. Labour is not used productively, and there are high incidences of unemployment, underemployment, and disguised unemployment. There is also growing evidence of deforestation in some areas—erosion processes have accelerated and the recharge of aquifers is diminishing—with the result that soil productivity has declined and the water stress is enhanced during dry seasons. Increasing scarcity of water for household use in the hills has also led to increased out-migration of farm households from mountain slopes with low population density to valleys with high population density. As a result, resources available in the mountain slopes are left idle (Khanal 2001). At the same time, the productive land in the valleys has been increasingly used for purposes other than agriculture. Such changes in land use have accentuated the problem of food insecurity in mountain areas. Out-migration has remained one of the most important strategies of mountain people for coping with the problems caused by the lack of productive employment opportunities in their home areas. Though remittances from these migrants have helped to increase the level of income, many areas are facing shortages of agricultural labour, which has led to less intensive use and abandonment of agricultural land, particularly among the large and medium farm households, thus affecting food security at community level (Khanal 2002).

Poor infrastructure and service facilities

Development of infrastructure, such as roads, schools, health posts, etc., is very costly in mountain areas. So the density of such infrastructure is less in mountain areas than in lowland areas. Moreover, the quality of service delivery in remote areas is very poor. The roads are frequently damaged and blocked due to landslides, debris flows in almost all the mountain areas, and heavy snow at higher altitudes. It is difficult to carry out rescue and rehabilitation activities during and after disasters in remote areas. All these processes have been leading to the insecurity and vulnerability of mountain people and their livelihoods.

Poor access to information, technology, inputs, and markets

Since large parts of mountain areas are not easily accessible, the flow of information about technology, inputs, and markets is limited. Moreover, the capital base of mountain people is poor and access to credit is also limited. Transportation of goods and services is very costly in mountain areas. As a result, mountain people benefit less from modern technology, inputs, and markets. Mountain people have to pay high prices for imported goods and sell their produce at cheaper prices. Many income-generating activities so far developed in mountain areas are extractive in nature and

local retention is much smaller (Papola 2002b). Such inequality of exchange of goods and services between highland–lowland areas has further accentuated the process of poverty in mountain areas.

Social and political exclusion

The participation of people living in remote mountain areas in the mainstream of development is poor. Often most people are socially excluded because of their tribal origin. They find themselves marginalised and develop a sense of exclusion and deprivation. They are less organised and their voice is weak (Papola 2002b).

Feminisation of poverty

Poverty in mountain areas also has a gender dimension. The brunt of poverty falls more sharply upon women and children, especially girls (Kievelitz et al. 1998; Papola 2002b). If consumption is taken as the indicator of poverty, women receive substantially less of the intra-household distribution of consumable items. If land holding is taken as an indicator of poverty, women are the poorest of the poor. Women who have land entitlements are generally widows, and they are also the *de jure* heads of the household. The incidence of poverty is higher in female-headed-households than in male-headed households. The trend of feminisation of agriculture is also increasing. A vast majority of these women toil as unpaid labourers on very small pieces of land with below subsistence productivity. Similarly, a great proportion of rural women suffer from chronic energy deficiency (RAP 1999). There are large gender gaps in education, health, and access to and control over income.

Weak institutions

Traditional institutions developed in the context of subsistence economies and isolated societies and are inadequate in the new context of globalisation (Jodha 2001). On the other hand, the new institutions created by government and non-government organisations have been only partially successful. Most of these institutions have not been built upon local traditional, institutional, and cultural bases.

High spatial diversity

The biophysical condition of mountain areas is very diverse, and the production potential differs significantly from one area to another. The potentials of remote areas are not assessed properly, and these areas are often neglected by efforts to achieve mainstream development. As a result, the areas are further marginalised and the quality of life of many people living in these areas is deteriorating.

MAJOR POLICY AND PROGRAMME INITIATIVES

Policies and programmes with different strategies and approaches have been initiated to address the increasing poverty in the region. A brief description of the approaches and interventions tried by the governments of different countries is given below.

Access to natural and physical assets

Many countries in the region introduced land reform programmes in the 1950s to address the problem of skewed distribution of cultivable land. China introduced a land reform programme in 1949 (Tao 1992). India introduced one immediately after its independence (Sharan 1992). Similarly, Nepal introduced such a programme in the 1960s. The programme in China helped to improve the condition of landless and marginalised farmers but did not sustain itself for long (Ruizhen 2000). The achievement in distributing land to landless and marginal farmers remained negligible in Nepal also. Resettlement is another programme initiative adopted to reduce poverty. The upland settlement programme in Bangladesh, resettlement programmes in Bhutan and Nepal, and poverty-reduction-through-voluntary-resettlement schemes in China are some examples (Shelley 2000; Lhamu et al. 2000). The resettlement programmes in China that were well integrated with infrastructural development, such as irrigation and transportation, to enhance local production have been very effective in reducing poverty (cited in Banskota 2002).

Improvement of infrastructure

Development policies in the HKH countries have emphasised inaccessibility as a major cause of underdevelopment and poverty in mountain areas and initiated programmes accordingly. The development of physical infrastructure, e.g., road networks, provides opportunities to diversify economic activities and has been instrumental in reducing poverty in some areas like Darjeeling and Himachal Pradesh in India and Ilam in Nepal (Sharma 1997; Papola 2002b). However, experiences from other parts of the HKH region show that merely improving transportation services is not sufficient for development; complementary development activities based on the comparative advantages of mountain areas are also required. Expansion of road networks must be planned to minimise the environmental hazards induced by road construction on mountain slopes. It may not be possible in the foreseeable future to provide roads to all mountain communities and, therefore, more recently, alternative experiments and approaches to provide physical access (e.g., ropeways and bridges) have been considered for very remote areas (e.g., gravity ropeways in Himachal, see Papola 2002b).

Improving productivity and food security

Realising the problem of inaccessibility and the resulting high cost of transportation, policy emphasis in the past was given to increasing production of cereals (Sharma and Partap 1994). People have been encouraged to increase production through intensification of agricultural activities over larger areas. Emphasis has been given to input-intensive agricultural technologies developed in the plains. However, these technologies often do not enhance productivity in mountain areas, and people have extended cropping to more marginal land to meet the increasing demand for food. This process has created a serious problem of land degradation and other environmental hazards and risks. However, the emphasis in recent years has been towards diversification of land uses based on the production potential of mountain areas. Reorganisation of production based on comparative advantages of different areas in China has been instrumental in reducing poverty through diversification of economic activities (Liu et al. 1994). Similarly, the horticultural development strategy of Himachal Pradesh in India has been effective in reducing poverty (see Chapter 15 by Partap and Sharma in this volume).

Access to credit and employment

Almost every country in the HKH has targeted credit and employment programmes. Many of these programmes tend to promote off-land activities. The Small Farmers' Development Programme (SFDP), Intensive Banking Programme (IBP), Production Credit for Rural Women (PCRW), Micro-credit Project for Women (MCPW), and Rural Self-Reliance Fund (RSRF) are some of the credit programmes in Nepal (Upadhyaya 2000). In Pakistan credit at low interest rates is provided through programmes such as the Small Industries' Development Board and Pakistan Industrial Credit and Investment Co-operation. Similar low interest credit programmes exist in other countries. There are some targeted employment generation programmes. National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) under the Integrated Rural Development Programme in India are examples of such programmes (Sharan 1992). There are also direct employment creation programmes like Food for Work in countries like Pakistan, India, and Nepal. However, many of these programmes have had limited coverage and are inadequate to address the mass poverty in many areas of the HKH region.

Human development

Policy programmes in all HKH countries have emphasised development of human resources. Other than regular vocational training, several programme-related training courses are provided. However, many of these

training programmes are general, and the local needs and opportunities of mountain areas are often neglected.

Social mobilisation

The importance of mobilisation of intended participants and beneficiaries of poverty alleviation programmes has recently been understood. The South Asian Poverty Alleviation Programme (SAPAP, UNDP) has been implementing social mobilisation programmes towards poverty alleviation in Bangladesh, India, Nepal, and Pakistan since 1994 (SAARC Secretariat 2002; UNDP 2000). The SAPAP has focused on grass roots' social mobilisation of the poor through social mobilisers or animators. Under this programme, efforts were made to promote broad-based, labour-absorbing growth; participation of the poor in economic activities through grass roots' empowerment measures; and a mechanism for dealing with vulnerabilities due to shifts in market conditions or natural calamities. It has had three programme components—grass roots' social mobilisation for building up institutions of the poor, supportive policy frameworks, and strong macro- and micro-level monitoring systems. The experience of this programme shows that community organisations are able to plan and manage the project and sustain the achievement. The micro-credit operation has had tremendous impact on income poverty. In areas where a holistic approach was followed, the programme has been fairly successful in involving people of all castes, religions, and classes into group activities. The inclusion of all sections in the programme's activities leads to a reduction in social conflicts. Many NGOs have been implementing poverty reduction programmes through social mobilisation in this region. Self-Reliant Development of the Poor by Poor (Integrated Development Systems; IDS) and Community Development through Social Mobilisation of Support Activities for Poor Producers; SAPPROS) in Nepal, and the Integrated Rural Development Programme (Agha Khan Rural Support Programme — AKRSP) in Pakistan are some of the programmes that have reduced poverty in different areas. However, the coverage of such programmes is limited (Upadhyaya 1998; Upadhyaya 2000; Zia 2000).

Other approaches

China has adopted an area-based approach through analysing the comparative advantage of an area, emphasising infrastructural development, strong technical support, and financial aid to manage and mitigate the mountain risks. The sustainable livelihood approach at community level, involving NGOs in natural resource management, has been adopted in Pakistan. Nepal has adopted a mixed approach. Self-reliance, social mobilisation, and strong support services, including R&D,

are important factors responsible for wide diversification of economic activities and reduction in poverty in Himachal Pradesh.

CONCLUDING REMARKS

There are many opportunities and constraints for poverty alleviation in the HKH region. Mountains in this region are very dynamic and hence they are more sensitive even to small-scale change. More energy and resources are required to rehabilitate the region's resources once they are degraded. Furthermore, more energy and resources are required for mountain people to sustain their livelihoods than for people in lowland areas. Yet these mountain areas have comparative advantages. Any effort to alleviate poverty through exploiting mountain resources should have a strong component of natural resource management, including activities for rehabilitation and regeneration. A significant proportion of land in these areas is still cultivable waste, fallow and abandoned. There is appreciable complementarity among different ecozones and regions. Efforts should be made to optimise the benefit of it. Effective watershed management and strong regional co-operation are necessary. Since the risks and vulnerabilities in these mountain areas are increasing, efforts should be made to devise and implement effective mitigation and management measures. More research is needed in these areas. The growth of cereal crops in most of these mountain areas is stagnant. Agriculture and economic activities should be diversified to reduce poverty. Improvement in access to markets, information, and technology is crucial for diversification of economic activities, as is development of entrepreneurship. Collective entrepreneurship is important in the context of highly fragmented resources and limited economies of scale in mountain areas. Human resource development and empowerment of the poor are important aspects of poverty reduction. Good governance and social mobilisation are essential activities in this regard. In addition to these, stability and security are two basic elements for economic growth and poverty reduction.

Any poverty reduction effort should recognise the specificities of mountain areas. This implies adequate understanding of the opportunities and constraints in mountain areas, and developing effective, integrated programmes. A holistic approach with active participation of local communities is necessary. There is a need for collective institutions to overcome the fragmentation of resources in mountain areas and to enhance the bargaining power of the mountain people in rapidly changing markets. Since mountain poverty has a strong spatial dimension, an area-based approach is also necessary. Mapping of poverty could provide a basis to develop area-based poverty reduction programmes. Spatial analytical tools such as GIS could be very useful for mapping and assessing resources

and poverty. It is also necessary to develop institutional mechanisms for rational and equitable sharing of the costs of conservation of mountain areas and the benefits of environmental services offered to lowland areas at both national and global levels.

BIBLIOGRAPHY

- Banskota, M. (2000) 'The Hindu Kush-Himalayas: Searching for Viable Socioeconomic and Environmental Options' In Banskota, M.; Papola, T.S.; Richter, J. (eds.) *Growth, Poverty Alleviation, and Sustainable Resource Management in the Mountain Areas of South Asia*, pp 57-106. Kathmandu: ICIMOD and Deutsche Stiftung fur Internationale Entwicklung, Zentralstelle fur Ernährung and Landwirtschaft
- Banskota, M. (2003) 'Poverty and Inequality in Mountain Areas'. In *Asia High Summit 2002*, CD-ROM. Kathmandu:ICIMOD
- CBS (1996) *The Nepal Living Standard Survey Report*. Kathmandu: Central Bureau of Statistics
- Chand, R. (2000) 'Agricultural Development, Growth and Poverty in India's Mountain Region' In Banskota, M.; Papola, T.S.; Richter, J. (eds) *Growth, Poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia*, pp 275-292. Kathmandu: ICIMOD and Deutsche Stiftung fur Internationale Entwicklung, Zentralstelle fur Ernährung and Landwirtschaft
- DFID (2000) *Sustainable Livelihoods Guidance Sheets*. London: Department for International Development
- Gurung, H. (1999) *Mountains of Asia: A Regional Inventory*. Kathmandu: ICIMOD
- Henninger, N. (1999) *Mapping and Geographical Analyses of Human Welfare and Poverty: Review and Assessment*. Washington D.C.: World Resource Institute
- ICIMOD (2001) 'Mountain Risks and Hazards', *ICIMOD Newsletter*. No 40. Kathmandu: ICIMOD
- ICIMOD (2002) 'Participatory Disaster Management Programme (Nep 99/014)', *Community Risk and Vulnerability Assessment: Examples of Eight Village Development Committee Areas (Internal Report)*
- Ives, J.D.; Messerli, M. (1984) 'Stability and Instability of Mountain Ecosystems: Lessons Learned and Recommendations for the Future' In *Mountain Research and Development*, 4(1): 63-71.
- Ives, J.D.; Messerli, M. (1989) *The Himalayan Dilemma: Reconciling Development and Conservation*. London: Routledge

- Jodha, N.S. (1992) 'Mountain Perspective and Sustainability: A Framework for Development Strategies' In Jodha, N.S.; Banskota, M.; Partap, T. (eds) *Sustainable Mountain Agriculture: Perspectives and Issues*, Volume 1, pp 41-82. New Delhi: Oxford & IBH Publishing Co. Pvt. Ltd.
- Jodha, N.S. (1994) 'Perspectives on Poverty Generating Processes in Mountain Areas' In Banskota, M.; Sharma, P. (eds) *Development of Poor Mountain Areas*. pp 38-45. Kathmandu: ICIMOD
- Jodha, N.S. (2001) 'Interacting Processes of Environmental and Social Vulnerabilities in Mountain Areas', *Issues in Mountain Development 2001/2*. Kathmandu: ICIMOD
- Joshi, B.K. (2000) 'Development Experience in the Himalayan Mountain Region of India' In Banskota, M.; Papola, T.S.; Richter, J. (eds) *Growth, Poverty Alleviation, and Sustainable Resource Management in the Mountain Areas of South Asia*. pp 171-194. Kathmandu: ICIMOD and Deutsche Stiftung fur Internationale Entwicklung, Zentralstelle fur Ernährung und Landwirtschaft
- Khanal, N.R. (1996) Assessment of Natural Hazards in Nepal. Unpublished Report Submitted to Research Division, Tribhuvan University, Kirtipur, Kathmandu, Nepal
- Khanal, N.R. (2001) 'Population and Land Use/Land Cover Change in the Himalayas: A Case Study of the Madi Watershed, Central Nepal'. In Watanabe, T; Sicroff, S.; Khanal, N.R.; Gautam, M. P. (eds) *Proceedings of the International Symposium on the Himalayan Environment: Mountain Sciences and Ecotourism/Biodiversity 24-26 November 2000*, pp 213-229. Kathmandu: Hokkaido University and Tribhuvan University
- Khanal, N.R. (2002) *Land Use and Land Cover Dynamics in the Himalaya: A Case Study of the Madi Watershed, Western Development Region, Nepal*. Unpublished Ph.D. dissertation, Tribhuvan University, Nepal
- Kievelitz, U.; Ojha, D.P.; Sharma, S. (1998) *The Nepalese Poverty Alleviation Issues and the GTZ Strategy*. Kathmandu: GTZ
- Lal, D. (2000) *The Poverty of Development Economics*. New York: Oxford University Press
- Lhamu, C.; Rhodes, J.J.; Rai, D.B. (2000) 'Integrating Economy and Environment: The Development Experience of Bhutan' In Banskota, M., Papola, T.S., and Richter, J. (eds) *Growth, Poverty Alleviation, and Sustainable Resource Management in the Mountain Areas of South Asia*, pp 137-170. Kathmandu: ICIMOD and Deutsche Stiftung fur Internationale Entwicklung, Zentralstelle fur Ernährung und Landwirtschaft

- Liu Yanhua; Tang Ya; Wei Taichang; Gu Xianyou (1994) 'From Poverty to Sustainable Development—A Case Study of Ningman County, Sichuan, China'. In Banskota, M. and Sharma, P. (eds) *Development of Poor Mountain Areas*. pp 285-299. Kathmandu: ICIMOD
- Mool, P.K; Bajracharya, S.R.; Joshi, S.P. (2001a) *Inventory of Glaciers, Glacial Lakes, and Glacial Lake Outburst Floods: Monitoring and Early Warning Systems in the Hindu Kush-Himalayan Region, Nepal*. Kathmandu: ICIMOD
- Mool, P.K.; Wagda, D; Bajracharya, S.R.; Kunzang, K.; Gurung, D.R.; Joshi, S.P. (2001b) *Inventory of Glaciers, Glacial Lakes and Glacial Lake Outburst Floods: Monitoring and Early Warning Systems in the Hindu Kush-Himalayan Region, Bhutan*. Kathmandu: ICIMOD
- NPC (1992) *Eighth Plan Document (1992-97)*. Kathmandu: National Planning Commission, HMG/Nepal
- NPC (1998) *Approach to the Ninth Plan*. Kathmandu: National Planning Commission, HMG/Nepal
- NRB (1985) *Multipurpose Household Budget Survey*. Kathmandu: Nepal Rastra Bank
- NYDESA (1999) *Statistical Yearbook 1998' Table 18*. New York: Department of Economic and Social Affairs, Statistics Division
- Papola, T.S. (2002a) 'Poverty and Inequality in Mountain Areas'. In *Asia High Summit 2002*, CD-ROM. Kathmandu: ICIMOD
- Papola, T.S. (2002b) *Poverty in Mountain Areas of the Hindu Kush-Himalayas: Some Basic Issues in Measurement, Diagnosis and Alleviation*. Kathmandu: ICIMOD
- Parvez, S.; Rasmussen, S.F. (2002) 'Sustainable Mountain Economies: Sustainable Livelihoods and Poverty Alleviation'. Unpublished Thematic Paper B2 prepared for Bishkek Global Mountain Summit: Aga Khan Rural Support Programme
- Pitt, D.C. (1986) 'Crisis, Pseudocrisis, or Supercrisis: Poverty, Women, and Young People in the Himalaya: A Survey of Recent Development'. In *Mountain Research and Development*, 6(2): 119-31
- RAP (Rural Access Programme/Nepal) (1999) *Poverty in Nepal: A Briefing Paper*. Kathmandu: Rural Access Programme Nepal and Department for International Development (UK)
- Reardon, T.; Vosti, S.A. (1995) 'Links Between Rural Poverty and the Environment in Developing Countries: Asset Categories and Investment Poverty'. In *World Development*, Vol. 23 No. 9. Great Britain: Elsevier Science Ltd.

- Rhoades, R.E. (1997) *Pathways Towards a Sustainable Mountain Agriculture for the 21st Century, The Hindu Kush-Himalayan Experience*. Kathmandu: ICIMOD
- Ruizhen, Y. (2000) 'Strategies and Experiences in Poverty Alleviation and Sustainable Development in the HKH and the Qinghai-Tibetan Plateau Region of China' In Banskota, M.; Papola, T.S.; Richter, J. (eds) *Growth, Poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia*, pp 247-258. Kathmandu: ICIMOD and Deutsche Stiftung für Internationale Entwicklung, Zentralstelle für Ernährung und Landwirtschaft
- SAARC Secretariat (2002) *SAARC—A Profile*. Kathmandu: Information and Media Division, SAARC Secretariat
- Sharan, V. (1992) 'India (1)' In *Rural Poverty Alleviation Programmes in Asia*. pp 134-135. Tokyo: Asian Productivity Organisation
- Sharma, P.; Partap, T. (1994) 'Population, Poverty, and Development Issues in the Hindu Kush-Himalayas'. In Banskota, M.; Sharma, P. (eds) *Development of Poor Mountain Areas*, pp 61-78. Kathmandu: ICIMOD
- Sharma, S. (1997) *Agricultural Transformation Processes in the Mountains of Nepal: Empirical Evidence from Ilam District*. Mountain Farming Systems, Discussion Paper Series No MFS 97/3. Kathmandu: ICIMOD
- Shelley, M.R. (2000) 'Socioeconomic Status and Development of Chittagong Hill Tracts (CHT) of Bangladesh: An Overview', In Banskota, M.; Papola, T.S.; Richter, J. (eds) *Growth, Poverty Alleviation, and Sustainable Resource Management in the Mountain Areas of South Asia*, pp 107-136. Kathmandu: ICIMOD and Deutsche Stiftung für Internationale Entwicklung, Zentralstelle für Ernährung und Landwirtschaft

Annex I: Mountain area, population, and their respective shares in the HKH countries

Country	Total area (sq. km)	1997 Total pop estimates (million)	Mountain areas (inclusions)	Area (mountains)		Population (mountains)		% of country total
				Total (sq. km)	% HKH total	Total (million)	% of HKH total	
Afghanistan	648,000	17.4	25 of the 30 Provinces	390,475	10.9	15.5	10.6	89.3
Bangladesh	144,000	117.7	Chittagong Hill Tracts	13,295	0.7	1.1	0.8	0.9
Bhutan	46,500	0.71	Entire Territory	46,500	1.3	0.7	0.48	100
China	9607,000	1208.8	All of Tibet and parts of Yunnan and Sichuan	1,700,266	47.7	25.5	17.3	2.1
India	3287,300	918.6	All of 8 and parts of 3 Northern States	461,139	12.9	41.7	28.0	4.5
Myanmar	676,300	45.6	All districts in the 4 States of Kachin, China, Shan and Rakkhain	317,629	8.9	10.1	6.9	22.1
Nepal	147181	21.66	Entire Territory	147,181	4.1	21.6	14.7	100
Pakistan	796100	126.6	NWFPA, FATA, Northern Areas, AJK and 12 districts of Balochistan	489,988	13.7	31.1	21.2	24.6
Total	15352381	2457.1		3,566,473		146.9		

Source: Banskota 2000

Annex II: Per Capita GDP (US \$)

Year	Afghanistan	Bangladesh	Bhutan	China	India	Myanmar	Nepal	Pakistan
1990	1475	221	168	342	360	203	188	395
1991	1416	223	140	353	313	199	168	415
1992	1344	215	140	415	308	218	177	435
1993	1218	227	132	511	295	230	174	443
1994	1657	249	150	457	335	238	194	475
1995	1159	272	166	584	370	248	199	508
1996	483	278	175	674	379	261	201	498
1997	442	286	205	735	420	272	217	473
1998	523	299	199	777	422	282	197	458

Source: United Nations (2001), Statistical Yearbook 1998. New York: Department of Economic and Social Affairs, Statistics Division (Table 18)

Annex III: Annual Growth Rates in GDP

Year	Afghanistan	Bangladesh	Bhutan	China	India	Myanmar	Nepal	Pakistan
1990	-3.1	3.4	6.6	3.8	5.7	2.8	4.6	5.5
1991	0.8	4.2	3.5	9.2	0.4	-0.7	6.4	7.8
1992	1	4.5	4.5	14.2	5.4	9.7	4.1	1.9
1993	-3.1	4.2	6.1	13.5	5	6	3.8	3.9
1994	-3	4.4	6.4	12.6	8.1	7.5	8.2	5.1
1995	26.2	5.4	7.4	10.5	7.4	6.9	3.5	5
1996	6	5.9	6.1	9.6	7.4	6.4	5.3	1.2
1997	6	5.6	7.3	8.8	6	5.7	5	3.3
1998	6	5.2	5.8	7.8	6	5	2.3	3.9

Source: United Nations (2001), Statistical Yearbook 1998. New York: Department of Economic and Social Affairs, Statistics Division (Table 18)