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Carrying Capacity of Himalayan Resources for Mountain Tourism Development

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(CREST)



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Carrying Capacity of Himalayan Resources for Mountain Tourism Development

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MEI Series No. 95/14

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Preface

This current discussion paper in the Mountain Enterprises and Infrastructure Series, "Carrying Capacity of Himalayan Resources for Mountain Tourism Development," is one of a number of papers delivered at the "Regional Conference on the Sustainable Development of Fragile Mountain Areas of Asia" which took place from December 13th to 16th, 1994, in Kathmandu, Nepal. Support for this Conference came from the Swiss Development Cooperation, FAO, UNDP, UNEP, and the UNU.

The unanimous concern expressed at this conference was for the deteriorating conditions of both the environments and livelihoods of mountain people. Mountain development had not been geared to the people nor the environment it purported to serve.

One of the achievements of the Conference was a wider sharing of knowledge amongst the mountain countries of Asia and insight into the constraints that confronted them and the opportunities offered by the wide diversity of their special mountain environments. Another significant achievement was the formulation of a Call to Action on the Sustainable Development of Mountain Areas of Asia, or SUDEMAA recommendations.

By publishing the conference papers in its various discussion paper series, ICIMOD seeks to share the knowledge gained with a wider audience. This current paper should be of interest to all those who are working with or concerned about the problems of the carrying capacity of mountain resources.

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Introduction

According to Hindu mythology, the Himalayas are the abode of Gods and Goddesses, as well as many saints. In a sense, tourism may have begun in the Indian subcontinent in the form of pilgrimage tourism. In many parts of India as well as Nepal, pilgrimage tourism to the Himalayas still continues to be very popular, although it has never been treated as a potential stimulus for local development.

Mountain tourism is comprised of all types of visits to the mountain areas of Nepal, India, and Pakistan. However, mountain tourism is relatively different in Nepal than in the other two countries. Although the total number of foreign visitors to India and Pakistan is far greater than to Nepal, mountain tourism in Nepal is dominated, for the most part, by international visitors, whereas, in the other two countries, domestic visitors dominate the mountain tourism scene.

This paper deals primarily with mountain tourism in Nepal. The second part of the paper deals with the impacts of mountain tourism in Nepal. The third part discusses some of the major issues in the context of mountain tourism in the Hindu Kush-Himalayas, including some of the issues in the specific contexts of India and Pakistan, and presents a conceptual framework for sustainable mountain tourism. Part four of the paper presents the argument that, without local community development, tourism development alone cannot be the panacea for mountain community development in the HKH. Nepal is endowed with many resources for developing tourism, but, unless local community development coexists with tourism, mountain tourism cannot be sustainable. An important dimension of this thesis is that it integrates mountain resources, local communities, and tourism development in the context of the 'carrying capacity' of mountain areas. The development of mountain tourism depends very much on whether a growing market for it exists or not, and this is discussed in part five. The paper ends with a conclusion.

Mountain Tourism and Its Impacts

In Nepal, mountain tourism means trekking and mountaineering tourism; the former being more popular. Rafting is gaining in popularity. The most popular areas in the mountain regions visited by trekkers are the Annapurna, Langtang, and Sagarmatha regions, which are protected areas (see map). Trekking tourism has experienced a healthy growth (Tables 1 and 2).

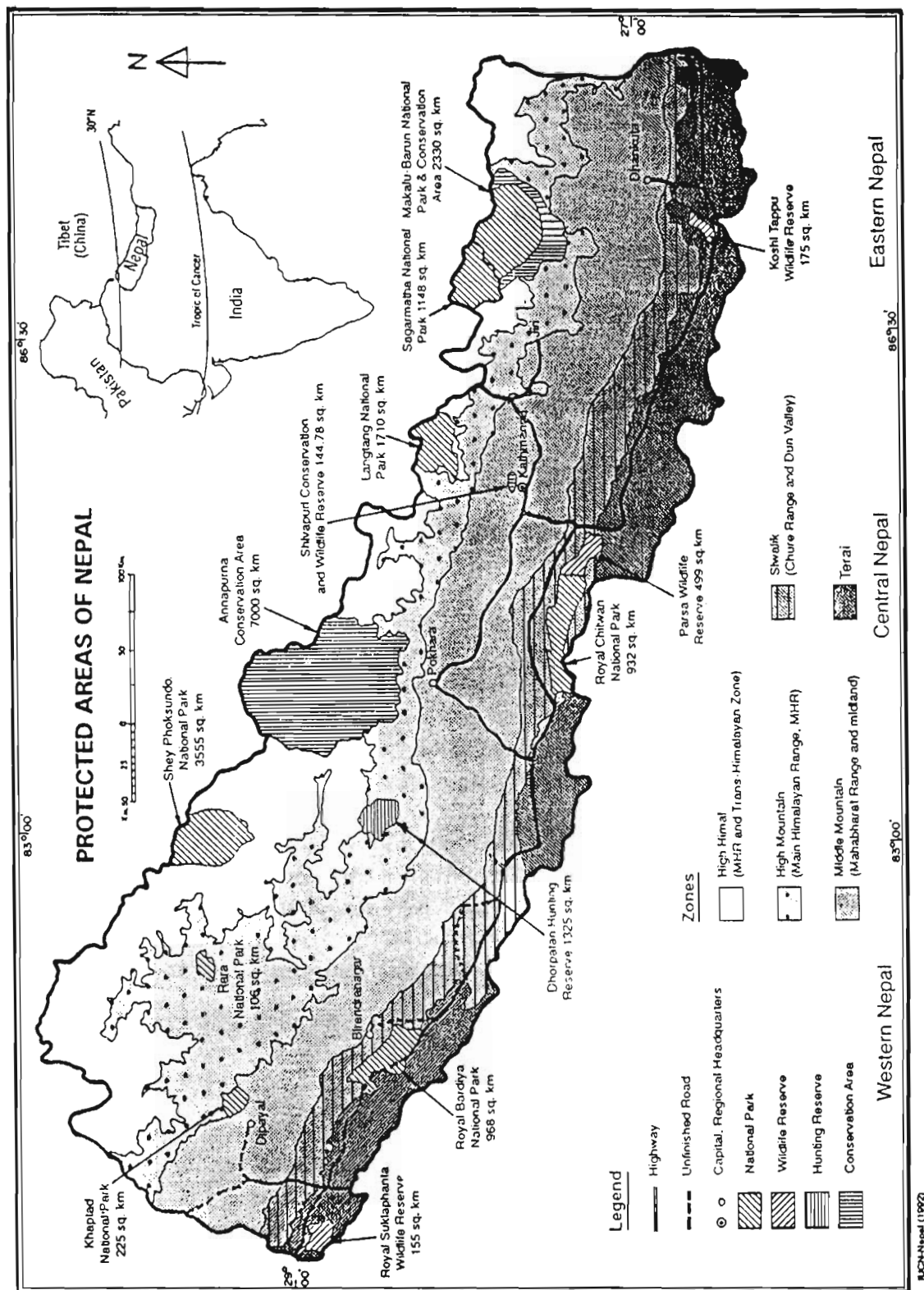


Table 1: Natural Resource Tourism: Numbers and Growth Rates (1987)

Type of Activity	Number of Tour-ists	Growth Rate per Annum
Mid-altitude trekking (up to 6,000masl)	47,275	11 %
High-altitude mountaineering	796	1.1 %
Rafting	3,612	320%
Wildlife tourism	25,844	rapid
Professional hunting	12	static
Religious tourism	30-60,000	?

Source: ERL 1989, Annex C Table 1.1.2(a).

Table 2: Mountain Tourism by Destination (1980-1992)

Year	SNP	LNP	ACAP	Others	Total	Share	Total Arrivals
1980	5836	4113	14332	3179	27460	22.47	122205
1981	5804	4488	17053	215	27560	24.46	112694
1982	6240	4535	19702	1855	32332	26.67	121247
1983	6732	4030	21119	417	32298	24.98	129303
1984	7724	4792	25422	3268	41206	34.94	117917
1985	8347	4610	18960	813	32730	25.75	127109
1986	9900	5250	33620	805	49575	29.49	168136
1987	8998	6107	30914	1256	47275	25.00	189116
1988	11366	8423	37902	3582	61273	31.60	193885
1989	11836	8563	36484	3975	60858	30.95	196661
1990	11314	7826	36361	6591	62092	31.82	195121
1991	11862	9603	39107	5198	65770	32.80	200489
1992	12325	9457	42553	7104	71439	31.36	227779

Source: Banskota and Sharma 1994

Trekking tourists consist of free independent trekkers (FITS) and group trekkers, who require trekking permits to visit certain areas in the country. FITS carry their own backpacks or hire a guide/porter to assist them; they eat and sleep in local lodges or "tea houses." Group trekkers join a custom and self-contained trek organised either by an adventure travel company based overseas, or a Kathmandu-based trekking agency (Lama 1991; Lama and Sherpa 1995). FITS are not permitted to visit newly opened areas, such as Kanchenjunga, Manaslu, Dolpa, etc, where only guided tourism (group trekkers) is permitted.

Mountaineering tourists can be classified into two categories, namely, those who climb peaks above 6,000m and those who climb peaks below 6,000m. Permits and fees are prerequisites for all mountaineering tourists regardless of their specific peaks. For peaks above 6,600m, permits are obtainable from the Ministry of Tourism and Civil Aviation. For peaks below 6,600m permits have to be acquired from the Nepal Mountaineering Association.

The bulk of mountain tourism in Nepal is conducted in protected areas (Tables 3 and 4). Many socioeconomic changes that have occurred among local people in protected areas are attributable to tourism. Although local people have made attempts to maximise opportunities made possible by the advent of tourism, the implications on local development as well as on conservation have not all been positive (Banskota and Sharma 1994; Byers and Banskota 1992). Tourism impacts can be categorised into different types and, often, both negative and positive impacts result from mountain tourism.

Table 3: Percentage Distribution of Trekkers by Region

Year	SNP	LNP	ACAP	Others	Total
1980	21.25	14.98	52.19	11.58	100
1981	21.06	16.28	61.88	0.78	100
1982	19.30	14.03	60.94	5.74	100
1983	20.84	12.48	65.39	1.29	100
1984	18.74	11.63	61.69	7.93	100
1985	25.50	14.08	57.93	2.48	100
1986	19.97	10.59	67.82	1.62	100
1987	19.03	12.92	65.39	2.66	100
1988	18.55	13.75	61.86	5.85	100
1989	19.45	14.07	59.95	6.53	100
1990	18.22	12.60	58.56	10.61	100
1991	18.04	14.60	59.46	7.90	100
1992	17.25	13.24	59.57	9.94	100

Source: Same as Table 2

Table 4: Protected Areas in Nepal

Name	Area (sq. km.)	Location
Hill and Mountain		
Rara National Park	106	High mountains
Shey Phoksundo National Park	3555	High <i>himal</i>
Annapurna Conservation Area ¹	7000	High mountain to high <i>himal</i>
Langtang National Park	1710	High mountain to high <i>himal</i>
Sagarmatha National Park	1148	High <i>himal</i>
Makalu-Barun National Park & Conservation Area	2330	High mountain to high <i>himal</i>
Shivapuri Watershed Protected Area	144	Mid mountains
Dhorepatan Hunting Reserve	1325	High mountain
Kaptad National Park	225	High mountain
Terai or Inner Terai		
Royal Sukla Fata Wildlife Protected Area	305	Terai
Royal Bardia National Park	968	Terai
Royal Chitwan National Park	932	Terai
Parsa Wildlife Protected Area	499	Terai
Kosi Tappu Wildlife Reserve	175	Terai

Source: Master Plan for the Forestry Sector Project (MPF 1988), main report.

Land Use

The impacts of mountain tourism on land use are in terms of changes in the crops cultivated or in cropping patterns; conversion of land from forestry to agricultural use; conversion of agricultural land to build lodges or tea stalls; leaving land fallow to rent as camp grounds, and so on. Agriculture as an occupation has gradually become secondary to tourism-related activities such as the operation of lodges, working as guides or kitchen boys, or working in tourism-related services in Kathmandu. Households have shown preference for

fruit and vegetable farming over traditional crops (Friend 1983; Upadhyay 1984; CEDA 1988; Chettri et al. 1992; Stevens, Sherpa, and Sherpa 1993; Byers 1986).

Litter and Pollution

Table 5 provides an idea of the amount of litter that is deposited in protected areas and other areas visited by tourists and their support staff, including porters. The generation of garbage of such volume is a serious concern, especially since decomposition is an extremely slow process in the mountain environment. Furthermore, if allowed to accumulate, the non-biodegradable, non-burnable garbage generated would ruin the environment, vegetation, livestock, and habitats. Add to this the poor assimilative capacity of the high altitude environment and the garbage problem is further exacerbated.

Table 5: Litter Deposited in the Mountain Environment, 1988 (in kg)

Area	Number of Trekkers	Average Deposited	Total Deposited	
Annapurna	37902	15	56853	
Khumbu	11366	15	17049	
Langtang	8423	15	12635	
Other	3582	15	5373	
Cumulative total (1976 to 1993)(in mt)			640mt	
Mountaineering (1979-1988): Garbage Cleared From Everest Base Camp, Spring 1993				
	Disposable Garbage	Non-Disposable Garbage	Oxygen/ Gas Cylinders	Total
14 expeditions	7030	2350	3444	12824
Average/team	502	168	246	916
Range	90-1350	60-360	356-540	390-1820
Nepal Total (1979-1988) total for 840 teams (in mt)				
	421680	141120	206640	769.44mt

Source: Lama and Sherpa (1995)

Pollution of water sources by placing toilets too close to or over streams and drinking water sources (both lodge latrines and movable trekking toilet tents), and use of chemical soaps for bathing and washing dishes and clothes in streams and near water sources, have been reported (Banskota and Upadhyay 1989; Gurung 1990; Lama and Sherpa 1995)

Forests

One of the widely discussed topics in environmentally-sound mountain development is the nature and extent of forest degradation and deforestation. Firewood demands by tourism and tourism associated activities in the mountain areas are believed to have considerable impact on forests, vegetation, and wildlife. Three factors that increase pressure on firewood demand are: in some areas visitors outnumber the local people; firewood demand is seasonal, lasting three to five months each year; and the growing seasons in the mountains are extremely short and harsh. An estimate of firewood consumption by tourists is given in Table 6. Although kerosene use by tourists is mandatory in some areas, firewood use by support staff and local tourism caterers continues (Bjonness 1980; Byers 1986; ERL 1989; Gurung 1990; Banskota and Sharma 1994)

Table 6: Estimate of Firewood Consumed by Tourism in Selected Protected Areas (mt)

Year		1976	1977	1980	1981	1982	1987	1988
SNP:	Group	619	692	858	747	917	1323	1671
	FITS	165	184	229	199	245	353	446
LNP:	Group	217	293	466	577	514	693	955
	FITS	27	36	58	71	63	85	118
ACA:	Group	229	294	456	543	628	985	1204
	FITS	131	168	261	310	359	563	688
Others:	Group	102	110	748	507	436	295	863
	FITS	9	9	62	42	36	25	72
Total:	Group	1168	1390	2528	2374	2495	3295	4693
	FITS	331	398	610	623	703	1025	1324
	Total	1499	1788	3138	2997	3198	4321	6017

Source: ERL 1989; Gurung 1990; Banskota and Sharma 1994

Employment

In mountain areas, tourism generates employment opportunities for porters, cooks, kitchen boys, and guides. However, not all of these employment benefits accrue to the local population and, quite often, people outside the area reap these benefits. The bulk of employment generated in mountain areas is in the form of portering and is seasonal in nature, lasting six to seven months a year. In the thirty years of mountain tourism in Nepal, this form of employment generation has not changed for the better.

Table 7 provides an estimate of the total direct employment generated by mountain tourism over a period of four years. Since the support staff hired by group trekkers (2 to 4) is generally higher than support staff hired by FITS (0.5 to 1.5), the former has a greater impact on direct employment than the latter. However, individual trekkers generate other indirect employment in lodges, hotels, and tea stalls. Employment generated in lodges, tea houses, and hotels and other forms of indirect employment are not considered (see Table).

Table 7: Direct Man Days of Employment Generated by Mountain Tourism

Year	Groups			Individuals			Total Employment Generated	
	Total Number	Employment Gen- erated		Total Num- ber	Employment Gen- erated		(Man Days)-	
		----- (Man Days) ----			----- (Man Days) ---			
		High	Low		High	Low	High	Low
1985	16,937	667,480	338,740	11,770	176,550	58,850	844,030	397,590
1986	19,829	793,160	396,580	13,780	206,700	68,900	999,860	465,480
1987	21,337	853,480	426,740	14,827	222,405	74,135	1075,885	500,875
1988	22,873	914,920	457,460	15,895	238,425	79,475	1115,345	536,935

Source: Banskota and Sharma 1994

Direct employment generated by mountaineering expeditions experienced a decline, especially during the period from 1990 to 1992 (Table 8). For example, direct employment generated by mountaineering teams declined from 9,154 persons to 8,251 persons in 1992 because of the decline in both the

number of mountaineering teams and in members per team (Banskota and Sharma 1994).

Table 8: Employment Generated by Mountaineering Teams

Year	No. of Teams	No. of Mountaineers	Seasonal Employment
1980	64	639	9016
1985	91	824	8835
1986	94	807	10415
1987	98	796	11166
1988	92	936	10839
1989	125	1053	10984
1990	120	966	12179
1991	130	1038	9154
1992	113	929	8251

Source: Ministry of Finance, Economic Survey (1993)

Income

The generation of income through tourism-related employment (primarily portering) is the most substantial income impact of tourism in mountain areas. The impact of mountain tourism on income accruing to the private sector is significant (Table 9). Group tourists have a greater impact on income because they generally hire larger support staff. The income generated by mountaineering tourism is also substantial and competes fairly closely with that generated by trekking tourism. In addition, mountaineering also generates substantial revenue in the form of royalties which, however, remain with the government (Table 9). The total income that accrues from tourism in mountain areas is not retained locally as lodge owners are, for the most part, from outside the region, food has to be imported, and income is remitted to family members living in urban areas. In general, a large proportion of the income from agency-organised trekking goes to people living outside the area. Besides, over the last decade the real per capita tourist expenditure has not increased (Banskota and Sharma 1994).

Table 9: Income Generated by Mountain Environmental Resources
(in Rs '000')

Year	Wates (NRs)	Food (NRs)	Mountaineering		Trek & Park	Peak fee	Total Mountain Revenue		Per Trek-ker per day	
			Exp. (NRs)	Roy-alty (NRs)	NRs	NRs	NRs	US\$	NRs	US\$
1980	16328	35558	15827	843	3295	2121	73971	6216	192	16
1981	18595	39073	18217	5281	3525	1760	86452	7265	210	18
1982	22811	47206	17504	1036	3880	2108	94545	7217	209	16
1983	24836	52414	18575	1150	3876	2521	103372	7179	229	16
1984	36343	74121	20169	2752	4945	3104	141434	8677	245	15
1985	31483	64272	17870	3298	3928	3646	124497	7074	272	15
1986	52485	117298	28854	4063	5949	5602	214251	10154	309	15
1987	55596	115481	34020	4330	5673	7770	222870	10223	337	15
1988	81310	159630	42582	5079	7353	8523	304477	12956	355	15
1989	89938	184416	63976	7222	7303	1389	354244	12929	416	15
1990	103952	197112	68368	7266	7451	1605	385754	13256	444	15
1991	120225	309618	156363	8929	7892	13053	616081	14428	669	16
1992	146663	332838	101355	30351	8573	20883	640662	15039	641	15

Shares

Year	Wages (NRs)	Food (NRs)	Mountaineering		Trek & Park	Peak fee	Total
			Exp. (NRs)	Roy. (NRs)	NRs	NRs	
1980	22.07	48.07	21.40	1.14	4.45	2.87	100.00
1981	21.51	45.20	21.07	6.11	4.08	2.04	100.00
1982	24.13	49.93	18.51	1.10	4.10	2.23	100.00
1983	24.03	50.70	17.97	1.11	3.75	2.44	100.00
1984	25.70	52.41	14.26	1.95	3.50	2.19	100.00
1985	25.29	51.63	14.35	2.65	3.15	2.93	100.00
1986	24.50	54.75	13.47	1.90	2.78	2.61	100.00
1987	24.95	51.82	15.26	1.94	2.55	3.49	100.00
1988	26.70	52.43	13.99	1.67	2.41	2.80	100.00
1989	25.39	52.06	18.06	2.04	2.06	0.39	100.00
1990	26.95	51.10	17.72	1.88	1.93	0.42	100.00
1991	19.51	50.26	25.38	1.45	1.28	2.12	100.00
1992	22.89	51.95	15.82	4.74	1.34	3.26	100.00

Source: Banskota and Sharma 1994.

Although the number of mountain tourists in India and Pakistan far exceed the number in Nepal, impacts at both national and local levels appear to be more pronounced in Nepal. Income impacts are more pronounced in Nepal as mountain tourism here is characterised by high income international tourists. In the case of India and Pakistan, mountain tourists are mostly domestic tourists whose incomes are relatively low (Saiyeda and Nazeer 1994; TARU 1994).

Sociocultural

The impact of tourism on local cultural traditions and values is difficult to assess. Not only tourists but also local people who travel for education, trade, and other purposes bring in new ideas and attitudes which can result in changes in local cultural practices. Changes in people's behaviour, dress, lifestyle, family and social structure, values, and expectations; decline in local support for local traditions and institutions; people's preference for tourist-related jobs over education; pollution of sacred places; changes in traditional architecture, and so on are generally argued to be the negative impacts of tourism on culture. Economic impacts are also important in bringing cultural changes. It can also be debated whether such sociocultural impacts are caused by tourism, by economic factors, or by other factors (Upadhyay 1984; Robinson 1993; Lama and Sherpa 1995; Stevens, Sherpa and Sherpa 1993; Gurung 1990).

Impact on Women

Only anecdotal evidence is available on the impact of tourism on women. It is argued that, in some places, tourism has increased the burden on women because male members stay away from home for longer periods of time to serve tourists. At the same time, tourism has provided off-farm employment opportunities for women and has enabled them to explore and exploit their managerial capabilities in lodges, tea-stalls, and so on. Tourism has also encouraged women to undertake such highly specialised and skilful tasks as climbing Mt. Everest, which undoubtedly has increased their morale from being simple housewives. Women from the *Sherpa* community have been trained as doctors and there is an increasing number of women from other mountain communities who are pursuing meaningful higher education.

Other Impacts

Although not directly attributable to tourism, there are other impacts that can be identified. **Awareness generation** in the form of education, basic knowledge

of a second language; awareness of improved health and hygiene standards; and awareness of the need for conservation of cultural sites and the environment in general. **Infrastructural development** in remote areas of the mountains can also be attributed to the growth of tourism. **Socio-demographic effects** in the form of reduced outmigration in some places and increased migration in other places; induced population growth; greater awareness of the benefits of family planning; positive impacts on nutrition; and so on have been perceived. **Research** (anthropology, biodiversity, culture, glaciology, etc) and **international publicity** are areas in which Nepal has benefitted through tourism. The plethora of books printed, the many documentary films that have been made, the abundance of articles that have been published in international journals, and the cover stories that have been published in the National Geographic magazine are all proof of the positive impacts of tourism. There can be no doubt that some of the publicity has been negative but, by and large, this publicity has helped promote Nepal as a unique country with great scope for mountain tourism (Banskota and Sharma 1994).

Mountain Tourism Revenue

Mountain resources can generate substantially more revenue than the amount currently generated. Mountain resources can generate income in various forms which accrue to Nepal directly. This revenue can be grouped into: wages earned by porters, expenditure on food and accommodation, mountaineering expenditure, and royalties and other forms of fees (peak, trekking, and park). Estimates indicate that, in real terms, this revenue has not increased substantially (Table 9).

Of the total revenue generated, wages paid to porters and other support staff account for about 23 per cent and food and accommodation expenditure for nearly 50 per cent of the total mountain revenue on an average. It is unlikely that all this income is retained locally as a sizeable number of porters hired during treks belong to other areas. Also, this expenditure is subject to a certain amount of leakage because lodges serve food which requires imported items. There is considerable scope for increasing the retention of income in local areas by developing tourism linkages with local production units (Wells 1993; Banskota and Sharma 1994).

It is clear that great scope exists for increasing the already substantial income generated by mountain resources. The various user fees charged have been based on *ad hoc* decisions, and no scientific studies have been conducted to base these user fees on the tourists' willingness to pay. Benefits have been identified in terms of the expenditure of tourists, whereas willingness to pay for the enjoyment of the unique environmental resources of the Himalayas remains untapped. Willingness to pay is an expression of preference which

reflects how much tourists are willing to pay over and above the actual cash cost of consumption of the environmental resources. In order to obtain all possible economic benefits, willingness to pay is the appropriate concept to use. In the context of Nepal, so far no study has been conducted to estimate the visitors' willingness to pay. Appropriate user fees could be stipulated on this basis.

Major Issues of Mountain Tourism in the Hindu Kush-Himalayas¹

In this section some major issues related to mountain tourism in the context of Nepal, India, and Pakistan are briefly summarised. A clear long-term policy on mountain tourism development is yet to be formulated in Nepal. For a small country like Nepal, tourism development must be defined in terms of national goals and an appropriate growth path must be prioritised. Tourism development cannot be viewed in isolation from conservation, natural resource management, and mountain development as mountain resources form the very basis of both mountain tourism and the survival of local mountain communities. Both India and Pakistan also appear to suffer from this long-term policy vacuum.

There has been no concerted effort on the part of governments to establish the idea of the mountain areas being potentially rich in a variety of unique natural resources. Neither has mountain tourism been conceived as an integral part of overall mountain development. This lack of perspective in the cases of Nepal, India, and Pakistan appears to have led to a demand-induced tourism growth pattern which has not been able to contribute meaningfully to local development. The unique mountain environment of the Hindu Kush-Himalayas is, as a result, deteriorating, thereby reducing the tourist amenities and visual appeal of the area. Meanwhile the local communities living among these environmentally rich resources continue to lead subsistence lives. How to develop mountain tourism, mitigate poverty, and provide an impetus to mountain development remain to be answered in all these countries in the HKH region.

Ever since the formulation of the Tourism Master Plan (MCI 1972) in Nepal, diversification of sightseeing and adventure tourism have been the major thrusts in all succeeding policies. However, in actual practice, the operation of mountain tourism is centralised and the benefits accrue to a few operators in urban centres. Mountain tourism is concentrated in a few pockets (Khumbu, Annapurna, and Langtang in Nepal; the Swat Valley in Pakistan and Himachal Pradesh in India). Opening new areas and building rudimentary infrastructure

1 Refer to Banskota and Sharma (1994), Al Jalaly and Nazeer (1994), and TARU (1994) for greater details of the issues discussed in this section.

have been the sole bases of tourism and mountain development in Nepal. As a result, only small pockets have benefitted. In the newly-opened areas, local people are finding it difficult to derive benefits from tourism as only group tourists are encouraged to visit such areas and other complementary investment programmes and policy actions are not forthcoming.

The national economic interest has always been in increasing foreign exchange earnings from tourism through increase in tourist numbers with little or no attention paid to local needs and issues (Touche Ross 1993). Government policies on the private mountain tourism sector are totally lacking and preference for tourism investment in urban areas prevails. Linkage of mountain tourism with the mountain economy is an issue that has not been addressed. Some of the older tourism areas with several years' experience in mountain tourism operation have provided substantial revenue to governments but little attention has been paid to ploughing back some of this revenue into establishing linkages between local and tourism development. The Annapurna Conservation Area Project is an exception.

There are no effective policies and programmes to control firewood use. A major factor in controlling the use of firewood has been government failure to count the support staff accompanying tourists and the various tourist outlets, such as lodges, tea stalls, etc, as primarily tourism-related and the demand for firewood by these units as a demand for firewood by tourists. Policy failure arises from the fact that this derived demand for firewood is not considered to be an integral part of mountain tourism energy policies.

Nepal's mountaineering tourism is now suffering from *ad hoc* policy changes. *Ad hoc* policies and inconsistencies appear to be common in all three countries. Application procedures for mountaineering are very cumbersome. The practice of requiring cash deposits for garbage disposal, despite hikes in royalties and attachment of government liaison officers to mountaineering teams, has been perceived as an unnecessary hassle for mountaineers. Similar issues have also been reported in the case of Pakistan, especially with regard to the appointment of liaison officers.

Tourism as a multi-sectoral activity requires strong and effective coordination between other sectors, both private and public. Line agencies often have narrowly conceived areas of jurisdiction and take care of only those problems which directly affect their sectoral interests. No effective body has been established to harmonise this situation. Recently, it has been envisaged that the Tourism Council could tackle the said problem, but this body has not been fully effective. It lacks an information base and needs to be institutionalised. In the state of Himachal Pradesh, a newly developed Tourism Master Plan is reported to have addressed only the issue of pilgrimage tourism, and an overall concern for tourism in general, linkages with the local economy, and coordination with various institutions and sectors have not been adequately dealt with.

What emerges clearly in these three countries of the HKH region is that mountain tourism development is seen in isolation from mountain environmental resources and local community development. No concerted effort has been made to perceive the characteristics of the mountain environment and the values of the different environmental resources that these mountains harbour as prime resources which can be developed to benefit the local community and enhance tourist attraction and experience. Efforts to develop tourism in the mountains without duly considering mountain characteristics and the economic value of mountain resources can be more harmful to the mountain environment and its economy than beneficial. Therefore, tourism development should be an integral part of mountain community development and vice versa.

In many places in the mountain areas of Nepal, conservation means modification of traditional behaviour on the part of local people as well as of tourist behaviour. To the tourist, a change in the behaviour for the sake of conservation may not be as demanding as in the case of local people who depend very much on the use of local resources. In the case of Nepal, this has been witnessed in most protected areas where conservation has resulted in a conflict between local people and the management authority. This conflict, in most cases, is due to modification of behaviour in the absence of alternative incentives to compensate for the changes local people have been forced to make due to policy interventions (Kharel 1993; Stevens, Sherpa, and Sherpa 1993; Yonzon 1993).

There are more regulations and commands than economic incentives. Economic incentives are given little time to succeed, whereas regulations are given too much time to fail. Economic incentives and disincentives at national and community levels can play an important role in conserving mountain environmental resources. The main objective in using incentives is to smooth out the uneven distribution of the social costs and benefits of conserving the mountain environment and to use these incentives as policy tools for correcting the problems resulting from market failure and misguided policies (McNeely 1988).

Thus, the major problem in the context of tourism in the Himalayas can be stated as **the lack of appreciation of the value of environmental resources and the lack of vision on mountain and tourism development**. Without appreciation of the value of environmental resources and a vision on mountain development, tourism development alone cannot raise the living standards of the mountain people. A great deal of work remains to be carried out in this area and it needs to be carried out urgently so as to conserve the environment through tourism development for the benefit of local communities.

Sustainable Mountain Development

Existing approaches to mountain tourism development have failed to benefit a wider community and protect the natural resources crucial for the survival of local communities and for mountain and tourism development (Banskota and Sharma 1994). In order to formulate a concept of mountain development in which tourism can play a catalytic role, it is essential to identify the importance of a mountain area in terms of its resources and the value of these resources from local, national, and international perspectives. Mountain development, to a great extent, means poverty alleviation.

Clean air; watersheds; biological diversity (genes, species, and ecosystem); scenic beauty; the cultural heritage of the people; human resources; and renewable resources such as firewood, fodder, etc may all be classified as environmental resources. The environmental resources found in the Himalayas are unique and have limited substitutes (Himalayan Resources for short [HR]). These resources are also the basis of mountain tourism development (MTD). These resources are of immense value to humanity (Thorsell and Harrison 1993). The total economic value of mountain environmental resources (consumptive, productive, and non-consumptive use values) is believed to be far in excess of what is currently realised (Banskota and Sharma 1994; Wells 1993; McNeely 1988).

Himalayan Resources, Community and Tourism Development in the Context of 'Carrying Capacity'

It is assumed that mountain community development (MCD) is necessary to improve the quality of life of mountain communities, as well as to conserve Himalayan Resources (HR). It is also assumed that mountain tourism development (MTD) has an important catalytic role to play in this process. Improvement in the quality of life of the mountain people and the conservation of HR necessitate the generation of new resources (traded). Himalayan Resources have economic value and can be developed to generate the necessary resources (Banskota and Sharma 1994; Banskota et al. 1994). For the sake of simplicity, it is assumed that mountain areas have potential for tourism development and community development. Community development is assumed to encompass all forms of development that address the needs of the local community. Mountain tourism development must have a strong link with mountain community development or else tourism development cannot be a part of sustainable mountain development.

Mountain regions are geographical regions that can be regarded as coherent entities from the standpoint of description, analysis, administration, planning, or policy. Therefore, mountain development will depend largely on the supply

of environmental resources. From the perspective of the welfare of the mountain people, mountain and tourism development should improve the welfare of the population; and this development should be compatible with environmental, regional, and national development. Mountain development thus has to fulfill two requirements: first, it must ensure the region's population of an acceptable level of welfare which can be sustained in the future and, second, it must not come into conflict with sustainable development at regional and national levels.

'Carrying capacity' (CC) is a key concept in planning for sustainable mountain development, i.e., local community and tourism development and environmental conservation. Carrying capacity seeks to establish ecological and behavioural thresholds beyond which the biophysical, socioeconomic, and environmental milieu and the quality of life of mountain people and visitors' experiences deteriorate. Given different environmental dimensions, different types of carrying capacity concepts are often discussed in the literature (WTO 1993; Nijkamp den Berg and Soeteman 1990).

Carrying capacity is a multi-dimensional and dynamic concept and varies according to season, time, behaviour and attitude of tourists and local population, facilities, management, and the dynamic character of the environment. The concept of carrying capacity can be represented by a range of limits rather than a single fixed value. These limits are often determined by the combination of three primary factors: environmental threshold, investment options, and management policies. Determination of the environmental threshold is important for the assessment of carrying capacity. When applied to the (mountain) environment of a region, carrying capacity indicates the number of people, including tourists, it can support. Furthermore, carrying capacity must be viewed in the context of development, as our primary concern lies in raising the standard of living of the people in this region.

The relationship between MCD and MTD in the context of Himalayan Environmental Resources (HER) can be conceptualised on the diagram given below. The large circle represents the Himalayas with its unique environmental resources (HER). Mountain community development (MCD) and MTD are represented by two other circles (as shown). These three circles or sets overlap each other to produce different subsets. Carrying capacity is represented by the additional circle.

Subset 1

Subset 1 represents the union of HER, MCD, and MTD and is within the Carrying Capacity of the ME. Here, there is an integration of tourism with mountain community development and this provides the basis for linkages between these two sectors. Both forward and backward linkages are established within MCD and MTD, and both these sectors do not compete for

the HER. Mountain-produced goods are used to the greatest extent possible and import leakages are minimised creating greater opportunities for retention of benefits from both forms of development. In other words, benefits accruing from both forms of development are maximised, giving rise to several rounds of multiplier effects which result in the growth of mountain community development. Also, since this union lies within the carrying capacity set, both mountain community and tourism development are sustainable.

Subsets 2 and 3

Subset 2 characterises tourism development, which is dependent on HER and is carried out in the mountain areas. Tourist needs cannot all be complementary to mountain needs and some degree of competition for HER between tourists and the mountain community is bound to occur. This subset is within the carrying capacity of the mountain environment and, thus, tourism development is sustainable in this region. Subset 3 is similar to subset 2, but in the context of MCD that is dependent on HER. The competition for HER in subsets 2 and 3 are unlikely to be symmetrical.

Subsets 4 and 5

These subsets are within the MTD and HER sets but outside the CC set, indicating that tourism and mountain development in these regions are unsustainable as they exceed the carrying capacity of the mountain environment. It is evident from subsets 4 and 5 that, while tourism and mountain development are integrated, both kinds of development extend beyond the limit of the carrying capacity. This could be due to lack of appropriate technological opportunities, institutional bottlenecks, lack of improvement in human physical capital infrastructures, wrong investment, lack of planning, gaps in knowledge, market and policy weaknesses or failures, and lack of management, all of which are likely to result in negative impacts.

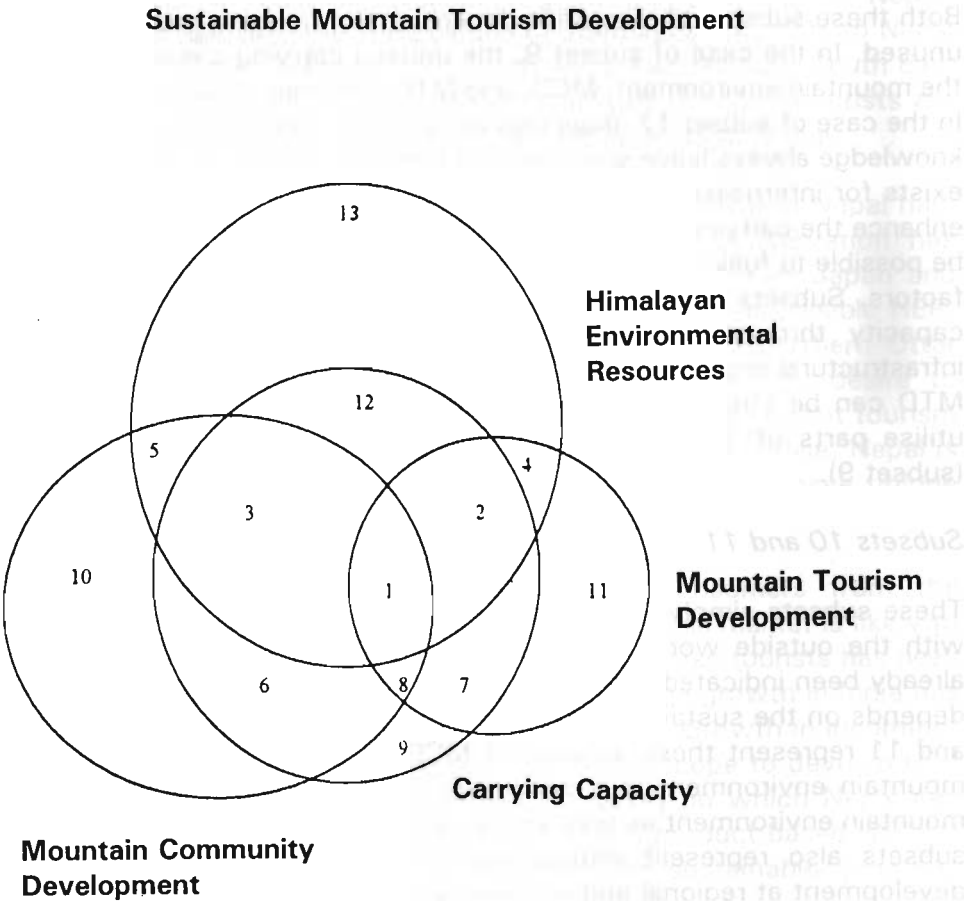
With new technology, improved infrastructure, and management, it is possible to exploit the potential carrying capacity and avoid the damage (subsets 4 and 5). It may not always be possible to completely eliminate such areas as there will always be gaps in knowledge. However, attempts should be made to minimise these areas through the combination of demand and supply management policy actions. Proper assessment of the economic value of environmental damage is required, for which natural resource accounting assumes importance.

Subsets 6 and 7

Subsets 6 and 7 indicate that the carrying capacities of the mountain environment for MCD and MTD have to interact with the regions outside the mountain environment. Many aspects of both form of development need varied

external inputs. Product and factor prices extrinsic to the mountain environment influence MCD and MTD and, hence, the utilisation patterns of HER which have implications on the carrying capacity of the mountain environment. Linkages of MCD and MTD extend beyond the mountain environment and parts of these external linkages give rise to leakages. Thus, all benefits cannot be retained within the country. External leakage cannot be avoided, it can nevertheless be minimised for sustainable MCD and TCD. Stated differently, both these intersections characterise intersectoral and international trade flows which influence the economic carrying capacity of mountain areas. Hence, the area represents the potential impact of external factors to the mountain environment's carrying capacity.

Diagram



Subset 8

This area extends beyond the mountain environment, is part of the MCD and MTD sets, and also lies within the carrying capacity. This subset indicates that the complementary relationship between MCD and MTD extends beyond the mountain environment. Many interrelated or interdependent activities, of both MCD and MTD, take place outside the region for their sustainability. Planning and research activities as well as many other activities, carried on outside the mountain environment, which affect development have implications for its carrying capacity. Note that subset 8 is different from subsets 6 and 7 in that the latter subsets are fairly independent whereas subset 8 is not.

Subsets 9 and 12

Both these subsets characterise dimensions of carrying capacity that remain unused. In the case of subset 9, the unused carrying capacity is external to the mountain environment, MCD, and MTD, whereas in subset 12 it is internal. In the case of subset 12, inappropriate policies, behaviour, as well as gaps in knowledge always leave some level of carrying capacity unused and the scope exists for internalising external knowledge and technology (subset 9) which enhance the carrying capacity of the mountain environment. Also, it may not be possible to fully optimise the carrying capacity as it is constrained by many factors. Subsets 9 and 12 represent the scope for expanding the carrying capacity through research and technology, planning and management, infrastructural improvements, etc. Certain dimensions of the current MCD and MTD can be strengthened to eliminate parts of 5 and 6 and to more fully utilise parts of 12, which may require external knowledge or technology (subset 9).

Subsets 10 and 11

These subsets simply indicate more macro linkages of both MCD and MTD with the outside world - regional, national, and international. Since it has already been indicated that sustainable development of a mountain area also depends on the sustainable development of a region or a nation, subsets 10 and 11 represent these aspects of MCD and MTD that are external to the mountain environment, but which are essential to the development of the mountain environment as well as its carrying capacity. In other words, these subsets also represent interactions of MCD and MTD with sustainable development at regional and national levels.

Subset 13

Finally, subset 13 is entirely HER representing minimum levels of resources that need to be conserved or preserved. This area defines the critical minimum levels or thresholds that need to be preserved to sustain gene pools, or

breeding stock. This region also characterises HER that can be classified as having option and existence as well as bequeath values. The level of HER existing in this region cannot be assumed to be substituted by man-made capital (Daly 1991).

Market for Mountain Tourism

Compared to other Asian countries, tourism in Nepal has grown at a slower rate, primarily because Nepal does not fall into the tourism mainstream (Touche Ross 1990). Thailand, within less than a decade, has been able to develop itself as a major tourist destination with over four million tourists visiting it annually. India has a strong market for domestic tourism, and international tourism in India has also been growing faster than in Nepal. Within the last two decades, the composition of international tourists to Nepal in terms of nationality has been changing, with Asian tourists from South East Asia accounting for a bigger share of the total arrivals. If Indian tourists are included, these comprise the largest share of total tourists to Nepal.

Many parts of South East Asia do not have the type of HER that Nepal has. Increasing concern for the global environment and its conservation has multiplied the demand to visit places like the Himalayas. From Japan and heading west, Nepal is the only country that has relatively accessible HER. India has such HER but, due to problems in Kashmir and northern Uttar Pradesh, such HER are not accessible to many tourists who desire to experience them. Pakistan is also endowed with such resources but tourism has only recently received attention in this country. Thus, in a sense, Nepal is the only country in the world where international access to these unique Himalayan Resources is relatively easy.

Nepal's Himalayan resources continue to attract consumers from the traditional tourism markets of Europe and America, and this market is likely to remain strong. Moreover, the income growth of South Asian tourists has been increasing at one of the fastest rates in the world. Income growth in India has also been increasing modestly within the last few years. Growth in income of neighbouring countries, therefore, provides additional scope to develop HER for MTD, and hence MTD. Clearly, there is a market on which Nepal can capitalise. What is required is a vision to develop new product-based HER for the tourist market which can provide the basis for sustainable mountain development.

Summing Up

The above framework helps to conceptualise mountain and tourism development in the context of mountain environmental resources. The next stage is

to operationalise the concept which is currently operating at the Centre for Resource and Environmental Studies (CREST). A summary of these operationalisation aspects follows.

First, it is essential to clearly identify the HER, the critical resources within HER, where they occur, and their current status. This will help to establish certain limits (assessment of HER as well as subset 13).

The second step involves identifying the community's existing conditions and needs as well as their status, opportunities, and constraints. The HER used by the community to fulfill consumptive and non-consumptive uses and the HER status need to be assessed and existing pressures identified (assessment MCD and subsets 3 and 5) .

The third step involves assessing MTD in relation to HER and the existing relationship between MCD and MTD. It is essential to assess mountain activities that are geared towards MTD, the number of people involved in MTD, and so on. Additionally, an assessment of the HER used by tourists (both direct and derived demand) and the status of these resources is necessary. (This will involve assessment of MTD, subsets 2 and 4.) At this stage, a picture of the linkages between MCD and MTD in the context of HER should evolve, i.e., assessment of subset 1. Analysis will also enable the assessment of subsets 12 and 9 to integrate the possibility of enhancing carrying capacity through internal and external policy actions.

Finally, the role of the partnership of different subsets to plan, manage, and monitor the development and conservation programmes needs to be well defined. As a result, a comprehensive picture of the HER, MCD, and MTD will evolve, and the necessary steps to evaluate carrying capacity and the basis to prepare a mountain tourism development plan will be possible.

Operationalising the above concept of sustainable mountain and tourism development requires that attention be focussed on physical, biological, social, and economic aspects of the environment to maximise the opportunities and mitigate the problems. This requires substantive shifts in policy and priorities at national level. The Government and its line agencies, NGOs, tourists, private agencies, and local people have definite roles to play as partners. The success or otherwise depends on how these partners are organised and coordinated through shared responsibilities and on how far local people from grass root institutions are involved in all development and conservation processes. Environmental considerations should be integrated with economic decision-making from the very beginning at all levels and proper assessment of environmental resources through economic accounting should receive immediate attention at both local and national levels.

It is useful to operationalise the concept of carrying capacity and sustainability using a critical factor approach. Identification of the internal characteristics of a defined geographical area and its interaction with other regions, assessment of potential of or constraints to a regions's development may provide the basis for identifying critical factors. These critical factors can be further viewed in terms of resources, specific areas or niches, behaviour, infrastructure, and institutions. Such critical factors may serve as focal points for both developmental and policy interventions as well as for monitoring. Preserving all resources would lead to foregoing many opportunities, making development an extremely expensive process. Intertemporal depletion may take place depending on the substitution possibilities between natural resource stock and man-made capital. Nevertheless, conservation of HER should receive primary importance in such an exercise.

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The Centre was established in 1983 and commenced professional activities in 1984. Though international in its concerns, ICIMOD focusses on the specific, complex, and practical problems of the Hindu Kush-Himalayan Region which covers all or part of eight Sovereign States.

ICIMOD serves as a multidisciplinary documentation centre on integrated mountain development; a focal point for the mobilisation, conduct, and coordination of applied and problem-solving research activities; a focal point for training on integrated mountain development, with special emphasis on the assessment of training needs and the development of relevant training materials based directly on field case studies; and a consultative centre providing expert services on mountain development and resource management.

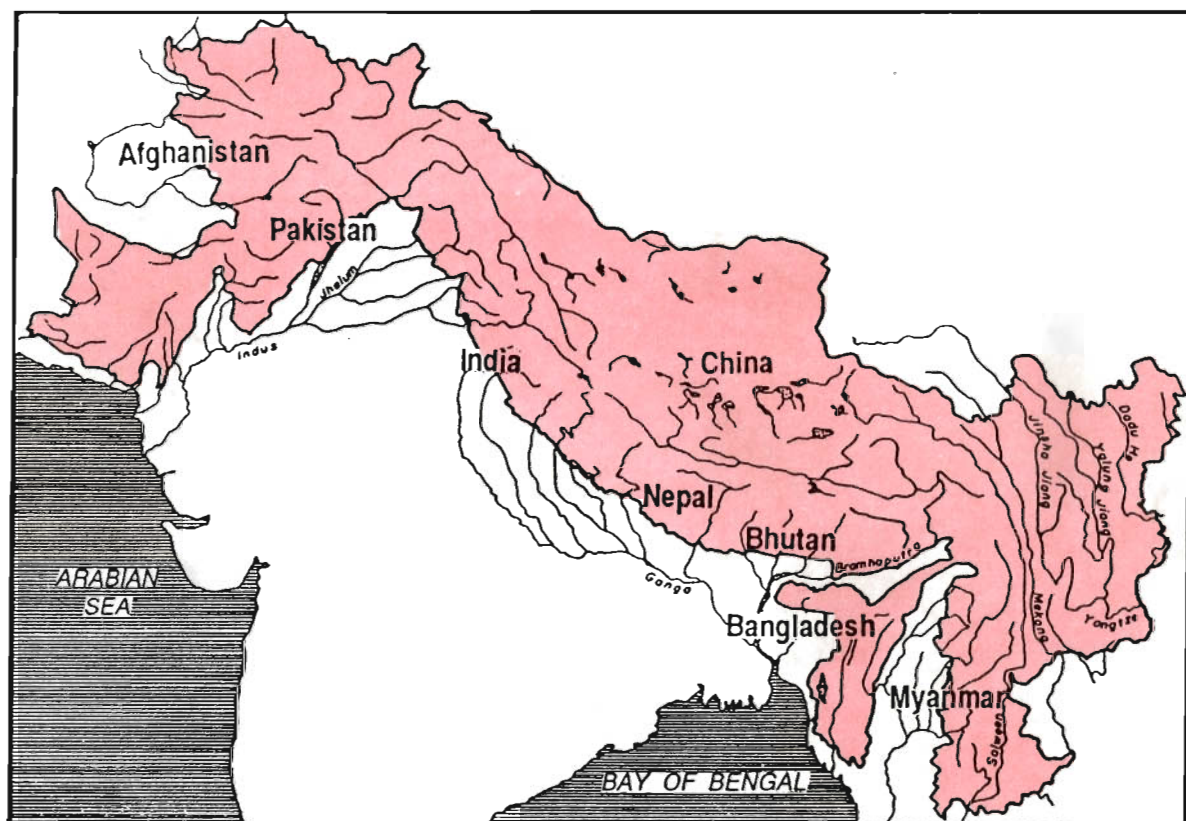
MOUNTAIN ENTERPRISES AND INFRASTRUCTURE DIVISION

Mountain Enterprises and Infrastructure constitutes one of the thematic research and development programmes at ICIMOD. The main goals of the programme include i) gainful enterprise development and income generation; ii) harnessing mountain specific advantages; iii) infrastructural development (social and physical); iv) sustainable energy resources for mountain development; and v) capacity building in integrated mountain development planning.

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