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Tourism for Mountain Community Development

Case Study Report on the Annapurna and Gorkha Regions of Nepal

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MEI Series No. 95/11

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Preface

The present Discussion Paper is one in a series of papers related to Mountain Tourism that have resulted from a NORAD-funded project entitled "Mountain Tourism for Local Community Development". The Project was initiated in 1994 with the objective of reviewing the status of mountain tourism in selected regions of the HKH (the mountains of Uttar Pradesh and Himachal Pradesh in India, Nepal, and the Northern Areas and North West Frontier Province in Pakistan), identifying the key issues with respect to mountain tourism and economic and environmental development of local communities, undertaking location-specific, in-depth investigation on the key issues, and developing a framework for Action Plans for sustainable mountain tourism and local community development in the case study areas.

The overview studies have already been published in the MEI Discussion Paper Series. The present paper is a case study on Mountain Tourism for Local Community Development in the Annapurna and Gorkha Regions of Nepal. The thematic focus is on the inventory of tourism resources, the nature and perception of the various impacts of mountain tourism, carrying capacity considerations, perception of the linkage between tourism and community development, and the development of framework for the Action Plan and Guidelines for Sustainable Mountain tourism oriented towards local community development in the case study areas.

The case studies from India and Pakistan are also published in the MEI Discussion Paper Series.

On behalf of ICIMOD, Dr. Pitamber Sharma is the Project Coordinator as well as the technical editor of these papers.

Contents

1
Study Background and Objectives

Background

The present study is a continuation of "Mountain Tourism for Local Community Development in Nepal," which was part of a study sponsored by the International Centre for Integrated Mountain Development (ICIMOD) on the current status of mountain tourism in the Hindu Kush-Himalayas of Nepal, India, and Pakistan (Banskota and Sharma 1994a). This previous study carried out an extensive literature review and identified various issues in the context of mountain tourism in Nepal. In the present study, some of these issues are further explored in two case study areas, namely, the Annapurna area, which is the most popular area for mountain tourism in Nepal, and the newly-opened Manaslu area.

The Himalayas harbour unique natural environments and are home to a large number of people who depend on the resources found in these environments for survival. Local demand for these resources is believed to be growing faster than the rate at which the environment can produce, thus leading to the latter's gradual deterioration. Local people have no option but to continue to use the resources, as development has not been able to mitigate poverty and generate new opportunities in these remote areas. On the one hand, poverty mitigation in the region requires accelerated use of the resources, and, on the other, their increasing use has accelerated deterioration. Furthermore, in areas where tourism is practised, tourism is believed to have added to the problem, although there is no denying that tourism has brought substantial benefits to some remote and inaccessible mountain areas. However, the dilemma nevertheless remains, for mountain development will require increasing use of the Himalayan resources, which will further increase the conservation and development challenges (Banskota and Sharma 1994a; Byers and Banskota 1993; Ives and Messerli 1989).

The resources found in the Himalayas are unique, and their potential value to local people in particular and to mankind in general is believed to be enormous. These resources also have significant economic value as well, which if properly utilised can provide a strong stimulus to mountain community development (Banskota et al. 1994; Thorsell and Harrison 1993). The development of these resources needs to be conducted in a manner that does not in any way jeopardise the environment. One way to harness these

resources is by maximising its non-consumptive uses through tourism promotion. In order to maximise the non-consumptive uses, the carrying capacity of the environment must be adequately understood, and tourism development in these areas must enable community development as well. Without local communities' participation in mountain tourism neither can mountain tourism development be successful nor can the environment be conserved. Therefore, both mountain community and mountain tourism development have to be addressed in the context of environmental resources, or what are referred to in this study as Himalayan Environmental Resources (HER). All forms of development carried out in the Himalayas have to be within the carrying capacity of HER for development to be sustainable. The integration of these factors has therefore necessitated the need to develop a methodology to conceptualise mountain community development (MCD) and mountain tourism development (MTD) in the context of HER. Mountain community and mountain tourism development will be addressed in the context of the carrying capacity of HER in the selected case study areas.

Major Issues in Mountain Tourism

This section briefly summarises the issues identified in the previous study.[1]

A clear long-term policy on what is desired from tourism in the context of mountain development has yet to emerge in Nepal. For a small country like Nepal, tourism development must be defined in terms of national-level goals, and an appropriate growth path must be prioritised. There has been no concerted effort on the part of the government to perceive the mountain areas as potentially rich in a variety of unique natural resources that are not easily available and accessible to international tourists in other parts of the world, or to see that the non-consumptive uses of these resources can be promoted through tourism development to transform the state of the mountain economy in many parts of Nepal.

Tourism development cannot be viewed in isolation from conservation and natural resource management and mountain development, as it is the mountain resources that form the very basis of mountain tourism as well as the basis of survival of local mountain communities. This lack of realisation has resulted in a demand-induced tourism growth pattern, with local people responding to tourist needs, and it has not been able to contribute meaningfully to wider

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[1] See Banskota and Sharma 1994a and Banskota and Sharma 1993 for discussion on the following and other issues.

mountain development. The unique mountain environment found in the Himalayas is therefore becoming increasingly degraded, thereby reducing the tourist and visual appeal of the areas, and, at the same time, local communities that live amidst these rich environmental resources continue to lead a subsistence life. How to develop mountain tourism that can mitigate poverty and provide an impetus to mountain development remains to be answered. Poverty alleviation in these potentially rich environmental areas calls for appropriate complementary investments in mountain tourism sectors that promote linkages between local production activities and tourism, so that leakages are minimised and retention of benefits locally is enhanced.

Ever since the Tourism Master Plan (Ministry of Commerce and Industry (MCI) 1972 was introduced, diversification of sightseeing and adventure tourism has been a major thrust of all tourist 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 (e.g., Khumbu, Annapurna, and Langtang). Opening new areas and building rudimentary infrastructure have been the sole basis of tourism development. As a result, only small pockets have been able to benefit, and, in newly opened areas (e.g., the Manaslu area), local people are finding it difficult to derive benefits from tourism, as only group tourists are encouraged to visit such areas, and other forms of complementary investment programmes and policy actions have not been forthcoming. Some of the older tourism areas, with several years of mountain tourism operation, have provided substantial revenue to the government, but little attention has been paid to ploughing back some of this revenue in order to establish linkages between local and tourism development. The Annapurna Conservation Area Project is an exception in this respect.

Diversification of destinations alone will not suffice. Product diversification, with emphasis on quality, has not received due attention. Continuing to promote trekking tourism alone is unlikely to bring greater benefits to the nation or to local communities. There is a great deal of scope for developing new tourism products in the mountain areas of Nepal. New products must be oriented towards maximising visitor days and visitor expenditure rather than numbers, and the willingness of tourists to pay should be the fundamental basis of pricing for such products. *Ad hoc* pricing procedures (trekking permit fees, park entrance fees, visa fees, etc) must be replaced with scientific procedures. The true economic value of tourism, when measured in terms of willingness, to pay is likely to be much higher than the current levels of expenditure by tourists (Wells 1993).

The national economic interest has always been how to increase foreign exchange earnings from tourism through growth in tourist numbers, with little or no attention paid to local needs and interests. Government policies for the private mountain-tourism sector are totally lacking, and preference towards tourism investment in urban areas prevails.

Tourism being a multisectoral activity, it requires strong and effective coordination between the various sectors, both private and public. Line agencies often narrowly conceive their area of jurisdiction and take care of only those problems that directly affect their sectoral interests. Policy weaknesses or failures arise from the fact that the direct and derived demands of tourism cannot be integrated into one category. Examples of this can be cited in the case of newly-opened areas where only group tourists are permitted who, being self-sufficient, provide little scope for local people to benefit from tourism. Although the government raises revenue from trekking permits, using this revenue to promote community development has suffered due to the lack of well-defined programmes and coordination.

Also, use of firewood by tourists has been restricted (kerosene is mandatory in some mountain areas), but its use by tourist support staff and local tourism outlets continues. A major factor in controlling the use of firewood has been government failure to look upon tourist support staff that accompany tourists as well as the various tourist outlets, such as lodges and tea stalls, as tourism-related; demand for firewood by these units should be seen as demand for firewood by tourists, irrespective of whether tourists consume the firewood or not. Policy failure arises from the fact that this derived demand for firewood by tourists is not considered to be an integral part of mountain-tourism energy policy.

Nepal's mountaineering tourism is now suffering from self-glorifying and *ad hoc* policy changes. *Ad hoc* measures and inconsistencies appear in many policy formulations. Application procedures for mountaineering are too cumbersome. The practice of cash deposits for garbage disposal, despite a hike in royalties and attachment of government liaison officers to mountaineering teams, has been negatively perceived as an unnecessary hassle for mountaineers.

Besides the ACAP there is no institutional and participatory approach to mountain and tourism development. Tourism-led development has been an individual response to meet tourist needs, and community development has

been externally driven. The need to organise mountain communities in both community and tourism development has not been addressed.

There has never been an ongoing research programme to address the problems in the area of mountain tourism and community development. If research needs are not realised, the chances that problems will outstrip solutions will be high, and new efforts made will most likely fail or have little effect.

Efforts to develop tourism in the mountains without duly addressing the mountain environment and the economic value of the resources it harbours can do more harm to the environment and its economy than good. Therefore, tourism development should be an integral part of mountain community development.

In many places in the mountain areas of Nepal, conservation means modifying the traditional behaviour of local people as well as the behaviour of tourists. To the tourist, a change in behaviour for the sake of conservation may not be as severe 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 brought about a conflict between local people and the management authority. This conflict, in most cases, is related 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 intervention (Kharel 1993).

There are more regulations and command structures 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 the national and community level can play an important role in conserving mountain environmental resources. The main objective of using incentives is to smooth the uneven distribution of the social costs and benefits of conserving the mountain environment; these incentives are policy tools for correcting the problems resulting from market failure and misguided policies (McNeely 1988; Winpenny 1991).

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 vis-a-vis mountain and tourism development.***" Without an appreciation of the value of environmental resources and a sense of vision for mountain development, permitting tourists to visit mountain areas cannot alone be considered as a panacea to improve the livelihood of the large

majority of mountain people. A great deal of work remains to be carried out in this area, and it needs to be carried out done urgently to conserve the environment in order to benefit local communities through tourism development.

Objectives and Scope of the Study

The objectives of the present study are to address some of the above issues in the context of two mountain tourism areas in Nepal, namely, the Annapurna and the northern Gorkha areas (Map 1). The Manaslu area, which for many years was a restricted area, has been opened to group tourism since 1991.[2] The Annapurna area is Nepal's most popular mountain tourism destination, with nearly 40,000 tourists visiting this area each year. The King Mahendra Trust for Nature Conservation (KMTNC), through its Annapurna Conservation Area Project (ACAP), has been actively involved in addressing some of the issues identified above in this area. The Manaslu area in Gorkha district has only recently been opened for tourism, but neither a tourism plan nor any form of management exists for this region.[3] The above issues, however, cannot be addressed in isolation from the carrying capacity of environmental resources. This latter aspect has necessitated the development of a conceptual methodology to integrate HER, MCD, and MTD.

The specific objectives of this study are:

- to develop a framework to integrate environment, community, and tourism and to address the carrying capacity of the mountain environment for sustainable development;
- to assess the impacts and implications of mountain tourism in two case study areas; and
- to develop guidelines for sustainable mountain tourism and indicators for monitoring carrying capacity.

The methodology developed in Chapter Two is at this stage of a conceptual nature. Although efforts have been made to operationalise it in terms of both qualitative and quantitative analysis, this has not been fully completed, and a lot more work remains to be done in this area.

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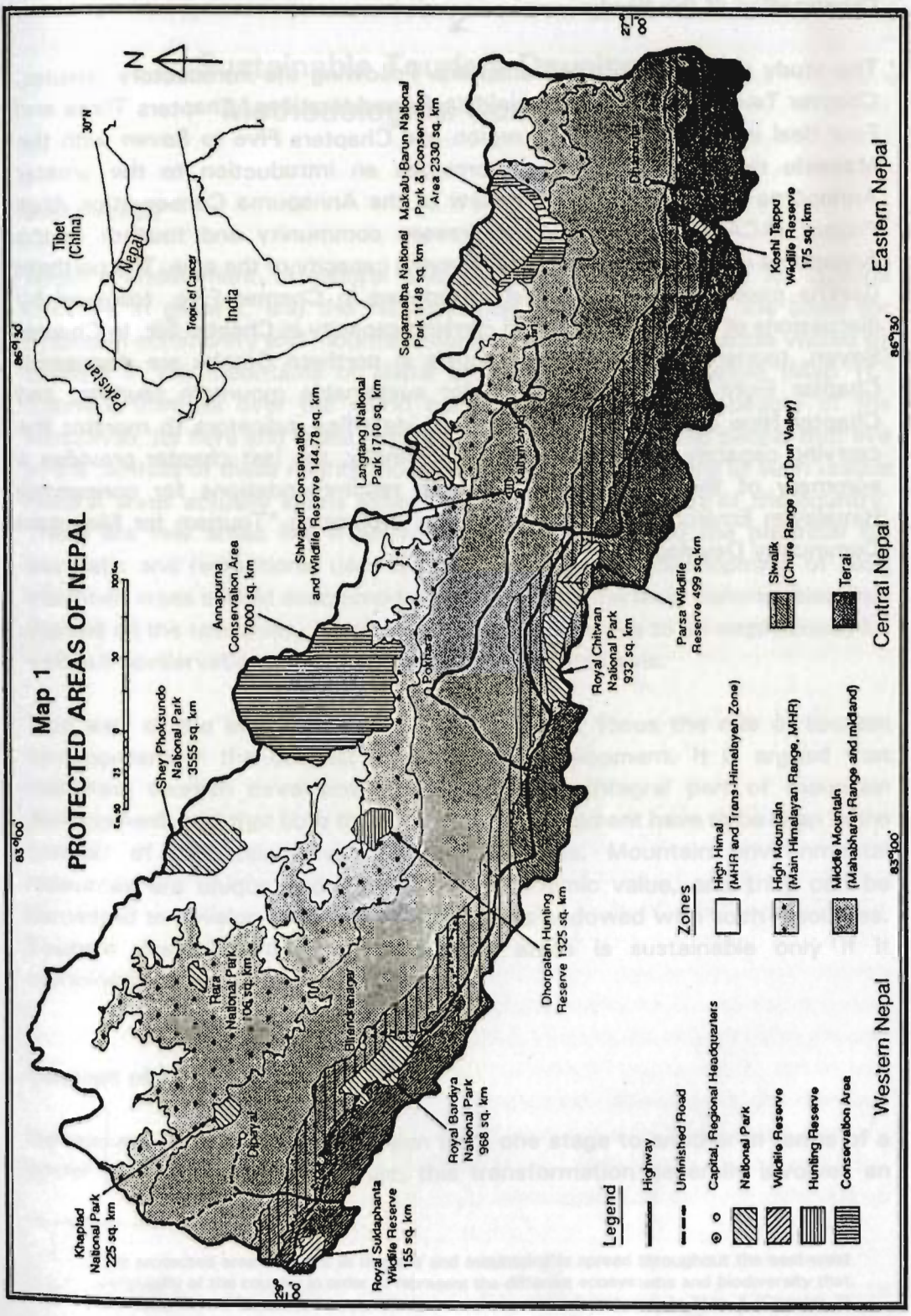
[2] The northern Gorkha region or area as referred to in this study includes areas north as well as south of the Himalaya in Gorkha district, including the Manaslu area.

[3] Ministry of Tourism, HMG is currently drafting a tourism development plan for the northern Manaslu region.


Map 1
PROTECTED AREAS OF NEPAL
Tibet (China)
Nepal
Pakistan
India
Tropic of Cancer
30°N
N
Shey Phoksundo National Park 3555 sq. km
Annapurna Conservation Area 7000 sq. km
Shivapuri Conservation and Wildlife Reserve 144.78 sq. km
Langtang National Park 1710 sq. km
Sagarmatha National Park 1148 sq. km
Makalu-Barun National Park & Conservation Area 2330 sq. km
Koshi Tappu Wildlife Reserve 175 sq. km
Rara National Park 106 sq. km
Khaplad National Park 225 sq. km
Royal Suklaphanta Wildlife Reserve 155 sq. km
Royal Bardiya National Park 968 sq. km
Dhorpatan Hunting Reserve 1325 sq. km
Royal Chitwan National Park 932 sq. km
Parsa Wildlife Reserve 499 sq. km
Pokhara
Kathmandu
Dhankuta
Birendranagar
Dipayal
Western Nepal
Central Nepal
Eastern Nepal
Legend
Highway
Unfinished Road
Capital, Regional Headquarters
National Park
Wildlife Reserve
Hunting Reserve
Conservation Area
Zones
High Himal (MHR and Trans-Himalayan Zone)
High Mountain (Main Himalayan Range, MHR)
Middle Mountain (Mahabharat Range and midland)
Siwalik (Churc Range and Dun Valley)
Terai
83°00'
86°30'
29°00'
27°00'
ICIMOD (1992)

Organisation of the Study

The study is divided into ten chapters. Following the introductory chapter, Chapter Two deals with methodological considerations. Chapters Three and Four deal with the Annapurna region and Chapters Five to Seven with the Manaslu region. Chapter Three provides an introduction to the greater Annapurna region, including a review of the Annapurna Conservation Area Project (ACAP). Chapter Four addresses community and tourism in the Annapurna region and assesses the carrying capacity of the area. The northern Gorkha case study area is first introduced in Chapter Five, followed by discussions of tourism impact and carrying capacity in Chapter Six. In Chapter Seven, tourism development potentials in northern Gorkha are discussed. Chapter Eight outlines guidelines for sustainable mountain tourism, and Chapter Nine discusses monitoring and identifies indicators to monitor the carrying capacity of mountain tourism. Finally, the last chapter provides a summary of the findings and presents recommendations for conserving Himalayan Environmental Resources and promoting "Tourism for Mountain Community Development."

2
Sustainable Tourism Development Methodological Considerations

Introduction

Nepal's endowment of natural and environmental resources, its cultural heritage in general, and the Himalayas in particular provide the basis for mountain community and mountain tourism development. The areas visited by tourists in the mountains of Nepal are mostly protected areas (Map 1).[1] Tourists from all over the world come to see the natural beauty of the Himalayas, its flora and fauna, and the cultural heritage of the people that live in the foothills of these mighty mountains. Nepal's endowment of such unique natural areas actually spans almost the entire northern part of the country. There are few areas like it anywhere in the world, and the potential for aesthetic and recreational uses is high. However, the development of such mountain areas should accommodate the needs of the local communities that depend on the resources. Therefore, conservation needs to be emphasised, for without conservation development will be unsustainable.

This part of the study aims to bring into better focus the role of tourism development in the context of mountain development. It is argued that mountain tourism development has to be an integral part of mountain development, and that both these forms of development have to be seen in the context of mountain environmental resources. Mountain environmental resources are unique and have a high economic value, and they can be harnessed to develop mountain areas that are endowed with such resources. Tourism development in the mountain areas is sustainable only if it complements mountain development.

Concept of Sustainability

Development means transformation from one stage to another in terms of a social goal. Among other things, this transformation generally involves an

[1] The protected area network in the hills and mountains is spread throughout the east-west geography of the country in order to represent the different ecosystems and biodiversity that characterise the country, i.e., to conserve unique natural systems. In Map 1 (Chapter 3) protected areas in the mountain region are only presented.

increase in the well-being of individuals in a society. Development is a normative concept and should not be confused with economic growth, which implies an increase in real per capita GNP over time. However, in the past, the form of development that has characterised many nations, both rich and poor alike, has raised some fundamental questions related to future generations as well as to the environment. The concern about these two issues in the development context has given rise to the concept of sustainable development (World Commission on Environment and Development ([WCED] 1987).

There is no one agreed definition of sustainable development. According to the WCED, sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. This concept implies that each generation should leave a stock of quality life assets, no fewer than those that have been inherited by it, for future generations. There are two interpretations of this (Pearce et al. 1992):

- that the next generation should inherit a stock of wealth, consisting of man-made and environmental assets, that is no less than the stock inherited by the previous generation; and
- that the next generation should inherit a stock of environmental assets that is no less than the stock inherited by the previous generation.

The main distinction between the two interpretations is that, whereas the former emphasises both man-made and natural capital, the latter stresses natural capital only. Without dwelling further on the definition of sustainable development, it is important to recognise that, for development to be sustainable, the concern of both man-made capital and natural capital for future generations need to be simultaneously addressed. Achieving sustainable development, therefore, requires: a) maintenance of a high quality of environment (goods and services provided by nature); b) a greater concern for poverty mitigation in the present generation (intragenerational equity) and fair treatment of the future generation (intergenerational equity) and; c) that society's planning horizon be extended to a longer time period.

Sustainable Mountain Development

Mountain development in the present context involves mountain communities and tourism, and thus sustainable mountain development ideally should

address the needs of the present and future generations of mountain communities as well as those of tourists. Sustainable mountain development does not differ significantly from the notion and concerns of sustainable development as described above. However, since tourism is an added dimension, some explanation of sustainable mountain tourism is in order.

As a working definition, sustainable tourism development may be defined *"as the management of all resources that can fulfill economic, social, and aesthetic needs (of mountain communities and tourists) while maintaining cultural integrity, essential ecological process, biological diversity, and life support system of the Himalayan environment"* (Globe 1990). Sustainable tourism development needs to adopt the principles of sustainable resource management so that tourism destinations can continue to attract visitors without reducing the quality of their experience and without squeezing out the opportunities for sustainable mountain community development.

Tourism has certain characteristics which are unique in terms of its relationship with the environment. While in many instances tourism implies non-consumptive uses of the environment (discussed below), the extent of its use has qualitative implications for both the environment and the user, and hence it may be considered as a semi-renewable resource (Barbier 1989).

Relationship between Mountain Community and Mountain Tourism Development

It is assumed that mountain community development (MCD) is necessary to conserve Himalayan Environmental Resources (HER), and that mountain tourism development (MTD) can stimulate this process of MCD.

HER have economic value (discussed below) and can be developed to generate the necessary resources for MCD and MTD. Community development encompasses all forms of development that address the needs of the local community and generate opportunities for gainful employment. Mountain tourism development encompasses activities that attract tourists, provide employment opportunities for local people, help them retain benefits locally, and provide a strong stimulus to community development. A mountain community is a geographical region that may meaningfully be regarded as a coherent entity from the perspective of description, analysis, administration, planning, or policy. Mountain development will therefore depend to a large extent on the supply of HER. In the context of the welfare of mountain people,

mountain and tourism development should be able to improve the welfare of the population, both at present and in the future, and at the same time be compatible with the environment. Mountain development thus has to fulfil two things: first, it should ensure the region's population an acceptable level of welfare that can be sustained in the future; second, it should not conflict with sustainable development at a regional or national level.

The Himalayas are endowed with unique environmental resources that have few close substitutes (Figure 1). Mountain communities are dependent on the HER for their livelihood (Figure 2). However, overextraction of these resources will result in deterioration of HER, and thus negatively affect their livelihood. This deterioration will be reflected in the declining productivity of the resource base, as people will have to travel further away to fetch firewood, water, fodder, and other resources. Also, the negative effect will be reflected in productivity declines in agricultural, forest, and grazing lands. Additionally, loss of habitats and species will result. Many other examples can be cited.

At the same time, the HER attract tourists, although the nature of HER demanded by tourists is different from that demanded by the local community. The demand for HER by the local community is mostly of a consumptive and productive nature (local and national significance of HER). On the other hand, tourists demand these resources for non-consumptive uses (national and global significance of HER). The quality and quantity of HER exploited by the local community have implications for the HER demanded by the tourist (recreational, aesthetic, and amenity values). Furthermore, the overall quality and quantity of HER give rise to option and existence values (Figure 2). Thus HER become important in both MCD and MTD (Figure 3).

The relationship between MCD and MTD in the context of Himalayan Environmental Resources, or HER, can be amplified by using Venn diagrams. Although the focus of a study may be on a mountain community endowed with unique HER, the value of HER extends beyond the geographical confines of the community and must be addressed accordingly. In Figure four three circles, representing HER, MCD, and MTD, are seen to overlap with one another. This overlap generates seven different sections, numbered from one to seven, each of which are discussed below.

Area One

This area is entirely HER, representing minimum levels of resources that need to be conserved or preserved for all generations to come. In this area, the

Figure 1

HIMALAYAN ENVIRONMENTAL RESOURCES (HER)

Himalayan Environmental Resources

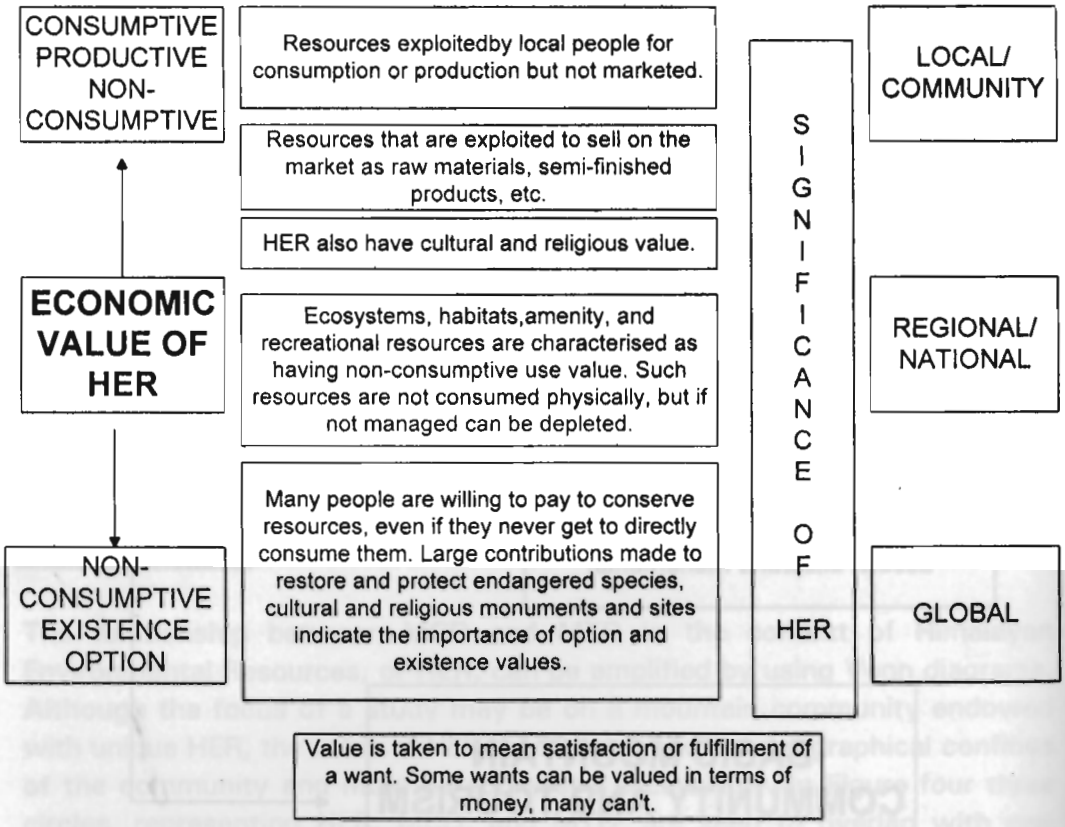
Includes all forms of resources endowed by nature, including life-supporting systems and waste-assimilative capacities. It also includes human capital and other man-made capital such as cultural and religious assets, sites and monuments.

"HER" HAVE ECONOMIC VALUE

BASIC MOUNTAIN COMMUNITY AND TOURISM DEVELOPMENT

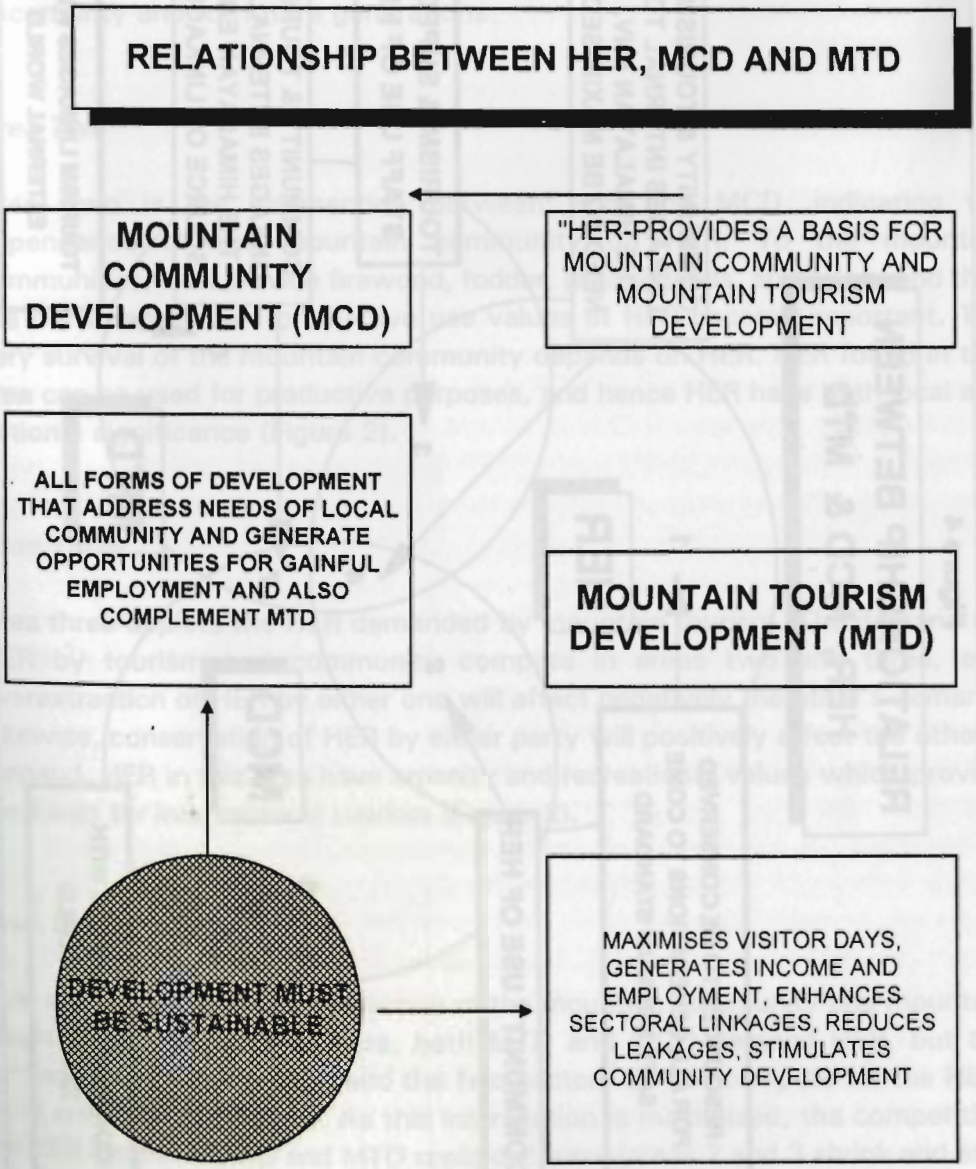
Figure 2

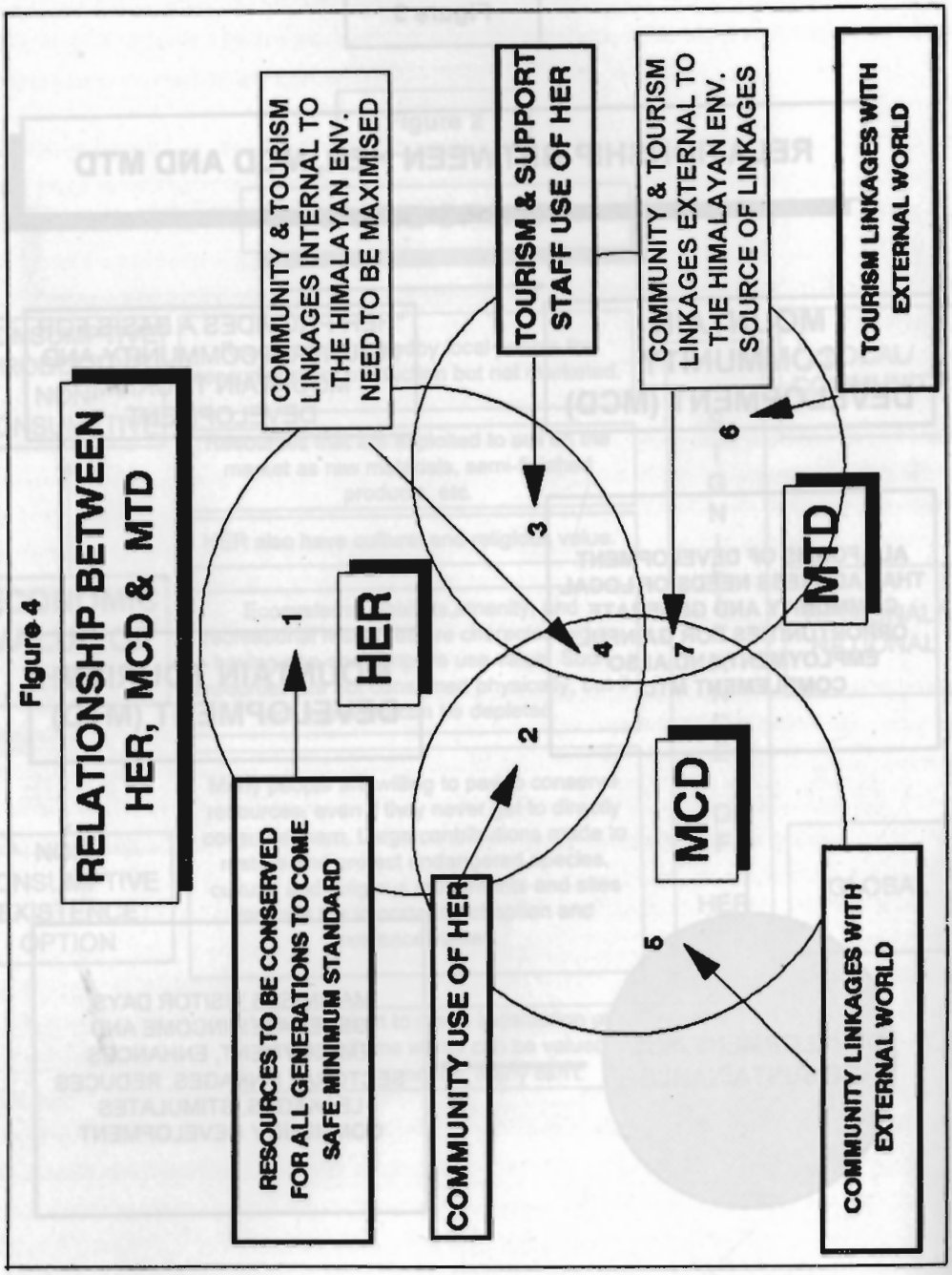
VALUE OF HER



Value is taken to mean satisfaction or fulfillment of a want. Some wants can be valued in terms of money, many can't.

Figure 3


RELATIONSHIP BETWEEN HER, MCD AND MTD
MOUNTAIN COMMUNITY DEVELOPMENT (MCD)
"HER-PROVIDES A BASIS FOR MOUNTAIN COMMUNITY AND MOUNTAIN TOURISM DEVELOPMENT
ALL FORMS OF DEVELOPMENT THAT ADDRESS NEEDS OF LOCAL COMMUNITY AND GENERATE OPPORTUNITIES FOR GAINFUL EMPLOYMENT AND ALSO COMPLEMENT MTD
MOUNTAIN TOURISM DEVELOPMENT (MTD)
DEVELOPMENT MUST BE SUSTAINABLE
MAXIMISES VISITOR DAYS, GENERATES INCOME AND EMPLOYMENT, ENHANCES SECTORAL LINKAGES, REDUCES LEAKAGES, STIMULATES COMMUNITY DEVELOPMENT


RELATIONSHIP BETWEEN
HER, MCD & MTD
COMMUNITY & TOURISM LINKAGES INTERNAL TO THE HIMALAYAN ENV. NEED TO BE MAXIMISED
TOURISM & SUPPORT STAFF USE OF HER
COMMUNITY & TOURISM LINKAGES EXTERNAL TO THE HIMALAYAN ENV. SOURCE OF LINKAGES
TOURISM LINKAGES WITH EXTERNAL WORLD
HER
MTD
MCD
RESOURCES TO BE CONSERVED FOR ALL GENERATIONS TO COME SAFE MINIMUM STANDARD
COMMUNITY USE OF HER
COMMUNITY LINKAGES WITH EXTERNAL WORLD
1
2
3
4
5
6
7
Figure 4

critical minimum levels or thresholds that need to be preserved to sustain gene pools, or breeding stock, etc should be defined and pre-served. The region can also be characterised as open to options and existence as well as bequeathing values. The level of HER existing in this region cannot be assumed to be substitutable by man-made capital (Daly 1991). In other words, area one is interpreted as the stock of HER that should be kept as a gene pool against uncertainty and for future generations.

Area Two

Area Two is the intersection between HER and MCD, indicating the dependence of the mountain community on HER. To the mountain communities, HER provide firewood, fodder, grazing lands, and so on, and thus the consumptive and productive use values of HER become important. The very survival of the mountain community depends on HER. HER found in this area can be used for productive purposes, and hence HER have both local and national significance (Figure 2).

Area Three

Area three depicts the HER demanded by mountain tourism. The demand for HER by tourism and community compete in areas two and three, and overextraction of HER by either one will affect negatively the other's demand. Likewise, conservation of HER by either party will positively affect the other's demand. HER in this area have amenity and recreational values which provide the basis for international tourism (Figure 2).

Area Four

This area represents the interaction of the mountain community and mountain tourism within the HER. Here, both MTD and MCD demand HER, but the demand is complementary, and the two sectors do not compete for the HER, as in areas two and three. As this intersection is maximised, the competition for HER between MCD and MTD could decrease (areas 2 and 3 shrink and area 4 expands). Furthermore, expansion in area four implies a greater linkage between MCD and MTD, as both sectors can exploit the economies of scale in development. As this linkage is enhanced, the competition for HER decreases, enabling greater conservation of HER.

Area Five

This area of MCD lies outside the HER, implying that community development also depends on the external environment. No community can live in isolation but will have to interact with the external world. Thus the mountain community's dependence on the external world is represented in area five, the community development linkage with the regional, national, and international community (or trade).

Area Six

Area six depicts a similar interaction of mountain tourism with the external world. Tourism development is dependent on resources external to HER.

Area Seven

The complementary nature of MCD and MTD also extends beyond the HER, as indicted by area seven. This is a case where benefits resulting from the complementary nature of MCD and MTD spill outside the mountain areas. In other words, area seven represents external activities that are directly related to MCD and MTD (area 4).

In the above illustration, leakages of benefits occur from areas five, six and seven. This leakage could be captured locally through development of MCD, which would imply expansion of areas two and four. Note that, as MCD expands, it will extend into area three as well, indicating that local communities will benefit increasingly from tourism (e.g., value-added). These leakages also spill over regionally, nationally, or internationally. Some competition for HER between these sectors will always occur, given the different nature of tourist demand and local community demand for HER. The two sets, namely MCD and MTD, are, however, never likely to overlap fully within the HER, given that MCD has to depend on the external environment for its development and tourism is an export sector.

Although it is possible to visualise other similar diagrams to describe different scenarios of mountain community and tourism development in the context of HER, the above illustration suffices to bring home the point that the best possible scenario is one in which MCD and MTD complement one another to the greatest extent possible. The larger the parts of these circles that overlap within the HER, the greater will be the benefits that are generated in the local area, and the greater their retention. Also, their complementary nature implies

that if tourism for some reason were to decrease or disappear, not all benefits would disappear, since MCD would still be important for generating benefits to the local people. This is desirable, since mountain tourism development should be led by mountain community development. In many parts of Nepal, mountain development is led by tourism development, and thus fluctuations in tourist arrivals result in large-scale economic losses for the local people. It should be noted that, even when the complementary relationship between MCD and MTD is present, changes in tourist arrivals will affect the local mountain economy, but the resilience of such areas will be stronger. Furthermore, it cannot be expected that all benefits resulting from tourism will be retained locally. Tourism is essentially (export) trade, and many activities are necessary in order to generate the final product, for which different products and factors have to be rewarded, many of which originate outside the mountain areas.

Carrying Capacity of the Himalayan Environment

Although the above discussion has presented a conceptual framework that helps link HER, MCD, and MTD, it does not address the carrying capacity (CC) of the mountain environment. Different types of carrying capacity concepts are often discussed in the literature.[2] For the sake of simplicity, carrying capacity is defined here as the maximum use by the community and tourism of a given geographical area and its HER for MCD and MTD without any adverse impact on the sociocultural, economic, and biophysical environments.

Carrying capacity is thus a multi-dimensional and dynamic concept, and it varies according to season, the changing behaviour and attitudes of tourists, and the local population, facilities, management practices, dynamic character of the environment, and level of local development. The concept of carrying capacity can be represented by a range of limits rather than a single fixed value. These limits are often determined according to the combination of three main factors: environmental threshold, investment options, and management policies. Determination of environmental thresholds is important in the assessment of carrying capacity. When applied to the mountain environment, carrying capacity indicates the number of people, including tourists, that it can support. Carrying capacity must be addressed in mountain development.

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[2] These include *environmental or biophysical* carrying capacity, *social or behavioural* carrying capacity, *economic* carrying capacity, and *infrastructural* carrying capacity, which are discussed briefly below.

The carrying capacity concept can be introduced in Figure Four to illustrate the interactions between HER, MCD, and MTD. A new circle to represent the carrying capacity is introduced as illustrated in Figure Five. The introduction of this circle gives rise to additional intersections, which can be interpreted in the following manner. Each intersection is marked serially.

Area One

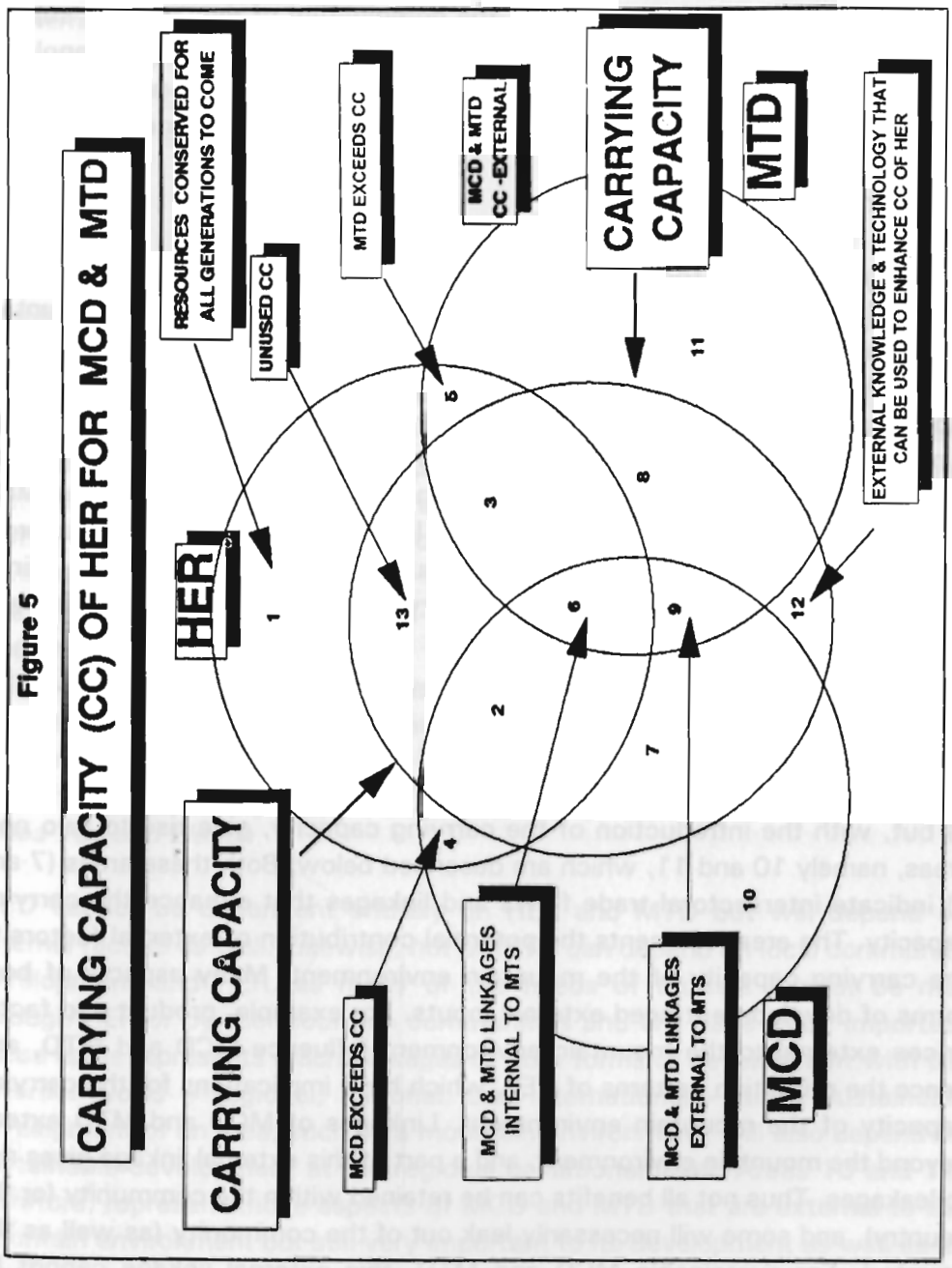
This area is similar to the one described above in Figure Four.

Areas Two and *Three*

These areas are also similar to the areas described above, except that, with the introduction of carrying capacity, the scope for MCD and MTD tend to reduce. All forms of development in the fragile mountain environments cannot be assumed to be environmentally friendly, and thus the choice of development activities narrows. The needs of tourists cannot all be complementary to mountain community needs, and some degree of competition for HER between tourists and the mountain community is bound to occur. The competition for HER in areas two and three is unlikely to be symmetric. However, these areas are within the carrying capacity of HER, and thus both MCD and MTD are sustainable.

Areas Four and Five

These areas are within the MTD and HER sets, but outside the CC set, indicating that MTD and MCD in these regions are unsustainable, as the carrying capacity of the mountain environment has been exceeded. It is evident from areas four and five that, while tourism and mountain development are integrated (areas 6 and 9), both kinds of development extend beyond the limits of the carrying capacity, perhaps because of encroachment upon sensitive ecosystems, the lack of appropriate technological opportunities, institutional bottlenecks and lack of improvement in human capital and other physical infrastructures, wrong investments, lack of planning, gaps in knowledge, market and policy weaknesses or failures, lack of management, and lack of coordination between different agencies (Chapter 1). With new technology, improved infrastructure and management, etc, it is possible to exploit the potential carrying capacity while avoiding the damage that can take place in mountain areas (areas 4 and 5). It may not always be possible to completely eliminate such excesses, since there will always be gaps in knowledge. Thus, within the context of HER, each form of development has


CARRYING CAPACITY (CC) OF HER FOR MCD & MTD
RESOURCES CONSERVED FOR ALL GENERATIONS TO COME
UNUSED CC
MTD EXCEEDS CC
MCD & MTD CC -EXTERNAL
CARRYING CAPACITY
MTD
EXTERNAL KNOWLEDGE & TECHNOLOGY THAT CAN BE USED TO ENHANCE CC OF HER
HER
CARRYING CAPACITY
MCD EXCEEDS CC
MCD & MTD LINKAGES INTERNAL TO MTS
MCD & MTD LINKAGES EXTERNAL TO MTS
MCD
1
2
3
4
5
6
7
8
9
10
11
12
13
Figure 5

an upper limit, which needs to be determined. Development beyond such limits can result in negative effects and become unsustainable. The portion of the HER that does not overlap with any of the three sets may be viewed as such an upper limit. Attempts should, however, be made to minimise these areas that exhibit unsustainability through the combination of demand and supply, management policy actions, research, introduction of appropriate technology, etc. A proper assessment of the economic value of environmental damage is needed, and for this natural resource accounting assumes some importance.

Area Six

This area represents the union of HER, MCD, and MTD and is within the CC of the HER. Here there is an integration or linkage of tourism with mountain community development. Both forward and backward linkages are established within MCD and MTD, and neither of these sectors competes for HER. Mountain-produced goods are utilised to the extent possible, import leakage is minimised, and greater opportunities for retaining benefits from both forms of development are enhanced. The complementarity relationship between MCD and MTD gives rise to multiplier effects as leakages are reduced, and a larger retention of benefits within the local community is made possible. Also, since this union lies within the carrying capacity, both mountain community and tourism development are sustainable.

Areas Seven and Eight

These areas are also similar to those described above (Figure 4, areas 5 and 6) but, with the introduction of the carrying capacity, give rise to two new areas, namely 10 and 11, which are described below. Both these areas (7 and 8) indicate intersectoral trade flows and linkages that enhance the carrying capacity. The area represents the potential contribution of external factors to the carrying capacity of the mountain environment. Many aspects of both forms of development need external inputs. For example, product and factor prices external to the mountain environment influence MCD and MTD, and hence the utilisation patterns of HER, which have implications for the carrying capacity of the mountain environment. Linkages of MCD and MTD extend beyond the mountain environment, and a part of this external linkage gives rise to leakages. Thus not all benefits can be retained within the community (or the country), and some will necessarily leak out of the community (as well as the country). For sustainable MCD and MTD, this external linkage cannot be avoided and hence some leakages are inevitable, although they can be minimised.

Stated differently, both these intersections represent intersectoral and international trade flows that influence the economic carrying capacity of mountain areas. Tourism is basically an international trade sector that has to also rely on resources that are external to the mountain resources. Furthermore, the full potentials of the external interactions are not fully used, as these areas are outside MCD and MTD but are within the CC of HER. Often poor marketing, policy, advertisements, etc may constrain external factors from enhancing the carrying capacity of the mountain environment.

Area Nine

In terms of linkages that take place outside the mountain environment, benefits of integrated mountain and tourism development extend beyond the mountain environment but lie within the carrying capacity. The complementary nature of MCD and MTD extends beyond the mountain environment and depends on external resources as well. Many interrelated or interdependent activities of both MCD and MTD take place outside the region for their sustainability. Planning, research, and technology, as well as many activities that affect both forms of development carried on outside the mountain environment, have implications for carrying capacity. Note that this area nine is different from seven and eight in that the latter areas are fairly independent, whereas area nine is not. A part of this complementarity (area 9) is in the form of leakages from the mountain area, and being within the carrying capacity, it is necessary for sustainable mountain development (local community and tourism development) and cannot be avoided.

Areas Ten and Eleven

MCD cannot be dependent entirely on HER and MTD but will depend on external factors as well. Likewise, not all MTD can depend on local community development and HER, as many of the needs of tourists cannot be met through HER or by the mountain communities and will have to be imported. These areas represents macro-linkages of both forms of development with the external world -- regional, national, and international -- since sustainable development of an area, such as a mountain environment, will also depend on sustainable development at the regional or national level. Areas 10 and 11, therefore, represent those aspects of MCD and MTD that are external to the mountain environment but still very important to its development as well as its carrying capacity. In other words, these areas represent interactions of MCD and MTD with sustainable development at regional and national levels, and they are influenced by many external factors as well.

Areas Twelve and Thirteen

Both these areas stand for dimensions of carrying capacity that remain unused. In the case of area 12, the unused carrying capacity is external to the mountain environment, whereas area 13 is internal. In the case of area 13, inappropriate policies, behaviour, and gaps in knowledge always result in some level of carrying capacity being left unused, and there is always scope too for of internalising external knowledge and technology (area 12) that can enhance the carrying capacity of the mountain environment. Still, it may never be possible to fully optimise carrying capacity, due to many factors. These areas (12 and 13) represent the scope for expanding the carrying capacity through research and technology, planning and management, infrastructural improvement, institutional development, and so on. Certain dimensions of the current MCD and MTD can be strengthened to eliminate parts of four and five in order to more fully utilise parts of 13, which may require external resources, knowledge, and technology (area 12).

Environmental, Social, Economic, and Infrastructural Carrying Capacity

Carrying capacity is a key concept in planning for sustainable mountain development, i.e., local community and tourism development. Carrying capacity seeks to establish ecological and behavioural thresholds beyond which biophysical and environmental (cultural and economic) factors, the quality of life of mountain people, and the visitor's experience do not deteriorate. Given the different dimensions of the environment, different types of carrying capacity concepts are often discussed in the literature.

Environmental or Biophysical Carrying Capacity

This is generally split into physical (size of space available for use) and biological or ecological (limits to acceptable impact on the flora, fauna, soil, water, and air quality) components.

Social or Behavioural Carrying Capacity

This generally refers to the level of impact tolerable before the visitor's experience is impaired. It also includes impact on the host population and its culture. Put differently, behavioural or social carrying capacity relates to individuals' perceptions of the number of people they feel comfortable with in any given environment.

Economic Carrying Capacity

Economic carrying capacity may be referred to as the ability to absorb tourism development without squeezing out desirable local development.

Infrastructural Carrying Capacity

This refers to the ability of physical facilities (of the community and tourists) to cope with community and visitor pressures and relates primarily to man-made capital.

Carrying capacity is thus a multi-dimensional and dynamic concept and varies according to season, behaviour, and attitude of tourists and the local population; quantity and quality of facilities; and management and 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 according to the combination of three main factors: environmental threshold, investment options, and management policies.

Operationalising the Concept

An attempt will be made to operationalise the above concept in two case study areas in subsequent chapters. At this stage it is not possible to fully implement the above framework for various reasons. First, the very nature of the study necessitates a greater focus on mountain tourism development. Secondly, the lack of information severely limits the implementation of the above framework, which, in addition, requires a great deal of refinement before it can be fully operationalised. As a result, in operationalising the framework, focus will concentrate on investigating critical factors only (Nijkamp et al. 1990).

By critical factors we mean crucial variables the presence (success factors) or absence (failure factors) of which are vital for the attainment of at least one element or object of sustainability but do affect other aspects of sustainability. Thus *critical factors are those which need to be changed from their current stage, or conserved or protected in their current state, in order to enhance the carrying capacity of the environment, based on some predetermined standard.* The critical factors belong to all three sets (HER, MCD, and MTD), and the state of HER, MCD and MTD may be viewed in terms of the outcomes that result as different sectors and subsectors in the mountain economy interact

with one another. An outcome is an action or inaction taken in any one sector that changes the state of the HER, MCD, and MTD. Critical factors can have negative or positive effects on MCD and MTD, and hence on HER. Negative factors (failure factors) result in an overall deterioration in the state of MCD, MTD, and HER, whereas positive factors (success factors) improve their current state.

A distinction of the following critical factors is made:

- critical resources,
- critical areas,
- critical behaviour,
- critical infrastructures, and
- critical institutions.

Critical Area and Critical Resources

A critical area is an area which by virtue of its natural occurrence experiences relatively greater stress, or is relatively more sensitive to increased human interference, or is relatively more scarce, or is characterised by extreme relative poverty and lack of critical resources, or else has potential for development (comparative advantage). Additionally, a critical area could be characterised by the representation of critical resources. A critical resource possesses the same above properties of a critical area. Critical resources can also be harnessed to promote development and conservation (e.g., water to produce electricity). Defining critical areas alone is not sufficient to protect the critical resources found in such areas.[3]

Since critical areas and resources are often not mutually exclusive, they can be treated under the same heading. Not all areas and resources found in the Himalayan environment can be considered to be critical. Generally, critical areas are characterised by critical resources that increase the biodiversity and cultural value of the area, are very rare, are necessary for survival, and are sensitive to human intervention. Additionally, critical areas would also encompass areas that are heavily used by people, but for which management is poor, with negative implications for the visitor's experience and for the

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[3] For example, certain species may be threatened within critical areas and need added attention for their protection. National parks are in a sense critical areas in the national context; poaching in there tends to endanger critical resources, such as musk deer and snow leopards, which need protection.

welfare of the local people. Some resources are more critical than others, and their presence or absence, quality and quantity can directly or indirectly influence the environment and the welfare of both visitor and host population of present and future generations.

Critical Behaviour

If human actions (both community and tourism-related) were not present, then the state of critical resources and critical areas would be subject to natural processes and we would not need to be concerned with conservation. Behaviour is critical and, if people do not follow rules and regulations, then conservation efforts, tourism, and local development cannot be successful. Attitude and perception toward conservation and development are reflected in human behaviour. Some human behaviour is more desirable than others. Management action is needed to motivate desired behaviour and to discourage behaviour that is not desirable. It is important to identify such critical behaviour of host and visitor populations. Local people, i.e., the host population and lodge owners, are both producers and consumers of resources, whereas visitors and their support staff are only consumers. All such parties may display critical consumption and production behaviour depending on the nature and extent of economic incentives and disincentives. Economic incentives and disincentives can be used as policy tools to motivate desired consumption and production behaviour while discouraging undesirable varities (McNeely 1988). In many instances, even though there may be no written code of conduct, a community generally adheres to a code. Deviation from such accepted norms is a form of critical behaviour that can generate either positive or negative outcomes. Insofar as behaviour generates positive benefits, such behaviour needs to be promoted, and, if, on the other hand, behaviour generates negative outcomes, it needs to be discouraged.

Critical Infrastructures

In remote and inaccessible parts of mountain areas that are characterised by extreme poverty, all forms of development, including infrastructures or man-made capital, may appear to be critical. Viewing critical development in this manner and trying to develop accordingly would take many years, and, besides, resources would be constrained. Therefore, not all infrastructures can be considered to be critical. A critical infrastructure is one that reduces stress on or promotes the biophysical, economic, and social carrying capacity of the area in question and which is important in promoting the well-being of the host and visitor populations. It has been often argued that poverty is the root cause

of environmental degradation. Poverty can be mitigated only if economic opportunities in such areas are expanded rapidly. For example, increased income and its distribution will enhance the purchasing power of mountain communities and will enable them to substitute alternative energy resources for firewood, which will enhance conservation. If tourism is considered to be a driving force for economic growth in the area, attention should be given to identifying critical infrastructures (trails, campgrounds, lodges, etc) to promote tourism development, and this development should be integrated with community development.

Critical Institutions

Referring back to the concept of mountain tourism development, four partners, namely, government, non-profit organisations, the local community, and the business community, are involved in providing different supply components of tourism as well as furthering community development. These partners have definite roles to play in promoting sustainable mountain development. There should be specified roles and responsibilities and overall coordination. The overall scope of work expected from NGOs and the business community depends very much upon how the government conceives the part of tourism business under its area of jurisdiction. Thus, the management objective of the government at the central level should be clearly defined. The more the government intervenes in the tourism business, the less scope there remains for effective participation of both profit and non-profit organisations in promoting tourism development. This central level institution must have representatives from the different partners to set policy guidelines, establish standards, and to monitor critical factors.

Local people at the grass-roots' level are also key partners, and they should be involved in decision-making, in planning and implementation, and in monitoring development and conservation in local areas (destinations and sites). The combined role of the different partners as an entity in itself gives rise to forms of development that may be termed critical development. These four partners, through proper coordination and information-sharing, must be made responsible for tourism development in mountain areas that are amenable to community development and conservation.

Value of Himalayan Environmental Resources

Himalayan Environmental Resources deserve special attention for several reasons:

- the conversion of HER is in many instances irreversible;
- HER provide the basis for MCD and MTD; and
- both MCD and MTD have important positive impacts on national development as well.

Economic growth and technological change can have irreversalities and asymmetries. HER cannot be recreated by development no matter what forms of technological development may occur (Daly 1991). HER have very limited substitutes and so the demand for their use has to be unique; namely a steep slope with significant *option demand* (Krutilla 1967; McNeely 1988). There are other forms of demand associated with HER depending on the different users that give rise to different forms of value. The different users are the local community, tourists, the support staff, and others. It is important to know how each group values HER. Understanding the different types of value placed by each group on HER provides a basis for developing a sustainable mountain and tourism development plan on the one hand and also for identifying the role and responsibilities of each agent.

Whenever an individual or a group of individuals derives satisfaction or fulfills a want from something, value is said to be generated. Economic value arises when satisfaction is derived from consuming resources directly or indirectly. The economic value of HER consists of actual value, option value, existence value, and non-consumptive use value. These HER in themselves have no value, and they are valued only because they are capable of being turned into goods and services for local communities and tourists who are willing to pay for their consumption. Thus, the demand for HER is a derived demand (McNeely 1988; Winpenny 1991).

Different people will assign different relative values to HER. It can be safely argued that local people will place relatively higher value on the direct use of HER, i.e., on those resources that meet their current needs. These direct uses, also called **consumptive use value**, refer to resources, such as firewood, timber, grass, pasture land, and other forest products, that bring benefits to the local community at some point in time and in future and do not enter the market. HER have productive use value as well. **Productive use value** refers to resources that are exploited for commercial purposes, e.g., firewood cut to sell to tourist lodges, medicinal herbs, spices, mushrooms, etc. Consumptive and productive use value together make up **actual value**, which is derived from the present or future use of resources and includes the direct personal or group benefits generated as well as benefits that accrue indirectly.

Non-consumptive use value refers to nature's functions or services. HER provide services without being consumed or traded. Many forms of mountain tourism have non-consumptive use values, which provide economic justification for conserving HER.

Option value refers to the option of individuals to postpone consumption of HER. This is an expression of preference or willingness to pay for the preservation of an environment given some probability that an individual or group will make use of it some time in the future. After all, the future is uncertain and society should prepare for unpredictable events. The best way to avoid danger (extinction or irreversible losses) is for society to preserve as many environmental niches (protected areas, nature preserves, etc), gene pools, or important environmental resources as possible. Safe minimum standard criteria should be used to prevent irreversibility and to ensure resource availability for future generations. The **willingness to pay** to preserve an environment for the benefit of our children and grandchildren is also a form of option value, better known as **bequest value.**

Existence value relates to the satisfaction from knowing that a resource exists, or else it concerns the right and welfare of non-humans. Many people value the existence of cultural sites, wildlife species, scenic places, etc, although these may not be in actual use.

Safe Minimum Standard (SMS) implies avoidance of physical conditions that would make it uneconomical to halt and reverse depletion. For example, SMS can be set for such critical resources as soil, forestry, grassland, animal species, and so on based on expert opinion. Although maintenance of minimum stocks involves costs, these costs may be meagre compared to the loss from resource extinction.

The different values discussed above have to be understood in the context of mountain development and its conservation. Consumptive use value of HER is high for the local people and provides the basis of survival to many mountain communities. Thus, for local people, firewood, litter, different forest products, and so on have a very high consumptive use value. Productive use value is more relevant at the regional and national level, although its value to the local community may also be very high. There are many resources in the Himalayas which, if properly managed can provide high productive use value to local people (e.g., harvesting of herbs, mushrooms, etc). Non-use values are relevant at the international level now that society has begun to realise that the global environment is in fact one huge environment and that its health

depends on all smaller environments. To the tourist, the non-consumptive use value of HER is high. All conventional economic methodologies, such as cost benefit analysis and resource accounting, fail to account for all these non-use values of the environment. Non-use values, although not easily quantified, should be noted nevertheless. Different methods exist to evaluate such resources.[4]

Necessary Elements for Developing Mountain Tourism

Assessment of Community Assets for Tourism Development

Community assets, which may be undeveloped and of use for community and tourism development, need to be identified. Tourism development will require additional facilities that may not be part of direct community development. The nature of tourist demand is such that it will require facilities and services generally not required by the local community. The development of such facilities and services, however, needs to be linked with local production activities in order for the local community to benefit from tourism.

The present state of community assets and the extent of services they currently provide need to be assessed. The different needs of the local community and tourists in relation to MCD and the type of MTD that is envisaged must then be assessed in the context of HER. The community assets can be broadly grouped into six different types, namely:

- natural tourism assets,
- cultural assets,
- information,
- infrastructure,
- tourism services and facilities, and
- institutions.

Natural Tourism Assets. These assets include the mountains, the forests, protected areas, waterfalls, lakes, rivers, wildlife, biodiversity and all unique natural features that are rarely found in other places and possess high non-consumptive use values.

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[4] There are different methods to evaluate environmental resources such as HER, a discussion of which is beyond the scope of the present study. Details can be found in Portney (1994); Hanemann (1994) and Diamond and Hausman (1994).

Cultural Assets. The cultural heritage of the local community is an important asset of the community. Historical buildings, sites, shrines, temples, *gomba*(s), archaeological sites or collections, folklore, traditions, festivals, handicrafts, museums, and so on are all cultural assets of a community that can attract tourists if properly developed.

Information. Tourists like to know about the climate and weather conditions of an area in order to prepare themselves with regard to clothing and other needs. Other information about the area is also desirable. Thus brochures, information centres, museums, and so on play an important role in promoting tourism and ensuring visitor satisfaction.

Infrastructure and Facilities. Infrastructure and facilities may be considered to be the spine of tourism. The availability and quality of the facilities are important in determining the carrying capacity of tourism in an area.

Partnership in Mountain and Tourism Development

A second necessary step to better understand MCD and MTD in the context of HER is to identify the various direct and indirect users of HER. The local community and tourists are direct users of HER. The local communities' relationship with HER is unique, e.g., rural farm households, who are users as well as managers of HER. Thus, their role as a partner in MCD and MTD is critical.

Second come the tourists, who demand HER for a variety of purposes, the value of HER to them being different from that of the local community. These two groups, namely, the mountain community and the tourists, are the direct users of HER, and the value of HER to these two groups varies, as already noted above.

Also related to tourist demand is the demand for HER on the part of the private sector that takes tourists to their destination and the support staff, including porters, who accompany them. Both private sector and porter demands for HER are of a different type, since such persons do not go to the mountains for the sake of consuming resources, as tourists do, but to provide services to the tourists. *In other words, the demand for HER by the private sector and the support staff should be reflected in the tourist demand for HER.* This distinction is important since the demand for firewood by the support staff who accompany tourists to mountain areas is high. Although in some places

firewood use by tourists has been restricted, this is not true with regard to porters.

NGOs or INGOs (simply referred to as NGOs) have been playing an important role in mountain development recently. Although NGOs are not direct users of HER, they influence the use of HER in a variety of ways, e.g., through education, awareness programmes (sanitation, hygiene, toilets, family planning, etc), income-generating activities, infrastructural expansion, and so on. The role of NGOs, therefore, has been to change the consumption and production behaviour of the mountain communities which affect HER.

Also, other development agents appointed by the government play an important role. In the case of the Annapurna Conservation Area, the King Mahendra Trust for Nature Conservation (ACAP) has a strong influence on the area's overall development, including tourism. In the case of Gorkha, the Gorkha Development Project (GDP) and its several project partners (NGOs) have begun to play a similar important role, although tourism development has yet to become a separate focus of the GDP.

Furthermore, these different actors or agents can be grouped into those that demand HER for consumption and production purposes and those that can influence consumption and production behaviour, and hence the supply of HER. The demand side includes the local people, the tourists, and their support staff. On the supply side are the local people who manage HER, the NGOs, and the government. The role of the private sector is an intermediate one, i.e., that of a middleman who can play an important role in filling the gap in investment options related to tourist facilities, marketing mountain tourism, and bringing tourists to the Himalayas. If HER are seen from the national and international point of view, the role of other partners also becomes important. For example, water resources originating in the Himalayas can be used to generate electricity.

Institutions

Finally, it is extremely important to build local institutions to support sustainable mountain development and to monitor and manage HER. Without such a management body at the grass-roots' level, the whole issue of carrying capacity and a subsequent action plan to ensure sustainable mountain development becomes meaningless. Clearly, NGOs and the government should play an important role in identifying and facilitating such institutions at the local level (destination).

Integration of tourism development with mountain development at the local level is essential for promoting intersectoral linkages, maximising the retention of benefits locally, and reducing leakages. The higher the degree of linkage, the larger will be the multiplier effect of tourist expenditure. The optimisation of benefits from tourism therefore depends on the nature and extent of both backward and forward linkages of development at the community level. Tourist products need to be developed through establishing strong backward linkages with agriculture and rural industries.

3
Annapurna Conservation Area And The Annapurna Conservation Area Project

Introduction to Annapurna Conservation Area

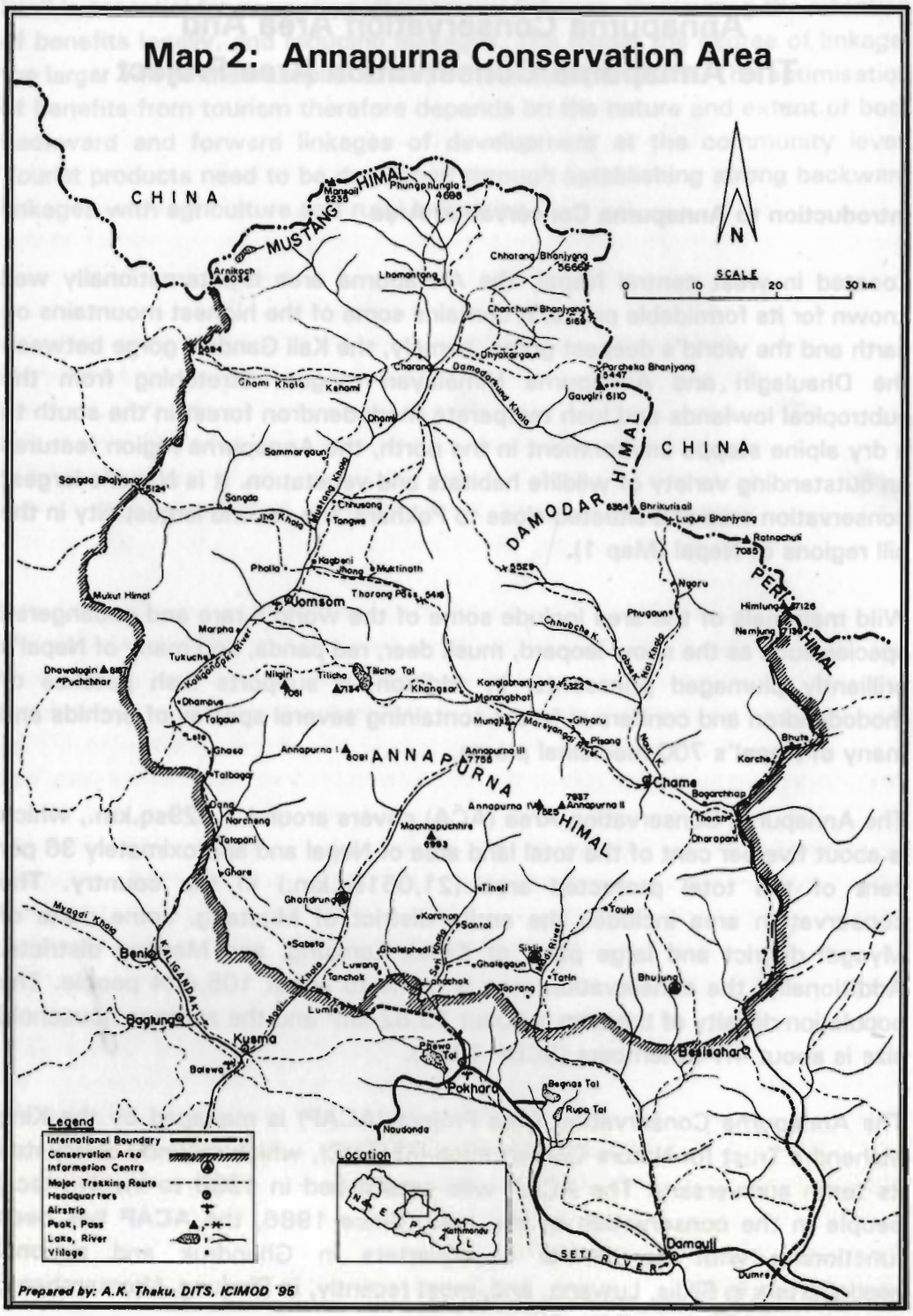
Located in west central Nepal, the Annapurna area is internationally well known for its formidable peaks. It contains some of the highest mountains on earth and the world's deepest gorge, namely, the Kali Gandaki gorge between the Dhaulagiri and Annapurna Himalayan ranges. Stretching from the subtropical lowlands and lush temperate rhododendron forest in the south to a dry alpine steppe environment in the north, the Annapurna region features an outstanding variety of wildlife habitats and vegetation. It is Nepal's largest conservation area and situated close to Pokhara, the second largest city in the hill regions of Nepal (Map 1).

Wild mammals of the area include some of the world's rare and endangered species such as the snow leopard, musk deer, red panda, and many of Nepal's brilliantly plumaged pheasants. In addition, it supports lush patches of rhododendron and coniferous forest containing several species of orchids and many of Nepal's 700 medicinal plants.

The Annapurna Conservation Area (ACA) covers around 7,629sq.km., which is about five per cent of the total land area of Nepal and approximately 36 per cent of the total protected area (21,051sq.km.) in the country. The conservation area includes the entire district of Mustang, some parts of Myagdi district and large parts of Kaski, Lamjung, and Manang districts. Additionally, the conservation area is home to about 105,424 people. The population density of the area is about 13.82/km^2 and the average household size is about 4.74 members (BCDP 1994).

The Annapurna Conservation Area Project (ACAP) is managed by the King Mahendra Trust for Nature Conservation (KMTNC), which recently celebrated its tenth anniversary. The ACAP was established in 1986 to involve local people in the conservation of the area. Since 1986, the ACAP has been functioning with its central headquarters in Ghandruk and regional headquarters in Siklis, Luwang, and, most recently, in Bhujung, Lhomanthang, Jomsom, and Manang (Map 2).

Map 2: Annapurna Conservation Area



Prepared by: A.K. Thaku, DITS, ICIMOD '96

Physical Features

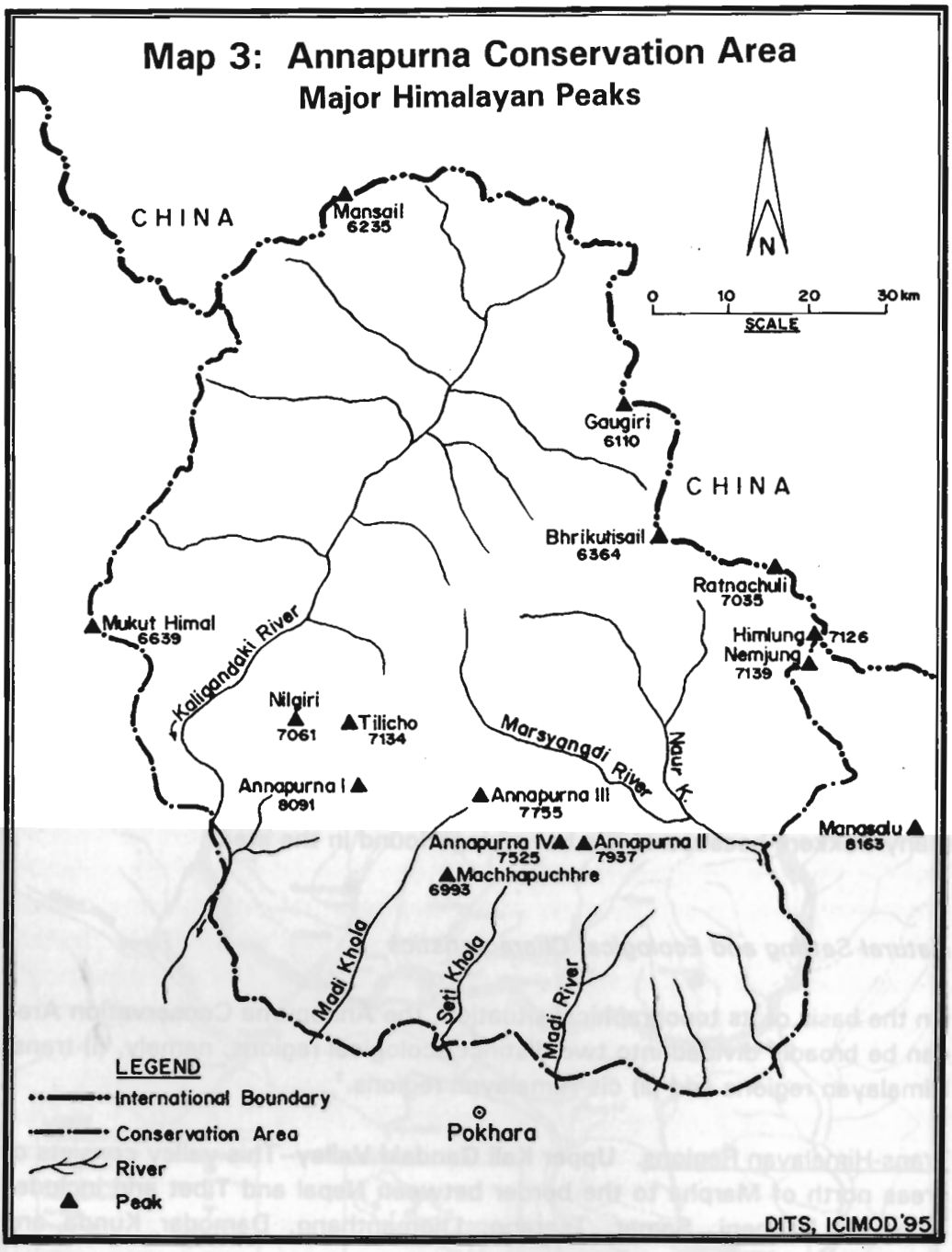
The Annapurna Conservation Area is dominated by mountain ranges and peaks, namely, the family of Annapurna peaks, Nilgiri south, Nilgiri north, Tilicho peak, Himchuli, Machhapuchhre, Gangapurna, Lamjung Himal, and Tukuche peak (Map 3). The grandeur of these peaks is best seen from Pun hill, located in Ghorepani village, and from Ghandruk village, through fir and rhododendron forests. The Annapurna range stretches from north to south, and the Kali Gandaki and Marsayangdi rivers lie on either side. Madi River originates at the Annapurna base camp. These three major river systems drain the Annapurna Conservation Area. The altitudinal range can vary anywhere from 1,000 metres above sea level (masl) to 8,000masl, resulting in a mosaic of different geographical zones, from subtropical conditions in the southern part to an alpine zone in the north. In a stretch of less than 50km, tropical hardwood trees (such as *Shorea robusta, Terminalia tomentosa, Bombax ceiba,* and *Eugenia jambolana*), pine-clad hills and oak forests at medium altitudes, then rhododendrons and firs that give way to birches and junipers before the vegetation changes to alpine scrublands, grasslands, meadows, and, finally, a treeless zone can all be found. Many waterfalls are encountered throughout the Annapurna trekking circuits. Two high-altitude lakes (i.e., Damodar Kunda and Tilicho) are located within the ACA. The sacred pilgrimage spot of Muktinath is located near the base of the Thorang La (pass) which divides the Kali Gandaki and Marshyangdi valleys. Kagbeni is the gateway to the upper Mustang district, which has only recently been opened to limited groups of tourists. The upper Kali Gandaki Valley features numerous fossil amenities (N. *saligram*). Tatopani, in the lower Mustang district area, is a sub-destination for many trekkers because of the hot springs found in the area.

Natural Setting and Ecological Characteristics

On the basis of its topographical situation, the Annapurna Conservation Area can be broadly divided into two distinct ecological regions, namely, (i) trans-Himalayan regions and (ii) cis-Himalayan regions.[1]

Trans-Himalayan Regions. **Upper Kali Gandaki Valley**--This valley consists of areas north of Marpha to the border between Nepal and Tibet and includes Jomsom, Kagbeni, Samar, Tsarang, Lhomanthang, Damodar Kunda, and

[1] The following notes on natural setting and ecological characteristics are elaborated in Bio-Diversity Conservation Data Project, Final Report, 1994.


Map 3: Annapurna Conservation Area
Major Himalayan Peaks
CHINA
Mansail
6235
N
0 10 20 30 km
SCALE
Gaugiri
6110
CHINA
Bhrikutisail
6364
Ratnachuli
7035
Himlung
7126
Nemjung
7139
Mukut Himal
6639
Kaligandaki River
Nilgiri
7061
Tilicho
7134
Marsyangdi River
Naur K.
Annapurna I
8091
Annapurna III
7755
Manasalu
8163
Annapurna IV
7525
Annapurna II
7937
Machhapuchhre
6993
Madi Khola
Seti Khola
Madi River
LEGEND
International Boundary
Conservation Area
River
Peak
Pokhara
DITS, ICIMOD'95

Muktinath. Jomsom is the headquarters of Mustang district and has a dry climate. The area lies north of the main Himalayas.

In this region, *Caragana brevifolia, Lonicera obvata, Rosa* sp, *Artemisia* sp, *Ephedra gerardiana*, and *Juniperus indica* are the dominant plant species generally found between 2,850 to 3,500masl, grassland shrub from 3,500 to 4,900masl, and rocks above 4,900masl.

Upper Marsayangdi Valley--This valley is situated in the northern part of central Nepal and is surrounded by the Himalayas on all four sides, namely, Annapurna in the south; Mukut in the west; Damodar in the north; and Mahalangur in the east. In Manang, the Khangsar and Kone *khola* (rivers) meet to form the Marshyangdi River. The Marshyangdi River proceeds south-east and then turns south through a narrow gorge formed by the Annapurna and Mahalangur ranges. The upper Marshyangdi Valley has a diverse habitat and represents the ecological zones upward from the temperate region. *Picea smithiana, Taxus baccata, Tsuga dumosa, Abies spectabilis, Betula utilis, Juniperus indica, Rhododendron arboreum,*and *R. barbatum* are dominant species from 2,700 to 3,150masl. *Pinus wallichiana, Juniperus indica, Betula utilis, Juniperus squamata, Rhododendron campanulatum*, and *R. lepidotum* are found in the 3,150 to 3,500masl range. Shrub and rocks with *Saussurea gossyphora* and *Cremanthodium purpureifolium* are prominent above 3,500masl.

Cis-Himalayan Region. **Madi Valley**--The Madi River originates from the base of Annapurna VI and Lamjung Himal and cuts a deep valley draining south through different vegetational zones. Subtropical, deciduous hill forests make up the Madi River's alluvial fan. *Alder, Bombax ceiba, Schima wallichii, Castonopsis indica, Toona serrata, Cinnamomum tamala, Alnus nepalensis, Rhododendron arboreum, Lyonia ovalifolia, Cyathea spinulosa, Shorea robusta*, and *Woodfordia fruticosa* are prominent species of plants found in this area.

Bhujung Region--The Bhujung region is located along the eastern bank of the Midim River on the southern slope of Lamjung Himal. The Midim and Khudi rivers are mostly covered by a dense forest in the east to Marshyangdi and west to Kali Gandaki. Dominant species in this region include *Bombax malabericum, Schima wallichii, Castanopsis indica,* and *Maesa chisa (1,100-1,500m); Viburnum erubescens, V. mullaha, Maesa chisia,* and *Quercus lamellosa (1,500-2,100m); Lyonia ovalifolia, Lex diparina, Eurya acuminota, Michelia kisopa,* and *Daphniphyllum himalayensis (2,100-2,700m)*; *Taxus*

baccata, Rhododendron arboreum, R. barbatum, and *Sorbus cuspidata (2,700-3,100m)*; and *Abies spectabilis, Rhododendron campanulatum, R. barbatum,* and *Betula utilis*. Shrubs dominate the vegetation beyond 3,500masl.

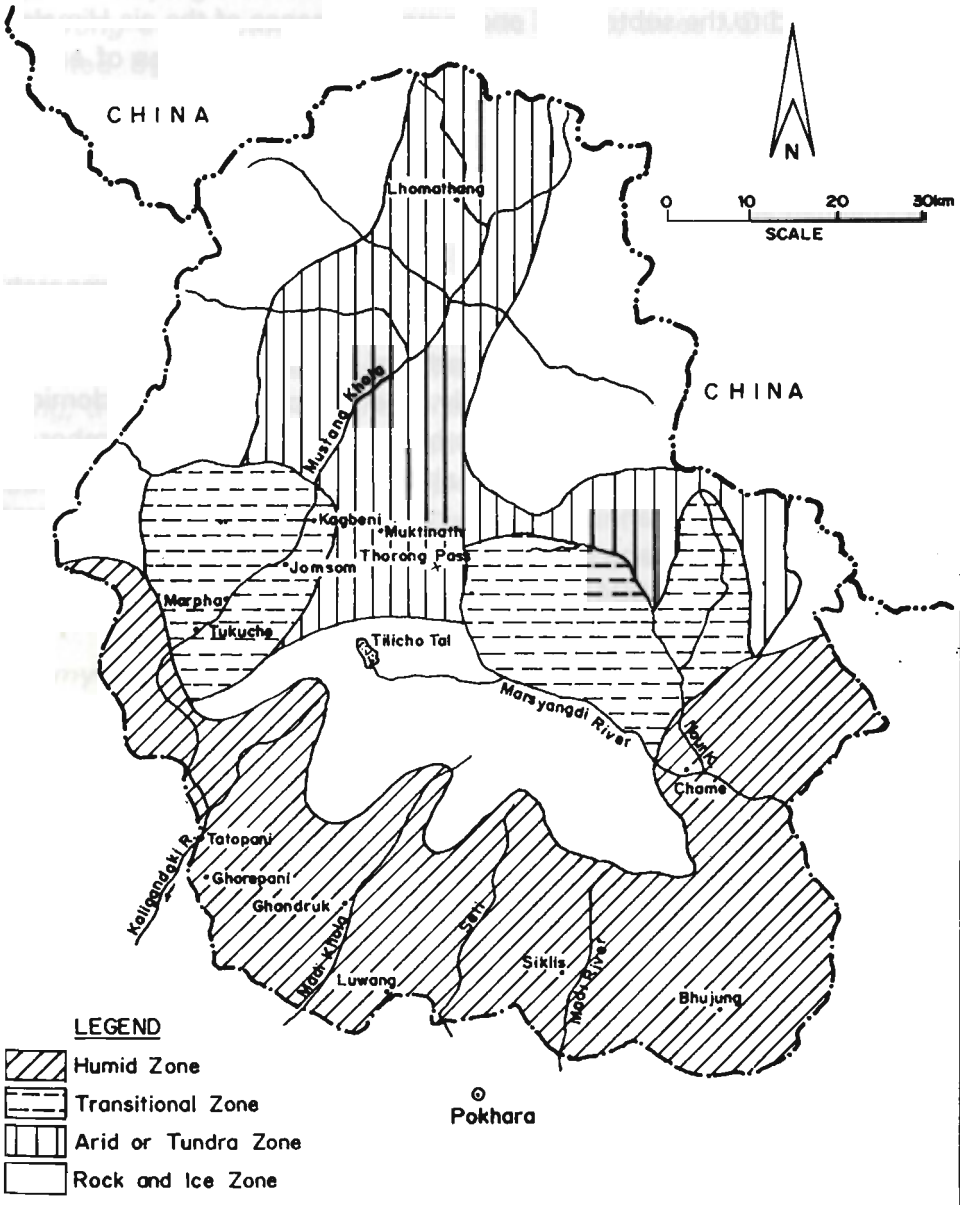
Lower Kali Gandaki Valley--Most of the lower Kali Gandaki Valley lies within the ACA. This region is characterised by subtropical and temperate regions. Dominant species in this valley are: *Shorea robusta, Bombax malabericum, Schima wallichii,* and *Castanopsis indica (850-1,400m)*; *Schima wallichii, Castanopsis indica, Rhus successidiana,* and *Toona ciliata (1,400-2,100m)*; and *Rhododendron arboreum, Pinus wallichiana,* and *Picea smithiana*.

Lower Marsayangdi Valley--The lower Marshyangdi Valley falls within the tropical to temperate regions. This area is much disturbed by human settlement, with trees being lopped for different purposes. The dominant species in this valley are: *Shorea robusta, Bombax malabericum, Schima wallichii, Castanopsis indica*; *Schima wallichii, Castanopsis indica, Rhus successidiana, Toona ciliata*; and *Rhododendron arboreum, Pinus wallichiana, Picea smithiana*.

Areas West of Madi--The subtropical zone west of Madi is heavily disturbed by human settlement and encroachment. South-facing slopes of the temperate zone are dominated by pure rhododendron forests. Species' distribution in this region are: *Schima wallichii, Castanopsis indica, Alnus nepalensis, Rhus wallichiana, Bombax malabericum, Pinus roxburghii,* and *Engelhardtia spicata* (1,100-1,800masl); *Viburnum erubescens, Rhododendron arboreum, Daphniphyllum himalayenis, Maesa chisa,* and *Daphne bolua* (1,800-2,400masl); *Rhododendron arboreum, Quercus lamelossa, Q. semecarpifolia, Mahonia nepaulensis, Michelia kisopa, Acer* sp., and *Sorbus cuspidata* (2,400-3,000masl); *Abies spectabilis, Taxus baccata, Tsuga dumosa, Betula utilis, Rhododendron campanulatum, R. arboreum,* and *R. barbatum* (3,000-3,300masl); *Rhododendron lepidotum, R. campanulatum, Juniperus recurva, Ephedra gerardiana,* and *Potentilla* sp. (3,300-4,000masl); and shrubs above 4,000masl.

The complex natural settings and ecological characteristics are reflected in a wide spectrum of vegetation types which range within the Annapurna Conservation Area (Map 4) from below 1,000masl in elevation to the trans-Himalayan alpine region. The many plant species endemic to Nepal include *Rhododendron campanulatum, R. lowndesii,* and *Picea smithiana*. A total of 1,226 plant species have been recorded in the Annapurna Conservation Area.

Map 4: Annapurna Conservation Area
Zoogeographical Regions



Source: Adapted from Biodiversity Conservation Data Project, KMTNC, 1994 DITS, ICIMOD '95

This includes 928 species of dicotyledons, 196 species of monocotyledons, 15 species of gymnosperms, 85 species of pteridophytes, and two species of fungi from a total of 150 families. In all, 38 species of orchids and nine species of rhododendrons have been recorded in this region (BCDP 1994).

Furthermore, 22 forest types are known within the Annapurna region. Most of them are confined to the subtropical and temperate zones of the cis-Himalayan region. In total, 426 species of medicinal plants and 54 species of endemic plants have also been recorded.

Climate

The climate varies with altitude and aspect. There is a 6^{0}C drop in temperature for every 1,000m rise in elevation (DUHE 1977). The average daily temperature decreases between the months of December and February and reaches a maximum between May and July. The seasonal climate is dominated by the southerly monsoon, which occurs between June and September. The rainfall type is mainly related to aspect, altitude, and the presence of a rain-shadow effect. Average annual rainfall ranges from 193mm in the trans-Himalayan region of Mustang to 2,987mm at Ghandruk, which is in the cis-Himalayan region (BCDP 1994).

Wildlife

The variation in altitude and topography, along with the existing forest cover, provides a wide range of habitats. Twenty-two species of amphibians from five families, 39 species of reptiles from eight families, 101 species of mammals from 23 families, and 474 species of birds from 52 families have been reported in the Annapurna Conservation Area (BCDP 1994). The brown bear (*Ursus arctos*) was also sighted for the first time in Damodar Kunda. The Himalayan *thar* (*Hemitragus jemlahicus*), barking deer (*Muntiacus muntjak*), *serew* (*Capricornis sumatraensis*), goral (*Nemorhaedus ghoral*), Himalayan bear (*Selenarctos thibetanus*), musk deer (*Moschus chrysogaster*), blue sheep (*Pseudois nayaur*), red panda (*Ailurus fulgens*), and snow leopard (*Panthera uncia*) are among the rare species found within the Annapurna region. Among these animals, the musk deer, the red panda, and the snow leopard are on the world list of endangered species. The Annapurna region also provides excellent habitats for various types of spring and autumn birds migrating from India and China, as well as from other regions.

Human Settlement and Culture

There are many villages to be found within the Annapurna Conservation Area. The number of village development committees (VDCs) and total population distribution is summarised in Table 3.1. Seventeen VDCs of Kaski and eight VDCs of Lamjung district are within the Annapurna Conservation Area, with the *Gurung* constituting the main ethnic group; three VDCs of Myagdi are dominated by the *Magar*; 18 VDCs of Manang by the *Managi Gurung*; Muktinath Valley by the *Mustangi* and *Baragaun Bhotia*, and the *Thakali* occupy the whole 18 VDCs of the Mustang region except at lower elevations. In the peripheral parts of the villages, *Brahmin, Kshetri, Kami, Newar* and other ethic groups are also to be found. The settlement pattern is usually clumped in most *Gurung* villages, whereas a scattered pattern occurs in villages dominated by other ethnic groups. Therefore, the region is culturally heterogeneous, and this is one of the main attractions to tourists who visit this region. The people who inhabit the high mountain regions are mostly the *Gurung,* the *Bhotia,* and the *Thakali* ethnic groups. Other people living in lower cis-Himalayan regions are mixed ethnic groups and include both Hindus and Buddhists. The Muktinath temple (Muktikshetra), located within the conservation area, is religiously an important place for both religions. Thousands of people come to the Muktikshetra each year to worship Lord Shiva.

Economy

The people in the Annapurna region, as in other rural areas of Nepal, depend on traditional agricultural practices and farming for their livelihood. Tourism also provides income for a large number of people in this region.

In cis-Himalayan regions, two crops are generally harvested annually, but they are believed to be inadequate to meet the food needs of the population. A large number of people, from the *Gurung* and *Magar* ethnic groups especially have traditionally been migrating to join the British and Indian armies. Thus, remittances and pensions are major income sources for many households in the region. But a large majority continue to rely on agriculture and animal husbandry to fulfil their basic needs.

Buffalo and cattle rearing occur all over the Annapurna region for milk and ghee producton, drafting, and other purposes. Yaks are found above 2,000masl. Sheep and goats usually graze in meadows not accessible to yaks and in areas where there is not enough fodder for larger livestock.

Other socioeconomic activities in the region include portering, operating teashops and lodges, bartering, producing and selling handicrafts, and collecting medicinal plants. The dependence of the local people on natural resources, or HER, is therefore to be seen in many activities. A recent study characterises these aspects of the population and natural resources of the area (BCDP 1994):

- the southern slopes (termed the cis-Himalayan zone) feels the high impact of human encroachment due to an exploding population and tourism, and the trans-Himalayan valley, with a very low population density is feeling a similar impact from tourism alone; and
- population density is rather high on the southern slopes in comparison to the trans-Himalayan zone.

Tourism in the Annapurna Region

The ACAP area is by far the most popular mountain tourism destination in the Nepal Himalayas. Trends in tourist visits to the Annapurna area are shown in Table 3.2.

Review of the Annapurna Conservation Area Project

Introduction

This section reviews some aspects of the Annapurna Conservation Area Project (ACAP), based on literature that was made available to CREST by the King Mahendra Trust for Nature Conservation. The Annapurna area encompasses 2,600sq.km. of high Himalayan terrain in which reside more than 40,000 people in five administrative districts. Though many ethnic groups with diverse cultural backgrounds are found in the area, providing a true mosaic, *Gurung, Magar* and *Thakali* are the dominant ethnic groups. The southern slopes are dominated by the *Gurung* and *Magar*, the northern and eastern areas by the *Manangi*, and the western Kali Gandaki Valley by the *Thakali,* the *Manangi* and Tibetans (Gurung 1990). Traditionally, *Gurung* and *Magar* serve in the British and Indian armies, whereas *Thakali* have been traders, carrying on business across the borders into Tibet and India. The majority of the inhabitants are poor farmers who are heavily dependent on land and nature for their livelihood.

Because of the area's unique and diverse ecological and cultural features, as well as accessibility, the Annapurna region has been by far the most popular

mountain tourist destination in Nepal. From a total of eight in 1966, the Annapurna region alone is now host to over 45,000 visitors each year and exceeds all visitors combined to other mountain areas. Despite positive benefits that tourism has brought to this region, deforestation, habitat destruction, litter, garbage, and other negative effects have also occurred, posing serious threats to the overall natural environment of the area.

In response to this impending ecological crisis, the King Mahendra Trust for Nature Conservation (KMTNC) was created by royal directives to implement meaningful conservation measures in order to strike a realistic balance between tourism, economic development, and nature conservation in the Annapurna region. KMTNC, founded in 1982 as a non-governmental and non-profit organisation, undertook a feasibility study of the area in June 1985. This study resulted in an Annapurna Conservation Area operational plan, and thence the Annapurna Conservation Area Project (ACAP). This plan advocated a new concept in protected area management by stimulating both improved local land-use practice, community development, and environmental protection rather than establishing a national park.The ACAP plan was officially approved in July 1986 and, in December 1986, the project started its activities by establishing a headquarters in Ghandruk village. On July 20, 1992, the ACAP received official gazetting from His Majesty's Government.

Objectives, Philosophy, and Approach

This section provides a brief introduction to the ACAP. It should be made clear that the discussion in it is not meant as an evaluation of the ACAP project. The aim is to evaluate "mountain tourism for local community development," and only those programmes and activities of the ACAP that are directly related to these issues are discussed. The present study being a case study, its scope is limited to the areas selected (Ghandruk, Ghorepani, and Ulleri) and does not in any way cover the vast area touched by ACAP.

The ACAP aims to develop an innovative approach for preventing environmental degradation and loss of natural resources in the Annapurna area through the creation of a sustainable balance of needs among local people, tourism management, and nature conservation, i.e., mountain development.[2] ACAP has both long and short-term objectives.

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[2] Mountain development is used to signify HER, MCD and MTD within the context of the carrying capacity of mountain environment.

Long-term objectives

- To conserve natural and cultural resources for all generations.
- To bring sustainable social and economic development.
- To develop tourism with minimum negative environmental impact.

Short-term objectives

- To improve forest conditions through improved management, rehabilitation, and agro-forestry programmes.
- To increase local people's awareness on environment, health and sanitation.
- To increase public participation in resource conservation and local development.
- To introduce appropriate fuel-saving technology.
- To monitor tourist numbers and activities and provide basic tourist facilities.

An important element of the ACAP's philosophy is to involve local people in all aspects of conservation and the development process, including tourism. The project is based on a grass-roots' philosophy. ACAP helps villagers to improve their quality of life and to strengthen their cultural integrity by empowering them with appropriate skills, knowledge, and technical and financial assistance. The formation of conservation and development committees (CDCs) at grass-roots' level is the mainstay of ACAP's Community Empowerment Approach.

Although the entire population of the area forms ACAP's target group, special attention is given to women and to people of lower caste. Tourists are also one of the target groups of ACAP programmes. Each village within the ACAP area must agree to form such a committee before it begins work in the area. Once the conservation committee is established and basic sanitation standards met, ACAP participates in the village as a matchmaker to link community-identified projects with external funding and technical expertise. Depending on the village resources, ACAP usually provides 50 per cent of the total project cost, with the remaining amount to be contributed by the villagers themselves. This is the form of partnership approach between ACAP and the local community practised in the area.

ACAP's partnership approach for involving local participation in conservation is an indirect approach, since conservation can occur only after some benefits

are assured to the people. However, to make conservation sustainable even after ACAP withdraws its support, incentives in the form of conservation education and development programmes that reduce village dependence on natural resources are initiated.

ACAP has developed management strategies that gives priority to heavily impacted areas in order to achieve its long-term conservation goals. Because of the large size of the project area, the whole conservation area has been divided into five management zones. These management zones include the following.

- Special Management Zone
- Intensive Use Zone
- Protected Forest/Seasonal Grazing Zone
- Wilderness Zone
- Biological/Anthropological Zone

ACAP began its programme by focussing on three keys areas, namely, community development, tourism development, and conservation; the latter being an element of HER, MCD, and MTD. An important part of the community development has been the formation of grass-roots' institutions. Such institutions have been formed to protect the natural resources (forest management committees) and promote both community and tourism development. ACAP's strategies fit in quite well with the framework developed in Chapter 2.

Since ACAP has been given legal authority over development of the region, it has assumed the responsibility for coordinating all development activities carried out by different ministries and departments and NGOs and INGOs in the region. ACAP's activites are sustained by tourist income (conservation fee), with additional support from the World Wildlife Fund, different King Mahendra Trusts in other countries, the German Alpine Club, and other international organisations.

ACAP's programme implementation can be divided into three phases (Dan Sieman 1993): a three-year pre-phased period (1987-1989) centred around Ghandruk village and Annapurna sanctuary (special management zone); a second phase started in 1990 and covering the entire management zone and portion of the intensive use zone; and the upcoming third phase, during which all remaining parts of the conservation area will be covered.

Programmes

Conservation. ACAP aims to counter forest degradation and deforestation by:

- increasing the area under forest cover;
- maintain the quality of existing forests;
- stabilise landslide areas; and
- develop community forestry.

The following strategies have been adopted to pursue the objectives of:

- promoting conservation education among villagers;
- returning the control of forest management to the local people;
- planting trees and establishing nurseries to increase forest area; and
- promoting fuelwood-efficient technologies and alternative sources of energy to reduce firewood consumption.

Conservation Education--The goal of the conservation education programme is to improve villagers' willingness to implement conservation policies by raising environmental awareness. First, villagers are made aware of the importance of forests and the causes and consequences of forest degradation; second, villagers are instructed on how they can participate in conservation through resource management and adopting new technology.

The conservation education programme is especially targetted at school children, adults in the community and trekker tourists, lodges and staff, medicinal plant collectors, hunters, poachers, and so on. Awareness is generated through museum displays, brochures, posters, booklets, teacher and staff training, and informal methods such as discussions, home visits, village meetings, study tours, and classroom activities. A conservation education curriculum has been developed for teaching at the high school in Ghandruk, and plans are underway to implement it in other schools.[3]

Forest Resource Management--ACAP is reviving the traditional forest management system through the establishment of forest management committees, using local leaders and the community.[4] These committees,

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[3] The conservation education curriculum was introduced to grades 6-8 at the Meshram Baraha High School in Ghandruk in 1990 with the objective of testing and integrating it within a year. Since 1991, ACAP has had a full-time conservation education teacher at this school to carry out this task.

[4] It is argued that the traditional forest management practices collapsed after the nationalisation of forests in 1957.

currently known as Conservation and Development Committees (CDCs), are given sole responsibility for management of forest areas where traditional use rights are established. It is the local people who select and elect the CDC, and it is the committee which formulates its own rules and regulations. The committee is not only responsible for forest-related matters but also for overall resource management. The CDC meets once every month to discuss and decide on forestry and community development issues. Some of the major decisions made by CDCs in most VDCs are related to zonation, firewood use regulations and plantation policies.

Zonation:

- Protected zone (within 2 hours' distance from the main settlement) where tree fodder is allowed but not tree felling.
- Semi-protected zone (2-4 hours' distance from the settlement) where only dry wood can be collected.
- Use zone (over 4 hours' distance from the settlement) where green tree felling for timber may be permitted based on CDC approval.

Regulations for Fuelwood Use:

- Green trees are not to be sold or purchased.
- One permit is issued to a family for a maximum of two prescribed species of tree per season.
- No fodder species shall be cut.
- Prohibition on the collection of medicinal plants and wildlife hunting.
- No electric rod shall be used for fishing.

Plantation Policies:

- The sub-CDC in each ward is responsible for setting aside community plantation sites and protecting them.
- Conservation guards assist the CDC in enforcing the rules. Initially ACAP provided a 100 per cent subsidy to cover the guard's salary in Ghandruk. However, since 1990, the Ghandruk CDC has been providing 10 per cent of the guard's salary, which was subsequently increased by an additional 10 per cent in 1991. ACAP hopes to phase out this subsidy gradually in 10 years.

The main functions and responsibilities of CDCs are as follow:

- make forest rules and make people aware of them;
- employ forest guards;
- select community plantation sites and mobilise the community to tend them;
- collect fees for certain forest products such as timber;
- punish or fine violators;
- utilise funds generated from fees and fines in conservation and local development projects; and
- oversee the conservation and development work funded by the committees and ACAP.

Conservation of Wildlife--ACAP has initiated a total ban on hunting throughout the area. This ban was agreed to by village CDCs and is enforced by forest guards. Fines for illegal hunting range from NRs 5,000 - 10,000. Studies indicate that although people do not hunt in areas where ACAP is active, some illegal hunting still prevails in adjacent areas where there is less control (Siemann et al. 1993). The effectiveness of the hunting ban has been reflected in increased wildlife around villages, and this has in turn led to livestock depravation. A compensation mechanism has yet to evolve, and, to a certain degree, illegal hunting may be related to the lack of compensation. Crop raids by wildlife are also on the rise.

Enforcement--The enforcement mechanism for forest and wildlife conservation is community-based, with the forest guards being hired by the CDCs. For example, in Chhomrong 50 per cent of the guard's salary is paid by ACAP, and the remainder is covered by taxes paid by lodges. ACAP plans to reduce its subsidy by 10 per cent each year. Hiring conservation guards in each VDC would require large financial resources. Given the large number of VDCs under ACAP, it is essential to identify the need for such guards for each village. There is good reason to believe that not all VDCs require forest guards. Second, new ways and means need to be explored and developed to support guard payment.

Apart from forest guards, verbal reprimands, fines, community sanction, and ostracisation by the community are other enforcement mechanisms apart from forest guards. The effectiveness of all these enforcement mechanisms, however, depends very much on how ACAP could make the extra effort to incorporate poorer sections of the area into community decision-making in conservation and development affairs. This is because the majority of the poor

are found to be unaware of ACAP's community development or conservation education activities, and they sometime act contrary to forest regulations in order to meet their survival needs with forest products. Second, the existing enforcement mechanism for those who reside outside the village boundaries does not seem to be too effective, as these people do not participate in village decision-making. It is, however, not clear how violators from outside the area are treated.

Nurseries and Plantations--ACAP has established a number of nurseries at different locations (Ghandruk, Chhomrong, Pasramro, Kuldighan, and Ghorepani) and has encouraged people's participation in tree plantations both on communal and private lands. By 1991, there were four project-owned nurseries established in Ghandruk alone, and, following a nursery training course, four private nurseries for fodder and fuelwood were subsequently developed.

ACAP provides seedlings to the villagers free of charge, but requires that they carry out planting on both communal and private lands. Incentives, such as the provision of barbed wire, technical supervision, and planting layout, are provided by ACAP. These incentives are awarded only after the communities have set aside plantation sites by community consensus, prepared such sites through voluntary labour, and defined good strategies for protection of the plantation sites. Estimates indicate that the survival rate of saplings, varying between communal (70%) and private (81%) plantations, is higher than the average survival rate in Nepal (40-50%). Women have shown a great deal of enthusiasm in the plantation programmes after the formation of the women's development programme.

Fuel-Efficient Technology and Alternative Energy--In an attempt to reduce dependence on fuelwood for cooking and heating, ACAP has introduced a number of innovative fuel-efficient technologies and alternative energy sources in some areas. Before widespread dissemination, ACAP tests each technology, which it then installs as a demonstration model. If successful, widespread distribution takes place according to demand by villagers. Some of the fuel-efficient technologies and alternative energy programmes introduced by ACAP are highlighted below.

Kerosene Depot--The ACAP operational plan suggests that group trekkers should be required to carry kerosene sufficient for cooking throughout the duration of their trek in special management zones (Chhomrong, Ghorepani, Upper Manang, and above Marpha). The plan further states that individuals

should be given concessions to sell kerosene in Kuldighan and Chhomrong. In 1987, a kerosene depot was established at Chhomrong, the last permanent village before the sanctuary, with funds donated by the German Alpine Club. The Chhomrong Lodge Management Committee has enforced the kerosene-only policy above Chhomrong. ACAP has also established checkpoints to ensure that campers obey the rules. Lodges in the sanctuary (i.e., from Chhomrong to Annapurna base camp) also must use kerosene. At the time the kerosene depot was established, daily firewood consumption was 20 kg in traditional households, 250 kg in most tourist lodges, and 100 kg per trekking group. It was estimated that after the introduction of the kerosene depot, about 4,000 kg of firewood a day could be saved during the trekking season. Kerosene use is getting popular, but it is not likely to be a substitute for firewood in more interior and inaccessible areas.

Electricity--The installation of a 50kW electricity plant in Ghandruk at a cost of Rs 3,330,000, of which the local villagers provided 46 per cent in cash and labour, and the remaining 54 per cent was from the Canadian International Aid Agencies (CIDA), HMG/N, and ACAP has become a success. This has benefitted 261 households in Ghandruk. This project is managed by an electricity management committee, consisting of locals and one representative from ACAP. A flat tariff rate is imposed with lodges paying 50 per cent more than households. The problem facing this project is that the installed capacity is already fully used, and demand is growing. ACAP must either install another plant or must devise a new mechanism for distribution. Similarly, another 100kW micro hydro electricity plant project is currently underway in Siklis. It is perhaps one of the largest and most expensive community-owned projects in Nepal, costing Rs 8,000,000. Like the one in Ghandruk, this project was funded half from external aid and half from a loan from ADB/N, ACAP, local equity raised by villagers, and voluntary labour. This project is expected to benefit over 400 households. A Siklis Electrification Service Committee has already been formed which will be responsible for the management.

A recently conducted study indicates that 15 houses and 14 lodges are currently using *bijuli dekchi* for cooking. The *bijuli dekchi* is a low-wattage cooker vessel. Among households using this new technology, estimates indicate that firewood consumption has decreased by almost half from 21 kg per day to about 10.5 kg per day. Although such *dekchi* save fuelwood and are relatively easy to use, they cannot be used for all cooking purposes and take about two hours to boil water. Also, among some communities this device is said to be inappropriate (Annabelle L. Newbigging 1993).

In Ghandruk, ACAP subsidised 30 per cent of the cost of all *bijuli dekchi* under 20 litres by 30 per cent and has also paid for transportation and repair costs for the first year. In Siklis, ACAP has planned to subsidise 60 per cent of such cookers, given the relatively poorer economic conditions of households in this area (Annabelle L. Newbigging 1993). Despite the subsidy, the cost for purchasing and operating a *bijuli dekchi* is still significant.

Back Boiler--The back boiler is perhaps the most successful fuel-saving technology introduced so far by the project. Back boilers simultaneously heat large quantities of water, and cooking can also take place. The heated water is used for a variety of purposes, including the provision of hot showers to tourists, and this source is limited to lodges only. In lodges, this technology is estimated to save on an average 675 kg of wood per month per lodge during tourist seasons - a reduction of 23 per cent of fuelwood use (Siemann et al. 1993)[5]. ACAP has established a back boiler construction workshop in Ghandruk to ensure the control of both cost and quality. The cost of installation of a 100-200-litre drum ranges from Rs 600 to 800. Since the back boiler water heater is integrated with a smokeless improved stove, the demand for smokeless chimneys is growing along with the demand for back boilers. ACAP subsidises the transportation and 50 per cent of the cost of circulatory parts for the back boiler.

Solar Water Heater--The solar water heater is another type of alternative energy technology promoted by ACAP in order to reduce firewood use. The installation cost (Rs 30,000) of this technology is very expensive. Given this problem, a prototype model of a low-cost solar water heater (200 litre capacity) was designed and installed in lodges in Ghandruk and Chhomrong. ACAP subsidises this technology by providing free transportation and installation as incentives for promoting the demand for this technology. The Rs 20 charge to tourists for the hot shower helps cost recovery in two to three years' time. A wider use of this technology is, however, constrained by its price.

Improved Stove--An improved stove is a closed stove that captures a great deal of heat and has a chimney and has not been widely disseminated because its fuelwood saving capacity is debatable. Several families who have installed back boiler water heaters have used such stoves. During the period 1990-91, altogether 19 improved stoves (9 in Ghandruk, 10 in Luwang, and 2 in Siklis)

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[5] An ACAP progress report indicates that this technology has been able to reduce fuelwood consumption on an average of about 40 per cent (ACAP two years' progress report (Jan 1990-Dec 1991)).

were installed. New stoves are being tried out, and one latest design has been found to increase energy efficiency by 60 per cent (Siemann et al. 1993). Available information further suggests that users (both households and lodges) are satisfied with the new stove. Although these stoves appear to be successful in terms of firewood savings, wider dissemination is constrained by its cost, which many poorer households cannot afford. The ACAP programme in future should target these poor households for the installation of this technology.

Space Heater--Space heaters are also designed to reduce the amount of firewood being consumed for heating purposes. During the period 1990-1991, six space heaters with a secondary combustion chamber were installed in Tatopani, Ghandruk, Ghorepani, and Banthanti.

Community Development. Community development aims to improve the living conditions of households. The programmes in this area can be broadly divided into two categories: infrastructural development and social or organisational development for local capacity building. Drinking water, toilet construction, trash disposal, and trail and bridge construction and maintenance are the typical infrastructural projects carried out in the area. Social programmes include community health and sanitation, conservation education, women-related programmes, cultural awareness, and job and skill training.

Community development programmes are initiated and implemented by grass-roots' committees. This approach is intended to ensure that the local population take responsibility for selecting, implementing, and managing community development activities. By helping the community to build their organisational capability, ACAP intends to reduce village dependence on external support. ACAP's focus on grass-roots' development is therefore vital for ensuring the long-term sustainability of the project after its planned withdrawal from the area.

Community Health--Community health programmes are concentrated in Ghandruk where a community health centre was established in 1987 to provide services for about 700 inhabitants. Also visited by tourists, this clinic is becoming more and more popular among the local people. Funding for this clinic was provided by ACAP and local people themselves on a 2:1 ratio.

The focus of the CHC is on preventative health care, namely on vaccination of all preventable diseases and mother and child health care. The centre also provides routine and emergency medical care. Since 1990, there has been an

almost regular monthly, mother and child health care mobile clinic within the Ghandruk sectors.[6] In the Luwang sector, covering six VDCs (Luwang-Ghalel, Revan, Dhampus, Sardi Khola, Ghachok, and Macchapuchhre), arrangements have been made to provide similar health services and to regularise clinic services. In Siklis, where a government-established health post exists, a mother and child health care programme has been regularised. Health care extension programmes to promote health awareness and health education are also ongoing. Women health volunteers, after receiving training, are employed in each ward. Family planning is another preventative health care service. The CHC also provides family planning advice and services. However, the number of families that practise family planning is still very low. More emphasis is being paid to birth control through vasectomy.

Sanitation--ACAP policy requires villagers to construct pit latrines before undertaking their community development programmes. Women's groups, health volunteers, and extension staff have played a key role in motivating local residents to build private toilets. The result has been very encouraging, with 885 toilets in Ghandruk VDC, 118 toilets in Panche VDC, and over 210 in Luwang and Revan VDCs. ACAP has been adopting a trade-off deal approach under which ACAP provides assistance for community development projects only if each household builds private toilets. While toilet facilities in the phase I area are found to be well designed and located, information and education about the case of toilets need to be further improved (Siemann and Steinbach 1993). Management of toilet paper by tourists also needs to be improved. A clean-up campaign is another component of sanitation. The objectives of the campaign are fivefold:

- collection and disposal of litter along the trekking route;
- inspection of latrine and rubbish pits at lodges along the way;
- raising health awareness among both trekkers and lodge owners;
- teaching students about conservation and development;
- suggesting appropriate locations for rubbish pits and latrines.

Construction of rubbish pits and regular clean-up campaigns have reduced the amount of litter on trails and in villages, especially in the phase I area (Ghandruk, Chhomrong, and Ghorepani). Information available from studies indicates that many villagers continue to throw trash on trails or simply in front of their home, and many residents do not bury their rubbish. This implies that educational programmes need to be made more effective in this area.

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[6] VDCs like Ghandruk, Dansheng-Mohorea, Sikha Ghar, and Lumle fall under the Ghandruk sectors.

Infrastructure--Infrastructural programmes implemented under the ACAP are designed to address basic village needs first, and these include improvement in drinking water, trails, and bridges. ACAP has so far supported 10 drinking water projects. The biggest undertaking has been the Khilang project at Siklis, where 1,200 people have benefitted. In most cases, the project provides financial and technical assistance for the purchase of pipes, cement, and taps, with the community contributing physical labour for the transport of required material and for actual construction work. Khilang PW project is considered to be an example of people's participation. This project was completed at a cost of 140,000, of which ACAP provided 40,000, the remaining cost being borne by a local mothers' group, which generated the fund by performing a cultural show in honour of visiting guests, soldiers; and also by CID Trans-himalayan Aid Society.

Bridges--Three bridges have been completed so far near Ghandruk, the first over the Modkyu Khola(1987), the second over the Kumring Khola (1989), and the third over the Ghatte River. The local contribution in terms of cost sharing in these projects was 35, 16, and 51 per cent respectively.[7] The Mandi bridge joining was also improved in 1991.

Trails--The quality of trails and bridges along the main trekking and commercial route within the ACAP active area is a source of pride for local residents. Bad trails are repaired and improved with the support of local people. Thus safe trails have been constructed in almost all parts of Ghandruk village. The participation of Lodge Management Committees (LMC) in development activities has been found to be commendable.

Women's Development Programme--ACAP has also placed special emphasis on increasing women's participation in its conservation and development programmes in view of the important role they play in conservation activities and the need for improving their socioeconomic status. A new programme called Women in Conservation and Development was introduced in 1990. This programme has helped build up women's institutional base through the formation of several women's groups. For example, 19 women's groups were formed in Ghandruk alone, 13 in Luwang, and seven in Siklis during the 1990-91 period. These women's groups are actively involved in various conservation and development activities. ACAP has used its right to select four members of a CDC to ensure that at least one woman representative is chosen if one is not elected by the community.

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[7] The Chiuri Khola suspension bridge undertaken by Ghandruk is one of the largest community development projects, and it has benefitted 25,000 people annually, including trekkers.

ACAP's women's development programmes cover the following

- Lodge management skills
- Women's and children's health and nutrition
- Literacy
- Carpet-weaving as a vocational skill

Some of the major activities of these women's groups are summarised here. Women's groups (or Ama Committee) in Ghandruk are actively involved in repairing trails. Women's groups in Ghandruk, Luwang, and Siklis meet once a month for a community clean-up and set deadlines for toilet construction in their community -- having fined up to Rs 100 those who have not met such deadlines. Women from groups in Chhomrong and Siklis have banned gambling in their village. Small-scale training programmes, such as wool-knitting and rabbit breeding, are also conducted to develop self-motivation and efficiency for women. A soft loan was also floated by ACAP's women's development section to open up an Ama Carpet Shop in Ghandruk in order to buy and sell handicrafts made of local materials. The market for these goods appears to be promising. Savings' boxes are distributed to local women in order to encourage personal savings. Women's groups in Ghandruk have purchased and distributed utensils for communal use at weddings, post-funeral ceremonies, and other community gatherings. ACAP's women's development section has purchased and distributed 36 pressure cookers for cooking to save both time and fuelwood. Women's groups have been providing funds for this purpose. Study tours are organised for women to increase their knowledge and exposure to different women's development projects of HMG/N and NGOs.

However, the effectiveness of the different women's groups varies among villages depending on the presence of a strong female leader. Although women now have become members of CDCs, their level of participation during meetings has remained low, perhaps because of their low self-confidence (Siemann 1993). Nevertheless, ACAP's women's development programmes are excellent starts for improving the situation of women.

Finally, women's groups (mothers' committees) have played an important role in the conservation of culture. These mothers' committees, which have been established in most project villages, have been encouraging pride in local culture and raising money for community development projects by performing cultural shows and dances at village festivals in honour of tourists. Although mothers' committees and the annual dance and dress competition contribute

to cultural preservation, there so far exists no specific plan of action to achieve the ACAP's cultural conservation objectives.

Adult Education--Two six-month-long women's adult education classes were initiated in Ghandruk with a total of 28 students. ACAP provided 50 per cent of the teacher's salary, in addition to stationery and kerosene. To minimise the drop-out rate, which was over 75 per cent, the women's development section forced the participants to deposit an amount to be refundable only after completion of the programme. Another four, six-month-long adult education classes were organised in 1990 with the initiation of conservation education and extension units. Altogether 82 (38 from Luwang and 43 from Siklis) completed this programme. Similarly, a total of 248 (147 from Ghandruk, 41 from Luwang and 60 from Siklis) completed adult literacy classes.

Tourism Management. A massive influx of tourists into the Annapurna region has had both positive and negative effects. To mitigate problems induced by tourism, as well as to promote benefits, ACAP has implemented a number of programmes aimed at both lodges and tourists.

ACAP collects an entry fee of Rs 600 (approximately US$ 12) from all trekkers visiting the Annapurna Conservation Area. Currently all the revenue from entry fees is deposited in a bank account as an endowment-trust fund to support administration and operation costs. ACAP expects to receive sufficient interest from the trust fund to become financially independent within the next five years, and thus financial independence may improve the long-term sustainability of ACAP. Many visitor's to ACAP's visitor centre in Ghandruk advocate increasing the fee to provide more money for programme activities. Entrance fee collection allows ACAP to monitor the number of tourists each month. Although tourists tend to spend only five-15 days in the area, their presence creates seasonal population pressure which requires monitoring and management. This pressure is further compounded by the limited areas visitors are permitted to visit. Also, from a product diversification point of view, aside from trekking there have been no new products developed: and this is necessary to benefit a wider population as well as reduce pressure in existing areas.

Lodge Management--ACAP has attempted to counteract a number of problems associated with tourist lodges that existed prior to the operation of ACAP. Before ACAP, tourist lodges were of poor quality. Lodge owners used to make no profit from room rent and only marginal profit from food, mostly imported from Pokhara. The leakage was considerably high. Only seven per cent of

every dollar spent by tourists remained in the village (ACAP estimates in 1985). ACAP has initiated the following programmes to counteract the above problem.

- Food preparation and lodge management training
- Village-based lodge management committees
- Standardised menus and pricing

Lodge owner and operator training is provided on;

- identification of tourist needs,
- promotion of hospitality to keep tourists happy,
- maintaining kitchen hygiene and sanitation,
- teaching how long to boil water and cook food for safety's sake,
- teaching how to sell and buy goods and services, and
- keeping audits for their business.

While almost all lodge managers in the phase I area have received at least one training session, their interest in acquiring further training, especially in the English language to improve communication with foreigners, is increasing. Continuation of periodic refresher training courses and more advanced training on the above issues need to be gradually completed by a training in English.

ACAP has assisted in the establishment of lodge management committees (LMCs) in heavily visited tourist areas, such as Ghandruk, Chhomrong and Ghorepani, with the objective of encouraging improved tourism management LMCs set policy regarding tourism issues in each village relating to the establishment of minimum lodge standards in sanitation, toilet facilities, and room security. While it is reported that there is an improvement in the comfort and cleanliness of tourist facilities, especially in the phase I area, not all lodges in Siklis outside the phase I area are found to have met minimum standards. The establishment of LMCs has also been successful in limiting the number of lodges in Ghorepani and the Annapurna sanctuary where the increasing number of lodges being constructed was leading to forest degradation and reduced profits. Studies indicate that, although no new lodges are being built in Ghorepani, ACAP has not been successful in limiting the size of each lodge, since existing lodges continue to add storeys. As a result, deforestation in some areas continues.

Through LMCs, ACAP has been able to persuade lodge owners to eliminate price competition through standardised lodge pricing and improved menus.

ACAP has helped to create menus that are based on locally available resources, thereby reducing the leakage. Available information indicates that as much as 50 per cent of the money spent by tourists is currently retained in the village in contrast to seven per cent before ACAP. An increase in the entry fee and a decline in purchases from Pokhara both minimise the leakage. The extent to which the reduced leakage has resulted from each of these factors is, however, not known.

Trekker Education--An ACAP intervention strategy on the demand side involves education programmes for trekkers, who are the users of the environment. ACAP has therefore provided both cultural and environmental information to trekkers through the following avenues.

- Information brochures and minimum impact code
- Natural history museum in Pokhara
- Visitor centre in Ghandruk and information posts in Chhomrong and Ghorepani
- ACAP area map.

Brochure--The brochure provides useful information on the Annapurna area and the ACAP programme approach and activities. It also provides a basic map outline of the ACAP area and ACAP's minimum impact codes. The codes make recommendations to trekkers under three general headings: conserve fuel-wood, stop pollution, and be a guest. Such codes are also printed on standardised menus in lodges. ACAP provides this brochure to every trekker when they pay the conservation fee.

Museum--Information on the area's culture, environment, natural resources, and ACAP activities is housed at the Natural History Museum on Prithvi Narayan Campus of Tribhuvan University, located some distance away from the tourist lakeside hub. Closer proximity to the tourist centre would perhaps increase visitation of this museum.

Visitor Information Centre--The visitor centre located in Ghandruk provides statistical information on the number and location of ACAP activities. Smaller information posts situated at Chhomrong and Ghorepani provide information on the local area and ACAP activities. Several studies conducted by outsiders (foreigners) have noted that information presented is unnecessarily overstated or sensationalised. That significant numbers of displays place blame for environmental degradation on tourists without equally attributing this to other factors is noted as a negative point. In this context, information displayed at

Sagarmatha National Park is effective in educating the visitors on a wide range of factors.

Product Diversification: Eco-tourism. His Majesty's Government of Nepal has entrusted ACAP with developing a model eco-trekking route under the title of "Eco-tourism Development and Circuit Trekking Project in Ghalekharka Siklis region". The project is funded by the Asian Development Bank, Manila. The main objective of this project is to promote or manage tourism so as to reduce to a minimum its environmental and socio-cultural impact, cater to visitors with different tastes, etc. Currently, about one thousand visitors use this trekking route. Some of the conservation and development programmes being implemented are given below.

Kerosene Depot Management--Kerosene depots have been established at Ghalekharka and Khaibrang villages under the supervision of local kerosene depot management committees. Limited visitor inflow as well as decreased local demand due to electrification has made it unfeasible to establish two depots as planned in Siklis and Panche.

Community Lodge-- Discussion on the construction of community lodges at the proposed sites in Siklis/Panche and Ghalekharka/Khaibrang villages remains in progress.

Electrification--Feasibility studies for the proposed micro-hydro electricity power sites at Khilang and Tanling have been completed. Various other community development projects are being launched or proposed for this eco-trekking route and include the following.

- Construction of a national history museum in Siklis and the establishment of a tourist information centre in Ghalekharka.
- Repair and maintenance of 10 schools.
- Repair and maintenance of various trails considered to be critical or dangerous.
- 10 drinking water projects, expected to be completed by the end of 1996, of which seven will directly benefit camp sites and three will benefit three villages.
- Promotion of vegetable gardens in Ghalekharka and Khaibrang.
- Promotion of poultry farming.
- Establishment of a forest nursery with a 10-15 thousand seedling production capacity.
- Plantation of 4,370 seedlings on four hectare of public land.

- Regular clean-up campaigns to be carried out in villages and on campsites with the help of local youth clubs, mothers' groups, and school students.

Summing Up

ACAP has been able to demonstrate an innovative approach to conservation and development with people's participation. ACAP has demonstrated its success in strengthening grass-roots' organisations by providing them with the responsibility of making forest conservation rules and community development decisions. The formation of management committees has made it possible to increase community participation in conservation and development activities. Conservation education, lodge owner training, literacy programmes, and women's development have enhanced environmental awareness among villagers. Conservation education has played an effective role in creating a shared sense of responsibility for maintaining the forest. Available reports further indicate significant declines in the use of fuelwood and hence reduced dependence on the forest as a result of fuel-efficient stoves, back boilers, kerosene, and electricity, especially among lodge owners in some areas. Evidence also reveals the effectiveness of ACAP towards changing the behaviour of local people regarding forest use. There has been a gradual decline in non-sustainable forest use practices. In addition to these major successes of ACAP conservation initiatives, there has also been improved sanitation and tourist facilities. Drinking water supplies and access to toilets have now improved. Similarly, available evidence indicates improvement in safety, hygiene and comfort in tourist lodges and standardisation of lodge prices. Finally, ACAP has, to some extent, also been able to minimise the leakage of tourist expenditure outside the region by establishing linkages of tourism with other production activities in the local economy. Despite these successes, several issues that need to be immediately addressed by ACAP to further strengthen its programmes are highlighted below.

Lack of Baseline Data and Documentation

ACAP's information base appears to be very weak. Despite various activities being undertaken over a wide areas, information on the projects, beneficiaries, and cost of the programmes is not easily available. The lack of adequate and systematic baseline data on the socioeconomic and natural resource conditions of the project area has been one of the most critical impediments in reviewing ACAP's programmes in the area. For an evaluation of the effectiveness of all project components, this information deficiency will be a major drawback.

There has been little attention paid to strengthening the database. Quantitative information on the major accomplishments of ACAP programme activities in the project area is not well recorded in progress reports. Of particular importance is the lack of annual revenue and expenditure figures for ACAP.

Monitoring and Evaluation Mechanisms

ACAP has not been able to develop an ongoing monitoring and evaluation mechanism for its programmes. This has greatly impaired the ability of both ACAP staff and community members to understand the impact of project activities in the area. Progress reports, which are produced mostly on the basis of the qualitative judgement of staff members, generally list initiatives undertaken without providing significant feedback and effects of these initiatives. An ongoing evaluation and documentation of successes and failures from which others can also learn becomes extremely important for a project like ACAP, given its experimental model of conservation and development.

Conservation Incentives

ACAP provides indirect incentives for conservation in its support to the community development projects, and while the community development project partially supported by ACAP encourages the community as a whole to follow ACAP's conservation rules, it does not provide direct incentives for individuals. This implies that villagers are likely to return to non-sustainable forest practices whenever there is decline in ACAP's development support to the villages. Conservation education should be backed by more direct incentives to counter this problem in future. Furthermore, incentive mechanisms should also reach those living outside the village boundary, as at present they have less incentive to comply with forest rules.

Ghandruk as a Unique Village

Ghandruk has the following important attributes, not found in every ACAP project village, which may have contributed to the success of ACAP initiatives.

- Respected village leader
- Well-organised village structure
- Relatively homogeneous population
- Considerable wealth relative to neighbouring villages due to outside income from army pensions.

Other villages in the area are not likely to compete with Ghandruk in these attributes, and the success of the ACAP programme in other deprived villages and the more deprived communities has yet to be seen. A large part of the ACAP region is inhabitated by such deprived people. Although the programmes carried out by ACAP should be seen as a positive step, lessons learned so far must be used to carry out programmes in other areas on a wider scale. In this respect, if tourism is to be a driving force in the conservation and development of the ACAP area, there has to be a greater focus on product diversification and income-generating activities. The link between tourism and community development must be based on improving community productivity and the production base. The conservation and community development programmes that are being carried out will not alone generate income, and, for them to be successful, a greater focus on wide-scale income generating programmes is necessary.

Table 3.1: Total Population in Annapurna Region

Population	Household No.	Total number of		
Male: 51,420 (48.77%)	22,225	VDCs	Districts	Zones
Female: 54,004 (51.23%)		58	5	2

Source: Population of Nepal, CBS, 1994

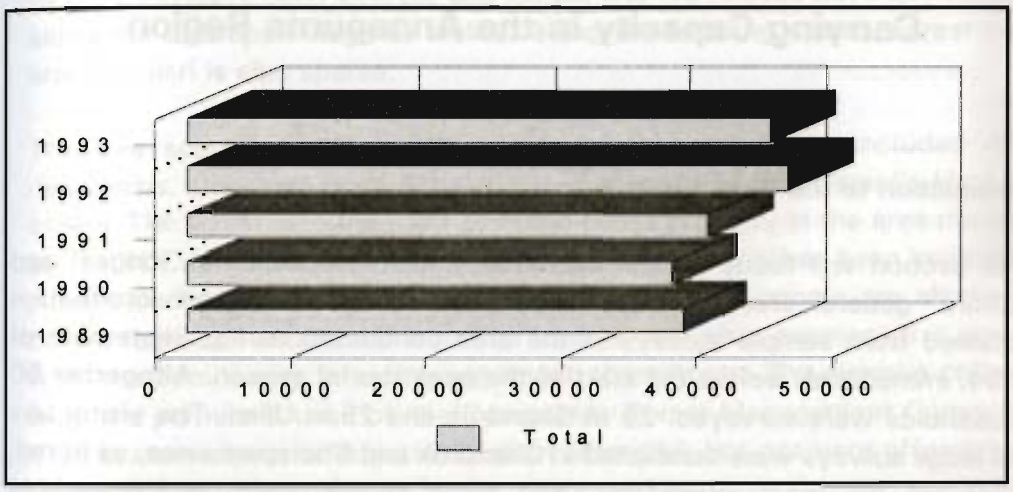
Table 3.2: Visitor in the Annapurna Area

Months	1989	1990	1991	1992	1993	1994
Jan	1,525	2,374	1,879	1,639	2,355	1,979
Feb	2,578	2,845	2,590	1,201	3,428	3,313
Mar	5,085	5,348	5,389	8,199	6,357	6,873
Apr	2,430	3,853	4,441	5,072	5,583	5,371
May	4,217	1,120	1,325	1,553	1,444	1,792
Jun	148	337	317	515	507	527
Jul	416	315	443	617	476	297*
Aug	396	445	721	975	688	
Sep	1,711	2,107	2,909	3,508	2,609	
Oct	4,633	7,768	7,586	9,989	9,607	
Nov	9,129	5,711	5,186	7,089	6,360	
Dec	4,326	3,588	5,727	4,096	3,717	
Total	36,594	35,811	38,513	44,453	43,131	20,152

Source: KMTNC, ACAP's Entry Fee Collection Counter, Department of Immigration, Thamel Kathmandu.

* Based on entry fee collected up to 22 July, 1994.

Chart 1: Visitors to the Annapurna Area (1989-1993)



Source: Table 3.2.

4
Impact and Implications of Tourism and Carrying Capacity in the Annapurna Region

Introduction to the Case Study Area

This section will focus on the case study area. Households', lodges' and visitors' general characteristics will be presented based on information obtained from sample surveys in the area conducted during September of 1994, immediately before the start of the peak tourist season. Altogether 50 households were surveyed: 25 in Ghandruk and 25 in Ulleri. The visitor use and lodge surveys were conducted in Ghandruk and Ghorepani since, as noted, these are the most intensively used areas in the region and household settlement is not present in Ghorepani.

There are a number of trekking options available to tourists within the Annapurna Conservation Area depending on visitors' interests and leisure time.[1] Among the most widely used trekking route is the Ghandruk-Ghorepani-Ulleri-Birethanti circuit. Ghandruk VDC and Ulleri (Dansing VDC) of Kaski district and Ghorepani (Sikha VDC) of Myagdi were the selected areas for this case study. The rationale for their selection is that all trekkers visiting the area generally reach the above-mentioned destinations. Trekking within this circuit can be generally completed within seven-14 days.

Ghandruk VDC lies between 28° 12'57" N-28° 15' north latitude and 83° 59'42" - 84° 2' east longitude at a distance of a one-day walk from Birethanti. The altitude of the Ghandruk area varies from 1,000 masl at Birethanti to 2,050 masl. The western slope of the Annapurna range on which the village is situated faces east and extends towards the bank of the Modi River. The VDC area stretches north to the Annapurna range and to Dansing and Sikha VDCs in the west, while Modi *dovan* and Sandhi Khola lie in the south.

The mountain tops from Ghandruk towards Ghorepani and from Ghorepani to Ulleri are covered with dense forests. However, the once dense Ghorepani

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1 There are three popular variations in trekking trails within the area: a) the circuit which takes 20 days and circumnavigates the range passing over the Thorung La at 5,415m; b) the sanctuary which takes 8-10 days to reach the Annapurna Base Camp, and c) the Jomsom-Pokhara trek which takes about 12 days for a round trip.

forest is no longer such. About a decade or more ago this forest was dense, and people feared to travel alone through it for fear of attack by wildlife. Large forest areas have been cleared, and lodges and tea houses have been built all along the Ghorepani ridge as well as along the trekking routes. Forest cover around Ulleri is also sparse.

The tree species found in the forests of the study area included *Alnus nepalensis, Daphniphyllum himalayasis, Schima wallichii, Camelia kissi,* and others. The forest resources are common public property in the area managed by the VDCs. A community forest management system has been initiated by ACAP, under its conservation policy, whereby local people are allowed to collect fuelwood and fodder from the forests only after permission is granted from the community forest management committees. The revenue collected from the permits is used by the Community Forest Management Committee. This system seems to function well in Ghandruk but not very effectively in Ghorepani and Ulleri villages.[2]

Household Survey Results

Socio-Demography

Among the ethnic groups in Ghandruk, the *Gurung* group is dominant accounting for 64 per cent of the sampled households, whereas the ethnic composition in Ulleri village is predominated by the Magar community (100%). In the study area as a whole, the *Magar* community represents the highest proportion of sample households (52%), followed by the *Gurung* (32%) and traditional or occupational lower-caste families (Table 4.1). The total population of the surveyed households was 261 persons, giving an average household size of 5.3, with little difference in the two areas, but with *Gurung* household size being higher (5.6) than *Magar* households (4.7).

Of the total sampled population in the study area, about 47 per cent were males as against 53 per cent females. The age group from 10-65 years constitutes the largest proportion in both the areas (Table 4.2). The percentage of illiterate females is almost two and a half times that of males in the two areas (Table 4.3). If only those who can read and write are taken into account, the difference between male and female literacy is narrower. However, if those who are literate through formal schooling are considered, the percentage of literate males is much higher than that of literate females.

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2 These and other types of ACAP intervention are discussed later in this chapter.

Occupation

A large percentage (42%) of the total population depends on agriculture. As an occupation those studying accounted for the second largest percentage (18%). The remaining population aged 10 years or older reported a variety of different occupations, with about eight per cent being in tourism. Across the two areas, occupational patterns do not vary much between Ghandruk and Ulleri, with the exception that Ghandruk has a relatively larger percentage (12%) of its active population in tourism than Ulleri (4%), whereas the opposite prevails in the case of those who reported service as their occupation. Further details are provided in Table 4.4.

Indirectly households can depend on tourism for sale of their produce, occasional employment, etc, besides being directly engaged in this sector. Information was solicited from the respondents to understand the strength or dependence of household heads reporting different forms of occupation with tourism. This dependence could be either high, moderate, or nil. The degree of occupational linkage with tourism appears to be more pronounced in Ulleri than in Ghandruk, especially in the agricultural sectors. For example, about 14 per cent of the households that were employed in agriculture and related occupations in Ulleri stated some linkage of their occupation with tourism, while only nine per cent in Ghandruk did (Table 4.5). This indirect or secondary linkage comes through the sale of agricultural produce or working in the tourism sector. In contrast, in Ghandruk the link is more direct, through the operation of lodges. In the case study areas, as a whole, the percentage of those who stated a high, a moderate, and no link between agriculture and tourism was two, four, and 94 per cent respectively. Other details are provided in Table 4.5.

Land Use and Farming

Pakho (upland) and *khet* (lowland) are the two types of land worked by the households in Ghandruk; *pakho* is the only type of land worked by the households in Ulleri. The majority of the sampled households in both areas own less than 0.5ha and only a small percentage (12%) own more than a hectare (Table 4.6). Furthermore, the majority of households are owner-cultivators, who neither rent their land to others nor rent from others. Pure tenants (8%) were reported in Ghandruk only. Similarly, landless households constituted four per cent of the sample in both areas (Table 4.6). The average size of operated areas is marginally larger in Ghandruk than in Ulleri, with the overall average being about 0.6 of a hectare (Table 4.7).

Households were asked if their land productivity was increasing or decreasing. A large majority of the households indicated that land productivity had either decreased or had remained the same, and only about six per cent reported that land productivity had increased. About 80 per cent of the households indicated that the cause for productivity decline were shortages of manure and labour and a small percentage (10%) indicated that it was due to the lack of irrigation.

A large majority of households in the area produce food to meet their needs only, and a fairly large percentage is not even able to meet their own food needs. A small percentage was found to have surplus to sell, some of which went to the tourist market (Table 4.8). The sale of food brings in a small cash reward to the households (Table 4.9).

Livestock. Households own a variety of livestock, and the average numbers of livestock owned in terms of LSU are similar in both areas (Table 4.10). A large majority of households adopt different feeding practices, with stall feeding being confined to a small percentage of households only. Many of the households did not indicate that tourism had had any positive impact on their livestock enterprise. Also, a small percentage of households in both areas sell some livestock produce both to tourists and to other local markets (Table 4.11).

Household Dependence on Forest Resources

Although firewood continues to be the main source of energy for most households, the different programmes carried out by ACAP may be assumed to have brought changes in energy use. Still, tourism is believed to have increased firewood demand. To better understand energy use patterns, households were asked about the intensity of energy use and their perceptions regarding the changing patterns of energy use.

Table 4.12 indicates that the average annual consumption of firewood per household in Ulleri (8,847kg per year or roughly 25kg per day) is relatively higher than in Ghandruk (3,040kg per year or about 9kg per day). The result seems plausible, given that Ghandruk has electricity with an installed capacity of 50kW benefitting 261 households (Table 4.12). Households also have begun using a variety of energy-saving gadgets. About 88 per cent of the respondents in Ghandruk reported using electricity, with 16 per cent reporting the use of liquid petroleum gas (LPG) and biogas (Table 4.13). However,

electricity is mostly used for lighting, and thus about 80 per cent of the households in Ghandruk depend on firewood for their energy needs.

In Ulleri, firewood is the only source of energy available. About 90 per cent of the annual fuelwood requirement is currently met through public forest reserves, and the rest through private trees (Table 4.14). In Ghandruk, private tree sources meet a relatively higher per cent (23%) of the annual fuelwood requirement of households than in Ulleri. Despite a lower level of firewood use in Ghandruk relative to Ulleri, the annual fodder consumption rate in Ghandruk is about twice that of Ulleri. This higher use of fodder in Ghandruk may be due to most households stall-feeding their livestock, as was pointed out by households. About 61 per cent of the fodder requirement in Ulleri originates from private sources compared to 36 per cent in Ghandruk. Household dependency on public forests for fodder is greater in Ghandruk than in Ulleri.

Information was collected from the respondents regarding their perceptions about changing patterns of energy use. A large percentage (75%) of households in Ulleri indicated that the growing shortage of firewood was due to tourism (Table 4.15). In contrast, the large majority of households in Ghandruk were of the opinion that tourism was not the key factor contributing to fuelwood scarcity.

When asked about the changing patterns of energy use, about 50 per cent of the households in Ghandruk indicated that change was induced by firewood shortages, as well as availability of kerosene and electricity. Tourism was not perceived as being responsible. However, in Ulleri, households' perception of this matter was different, as increasing use of kerosene was perceived to be induced by tourism. Fuelwood shortages due to tourism were also perceived by 67 per cent of households in Ulleri, but not so in Ghandruk (Table 4.16).

Lodge Survey Results

A structured format was used to collect information on various issues related to lodges: visitors, energy use, import leakages, and perceptions about community development. Altogether 40 lodge owners were interviewed for the case study, out of which the survey included 22 lodges from Ghandruk (60%) and 18 from Ghorepani (40%). This section summarises the different responses.

Lodge Ownership, Capacity, and Employment

About 95 per cent of the lodges in Ghorepani and Ghandruk are owned by people from these villages, and only about five per cent are owned by people who migrated to them. Although most (87%) of these lodges are operated by the owners themselves, some have been rented out as well (8% in Ghandruk and 5% in Ghorepani) (Table 4.17).

Most of the lodges are of a permanent nature (78%), being open all year round. Of the 22 per cent of the lodges that claimed to be temporary, 88 per cent (i.e., 8) were in Ghandruk, and the remaining 11 per cent were in Ghorepani. The average number of rooms in the lodges in Ghorepani is 8.72, and in Ghandruk it is 7.27. Likewise, the number of beds per lodge in Ghandruk is 15.94, and it is 17.27 in Ghorepani (Table 4.18).

An average lodge in both the areas provides employment to 7.5 people each year, with 4.2 persons being employed during the peak season. Females comprise about 55 per cent of the employees in lodges. The bulk of lodge employment (75%) is taken up by family members, and local labour is hired (25%) to fill the gap (Table 4.19).

Volume and Rates' Charges

The 40 lodges surveyed in Ghandruk and Ghorepani put up a total of 14,721 (72%) tourists during the last peak season (October to April) and an additional 5,601 (28%) tourists during the slack season (Table 4.20). Lodges in Ghandruk put up 46 per cent of the visitors, and lodges in Ghorepani 54 per cent. During the slack season (monsoon season) more tourists (61%) visited Ghandruk than Ghorepani, perhaps due to Ghandruk being relatively more accessible. The total number of visitors put up by the lodges in the two areas is almost 50 per cent of all the trekkers that visit the ACAP area in a year. The average length of stay in a lodge is about one night per visitor in both the areas.

Lodge owners in Ghorepani and Ghandruk were asked to provide the rates charged per tourist for various items. Results have been summarised in Table 4.21. The rates charged for different items in the two areas show variations across the areas as well as within and across the season within an area. For example, in Ghandruk the cost of renting a room was Rs 75 last season, which is slightly higher than the rate that prevailed in the previous season (Rs 70). In Ghorepani, the current season's room rate was lower (Rs 50), and it had not

changed since last season. On an average, prices are higher in Ghandruk than in Ghorepani, as can be seen in Table 4.21. Based on these rates, a trekker requires about Rs 260 in Ghorepani and Rs 357 in Ghandruk per day to pay for accommodations and meals. This rate is a minimum rate and does not include the cost of porters and other expenses.

Energy Use

Energy originating from forests, namely firewood, is the main energy source for lodge owners in Ghorepani and Ghandruk, although in Ghandruk the availability of substitutes appears to have reduced firewood consumption. The average annual rate of firewood consumed per lodge in Ghorepani is almost six and a half times greater than that in Ghandruk (Table 4.22). Ghandruk lodges have access to other energy sources, and the price of firewood in Ghandruk is relatively higher (15%) than in Ghorepani, which may have encouraged additional consumption in Ghorepani.

Kerosene, although available in both areas, is more widely consumed in Ghandruk than in Ghorepani, and again the relatively lower price per litre of kerosene and the availability of a kerosene depot run by the ACAP may partly explain of the higher consumption of kerosene in Ghandruk. Furthermore, Ghandruk appears to use other energy sources, such as LPG gas, electricity, and solar heaters, which also helps explain the lower firewood consumption there.

Additional information was also collected that sheds light on this issue of energy consumption. Availability of alternative energy sources has enabled lodge owners in Ghandruk to use a variety of appliances that do not depend on firewood, whereas lodge owners in Ghorepani have not been able to use all these devices because of the lack of alternative energy and other factors. For example, solar heaters that require solar energy were not reported in use by the lodges in the sample. This indicates that either they cannot afford to install these technologies or they are not fully aware of them. Furthermore, inaccessibility increases transportation costs and thus these technologies are less affordable in Ghorepani, which explains the lower use there of these conveniences (Table 4.23).

Ownership of back-boiler heaters is higher in Ghorepani than in Ghandruk. Back-boiler heaters in Ghorepani depend entirely on firewood, so that their use is seen to be lower in Ghandruk. Over 45 per cent of the lodge owners surveyed in Ghandruk reported use of solar heaters for heating water. In

Ghorepani, no lodge owner surveyed reported such use. Cooking rice uses up a considerable amount of energy, and, with electricity available in Ghandruk, 68 per cent of the lodge owners surveyed reported use of rice cookers, thus saving on firewood. Ghorepani currently does not have electricity, and hence the use of electrical appliances is out of the question. Also, the percentage of lodges using kerosene is substantially higher in Ghandruk (91%) than in Ghorepani (22%), and here the relative price in the two areas helps explain why fewer lodges in Ghorepani use kerosene (Table 4.23).

Use of technologies can be constrained by their prices, that is, whether lodge owners can afford them. Lodges owners were therefore asked about their perception of the various appliances and energy types used, as well as their prices (Table 4.24). Most of the appliances are perceived by lodge owners to be inexpensive and efficient. Note that 75 per cent of the lodge owners in Ghorepani perceived the price of kerosene to be expensive, a much higher figure than in Ghandruk.

In both areas, a large percentage of lodge owners indicated that firewood consumption has been decreasing over time, although a small percentage (8%) indicated its use has been increasing. About 25 per cent of the lodge owners in Ghorepani reported that kerosene use has increased over the years. In Ghandruk, where other energy types are also used by lodge owners, only 19 per cent reported increasing use of kerosene and 33 per cent reported decreasing use of it.

Lodge owners were also asked to give their opinion on the supply situation of the different energy sources, lodges, water supply, and whether space to build more lodges would be adequate or not if tourism in their areas were to double. Firewood supply was perceived to be adequate in both areas (Table 4.25). About 68 per cent of the lodge owners thought electricity would be in short supply in Ghandruk. Lodge owners also perceived that energy would be in short supply, more so in Ghandruk (27%) than in Ghorepani (6%). In general, some of these basic facilities required for tourism expansion, although not currently perceived by lodge owners to be seriously constraining factors, nevertheless need to be monitored if tourism is to further expand in the area.

Another question that was asked of the lodge owners was their opinion regarding deforestation and whether tourism had induced it. In Ghorepani, about 72 per cent of the lodge owners gave an affirmative response, while in Ghandruk only 36 per cent agreed. Likewise, when lodge owners were asked if tourism had brought them benefits, an overwhelming 100 per cent in

Ghandruk and 94 per cent in Ghorepani indicated such to be the case (Table 4.26).

Visitor Survey Results

For the purpose of the case study, a total of 40 visitors were interviewed during September, which marks the beginning of the peak season. The surveys were carried out in the Ghandruk (20) and Ghorepani (20) trekking circuit areas. Visitors residing in different lodges as well as group tourists camping in the area were randomly selected and asked to fill out the survey questionnaire. Generally, all responded to most of the questions asked.

Trekkers to mountain destinations are generally categorised into either free independent trekkers (FITs) or trekkers whose trips are fully organised by local travel or trekking agents (hereafter GT or group trekkers), including meals and accommodation (Banskota et al. 1994). Both types of trekkers visit the area. About 55 per cent of the trekkers surveyed in the study area were FITs, and the remaining were GT. Of the visitors surveyed, 55 per cent were females compared to 45 per cent males. Among the FITs interviewed, male and female trekkers shared equal percentages, whereas, among the GT, female trekkers constituted a relatively larger percentage (61%). Given the random nature of the surveys carried out, it appears that more females prefer to trek in groups than males (Table 4.27).

The age group distribution of trekkers indicates that the large majority of trekkers in both the groups fall in the 19-35 age group, followed by the 36-50 age group, and finally the 51-plus age group. Such an inverse relationship between trekkers and their age is found to be more pronounced in GT compared to FITs. Note that female trekkers surpass males only in the older age group (above 51 years) in the case of FITs, whereas females predominate in all age groups in the case of GT. The 35-55 age group constitutes the largest among both FITs and GT. Other details are provided in Table 4.28. The majority of trekkers visiting the area were Europeans (80%), followed by Asians (10%). The distribution of trekkers by nationality does not vary much between FITs and GT (Table 4.28).

Duration of Stay

Trekker's duration of stay depends on the number of days they have applied for in procuring trekking visas, and, amomng other things, the quality of tourist

products and facilities available. About 75 per cent of the visitors surveyed had planned to trek for about a week in the area, and the remaining 25 per cent reported to have planned two weeks of trekking. The majority of the group trekkers (56%) planned to spend around two weeks trekking, while FITs planned for a week of such activity (Table 4.29).

The average number of days trekked or planned for each of the two groups by continent of origin, age group and sex is provided in Table 4.29, along with their respective standard deviations. The mean numbers of trekking days for independent trekkers was 9.68, and for the organised group trekkers 13.82. The average number of trekking days for the GT increases with the increase in their age, whereas the relationship is mixed in the case of FITs. Similarly, the result indicates a variation in the duration of stay by nationality, with the lowest number of trekking days being spent by Asian tourists (about one week) in both groups of trekkers. The estimated length of trekking days of the male trekkers, furthermore, has been found to be relatively higher than that of female trekkers in both FITs and GT.

Accommodation

Private lodges, camping sites, and private homes (or paying guest accomodation) are the main accommodation facilities available to trekkers visiting the conservation area. Visitors were asked to provide information on the number of nights stayed at different facilities while in the conservation area. Some trekkers use a combination of these facilities. Group trekkers reported a preference for tents (i.e, camping) and lodges, while FITs reported one for lodges and private homes. Females also reported more use of lodges and tents than private homes. It appears that trekkers prefer to use a combination of facilities rather than use only one. Use of private homes for accommodation appears to be the least preferred option. The average number of nights stayed under the lodge-only category was nine for FITs compared to about two for GT. FITs were found to stay 2.5 nights on an average in private homes compared to less than two nights in the case of GT. Group trekkers, on the other hand, were found to stay on an average 11 nights in tents (camping). Other details are provided in Table 4.30.

Perceptions

Visitors were asked to comment on the quality of meals and accommodation facilities and rank them as being good, fair, or bad (low) (Table 4.31). The majority of both independent and group trekkers (57%) reported the quality of

meals to be good, and, for the remaining 43 per cent of the trekkers the quality of meals was thought to be fair. With regard to rooms, only 20 per cent of all trekkers reported the quality to be good, and a small proportion (10%) of visitors ranked room quality as bad. Regarding hygiene and sanitation conditions in the facilities used, the overall ranking made by the majority of the visitors was fair (56%) (Table 4.31).

Table 4.32 shows visitors' opinions on the prevailing price of meals and rooms. Among those who responded, over two-thirds perceived the price of both meals and rooms as being reasonable or fair. A very few respondents, mainly FITs (who are mostly low-budget tourists), felt the prices of meals were high. It is interesting to note that about 50 per cent of the group trekkers compared to 26 per cent of FITs even perceived the prices of rooms to be low. Likewise, the prices of meals were rated to be low by 25 per cent of the visitors. Group trekkers did not once indicate that meal and room prices were high. This could be because group trekkers do not use local outlets for meals and accommodations. On the whole, the prevailing prices of both meals and accommodation were found to be reasonably fair by majority of visitors in the case study area.

Visitors' Expenditure

The total cost of a trekking trip for an average visitor doing the complete Annapurna circuit arranged through a trekking agency in a group was Rs 20,955, while for an average independent trekker the cost was about Rs 2,446. For the FITs, the cost does not include the round-trip transport cost or other costs incurred before reaching the area but only after arriving in Nepal. Similarly, average expenses run up by GT visitors for local products, such as handicrafts, drinks, and fruits within the trekking circuit, were Rs 6,524, while an average independent trekker spent about half this amount, namely, Rs 3,318 (Tables 4.33 & 4.34).

The average daily expenditure of independent trekkers for breakfast, lunch, dinner, and drinks in local outlets exceeds that of group trekkers, as expected. It is to be noted that the estimated daily expenditure for these items for the use of group trekkers refers to expenditure at local outlets other than those for meals prepared and served by the trek organiser. The result further indicates that the average daily expenditure of independent trekkers for local products, such as fruit and handicrafts, is also relatively higher (Rs.144) than that of group trekkers (Rs 58) (Table 4.35).

Demand for Porters

Various responses have been obtained from visitors regarding the hiring of porters and the wages paid to them. Results have been summarised in Table 4.36. Porters are mostly hired by the group trekkers. About two thirds of the group trekkers, compared to only 15 per cent of the independent trekkers, reported hiring porters during their trekking trip. The average number of porters hired by group trekkers (13.40) was more than double the number hired by independent trekkers (6.2). While it appears that females are seldom used as porters by FITs, about one- third of the GT reported hiring female (3.2) porters. Given the relatively longer duration of trekking days spent by GT than FITs, the former generated porter employment for relatively longer periods of time (13.5 days per trekker) than the latter (6.3 days). It is, however, noted that not all porters hired by the GT are from the conservation area, as it is common practice to hire porters mostly from outside the entry points. No information, though, was solicited from visitors regarding the place of origin of the porters hired. The results showed considerable variation in daily wage rates between male and female porters. The average daily wage of male porters hired by the GT was almost twice that of female porters (Rs 85/day). Wage rates also varied between FITs and GT, as shown in Table 4.36.

Visitors' Motivation for Visiting the Annapurna Region

In order to understand visitors' motivation in visiting the Annapurna region, a set of pre-specified factors was submitted for ranking, with one standing for the highest, two for the second highest etc. The results indicate variation in the motivating factor, meaning that different visitors travel to the region with different motives. Viewing scenery and experiencing nature together may be considered the main motivating factors for both FITs and GT, wtih nearly 75 per cent indicating so. Among the FITs, trekking as a motivating factor ranked first only for 15 per cent, while among the GT it ranked first for 36 per cent. Visiting Nepal was ranked first by 67 and 36 per cent of the GT and FITs respectively. Among the latter, a large majority (60%) responded that other factors (not identified) were the motivating ones (Table 4.37).

Visitor Sickness

Eighty-five per cent of all respondents provided responses to the question on sickness. Of them, about 30 per cent were independent trekkers and the remaining were group trekkers who reported that some of their friends became sick during the trip. About 82 per cent of them reported that the cause of the

sickness was due to drinking contaminated water. No other reasons were reported by the visitors.

Knowledge about the Annapurna Region

Visitors were asked if they had heard about the Annapurna Himalaya and Annapurna Conservation Area Project (ACAP) before arriving in Nepal. More than eighty-two (82.5) per cent of all visitors reported having heard of the Annapurna Himalaya before arriving in Nepal, and the majority of them were FITs. However, only 27.5 per cent of all visitors knew of ACAP before arriving in Nepal, and the majority of them were again FITs (Table 4.38). In response to the question concerning whether they knew that the conservation fee they paid to visit the area was used fully for the development of the area, only 36 per cent of all visitors (58% of FITs compared to 42% of GT) answered in the affirmative, and the rest, 52.5 per cent, were not aware of this (Table 4.38).

A final question asked to the visitors was whether their trip had been as enjoyable as expected or not. More than ninety-four per cent of all visitors expressed an affirmative opinion, with five per cent of independent trekkers answering that the trek was enjoyable but not as much as expected (Table 4.39).

Impact and Implications of Tourism

This section describes the impact of tourism as perceived by the host population, namely, households and lodge owners in the Annapurna region, who together form an important part of the supply side of tourism. For an assessment of the impact of tourism in mountain areas, reference to tourism alone will not suffice vis-a-vis the broader issue of "tourism for local community development," as has been extensively discussed in Chapter 2. All three aforementioned aspects, namely, Himalayan Environmental Resources (HER), Mountain Community Development (MCD), and Mountain Tourism Development (MTD), have to be addressed simultaneously, and the carrying capacity of the mountain environment must be assessed. Since the Annapurna Conservation Area Project (ACAP) is endeavouring to bring about positive changes in nature conservation as well as in the quality of life of the mountain people, the discussion below will constantly refer to cases of ACAP intervention. Also, tourism has been playing an important economic role in the area, and ACAP has been attempting to strengthen the link between community and tourism development. On the demand side are the visitors, and

any intervention must be able to improve the visitor's experience and simultaneously conserve HER and promote MCD. This chapter addresses these issues on the basis of surveys carried out in Ghandruk, Ghorepani, and Ulleri, as well as secondary sources. Also discussed in this chapter is the carrying capacity issue elaborated in Chapter 2.

An earlier volume has discussed extensively the more visible types of impact of mountain tourism in Nepal, which also apply to the Annapurna region (Banskota et al. 1994). This chapter will not deal with the same issues but with the perceptions of the host population and the visitors. ACAP, directly or indirectly, through its intervention or policies and programmes, affects both the groups.

The Annapurna Area of the Past

Besides traditional activities, such as farming and animal husbandry, tourism has become an important activity in generating income and employment in some areas of the Annapurna region.[3] Tourism has been possible because of the unique and rich endowment of the Himalayan Environmental Resources (HER) referred to in Chapter 2. Besides tourism, the local community also depends very much on HER to meet their needs for food, firewood, fodder, grazing, etc. When tourists began visiting the area, the local people responded to meet their needs. This demand-induced tourism characterised the development of tourism in the area before ACAP. There was virtually no supply management for tourism. Lodges were built, for which trees were harvested and firewood extracted to meet the needs of the tourists. Forests in many parts were rapidly degraded due to the increasing pressure on HER to meet the demands of both locals and tourists. Additionally, campgrounds, trails, villages, base camps, etc became littered. Lodge owners competed with one another, price wars broke out, and profits were not reaped from their business. There were many other types of negative impact as well.[4] There were visible signs that the carrying capacity of the area was deteriorating under the increasing demand for HER from both the host and tourist populations.

This situation resembles the one described in Figure 2 where the carrying capacity of the mountain environment was not taken into consideration in any programme or policy formulations. There was perhaps some concern for

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3 Trade with Tibet, which once used to be a thriving business in this region, has dwindled over the years and is no longer as important as it used to be.

4 See Banskota and Sharma (1994a) for more details.

carrying capacity, but it was not invoked. Community and tourism (areas 2 and 3 respectively) both intensively encroached on HER (area 1). Although links between tourism and community development existed (area 4 in Figure 2), the link seems to have been weak and unsustainable. Price wars between lodges, the lack of a code of conduct, the lack of community infrastructures, littering, the lack of environmental awareness and so on were all important factors during this period in the Annapurna area. There was considerable leakage of income earned from tourism from the area with the largest benefits likely going to tour operators (area 6) who brought tourists to the area. The wider mountain community (areas 2 and 5) remained uninvolved or had no opportunity to participate in community or tourism development, and, at the same time, HER were constantly overused. There was no vision regarding mountain development, nor was the value of HER appreciated, and, as a result, there was no effort made to develop and link tourism with community development for the conservation of HER.

In general, this was the state of mountain tourism in the Annapurna region prior to ACAP. It is precisely for this reason that the Annapurna Conservation Area Project (ACAP) was implemented through the King Mahendra Trust for Nature Conservation (KMTNC) by a royal directive, namely, to develop ways and means to improve the carrying capacity of the Annapurna region.

Tourist-Related

This section will report host and visitor perceptions of the types of tourist-related impact and the broader areas of community development and environmental conservation as well as ACAP programmes. The host population includes both the lodge owners and households whose links with tourism are indirect.

Impact Perceived by Host Population-Households. The quality of life of rural households encompasses both objective and subjective information on their perception of living conditions. 'Living conditions' was defined to subsume a broad range of issues: cleanliness and sanitation, environmental conservation, cultural preservation and promotion, poverty alleviation, employment and income generation, skill improvement, and women's development. Each of these broad categories was broken down into more detailed attributes. Respondents were asked to state whether the existing situation on the attributes of living conditions had **improved, was the same as before,** or **had worsened**. Additionally, households were asked to comment on factors they

perceived to be responsible for bringing the change. The choices offered to households were tourism, ACAP, both tourism and ACAP, population growth, educational development, improved skills and management, and so on. Population growth, education, and improved skills or management have been grouped into the category others-1, because of their low response rate. Others-2 refers to factors not in the choice given to the households.

Environment. **Village and Neighbourhood**--Householders' perception of the cleanliness and sanitary conditions of their villages in general was that water sources, trails, schools, scenic spots, and public places were felt to have improved, as indicated by a large percentage of households. With regard to personal health, a large majority (92%) perceived improvement, with a smaller percentage either perceiving the same standard (6%) or a worsening (4%) situation in health (Table 4.40).

As for factors responsible for the changed conditions, a large majority of the households indicated that ACAP was responsible. A smaller percentage indicated tourism to be the cause, and a still lower percentage cited other factors. For example eight per cent of the households stated that tourism was the cause of the improved cleanliness and sanitary conditions in the villages, 48 per cent attributed them to ACAP, and 36 per cent attributed them to both tourism and ACAP. The percentage of households that attributed the improved situation to ACAP varied between 37 per cent in the case of cleanliness in schools and 48 per cent in the case of personal health. In other words, 43 per cent (scenic spots) to 49 per cent (personal health) of the households appeared to be aware of ACAP intervention in relation to cleanliness and sanitation in the survey area. Other results are summarised in Table 4.40.

Forests, Watershed and Habitats--Protection of environment (forests, watersheds, pastures and wildlife, and the general awareness of the environment) was perceived variedly by the host population surveyed. For example, almost all surveyed households reported having perceived that the forest and wildlife situation had improved. Again, ACAP was identified as the major factor responsible for this improvement in the case of forests (78%) and wildlife (69%). The percentage of households that perceived tourism, ACAP and tourism both, and other factors to be responsible for the improvement was comparatively low.

Regarding the protection of pastureland, household perception was also mixed. Those who perceived pasture protection to have improved represented 38 per cent of all questioned. About 36 per cent perceived pasture protection to be

the same, and 20 per cent perceived it to have become worse. Of those who felt pasture conditions had become worse, 80 per cent attributed it to ACAP interventions.

About 54 per cent of the households perceived improvement in watershed conditions, another 30 per cent perceived the situation to be the same, and only two per cent perceived it to be worse than before. While ACAP was cited as the main contributing factor to the improved watershed conditions, the lack of management (others-1) was the main reason stated for the same or worsening situation of watersheds (Table 4.41).

A large majority of households perceived that the general awareness of the environment and environmental issues had improved (90%), and 87 per cent attributed this change to ACAP. At the same time, the four per cent who perceived awareness to have become worse all felt ACAP to be responsible.

Culture. Households' perceptions regarding the preservation of cultural sites, particularly of sacred places and monuments in the study area, were mixed. The proportion of households experiencing no change in the preservation of sacred places (40%) and monuments (44%) was relatively higher than those who perceived an improved situation among these cultural entities. However, households were unable to pinpoint the factors responsible for this situation, although in the case of sacred monuments about 18 per cent perceived their deterioration to be due to the lack of education and management (others-1) (Table 4.42).

Tourism, it is often argued, brings changes in the religious values of a society. This, however, does not appear to hold firmly in the case study area, as a large majority (74%) of households perceived no change in the religious values of their community, and 16 per cent even perceived them to have improved. Those who perceived an erosion of religious values totalled about 10 per cent. Households also indicated that neither tourism, ACAP, nor factors such as education were responsible for maintaining religious values, as about 74 per cent of them identified other causes for the present situation.

In the case of cultural values, the situation was different. The percentage of households perceiving an improved, unchanged and worse situation for cultural values were respectively 16, 70, and 10 per cent. A very few households identified ACAP as being responsible for either improving cultural values or maintaining them. However, 60 per cent of the households believed tourism to have worsened the situation. Also, a large percentage (94%) perceived

other factors (others- 2) they could not identify to be maintaining cultural values in their society.

About 66 per cent of the sampled households perceived an improved situation in their village life, with tourism (49%) and education and management (42%) being identified as the main contributing factors. The majority of households (54 per cent) also felt that their family ties had improved mainly as a result of improved educational status (85%).

A large majority of the households perceived that crime and theft in the community had either improved (i.e., lessened) or remained the same. Although only 13 per cent perceived tourism to be responsible for the change, a large majority felt that there were other factors responsible for this situation. Also, 28 per cent felt that the crime and theft situation had worsened, and tourism was considered to have brought on this change (93%).

Regarding the preservation of cultural assets, such as dances and music, 26 per cent of the households reported noticing some improvement or promotion of local dances and music. Tourism was the major factor identified in such an improvement, followed by ACAP and education. About 50 per cent of the sampled households perceived the status of dance and music as being the same as before, and out of these, 84 per cent indicated factors other than those identified as being responsible. Another 18 per cent, however, perceived a negative effect on local dances and music, due mainly to tourism (93%).

A promotion of local handicrafts was perceived by only about four per cent of the households, which attributed the improvement to tourism only (100%). Another 50 per cent perceived the situation to be unchanged. Of the 12 per cent who thought that the situation was worse, 50 per cent indicated that tourism was responsible. Whatever preservation there is under the category (i.e., same), a large majority of the households (84%) indicated other factors to be responsible.

The situation with respect to family planning was perceived by 60 per cent of the households to have improved, by 16 per cent to have remained the same, and by four per cent to have worsened. In general the majority of households could not identify factors responsible for either the improved or the *status quo* situation.

Economy. Perceived impact on *poverty* also varied widely among the sample households, although a majority (64%) stated that poverty had been reduced

(improved situation) mainly due to tourism (84%). No change in poverty was perceived by 16 per cent of the households, and factors other than those offered were indicated by them to be responsible. Finally, of the 10 per cent who thought that the poverty situation had become worse, 60 per cent singled out tourism as the main reason (Table 4.43).

The vast majority of households in the study area (76%) reported that *employment opportunities* had improved. Ninety per cent of the households identified tourism as responsible for generating employment. Only a small per cent of the households felt that employment opportunities had either remained the same (16%) or become worse (8%).

As with employment, the large majority (72%) of households reported that *incomes* had improved in the area. Tourism was perceived to be the main contributing factor, as indicated by almost 90 per cent of the households. Households that did not perceive any enhanced income opportunities accounted for 22 per cent and the six per cent that indicated a worsened situation identified other factors as being responsible. However, despite the large majority of households that experienced improvement in their income levels as a result of tourism, there has been no indicated change in their level of savings and investments.

Rapid growth in *land prices* and *labour shortages* was the other perceived negative impact in the community. About 68 per cent of the households indicated that land prices had worsened (increased), and 62 per cent noted labour shortages. Tourism was identified as being responsible for increased land prices (worse) by about 85 per cent of those who thought land prices had increased. Likewise, among those citing labour shortages, about 77 per cent indicated tourism to be the cause.

When asked whether there had been any improvement in the *self-reliance* of households, a majority of households (60%) stated that their own self-reliance had improved relative to the past. Tourism was identified as the single key factor (67%) for the development of self-reliance. Perhaps the positive impact of tourism on employment and income may be the factor that has helped the community improve their self-reliance.

Finally, the *migration* situation was reported to have eased (improved) by only about 18 per cent of the households. Another 62 per cent did not perceive any change in the situation. Among those that perceived an improvement, 89, 20,

and 16 per cent identified ACAP, tourism, and other factors respectively to be responsible.

Impact on Women. Of the 58 per cent of the respondents who perceived an improvement in skills, about 72 per cent attributed it to ACAP. Only 26 per cent indicated that the situation had remained the same and cited unnamed factors as responsible for this (Table 4.44). Both positive and negative types of impact of tourism on women are often discussed in the literature. The extent to which mountain tourism helps minimise the work burden of women depends on the nature and extent of fuel- efficient and other labour-saving technologies that can be promoted and made accessible and affordable to households. In some villages of the Annapurna area, the work burden of women may have been reduced due to the promotion of such technologies. Introduction of electricity, rice mills, fuel-efficient technologies, and drinking water projects, as well as improved management of forests have been noted as factors that have reduced this work burden. At the same time, women are also forced to take over male responsibilities, as male members often leave home for employment for prolonged periods of time. Some related types of impact perceived by the respondents regarding the work burden of women, their education, and income in the case study area are summarised in Table 4.45.

A fairly high percentage (44%) of the respondents in the study area perceived that there had been an improvement (reduction) in the work burden of women, due mainly to tourism (59%). A higher percentage (50%) indicated the situation had not changed, but only four per cent indicated an increase in the work burden. Among those who indicated that the burden had decreased, about 31 per cent attributed this to tourism, while all those that indicated no change were uncertain as to what factors were responsible for the *status quo* situation.

A large majority (82%) of the sampled households perceived that women's education had improved over the years, although there was no one single responsible factor that households identified as being responsible. The 16 per cent who perceived no change cited factors other than tourism and ACAP.

The impact on women's income was found to be strongly positive, as 48 per cent of the respondents claimed their income situation had improved. However, 46 per cent indicated that the situation was the same as before, but only two per cent stated that it had become worse. Of those indicating an improved situation, 71 per cent identified tourism to be the cause, and some

(21%) found both tourism and ACAP to be the cause. The 46 per cent who perceived women's income to be the same could not identify the cause.

Community Development. This section summarises household perceptions towards community development activities such as infrastructure, forest conservation, alternative energy, income generation, and training (Table 4.46). Respondents were asked to state facilities that existed in the community and then to indicate whether their conditions were better, the same as, or worse than five years earlier. They were additionally asked what the responsible factors might be and what group of households in the community had benefitted.

Regarding the physical infrastructural facilities, the large majority of households reported that the situation was better than five years before. Community and tourist facilities, such as trails, bridges, campgrounds, lodges, and drinking water, were perceived to be better by a large majority of the households. A significant percentage of households, however, stated that there had been no improvement in the situation of bridges (20%), post offices (22%), veterinary services (42%), and marketing facilities (100%).

With regard to institutional development, households indicated a generally improved situation compared to five years' earlier, except in issues affecting women where the situation was not as good. For example, the current status of women's skilled training was perceived to be the same (31%) or even worse off than before (18%).

Not all the sample households reported having access to income-generating opportunities involving food and cash crop production and livestock, horticultural and handicraft development. For example, about 48 per cent of the sampled households did not have access to livestock and handicraft-related income-generating activities. Even among those who had access to such opportunities, a majority of them (58%) perceived business to be the same as before. Those who were in vegetable farming (88%) indicated that the situation had improved, but 27 per cent also indicated that income from vegetable farming was the same as five years' earlier. That income- generating opportunities have not improved is also supported by the response made by households on the lack of development in marketing. Although a large percentage of households did indicate that incomes had increased, this was mostly attributed to tourism rather than other aspects of community development. This clearly indicates a weakness in income-generating activities.

Establishment of both private and public nurseries has been one of the conservational programme activities of ACAP. However, 30 per cent of the sampled households in the study area were not aware of a public nursery, while over 90 per cent of respondents claimed the non-existence of private nurseries. Among those who reported the existence of both types of nurseries, the majority felt the situation to be better now than before.

Regarding alternative energy programmes, such as improved stoves, rural electrification, back boilers, solar heaters, and gas and kerosene uses, over 90 per cent of households, the majority of whom were from Ghandruk, perceived a better situation, while a small percentage were unaware of such facilities in their villages and thus reported a lack of them.

When asked what were the major factors responsible for the change relating to different aspects of community development, household perception varied, but, in most cases, ACAP was identified as the key positive factor for change or community development. More specifically, respondents were given five choices, namely, (a) tourism, (b) ACAP, (c) both, (d) government, and(e) villagers' own initiatives, and asked to select which of these factors they perceived were responsible for the changes in community development. The results are summarised in Table 4.47.

The majority of the respondents identified ACAP as the positive factor for improved situations in sanitation, forest conservation, alternative energy programmes, environmental awareness, women's development, lodge management, and training. Similarly, the government was pointed out as the main mover for the improved drinking water situation. Tourism was reported by the majority of the respondents as a key factor for development of markets (50%), lodges (90%), and camp grounds (80%).

Finally, household perception about the distribution of benefits is reported in Table 4.48. In response to most questions, a majority (83%) of the households thought that benefits had accrued to the villagers. About 12 per cent felt that only those households engaged in tourism had benefitted in any substantial way. Other results are summarised in Table 4.48.

A major conclusion that emerges from the analyses of community development is that the level of community satisfaction concerning community development is quite positive, with the majority of respondents crediting ACAP with being responsible. Second, the results indicate that distribution of benefits is fair, as very few households thought the richer section of the

community had unduly benefitted; the majority felt that benefits accrued to all villagers. Third, income-generating programmes have not been effective and need to be enhanced. The link between community and tourism development is weak.

Impact Perceived by the Host Population Lodge Owners. Lodge owners were asked about their awareness of various community development programmes and to indicate whether selected issues in their community had changed (improved, remained the same or had gotten worse) over the previous five years. The same areas were covered as for the households. The results are summarised in Tables 4.49 to 4.51.

With regards to basic development infrastructures, the majority of lodge owners indicated that the situation had improved or was better than five years' earlier in both Ghorepani and Ghandruk. A negligible percentage indicated the situation had become worse. With regard to other types of infrastructure too, a large majority of the lodge owners indicated that the situation was similarly better (Table 4.49).

The lodge owners were also asked why they thought the situation had changed (Table 4.50). With regard to basic development infrastructure, the opinion of the lodge owners was found to be fairly divided. In Ghorepani, about 32 per cent felt tourism had induced the change, whereas only about 19 per cent of the lodge owners in Ghandruk attributed the change to tourism. On the other hand, a lower percentage (10%) of lodge owners in Ghorepani attributed the change to ACAP, whereas about 23 per cent of Ghandruk lodge owners attributed the change to ACAP. A similar percentage of lodge owners in Ghandruk attributed the change to the government, but, in Ghorepani, this percentage was smaller (14%). Lodge owners also attributed the change brought about in infrastructural development in the community to the villagers. A fairly large percentage (30%) of the Ghorepani lodge owners who indicated that the infrastructural situation was better than five years' earlier were, however, unable to decide to whom to attribute the change. Lodge owners in Ghandruk were more sure in this respect. In both the areas, ACAP was cited as the main cause for bringing improvements to the health situation, but more so in Ghandruk (70%) than in Ghorepani (57%). Lodge owners do not seem to credit the government with the change indicated in most of the issues, as may be seen in the Table, and this is more true of lodge owners in Ghorepani than in Ghandruk (Table 4.50).

In human resource development, income generating activities, and conservation, lodge owners in both the areas credited ACAP with the positive changes that have been realised. In Ghorepani, a larger majority attributed the positive change in human resource development and conservation to ACAP than in Ghandruk. In other areas, namely health and income generation, it was the lodge owners in Ghandruk who were more willing to attribute the positive change to ACAP. The results indicate that villagers have also been credited by the lodge owners with bringing about positive changes in their community in all areas except human resource development (Table 4.50).

A final question asked concerned the opinion of lodge owners on who was receiving the benefits from the various forms of development. The lodge owners, who in the questionnaire were themselves categorised as being 'tourism-related', felt that more of the local community had benefitted from the various community-level programmes (Table 4.51). The results based on the information obtained from the field indicate the important role ACAP has played in improving the community's well-being. Tourism has brought income to lodge owners, but growth in lodge owners' income is unlikely to spill over to the community unless concerted efforts are made to link these two sectors.

Impacts Perceived by the Visitor Population-Demand Side. The majority of the visitors surveyed (63%) perceived the prevailing trekking permit fee to be fair. The trekking permit fee was reported to be high by about 29 per cent of all trekkers, the majority of whom were FITs. With regard to the conservation area fee, only 24 per cent of the independent trekkers indicated that the fee was high, with a larger percentage (76%) stating that it was between fair and low. Similarly, visitors' perceptions regarding porter wage rates varied according to the type of trekker. While two-thirds of the independent trekkers thought porter wages were fair, a majority of group trekkers (57%) perceived porter wages to be low.

Despite the low level of expenses for local products, the contribution of the FITs to the local economy was relatively higher than that of the GT. It should be recalled that GT spent about two weeks, whereas as FITs spent only about a week, in the area. On a per day basis, therefore, FITs spent more time than GT visitors. Also, a large part of the GT expenditure paid to travel agents actually is not spent in the area, since most food purchases are made outside.

About 40 per cent of the visitors reported that the information on maps of the conservation area were helpful and adequate, another 45 per cent reported the

information was helpful but inadequate, and about 15 per cent considered the information not helpful (Table 4.52).

When asked whether the code of conduct is obeyed by trekkers as well as local people, the large majority of the visitors surveyed indicated that most trekkers and local people obey the code of conduct. However, 30 per cent of the visitors reported that most local people do not obey the code of conduct. Among the visitors who indicated that they themselves do not obey the code of conduct 27 per cent indicated that it was the FITs and only six per cent GT (Table 4.53).

Information was also solicited from the visitors regarding their perception on congestion or crowding in the conservation area. When asked whether the number of visitors permitted to visit the area was too many, adequate or not a problem, a small per cent of the visitors (13%) perceived "too many" visitors (congestion) in the area, while another 50 per cent thought, that the number of trekkers currently permitted in the area was adequate and should not exceed the current level. Those who perceived that the current number of visitors was not a serious problem comprised less than 38 per cent. Visitors' perceptions of congestion, however, varied between FITs and GT (Table 4.54). Based on the results, it may be argued that the area is reaching a point beyond which the experience of the visitors will perhaps begin to deteriorate if more trekkers begin to use the same number of facilities and services. In other words, additional visitors may result in congestion, so that planners should begin thinking of additional infrastructural development, products, and area diversification.

Information was also collected from the visitors regarding their perceptions of garbage, littering, and sanitation conditions in the different places within the region. Table 4.55 summarises the results. The majority of visitors perceived the garbage and littering situation on campsites to be good, while 47 per cent reported being satisfied with the sanitation on the campsites. Along trek routes and scenic spots 35 per cent of the visitors perceived littering and sanitation conditions to be good. Regarding lodges, only a small percentage of visitors reported sanitation conditions to be good. Garbage, littering and sanitation conditions in homes and villages were found to be unsatisfactory by visitors. Sanitation conditions in schools were perceived by a large majority of the visitors to be good. The details are provided in Table 4.55.

Community and Tourism Linkages

A major aspect of mountain community development through tourism will concern how strongly these two sectors are linked. This section attempts to shed some light on the link between tourism and community development by addressing import leakages. Imports are considered to be purchases made by local households and lodges from outside the area. The higher the degree of imports, the higher will be the leakage, implying a low level of saving of tourism income. Although not all types of purchases can be made locally, many perishable items can be produced locally to cater to the tourists. Moreover, purchases made by households are not considered here due to lack of information. As has been discussed in Chapter 2, for sustainable mountain development, tourism and community development should complement one another (area 6 in Figure 5).

The case study areas are heavily dependent on agriculture. As a result, the dependency of lodges on imports for food supplies to cater to tourists will provide some idea of the linkage between tourism and community. Lodge owners derive their income from tourists by providing them with services. They are required to purchase a variety of items from the local community and perhaps from other areas to cater to tourists, unless they are able to draw on their own sources. In the latter case, too, imports of basic food items should be low. Even though many lodge owners may supply different food items from their own (i.e., local) sources, some items nevertheless will have to be purchased. Thus lodge owners were asked to provide information on the share of expenditure for different items by source of purchase (local or import) in order to understand lodge dependency on the local community in catering to tourists. The results are summarised in Table 4.56.

Rice is a prime food item required for catering to tourist needs. In Ghorepani, lodges indicated that all purchasing of rice took place in Pokhara or other towns or areas. Ghorepani does not produce its own rice. In Ghandruk, households do cultivate rice but, as implied by local households and indicated by lodge owners, purchasing is done in Pokhara. Of the total expenditure for rice by lodges in Ghandruk, local purchases account for only three per cent, as against 97 per cent through imports.

Lodge owners in Ghorepani spend more on imported flour than lodge owners in Ghandruk. Flour is processed from grains locally if flour mills exist. Value-added is generated which can be retained in the community. Flour mills can thus be seen as a part of community development, generating not only value-

added but also employment. From this point of view, the linkage between community development and tourism is stronger in Ghandruk than in Ghorepani, as 48 per cent of expenditure for flour accrues locally. In Ghorepani, the local purchase of flour accounts for only about four per cent.

Bread requires flour, and its preparation generates employment and value-added. Specialised techniques as well as technologies are required, and they in turn affect community development. In Ghandruk, 48 per cent of the expenditure by lodge owners accrues to local bread makers, and, in Ghorepani, this percentage was much lower (15%), indicating a weaker linkage here between tourism and community development in Ghorepani than in Ghandruk.

Vegetables can be cultivated in almost any place. From the angle of vegetable production, the link between tourism and community development in both areas appears to be relatively stronger than in the above cases discussed. In Ghandruk and Ghorepani, local purchase of vegetables accounts for 79 and 85 per cent of the total expenditure for vegetables respectively, as reported by the lodge owners. Similar responses were obtained in the case of meat and furniture expenses. In other items, such as eggs, milk, and fruits, both areas heavily rely on imports. Again, items such as cloth, drinks, jam, and butter have to be imported, since they cannot be produced cost effectively in areas like Ghandruk and Ghorepani. However, items such as eggs and milk have the potential to be produced locally.

Based on the information presented above, the link between tourism and community development is not very strong. Many items, such as eggs, milk, and fruits, can be locally produced, but such does not appear to be happening. If the market for these products did not exist, lodge owners would not be importing these items. Imports of these items add to the cost which tourists have to pay. In addition, such purchases of imports are leakages which the community could retain if they were to be produced locally. The scope for exploiting tourism for local community development can be widened, given that about 50 per cent of the GT purchase a large part of their food needs in Pokhara. If perishable food items can be developed locally and their supply is assured, it is very likely that tour operators will opt for local purchases, since the availability of such items locally will save them the cost of transporting purchased food to the area.

Therefore, scope for further linking tourism with community development does exist. What is called for is enhancing local production activities, the production base and cross-sectoral linkages. Such links not only promote tourism and

community development directly, but also generate multiplier effects in the community. It should, however, be noted that not all leakages can be avoided, since many tourist needs require the purchase of commodities that are not locally produced. Nevertheless, the above results do indicate that, despite the unavoidable purchases that have to be made of imported items, there is scope for developing production of a variety of foodstuffs, which will help minimise such leakages. Also, in order to account for the leakages more fully, it is essential to have information on household purchases of different commodities. Such an understanding of imports generated by the local community will help identify areas that can be strengthened to promote the link and generate multiplier effects.

Furthermore, only those households that operate lodges reported direct links with tourism, and only 10 per cent reported an indirect linkage. Thus, in an overall sense, the results do not indicate that tourism and community development complement one another strongly. ACAP's programmes are concentrated more on conservation, community development (mostly social), and tourism awareness, with little attention being paid to income-generating schemes related to local production systems such as agriculture, livestock, and cottage industries. Although tourism has generated a small market for local surpluses, the fact is that efforts to increase such surpluses have not been adequately promoted, as indicated by the small percentage of households reporting having surpluses or selling surpluses to the tourist market. The perceived impact of tourism on agriculture, livestock, and horticulture has been found to be low; the majority of households perceived no change or no effects in the study area. This is also confirmed by the lodge owner survey: the majority of owners import vegetables and milk from outside the community.

The forward linkage of agricultural and non-agricultural activities in the study area is low, but the backward linkages of tourism, especially with community development, are also weak. This was indicated by the poverty of indirect houshold links with tourism. Although households did perceive benefits from tourism, these benefits are mostly in the form of employment, namely portering, so that a strong link between tourism and community development appears to be lacking. ACAP has not addressed income-generating issues adequately in the area; to improve this link, income-generating projects need to be emphasised and developed. Not only can this induce more saving, but indirect benefits of tourism can also be further enlarged, and this will provide stronger support for community development.

Assessment of Carrying Capacity

This section will address qualitatively the carrying capacity of the case study areas based on the discussion above and in earlier chapters. The methodology described in Chapter 2 will be utilised for the purpose. In Chapter 2, HER, MCD, and MTD were discussed at length, and it was shown that when carrying capacity considerations are invoked, the scope for community and tourism development tend to narrow. This, however, is not to say that possible benefits will reduced, only that unsustainable practices that do not promote the conservation of HER should be discouraged. There are potential benefits from promoting productivity of the existing resource base as well as community-level production activities. Scope also exists for using external knowledge to promote different dimensions of community and tourism development as well as to conserve HER. External factors that do not appear to be relevant suddenly come into picture once carrying capacity is considered and the mountain environment's linkage with the external world is taken into account. Additionally, areas that have potential uses can be further exploited to enhance mountain development. These are some of the issues that will be addressed in this section.

It was indicated in Chapter 2 that the carrying capacity of a complex environment, such as the Annapurna region and the case study areas, cannot be easily analysed without simplifying assumptions. As a result, it was indicated that a critical factor approach should be taken in order to understand and evaluate the carrying capacity. Critical factors are those that promote or encourage positive or negative inducements to conserve and/or develop HER, MCD, and MTD. The critical factors identified were critical areas, critical resources, critical institutions, and critical behaviour. For community and tourism development to be carried out within the carrying capacity of the mountain environment is also equally important. The last chapter has already discussed the two aspects of community and tourism development, and here only the carrying capacity will be discussed. Reference to Figure five will be made in the analysis.

Past activities have induced unsustainable features in different parts of the region. Stated differently, human activities as manifested in critical behaviour have induced encroachment into critical areass, and critical resources have either been directly or indirectly threatened (area 1 in Figure 5). The lack of critical institutions and infrastructure reinforced this situation. In other words, the situation in the Annapurna environment (HER) was already crossing carrying capacity limits (areas 4 and 5). It was with a view to improving the

carrying capacity - to reducing stress on the fragile ecosystems and improving the resource base and the quality of life of the mountain people - that ACAP was created.

The review discussed in Chapter 3 noted various programmes initiated by ACAP to improve the overall carrying capacity of the area. ACAP began its programme by focussing on three key areas, namely, community development (area 2), tourism development (area 3), and conservation (which is an element of HER, MCD, and MTD). Although no strict definitions of these concepts have been made by ACAP, there does appear to be an understanding of their role in its programmes. There are elements of the critical factor approach outlined in Chapter 2 in those parts of ACAP programmes that address carrying capacity. However, viewing the mountain environment as potentially rich in HER and tourism as a spur for local community development does not appear to have become adequately engrained. The different areas identified in Figure three provide the basis for evaluating this issue. This section will therefore deal with three separate but interrelated issues relating to carrying capacity of the Annapurna region. First, ACAP's approach to overall development in terms of critical factors will be addressed, second, the 'mountain development' perspective will be discussed, and finally, an assessment of the overall carrying capacity will be conducted.

Critical Area

ACAP's focus on the three areas of community, tourism development, and conservation, and the different programmes and polices initiated under it all deal with the critical factors. The formation of zones is a first step in defining critical areas. Different areas had already experienced different degrees of degradation and deterioration, and, depending on their status, the areas were classified into different management zones (Chart 2).

This identification of the management zones, although still broad, nevertheless should be followed in defining safe minimum standards to regulate types and volume of resources exploited by the host as well as the tourist population. Regulations governing hunting and the gathering of medicinal plants are two forms of safe minimum standards, in this case the safe minimum has been defined as a total ban.

If critical areas and safe minimum standards are defined without addressing the needs of the local people, the very purpose of delineating such areas would be defeated. However, the formation of such critical areas takes into

Chart 2: Management Zones in the Annapurna Region

Management Zones	Features	Management Implications
Special management zone	Selected areas of the greater Annapurna region which are being threatened by human (host & visitor) impact; they include Chamrong (Annapurna Sanctuary), Ghandruk-Chamrong-Ghorepani forest, Manang, Tilicho Lake, Chaune Forest.	High priority. Extensive monitoring of all aspects of tourism and environment, and a full-scale effort to develop and reverse trends.
Intensive management zone	Area of human settlement on southern slope, characterised by intensive agricultural and human activities.	Conservation education. All potential commercial development to be continuously assessed; encouragement of traditional management systems for forests and pastures.
Protected forest and seasonal grazing zones	Below wilderness zone and above intensive use zone.	No slash-and-burn agriculture. Restrictions imposed on collection of dried fuelwood, fodder, litter and timber, and a ban on hunting. Harvest of medicinal plants only for ritual, personal, or village purposes is allowed.
Wilderness zone	Upper elevation limits on seasonal grazing, roughly above 15,000 ft.	No development. Full protection.
Biotic and anthropological zone	Natural area where the influence of modern technology and outsider influence have not been noticeable on the traditional way of life.	Full exclusion of foreigners from the area other than those conducting scientific studies.

consideration local people's need for firewood, fodder, and other resources (HER).

The protected zone lies within two hours' distance from main settlements. In this zone, households are allowed to collect fodder, but tree harvesting for firewood or timber collection is not permitted. The semi-protected zone is a further distance away from settlements (two to four hours). In this zone, households are allowed to collect only dead wood, and tree felling or fodder collection is not permitted. The 'use zone' is the farthest distance away from settlements (at least four hours), and there tree felling is permitted after permission is obtained from the CDC.

Whether this critical area concept or zonation is effective depends on how households benefit from it. Programmes focussed on conserving critical areas are likely to be successful if the host population perceives the benefit from doing so. This perception of 'benefitting from' is perhaps the decisive factor in inducing participation of the local community, without which rural development programmes are unlikely to be successful. External intervention generally fails if such intervention does not bring positive benefits to the host population. The Forest Nationalisation Act was such a case in point, and, despite government regulation, forests are being degraded at an unprecedented rate. Tourism development likewise can be successful only if the host population perceives it will bring them benefits. Therefore, this study presupposes the perceptive ability of the host and visitor populations to understand carrying capacity, ACAP intervention, and the role of tourism. Based on the case study areas, it can be said that the host population perceives benefits from the critical areas. However, whether other households in other villages also perceive benefits still remains to be answered.

Critical areas are not only those that manifest negative impacts and, hence, need protection. Critical areas that offer comparative advantages in developing new products should also be identified in order to enhance benefits to the community. The opening of the eco-tourism circuit in the Sikles region is a case in point. Identifying critical areas requires assessing values of HER and promoting new products, but within the carrying capacity. In a large area such as the Annapurna region, there are potentially many critical areas where exploitation can generate positive benefits to mountain communities. The need to assess critical areas in terms of benefit generation does not appear to be adequately understood. Although from a tourism perspective the existing areas visited by tourists may not exhibit signs of congestion, they are perceived as doing such by the visitors. As the percentage of visitors who perceive

congestion increases, the (social) carrying capacity will be impaired and the benefits to the local people will decline.

Another critical area is the identification of poverty pockets. Poverty needs to be better addressed, and poverty pockets need to be identified as critical areas, since people from these areas will encroach on the resources to meet their basic needs. Who the poorest of the poor are, where they are located and what comparative advantage these areas have need to be evaluated. Some of these areas may have adequate HER for developing new tourism products to help mitigate poverty. There do appear to exist programmes directed towards poverty mitigation by identifying the poorest of the poor.

While it appears that the identification of critical areas has begun in a limited way, a great deal of work still remains to be done. In order to mitigate poverty and develop new products, to define safe minimum standards etc, the identification of critical areas becomes an important concern. Critical areas currently appear to be viewed only on the basis of their negative characteristics; their positive characteristics, as reflected in the value of HER, still remain to be assessed in order to promote community and tourism development. It is therefore necessary for ACAP to begin developing new products and new areas and to integrate these products and areas into community development (areas 2 and 6 in order) not only to enhance the carrying capacity of the overall region but also to avoid development that is unsustainable (areas 3 and 5), such as that which may result through overcrowding.

Critical Resources

Critical resources are those which experience relatively greater stress and are relatively more sensitive to increased human interference and thus need protection. Also, critical resources are those that are important for the daily needs of the local people but for which supply is scarce. The first type of critical resource is generally associated with some critical area and includes rare and endangered flora and fauna. Defining critical areas and protecting them implicitly protects some critical resources. Thus, in a sense, a critical area is a complement to a critical resource.

Some success is being achieved in protecting such critical resources, as indicated by the increasing frequency of depredation of livestock and raids on crops by wildlife. The host population has perceived that, in general, wildlife is more protected than before. However, this issue of crop raids and livestock

depredation has not been dealt with, and an increasing number of villagers have to put up with the problem. If the latter continues and its frequency increases, households are likely to take action to protect their crops and livestock from wildlife, with the results that unwanted critical behaviour (trapping, poisoning, hunting, and poaching) may increase. Appropriate incentive and disincentive mechanisms need to be devised to address this problem, as discussed below. It can be quite safely argued that critical areas have promoted the critical resources and hence contributed to the improvement of the biophysical carrying capacity.

However, this improvement in the carrying capacity cannot be considered to be sustainable, unless the question of why critical areas had to be defined in first place is addressed. Areas have turned into critical areas due to encroachment by people out to fulfil their basic needs directly or indirectly. Without addressing the issue of human needs met from HER, long- term sustainability is unlikely to be achieved.

Among the natural resources required to meet the daily needs of people, it is primarily food, firewood, and fodder which are becoming scarce. Gradual encroachment on forests to clear land for agriculture and exploit other resources has serious implications for the entire environment, including micro-ecosystems. ACAP's nursery-related programmes, afforestation programmes, seedling distribution, and introduction of kerosene depot, fuel-efficient technology, and electricity are all factors that help reduce stress on the critical resources (forest) and improve the carrying capacity. The introduction of electricity and fuel-efficient technology are examples of how external knowledge and technology (area 12 in Figure 3) can be internalised to enhance the carrying capacity of the mountain areas. At the same time, efforts made to replant areas and improve forest management enhance the carrying capacities in areas 1, 2, 3, 4, 5, and 6. The success of technology and forest management in reducing stress on one critical resource, namely, firewood, has had a multiplier effect on forest conservation and hence increased biomass.

There are certain issues raised by researchers and development professionals regarding ACAP's forest management practices. The first issue concerns whether ACAP management techniques and silvicultural practices are appropriate for improving the structure, composition, and biomass productivity, i.e., carrying capacity, of the forest. Forest yield can be increased through use of silvicultural practices such as thinning of new growth to improve overall tree growth, release cutting of overgrown trees, thinning of favoured species, and harvesting to encourage regeneration of certain species. Sophisticated

management techniques, however, require a high degree of compliance and are difficult to enforce in the absence of effective social control mechanisms. ACAP is currently focussing on social control before introducing more technical silvicultural practices. More technically trained and experienced staff are needed to conduct such silvicultural practices. Furthermore, it is not appropriate to practise silviculture without promoting biomass growth.

Also, on the socioeconomic side, carrying capacity will be very much strengthened if food supplies can be improved, since a large percentage of the population in the area experience food deficits. This aspect of critical resources, namely food, does not appear to have received much attention so far. This will undermine the overall sustainability and carrying capacity of the area, and efforts made in other areas may be seriously jeopardized. A strong link between community and tourism development is unlikely to be fostered if tourism continuously has to depend on imported food and the local community's potential to produce food is not improved.

An important element of enhancing the carrying capacity of the area has been the introduction of new technology and knowledge. Such intervention increases the dependence of mountain communities on the external world, which has implications for the carrying capacity (areas 7, 8, 10, and 11). But using a critical resource, such as water, to harness electricity is to be encouraged.

The price of the different technologies still appears to be a constraint. The use of such technologies by lodges in Ghandruk has not spilled over to households. The high price is a constraining factor, and, given the large majority of poor and subsistence households in the area, a wider adoption of such technology may not be forthcoming. Accessibility is another factor that adds to the price of imported fuels or technology. Ultimately, a wider use of electricity must be developed and emphasised, to be followed by a wider dissemination of firewood-saving technology.

Poverty and conservation can go hand in hand, mutually reinforcing one another under certain conditions. If poverty is exacerbated in mountain communities, their link with the external world is seriously jeopardised and their access to new knowledge and technology seriously curtailed (area 12). Thus, without programmes that aim to improve their incomes, poverty cannot be mitigated, and so, also, their access to external knowledge and technology cannot be enhanced. Although critical resources, such as fuel-efficient technology and electricity, help promote conservation, they would be useless

if households cannot afford to use them. Poverty is the main factor constraining their use. Reliance on kerosene may be unavoidable, but it is an external critical resource and its continuous promotion may not be a sustainable option relative to electricity. Income-generating activities in the ACAP region, aside from lodge operations, are seriously lacking. This has been discussed already in the context of community and tourism linkages and in that of leakages. If this linkage is not developed, all the efforts made by ACAP can be seriously retarded. Thus, from the critical resource point of view, the overall carrying capacity of the ACAP region is still vulnerable, as a large majority of the people do not have access to such resources.

Critical Infrastructure

Infrastructure is necessary for tourism development, but it alone is unlikely to improve the carrying capacity of the mountains if local people's infrastructural needs are not adequately addressed. Although a large majority of households in the case study area did indicate satisfaction with infrastructural development, aside from the case study areas the status of infrastructural development is not known, but it may be presumed to be relatively poor.

The infrastructure that has been considered involves social concerns in most cases. However, critical types of infrastructure to promote economic growth that can be driven by HER remain to be either addressed or realised. At this stage it is useful to link critical resources that can be exploited to promote development and critical infrastructure. Often such critical resources remain unutilised because of the lack of accessibility, affordability (production units), and markets.[5] HER need to be used to provide income and employment to the mountain people. Local people have no option but to continue use of HER, as development has not been able to mitigate poverty and generate new opportunities in these remote areas. On the one hand, poverty mitigation in the region requires accelerated use of resources, and, on the other, their increasing use has accelerated their deterioration. Furthermore, in areas where tourism is prevalent, tourism is believed to have added to the problem. However, the dilemma nevertheless remains, for mountain development will require increasing use of HER, which further increases the conservation challenges. Besides other things, the lack of critical infrastructure is a major obstacle to harnessing these resources that can improve the overall carrying capacity of mountain areas. An example is the case of the Ghandruk hydro-electricity

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5 See Banskota et al. (1994) for an exposure of this issue in the context of the Manaslu area of northern Gorkha's Himalayan environment.

infrastructure, which uses HER, namely water, and has played a critical role in promoting the carrying capacity of the Ghandruk area. This one critical component of the infrastructure has strengthened conservation, reduced dependency on firewood, and promoted the quality of tourism. Other infrastructural development that can promote economic growth and conservation therefore needs to be identified, assessed, and developed in order to enhance the carrying capacity of the area from a socioeconomic point of view.

Critical Institutions

An important part of community development has been the formation of grass-roots' institutions. Such institutions have been formed to protect HER and promote both MCD and MTD. Many ACAP activities are carried out through local institutions. ACAP itself is the critical institution in the area, for without ACAP the various programmes and successes in the area would not have been possible. Although it is extremely difficult to predict whether institutions, once formed, will be sustainable or not, these institutions are currently playing a critical role in their communities. Simply forming institutions alone is not going to suffice, since their role in promoting conservation and development has to be understood and assessed. If problems emerge (e.g., wildlife protection and livestock depredation), it is the local people who need to solve them. How these institutions address problems, how decisions are made, who participates in the decision-making, etc, all these things need to be understood and improved for the institution's survival. Simply pumping resources into rural areas without developing local management capabilities is unlikely to achieve development. Human resources can be developed, but they need to be organised to promote social capital, which is equally important for sustainable development. Local institutions, such as those being formed by ACAP, are, therefore, considered to be critical institutions and need to be monitored and evaluated periodically in order to resolve problems and enhance the management capabilities of local areas. In this aspect of institutional development, ACAP has been able to create some critical institutions, but since it has no follow-up programmes of monitoring and evaluation, the effectiveness of these institutions cannot be assessed.

The strong link between community development and tourism will also depend on improving the status of women. Women in the mountain areas have shown their capabilities as good managers of lodges and households, as well as of natural resources. Income-generating activities that enhance women's income will not only help women improve their overall status but can also bond

community and tourism linkages. In this respect, too, ACAP appears to have made a breakthrough, based on the results from the case study area. However, the lack of information prevents one from generalising about the role and effectiveness of the critical institution in the greater Annapurna area. At the national level, a critical institution such as that discussed in Chapter 2 (also see Chapter 8) does not exist, and so the dissemination of ACAP successes elsewhere and the adoption by ACAP of successes from other areas of the country have perhaps been constrained. Furthermore, overall monitoring of MCD and MTD in the context of sustainable mountain development in the Annapurna region is lacking because of the absence of such an institution.

Critical Behaviour

Human behaviour is considered to be critical if it directly or indirectly, negatively or positively, modifies nature or promotes development. Although the study has not been able to focus adequately on critical behaviour, there are some lessons already learned in this area that can be documented. And a discussion of critical behaviour would perhaps be incomplete without discussing economic incentives and economic disincentives.

Economic incentives motivate desired behaviour, while discouraging behaviour which is not desired. The main objective of incentives is to smooth out the uneven distribution of the costs and benefits of conserving and developing the mountain environment and to use them as a policy tool for correcting market failure. Economic incentives can be broadly classified into direct and indirect incentives.

Direct incentives can be either in cash or in kind. Direct cash incentives include fees, royalties, rewards, grants, income support, subsidies, loans and daily wages, whereas direct cash disincentives include penalties and fines. Direct incentives in kind, on the other hand, include food-for-work programmes, material and goods donated to protect area management, timber concessions etc, whereas direct disincentives in kind might include elimination of use rights or confiscation of land and jail sentences, etc.

Some portion of the entry fee to conservation areas needs to be ploughed back into the community development and conservation activities as an incentive for developing the area. This situation has been pioneered by ACAP; the conservation area fee collected from visitors is used directly to carry out development activities in the area. An endowment fund has been created from this conservation fee.

Fines and penalties can be used to discourage the illegal behaviour that depletes resources (poaching). The effectiveness of fines, however, depends on the size of the fines and the enforcement level. Fines and penalties can also serve as incentives if some portion of them is returned to villagers for conservation and development activities. The provision of cash compensation for the damage caused by wild animals is also deemed important for conserving the mountain environment. For example, in the case of endangered species, land owners could be compensated for the costs they incur from having to restrict land use in order to protect species' habitats. Villages can be compensated for crops damaged by wild animals, but this has not happened in ACAP, as already stated.

Subsidies are negative taxes to support activities that operate at a loss - possibly due to market failure - while still meeting community needs. Subsidies may be granted for those activities that generate positive externalities which can serve as important incentives for conserving environmental resources. Subsidies should be granted to activities that promotes conservation.

National NGOs can play an important role in providing grants for specific community activities (of relatively short duration) which may provide a foundation for changes in behaviour. Such direct cash incentives are important for promoting the supply of locally-produced goods and their linkages with tourism. They, however, do not appear to have been initiated in ACAP.

Indirect incentives involve applying fiscal measures (e.g., tax exemption or allowances, price support, insurance, guarantees, and tariffs), provision of services (e.g., conservation education and community development programmes), and social measures (land tenure, training, education, information, and building up institutions). ACAP provides some indirect incentives for conservation through supporting a number of community development activities, including conservation education, whereas little attention is paid to direct incentives to household income-generating activities.

In order for all these incentives to function effectively, some degree of regulation, enforcement, monitoring and feedback is required. Incentives should be granted on a flexible basis and in view of changed conditions. For example, entrance fees for protected areas/parks may need to be increased to keep up with inflation, or the quality of the community's services to be improved. Specific entrance fees should be charged on the basis of operating expenses, interest, and amortisation of investment in order to ensure efficient management of the area, including maintenance costs. The entry fee for

conservation areas tests the willingness to pay on the part of the tourist and may in fact fall far short of such tourist willingness. Any entry fee for conservation areas, such as that covered by the ACAP, that results in few visitors should, however, be discontinued if it produces less revenue than the cost of collecting such fees. The concept of marginal opportunity costs should be used as a tool for determining incentives appropriately.

It is equally important to modify perverse incentives that may be counterproductive. Incentives are perverse when they stimulate behaviour which tends to deplete environmental resources or retard development. Such perverse incentives are often instituted by an authority such as ACAP. For example, agricultural incentives provided in the form of subsidies are becoming a major constraint to the viability of agriculture and other sectors, and also have had a negative impact on environmental resources. It is thus essential to replace such perverse incentives with new incentives. Incentives should, in any case, be designed with great care and fine tuned to the marginal opportunity cost.

Since the community is the place where most incentives necessarily have their impact, it is important to devise different forms of incentives at the community level within the context of local social organisations (or critical institutions). However, for incentives to function well at the community level they need to be supported by appropriate policies at the national level.

Economic incentives at the community level generally involve one or more of the following:

- assigning management responsibilities to local institutions;
- strengthening community-based resource management systems;
- designing pricing policies and taxation to promote conservation; and
- introducing a variety of property rights and land tenure arrangements.

Conservation incentives at the community level should be designed to address the following objectives:

- to conserve traditional knowledge about the use of HER and to reestablish common property management institutions;
- to compensate local people for possible income lost through restrictions imposed on the use of protected biological resources or damage caused by wild animals;
- to reduce agricultural pressure on marginal lands; and

- to build up the institutional capacity of the community to promote conservation and development.

ACAP has attempted to revive the traditional forest management system through establishing forest management committees which comprised of local leaders and the community at large. These committees (renamed Conservation and Development Committees) have the overall management responsibility for conservation and development. Although ACAP has addressed a number of incentives by assigning management responsibility to local grass-roots' institutions, a great deal of work still remains to be done in this area. This includes the provision of more direct incentives for income-generating activities, compensation mechanisms for losses caused by wildlife, poverty-focussed programmes among the poorest of the poor, etc. Besides the general focus on social programmes, income-generating activities need, in particular, to be greatly emphasised.

Recommendations

Many of the benefits from tourism go primarily to the small percentage of villagers who are lodge and restaurant owners. Porter guides and support staff often share in them, whereas the large percentage of subsistence farmers, especially of the poor lower class, do not directly benefit from tourism income. Due to the lack of linkage between community and tourism development, benefits from tourism are confined primarily to lodge owners, a large segment of the mountain community being left out. In other words, although the potential to enlarge area six exists, this is not happening. A greater focus on income-generating activities is required in the area, and this can be achieved by bringing about a greater linkage between MCD and MTD. While cash incomes have increased to some extent as a result of tourism, the real income of most villagers has remained virtually stagnant, or even declined, due to inflation. This is especially true for poor food-deficit villagers.

Among the lodge owners as well, a large share of the income earned from tourism continues to leak out in the form of imports. While the available estimates indicate that as much as 50 per cent of the money spent by tourists has been retained in the ACAP areas since the introduction of ACAP (compared to 7 per cent before ACAP), it is not clear whether such a reduction in leakages has resulted from improved linkages of tourism with the local economy or from increased entry fees. In the present study's assessment, leakages continue to be large. The percentage of lodge owners' expenses for

import needs also to be taken into account and evaluated in order to understand the potential to better integrate community and tourism development.

Although some successes in conservation have been achieved (new infrastructure is benefitting communities, household behaviour is being modified, women are becoming involved in resource conservation and income generation etc), a large segment of the poor are being left behind. A wider diffusion of tourism benefits through stronger linkages between tourism and community development that is within the carrying capacity of the mountain environment stands out as the main issue which ACAP should focus on in its programmes. Stated differently, the dual economic structure, namely the subsistence sector and the tourism sector, needs to be linked in order to improve the carrying capacity of the area.

HER have significant economic value as well, which, if properly utilised, can provide a strong stimulus to mountain community development. The development of these resources needs to be conducted in a manner that does not in any way jeopardise the environment. One way to harness these resources is by maximising their non-consumptive uses through tourism promotion. ACAP should take the initiative to begin assessing the value of HER in the area. Although some initial efforts have already been made through the biodiversity study, additional work on developing safe minimum standards, limits of acceptable change, and other standards would be useful not only for this one area, but could set standards for other mountain areas of Nepal as well.

The assessment of HER could help in assessing the potential for other non-consumptive uses of HER. Note that only about 27 per cent of the visitors reported that trekking was their primary motive for visiting the area. There is scope to develop other products in the area to increase the range of products available to tourists and, at the same time, generate employment opportunities for local people.

Table 4.1: Ethnic Composition of Households

Area	Gurung	Magars	Occupational	Others	Total
Ghandruk	16 (64)	1 (4)	7 (28)	1 (4)	25 (100)
Ulleri	-	25 (100)	-	-	-
Total	16 (32)	26 (52)	7 (194)	1(2)	50 (100)

Figures in parentheses are percentages.

Table 4.2: Distribution of Population by Age and Sex

(given in percentages)

Age Group	Ghandruk			Ulleri			Total		
	Male	Fem	Total	Male	Fem	Total	Male	Fem	Total
Less than	17.2	15.9	16.5	27.6	27.1	27.3	22.1	21.6	21.8
10-65 yrs	81.3	79.7	80.5	65.5	70.0	68.0	73.8	74.8	74.3
65 + yrs	1.6	4.3	3.0	6.9	2.9	4.7	4.1	3.8	3.8
Total	64	69	133	58	70	128	122	139	261
Sex Ratio	92.75			82.8			87.76		

Table 4.3: Literacy and Level of Education of the Household Members Aged 10 Years and Above

(given in percentages)

	Ghandruk			Ulleri			Total		
	Male	Fem	Total	Male	Fem	Total	Male	Fem	Total
Illiterate	20.8	51.7	36.9	12.0	37.3	25.8	16.8	45.0	32.0
Read and write	17.0	10.3	13.5	26.0	23.5	24.7	21.1	16.5	18.6
Primary	17.0	8.6	12.6	12.0	9.8	10.8	14.7	9.2	11.8
Secondary	28.3	19.0	23.4	38.0	27.5	32.3	32.6	23.0	27.5
SLC or above	17.0	10.3	13.5	12.0	2.0	6.5	14.7	6.4	10.3
Total %	100	100	100	100	100	100	100	100	100
Cases	(53)	(58)	(111)	(42)	(51)	(93)	(95)	(109)	(204)

Table 4.4: Distribution of Economically Active Population (10 years and above) by Occupation

(given in percentages)

	Ghandruk	Ulleri	Total
Agriculture only	38.7	46.2	42.2
Agriculture +others	10.0	7.5	8.8
Service	3.6	11.8	7.4
Pension	4.5	4.3	4.4
Business	1.0	4.3	2.5
Tourism	11.7	4.3	8.3
Wage labour	1.0	-	0.5
Student	17.1	19.4	18.1
Others	12.6	2.2	7.8
Total	111 (100)	93 (100)	200 (100)

Table 4.5: Occupational Linkage of Households Members (10 years and above) with Tourism

(given in percentages)

	Ghandruk			Ulleri			Total			Total Cases
	High	Mode-rate	No Link	High	Mode-rate	No Link	High	Mode-rate	No Link	
Agriculture only	-	-	100	4.7	7.0	88.4	2.3	3.5	94.2	86
Agriculture +others	9.1	-	36.4	14.3	28.6	57.1	11.1	44.4	44.4	18
Service	-	54.5	75.0	18.2	-	81.8	13.3	6.7	80.0	15
Pension	-	25.0	100	-	25.0	75.0	-	11.1	88.9	9
Business	100	-	-	25.0	75.0	-	40.0	60.0	-	5
Tourism	92.3	7.7	-	100	-	-	94.7	6.0	-	1
Wage Labour	-	100	-	-	-	-	-	100	-	1
Students +Others	-	-	100	-	-	-	-	-		53

Table 4. 6 Distribution of Households by Farm Size

(given in percentages)

	Ghandruk	Ulleri	Total
Farm size			
Less than or equal to 0.5 ha	88	84	86
0.5 ha -1.0 ha	8	16	12
1.01 ha & above	1	-	2
Tenurial Status			
Owner-cultivator	60	80	70
Owner cum tenant	12	12	12
Pure tenant	8	-	4
Landlord only	16	4	10
Landless	4	4	4

Table 4. 7: Size of Operated Area by Type of Land

Type of operated land	Ghandruk	Ulleri	Overall
Khet (ha)	0.12 (0.19)	-	0.15 (0.06)
Pakho (ha)	0.57 (0.67)	0.51 (0.36)	0.54 (0.53)
Overall (ha)	0.70 (0.79)	0.51 (0.36)	0.60 (0.62)

Note: Figures in parentheses are standard deviations.

Table 4.8: Households Reporting Food Sufficiency and Disposal of Surplus

(shown in percentages)

Overall case study area	Sufficient for home consumption only	Not enough to meet family needs	Some sold to tourist market	Some sold to local market	Some sold in both markets
Paddy	46	46	8	-	-
Maize	75	14	9	2	-
Wheat	77	8	15	-	-
Millet	73	13	11	2	-
Potatoes	59	22	16	-	3
Vegetables	82	8	11	-	-

Table 4.9: Average Income of Households from Marketing Crops

	Ghandruk	Ulleri
Mean (Rs)	2910	2986
Std Dev	1898	3055

Table 4.10: Average Livestock Holding by Type of Animal (LSU)

	Cow	Ox	Buffalo	Goat	Sheep	Poultry	Total
Ghandruk	0.82	0.15	1.55	0.15	0.42	0.21	3.61
Ulleri	0.25	0.42	1.47	0.42	0.42	0.10	3.96
Average	0.53	0.29	1.51	0.29	0.42	0.15	3.78

Table 4.11: Disposal of Livestock Products by Households in Different Markets

(shown in percentages)

	Tourist Market	Local Market	Both	Others	Total
Ghandruk	12	10	5	73	100
Ulleri	20	5	5	70	100

Table 4.12: Average Annual Consumption of Fuelwood and Fodder Per Household

	Fuel-wood (Kg/HH)	Fodder (Kg/LSU)
Ghandruk	3,040	7,661
Ulleri	8,847	3,934
Total	6,003	5,797

Table 4.13: Percentage of Households Using Different Types of Energy

	Fuelwood	Kerosene	Electricity	Gas
Ghandruk	20(80)	15(60)	22(88)	4(16)
Ulleri	25(100)	25(100)	-	-
Overall	45 (90)	40 (80)	22 (44)	4 (8)

Note: figures in parentheses are percentages.

Table 4.14: Share of Fuelwood and Fodder from Private and Public Sources

	Fuelwood		Fodder	
	Private source (%)	Public source (%)	Private source (%)	Public source (%)
Ghandruk	22.61	77.4	46.6	53.4
Ulleri	10.8	89.2	61.5	38.6
Total	16.4	83.5	53.7	46.3

Table 4.15: Perceived Impact of Tourism on Scarcity of Firewood and Fodder

Attributed to	Ghandruk (%)		Ulleri (%)		Total (%)	
	Fuelwood	Fodder	Fuelwood	Fodder	Fuelwood	Fodder
Tourism	4	-	75	22	40	11
Partly tourism	9	-	4	6	6	3
No tourism impact	83	89	4	61	43	75
Population growth	-	-	17	11	9	6
No desire to protect forests	4	11	-	-	2	6

Table 4.16: Reasons for Changing Pattern in Energy Consumption

	Ghandruk (%)				Ulleri (%)			
	Tourism	Fuel-wood shortage	Others	Total	Tourism	Fuel-wood shortage	Others	Total
Fuelwood	-	53	47	75	-	86	14	82
Kerosene	-	50	50	20	67	-	33	18
Electricity	-	-	100	5	-	-	-	-
Total	-	50	50	100	12	71	18	100

Table 4.17: Lodge Owners' Place of Origin, Type of Lodge and Lodge Status

	Ghorepani (%)	Ghandruk (%)	Total (%)
Lodge Owners' Place of Origin			
Same village	94	95	95
Migrated	6	5	5
Type of Lodge			
Permanent	55	45	78
Temporary	11	88	22
Owner- Operated or Operated by Others			
Owner-operated	46	54	87
Operated by others	40	69	13
Total	45	55	100

Table 4.18: Mean Number of Rooms and Beds Per Lodge

	Mean	Std Dev	Cumulative Sum
Rooms			
Ghorepani	8.72	2.60	157
Ghandruk	7.27	3.29	160
Total	7.92	3.05	317
Beds			
Ghorepani	17.94	5.20	323
Ghandruk	15.27	7.27	336
Total	16.47	6.42	659

Table 4.19: Employment per Lodge during Peak and Slack Seasons by Sex

	Peak Season			Slack Season			Total in %	
	Male	Fem.	Hired	Male	Fem.	Hired	Male	Fem.
Ghorepani	1.22	1.78	1.00	1.22	1.78	-	43	56
Ghandruk	1.00	1.59	1.00	1.00	1.59	-	45	55
Total	1.10	1.67	0.50	1.10	1.67	-	44	56

Note: 'Male' and 'female' refer to family members.

Table 4.20: Mean and Total Number of Visitors Entertained per Lodge during Peak and Slack Seasons

	Peak Season		Slack Season	
	Mean	Total	Mean	Total
Ghorepani	1133	7930	276	2209
Ghandruk	565	6791	283	3392
Total	775	14721	280	5601

Table 4.21: Average Rates Charged per Tourist for Various Food Items and Services

Items	This Season	Last Season	Range
	Rs	Rs	Rs
Room	75.00	70.50	40-350
Bed	37.86	37.75	20-250
Breakfast	85.71	80.25	35-150
Lunch	90.00	88.75	30-150
Dinner	142.86	141.50	60-300

Table 4.22: Average Annual Energy Consumption(AAEC) by Lodges

Energy Sources	Ghorepani		Ghandruk	
	AAEC	Price/Unit	AAEC	Price/Unit
Firewood	17753.20kg	1.09/kg	2689.20kg	1.26/kg
Kerosene	319.63 Lit.	21.91/Lit.	618.38 lit.	15.00/lit.
Gas	-	-	21 cylinder	485.00/cyl.
Electricity	-	-	12.5 kW. hr	00.75/Watt
Solar heater	-	-	2.2 panel	10750.00/panel

Table 4.23: Use of Energy Devices as an Alternative of Fuelwood

(shown in percentages)

Energy devices	Ghorepani	Ghandruk
Improved Stove	16.7	18.2
Back-boiler heater	61.1[1]	27.3
Solar heater	00.0	45.5
Space heater	5.6[2]	9.1
Rice cooker	00.0	68.2
Electric jug	00.0	68.2
Kerosene	22.2	90.9
Gas	11.1	31.8

Notes: 1 All the back-boiler heaters installed in the lodges of Ghorepani run on fuelwood
2 All space heater in the lodges of Ghorepani use fuelwood.

Table 4.24: Lodge Owners' Perceptions of Different Appliances: Ghandruk

(shown in percentages)

Appliances	Efficient and inexpensive		Expensive	
	Ghorepani	Ghandruk	Ghorepani	Ghandruk
Improved stove	100	100	-	-
Back-boiler heater	72	100	9	-
Space heater	100	100	-	-
Kerosene	25	100	75	-
Gas	-	100	NA	-
Solar heater	-	50	-	50
Rice cooker	NA	100	NA	-
Electric jug	NA	100	NA	-

Table 4.25: Lodge Owner Perceptions of Supply of Different Resources if Tourists Were to Double

(shown in percentages)

Existing Facilities	Ghorepani			Ghandruk		
	Ade-quate	Short-age	Don't Know	Ade-quate	Short-age	Don't Know
Firewood	83	11	6	45	9	46
Electricity	N/A	N/A	N/A	5	68	27
Lodges	67	22	11	41	59	-
Water supply	94	-	6	82	18	-
Kerosene	94	6	-	73	27	-
Space	78	11	11	64	27	9

Table 4.26: Lodge Owners' Perceptions of Deforestation and Tourism Benefits

(shown in percentages)

	Ghorepani			Ghandruk		
	Yes	No	Don't Know	Yes	No	Don't Know
Firewood use will increase in future	-	100	-	5	77	18
Tourism will enhance deforestation	72	22	6	36	64	-
Tourism has brought benefits	94	-	6	100	-	-

Table 4.27: Agewise Distribution of Visitors by Type

Age Group	Independent Trekkers			Group Trekkers		
	Male	Female	Total	Male	Female	Total
19-35	9 (81.8)	8 (72.7)	17 (77.3)	4 (57.1)	6 (54.5)	10 (55.6)
36-50	1 (9.1)	1 (9.1)	2 (9.1)	2 (28.6)	3 (27.3)	5 (27.8)
51 +	1 (9.1)	2 (18.2)	3 (13.6)	1 (14.3)	2 (27.3)	3 (16.7)
Total	11 (100.O)	11 (100.0)	22 (100.0)	7 (100.0)	11 (100.0)	18 (100.0)

Note: Figures in parentheses are percentages.

Table 4.28: Percentage Distribution of Trekkers by Nationality

Trekkers	European	Australian	USA	Asian	Total
Independent	77.3	9.1		13.6	100.0
Group	83.3	5.6	5.6	5.6	100.0
Total	80.0	7.5	2.5	10.0	100.0

Table 4.29: Trekking Duration by Nationality, Age, and Sex

Nationality	Independent Trekkers		Group Trekkers	
	Mean (days)	S.D	Mean (days)	S.D
European	10.4	6.76	14.6	7.2
Australian	11.0	4.24	7.0	0.0
USA	-	-	17.0	0.0
Asian	6.3	1.15	7.0	0.0
Age Group				
19 - 35	11.2	6.27	10.3	8.2
36 - 50	4.5	3.5	17.8	0.4
51 +	6.0	3.5	17.7	1.2
Sex				
Male	11.6	7.2	15.7	9.3
Female	8.1	4.6	12.8	5.6
Total	9.86	6.15	13.82	6.96

Table 4.30: Average Number of Days Visitors Use Different Facilities

Visitors' Category	Lodge	Tents	Private House	Lodge+ Camping	Lodge+ House
Independent	9.00	0.68	2.45	9.68	11.45
Group	1.67	11.06	1.89	12.73	3.56
Male	6.39	5.00	3.78	11.39	10.17
Female	5.14	5.64	0.91	10.78	6.05
Total	5.70	5.35	2.20	11.05	7.90

Table 4.31: Visitors' Comment on Meal and Room Quality and Hygiene and Sanitation

(given in percentages)

Comments on	Independent			Group			Both		
	Good	Fair	Bad	Good	Fair	Bad	Good	Fair	Bad
Food	57.1	42.9		57.1	42.9		57.1	42.9	
Rooms	23.8	71.4	4.8	-	75.0	25.0	20.0	72.0	10.0
Hygiene & Sanitation	38.1	47.6		42.9	42.9	14.3	39.3	46.4	14.3

Table 4.32: Visiotrs' Perceptions of Prices of Meals and Lodging

(given in percentages)

Perception on	Independent Trekkers			Group Treekers		Both (%)		
	Fair	Low	High	Fair	Low	Fair	Low	High
Price of Meal	61.9	28.6	9.5	85.7		67.9	25.0	7.1
Price of Lodging	73.7	26.3	-		50.0	69.6	30.4	-

Table 4.33: Average Cost of Trekking Trip Paid by FITs

	Mean (Rs)	Std Dev	Min	Max	% Responding
Round-trip travel	49585	49034	1000	182896	45
All accommodations	9822	13328	100	39960	25
Food expenditures	4768	4536	150	14961	28
Visas,fees, taxes	3496	3878	300	14961	38
Other expenses	35925	43479	500	159840	37

Table 4.34: Average Cost of Trekking Trip paid by GT

	Mean (Rs)	Std Dev	Min	Max	% Respond-ing
Round-trip travel	84097	45582	19948	144623	37
All accommodations	6891	2683	1995	9431	18
Food expenditures	2751	1036	1598	4987	20
Visas, fees, taxes	2486	966	1247	4000	22
Other expenses	91588	69668	4987	249350	30

Table 4.35: Average daily Expense Per Visitor on Various Items

(given in rupees)

Visitors' Category	Breakf ast	Lunch	Dinner	Drinks	Fruits & Handi-craft	Total Per Trip
Independent Trekker	51	54	66	51	144	3318
Group Trekker	10	17	17	35	58	6524
Both	32	37	44	44	89	4761

Table 4.36: Average Number of Porters Hired by the Visitors and Average Wage Rates

Type of Porters hired	Independent	Group
	Mean	Mean
Male porter	6	12
Female porter	-	3
Total number of Porters	6	15
No. of hired days	5	12
Male wage (Rs/day)	275	168
Female Wage (Rs/day)	-	85

Table 4.37: Visitors' Motivating Factors in Ranked Order (Independent and Group Trekkers)

(given in percentages)

Motivation Factors	Independent			Group			Total		
	Rank 1	Rank 2	Rank 3	Rank 1	Rank 2	Rank 3	Rank 1	Rank 2	Rank 3
Viewing scenery	47	47	5	59	18	24	53	33	14
Trekking	15	31	54	36	21	43	26	26	48
Experiencing Nature	31	31	39	17	42	42	24	36	40
Vvisiting Nepal	36	27	36	67	33	-	43	29	28
Others	60	20	20	20	80	-	40	60	-
Relaxation	100	-	-	33	33	33	14	14	71
Camping	-	-	100	-	-	100	-	-	100

Table 4.38: Visitors' Knowledge about Annapurna and Reinvestment of the Conservation Area Fee

	Independent	Group	Both
Heard of Annapurna	18 (54.5)	15 (45.5)	33 (82.5)
Heard of ACAP	7 (32.0)	4 (22.2)	11 (27.5)
Knowledge of Fee's Use	7 (39.0)	5 (33.3)	12 (36.40)

Note: figures in parentheses are in percentages.

Table 4.39: Visitors' Overall Trekking Experience

	Independent	Group	Overall
Most Enjoyable	19 (90.5)	18 (100)	37 (95)
Less Enjoyable	2 (9.5)		2 (5.1)
Total cases	21 (100)	18 (100)	39 (100)

Note: figures in parentheses are in percentages.

Table 4.40: Household Perception of Cleanliness and Sanitation

(given in percentages)

	Percep-tion	Household-Perceived Factors Responsible for Change					Total
		Tourism	ACAP	Both	Others-1	Others-2	
Village	Improved	10.00	38.75	41.25	17.92	56.25	82.00
	Same	0.00	0.00	0.00	0.00	100.00	4.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	8.00	46.00	34.00	2.00	6.00	100.00
Water Sources	Improved	17.65	36.85	32.85	2.13	6.25	94.00
	Same	0.00	0.00	0.00	0.00	50.00	6.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	12.00	42.00	28.00	3.33	8.00	100.00
Trails	Improved	8.55	32.15	34.50	4.23	12.10	100.00
	Same	0.00	0.00	0.00	0.00	0.00	0.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	6.00	40.00	34.00	4.00	8.00	100.00
Schools	Improved	17.90	22.50	7.50	6.62	32.20	98.00
	Same	0.00	0.00	0.00	0.00	50.00	2.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	8.00	36.00	12.00	6.00	26.00	100.00
Scenic Spots	Improved	72.05	25.85	12.05	0.00	0.00	96.00
	Same	0.00	0.00	0.00	0.00	100.00	30.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	26.00	30.00	14.00	0.00	30.00	100.00
Public Places	Improved	28.85	38.90	14.95	0.93	14.60	100.00
	Same	0.00	0.00	0.00	0.00	50.00	30.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	26.00	42.00	16.00	0.67	14.00	100.00
Health & Sanita-tion	Improved	93.75	0.00	0.00	0.00	6.25	18.50
	Same	1.60	0.00	0.00	3.23	38.70	62.00
	Worse	5.00	0.00	0.00	10.00	15.00	20.00
	Total	20.00	0.00	0.00	8.00	56.00	100.00

Table 4.41: Household Perception of Environment Conservation

(given in percentages)

	Percep-tion	Household-Perceived Factors Responsible for Change					Total
		Tourism	ACAP	Both	Others-1	Others-2	
Forests	Improved	0.00	74.30	10.25	0.93	12.65	100.00
	Same	0.00	0.00	0.00	0.00	0.00	26.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	78.00	10.00	0.67	10.00	100.00
Wildlife	Improved	0.00	62.80	12.30	3.13	15.55	98.00
	Same	0.00	0.00	0.00	0.00	0.00	0.00
	Worse	0.00	50.00	0.00	0.00	0.00	2.00
	Total	0.00	70.00	12.00	2.00	12.00	100.00
Pastures	Improved	0.00	34.00	0.00	1.18	62.15	38.00
	Same	0.00	8.35	0.00	4.63	77.80	42.00
	Worse	0.00	88.90	0.00	1.85	5.55	20.00
	Total	0.00	34.00	0.00	4.67	5.00	100.00
Water-sheds	Improved	0.00	81.70	11.35	1.50	2.25	54.00
	Same	0.00	0.00	0.00	8.88	73.35	44.00
	Worse	0.00	0.00	0.00	16.67	0.00	2.00
	Total	0.00	38.00	10.00	7.33	30.00	100.00
Environ-ment Awareness	Improved	24.55	47.35	16.60	1.62	6.25	90.00
	Same	0.00	0.00	0.00	0.00	50.00	6.00
	Worse	0.00	50.00	0.00	0.00	0.00	4.00
	Total	22.00	48.00	16.00	1.33	10.00	100.00

Table 4.42: Household Perceptions of Cultural Preservation and Promotion

(given in percentages)

	Percep-tion	Household-Perceived Factors Responsible for Change					Total
		Tourism	ACAP	Both	Others-1	Others-2	
Sacred Places	Improved	3.55	30.70	13.55	0.00	52.15	38.00
	Same	0.00	0.00	5.00	3.33	85.00	60.00
	Worse	0.00	0.00	0.00	16.67	0.00	2.00
	Total	2.00	10.00	6.00	3.33	72.00	100.00
Sacred monu-ments	Improved	4.55	55.70	0.00	4.42	88.75	30.00
	Same	0.00	0.00	0.00	16.67	0.00	68.00
	Worse	0.00	0.00	0.00	4.00	72.00	2.00
	Total	2.00	14.00	0.00	4.00	72.00	100.00
Village life	Improved	49.05	3.70	8.35	12.95	0.00	66.00
	Same	0.00	3.55	3.55	2.37	85.70	30.00
	Worse	0.00	0.00	0.00	8.33	25.00	4.00
	Total	32.00	6.00	4.00	11.33	24.00	100.00
Family ties	Improved	6.25	2.10	0.00	30.55	0.00	54.00
	Same	0.00	0.00	0.00	1.97	94.10	36.00
	Worse	0.00	0.00	0.00	29.17	12.50	10.00
	Total	6.00	2.00	0.00	19.33	34.00	100.00
Family planning	Improved	0.00	10.00	0.00	6.67	20.00	10.00
	Same	0.00	1.35	0.00	0.45	97.30	80.00
	Worse	20.00	0.00	0.00	10.00	0.00	10.00
	Total	4.00	4.00	0.00	64.00	80.00	100.00
Religious values	Improved	0.00	6.25	0.00	10.42	12.50	16.00
	Same	0.00	1.45	0.00	0.48	97.15	74.00
	Worse	75.00	0.00	0.00	8.33	0.00	10.00
	Total	6.00	4.00	0.00	5.33	74.00	100.00
Cultural values	Improved	9.10	0.00	4.55	23.93	14.55	32.00
	Same	0.00	0.00	0.00	0.93	97.20	40.00
	Worse	46.45	0.00	0.00	1.18	0.00	28.00
	Total	30.00	0.00	2.0	8.67	42.00	100.00
Crime and theft	Improved	15.40	11.55	0.00	3.85	11.55	26.00
	Same	0.00	2.00	2.00	1.33	92.00	56.00
	Worse	33.35	0.00	0.00	3.70	5.55	18.00
	Total	20.00	8.00	2.00	4.67	56.00	100.00
Dance and music	Improved	50.00	0.00	0.00	0.00	0.00	4.00
	Same	0.00	0.00	4.00	1.33	92.00	84.00
	Worse	25.00	0.00	0.00	5.55	8.35	12.00
	Total	10.00	0.00	4.00	2.67	78.00	100.00
Crafts	Improved	85.90	0.00	7.25	0.75	4.55	64.00
	Same	20.00	0.00	0.00	2.08	73.75	26.00
	Worse	30.00	0.00	0.00	6.67	63.33	10.00
	Total	64.00	0.00	4.00	2.67	24.00	100.00

Table 4.43: Household Perceptions of Poverty Alleviation, Employment and Income

(given in percentages)

	Perception	Household-Perceived Factors Responsible for Change					Total
		Tourism	ACAP	Both	Others-1	Others-2	
Poverty	Improved	85.90	0.00	7.25	0.75	4.55	64.00
	Same	20.00	0.00	0.00	2.08	73.75	26.00
	Worse	30.00	0.00	0.00	6.67	0.00	10.00
	Total	64.00	0.00	4.00	8.00	24.00	100.00
Employ-ment	Improved	90.10	0.00	6.05	1.28	0.00	76.00
	Same	0.00	0.00	0.00	2.08	43.75	16.00
	Worse	0.00	0.00	0.00	16.67	0.00	8.00
	Total	68.00	0.00	4.00	14.00	14.00	100.00
Income	Improved	89.65	0.00	5.80	0.00	4.55	72.00
	Same	0.00	0.00	0.00	3.03	40.90	22.00
	Worse	0.00	0.00	0.00	12.50	0.00	6.00
	Total	64.00	0.00	4.00	10.00	22.00	100.00
Land price	Improved	50.00	0.00	0.00	0.00	0.00	6.00
	Same	0.00	0.00	0.00	1.85	94.45	26.00
	Worse	83.35	0.00	0.00	2.23	10.00	68.00
	Total	64.00	0.00	0.00	6.00	30.00	100.00
Labour	Improved	50.00	0.00	0.00	0.00	0.00	6.00
	Same	0.00	0.00	0.00	0.00	100.00	32.00
	Worse	72.65	1.80	0.00	8.53	0.00	62.00
	Total	54.00	2.00	0.00	12.00	32.00	100.00
Self-reliance	Improved	73.30	4.55	0.00	7.38	0.00	60.00
	Same	0.00	0.00	0.00	1.18	96.45	40.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	40.00	4.00	0.00	18.00	38.00	100.00
Migration	Improved	20.00	51.50	0.00	4.03	16.25	58.00
	Same	0.00	0.00	0.00	2.57	92.30	42.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	4.00	42.00	0.00	8.00	46.00	100.00

Table 4.44: Household Perceptions of Skill Development

(given in percentages)

Perception	Household-Perceived Factors Responsible for Change					Total
	Tourism	ACAP	Both	Others-1	Others-2	
Improved	0.00	86.10	13.90	0.00	0.00	90.00
Same	0.00	0.00	0.00	0.00	50.00	6.00
Worse	0.00	50.00	0.00	0.00	0.00	4.00
Total	0.00	82.00	12.00	0.00	6.00	100.00

Table 4.45: Household Perception on the Changing Status of Women

(given in percentages)

	Perception	Household-Perceived Factors Responsible for Change Total					Total
		Tourism	ACAP	Both	Others-1	Others-2	
Women's work burden	Improved	30.95	0.00	2.40	21.43	2.40	44.00
	Same	0.00	0.00	0.00	0.67	98.00	52.00
	Worse	0.00	0.00	0.00	16.67	0.00	4.00
	Total	26.00	0.00	2.00	20.00	52.00	100.00
Women's education	Improved	3.70	12.55	9.10	18.83	18.10	80.00
	Same	0.00	0.00	0.00	0.00	100.00	20.00
	Worse	0.00	0.00	0.00	0.00	0.00	0.00
	Total	4.00	8.00	8.00	48.00	32.00	100.00
Women's Income	Improved	65.55	0.00	25.55	1.85	3.35	48.00
	Same	0.00	0.00	0.00	1.43	95.65	50.00
	Worse	0.00	0.00	0.00	16.67	0.00	2.00
	Total	34.00	0.00	10.00	8.00	48.00	100.00

Table 4.46: Household Perceptions of Various Community Development Activities

(given in percentages)

Conditions Related to	Better	Same	Worse	Don't Know
School	96	4	0	4
Health	89	12	2	0
Sanitary/Toilet	94	2	4	4
Drink	88	12	4	0
Bridge	76	20	4	4
Trail	100	4	0	0
Post Office	68	21	11	2
Bank	100	0	0	0
Veterinary	59	42	1	0
Market	0	100	0	0
Lodge	98	2	4	0
Campus	100	4		0
Forest	91	4	4	3
Community Health	89	11	2	0
Tourism Development	97	3	2	0
Other Development	75	25	1	0
Women's Development	73	24	3	2
Women's Skills and Training	52	31	18	2
Male Skill and Training	67	33	0	0
Training Related to Tourism	87	11	3	3
Environment Conservation	93	5	2	3
Adult Education	79	11	11	3
Food Crop Production	70	27	3	2
Cash Crop Production	83	17	1	0
Vegetable Production	71	27	2	3
Livestock Practices	42	58	2	0
Craft	42	58	2	0
Private Nursery	100	0	0	0
Public Nursery	97	3	3	0
Plant Distribution	97	3	3	0
Private Plantation	95	5	3	0
Community Plantation	100	3	0	0
Pasture	100	3	0	0
Improved Stove	100	3	0	0
Boiler	100	3	0	0
Solar Heater	100	3	0	0
Space Heater	100	3	0	0
Bio-Gas	100	3	0	0
Kerosene	100	3	0	0
Total	89	9	2	100

Table 4.47: Perception on Factors Responsible for Comm. Development

(given in percentages)

	Tourism	ACAP	Both	Govt	Villagers	Don't Know	Total
School	5	21	10	29	17	19	3
Health		23	19	46	8	4	2
Sant/Toilet		9	67	20		2	2
Drink Water		2	26	6	58	6	2
Bridge		11	14	46	16	14	4
Trail		4	16	16	6	58	
Post Office					100		
Bank					100		
Veterinary		43				57	1
Market	50				50		0
Lodge		90		8		2	
Campus	88		10		2		4
Forest		85			15		4
Health Com			67		13	17	4
Tour dev	28	34	28		9		3
Other dev	13	25	25		25	13	1
Women dev		75			16	9	3
Women Train			45		41		14
Male Train			67		33		
Tour Train		5	63	24	3	3	3
Env Conser			98				3
Adult edu		87		5		8	3
Food Crop		7		21	7	64	1
Cash crop		50		50			0
Veget			13		19	6	63
Livestk Occup				20	10	70	1
Craft					20	10	70
Privt Nursery		100					0
Pub nursery			97				3
Plant Distr			97		3		
Private Plant		76		5	20		3
Comm Plant			74		7	19	
Pasture		74		7	19		4
Imprv Stove			74		7	19	
Rural			74		7	19	
Boiler		74		7	19		4
Solar Heater		74		7	19		4
Space heater		74		7	19		4
Bio-Gas		74		7	19		4
Kerosene		74		7	19		4
Total	9	54	5	14	13	5.6	100.0

Table 4.48: Household Perception on Beneficiaries of Community Development

(given in percentages)

	Wealthy	Poor	Local	Tour	HH	Don't
School	2	5	96	5	2	4
Health		8	92			2
Sant/Toilet			98		2	3
Drink			100			4
Bridge			100			4
Trail			98		2	4
Post Office		4	96			2
Bank			100			0
Veterinary		6	94			1
Market			50	50		0
Lodge		4	2	94		4
Campus			4	96		4
Forest	9	7	84			3
Health		11	85		4	2
Tour dev			16	84		2
Other dev	14		86			1
Women		3	74	3	19	2
Women	7	26	59		7	2
Male Train		67	33			0
Tour Train	3	3	11	84		3
Env		5	92		3	3
Adult edu		14	83		3	3
Food Crop		12	82		6	2
Cash crop		27	73			1
Veget		9	91			3
Livestk		18	82			2
Craft		18	82			2
Privt			100			0
Pub			97		3	3
Plant Distr			100			3
Private	10		90			3
Comm			100			3
Pasture			100			3
Imprv			100			3
Rural Elect			100			3
Boiler			100			3
Solar			100			3
Space			100			3
Bio-Gas			100			3
Kerosene			100			3
Total	1.0	3.6	82.7	11.5	1.3	100

Table 4.49: Lodge Owners' Opinions on Different Community Development Programmes

(given in percentages)

	Better now than 5yrs ago	Same as 5 yrs ago	Worse now than 5 yrs ago
Basic Development Infrastructures:			
Ghorepani	95.1	3.5	1.4
Ghandruk	96.0	2.9	1.1
Health:			
Ghorepani	94.3	-	5.7
Ghandruk	100.0	-	-
Human Resource:			
Ghorepani	84.85	15.2	-
Ghandruk	96.70	1.7	-
Income Generation:			
Ghorepani	100.0	-	-
Ghandruk	100.0	-	-
Conservation:			
Ghorepani	90.6	7.5	1.9
Ghandruk	96.0	4.0	-

Table 4.50: How Lodge Owners Attributed Change in Community Development

(given in percentages)

	Tourism	ACAP	Both	Govt	Villagers	Don't Know
Basic Dev Infra.:						
Ghorepani	32.4	10.1	1.0	14.4	12.2	30.2
Ghandruk	18.8	22.9	8.2	22.9	18.8	8.2
Health:						
Ghorepani	9.8	56.0	-	-	13.7	19.6
Ghandruk	7.8	70.3	6.3	-	1.6	14.1
Human Resource:						
Ghorepani	3.0	97.0	-	-	-	-
Ghandruk	1.7	78.3	3.3	16.7	-	-
Income Generation:						
Ghorepani	2.3	67.4	-	-	23.3	7.0
Ghandruk	2.1	84.7	1.4	-	11.1	1.0
Conservation:						
Ghorepani	2.3	67.4	-	-	23.3	7.0
Ghandruk	2.1	36.4	4.5	31.8	25.0	2.3

Table 4.51: How Lodge Owners Perceived Who Benefits More from Community Development

(given in percentages)

	Local People Have Also Benefitted	Only Tourism Related Have Benefitted	Don't Know
Basic Dev Infras:			
Ghorepani	72.2	26.4	1.4
Ghandruk	70.5	28.9	1.0
Health:			
Ghorepani	78.8	15.4	5.8
Ghandruk	81.3	18.8	-
Human Resource:			
Ghorepani	54.5	45.5	-
Ghandruk	88.3	11.7	-
Income Generation:			
Ghorepani	100.0	-	-
Ghandruk	97.9	2.1	-
Conservation:			
Ghorepani	73.8	21.4	4.8
Ghandruk	79.6	17.7	1.0

Table 4.52: Visitors' Perception about Information

(given in percentages)

Visitor's Category	Helpful and Adequate	Helpful but Inadequate	Not Helpful
Independent Trekkers	40	53	7
Group Trekkers	39	39	22
Total	39	45	15

Table 4.53: Visitors' Perceptions whether the Code of Conduct is obeyed by Trekkers and Local People

(given in percentages)

Visitors Category	Trekkers		Local People	
	Most Obey	Most Don't	Most Obey	Most Don't
Independent	72.7	27.3	68.2	31.8
Group	94.1	6.0	75.0	25.0
Total	82.1	17.9	71.1	28.9

Table 4.54: Visitors' Perceptions of the Number of Trekkers Permitted to Visit the ACAP area

(given in percentages)

Perception by Category	Too Many	Adequate	Not a problem
Independent Trekkers	14	48	38
Group Trekkers	12	53	35
Total	13	50	37
Perception by Purpose			
Viewing Scenery	18	47	35
Trekking	17	50	33
Nature Experience	20	20	60
Relaxation	-	-	100
Like Visiting Nepal	-	67	33
Others	-	100	-

Table 4.55: Visitors' Perceptions on Garbage, Littering and Sanitation in the Different Places

(given in percentages)

Areas	Garbage				Littering				Sanitation			
	Good	Fair	Bad	%	Good	Fair	Bad	%	Good	Fair	Bad	Case
Dining	57	43	-	75	55	45	-	73	37	43	20	30
Lodge	44	44	11		37	63			18	55	26	27
Camp sites	67	33	-	38	67	33	-	38	47	40	13	15
Trek routes	33	47	19	90	14	66	20	88	35	32	32	34
Villages	19	54	27	93	28	42	31	90	14	41	45	29
Homes	33	58	8	30	27	73	-	28	25	42	33	12
Scenic spots	39	55	6	83	31	56	13	80	35	38	28	29
Schools	60	40	-	50	58	42	-	48	50	43	7	14
Religious sites etc.	44	20	36	63	48	29	24	53	38	31	31	16
Others	50	-	50	5	50	-	50	5	50	-	50	52

Table 4.56: Sources of Possible Leakage from Tourist Generated Income

(given in percentages)

Items	Ghorepani		Ghandruk	
	Local%	Import%	Local%	Import%
Rice	0.00	100.00	3.18	96.82
Flour	4.12	95.88	48.41	51.59
Bread	14.71	85.29	42.42	57.58
Vegetables	85.25	14.75	79.09	20.91
Meat	75.00	25.00	81.94	18.06
Egg	0.00	100.00	1.14	98.86
Milk	0.00	100.00	21.14	78.86
Fruit	0.88	99.12	0.00	100.00
Jam/Butter	0.00	100.00	0.00	100.00
Furniture	90.29	9.71	85.45	14.55
Cloth/Drinks/Mattresses	5.56	94.44	0.00	100.00
Total	23.59	76.41	31.91	68.09

5
Introduction to the Gorkha Case Study Area

Introduction

Tourism development in Gorkha district has received attention ever since the 1972 Master Plan. More recently, there has been a renewed interest in tourism development in the district. In a recent study carried out by Touche Ross for the Ministry of Tourism and Civil Aviation, the need to diversify tourism has been further elaborated, with Gorkha district once again entering the picture. Since tourism development has already received priority in Gorkha, this provides a first justification for developing tourism in the district.

The district possesses some comparative advantages for tourism development. First, the district is relatively accessible, about a four-hour drive from Kathmandu. This accessibility will have to be further improved if greater tourism potential is to be realised, and helicopter services will have to be developed immediately to accelerate tourism development.

The district lies between the two major tourism hubs of Nepal, namely Kathmandu and Pokhara, and possesses unique HER. Its central location thus can be seen as a strategic point. Overcrowding in Pokhara and Kathmandu, as well as in other existing mountain tourism destinations, can be eased if tourists are diverted to Gorkha. Chitwan National Park, which is visited by most tourists besides Kathmandu and Pokhara, can also be linked to the Gorkha circuit. From this circuit, it is possible to link on to Lumbini, the birthplace of Lord Gautam Buddha. In other words, Gorkha district can become a central point in relation to Kathmandu, Pokhara, Chitwan, and Lumbini.

Although many parts of the district have potential for tourism development, the present study identifies two broad areas for mountain tourism development in Gorkha. The first area is to the south of the Himalayas and is referred to as the Southern Manaslu Region (SMR), and second is north of the Himalayas and referred to as the Northern Manaslu Region (NMR), including the Manaslu area as well (See Map 5). The SMR consists of the VDCs of Barpak, Ghyachok, Simjung, Jaubari, Laprak, and Uhiya.[1] The NMR consists of Sirdibas,

1 Additional VDCs in the SMR may also contain potential and should not to be excluded from any tourism plan. Also, if trekking tourism is considered, additional VDCs that have to be traversed would also have to be considered in this area.

Chhekampar, Chumchet, Bhi, Prok, Lho, and Samagaon VDCs.[2] This chapter provides a brief description of the physical features, cultural heritage, and socioeconomic status of households in the district.[3]

Physical Features

As the Himalayan range enters Gorkha from eastern Nepal, it begins to lie fully inside Nepal and no longer merely forms the main border line between Nepal and Tibet. In the case of Gorkha proper, the Himalayan range thus transects the upper half of the district (Map 5) into the southern and northern Himalayan foothills. The Himalayan range in Gorkha consists of Manaslu (8,156m), the sixth highest peak in the world, Ngadi Chuli (7,871m), Himal Chuli (7,893m), Baudha Himal (6,672m), Shringi Himal (7,187m), and many more, which can be seen from many parts of the district.

The district is encircled by the Marsyangdi River on the west and the Budi Gandaki River on the east. The Chepe and Daraudi rivers originate from the southern slopes of the Himalayas and dissect southern Gorkha into two halves, flowing southwards to meet the Marsyangdi River at Abu Khaireni.

The Northern Manaslu Region

Geographically, the Northern Manaslu Region (NMR) is the catchment basin of the Upper Budi Gandaki River and may also be referred to as the Upper Budi Gandaki Valley or the Manaslu region, and this is an extremely steep and narrow valley. The Budi Gandaki River is fed by many glaciers originating from the many Himalayan peaks of the region, including those of Manaslu in the west and Ganesh Himal in the east (Shiar Khola).

Climate. The climate of this northern region is typical of dry inner valleys, which are also termed 'back valleys' (Stainton 1972; Nelson 1980). Rainfall records are not available, but one can easily sense that annual rainfall is significantly less than on the southern side of the main Himalayan range. Beyond Jagat, the force of the monsoon is drastically reduced, and the diurnal valley winds are more pronounced, desiccating the valley. Cloud layers hang over the crest of the mountains, resulting in a relatively drier climate. Winter

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[2] Most of the information contained in the context of the NMR refers primarily to VDCs other than Chhekampar and Samagaon.

[3] This chapter is based on studies carried out by CREST for Gorkha Development Project. All relevant data reported in this Chapter are from Banskota and Sharma (1994b) and Banskota et al. (1994), unless otherwise mentioned.

is severe and snowfall occurs at elevations lower than 2,000m.

Topography and Land System. The main valley runs from west to east and is joined by two major side valleys, i.e., (i) the Shiar Khola Valley, which drains the northern slopes of Ganesh Himal and the southern slopes of Thaple Himal along the Nepal-China border and (ii) the valley formed by the Chhuling Khola, which originates near Baudha Himal and Himal Chuli. The two rivers join between Philim and Nyak where the Budi Gandaki gorge is very narrow.

The land system is extremely rugged, with deep side valleys enclosed by high ridges creating a semiarid environment at elevations ranging from 2,500m to 8,000m. Several valleys in the NMR have been formed due to glaciation, and such valleys are U-shaped, with remnants of morainal and outwash terraces, whereas other valleys have been incised by fluvial processes to create a V shape.

Above 3,500m the Alpine Highlands' Land System is dominated by a treeless region often interspersed with snow and ice fields. Glaciers and glacial land forms, such as cirques, morainal deposits, and arêtes are quite common in the area.

Forests and Vegetation. Vegetation types in attitudinal zonation are strongly visible. High peaks and glaciers are essentially lifeless above 5,000m. Between 4,000 and 5,000m, alpine grasslands, steppic cushion plants, and thorny bushes dominate the vegetation. The belt lying below 4,000m has birch forests with bushy rhododendrons. Junipers form patches of forest in drier areas at lower elevations, while on mountain crests and lower slopes, oaks and rhododendrons dominate the forest flora, with firs and hemlocks along shady slopes. Morainic areas have spruce and larch forests with lots of blue pine. Generally blue pine takes over as soon as natural forests are degraded or burned.

The area presents a continuous gradient of altitude throughout the length of the region and can be logically subdivided on the basis of indicator vegetation into, for example, the *sal* zone, the chir pine zone, the blue pine zone, the birch zone, and the treeless zone. However, the valley floor between Gaap and Namrung which lies in the blue pine zone, has a unique type of mixed forest. It could well be classified as a 'temperate mixed forest,' and it is sheltered from valley winds and remains quite wet. The forest is fairly dense and remains the most important habitat for the birds and wildlife of this area.

The grasslands are very significant for sheep farming. The range land lying above 3,000m is carefully managed by local villagers. The use of grasslands is regulated during village meetings and by mutual consent. Fire is employed as a major management tool.

Birds and Wildlife. At least 190 species of birds and over a dozen mammals have been recorded in this region. Field evidence and local information provide confirmation of the following mammals: musk deer, blue sheep, snow leopard, Himalayan black bear, flying squirrel, hoary-bellied Himalayan squirrel, red panda, common leopard, wild dog, Himalayan yellow-throated martin, porcupine, jackal, weasel, Assamese monkey, langur monkey, crab-eating mongoose, wildcat, Himalayan *thar, ghoral*, Himalayan marmot, pica, and so on.

The valley is remarkably rich in *thar* and *ghoral* populations. Herds from fifty to two hundred individuals were observed during the present survey. Such a high number of animals is rarely seen elsewhere in the Nepal Himalayas. There are several bird species which are confined to small gullies sheltering broad-leaved trees. Corn fields have to be protected against crows, choughs, and snow pigeons during the sowing season, against monkeys and black bears during harvesting season, and against *ghoral* and *thar* during growing season.

Southern Manaslu Region

This area, lying to the south of the main Himalayan range, is drained by the Daraundi and the Chepe and partly by the Budi Gandaki as well. Any trek along these valleys leading towards the Himalayan crest passes through a typical midland landscape, with terraced hill slopes, forested patches, carefully laid-out hamlets, and a series of mountain spurs and snowy peaks. Vertical waterfalls, forested areas, pasturelands, farming, and cultural activities are encountered quite frequently in this area.

Climate. The climate is of the temperate monsoon type above 2,000m and of the sub-tropical monsoon type below this altitude. Rainfall varies from 2,000 mm per year to 3,000 mm per year depending on the location.

Topography and Land System. A major portion of the land lies within the Marsyangdi Asymmetrical Ridge (MAR) and the Chepe Moderately High Ridge (CMHR) land systems. Accordingly, the MAR has 26 per cent forest cover and 19 per cent brush land cover. Agricultural land claims about 55 per cent. Watershed conditions are rated at 50 per cent excellent and 50 per cent good,

implying little human-induced erosion. However, natural erosion processes, including landslides, may be present.

The upper slopes come under the Chepe Moderately High Ridge land system (CMHR), of which only 39 per cent are under cultivation, while the forest cover is about 23 per cent and the brush land coverage 38 per cent. It also includes a considerable portion of range land. Watershed conditions are rated as 54 per cent excellent and 46 per cent good.

Forests and Vegetation. Natural vegetation is influenced heavily by human activities. Regeneration forests are found near most settlement areas. Ravines and gullies have more mature trees than other slopes and are dominated by utis trees with very little pine. The region itself is dominated by mixed hardwood forests interspersed with evergreens. Epiphytic orchids are also found in this region.

Forests in the temperate zone, at 2,000m to 3,000m, are composed of oaks and rhododendrons on the drier south-facing slopes and, on the north-facing slopes, by sparse laurel trees and shrubs. The sub-alpine zone at 3,000m to 4,000m gets up towards the crest land and the steep upper slopes. There the forest is dominated by *kharsu* oaks and fir trees. Disturbed areas exhibit a predominance of *lali gurans* and *nigalo*. In drier places, patches of blue pine may occur towards the head of the valley, while hemlocks dominate shaded places. Both the regions are characterised by pristine forests with great biodiversity. But, in recent times, there has been an ever-increasing threat to the many plant species from habitat destruction. (Banskota et al.1994; Kihara 1955; Dobremez and Jest 1976; and Stainton 1972).

Wildlife and Wildlife Habitats. Midland Nepal is not famed for large mammals. Local people often refer to barking deer, common leopards, jungle cats, mongooses, yellow-throated martins, porcupines, wild boars, and black bears. Among the more visible animals, mention should be made of rhesus monkeys, langur monkeys, and Assamese monkeys. At higher altitudes, *ghoral* are often hunted by local *shikari* (hunters). Musk deer are reported to be found in the alpine zone.

Bird life is much pronounced all throughout this region. Birds are numerous at the interface between forests and fields. Thirty to fourty-five species of birds can be recorded in a day, with 50 per cent occurring in cultivated areas. Birds of the *terai* and the Gangetic plain, such as the little green heron, brown-eared *bulbul* and drongo cuckoo have been observed in the lower hills of Gorkha.

Cultural Diversity and Heritage of Gorkha

Northern Manaslu Region

All the villages of NMR are inhabited primarily by Tibetan speakers. In spite of their shared Tibetan culture the people of this region do not form a homogeneous group, and this is reflected in the traditional division of the region into three distinct areas.

- Nubri, the westernmost section of the Budi Gandaki as far as Namla (Nubri means literally 'Western Hills').
- Kutang, the area extending from Namla down to the confluence of the Shiar *Khola* with the Budi Gandaki.
- Tsum: the valley of the Shiar ('Eastern') *Khola* itself (not considered in this study).

The Nubri region is very rich in monasteries. The Kutang region, represented by the Shringi Valley and villages like Bhi and Chhak, exhibits a strong endemism of culture (Aris, 1973).

The inhabitants of Nubri and Tsum are for the most part traceable to Tibetan antecedents. Manaslu traditionally had close economic links with Tibet, especially with the area of Ru, some fifteen miles north of the border. The semi-nomadic people of Ru acted as the middlemen in this trade, bringing salt from the Changthang to as far south as Arughat and exchanging it for grain.

Tsum is said to have been peopled by settlers from Central Tibet originally. The entire area, and Tsum in particular, for a long time had close ties with Bhutan. Kutang, which extends from east of Namla to Nyak, is the home of what may be the earliest group in the area. The inhabitants are distinguished by a Tibetan language different from the Western Tibetan dialects of their neighbours. This language is said to bear certain similarities to *Thakali* (and presumably therefore to *Gurung).* The area is notable also for the presence of a ritual specialist called a *pachu* (*Gurung*) or *bonpo* (Tibetan), an archaic category of priest who is responsible for the cult of certain clan and territorial divinities.

Southern Manaslu Region

Mid-Gorkha may reasonably be considered as part of the heartland of the *Gurung.* Tradition has it that this people, who refer to themselves not as

Gurung but as *Tamu* in their own Tibeto-Burman language, migrated from north-eastern Tibet at some unspecified period and entered what is now Nepal through the Nar Valley in upper Manang. The entire people stayed together in a series of large fortified settlements, abandoning one before moving to a new area and constructing another. The last of these settlements, called Kwola, is located several days' walk to the west of here. Research has yet to be conducted on this site, but, according to an archaeologist who has visited the place, the ruins suggest that Kwola was not merely a village but a city-state. After the abandonment of Kwola, perhaps in more peaceful times when fortifications were less necessary, the *Gurung* dispersed east and west into a number of smaller, unfortified settlements. Mention should also be made of the fact that the *Ghale*, who are numerous in the area, are considered by some people to be an ethnic group distinct from the *Gurung.* Tibetan influence becomes more apparent in Sirdibas VDC where there are several *gompa*. The temple of Ghatte *Khola,* called Trashilung *Gompa,* is located in the nearby village of Panshing. It has a small amount of agricultural land (one *ropani*), and receives regular tribute from its parishioners, each household providing firewood, timber, butter, oil, and cash. It seems to be quite a minor institution, with just two lamas. The priestly family, which is said to have come from Dolpo, has been in the area for six generations.

Socioeconomic Characteristics: Southern Manaslu Region and Northern Manaslu Region

Household Composition

The middle region of Gorkha is more densely populated than the south or the north. In this region, the *Brahmin, Chettri* and *Newar* have dominated the population in terms of ethnicity. Towards the Southern Manaslu Region (SMR) the *Gurung* are more common. The north is dominated by *Gurung, Sherpa* and *Bhotia* ethnic groups. Household size in the district is about 6.7 persons per household, with a large majority of households in mid- and southern Gorkha falling into the medium family category (5-8 members), whereas in northern Gorkha the small family (1-4 members) predominates (59%).

Literacy

The percentage of the population that is literate, based on formal schooling, is less than 20 per cent, and another 37 per cent has acquired this skill through informal sources. Female illiteracy is higher than male illiteracy in all regions. Although a large percentage of school-aged children are reported to

be enrolled in school, about 36 per cent of children do not attend school as their labour is required for household or farm chores, or due to financial constraints. Illiteracy in northern Gorkha is about double that of the district average.

Farming

Subsistence agriculture is the main occupation of a large majority of household heads (79%) in the district. Another 10 per cent engage in outside service (mainly the army) as their main occupation, and about 11 per cent are dependent on wage labour (6%) and cottage industries, trade, or commerce (6%) for their livelihood.

A vast majority (75%) of the households in the district are owner-cultivators who neither rent out land nor rent it from others, and only about three per cent are landless. In terms of the size of holdings, the lower 20 per cent of the households in the district work less than five per cent of the total cultivated land, whereas the share of the top 20 per cent of the households is more than 41 per cent. A large majority of households fall in the mid-size category of farms, though in southern Gorkha the large-size category predominate. The degree of land inequality, as indicated by the Gini-coefficient, is estimated to be 0.34 in the district as a whole.

Pakho (sloping land), *khet* (irrigated and unirrigated types), and *khoriya* (i.e., slash and burn) are the three types of land operated by farm households in the district. A vast majority (96%) of the households in the district depend on *pakho*. *Pakho* is the only type of land cultivated by households in northern Gorkha. The proportion of households operating irrigated *khet*, unirrigated *khet,* and *khoriya* is about 38, 37.8, and 27 per cent respectively. Sixty per cent of households in south Gorkha compared to roughly one-third in mid Gorkha have irrigated *khet*. *Khet* is not found in northern Gorkha.

The average size of cultivated land holdings, i.e. farm size, in the district is estimated to be 0.93 hectares, which is slightly lower than the 1991 National Sample Census of Agriculture's estimate for Gorkha. The average size of cultivated land declines as one moves from southern (1.07 ha) to northern Gorkha (0.55 ha). Regionwise, irrigated *khet* is found to be mostly concentrated in southern Gorkha, constituting 28 per cent of the cultivated land, whereas in middle Gorkha *khoriya* occupies the second dominant type of land (43%). Food crops dominate agricultural areas, with cash crops and vegetables accounting for only about eight per cent of the total area.

Vegetable cultivation is a recent practice for a large majority of households in the district.

Not all households use modern agricultural inputs such as chemical fertiliser and improved high-yielding seeds, perhaps because of the limited availability, low purchasing power of households, and lack of knowledge about the influence of such inputs on productivity. Chemical fertiliser is not used by households in northern Gorkha, whereas 58 and 40 per cent of the households reported its use in middle and southern Gorkha respectively. In contrast, over 62 per cent of the households in northern Gorkha are found to use improved seed, compared to less than nine per cent in other regions of the district.

A large majority of the households believe that agricultural productivity has been declining over the years. Although there is some variation in household perception across the regions as to why productivity has declined, a large majority perceived lack of irrigation (76%), lack of manure (46%), lack of chemical fertiliser (38%), and lack of quality seed to be the most important reasons.

Seasonal Migration

Migration to the south has been a response adopted by households from the hill and mountain regions to gainfully employ themselves for a few months each year in order to supplement family incomes. In Gorkha, outmigration from the north (78%) is more than six and two times higher respectively, relative to southern and middle Gorkha. The average duration of outmigration of people from the north is about half that of the other two regions. For the district as a whole

Health

Over 50 per cent of the households in the district have access to piped drinking water. In the north, most households that have such access have acquired it only within the last three years. Family planning awareness has also increased in these mountain regions of Gorkha. In the south, about 40 per cent of the household heads reported some members adopting family planning practices. Permanent family planning methods appear to be more prevalent than temporary ones in the district, with a higher percentage of males reporting family planning practices than females. In the north, the overall percentage is much lower (9%), and only males reported adopting family planning practices.

Animal Husbandry

Livestock are owned by a large majority of households in the entire district (83, 67 and 56% in the south, middle, and north respectively). Herd composition varies from region to region, with the average size of holdings in terms of Livestock Standard Unit (LSU) being about 4.5 for the entire district. LSU density per hectare of operational area is highest in the north (5.51), followed by the south (4.85) and the mid-region (4.78).

Food Sufficiency

Food sufficiency in the district is a major problem for a large percentage of households. In the north only, about 31 per cent of the households are able to meet their food needs from the land they cultivate. In the southern and mid regions this percentage is about 48 and 52 per cent respectively. The number of months food is sufficient for is about nine. In order to meet their food needs, households adopt a variety of strategies, such as taking food or cash loans, outmigration, and selling or mortgaging property. Informal credit markets (local moneylenders, relatives, and friends) continue to be the primary source of credit. Institutional borrowing ranks only second to local moneylenders in the entire district.

Energy

Fuelwood, twigs, and crop residue are the three main sources of fuel used by the rural households for a variety of domestic purposes such as cooking, heating and distilling alcohol. The yearly per capita consumption of fuelwood is almost triple in the north (1,744kg fuelwood equivalence) the consumption in the south (627kg) and middle (735kg), reflecting the harsh and long cold season in that region.

Household Expenditure

The per capita expenditure for consumable goods in the district is only about Rs 3,791, with the middle region having the highest rate (Rs 3,856), followed by the south (Rs 3,714) and north (Rs 3,469). Food dominates household expenditure in all the three regions, followed by clothing.

Status of Infrastructure

The economic status of the district, including its inhabitants, is poor, as already highlighted in the above section. Overall infrastructural development in the district is still far from adequate. Gorkha *bazaar* itself, which is served by an all-weather blacktop road, has limited accommodation facilities. Water supply conditions are far from optimal in the *bazaar.* Along all the trekking routes, the types of infrastructure required by tourists are virtually absent.

Drinking Water

Drinking water, although accessible to about 50 per cent of the population, is confined to the interior villages; a large number of hamlets that lie on the trail have no access to drinking water. Along the western ridge trail especially, water is extremely scarce, and local people have to travel long distances to fetch water for their daily needs. After crossing Jagat and entering the Upper Budi Gandaki Valley, the numerous streams and rivulets provide the necessary water needed by households. Within the last three or four years, the GDP, Care Nepal, and RADC have been able to develop some drinking water facilities, but the need far outstrips the pace at which such facilities are being provided.

Trails and Bridges

The trail conditions in the area vary in quality. These trails are heavily used by local people, and virtually all transportation has to be done entirely on human backs. Carrying loads manually cannot be seen as an efficient means of transport. Transport by mules or horses is a viable alternative and should be encouraged. Many trails or sections of trails are in a far from desirable state, even by local standards. Along with upgrading and improving old trails, new trails will have to be developed in many places if tourism development is to provide an impetus to the region's economy. That it is possible to construct broad and smooth trails in these steep mountain terrains may be seen from the Philim-Chhekampar trail, a GDP undertaking.

Many existing old bridges need to be replaced, improved, or maintained. Many of the bridges have not seen maintenance perhaps since the time they were constructed. Some bridges may not last many more years if immediate upgrading or maintenance work is not carried out. (See Annex for details).

Accommodation and Campsites

After Gorkha *bazaar* there is not one accommodation facility or a campsite with minimum facilities. An accommodation facility of minimum standards would include the following: cleanliness (rooms, beds, dining or eating places, toilets, garbage disposal, access to water, some level of privacy). In many places where tourist have to halt for the night there are no campsites, and public land is used whenever available. In some places, property owners have set aside some of their land as a campsite. All these campsites lack basic toilet facilities. Tourists pitch toilet tents at their convenience (close to the camp area or otherwise), and those who do not desire to use such tents simply take care of their needs in the open. The support staff and porters never use toilet tents.

There is one exception in this respect. In Jagat, there is a campground that has maintained some minimum standards, with a drinking water facility, for example, which also serves the needs of the local people. There is also a toilet, a garbage disposal pit, a kitchen area, an open place accommodating about a dozen tents, and a dining area. Some degree of privacy is ensured, since the campsite is enclosed.

The Upper Budi Gandaki Valley is extremely steep, and finding campsites for a few tents is often difficult. In some places, local people have begun to rent out agricultural land to pitch tents. Although households benefit from this alternative use of land, over time such a practice may not be healthy, as toilet and garbage pits fill the entire area (Lama and Sherpa 1994).

Energy

Fuelwood is the basic source of energy for local people as well as tourist groups. Although conscientious tourists use kerosene which they have porters carry from Gorkha, the porters have to rely on firewood. The only area where electricity is available is in Barpak VDC where a 75kW micro-hydel plant has been established. Power is used mainly for lighting, but recently two Nepali paper establishments have begun to use electricity.

Markets

The entire area has currently no organised marketing facilities of any kind.

Communications

Beyond Gorkha *bazaar* there are no communication facilities available until reaching Philim. The station in Philim is owned by the Remote Area Pasture Development Office and thus is not readily accessible to the public. In Namrung, the police office has a wireless set, and the police are helpful in communicating messages to Kathmandu. A wireless set also exists in Samdo.

Conclusions

Although the HER existing in the SMR and NMR are rich, the people that live on both sides of the foothills are poor and carry on a subsistence living. Tourism development has enormous potential to benefit a wide section of this community. However, for tourism development to be successful in this area, a fundamental prerequisite is community development. The status of some types of infrastructure in the area is far from adequate in providing local communities with basic services. If this infrastructure is not built and community development is not strengthened, tourism development alone is unlikely to succeed in delivering benefits to a large number of people in the area. Without local community development, local people will have no incentive to be partners in either tourism development or environmental conservation. If tourism continues without the participation of local people, the negative impact that has surfaced in other parts of Nepal will also emerge in this region.

Annex To Chapter 5

Infrastructural and Socioeconomic Conditions along the Trail of Northern Gorkha[4]

Gorkha, 1,100m - Daraundi, Hanse Pasal, 500m - Chorkate, 550m - Chhoprak, 1,100m

Trail The trail conditions are fairly good. From Chorkate the trail ascends to Chhoprak. No bridges are encountered after crossing the Daraundi at Chhepetar.

Bridges The suspension bridge could last longer if better maintained; planks are already falling out and rust has formed in many places on the bridge.

Drinking water Drinking water is not readily available in this region. At the river side people use Daraundi river water. The entire Chhoprak VDC suffers from water scarcity.

Camping sites There are no campsites developed; available open space is used for the purpose. Other associated facilities, such as toilets and garbage disposal, have also not been developed. Plastic litter is fairly apparent on many parts of the trail.

Community The community residing in this area is a mixed community consisting of *Gurung, Brahmin*, *Chettri* and *Newar* groups. There is a high school in the area (Mandal High School with about 700 students - 400 boys and 300 girls). In the area of social development, there have been drinking water projects in the area, but not all taps receive water. The GDP has recently developed drinking water facilities in the VDC, but still a large number of households do not have access to safe drinking water. There is the Bhusunde Watershed Management Project, which has only recently begun. Centre for Community Development and Research (CECODER) has begun a milk collection programme and a fruit canning operation in this area, given that fruits such as mango, lichi, pineapple, banana, orange, lime, peach, etc grow well in this area. The VDC is self-sufficient in food grain and exports to the food-deficit north. Villagers have begun a recent afforestation programme in various parts of the village. Other forms of development have not reached this area. Firewood is the only source of energy in the entire region. Some biogas plants have been installed, but they are not operating smoothly.

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4 Also see IUCN 1993.

Chhoprak, 1,100m - Pamgaon, 1,600m - Amrung, 1,600m

Trail The trail from Chhoprak to Amrung is along a ridge for almost the entire day. The trail meanders through forests and villages, and beautiful scenes are encountered, including that of the Manaslu Himal. The ridge trail is easy.

Bridges No bridges of significance are encountered; small streams lack bridges and during the monsoon create difficulties for local people to travel.

Drinking water This entire region is scarce in drinking water. Local people have to travel long distances down the slopes to obtain water from natural springs. A water source at a place called Namki is believed to be good but will require a storage tank and water will have to be piped some two to three kilometre. The water taps at Chitre Pokhari (an easy 3-hour walk from Chhoprak) is served by a two-inch pipe and has a good supply for the entire area.

Camping sites Same conditions as mentioned above.

Community development One remarkable sight in this area is the stone walls built around private forests by the local people to protect them from livestock encroachment. Most of the wards and villages have forest protection programmes, although their effectiveness varies. The Department of Forests has a unit at Phenam. There is a firewood quota for each household, according to household size, in force in this VDC-Jaubari. The VDC is also believed to have wildlife in the forests. There are fines for illegal tree felling and poaching. Loose grazing is still a problem, but villagers are aware that this is a bad practice. The major crops in the VDC are maize, millet, rice and wheat. *Khar* grass, which is used as a fodder and for thatching roofs, is a cash crop. Pears, apricots, and apples were reported to grow well in this area. Some households have also begun cultivating oranges. The VDC is a food-deficit area, and only about 65-70 per cent of the households cultivate sufficient food. Buffaloes are owned by a large majority of the households, and most are stall-fed. Households raise goats and stall-feed them. There are two high schools and a number of lower level schools in this VDC. Accessibility to them is relative easy. An *illaka* health post exists in the VDC, but it is too far away for many people to make good use of it. This VDC is the gateway to the southern foothills of the Himalayas. The view from the ridge is excellent, and various places have potential for tourism development, as discussed below. CECODER has also initiated some measures to promote tourism in the VDC: cleanliness, paying guests, etc.

Amrung, 1,600m - Ajirkot, 1,850m - Bhachek, 1,750m

Trail The trail continues along the ridge top, providing beautiful glimpses of the Himalayas and the Mahabharat range. In some places, *Gurung* villages are also found. The general condition of the trail is reasonable during the dry season but a little bit of rain can always make it slippery.

Bridges There are no major bridges on this section of the ridge.

Drinking water Drinking water continues to be scarce until reaching the night haltage point at Bhachek, a small village with a fairly good supply of water. Bhachek has a small marketplace with tea shops and a small public video facility.

Camping sites There are no campgrounds all along this route, although the potential to develop them is there, especially along the Bhachek saddle.

Community Similar to above. The tourism potential of western Gorkha begins to unfold as one proceeds north along this ridge. The journey from Amrung to Bhachek is filled with scenery, fairly substantial forests, and one constantly sees the village down below from the ridge top. Occasionally, Daruandi River will also make an appearance. The beauty of the Himalayas from Ganesh Himal to Manaslu Himal and beyond also becomes more prominent. From this point one sees deep into Lamjung district in the west and parts of the Annapurna range. Ampipal, Kharibot, and other villages located above the Chepe River can be seen over the undulating hills that encompass Bhachek from the west. North of Bhachek is the Siran *danda* which takes one into the temperate and semialpine regions of the Himalayan slopes. This area provides excellent scope for a new kind of tourism development, as will be discussed later. A place called Ajirkot has some local and historical significance from the time of Drabaya Shah. Abandoned terraces remind travellers of the outmigration of people from this area.

Bhachek, 1,750m - Namkigaon, 1,800m - Siran Danda, 2,000m - Ghyachokgaon, 1,750m - Dumsigaon, Daraundi, 1,050m

Trail The ridge trail continues along the ridge top, providing similar spectacular beauty. After a few hours of journeying the trail begins to descend.

Bridges Two major bridges are encountered on this journey: one across a tributary of the Daraundi *Khola* and one across the Daraundi. The latter bridge requires some maintenance.

Drinking water Drinking water is not as scarce in this area.

Camping sites. Same as above.

Community Similar to above. The Siran *danda* area is only marginally touched by the existing trail but, as already mentioned, extends into the temperate and sub-alpine zones and pasture lands. Ghyachok VDC is an entirely *Gurung* and *Ghale* community. This area has excellent slate quarries, as is evident from the roofing material of the houses in it. The *Gurung* and *Ghale* culture is filled with song and dances, and one constantly hears the beating of drums and singing late into the night. Sheep farming is a major activity in this area.

Dumsigaon, Daraundi, 1,050m - Barpak, 1,990m

Trail The trail from Dumsigaon on the west bank of the Daraundi to Barpak is straight uphill, about four to five hours' climb. Trail conditions are fairly good, except in some places where the debris from landslides needs to be taken care of. A landslide two years ago wiped out a small school whose remnants are still visible. This area is extremely rich in birds.

Bridges No major bridges are encountered.

Drinking water Water is something that is not scarce in this region. All agricultural land can be irrigated due to its abundance. Water sources are broad upon small sub-catchments of dense vegetated gullies and ravines.

Camping sites Same as above.

Community The community consists of *Gurung* and *Ghale.* Barpak village was the birthplace of the Victoria Cross holder Gaje Ghale. The village has many citizens in the British and Indian armies and many retired soldiers as well. Regular soldiers make sizeable donations for the creation of such things as schools and playgrounds. After Gorkha *bazaar*, this is the first village that has its own supply of electricity (75kW). Most houses have slate roofs. This area has much potential and in fact can be developed into a small rural township. It has great scope for tourism as the foothills of the Himalayas are accessible

from it. Furthermore, straight eastwards from this village is the 300m Mamche *danda*, which has a temperate climate. The view from this point is one of the best in the entire region. The hilltop is rich in flora and fauna, but already disturbance to the biodiversity from excessive grazing is obvious. Mamche *danda* should be converted into some sort of District park or district protected area. Tourism potential is excellent. Further development of hydroelectricity is also possible.

Barpak, 1,900m - Mamche Danda, 2,750m - Pass, 2,800m - Laprak, 2,200m

Trail Conditions are fairly good.

Bridges None encountered.

Drinking water Available with great difficulty.

Camping site None developed.

Community A *Gurung* and *Ghale* community. Houses have slate roofs. Many males members are in the army but, compared to Barpak, this area is poor. Agricultural land is steep, and retaining walls have been built from the Macha *Khola* to prevent landslides. Slate roofs are replaced by shingles, and this takes a heavy toll on the forests. The highlands are accessible from this area, so that tourism has potential. The Mamche *danda* pastures are used by inhabitants of both Laprak and Barpak.

Laprak, 2,200m - Jerbu Khola, 1,750m - Singlagaon, 2,200m - Khorlagaon, 1,750m - Khorlabesi, 950m

Trail The trail heads straight downwards towards the Macha *Khola* and begins to ascend immediately after crossing the bridge over the Macha *Khola*. The trail up to Khorlabesi requires widening in many places. The last hundred metres of trail leading to a bridge adjoining Khorlabesi is virtually non-existent; a cliff has to be crossed with extreme care to reach the bridge. This last stretch to the bridge is strategically important since this bridge connects the Upper Budi Gandaki Valley with southern Gorkha. This section of the trail needs immediate repair work.

Bridges The Macha *Khola* bridge is in fairly good condition. A second bridge is encountered just before reaching Khorlabesi on the banks of the Budi Gandaki. Khorla itself is a tributary of the Budi Gandaki. The condition of the bridge is good.

Drinking water Drinking water is fairly easily available, although many villages do not have access to piped water.

Camping sites The area from Laprak to Khorlabesi can be used only as a transit area and does not provide scope for tourism development.

Community Similar to Barpak.

Khorlabesi, 950m - Tatopani, 950m - Dovan, 1,000m - Jagat, 1,400m

From Khorlabesi onwards north the trail merges with the main trail to the Upper Budi Gandaki Valley.

Trail There are many sections on this stretch of the trail that require a great deal of work. Sections that have been washed out by landslides have to be rebuilt. A section about half a kilometre from Yaru Valley poses a great danger to porters, local people, and tourists. Previous landslides have virtually clogged the Budi Gandaki River at this point. Further landslides could easily dam the river, creating a big reservoir. A surge of water could then break through the debris and create a massive flood downstream. This has already occurred in the past. Taming the mountain slopes and clearing the debris can perhaps be the first step in building a dam to generate electricity at this point. The section of the trail leading to the Yaru River is also gradually being eroded by the river, and the bridge over the Yaru River is in great danger of being washed out. CARE is building retaining walls to control water flow, but more work is required before the bridge can be considered safe. And this has to be done immediately. Sections of the trail from this point to Jagat are built on the stiff rock cliff and are fairly good. However, some sections have been washed out by the river or covered by landslides.

Bridges The bridge over the Budi Gandaki River beyond Tatopani needs immediate repair work. Missing wooden planks have been replaced by rocks. The cables holding the bridge are gradually tearing apart and the entire bridge is covered by a thick layer of rust. It would take millions of rupees to replace this bridge if repair work is not carried out in time. Another suspended bridge

near Jagat above the Budi Gandaki River is in an equally dilapidated state and requires immediate attention.

Drinking water Does not appear to be a problem.

Camping sites Not required after Khorlabesi until reaching Jagat.

Community *Gurung* primarily.

Jagat, 1,400m - Sridibas, 1,450m - Philim, 1,600m

Trail The first part of the trail, representing about two hours of walking, is fairly good, requiring only some improvements. However, after the village of Sridibas, the trail begins a gradual ascent along an unstable mountain slope for nearly one hour. Even during the dry season (May), this section of the trail has many unstable sections, with earth constantly falling on it from above. In fact, this section of the trail was itself relocated from the other side of the river where conditions were so bad that even local people found it difficult to traverse. The present section requires immediate improvement or rerouting. The trail then reaches Ghatte Kulo and, after crossing a bridge, begins to ascend to Philim. This latter section of the trail is fairly good. A number of rivulets meander along the valley. About a dozen watermills operate in the area within less than 500m distance.

Bridges The major bridge along this part of the trail is over the Budi Gandaki River near Ghatte Kulo. The bridge is a suspension bridge, which could last many more years if it received some maintenance work. Another river crossing is at Ghatte Kulo where a river from a nearby watershed, after dropping to the ground, takes the form of a delta. The stream covers a huge area, and in summer local people have great difficulty crossing it. A bridge is thus required here.

Drinking water In the recent past the GDP/RSDC installed water taps in some of these areas, which has benefitted households in a number of villages. In Philim, which is a large village, drinking water is still a problem, as there are not enough taps. In many villages, drinking water projects were sanctioned but never constructed. CARE Nepal can no longer legally construct such projects as they had in the past (according to a NGO volunteer working in the area).

Camping sites The distance from Jagat to Philim is only about three hours on foot, and hence campsites are not required, although there is adequate space to develop such, if the need arises for, for example, emergency shelters. Philim has ample room for developing campsites.

Community The community is a mixed group consisting of *Bhotia* and *Gurung*. Subsistence agriculture and sheep raising are the main activities of this region. Food sufficiency is a major problem in this area. Maize, millet, and wheat are cultivated in it. People there have never cultivated vegetables in the past, but efforts made by GDP/RSDC and CARE are changing all that. Fruits are not cultivated, but demonstrations indicate the possibility of cultivating apricots, pears, oranges, and apples in some areas of this region. Potato production can be increased, as the region has suitable climatic conditions, but, due to the absence of marketing, surplus potato production is generally wasted, as households do not know how to store surplus potatoes. Many people migrate to the south annually to look for jobs to meet their family's food and other needs. A large number of school-aged children do not go to school, being required for household chores.

This area is sheep country, with over 25,000 sheep in the entire VDC. Pansing village relies entirely on sheep farming to meet food and other needs. The whole area around Philim and Pansing is totally denuded. Old accessible forests have been thoroughly cut and no new plantation has taken place. There is a great deal of pressure on the forests to meet fuelwood needs. Also, all houses in this region use shingles, which need to be replaced once every three to four years, and thus puts additional pressure on the forests. Slate is available, but the poor economic condition of households makes this alternative unaffordable. Although slate can be quarried locally, wages have to be paid to the miners.

Philim, 1,600m - Ngyakkunna, 1,750m - Denggaon, 1,900m - Deng, 1,800m

Trail This section of the Manaslu trail can be considered a 'bottleneck' trail. From Philim to Deng, which is nearly an eight-hour walk, there is not a single place along the entire stretch of the trail to set up two or three tents. Finding a flat space to have lunch is almost impossible. Furthermore, the section of the trail on the cliff below Nyak, called the Nyak Kuna (corner), is extremely dangerous. The trail was created by dynamiting the rock cliff and then piling up rocks. The piled rocks are unstable, the turns are narrow and steep, and the overall condition of the trail is among the worst in the entire region. Tourists

as well as some members of the CREST team have had great difficulty traversing this section. And down below, some 300-400 metres, the Budi Gandaki is roaring. The entire section of the trail from Philim to Deng requires improvement.

Bridge The Budi Gandaki River below Philim towards Deng passes through a narrow gorge some 20 feet wide. The bridge over this part of the river is made of wood and is unstable. Its predecessor was made from *chhoya* (rope). Although there have been improvements to the bridge, it needs to be replaced by a metal structure. The present wooden bridge is built so low over the river that during the summer months the water sometime reaches it. It has been washed out often in the past. A better bridge is also required just before Deng as currently a log is serving the purpose.

Drinking water Drinking water facilities have not been developed in this area.

Camping sites The Budi Gandaki Valley is extremely narrow in this area and, as already indicated, finding suitable camping grounds is almost impossible until reaching Deng. In Deng some farmers rent their land out for camping if the fields are fallow. During the crop season, advantage can be taken of the riverbank where there is wide space available for camping. This spot has to be carefully planned if it is to serve as a camping ground and the river is not to be polluted.

Community The community in this area is among the poorest in the region. The entire region is sparsely populated, and, although farming is the major occupation of the households, it is not a productive enterprise in any sense.

Deng, 1,800m - Rana gaon, 1,850m - Bhi gaon, 2,000m - Gap, 2,050m - Namrung, 2,550m

Trail The trail from Deng to Namrung presents nature in a variety of forms and is a very enjoyable trek. The section of the trail from the river crossing after Deng up to the village of Rana requires upgrading. In general, though the trail from Deng to Namrung requires little improvement, except for an occasional widening and slope control.

Bridges The trail is almost entirely along the bank of the Budi Gandaki River. This river and several of its tributaries have to be crossed several times. Except for a metallic bridge over the Budi Gandaki below the village of Bhi

(CARE Nepal), all bridges are made of wood and are in a poor state. At one point along the trail, the Budi Gandaki can be seen passing through a huge hole in a rock which it pierced over millions of years ago, the wooden bridge requires immediate repair. There are several bridges like it in this section of the trail.

Drinking water Drinking water is still a problem for a large majority of the households of this region.

Camping sites There are many places to develop campsites in this section of the trail.

Community The community consists mostly of *Bhotia* who depend on agriculture and pastoralism. There is a subsistence life similar to that described in the case of Philim. There is an excellent patch of forest in this section valuable for its biodiversity and in need of protection. A small campsite has been developed in it by a local entrepreneur. This entrepreneur is also building a small lodge which requires an enormous amount of wood. There is a great deal of wastage due to the fact that the axe is the most important tool for carpentry here.

Namrung, 2,550m - Lhigaon, 2,860m - Shyogaon, 2,900m - Lho, 3,180m

Trail The general condition of the trail in this sector could be improved if some sections were widened and upgraded. Local people use horses which, because of the steepness and narrowness of the trail, have to be led rather than ridden.

Bridges There are several small and large tributaries of the Budi Gandaki River that have wooden bridges and only some makeshift bridges.

Drinking water Most of these villages have drinking water.

Camping sites From Namrung to Lho is a short trail of four hours. The first magnificent view of Manaslu is available from this village. At the top of the village, on a hill, some local people have set aside land as a camping ground. This campsite needs a great deal of improvement. It has neither drinking water, garbage disposal, nor toilet facilities. All tourists going to the Manaslu area are likely to spend at least one day here, and soon the lack of these facilities could mar the area with garbage and litter. The campsite owner has

indicated a great interest in receiving training and acquiring a loan to develop the campsite.

Lho, 3,180m - Samagoan, 3,523m

Trail From Lho to Samagoan the trail is fairly easy, and can be used by mules and horses. A flat terrace of several hectares along the way is an ideal site for a spectacular view of a snowy panorama on all three sides. This place, called Shyla, could easily serve as an airstrip, but it is now being encroached upon by villagers for cultivation. A fir forest is said to be the main source of timber export (illegal) to Tibet. The main trail passes through morainic deposits, but these do not pose any problem.

Bridges There are no major bridges. Small meandering rivulets are easily crossed.

Drinking water Little rivulets and springs are found, so there is no real scarcity of drinking water, but there is no provision of piped water.

Camping sites The Shyla terrace is a perfect location for camping. Sama-camping generally takes place on the flat area around the monastery, which is about 45 minutes by foot from the main village. Village hygiene is very poor, and this is a major disincentive to camp near the village in spite of the camping sites there.

Community Sama is an old settlement with a renowned monastery. It is inhabited by the *Nubri* people whose affinity with the *Bhotia* is very pronounced. Settlements look much similar to Lho. Sama is the principal village serving the Manaslu base camp, and local people do not encourage or even allow outsiders to work as porters for carrying loads from Sama to the base camp.

Samagoan - Samdo 3,758m

Trail The trail passes along a wide valley with forested slopes, and pastureland along the valley floor and morainic remnants near Birendra *tal*, a small glacial lake. Manaslu Peak, the Manaslu glacier, and the lake provide a beautiful scene. The trail then leads to the head of the valley, which narrows as one moves westwards. At places, the trail passes through masses of ice and

snow, which remain till the middle of June. This panorama gradually vanishes as one approaches Samdo.

Bridges No bridges are encountered along this section of the trail.

Drinking water Very recently the people have had a drinking water project initiated by the Gorkha Development Project.

Camping sites Between Sama and Samdo the valley is generally open, and camping sites may be developed in a number of places. Firewood becomes more scarce as one proceeds to Samdo where there are virtually no trees and shrubs. Local people descend towards Sama to fetch firewood, and local disputes over forest resources have been common ever since Samdo village was settled in the early 1960s.

Community Samdo is inhabited by Tibetan people displaced from neighbouring villages. The number of houses is about 20, and the people are mostly herders of yaks and sheep.

Samdo - Dharmasala, 4,348m

Trail The trail from Samdo quickly descends to an open field often marked on the map as Larkya *Bazaar* or Larkya Baluri. It is a historic place where Tibetans and Nepalese once bartered goods. There are no shops or any physical structures in this area. The trail from this point onwards begins to ascend a steep slope and finally reaches Dharmasala at about 4,400m. There is a small hut with a wooden roof that can shelter 10-15 people. Camping sites may be developed around the hut, but all fuel must be carried to the camp. This site serves as the base camp for crossing Larkya *La*, and signs of an emerging garbage problem are already visible in the area. Camping space is limited, and one would not recommend more than 10 or 15 tents at a time.

Dharmasala - Lyarka La, 4,970m, - Tabuche, 4,394m

The trail from Dharmasala to Larkya *La* is typical of any high-altitude trekking place in giving rise to breathing problems and altitude sickness. One should plan to arrive at the pass before noon, in order to avoid blizzards and cold winds. Accidents have occurred during recent years to ill-equipped or ill-clothed porters. The route goes over loose scree and boulders, and also

through ice and snow. Trekkers often leave Dharmasala at dawn and attempt to cross the pass in six to eight hours. There are no facilities to prepare food after leaving Dharmasala. After the pass the trail makes a gradual descent for about 40 minutes and thence drops steeply through unstable boulders and scree till it reaches Tabuche, which is relatively flatter. Tabuche has a good camping site with plenty of water from a nearby stream but scarcity of fuelwood discourages porters from camping there. Some big boulders serve as a rock shelter for local travellers.

Tabuche-Bimthang, 3,697m - Chalikharka, 3,000m

The trail from Tabuche to Bimthang follows a morainic deposit till one reaches the relatively green and forested valley of Bimthang. Bimthang has tea houses and a *dharmasala*. The valley is open enough to provide plenty of ground to develop campsites. Drinking water is obtained from the river, and local people consume great quantities of firewood available from nearby forests.

From Bimthang onwards, the trail passes through unstable slopes and morainic deposits. Wooden bridges serve the several small streams that are encountered. The trail then passes through rhododendron forests interspersed among fir trees. Yak herders have prepared sheds on flat areas to serve as campsites for trekkers. This route is spectacular in early summer due to the grandeur of the rhododendron blossoms. Campsites could be developed in a number of places which offer excellent views of Manaslu. Chalikharka itself is *goth* area for yaks, horses, and cows.

Chalikharka, 2,439m - Thonje, 1,939m

The trail follows the Dudh *Khola* Valley. Most of the time the trail remains at about 300m above the riverbed and eventually leads to a flattish terrace at Thonje, which has lodge facilities and some shops. From Thonje the trail passes on to a long suspension bridge to meet the Manang trail at Dharapani. The bridge is quite long but its foundation is dilapidated.

Thonje - *Tal,* 1636m - Jagat, 1333m

The Manang trail is a heavily used tourist trail with lodges and tea shops every now and then. However, the bridges over the Marshyangdi River are in a miserable condition, many of them having lost large portions of their deck.

The community consists of the *Gurung* people, and their fields appear to be fairly rich. Most houses have members serving in the Indian or British army. The Marshyangdi riverbanks have good camping sites except at Jagat, which is located on a narrow spur. Traditionally, this location was used to raise taxes on merchandise traded between Nepal and Tibet. Most villages in the area have water taps.

Jagat -Bhaundanda -Ngadi, 1,242m

The trail is wide and heavily used by mules. It passes through fields and terraces. The ascent to Bhaundanda is fairly difficult, and it is best to start the ascent at dawn. Bhaundanda has a number of tea shops and lodges. Plastic bottles and bags are littered all over the place. The community is a *Brahmin* one, as the name of the village indicates. From Bhaundanda, the path descends to Ngadi, a well-known *Gurung* village with lodges, tea shops, and local bars.

Ngadi - Besisahar, 788m

The trail becomes tedious, passing through hot valleys and cultivated fields. Besisahar, the headquarters of Lamjung district, is a long *bazaar* of all sorts of shops. There are few hotels and tea shops. It has a mixed community of the *Brahmin, Chettri, Gurung, Magar* and *Newar* ethnic groups. The trail from Khorlabesi all the way to Gorkha is inhabited, and facilities of varying quality are available.

6
Tourism Impact, Carrying Capacity, and Opportunities in Northern Gorkha

Introduction

This chapter will assess the implications of tourism in northern Gorkha. There is no information available on tourism in the southern foothills of Gorkha. However, by touring the area, talking to villagers, and judging the types and level of infrastructure developed by local people, one surmises that the volume of tourists along the southern foothills is negligible at present. Group tourism has only recently begun in the northern Manaslu region, there confined to areas along the bank of the Budi Gandaki River (Map 5). Following an assessment of the area's carrying capacity, opportunities for tourism development in the southern and northern Manaslu regions will be identified.

The areas being considered on either side of the Gorkha Himalayas are remote and backward areas, as has already been discussed in Chapter 5. Despite their backwardness, these areas have a considerable endowment of HER, which, if properly utilised, can provide new opportunities for development. Tourism development in these areas has substantial scope for providing the necessary stimuli for local development. However, for this to happen there has to be a major shift in how MTD is viewed and how MCD can be linked with it. It should be noted that this chapter is not a planning document ready to be implemented. It is rather a document that identifies projects and therefore presupposes further investigations before project implementation can begin.

The Current Tourism Situation

After 1991, when the upper Gorkha region -- the Northern Himalayan Foothills - was opened to tourism, there has been an increased hope among a large number of local people that tourism will bring sustainable benefits to them. The NMR has witnessed its third season now (fall of 1994). Only guided trekking tourism is permitted in the NMR. In the SMR, except for some occasional trekkers, tourism does not exist in this region.

All tourists that desire to visit certain areas in the mountain regions, including the NMR, have to acquire a trekking permit from the Department of Immigration. The trekking fee charged varies from one location to another.

The trekking permit fee to the Manaslu region, as of August 1994, is provided in Table 6.1. Separate trekking permits are required for each area to be trekked in.

Table 6.1: Trekking Permit Fees For Northern Manaslu Region

Area	Duration	Rate	Extension	Type
Manaslu	September-November	US$ 90/week	December-August	US$ 75/week

Source: Visa and Trekking Information: Department of Immigration August 1994, Nepal.

Mountaineering is also permitted in the area. There are 84 peaks in various mountain ranges opened for mountaineering through the country. Of these 84 peaks, the number that are opened for climbing in the NMR includes Mt. Manaslu, Himal Chuli, Peak 29, Baudha Himal, and Huin Chuli.

The government, after opening the Manaslu area for guided tourism, made it clear that part of the revenue collected (about 60%) in the form of trekking permit fees would be used for community development. The number of trekkers that visited the Manaslu area in the last two seasons is presented in Table 6.2. However, this revenue is still in the hands of the government.

Table 6.2: Trekking Tourism in the Northern Manaslu Region

Year	First Season September-November	Second Season December-August	Total
1993/94	209	219	421
1994/95	NA	104*	104

* Does not account for the entire seasonal permits issued.

The present volume of tourism is clearly not sizeable enough to have any lasting impact on the Manaslu environment or the economy. But things may change; tourism is likely to grow over time, and its impact on the environment and economy is likely to become more pronounced.

Tourism Impact

This trek is a hard and strenuous one requiring almost a month to make the round trip. The trek usually starts from Gorkha district's headquarters and can take in a number of ways, but ultimately all routes converge at Yaru. The most popular of these trek routes starts from Gorkha *bazaar* and heads straight north along the eastern edge of the district or the western bank of the Budi Gandaki River until reaching Yaru. The second trail goes from Gorkha *bazaar* and heads westwards to Chorkatee and Choprak and ascends to the ridge. For nearly three days the trail traverses the ridge until reaching Ghyachok, from where the trail descends to the Daraundi River and begins a steep climb to Barpak. This trail also ultimately reaches Khorlabesi near Yaru and then follows the main trail. Another trail that is relatively difficult throughout the year and can be recommended only to semi-mountaineers is over Rupin *La*. This trail can be taken through Barpak and heads straight towards Baudha Himal and Rupin *La* (5,300masl) pass. This trail is invariably traversed under snowy and icy conditions and requires a great deal of preparation. According to local accounts, many attempting this trail have had to turn back because of inhospitable factors (see chart below). Yet another trail originates from Dhading. This trail descends through Dhading district to the Budi Gandaki river near Aru Ghat and then proceeds along the main trail. Usually the trek passes through the Upper Budi Gandaki Valley, over Lyarka *La* (5,500masl), into Manang and Besi Sahar and finally back to Kathmandu. Some reach the last village near the Nepal-Tibet border at Samdo and return back via Gorkha or Dhading to Kathmandu.

Presently the volume of tourism in the Manaslu area is still very small, and thus, the impact, whether positive or negative, has not been as strong as in other older areas. However, if more and more tourists continue to visit this area under the present state of infrastructure and management, the consequences are predictable. Negative effects are likely to dominate the positive ones, and local people are unlikely to reap economic benefits from tourism. The scope for local people to obtain benefits is limited by the lack of overall development in the area.

In the first place, group tourists are self-sufficient for food and shelter, which constrains any direct contribution to the local economy. Even if this constraint were not there, for example, if FITs were also permitted to visit the area - the level of production of food and services is so meagre that many households

would not know how to benefit from tourism. Households willing to sell whatever little food they had to the tourists for the immediate cash reward it brings would likely suffer in the end from an already existing food deficiency problem in the area. Local prices would also likely escalate, with a negative impact on a large majority of households involved in the trade of such products.

Seasonal migration from the area has already been discussed. Portering jobs are also not likely to benefit the local people since porters are hired generally from Kathmandu, Gorkha *bazaar* or other starting points of the trek. Other forms of benefit do not exist currently.

Since tourism has only opened recently in the area, the impact on the environment has not surfaced visibly. Some local people are trying to reap benefits by renting camping grounds and selling firewood. The only places where such efforts have been made are Jagat and Lho. The campground in Jagat is worth mentioning since it has water, kitchen, and toilet facilities, although their quality needs improving. In Lho, a campground on a hill at the edge of the village has been set aside for camping purposes, but it lacks facilities, and during the peak tourism season the area fairly fills up with toilet tents, garbage, and litter. Thus, if things continue to progress as at present, the negative impact on the environment that has been witnessed in other parts of Nepal will undoubtedly emerge in the Manaslu region as well.

In summary, the level of community development in the areas on either side of the Himalayas is so meagre that local people have not been able to respond to the opening of tourism in their area. Given the present style of self-sufficient group tourism practised in the area, the scope for the local community to benefit on a larger scale is virtually absent. Garbage, pollution, and increased harvesting of trees to meet the firewood needs of tourism will result. The ultimate outcome will be similar to that experienced in other mountain areas of Nepal.

Critical Factors

The low level of tourism in the area, and the even lower level in the southern foothills, has not resulted in any forms of serious impact, and hence critical factors cannot be specifically pointed out at this stage. However, if tourist numbers increase, the state of infrastructure does not develop, a code of conduct is not established (for tourists, agencies, and local people), and local people are not provided with adequate opportunities to benefit from tourism,

the negative impact that has been witnessed in other mountain areas of Nepal will surface in this region too. Such an impact will give rise to perverse incentives which will be reflected by both the host population and the tourists. Therefore, at this stage, only a discussion of critical areas, resources, infrastructure, and institutions will be conducted.

Critical Resources and Areas

The critical resources identified in this section refer to area 1 identified in Diagrams 1 and 2. These areas are characterised by fragile and sensitive HER, and any form of development should in no way be allowed to disturb these resources. Since these critical resources are found in specific areas, the critical areas are also identified.

Rare Species. Species like *Larix himalaica* (which occurs in the Lho area), *Cyathea spinulosa* and *Toricellia tiliaefolia* (which occur in the Budi Gandaki Valley near Philim) are very rare in this area as in all of Nepal. Their occurrence in the northern Gorkha region increases the value of the area, but if no proper care is taken for their conservation they will disappear from the region forever.

Endemic Species .There are very few endemic tree species in Nepal, i. e., species found only in Nepal and nowhere else in the world. One of them is *Homalium nepalense*. This species commonly occurs in the Budi Gandaki Valley at 1,000 to 1,600m, and is an assest to the area.

Orchids. The climate of Mamche *danda* (2,800m) between Barpak and Laprak is suitable for orchid cultivation, as it is very moist. Many kinds of epiphytic orchids can be grown there, and the villagers can benefit from this.

Wildlife and Wildlife Habitats. Midland Nepal is not renowned for large mammals. Local people often refer to barking deer, common leopards, jungle cats, mongooses, yellow-throated martins, porcupines, wild boars, and black bears. Among the more visible animals, mention may be made of rhesus monkeys, langur monkeys, and Assamese monkeys. At higher altitudes, *ghoral* are often hunted by local *shikari* (hunters). Musk deers are reported to be found in the alpine zone.

Birdlife is much pronounced all along the midland region. Birds are numerous at the interface between forests and fields. Thirty to 45 species of birds are recorded in a day, 50 per cent of them sighted in cultivated areas. Birds of the *terai* and the Indo-Gangetic plain, such as the little green heron, brown-eared

bulbul, and drongo cuckoo, have also been observed in the lower hills of Gorkha.

Yaru Landslide and River Damming.The Yaru River meets the Budi Gandaki at about 1,300masl. The valley is wide, with a canyon-like constriction at either end of the Yaru Valley. The mighty river leaves the Yaru Valley through rock debris that has fallen down from lateral slopes on either side of it. The trail passes over unstable rock debris and boulders. It is regarded as one of the most difficult stretches of trail to negotiate in the Manaslu circuit.

Fresh landslides could easily dam the river, causing the formation of a lake. An outburst flood from such a lake could cause great damage to the lower valley as far as Aru Ghat. A similar vulnerable situation exists in the Jagat gorge, although the slopes there are more solid and stable. Seismic activity could trigger such damming of the Budi Gandaki River at several points between Jagat and Sama. A communications early warning system would help to reduce the hazard from debris torrents.

Glacial Lake Outburst Flood (GLOF). Manaslu area is rich in glaciers, but an actual mapping of glacier lakes or an assessment of the potential threat of outbursts from them has not yet been made. GLOFs are regarded as a potential hazard for most glacial-fed rivers. Pakar Lake to the south of Larkya *La* is one of the most obvious threats. Birendra *Tal* at the toe of the Manaslu Glacier, on the other hand, is rather small and poses no serious problem. However, avalanches reaching the lake could trigger floods in areas lying near Sama village.

Nyak Cliff. Soon after its confluence with the Shiar Khola, the Budi Gandaki forms a very narrow and canyon-like gorage. It is bordered by steep cliffs, and the trail is cut out of the rock. It is a narrow and intimidating trail even for experienced trekkers. The stretch is covered in about an hour's walk. It represents one of the major bottlenecks for pony travel in the Upper Budi Gandaki Valley. An alternative route would soon come into demand should a larger tourist influx occur.

Larkya *La*. Crossing Larkya *La* is an acceptable challenge for most trekkers. The pass lies at 4000m and has to be crossed before noon, like any other high pass. It takes about six hours to cross the pass from the campsite at Dharmasala. The path is gradual but long. A few people, especially porters poorly clad for such heights, have already been the victim of Larkya *La*'s

inhospitableness. Trekkers need to pay close attention to the weather forecast for the day. An emergency sheltering place near the pass would save human lives. The Manaslu circuit over Larkya *La* and other trekking circuits above 4,000m in altitude are generally regarded as minor undertakings by trekking parties. Thus, the porters and support staff do not obey safe minimum standards for clothing, food, and other requirements. Therefore there is a dire need to prescribe safe minimum standards for crossing high-altitude passes. Communications' facilities for rescue operations should be part and parcel of such a prescription.

The Prok-Namrung Forest. The main valley of the Budi Gandaki is windswept for most of its length, but side valleys have forests of high biodiversity value. The mountain slope from Kal *Tal* to Prok and thence to Namrung side exhibits a juxtaposition of more than eight vegetation zones in a single sweep. Above 4,000m there is a vast stretch of alpine grassland followed by the bushy vegetation of dwarf rhododendrons and junipers, and they in turn by the more woody vegetation of birches and rhododendrons. At about 3,000m the sub-alpine zone is dominated by pure stands of oak forest (*Quercus semecarpifolia*) interspersed with coniferous forests in ravines and morainic habitats. At the lower altitude of 2,500m pure stands of rhododendron are often met with. Towards the valley floor the forest is very mixed and diverse, and includes a number of broad-leaved trees, such as *Prunus nepalensis* (cherry), *Betula utilis* (laurels), *Machilus* sp. (maples), *Ilex* sp. (holly), and *Cornus capitata* (dogwood). At places *Pica smithiana* (Himalayan spruce) and *Tsuga dumosa* (Himalayan hemlock) grow to 70 or 80m tall. Forest birds are seen and heard in abundance, and langur monkeys are also much in evidence. Musk deer, barking deer, Himalayan black bears, flying squirrels, and wild goats (*ghoral*) are often reported by local people. The Prok-Namrung sector of the Budi Gandaki is of special significance for its biodiversity and warrants immediate measures to protect and conserve it.

Land of Conifer Diversity. The Budi Gandaki Valley at Lho (2,700m - 3,000m) is interesting due to the richness of conifer species found there. Larch (*Larix himalaica*), spruce (*Picea smithiana*), hemlock (*Tsuga dumosa*), blue pine (*Pinus wallichiana*), fir (*Abies spectabilis*), and yew (*Taxus baccata*) occur in one area. In no other part of Nepal has there been reported such a combination of conifer species. Thus, this part of Nepal can be said to be a land of conifer diversity. The other gymnosperm species found in the area are *Ephedra* sp. (commonly found in open places) and *Juniperus* sp. (which occurs on dry rocky slopes). Phytogeographically, the valley is important because the distribution of *Picea smithiana* in Nepal ends there. No forest of this species

has been reported further east of it. The valley is also the western limit for the distribution of *Larix himalaica*. Therefore, it is a boundary area for the western as well as eastern plants.

Sama-Samdo Birch Forest. The Budi Gandaki Valley at Sama near Birendra Tal supports birch and juniper forests on the slopes. East-facing slopes are over 80 per cent birch, while west-facing ones have some blue pines below the birch zone. The valley further opens up and extensive forests of birch are met with. These areas also need immediate protection from encroachment by wood traders and trekking parties.

The Syala Forest. Just a few kilometres away from Lhogaon is the Syala terrace, which harbours one of the finest fir forests of Nepal. It is facing severe threat from local people, with deforestation going on at an alarming rate. No government mechanism has reached there, and a large number of logs is reported as being moved across the border on yaks. Protection measures should be taken immediately in concert with the local villages.

Serang Valley. Serang Valley lies mostly in the Bhi Village Development Committee (VDC). Traditionally it belongs to a culturally distinct geographical area called Kutang in the local Tibetan language. Kutang's special features include its distinct dialect, known as *Kuskad,* and the artistically unique *chorten* and *mane* walls, which consist of thousands of stone slabs carved with linear drawings of deities, gurus, gods and goddesses, and inscribed prayers. The valley, drained by the Serang (Shringi) *Khola,* is hemmed in by mountain crests and peaks in the form of a horseshoe, which opens towards the confluence with the Budi Gandaki. The valley is approachable only from two routes: one passing through the Tsak (Chhak) and Kak villages, after crossing the Budi Gandaki over a wooden bridge near Gap, and another passing from Bhi village through a small settlement called Serang on a spur that overhangs Bhi. Both routes involve steep ascents of over 5,000ft from the riverbed. The Serang Valley has maintained its sacredness and sanctity thanks to the fact that it is remote and difficult to reach. The Kyimo Lung is well known as a seat of learning, a pilgrimage site, and a centre for meditation.

This valley is uniquely rich in wildlife, especially in *ghoral* and *thar*, which congregate in herds of 50-200 and graze near the monastery. The Serang *gompa* site lies on a pretty plateau nestled in the lap of a conical hill up against the main slope of Serang Himal (Shringi Himal). The site of Serang *gompa* is all the more conspicuous due to a grove of about a dozen cypress trees, which

are over 80 ft tall. These are cultivated plants, presumably brought from the eastern Himalayas, most likely from Bhutan.

Infrastructure

As long as trails such as those along the Nyak cliff and the Yaru landslide exist, neither can tourism be promoted nor can local people benefit from efficient transportation. The Larkya *La* trail is another dangerous trail, and promoting tourism along it may be irresponsible. In general, trail conditions in the tourism area vary in quality. A major reason why tourism and trade have become the world's largest industry is the development of swift and efficient transport systems. If tourism in the Manaslu area is to develop, trail development is a must. The current condition of the trail cannot possibly facilitate healthy growth of tourism or local community development. Along with upgrading and improving old trails, new trails will have to developed in many places if tourism development is to provide an impetus to the region's economy. Likewise, many bridges need to be improved, upgraded, and built to facilitate tourism. A campground with kitchen and toilet facilities, water supply, energy etc need to be developed in an integrated way in order to overcome the critical infrastructure situation in the region and without its development the carrying capacity will be serious jeopardised.

The provision of facilities to porters has to be considered as well. As has already been indicated, porters cannot be viewed differently than tourists. The demand for firewood by porters is a derived demand of tourism, and hence the needs of porters should be taken into account in developing tourism facilities. Currently porters have to sleep in the open, under rocks, inside caves, or sometimes in private homes. In areas where settlements do not exist, porters have great difficulty keeping themselves warm during the night, unless there is a fire that keeps burning all night. These fires use scarce juniper plants that take decades to reach 20-30cm in height. Porters also need toilet facilities. Currently the practice is to use nearby water sources. This practice has to be stopped lest water sources become polluted. Toilet tents are also often pitched near water sources, with similar results.

Institutions

Even if tourism and the critical factors were to receive priority, sustainable development would still be difficult to realise if local people's participation were not forthcoming. Given group tourism, tourism can continue without local people getting involved, and this situation will ultimately generate perverse

incentives, with ramifications on many levels. Therefore, the need to organise people into grass-roots' institutions should be seen as an important step towards harnessing the HER. Such organisation will help to create strong linkages between tourism and community development.

Carrying Capacity

The SMR and NMR are both environmentally rich areas but, at the same time, are also sensitive to human interference and are already under stress. Currently it is difficult to assess the carrying capacity of the area for tourism development. However, given the conceptual model discussed in Chapter 2, it is possible to offer conjectures.

In the first place, there is no linkage between community development and tourism, although the latter both use Himalayan resources. The scale of competition for HER is currently small, but, as tourism grows, it will increase. Tourism will bring porters who require food and firewood. Both these resources will bring cash returns to the local people, who will compete among themselves to sell these products to the tourists. The campgrounds will be degraded by garbage and pot-holes made by toilet tents, as there are no alternative provisions. Campgrounds near water sources will pollute them.

The supply side is so vulnerable that, as the demand pressure continues to increased, negative impacts will gradually become manifest. Stated differently, the carrying capacity of the area is already so fragile and unmanaged that current levels of tourism are bound to have a serious negative impact on the environment. Without being linked to local community development, tourism can neither prosper in this area nor benefit the local people.

Overall infrastructural development in the district is still far from adequate. Gorkha *bazaar* itself, though served by an all-weather blacktop road, has limited accommodation facilities. Water supply conditions are far from optimal in it. Along all the trekking routes, the types of infrastructure required by tourists are virtually absent.

Gorkha's Tourism Resources and Potential for Development

Tourism development in Gorkha district has received attention ever since the 1972 Master Plan, but little has happened so far. More recently, there has

been a renewed interest in tourism development in the district. In a recent study carried out by Touche Ross for the Ministry of Tourism and Civil Aviation, the need to diversify tourism has been further highlighted, and Gorkha district has once again come into the picture as a potential area for tourism development. Currently, there is an ADB-Manila-supported infrastructural development programme going on in and around the district's headquarters. Since tourism development has already received priority in Gorkha, this provides a first justification for emphasising MTD in the district. The district possesses comparative advantages for MTD. The district is relatively accessible, about four hours by motor from Kathmandu. This accessibility will have to be further improved in order to enhance tourism benefits. And for the promotion of MTD, helicopter services will have to be developed immediately.

The district also lies between the two major tourism hubs of Nepal, namely Kathmandu and Pokhara. Its central location thus can be seen as a strategic point. Overcrowding in Pokhara and Kathmandu, as well as in other existing tourist destinations in the mountain areas, can be avoided if tourists are diverted to Gorkha. Some of the scenic beauty presented in the greater Pokhara region is also provided in Gorkha. Chitwan National Park, which is the area visited by most tourists outside Kathmandu and Pokhara, can also be linked to the Gorkha circuit. From this circuit, there is a link to Lumbini, the birthplace of Lord Gautam Buddha. Thus, Gorkha district is a central point in relation to Kathmandu, Pokhara, Chitwan, and Lumbini. However, more important than the above factors, Gorkha possesses unique natural areas and, coupled with the above factors, provides enormous scope for tourism development. On both sides of the Gorkha Himalayas there are numerous pockets of territory suitable for MTD. Additionally, tourism development can be envisioned to promote mountain community development, as will be discussed below.

New Mountain Tourism Products and Markets

Mountain tourism development in Nepal has essentially been demand driven (see Banskota and Sharma, 1994c), i.e, local people have responded to meet tourist demands in areas visited by tourists. Supply side management has been completely missing, as a result of which new tourism products other than trekking tourism have essentially not evolved. Examining the trend in tourist expenditure over the last decade makes it evident that in real terms there has been no growth. The estimated direct and indirect expenditure per tourist per

day has averaged less than $270 in real terms for the last decade or so. The environment continues to deteriorate, and a wide section of the community where tourism exists in the mountains is left behind, with no means to improve their living standards.[1]

Rafting tourism is gaining in popularity, but this product provides little scope for benefitting the mountain people that live high above the rivers where rafting goes on. Some scope is also provided in Gorkha along the Budi Gandaki and Daraundi Rivers.

Although diversification of areas has received attention ever since the 1972 Master Plan and continues to be emphasised, there has been little progress in this respect. With the returns from trekking tourism being as low as they are, on the one hand, and with large untapped potential to develop new products, on the other, area diversification alone is unlikely to ensure larger benefits, nor is it likely to bring in more high-paying tourists. New 'mountain tourism products' have to be developed. These new products have the potential to benefit local communities, as will be discussed below. The development of new 'mountain tourism products' has potentials if one realises that HER have different values and that there is an increasing demand for such products.

Market

Tourism is the one of the world's largest market sectors. Each year millions of tourists travel within and outside their own countries. Relative to other Asian countries, tourism in Nepal has grown at a slower rate, primarily because Nepal does not fall within the mainstream of various routes (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 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 gaining a larger share of the total arrivals. If Indian tourists are included, they become the largest group. Besides, international data indicate that tourists from the 35-55 age group from industrialised and newly industrialised countries are travelling more and more. This group has the greatest amount of

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[1] The development of new products and markets is not only important in the Gorkha region but also in the ACAP area as well and other mountain areas of Nepal where tourism currently matters and where there is potential for growth.

income and is generally inclined to take several holidays annually rather than one long vacation (McIntyre 1993).

Many parts of South-east Asia do not have the types of mountain environmental resources Nepal has. The increasing concern for global environment and its conservation has fuelled interest in visiting such places as the Himalayas. All the way from Japan to West Asia, Nepal is the only country that has mountain resources that are relatively accessible to a wide range of international tourists. India has such HER, but, due to problems in places such as Kashmir and northern Uttar Pradesh, such HER are not accessible to many tourists who desire to take advantage of 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 Environmental Resources is relatively easy.

Nepal's Himalayan resources continue to attract interested persons from the traditional tourism markets of Europe and America, and these markets are likely to remain strong. Moreover, the growth of income of South Asian tourists has been increasing at one of the fastest rates in the world. Income growth in India, in particular, has been increasing modestly within the last couple of years. Growth of income in neighbouring countries, therefore, provides additional scope for developing HER for MTD and hence MCD. Clearly, the market is there for Nepal to capitalise on; what is required is a vision of how to develop new products based on HER for marketing to tourists and thereby provide a basis for sustainable mountain development.

Growth of income in neighbouring countries provides enhanced scope for offering new tourist products in new destinations. With economic development, people are finding it harder and harder to take long vacations; short trips are becoming in greater demand. Furthermore, international tourist spending has also been increasing in many countries, but this spending in Nepal has remained more or less constant in real terms, primarily due to the lack of spending outlets.

The traditional trekking tourists that visit Nepal will continue to do so, and there are many areas that cater to them already. However, new areas should be able to provide new products that are of reasonable quality and accessible within a short period of time. Accessibility will be important since tourists will want to visit new areas only briefly. A market for new products should

therefore not be a problem. The problem lies in developing new products and marketing them.

Mountain Tourism Products

The type of tourism development that is being envisioned does not include the traditional type of trekking tourism currently popular in Nepal. The latter type of tourism prevails in all the mountain areas of Nepal currently, whereas in a new area like Gorkha the new tourism product must be able to be of greater benefit to the local people in that it integrates the local economy with tourism. This will require community participation to offer tourists a variety of high-quality products in order to increase their stay. Needless to say, the new products have to be environmentally friendly.

What is being proposed as a new tourism product is based on the concept of mini-tourism hubs, or simply hubs. This concept calls for a variety of tourism products to be developed based on HER, with the hub being a central point of entry and exist. There could be several hubs on both the southern and northern foothills of the Gorkha Himalayas, offering a variety of different products for tourists to enjoy.

Such products have to be varied and spread over an extended area but still be accessible within one or two days from each hub, so that tourists have a range of options to select from. The more varied these products are, the greater the scope for benefitting a wider section of the community. Developing these new and varied products will make it possible to increase tourist nights in a hub, as there will be multiple products for tourists to access. However, all products developed must maintain high standards, and the services provided must be firstrate if tourist nights and the occupancy rate of the hub are to be increased. Only then can larger benefits be generated from mountain tourism, and, with linkages to the local community, mountain tourism can provide the badly needed stimuli for its development.

A major aspect in developing such a hub will be the development of an efficient, reliable, and quick transport system. Travelling in the hill and mountain regions of Nepal, although very enjoyable, takes a great deal of time and generally must be done on foot. Nepal has already developed a market for such trekking tourists, and there is no reason to develop new markets for the same type of tourists. Substantial scope already exists for developing such areas further. There are many places where trekking tourism is possible, and Gorkha need not follow the development of similar tourism products.

Access to hubs must be facilitated by helicopter services from Kathmandu, and this applies to other locations if the demand exists. At the least, the service between Kathmandu and the hubs must be assured. With the new helicopter services that have developed in the country, promoting such efficient transportation should not pose problems. Futhermore, the hubs and their various satellites must be equipped with reliable communication services. The mini-hub centres should have standard accommodation and food facilities. They must be managed by professionals, but for the semi-skilled and unskilled jobs, local people must be trained and given preference. Local people should be trained in a variety of activities and should be involved in producing perishable commodities for the hub and in acting as guides in a variety of tours to be developed in the area.

As for infrastructural development (trails, accommodation facilities, etc), standard codes need to be drawn up so that it blends with the local environment. Local raw materials should be used to the extent possible to provide income and employment opportunities to local communities. Other issues also need to be addressed.

Appropriate fees for the different tourist commodities must be levied, and such fees should be used to pay local guides as well as those involved in local community development. Part of the tax revenue from accommodation facilities should also be channelised into local development.

With the rapid growth in income in many countries of the world, with more and more people travelling, and with the demand for enjoying nature becoming greater, the scope for developing a mini-tourism hub appears to be reasonable.

Some new mountain tourism products suggested for development in the Gorkha region are identified in this section.

Pure Nature Trails. The environment on both the southern and northern foothills still remains pristine. The quality of this pristine environment is second to none in the entire Himalayas.

Sightseeing Adventures. Some areas within the regions contain spectacular scenes of the mighty Himalayas and the Mahabharat Range across the entire horizon. Ganesh Himal, Baudha Himal, Himal Chuli, Manaslu, Annapurna etc can all be seen in one wide panorama.

Biodiversity Tours. The pristine nature of the Himalayan environment found in these areas provides enormous scope for developing biodiversity tours. Some floral species found in the northern area are endemic to this area, and other species endemic to Nepal are also found in this region. The floral diversity of these regions has still not been adequately documented. During a month's trip though the settlement area, the study team identified over 200 species of birds. Although observing other wildlife is more difficult, it also abounds in this region, more so on the northern side than on the southern. Birds are plentiful on either side.

Glacier Tours. Glaciers are accessible from both sides of the region, but, as with all glaciers, such tours can be risky. However, reasonably accessible glaciers can be identified and tours can be developed.

Camping Tours. Many tourists that visit the hubs may also want to experience pure wilderness camping.

Cultural Tours and Village Tourism. Many tourists are interested in visiting local communities, observing their lifestyles, experiencing their food, and enjoying other aspects of the local community's cultural assets.

Helicopter Tours. Helicopter tours can be scheduled on a demand basis. Helicopters will have to be used for connecting the hub centres of Gorkha with other areas of the country.

Others. Many other activities can be identified, such as rock climbing, tobogganing and skiing (which may be seasonal), white water rafting etc.

Proposed Areas for Hub Centres

Although many parts of the district have potential for tourism development, the present study identifies two broad areas for the development of hubs in the district. On the southern foothills the proposed site is the Siran *danda* area, and, on the north, it is the Prok area. Both of these areas are different from a geographical point of view, and thus their environments also differ so that each provides scope for developing different mountain tourism products. Developing tourism on either side of the Gorkha Himalayas will help diversify tourism development, reduce competition in the relatively backward northern region, and enhance tourism-led community development. Since poverty is believed to be positively correlated with environmental degradation,

community development will help promote conservation, even as tourism development will enable local communities to develop.

The **Southern Manaslu Region** basically consists of the VDCs of Barpak, Ghyachok, Simjung, Jaubari, Laprak, and Uhiya. The **Northern Manaslu Region** consists of Sirdibas, Chhekampur, Chumchet, Bhi, Prok, Lho, and Samagaon. An appropriate location needs to be identified in these areas for the development of hubs. Other locations for the development of other products also have to be identified. Product development should not occur in areas too close to one another, to avoid congestion as well as to reduce competition among local communities in catering to the tourists.

Role of Institutions

The new type of tourism envisaged will require a strong institutional setting at the grass-roots' level in order to maintain close links between tourism and community development. Currently, the Gorkha Development Project (GDP) is supporting a number of activities at the grass-roots' level to improve the socioeconomic well-being of the poorest of the poor in the district. Following a grass-roots' philosophy, it has established a strong institutional framework at the base to carry out development activities. These activities are carried out on the initiative of the local people themselves. Among the different activities supported by GDP is tourism development. Furthermore, GDP has NGO project partners that carry out different community-level programmes in the district. Thus GDP already has a strong institutional presence in the district. Therefore, it is recommended that GDP should be given the mandate for the overall supervision of mountain tourism for local community development in Gorkha.

GDP has already established a strong grass-roots' organisational framework for community development. If a new institution was established for developing tourism, it would take considerable time and effort to get communities to participate in tourism development and scarce resources would be spent in duplicating work, which might have negative implications for the current work being carried out by the GDP. If people are unable to participate in tourism development, it is unlikely they will benefit from it. Unless their participation is assured from the very beginning, negative effects will undoubtedly surface, resulting in the kind of tourism that prevails in many other parts of the mountain areas of Nepal.

It is unreasonable to expect that local people will participate in tourism development as an institution unless they are provided with both short-term

and long-term economic incentives by simultaneously launching complementary programmes to enhance both individual and community well-being. GDP has already begun launching confidence-building projects in the district. Through assessment of potentials, GDP can help local communities develop certain types of infrastructure that will enable them to benefit from tourism. Additionally, through its project partner, namely the Rural Self-reliant Development Centre (RSDC), and others, grass-roots' institutions have been formed in over 50 of the district's 69 VDCs, including the remote and inaccessible north. Income-generating activities are already being carried out in many of these areas. Different community-level programmes, such as those for drinking water, trail construction, and suspension bridges, have either been carried out or are being carried out through GDP support. The few kilometres of trail currently being constructed between Philim and Chhekampar in the remote north; the drinking water, vegetable production, health, sanitation and hygiene programmes; the suspension bridge over the Trishuli River at Fisling and near Beni Ghat; and many more endeavours can be cited as examples of successes in community development through grass-roots' organisations initiated by GDP. Additionally, CECODER, another GDP project partner, is working actively in Gorkha to help the community develop marketing skills and to help in some aspects of village tourism.

However, GDP will require additional resources to develop MCD and MTD. In the northern foothills, resources are already being generated in the form of trekking fees, 60 per cent of which have already been committed by the government for the area's development. This resource should be made available to GDP to carry out both MCD and MTD in this area. GDP should additionally motivate the private sector to invest in tourism in the areas identified.

In the southern foothills, GDP will have to find additional resources, and here the private sector can be provided with appropriate incentives to invest. GDP should develop standards, norms, and codes of conduct for all to follow. Current activities carried out by GDP should be strengthened or modified to promote tourism-supporting goods and services. ACAP has a great deal of experience in tourism, and GDP should combine its successes with its own advantages to promote both MCD and MTD. An effective system will be required to monitor the environment as well as both MCD and MTD.

A number of sources for tapping resources exist, including sources available to GDP. Resources can be used to develop activities that contribute to

community development as well as integrate the latter with tourism development. Tentatively these sources are as follow.

- VDC funds. Recently HMG has given a development grant to all VDCs.
- Confidence-Building Projects. GDP carries out confidence-building projects in VDCs.
- GDP's Ongoing Support Programmes Through Project Partners. Many programmes that GDP supports through its project partners are already helping many communities, and such programmes should be continued. Income-generating activities can be further diversified to include poultry development catering to the hub centres.
- Community Savings. The grass-roots' organisations all have savings' schemes. Members can take loans from these schemes for a variety of purposes. GDP can provide strong support to such institutions in channelling their savings to invest in activities that help generate income from tourism.
- Area Permits. This source is similar to what is now trekking, conservation area or park entrance fees. ACAP receives the resources generated from a conservation fee to carry out its programmes in the Annapurna region. Likewise, the government is already committed to providing 60 per cent of the resources raised from a trekking fee in the Manaslu region. Similar fees should be levied in the southern foothills and the resources used to develop both MCD and MTD.
- User Fees. Along with area fees, local fees for various activities can be charged to visitors.
- Employment. The hub centres will have to be constructed, and local people can be hired as unskilled or semi-skilled labour. GDP can initiate a labour certificate programme to save the income earned to help local people channel their resources to productive investments. Additionally, during the construction phase, local raw materials will be required for which the community should change. This fund would be an additional source of revenue. Permanent employment in the hub centres will be generated. Local people should be trained to fill the posts of the various guides required for the new products.
- Other Sales. Local people can produce vegetables, meat, and handicrafts to sell to tourists through the hub centres.
- Other Sources. Community lodges can also be built to generate revenue for community development; cultural programmes by different communities can be staged in the hub centres. Handicrafts can be produced to sell to tourists.

After the tourism development component is introduced, GDP will need to develop a plan; identify areas for human resource development; develop partnerships with the private sector, including financial institutions; develop a code of conduct for local people and tourists; and develop a monitoring system for tourism and the environment.

Lessons from ACAP

ACAP has been able to demonstrate that providing positive incentives to local people can promote conservation, and this it has done through its partnership approach. These benefits have occurred through a variety of subsidised community development programmes, conservation education programmes, and the introduction of firewood-saving technologies.

Although subsidies are not a sustainable approach to development, they may nevertheless be necessary, especially in parts of Gorkha that are remote and inaccessible and where poverty is perhaps more chronic than in the Annapurna region. Subsidy programmes must be carried out on a case-to-case basis and should not become a general policy. Furthermore, GDP should attempt to use the existing national framework of subsidising projects by involving local people with government institutions such as the ADB, rather than getting directly involved in such subsidy programmes.

ACAP has initiated conservation education programmes to motivate people to change perverse behaviour. This is an important innovative approach and is likely to be sustainable. It will be to GDP's benefit to understand such programmes and adapt them to Gorkha's context.

The introduction of fuel-efficient and alternative energy technology in Ghandruk is an example of how external knowledge and technology have helped minimise pressure on forests and enhanced carrying capacity (ecological) through the conservation multiplier effect. GDP should study this aspect carefully, assess the social benefits and costs of the programme, and investigate the possibility of introducing this programme in Gorkha.

ACAP's experience suggests that those who reside outside a village or community that has agreed to conserve forests are difficult to assimilate into the conservation process. This could be because those residing outside the area, who have to depend on forest resources, have no alternatives. Also, the poorer sections within the village could face similar problems. This situation

therefore warrants a new approach: to devise a forest management committee in which users outside a community or village are also included.

ACAP has been able to build an institutional base for women to participate in conservation and development work. Women's activities have enhanced the local community's pride in its culture. Cultural conservation, though, has not received much attention, so that the efforts made by the women of the Annapurna area are worth being properly documented and disseminated in other parts of Nepal, including Gorkha. Women have also been active in spreading the use of new fuelwood-saving technology.

ACAP's experience in the field of tourism does provide scope for dissemination in the Gorkha region. However, in the case of Gorkha there will be a need to diversify tourism products so that the tourism can spread out to a wider community without adversely affecting the environment. Gorkha will have to give greater attention to income-generating activities that can be supported by tourism than has been the case in ACAP.

Another important lesson that can be learned from ACAP is that success of a programme depends on community characteristics. For example, Ghandruk as a model village of ACAP possesses unique characteristics in terms of leadership capability, resource endowment, etc, which may not be easily available in Gorkha. In other words, although there many lessons to be learned by Gorkha from ACAP and vice versa, no one experience can be easily replicated, since each area has its own problems and potentials and its own types of people. ACAP's legal status is also is very different from that of GDP. Thus, the challenge will be how the lessons can be adapted to suit local conditions.

7
Guidelines for Sustainable Mountain Tourism

Introduction

In 1992 over 300,000 tourists visited Nepal, of whom about 70 per cent came for pleasure and 11 per cent for trekking or mountain climbing. Tourism has been important for Nepal in terms of foreign exchange earnings and employment generation. Additionally, mountaineering tourism has been able to penetrate remote areas of the country and bring income and employment opportunities to these inaccessible regions. Despite these benefits, which may be considered only the tip of the iceberg, Nepal's tourism potential remains virtually untapped. The growing concern over environmental degradation in both urban and rural areas, especially in the mountains, has become an obstacle to promoting tourism. At the same time, the lack of development of new tourism products in new areas, poor marketing, and policy and institutional weaknesses have constrained the growth of this industry. Tourism development will require a better and more friendly relationship with the environment. Tourism in rural areas will require greater emphasis on local development. More important, tourism is changing, and understanding how it is changing becomes critical if Nepal is to continue to attract more tourists. Unless the above issues are adequately and effectively tackled, future growth in tourism is not likely to be sustainable. Hence there appears to be an urgent need to plan tourism for the twenty-first century.

Chapter 2 discussed sustainable mountain community and tourism development in the context of the carrying capacity of Himalayan Environmental Resources. It was stated that conservation would be difficult to achieve without considering the carrying capacity of HER. Without such a consideration, many activities carried out in the mountain areas could exceed the carrying capacity, and hence it is unlikely that sustainable mountain development would be accomplished. Furthermore, to accomplish sustainable mountain development, many factors external to the mountain environment also become important. When the concept of carrying capacity is introduced, it becomes clear that some current activities (both MCD and MTD) in the mountain areas may exceed the carrying capacity, and, at the same time, some potential carrying capacity remains unused. This unused carrying capacity can be both internal and external to the mountain environment. However, there is scope for enhancing the carrying capacity of the mountain environment by internalising external knowledge and technology. It was also

pointed out that carrying capacity can be further disaggregated into social, ecological, and economic carrying capacities, and that sustainable mountain development perhaps seeks to establish a balance between them. However, sustainable mountain development will also depend very much on how mountain community development is complemented by a form of mountain tourism development in which tourism income leakages are minimised and maximum benefits from tourism are retained locally. Equally important is that visitor satisfaction also be maximised. Although an attempt was made to use this methodology to address the carrying capacity of mountain tourism in the Annapura and Manaslu regions, the preliminary nature of the methodology has made its use limited. Nevertheless, the methodological considerations provided in Chapter 2 can be used to draw up guidelines for sustainable mountain tourism development and its implementation and monitoring. This chapter will focus on the first two issues, leaving monitoring for the following chapter.

Goal and Objectives of Sustainable Mountain Tourism Development

Goal

Achieving sustainable mountain tourism development should be the guiding principle of national tourism development. Sustainable mountain tourism is defined to reflect a state of development in which the quality of life of the mountain people improves and visitor satisfaction is enhanced without depleting or degrading HER for future generations to come.

Objectives

The Himalayas are home to millions of people whose daily needs for survival depend on the resources they harbour. The consumptive use value of these HER is important to the mountain community, but for various reasons they are being degraded, which makes survival relatively more difficult. There is great urgency to conserve these resources in order to meet the present and future needs of mountain communities. Furthermore, these HER have productive use values, i.e., the potential to be harnessed in order that new alternatives can be generated to enable mountain communities to move away from unsustainable practices. It is increasingly being realised that there is a strong correlation between poverty and environmental degradation, and, without poverty mitigation, environmental improvement (i.e., conservation of HER) is unlikely to be possible. Hence poverty mitigation (along with community development) features as an important objective in the development of mountain areas.

HER also have non-consumptive use values with few close substitutes in the world. These are scarce and provide the basis for tourism development. Where mountain areas are characterised by HER whose non-consumptive use values are relatively high, tourism development can be an important catalyst to mountain community development. If tourism development is seen as playing a catalytic role in mountain development, one objective of mountain development should be to maximise visitor satisfaction.

Equally important is that there has to be growth in mountain development. As argued in Chapter 2, the greater the complementarity between mountain community and tourism development, the greater the scope for sustainable mountain development. At the same time, not all MCD and MTD can be complements, as both will depend on other factors that are external to the mountain environment. Hence, in this context of external linkages and multiplier effects, the productive use value of HER must be assessed so as to foster further development in the mountain areas. The productive use value of HER receives greater prominence at the regional and national level, and thus becomes important for regional and national development, in which there is a significant role for the private sector to play, including those parts that address both MCD and MTD, as well as development that goes beyond the confines of the mountain areas. However, given that such resources are available in specific mountain areas, their utilisation will contribute to the development of mountain areas as a whole. The role of government will be to facilitate the business sector as well as the non-profit sector and local people in the development of the productive use value of HER. Hence economic growth must be an objective of overall sustainable mountain development.

Besides economic growth, equal importance is attached to addressing the equitable distribution of benefits generated. Productive use value and non-consumptive use values of HER generate benefits, a large part of which generally accrues outside the mountain communities, although such benefits depend very much on the resources found in the mountain areas. Establishing strong linkages between community and tourism development provides a means to enhance equity in mountain areas. Generation of employment in the form of portering should be substituted over time by developing a new cadre to address both mountain and tourism development. Qualified manpower can help to ensure a better distribution of income. The nature of the production system in mountain areas, which is subsistence-based, needs to be reviewed in light of the productive use value of HER.

Finally, there should be no doubt that conservation of HER for the present and future generations must be at the focus of sustainable mountain development. The government needs to make sure that the other partners adhere to conservation ethics right from the planning stage. Effective monitoring will be necessary.

Thus the objectives of sustainable mountain tourism can be stated as follows (Figure 6):

- poverty mitigation (Need to be clear on Sustainable Mountain Development and Sustainable Mountain Tourism),
- improved visitor satisfaction,
- growth and equity, and
- conservation.

There should no question that sustainable mountain tourism development cannot and should not be an independent national goal. This goal should be an important component of overall national goals. This is essential since, as has already been discussed in Chapter 2, many aspects of both mountain community and tourism development cannot be isolated from the national economic picture or from the international economic picture. The different use values of HER also make it clear that HER has importance at different levels. Linkages and multiplier effects can be enhanced only if such values are realised and the resources are harnessed with the above objectives in mind. Many programmes and policies carried out by the government can indirectly affect the outcomes of sustainable mountain tourism.

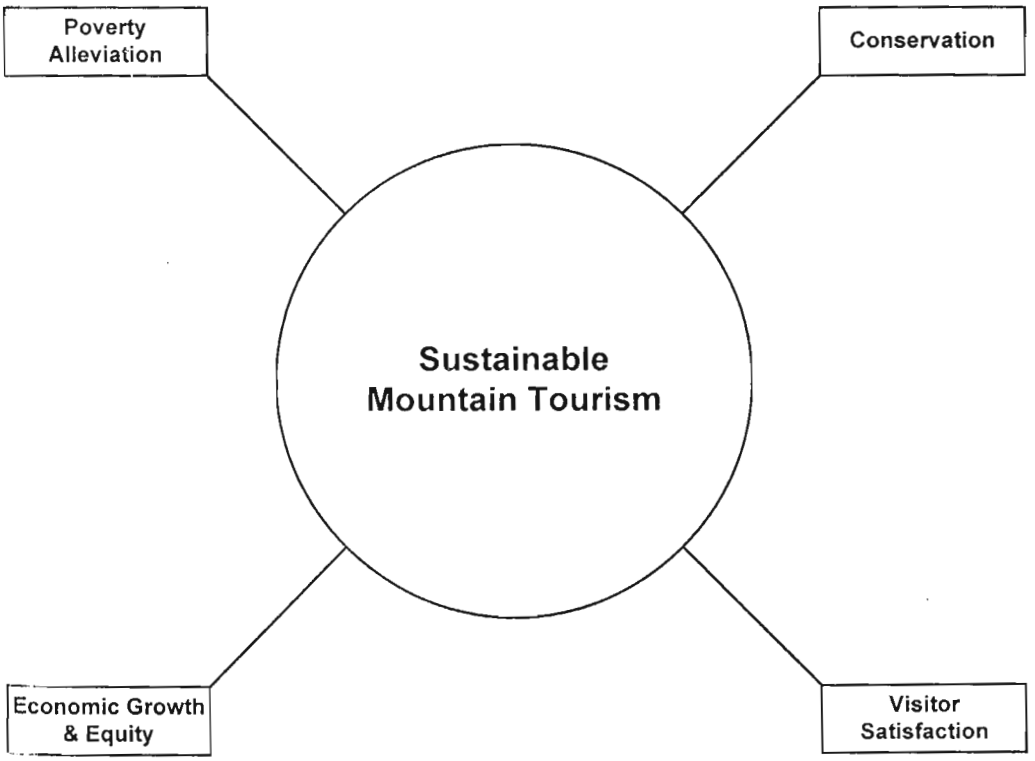
Tourism Planning

To fulfil the goal, planning is essential. There cannot be one mode of planning in mountain tourism development, as each mountain area will differ in terms of its potential as well as its constraints and will require different approaches and strategies. Whatever planning approach is used, care should be taken to avoid or minimise negative types of impact on the environment, culture and economy, and to maximise or promote positive types. Achieving this goal, although not easy, can be greatly facilitated by thorough planning.

Tourism development is complicated by the fact that, unlike other sectors or an industry, tourism does not fit into any one sector or industry. Rather, different sectors and industries directly or indirectly play different roles in

Figure 6

Objectives of Sustainable Mountain Tourism



tourism development. All the different actors involved must be given a role and voice in planning from the very beginning.

It is argued that tourism should not be considered as a sector since it is an agglomeration of a multitude of components from many different sectors of an economy. It aims to meet the different needs of travellers and has an influence on the environment, economy, and society (Gunn 1994).

Tourism does not fit the usual definition of industry either, since there is not one single tangible product that is associated with tourism. Tourism products (visitor experiences) occur at different destinations, with each destination providing visitor satisfaction in different ways, and these products are readily perishable. Tourism development, unlike industrial or other forms of development, is also different in requiring a diverse mix of decisions makers. In addition, tourism development has greater implications for the social and economic life of communities than other forms of development.

Planning Steps for Sustainable Mountain Tourism

To meet the above objectives it is essential to plan mountain community tourism development. Some important steps necessary for planning sustainable mountain tourism development are discussed in this section. The steps described below are of a general nature and need to be fine-tuned to suit specific locations. Different parts of the mountain areas harbour different HER, which has implications for the types and scale of MCD and MTD as well as for the overall carrying capacity of the area; hence the need to fine-tune. However, the steps identified below should be mandatory.

Inventory of HER. First and foremost there is a need to take an inventory of HER. It should be recalled that HER, according to our use of the term, includes not only natural resources but also other resources related to culture, religion, and institutions. As will be discussed in the following chapter, this inventory will provide the basis for monitoring and evaluating the goals of sustainable mountain tourism. This inventory will further enable one to identify the critical factors. As has already been discussed, critical factors can either be of a contributing nature, in which case they should be utilised to promote sustainable mountain tourism development, or they can be of a retarding nature, in which case they need to protected. The inventory will further provide the basis for assessing carrying capacity, defining safe minimum standards, and determining limits of acceptable change. Rare and endangered species, unique ecosystems, and habitats that need protection can be

assessed after a detailed inventory of HER is made. Finally, such an exercise may enable one to plan the use of HER for present and future generations.

Assessment of the Value of HER. A second necessary step is the assessment of the value of HER. This assessment of the value of HER should reflect its importance in terms of the following:

- consumptive use value
- productive use value
- non-consumptive use value.

Assessment of the value of HER is important for many reasons (McNeely 1988). First, biological resources are not appropriately priced in the market place. Second, conserving resources often brings intangible returns in the short run, and the incentive to conserve HER is not voluntary. Those who benefit from using HER (generally productive use values) seldom pay the full economic cost of exploiting them and instead pass on the cost to society or local communities. Fourth, property rights to HER are not well defined and tend to be of open access types. Under such circumstances, markets cannot allocate these resources in the most desired way to benefit present and future generations. Fifth, economic planning tends to encourage use rather than conservation. And, finally, national income accounting does not reflect the depletion of resource stock as national assets or capital lost, but rather accounts the resources exploited as accrued income. When natural capital stocks (HER) are depleted, the future flow of income is also lost and hence the need to reflect such losses in national income accounts.

Furthermore, any assessment of HER should address the significance of value of HER at the local, regional, national, and global levels. Potential use of HER to promote sustainable mountain tourism development then needs to be identified. At this stage, it will be possible to assess MCD and MTD potential and constraints.

Manpower. The need to develop a mountain cadre that can address mountain tourism development has to be recognised. Although this need should be a part and parcel of national goals, it should feature as important in sustainable mountain tourism development. In the present context, mountain tourism is not seen as a narrow but as a broad concept, under which community development is conferred an important place within mountain tourism development.

Concepts such as those discussed in this study are abstract and become tangible only after they are translated into action, for which trained manpower with varying skills is necessary in order to address a multitude of issues and actions. Mountain areas are unique, requiring special attention, and, hence, the need to train personnel that can address their concerns should be seen as important. Furthermore, as will be discussed below on the supply aspects of tourism, the need to develop specialised skills becomes even more urgent and apparent.

Product Development. The assessment of the value of HER will provide a basis for developing new tourism products. However, this alone will not suffice. The new products must respond to demand, and the importance of understanding the trends in tourist tastes and preferences should therefore be recognised.

Linkages of MCD and MTD. Tourism is unlikely to bring community development unless efforts are made for it to do so. Tourism development in mountain areas must be integrated with community development. Indigenous knowledge alone cannot help promote tourism in the mountain areas. New knowledge and technology will have to play a greater role. The economies of many mountain areas cannot be based solely on food production; alternatives need to be developed. The assessment of the value of HER will enable the assessment of mountain comparative advantage. Although in the short run Nepal cannot abandon the growth strategy and poverty abatement based on increased agricultural production, planning for the twenty-first century must be based on the comparative advantage paradigm. However, not all mountain areas will have the same potential for tourism development. How they can and should be linked with mountain tourism development must be made clear.

The above five steps, while not exhaustive, nevertheless provide a basis for assessing the potential of mountain areas for both community and tourism development. If tourism development in an area is seen to have potential, then the next stage involves assessing tourism demand and planning for the supply components of tourism.

Marketing: Tourism Demand

Marketing in tourism requires consumers to come to the destinations to consume the product. Tourism products, unlike many other products, are immobile. Tourism marketing implies a reorientation in business policy, management, and practices. Marketing tourism will not only entail improved

supply management, but also the establishment of consistent and effective communications with tourist markets in order to understand their wishes, needs, motivations, likes and dislikes, so that the host country can adjust its supply components. Tourists need to be made aware of the attractions a host country desires to bring them in contact with, how these attractions can be reached, and the types of services they will be offered once they reach them. Tourist needs and preferences should be used to develop new products or remodel old ones. Well-articulated information on tourism products, accessibility, and services therefore plays an important role in marketing and promoting tourism.

It is essential to know where the tourists are in order to focus marketing, i.e., market segmentation. Past data on tourist arrivals can be used to assess market segments.[1] Thus marketing research is an indispensable part of tourism marketing. Research aims to provide answers to various questions related to marketing activities and is basic to successful tourism marketing. Market research is the analysis information related to the supply and demand of tourist products. On the demand side, information about actual visitors (who visit the host country) and potential visitors (who have plans to visit) needs to be periodically collected. Other important aspects of tourism marketing are product formulation and development, promotion of products, sales' promotion, and public relations.

Supply Components of Mountain Tourism

The supply side of tourism can be broadly grouped into five major components: *attraction, services, transportation, information, and promotion.* Planning should strive to interrelate the development of all these components of the supply side of tourism with the different partners involved. It is important for the decision-making partners to understand how these supply components operate in the system (Figure 7).

First, all the components are interdependent. Each individual within each component is critically influenced by plans, developments, and operations within the other components.

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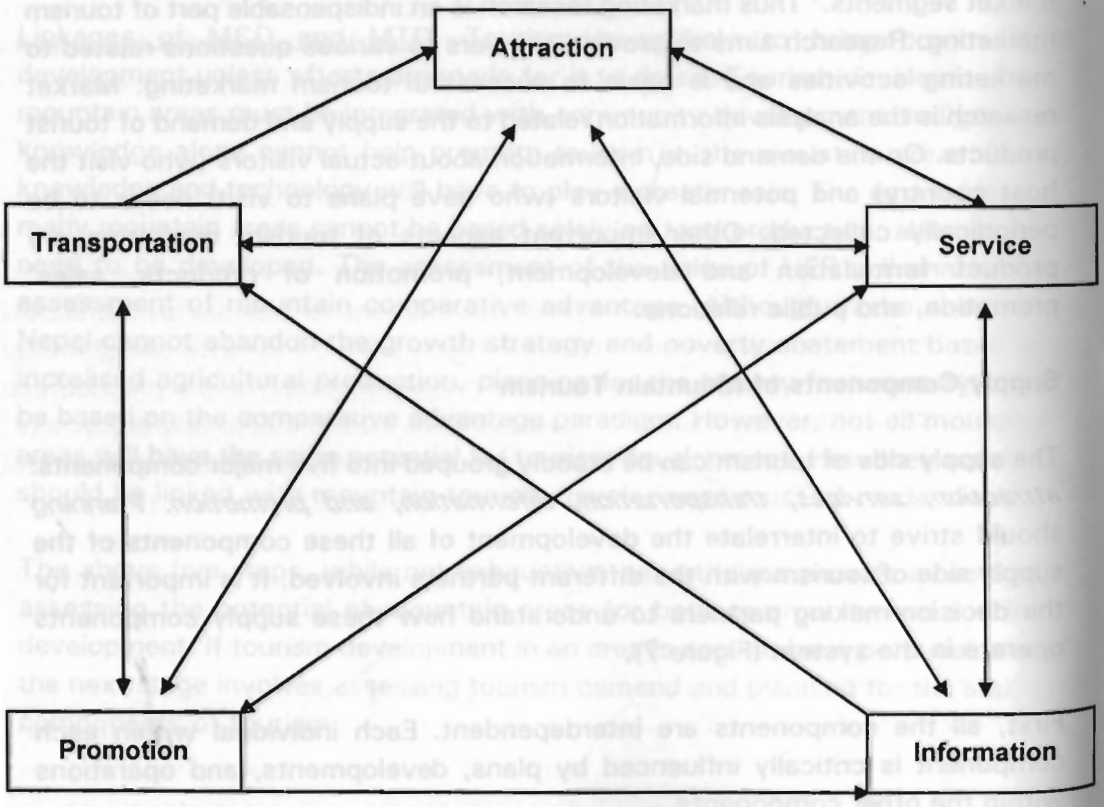
1 In the case of Nepal, the immigration card which all incoming and outgoing tourists have to fill out on their arrival and departure points, while containing some useful information, needs to be changed to get better information on tourists. Information from tourist markets also needs to be collected. Other sources of information, such as those published by the World Tourism Organisation (WTO) and other tourism organisations, need to be regularly analysed. Additionally, various international journals on tourism also provide invaluable information on new research in tourism.

Figure 7

Supply Components of Tourism



Source: Gunn, 1994

Second, a tourism system is very dynamic, not only within each component but also between demand and supply. Such dimensions of dynamic interdependency call for constantly monitoring changes in each component and demand side trends.

Third, since a tourism system is owned, developed, and managed by many separate actors, tourism demands special cooperation in planning and controlling.

Fourth, each component and every actor within it is dependent on the characteristics of the market (demand). Since the supply side is owned and managed by different actors, planning needs to integrate the policies and actions of all three sectors in order for tourism to function properly. This planning process should go forward under the realisation that there is a great need to cooperate and make trade-offs so that the final plan developed becomes the property of all partners involved. No one partner should try to impose on or dictate to other partners.

Attraction

Attractions constitute the most powerful component of tourism on the supply side. Their major purpose is to lure visitors and to provide satisfaction. Attractions are those developed areas and programmes that are planned and managed to stimulate visitors' interest, active involvement, and enjoyment. They depend very much on the distribution and quality of natural and cultural resources. Planning for tourism must therefore place emphasis on those areas that have the best attractions and which can be linked with other services.

Services

Services constitute another key component on the supply side of tourism. Service-oriented businesses (accommodation, food service, travel agencies/ business, retail shops, restaurants etc) generate the greatest economic impact in terms of employment, income, and tax revenue, and they are the source of multiplier effects and linkages through the indirect support with other sectors. Each sector's success will depend on its relationships as well as on the success of other supply components.

Transportation

Transportation as a vital component of a tourism system provides a critical linkage between market source and destination. Since all other supply components of tourism depend on transportation, there should be proper planning and managerial linkages between transportation, decision-makers, and tourism developers. Changes in routes, pricing, schedules, and other factors can affect the tourism business.

Information

Travel information is another important supply component of tourism. In contrast to advertising, which is intended to attract, information is descriptive (maps, magazines, articles, guidebooks, videos, etc). The objective is to provide visitors a greater understanding of places and activities. Pre-travel information is as important as *en route* and on site information. Planned visitor centres offer many varieties of information and services (food, retail sales, museum exhibits, publications, etc) to visitors.

Promotion

Despite the fact that promotion is programme rather than physical development, it is an important supply component of tourism, with strong and critical linkages with other components. Promotion takes place only after all other supply components of tourism have been developed. All promotional planning should be closely integrated with all other supply side planning and development. It must be used with great sensitivity for the goal of visitor satisfaction and be closely tied in with land development.

Community Development

For mountain tourism to be sustainable, tourism should be closely linked to the local production system. Complementary investment programmes to boost mountain framing systems should be simultaneously introduced through established cross-sectoral linkages. Tourism planning in mountain areas should integrate community development with tourism to promote economic growth equity and heighten the experiences of both visitors and host population.

Steps in Implementing a Tourism Plan

After the demand and supply components have been planned, the next step is implementation. It should be pointed out that the interactive planning or system planning approach suggested should involve citizens at all levels during both the planning and implementation stages. Some additional steps suggested during implementation are listed below (Figure 8).

Monitoring and Evaluation

Details on monitoring and evaluation are presented in the following chapter.

Policy Reform

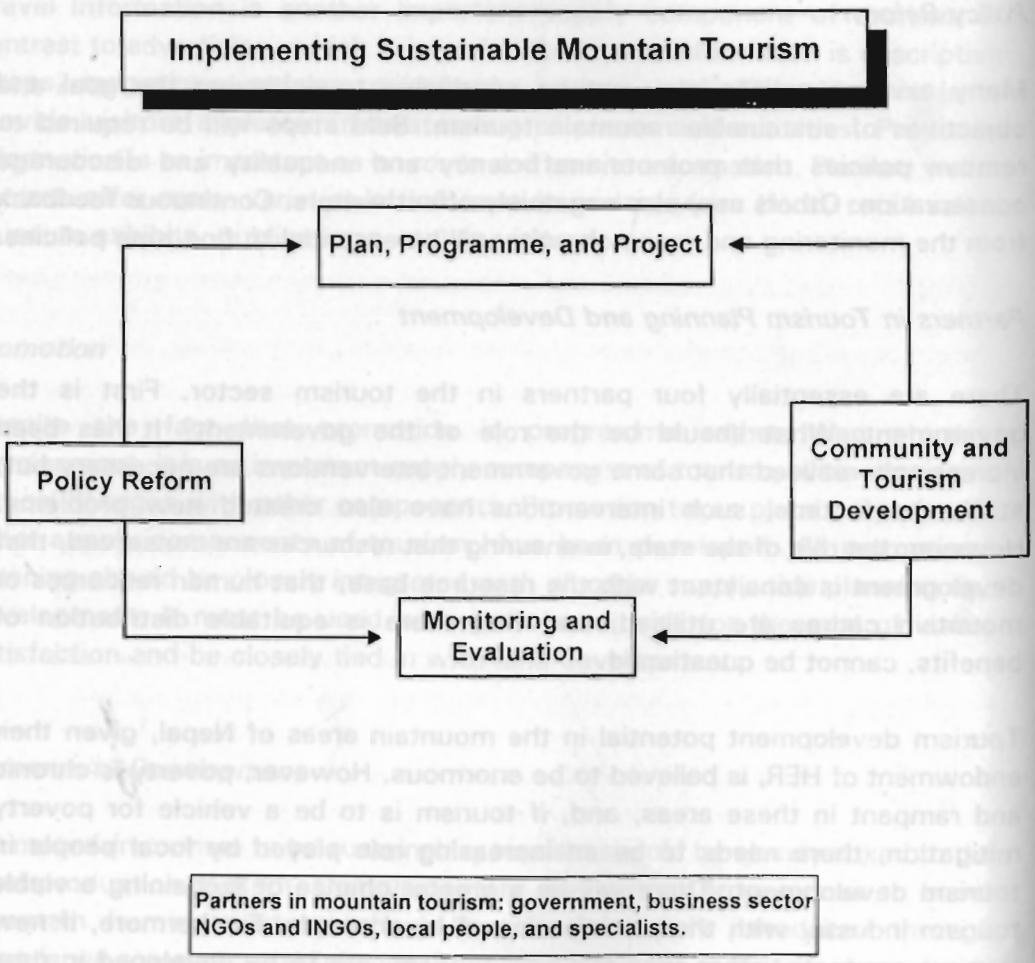
Many existing polices may not be conducive to achieving the goal and objectives of sustainable mountain tourism. Bold steps will be required to remove policies that promote inefficiency and inequality and discourage conservation. Others may also negatively affect visitors. Continuous feedback from the monitoring and research units will be essential to fine-tune policies.

Partners in Tourism Planning and Development

There are essentially four partners in the tourism sector. First is the government. What should be the role of the government? It has been increasingly realised that some government interventions are necessary but, at the same time, such interventions have also created new problems. However, the role of the state, in ensuring that resources are conserved, that development is consistent with the resource base, that human resources or mountain cadres are utilised, and that there is equitable distribution of benefits, cannot be questioned.

Tourism development potential in the mountain areas of Nepal, given their endowment of HER, is believed to be enormous. However, poverty is chronic and rampant in these areas, and, if tourism is to be a vehicle for poverty mitigation, there needs to be an increasing role played by local people in tourism development. There will be a greater chance of sustaining a viable tourism industry with the participation of local people. Furthermore, if new tourism products, other than trekking tourism, are to be developed in rural areas, the effective participation of the local people ought not to be undermined. The lives of many local people depend on HER, so it is important to include them as a partners in mountain tourism development planning.

Figure 8


Implementing Sustainable Mountain Tourism
Plan, Programme, and Project
Policy Reform
Community and Tourism Development
Monitoring and Evaluation
Partners in mountain tourism: government, business sector NGOs and INGOs, local people, and specialists.

Third is the business sector, whose role in tourism is the most difficult to define, yet very important. This difficulty arises from the fact that tourism itself is not a single industry or sector but rather multidimensional in nature. For sustainable mountain tourism development the role of the business sector is also important.

Finally, the non-profit sector is beginning to play an important role in the development and conservation of mountain areas by following a grass-roots' philosophy. Ways and means have to be assessed to make such organisations more effective.

A sustainable mountain tourism development plan must be part of a national tourism plan, which in turn must fit into the overall national development plan. This plan must be seen as an ongoing process, with each partner interacting with the other to achieve the goal of sustainability. The government, the business sector, the non-profit organisations, and the local people then become tourism developers and make their own specific decisions as to their roles in tourism in producing goods and services on the supply side. Note that, within each partner, there are many individuals, organisations, agencies, etc that need to integrate themselves to produce the various goods and services.

Institutional Mechanisms

Tourism development is complex, given the interdependencies between different sectors and partners within and across each component of tourism. What needs to be done is something that must be agreed upon by the partners themselves (see below), since it is only the partners that "know where the shoe pinches." Therefore, it is necessary that there first be an understanding among the different partners as to their roles in sustainable tourism development. Then roles and responsibilities of the various partners must be agreed upon and be made effective through appropriate policy actions. Each partner must also develop its own institutional mechanisms to address the different aspects of the supply component sector of tourism. To achieve such coordination, it will be essential for partners to form a coordinating committee that represents a broad collocation of such persons, including those involved with the different supply components.

Monitoring must be conducted to determine how well tourism is functioning and to provide feedback for policy change or reform purposes. Clearly it is not new institutions that will develop tourism but rather a clear definition of the roles of existing institutions, with each institution effectively executing its role

in supply management. Equally important will be the development of new products in relation to market demand. Thus, understanding market trends has to be part of the planning process.

A central tourism agency at the highest level of government must be formed to be the catalyst for continuous planning, implementation, and monitoring of sustainable tourism development, including mountain tourism. This body must coordinate and facilitate activities with other sectors, ministries, and departments, as well as other relevant organisations. Such an agency must be supported by the government and must be given wide ranging powers to make it an effective institution.

The formation of a tourism development authority at the highest level of government is essential if policy guidelines and the planning and implementation of sustainable mountain tourism development are to come about. Such an authority must have representatives from all the four partners who play an active role in tourism development, researchers in tourism, environment-related organisations, local pioneers, and, perhaps, others. All these partners must be involved in central-level decision-making, related to planning and policy formulation, and must also facilitate coordination across different levels, namely sites and destinations, as well as at the national level. Thus, a major concern of this authority will be policy reform aimed at facilitating sustainable mountain tourism development.

The rationale behind the formation of an authority at the national level is apparent, given the need for establishing policy guidelines, setting standards, coordinating among different partners and sectors, and planning, implementing, and monitoring the impact of tourism.

Carrying Capacity Considerations

Carrying capacity, although a difficult concept to operationalise, must nevertheless be brought into play. It must be used as a tool to fine-tune both the demand and supply management of mountain tourism. The diversification of tourists to new destinations, the promotion of quality services, pricing tourism, development of new tourism products, community development priorities, and their linkages with mountain tourism can be addressed using the critical factor approach.

Research

Tourism development presupposes a great deal of information and prior study. Support for tourism research, education, and training will be required. Universities should incorporate tourism as a separate course for specialisation, one that offers many different subjects relating to mountain areas, tourism, and local development. Research should be an integral part of overall sustainable mountain tourism development.

Stages of Planning

Planning should take place at three different levels. The first is at the national level, where the aim should be to integrate and facilitate the many types of complex interaction necessary for mountain tourism development. At this level, planning should provide policy guidelines, identify destinations, and set standards. This stage of planning should be able to develop broad destination documents, which identify existing potential and the investment requirements, thus laying a basis for future investment by appealing to investors and developers.

The second stage should focus on destination plans and feature strong interaction with local communities. Destination plans should gravitate toward geographic areas that have potential for both MCD and MTD. Such plans should be able to identify different products that can be developed (to satisfy both host and visitors), income and employment opportunities, and they should address issues related to transport and accessibility, utilities, and services. Destination area planning must also reflect sensitivity for social, economic, and environmental types of impact. Site planning is more specific and may relate to construction of supply side development, e.g., camp grounds, resorts etc, which generally fall under the control of an individual or a small group of individuals, or even a community.

8
Monitoring Framework for Carrying Capacity of Mountain Tourism

Introduction

Despite two decades of monitoring and evaluation (M&E) exercises in Nepal, a reliable monitoring framework has yet to evolve. The need for monitoring and evaluation in development work of any nature has been realised to be an important element of the development process itself. With growing concern over sustainable development, where the environment is an important focus, monitoring development has become even more necessary as well as complex. However, lessons learned from the community forestry project in Nepal suggest that the more monitoring and evaluation are integrated into the project and built on the existing information system, the more the real objective of improving project performance can be achieved (FAO 1983). Experience gained from this system also suggests the need for flexibility in the M&E system to ensure better performance of the project over time through corrective actions based on M&E findings.

A sound M&E system should not only rely on quarterly reports and ongoing evaluations, as has generally been the case, but also on participatory evaluation conducted by the beneficiaries of the project. Both monitoring and evaluation are tools used to better manage a project, and they are basically meant to ensure that a project is progressing according to plan and that the objectives (purposes) are being realised as scheduled and desired. Generally, development projects involve multiple components. These components are carried out by different institutions and during different time periods and require different inputs. Often activities of one institution become inputs to activities carried out by other institutions. For the successful execution of activities, it is important to pinpoint inadequacies in the ways activities are carried out. Such information becomes important subsequently when taking remedial action. Hence monitoring becomes important in checking mistakes and designing remedial actions. Furthermore, a sound monitoring system should also serve as a warning mechanism for project management. In summary, the basic purpose of a monitoring system is to "achieve efficient and effective project performance by keeping track of progress during project implementation, in relation to targets, and by corrective action as required" (Bhatta 1990).

It is clear from the preceding chapters that, for a healthy form of tourism development, one that can meaningfully contribute to mountain community development and also conserve HER, simply focussing on tourism alone is not going to be sufficient. The need to have a clear vision of what is desired from tourism, the assessment of the value of HER that will be made accessible to visitors, and ways and means to link the local community and enhance its productivity are some required elements of "tourism for local community development." In other words, the carrying capacity of the mountain environment needs to be understood and managed, and its productive capacity improved. In this way, carrying capacity can be enlarged; it need not be considered static.

Chapter 2 developed a framework that helped conceptualise complex issues on sustainable mountain community and tourism development. For sustainable development of the mountain environment, carrying capacity needs to be constantly monitored, for if the health of the mountain environment deteriorates, not only tourism but also local people, whose very existence depends on these resources, will suffer.

The focus of this study has been on "mountain tourism for local community development," and hence the need to simultaneously monitor selected attributes of HER, MCD, and MTD is apparent. At this stage in the study it is not possible to give "all" monitoring indicators for assessing the state of the carrying capacity of mountain environments. First, attempting to do so would be beyond the scope of the present study. Second, trying to monitor everything will never be possible, given the lack of resources as well as knowledge. Hence, there is a need to set priorities by monitoring selected attributes of the mountain environment. Given these limitations, therefore, the critical factor approach already discussed provides an important first step to developing monitoring indicators. It has already been defined that *critical factors are those which need to be changed from their current stage, conserved, or protected in their current state in order to enhance the carrying capacity of the environment, based on some predetermined standard.*

Management Objectives for Monitoring

Although the study has constantly emphasised the need to consider community and tourism development simultaneously, the monitoring indicators identified below will concentrate on only tourism and those aspects of community development that have a link with tourism development, given the

focus of the study. With reference to Figure 5, therefore, the primary focus is on areas 2, 3, 4, 5, and 6.

Carrying capacity is a relative concept that varies according to management objectives and standards (or management parameters) among other things. It therefore becomes important to define management objectives and parameters before operationalising carrying capacity and conducting an effective monitoring of it. Different types of carrying capacity (biophysical or environmental; economic; and social or behavioural) are determined by their respective demand and supply conditions, the latter being influenced to a large extent by management. It is important to distinguish `change' (actual impact) and acceptability of `change' in order to prevent further degradation or erosion of areas and resources. Limits of acceptable change are often used to define how much and what type of change may occur, and what management action is required to control it. Determination of limits of acceptable change involves basically four steps.

1 Identify relationships between existing conditions and those judged acceptable:

- inventory of resources and socioeconomic conditions, and
- specification of standards for resource indicators and socioeconomic indicators.

2 Specify acceptable and achievable resource parameters:

- identification of critical factors.
- description of opportunities, and
- selection of indicators of resources and social conditions.

3. Identify management actions:

- identification of alternative opportunities,
- identification of management actions for selected alternatives, and
- selection of alternatives based on their evaluation.

4. Implement actions and monitor the environment and socioeconomic conditions.

The above paragraphs suggest the need for a management unit, which we refer to as the critical institution. `*Limits of acceptable change*' is therefore a

management concept calling for a combination of zoning, standards, and monitoring to prevent degradation. As an initial step, a detailed inventory study of environmental and socioeconomic conditions of the areas, including a number of special surveys related to different aspects of their general economy, wildlife, habitats, botany, and so on need to be conducted in order to establish baseline conditions. Such studies will not only provide the basis for defining the management zones and setting standards for environmental and socioeconomic conditions but also provide a benchmark for future monitoring and evaluation of programme intervention. Information on the number, stock, diversity, and distribution of the different rare, endemic and endangered animal and plant species, and their sensitivity to human interference, will make it possible to establish a number of biodiversity-related supply side indicators and standards for them. Similarly, the regenerative capacity of different types of accessible forests can be determined based on biomass inventory surveys and safe minimum standards established. In other words, a basic picture of Figure 5 and its various areas will emerge.

Establishing safe minimum standards for both environmental and socio-economic infrastructural facilities is essential for monitoring the changes and in order to be able to take timely management action. Minimum breeding stock to guarantee the survival of unique and endangered animal species, minimal residuals of viable plant for revival of valuable plant species, and maximum rate of erosion per year are some examples of safe minimum standards for natural resources. Similarly minimum standards should also be set for infrastructure and tourist facilities (sanitation and safety standards for lodges and campgrounds) as well as for tour operators and travel agencies. Such minimum standards imply the avoidance of physical conditions that would make it uneconomical to reverse depletion. All these standards need to be established based on expert opinion and after a detailed assessment of the environmental and socioeconomic conditions of an area. Such standards should also indicate the extent to which mountain tourism and community development are integrated into the natural and cultural environment.

Additionally, a number of feasibility studies of the development potential in different pockets needs to be conducted, based on the principle of comparative advantage of the area, and plans formulated from the feedback. Exploitation of such development potential or economic opportunities is essential for enhancing the economic carrying capacity of the area and promoting economic growth.

Developing a base standard against which to monitor various attributes will mark the beginning of the monitoring and evaluation process. Without a base standard it will not be possible to indicate the change. Both qualitative and quantitative standards can be used. However, developing qualitative standards may take a long time, and the initial monitoring process may have to rely on qualitative assessments. Therefore, initially, a baseline study that assesses the existing condition, identifies the `critical factors', and develops the `limits of acceptable change' should be carried out. The carrying capacity can then be assessed by analysing the demand and supply situation qualitatively. Both carrying capacity and limits of acceptable change are interdependent despite their respective merits and limitations. Both are useful as part of an ongoing process to monitor change in environmental and socioeconomic indicators.

It should be further pointed out that technical issues that require elaborate studies should be subject to periodic evaluation, for which the management should be sensitive. For example, the need to assess the conditions in habitats or biodiversity may not have to be part of regular monitoring exercises, since change in these parameters of environment are not likely to occur within short periods of time. An evaluation that is conducted once every five years or so may suffice. Similarly, establishing change in the socioeconomic conditions of the host population may also be part of a periodic evaluation conducted at similar intervals. It is the role of the management to identify and prioritise the necessary studies that have to be conducted at different periods of time. It should be said that identifying *critical opportunities* (factors) cannot be part of a monitoring exercise. Such opportunities should be identified through feasibility studies. Thus, in what follows below, only monitoring indicators that are subject to changes over shorter periods of time are discussed.

Monitoring Indicators

Indicators that have been developed below for monitoring purposes encompass both quantitative and qualitative dimensions of MCD and MTD and their linkages. Periodic surveys of households, lodge owners, and visitors in different areas need to be conducted in order to monitor changes and impact. The management parameters or standards discussed earlier may also be important in this context. That is, several supply side indicators relating to environmental resources need to be developed by the management unit after inventory surveys, as stated above. Indicators developed below relate mostly to the demand side. Indicators generated from lodge owner surveys will also serve to monitor the supply side of tourism. Additional indicators have also

been developed to monitor the linkage of tourism with community development.

Mountain Community Development

Firewood and fodder are the major natural resources demanded by households, and their excessive and unmanaged consumption is believed to be the prime cause of forest degradation. To decelerate or retard the process over time, various community-level programmes have been initiated in different parts of the country that encourage private tree plantation, protection of community forestry, changes in ownership rights from the government to community, and dissemination of fuel-efficient and alternative sources of energy. There have also been awareness generation programmes relating to forest conservation and the negative impact of forest and pasture degradation on soil erosion and other downstream effects.

At the community level, therefore, if the above programmes have been effective, there ought to be a decreasing reliance of households on community forest for firewood and fodder. This can happen only if more households have private tress from which they can meet their fuelwood and fodder requirements. Additionally, a greater supply of firewood from private sources implies less travel time to collect firewood. Similarly, fodder collection time is also reduced, and stall feeding practices will increase, thereby reducing open grazing to some extent.

In tourist areas there has been increasing awareness on the part of many lodges and tourists of the need to use kerosene.[1] Where electricity and kerosene are available, households are beginning to use these alternative energy sources. These factors along with the private tree plantations, therefore, may be assumed to reduce pressure on public forests and hence promote conservation. Conservation of forests enhances watershed conditions and habitats. Development, including tourism, it has been argued, erodes cultural values and religious traditions, and the need to protect these has received a great deal of attention.

Therefore, the indicators identified to monitor the effectiveness of the conservation programmes are as follow:

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[1] In the national parks and ACAP area, kerosene use by group trekkers is mandatory.

- Per capita firewood consumed per annum
- Share of annual firewood requirement met from households' private sources
- Share of annual fodder requirement met from households' private sources
- Percentage of households using kerosene and electricity for cooking and lighting
- Percentage of households using improved stoves and other appliances
- Percentage of households reporting better forest conservation
- Percentage of households reporting more wildlife than before
- Percentage of households reporting better watershed protection
- Percentage of households reporting less open grazing practices
- Percentage of households reporting better protection of cultural sites
- Percentage of households reporting better protection of religious sites
- Percentage of households reporting more crime and theft in their community
- Percentage of households reporting more poaching

Another dimension of community development is the development of community infrastructure. In particular, drinking water, schools, health posts, trails, and bridges have received and continue to receive a great deal of priority in the mountain areas. Some of these types of infrastructure reduce travel time and travel risk, and others simply make such facilities relatively more accessible to households. For example, in the absence of a bridge, many children would have to travel long distances to school, so that the construction of bridges can greatly enhance accessibility. Drinking water projects have made water more easily available to households. Likewise, trail and bridge construction have also facilitated marketing and trade in different parts of the country. Hence, one of the benefits that accrues to households from such development infrastructure can be judged from the time saved.

Percentage of households indicating less time for:

- water collection,
- travelling to markets,
- travelling to schools,
- travelling to health posts,
- literacy rate by sex (6 yrs and above) and age, and
- percentage of household members that have received training through some project.

Development infrastructure, in addition to saving travel time, has boosted income by making markets accessible. Trail and bridge construction facilitate trade with households gaining access to modern agricultural inputs for increasing production and possibly marketable surplus. Households are also gradually cultivating cash crops where accessibility and markets have improved. This impact of community development is reflected in per capita incomes and income shares accruing from various sources, both farm and off-farm ones. Additionally, such infrastructure has also enhanced tourism potential in some areas, and tourism has in turn contributed to household income. Once tourism comes to mountain communities, households find employment, even if it be for short periods, and also have the opportunity to sell different products to the tourists and tourist-related markets.

It is important, however, to gauge households' perceptions of development impact. If households perceive development impact positively, this will provide a basis for its sustainability; otherwise households will be unwilling to participate in development. Often some forms of development, it has been argued, only increase the burden on women. Also, development has been blamed for inflation. Tourism has been thought to drive away labour from local areas, thus creating labour shortages in some places. Hence, some of the indicators identified for monitoring other aspects of community development are as follow:

- Per capita income and share distribution of income
- Ratio of cash crop area to total area
- Shares of income from farming, livestock, pensions, tourism, other off-farm activities etc.
- Share distribution of household expenditure
- Average days worked for tourism in the last season
- Percentage of households reporting sale of home-produced goods to tourist and other (non-tourist) markets
- Percentage of households reporting the tourism is good for the community
- Percentage of households reporting that tourism has helped increase local income
- Percentage of households reporting inflation
- Percentage of households reporting more off-farm employment opportunities (by gender)
- Percentage of households reporting labour shortages in their community

- Percentage of households reporting that women's work burden has decreased
- Percentage of households reporting that women's income has increased

In mountain communities, where poverty is rampant, relatively poor people become marginalised and are unable to benefit from development. Poverty mitigation has to be an important goal of sustainable development. The worst form of poverty in mountain areas may be considered to be the lack of food. Many households are unable to meet the annual food needs of their families. Such households need to be identified and special income-generating programmes directly targetted at such households. The indicators identified in this case are the following.

- Percentage of households reporting food deficits and
- Average number of food-deficit months

There have been other community programmes that have attempted to generate awareness of various aspects of community well-being having to do with cleanliness, hygiene, and sanitation. In many parts of the country, NGOs have been active in encouraging households to keep their villages clean and construct pit latrines. An important aspect of this dimension of community development is an increase in the visual appeal of an area. Such programmes are important in terms of both community well-being and tourism. Thus, the indicators identified for monitoring this dimension of community development are:

- percentage of households having pit latrines
- percentage of households reporting that their village was clean

Mountain Tourism Development

Although mountain tourism has potential for development in many parts of the mountain areas of Nepal, it has currently developed in only a few pockets. The development of tourism will require an understanding of visitor perceptions of a variety of issues. This section discusses some important issues and identifies monitoring indicators.

It is first essential to monitor the number of visitors that visit the area monthly. Although the general practice has been to report visitor numbers on a monthly or annual basis, such information is useless for understanding different aspects

of tourism at the local level. Thus, information on visitor numbers by routes and destinations should be collected.

The number of lodges existing in a given area is not easily available. The number of lodges and their capacity (rooms and beds) are important to know in order to understand the supply side of tourism in an area. Despite almost three decades of tourism in Nepal, there is no published information on these supply components of mountain tourism. Tourists are also known to stay with local families as paying guests. Group trekkers enjoy camping, and determining the number who use camping grounds is important. This information is crucial for understanding occupancy rates and helps policy makers to regulate the flow of tourism and also the expansion rate of facilities in an area.

Some indicators developed for monitoring these aspects of mountain tourism are as follow.

- Number of visitors to major destinations by season
- Number of lodges along major circuits and at destinations
- Capacity (beds and rooms) of lodges along major circuits and at destinations
- Total visitor days and occupancy rates of lodges along major circuits and at destinations by season
- Percentage of visitors reporting number of days spent at major destinations
- Percentage of visitors reporting number of days spent in lodges, campgrounds, and private homes

Tourism has been unjustly blamed for accelerating deforestation in many parts of the mountain areas. It is the responsibility of the area management to define polices and provide incentives to local communities to use alternative energy sources or firewood-efficient technologies while catering to tourists. The management must be responsible for enforcing and monitoring energy use which has direct implications for conservation. For example, although kerosene use is mandatory for all group trekkers, its enforcement is not believed to be effective.

Therefore, in order to monitor those aspects of mountain tourism relating to conservation, the indicators identified are as follow.

- percentage of lodges using firewood, kerosene, and electricity for lighting and cooking by season,

- average daily consumption of firewood, kerosene, and electricity per lodge by season, and
- percentage of lodges reporting decreased use of firewood.

Tourism has been able to increase off-farm employment in areas where it has been developing. Women in these areas have proved to be good managers of lodges. Thus, off-farm employment has been generated. During peak seasons, lodge managers are known to hire labour and make up for deficits incurred by household members.

- Number of family members and hired employees per lodge by sex and season.

Prior to the ACAP project, there was considerable variation in prices of rooms, beds, and meals in the area, so much so that lodge owners were not realising normal profits from their lodges. Thus, a standard price-setting mechanism is an important aspect of a well-organised tourism community. It facilitates matters for tourists, who will not need to bargain, and also helps lodge owners to make normal profits from their investments. However, while prices may appear to be justifiable to lodge owners (sellers), visitors (buyers) may think otherwise. Such tensions in the mountain tourism market are undesirable and need to be monitored.

- Average price per room and bed by season
- Average price per meal by season
- Porter wages
- Entry fee
- Trekking permit fee
- Percentage of lodge owners reporting increased profit from tourism
- Percentage of lodge owners reporting having received training
- Percentage of lodge owners reporting that tourists are hospitable
- Percentage of lodge owners reporting that tourists obey the code of conduct

One major factor affecting tourism carrying capacity will be the quality of services provided by the lodges. Measuring the quality of services provided is not an easy task. The perceptive judgements of tourists have to be relied upon. There have been concerted efforts by NGOs as well as the government to provide training to local lodge managers on various aspects of services designed to improve the overall quality of tourism. Such efforts will be meaningless if tourists do not perceive the quality of services to be good. Such

information will be useful for management in identifying areas of tourism services that need improvement. Moreover, price-setting mechanisms of the services provided can be facilitated by such information.

The conservation awareness programme discussed above in the context of community development is also important in that of tourism. Aside from the economic linkages of tourism with community development, conservation programmes are important for tourism development, as conservation increases amenity values, which most tourists come to enjoy. Thus it is important to know the perceptions of tourists. The following list identifies a variety of indicators to monitor these aspects of mountain tourism development from the visitor's perspective.

Percentage of visitors reporting the following good, fair or bad.

- quality of meals,
- quality of accommodation,
- quality of service provided by lodges,
- quality of service provided by tour operators,
- quality of campgrounds,
- quality of trails, and
- quality of bridges.

Garbage, littering, and sanitation conditions in the following were either good (fair) or bad:

- lodges rooms,
- dining area,
- lodge area,
- trekking routes,
- scenic spots,
- villages, and
- campsites.

A percentage of visitors reported that there were too many tourists, by trail circuits and destination.

Tourist attitude towards lodges and local people:

- percentage of tourists reporting that the hospitality shown by lodges was good or bad,
- percentage of tourists reporting that the hospitality shown by local people was good or bad,

- percentage of tourists reporting that other tourists obeyed the code of conduct,
- percentage of tourists reporting that lodges obeyed the code of conduct,
- percentage of tourists reporting that tourist information provided was helpful,
- percentage of tourists reporting that tourist information provided was adequate,
- percentage of tourists reporting that the quality of the environment was good or bad, and
- percentage of tourists reporting that their trip was as enjoyable as expected.

Community and Tourism Linkages

For mountain tourism to be sustainable, it will need to be strongly linked to community development. Tourism provides different opportunities to trade. In places like the Annapurna area, a large percentage of lodge purchases are made outside the region. Many items required to cater to tourists can be produced locally. Thus, knowing the different items which lodges purchase and where they purchase them can provide an idea of the strength of the linkage between mountain community and tourism. Leakages arise when items purchased by lodges are not locally produced but have the potential to be locally produced, and often relatively cost-effectively. For example, many food items imported from Pokhara by lodges in Ghandruk and Ghorepani can be locally produced, and thus leakages can be minimised. Household incomes will increase as new markets for produce become available and employment is generated.

Another factor that can develop a strong link between community and tourism development is tourism product diversification. When new products are developed, local people will find new opportunities to obtain income and employment, although this may also cause local shortages of labour (discussed above). Some indicators identified for understanding the linkage and leakage of mountain tourism with mountain communities are given below.

- Percentage of households reporting the sale of products to tourists and lodges - by type of products sold in the previous season
- Value of the products sold to tourists and lodges - by household and by type of product sold in the previous season
- Percentage of hired labour in lodges - by season and sex

- Percentage distribution of food and other supplies purchased by lodges - by source (local or imported) and season
- Ratio of the local food and other supplies purchased - by lodges to total lodge purchases by season
- Percentage of household members reporting occupational linkage with tourism
- Percentage of households reporting the sale of products to tourists - by type of products in the previous last season

Critical Institution

Based on monitoring and periodic evaluation and other studies, the management should be able to identify the critical factors. Critical factors are meant to describe crucial variables whose presence (success factors) or absence (failure factors) are vital for the attainment of at least one element or object of sustainability without affecting the other aspects of sustainability. Critical areas, resources, infrastructure, behaviour, and development thus have to be identified by management to promote the success factors and discourage the factors that promote unsustainability. These dimensions also provide the basis for assessing the carrying capacity of the Himalayan environment.

Finally, it is important to emphasise the need for a critical institution responsible for carrying out the above tasks. Management objectives and strategies have to be clearly defined and coordination established with other agencies and local communities and other institutions. Studies have to be carried out, a baseline inventory is required, standards have to be set (rules and regulations, safe minimum standard and code of conduct, indicators have to be developed, etc), and an initial carrying capacity assessment has to be conducted. Only after all these activities are conducted by a critical institution (e.g., ACAP and GDP) can the monitoring process then begin.

However, over time this responsibility for development, monitoring, and evaluation has to be passed on to local communities. An additional role of this critical institution, therefore, lies in developing grass-roots' institutions and training the members of these institutions to carry out the monitoring process themselves. Finally, monitoring as an ongoing process is in itself a planned feedback system insofar as project management is responsive and flexible enough to modify the project management process based on the monitoring process and monitoring findings.

9
Summary, Conclusions, and Recommendations

Introduction

This study has made an attempt to understand the problems and prospects of mountain tourism in two areas of Nepal. The first area selected was the Annapurna area, which is the area most heavily used by tourists in the mountain regions of Nepal. The second was the Manaslu area, which has only recently opened up for group tourism. An important part of this study was to assess the carrying capacity of the two regions.

The goal of assessing carrying capacity necessitated the development of a framework. This framework integrated mountain community development and tourism development within the context of Himalayan Environmental Resources. The methodology demonstrated that carrying capacity cannot be viewed as a closed concept determined by the immediate attributes of a local environment. Many factors that appear to be within the strict limits of carrying capacity may, in fact, have already exceeded its bounds. At the same time, scope exists for enhancing the carrying capacity of the mountain environment, and it can again be of both an internal and external nature. Thus, there are always ways to enhance local carrying capacity by internalising external knowledge and technology. Nevertheless, lack of knowledge, misguided policies, and so on, may condemn some carrying capacity to remain underutilised. It was also pointed out that, in order for local communities to benefit from tourism, there is a need to link local production activities with tourism. However, given that tourism is an export industry, not all benefits can be retained locally; some will always leak out.

Carrying capacity is not easy to implement, and therefore the concept of critical factors was introduced to simplify the framework. Such factors include critical areas, resources, behaviour, infrastructure, and institutions, which are all important, not only for assessing carrying capacity but also for promoting it. This methodology was then utilised in the two case study areas of Annapurna and Gorkha.

There is little doubt that tourism, if properly managed, can be of benefit to local people and also promote conservation as has been the case in the Annapurna area. This has been possible only through a concerted effort, i.e., the ACAP. In the Manaslu region, although the area has been opened for

tourism, a concerted effort to plan tourism and integrate it with community development has been lacking, and, as a result, local people are finding it difficult to benefit from tourism. The conclusion is clear: tourism is not likely to bring benefits unless it is well planned and coordinated with local development. A summary of findings in the two case study areas follows, and final recommendations are provided.[1]

Annapurna Region

In the Annapurna region, potential benefits from tourism are perhaps less than what can in practice be realised. Although the carrying capacity of the area is improving, more time, management, resources, and innovations will be required to bring it within acceptable limits or safe standards. What appears to be lacking in the Annapurna region to make tourism a more powerful catalyst for local development is the creation of new products. Trekking cannot be considered as the only tourism product the Annapurna area can offer. There is an urgent need to assess HER and develop new products in order to bring more income and employment opportunities to local people.

Households and Community

Households in Ulleri consume 8,847 kg of firewood per year, or roughly 25 kg per day, which is substantially more than in Ghandruk (3,040 kg per year, or about 9 kg per day).

About 88 per cent of the respondents in Ghandruk reported using electricity, but 80 per cent rely on firewood for cooking, as most households use electricity for lighting purposes only.

A large percentage (75%) of households in Ulleri indicated that the growing shortage of firewood was due to tourism, but such a conclusion was not reached by households in Ghandruk.

As for direct occupational linkage with tourism, only eight per cent of the households indicated that they had any link with tourism, there being a higher percentage in Ghandruk (12%) than in Ulleri (4%). Only those households that operated lodges reported having a direct linkage, and 10 per cent reported an indirect link. This is also confirmed by lodge owners' purchases of vegetables,

1 Also refer to individual chapters for more specific summary and recommendations.

fruit, milk, eggs, etc from outside the community, with less than one-third of tourist-generated lodge income being retained within the community. The linkage is found to be much greater in Ghorepani than in Ghandruk, where the ACAP programmes are most concentrated.

Firewood is the main energy source for lodge owners in Ghorepani and Ghandruk, although in Ghandruk the availability of substitutes appears to have reduced firewood consumption. The average annual firewood consumed per lodge in Ghorepani is almost six and a half times greater than that consumed in Ghandruk.

A number of community development programmes related to both infrastructural and social or organisational development have been initiated by ACAP to improve the living conditions of the people, following the participatory approach. All programmes come together in one pilot programme - Ghandruk - and appear to be doing fine.

The result indicates that a large majority of households in the study area (ACAP) perceived the physical infrastructure and community and tourist facilities to be better than five years before. Likewise, household perceptions of sanitation and cleanliness in their village, as reflected in water sources, trails, schools, and scenic spots, were found to have improved due to ACAP, as indicated by the large majority. Similarly, the majority of households perceived an improvement in the conservation of forestry and wildlife and their environmental awareness, mainly due again to ACAP.

That tourism often brings changes in the cultural and religious values of a society does not appear to be borne out in the case study areas, as the large majority of households perceived no change in the preservation of cultural sites and their religious values.

The large majority of households (70%) perceived no change in cultural values. Only 10 per cent experienced a worsening of cultural values. However, 60 per cent of the households felt tourism had worsened cultural values. Likewise, 93 per cent of the households thought that tourism had increased crime and theft in their community, although those perceiving the worsening situation numbered only 28 per cent.

ACAP has placed special emphasis on increasing the participation of women in conservation and development programmes through the formation of various women's groups, which are actively involved in some villages in repairing

trails, banning gambling, disseminating fuel-efficient technologies (pressure cookers), and conserving cultural assets.

The introduction of time-saving technology and drinking water projects, along with the improved management of forests, has reduced women's work loads in some areas. The results indicate that a significant percentage of the respondents in the study areas perceive some reduction in the work burden, with 59 per cent attributing such change to tourism. Similarly, a large majority of the households noted some improvement in women's education. That women's income had increased was felt to be the case by 48 per cent, the majority of whom attributed this to tourism.

Household perceptions of unemployment, poverty, and income were positive. A large majority of the households attributed such positive change to tourism. Not all households reported having access to income-generating opportunities in food and cash production, livestock, and handicraft development activities. And even the majority of those who have access to such opportunities judged business to be the same as before.

The average daily wage of male porters hired by GT was almost twice that of female porters (Rs 85/day). The majority perceived porter wages as being either fair or low.

Lodges

About 95 per cent of the lodges in Ghorepani and Ghandruk are owned by the people of those villages, and only about five per cent are owned by people who have migrated to them.

The average number of rooms in the lodges in Ghorepani is 8.72 and in Ghandruk 7.27. Further, the number of beds per lodge in Ghandruk is 15.94 and 17.27 in Ghorepani.

An average lodge in both the areas provides employment to about 7.5 people each year. The bulk of lodge employment (75%) is reserved for family members, with local labour being hired (25%) to bridge the gap during peak seasons.

The 40 lodges surveyed in Ghandruk and Ghorepani accommodated a total of 14,721 (72%) tourists during the last peak season (October to April, 1993) and an additional 5,601 (28%) tourists during the slack season. Lodges in

Ghandruk accounted for 46 per cent and those in Ghorepani for 54 per cent of the visitors.

The total number of visitors who put up in lodges in Ghandruk and Ghorepani comprised almost 50 per cent of all the trekkers that visit the ACAP area in a year. The average length of stay in a lodge is about one night per visitor in both the areas.

Ghandruk lodges have access to other energy sources. The price for firewood in Ghandruk is relatively higher (15%) than in Ghorepani, which may have encouraged additional consumption in Ghorepani.

Although kerosene is available in both areas, its consumption is higher in Ghandruk than in Ghorepani. The higher price of kerosene in Ghorepani may be one reason why there is less use of it there than in Ghandruk.

Some level of energy substitution for firewood (solar energy, kerosene, and electricity) is taking place in lodges in Ghandruk. Electricity is not available in Ghorepani.

Over 45 per cent of the lodge owners surveyed in Ghandruk reported the use of solar heaters for heating water, 68 per cent of them reported the use of rice cookers, and 91 per cent of them reported using kerosene. In Ghorepani, only 22 per cent of the lodges reported using kerosene.

The use of alternative energy sources and firewood-saving technology appears to be influenced by knowledge of such technology, accessibility, and affordability. Most of the appliances were perceived by lodge owners as being inexpensive and efficient.

More than one-third of the lodge owners indicated that tourism had contributed to firewood scarcity, but at the same time over 90 per cent also indicated that tourism had brought benefits to them.

In general, the basic facilities required for tourism expansion (energy, space, accommodation, etc) were not perceived by lodge owners as seriously constraining factors, and they expressed the opinion that local facilities would be able to sustain an additional volume of tourists.

The lodge owners' perceptions of community development were also found to be fairly positive, with most lodge owners attributing such improvement first

to ACAP, followed by tourism. The result indicates the important role ACAP has played in improving community well-being.

Visitors

Most of the visitors surveyed were FITs. Females account for about 55 per cent of the visitors. The 35-55 age group constituted the largest number in both FITs and GT categories. The majority of the trekkers visiting the area were Europeans (80%), followed by Asians (10%).

The average number of trekking days for independent trekkers was nine compared to 13.82 for organised group trekkers. Trekkers prefer to use a combination of accommodation facilities rather than only one. Generally, group trekkers prefer tents (camping) and lodges, whereas FITs prefer lodges and private homes.

The majority of both independent and group trekkers (57%) reported that the quality of meals was good. With regard to rooms, only 20 per cent reported the quality to be good. Hygiene and sanitary conditions in the facilities used, on the other hand, were perceived as being fairly good by the majority of visitors. Two-thirds of the visitors perceived the price of both meals and rooms as being reasonable or fair.

One trekker (FITs) requires about Rs 260 in Ghorepani and Rs 357 in Ghandruk per day to pay for accommodation and meals. This rate is a minimum rate and does not include the cost of porters and other expenses. Additionally, other average daily expenditures of independent trekkers for local products, such as fruit and handicrafts, are also substantially higher (Rs 144) than those of group trekkers (Rs 58).

An average GT generates about 13.5 porter-days of employment, whereas an average FITs generates 6.3 porter-days of employment. Female porters are generally hired only by group trekkers.

Viewing scenery and experiencing nature were considered to be the primary motivating factors for visiting the Annapurna area, as indicated by 75 per cent of the visitors.

The majority of visitors thought that the number of trekkers currently permitted in the area is adequate and should not be exceeded, indicating that

the visitor's experience will likely begin to deteriorate if more trekkers use the same level of facilities and services.

While the majority of visitors perceived the garbage and litter situation in campsites as being good, only 35 per cent felt the situation to be good along the trek and in scenic spots. Garbage, litter, and sanitation conditions in homes and villages were, however, found to be unsatisfactory by a majority of visitors.

More than 80 per cent of all visitors reported having heard of the Annapurna Himalayas before arriving in Nepal, but only about 28 per cent had heard of ACAP beforehand.

A majority of visitors (53%) were not aware that the conservation area fee was used for the development of the area.

More than 94 per cent of all visitors stated that their trek was as enjoyable as they had expected, and only five per cent of the independent trekkers responded that the trek was enjoyable but not as much as expected.

Tourism is seen by the majority of households as having promoted local handicrafts.

Gorkha

The state of the economy in the case study area of Gorkha is poor. Many households do not have sufficient food to meet their needs. Other employment opportunities are also not available. Tourism has been opened in the area, the form of tourism allowed being group tourism. Although group tourism is believed to have relatively less impact on the environment in terms of fuelwood needs, this is not so if porters' demand for firewood is taken into account. Also, the impact of group tourism on local income is not believed to be high, as group tourists are by nature self-sufficient for most needs. Thus local people do not find ways to benefit from tourism.

The carrying capacity of the Gorkha region is mixed. The state of the environmental carrying capacity does not appear to have been influenced by tourism, simply because the latter has only recently started. If current practices continue, the chances are that the Gorkha region will experience negative environmental impact. Current action to conserve important critical

areas and resources has been identified. From an economic point of view, the area's economic carrying capacity is already overstretched, and current tourism practices will not bring benefits to local people. This can have serious implications for the social carrying capacity of the area.

Conclusions and Recommendations

The programmes that are currently going on in the case study areas appear to be guided by a vision of "mountain tourism for local community development," and more so in Ghandruk than in Ulleri and Ghorepani. However, whether similar efforts are being made in other areas of the greater Annapurna region and how effective they are is not clear. The overall information base on ACAP is poor, and the lack of adequate and systematic information on environmental and socioeconomic conditions severely limits detailed analysis of the greater Annapurna region. Although the Gorkha region has been opened to tourism, how to develop tourism to benefit the local community is a question that remains to be addressed. The present study has made an attempt to fill in this gap.

The social carrying capacity as far as community and tourism infrastructure, forest protection, awareness, and other programmes are concerned appears to be fairly successful in the case study areas, although in Ghorepani and Ulleri such programmes have yet to become as successful as in Ghandruk. In the Gorkha area, the state of community infrastructure, the lack of forest management, and the general lack of development are likely to put more pressure on the overall social carrying capacity of this Himalayan environment as more tourists visit this area. Tourism is necessary for the area and its promotion will require concerted efforts to enhance the social carrying capacity for the benefit of both the local people and the tourists.

The efforts made to improve the environmental carrying capacity in Ghandruk are laudable. External knowledge and technology have played an important role in inducing some sections of the community to use alternative energy sources and new energy-efficient technology. However, use of alternative energy sources is confined to lodges in most cases; the bulk of the households, even in Ghandruk, continue to use firewood for cooking. In Ghorepani and Ulleri, the pressure on forests for firewood does not appear to have eased, as lodges and households continue to use heavy quantities of firewood. Kerosene use by lodges in Ghorepani is also significantly less than by lodges in Ghandruk. In addition, Ghorepani does not have electricity. The use of alternative energy and technologies in other areas is constrained by lower levels of income. As

transport costs increase, both alternative energy and technologies become expensive, which will deny many poorer households access to them. Improved management of forests and private plantations to increase biomass will have to be greatly encouraged in future, along with the development of electricity and cheaper, more fuel-efficient technologies. In the short run, lodges must be further encouraged to switch to new technologies and alternative energy.

The introduction of electricity and fuel-efficient technology are examples of how external knowledge and technology (area 12 in Figure 3) can be internalised to enhance the carrying capacity of mountain areas. At the same time, efforts made to replant areas and improve forest management are actions that enhance the carrying capacities in areas 1, 2, 3, 4, 5, and 6. The success of technological intervention and forest management to reduce stress on a critical resource, namely firewood, has a multiplier effect on forest conservation, and hence the increase of biomass. Providing electricity and other critical development opportunities should be seen in the broader context of resource conservation, as the conservation of HER is of significance at local, national, and global levels. Identifying these values would provide a strong argument for Nepal to promote electricity generation, as a unit of electricity generated in remote and inaccessible parts of the Himalayas benefits present and future generations globally.

This issue has not been addressed in northern Gorkha. Firewood gathering in the northern Manaslu region requires urgent management. With tourism underway, firewood sales will provide an opportunity for local people to earn cash incomes. Group tourism, which is the only form permitted in the area, will put great pressure on forests. There is also a need to initiate conservation efforts in the southern Manaslu region.

Although many local production activities can be promoted to meet the food needs of tourists, this issue does not appear to have been adequately dealt with. As a result, tourism's link with local production activities has not been strong. Improving the economic base of the area appears to have been confined to activities related to lodges, with the economic growth in private households lagging behind. This has resulted in a great deal of tourism income leakage. Ways have to be explored to establish a strong linkage between tourism and local production systems so as to minimise the leakage and enhance the multiplier effects through cross-sectoral linkages. In the Gorkha region, the overall economic condition of households is extremely poor, more so along the northern foothills than the southern, and tourism promotion alone is likely to bring hardship to many households.

Poverty mitigation and conservation go hand in hand, mutually reinforcing one another. If poverty is exacerbated in mountain communities the latter's link with the external world is seriously jeopardised, and access to new knowledge and technology is also seriously curtailed (area 12). Thus, without programmes that aim to improve incomes, poverty cannot be mitigated, and so access to external knowledge and technology cannot be enhanced. Although critical resources, such as fuel-efficient technology and electricity, help promote conservation, they are useless if households cannot afford to use them. Poverty becomes the main constraining factor. Although reliance on kerosene is unavoidable, this form of energy is an external critical resource, and its continuous promotion may not be a sustainable option, relative to electricity. Income-generating activities in the ACAP region, aside from lodge operations, are seriously lacking. Thus, lack of tourism linkages with the local economy can significantly undermine ACAP's programmes in the future.

Another critical area is the identification of poverty pockets. Poverty needs to be better addressed, and poverty pockets need to be identified as critical areas, since people from these areas will encroach on resources to meet their basic needs. Who the poorest of the poor are, where they are located, and what comparative advantages these areas have are questions that need to be evaluated. Some of these areas may have adequate HER to develop new tourism products in order to help mitigate poverty. There do appear to be programmes directed towards poverty mitigation by first identifying the poorest of the poor.

Also, the economic carrying capacity will be very much strengthened if food supplies can be improved, since a large percentage of the population in the area experience food deficits. This aspect of critical resources, namely food, does not appear to have received attention so far. This will undermine the overall sustainability and carrying capacity of the area, and efforts made in other areas can be seriously jeopardised. A strong link between community and tourism development is unlikely to be fostered if tourism continuously has to depend on imported food and the local community's potential to produce food is not improved.

It is unreasonable to expect unique attributes, such as those prevailing in Ghandruk, in terms of household income, natural resource endowment, and organisational strength to recur in other VDCs of ACAP. However, the critical success factors in Ghandruk need to be more closely scrutinised. This study has not been able to address this issue, which was not part of its objective. Understanding the critical success factors is essential though for creating

similar programmes in other areas of ACAP or in other parts of Nepal. At the same time, detailed documentation and investigation of the failures are also needed so that the factors responsible for them can be identified and avoided in other programmes.

Currently, only group tourism is permitted in the Gorkha region. At first glance, it appears that group tourism puts relatively less pressure on the carrying capacity of the Himalayan environment, given its independence in terms of food and shelter. Generally, group tourists promote porter employment more so than FITs. Generating employment is desired in these remote and relatively inaccessible places. But there is a dilemma here. Group tourists require a larger number of porters, who consume firewood and other resources. The derived demands for firewood and other needs of porters put pressure on the existing social, environmental, and economic carrying capacities of the area. By contrast, the FITs' contribution to the local economy is more direct, as they generally use local outlets to meet their food and shelter needs. Either way, the pressure is there and is unavoidable. Therefore, unless supply side management is integrated with local community development, tourism promotion per se is unlikely to have any positive effects on the environmental, social, and economic carrying capacities of the areas.

In the 30 years or so of mountain tourism in Nepal, there has been little attention given to production diversification; reliance on trekking tourism continues to prevail. This form of tourism has not been able to generate any qualified manpower in the hills and mountains of Nepal, and the only form of employment that is generated is porter employment. It does not appear dignified to glory in promoting this form of manpower, but concerted efforts to develop new forms of manpower have been totally lacking. Secondly, linking tourism with local community development does not appear to have received adequate attention either. This endeavour namely "mountain tourism for local community development," needs to be urgently promoted in Nepal. Product diversification, maximising visitor days, tourism permit fees based on the willingness to pay, and linking tourism with community production activities lie at the heart of this concept.

In the Annapurna region, an effort has been made to diversify products. The promotion of eco-tourism in the Sikles area is one example. However, it is not clear how visitor days will be maximised and how the community will benefit from this new product. The conservation area fee and the Manaslu permit fees are based on *ad hoc* decisions. A majority of the visitors surveyed in the ACAP area indicated that their visit was as enjoyable as expected, implying that

there is scope for capturing consumer surplus in order to promote the resource generation required for development of the area. Permit fee pricing in the Gorkha region also needs to be similarly designed.

In the case of Gorkha, there is, given the HER, enormous scope for tourism development both south and north of the Gorkha Himalayas by creating new products and markets. The present study identifies a variety of new tourism products based on the concept of the tourism hub, with the hub being the central point of entry and exist. Although there can be many hubs, the Siran Danda area in the southern Manaslu region and Prok, Lho, Samagoan, and Chekampar in the north are areas where these new tourism products can be developed.

Programmes focussed on conserving critical areas are likely to be successful if the host population perceives benefit from them. Although the host population does perceive benefit from the critical areas defined by ACAP, there are some critical areas where households suffer such as crop and livestock damage from wild animals. This issue of crop raids and livestock depredation has not been dealt with, and, if it continues and its frequency increases, households are likely to take action to protect their crops and livestock from predators and unwanted critical behaviour (trapping, poisoning, hunting, and poaching). ACAP's response to this issue has been ineffective, as it has not been able to convince villagers simply through increasing non-predatory animals. Unless appropriate compensation mechanisms for this loss are introduced as an incentive to motivate desired behaviour, the environmental carrying capacity of these areas is likely to be threatened.

Critical areas that have a comparative advantage in developing new products should also be identified in order to enhance benefits to the community. The opening of the eco-tourism circuit in the Sikles region is a case in point. Identifying critical areas requires assessing values of HER and promoting new products (within the constraints imposed by the carrying capacity). In a large area, such as the Annapurna region, there may be many critical areas where exploitation can generate positive benefits to mountain communities. The assessment of critical areas in terms of benefit generation does not appear to have received adequate attention.

Tourist perceptions and reactions to congestion in critical areas need to be constantly monitored in order to determine the social or behavioural carrying capacity beyond which visitors' experience is impaired. From this perspective, although the existing areas visited by tourists do not exhibit congestion, they

are likely to go beyond acceptable or tolerable limits if more tourists are permitted to visit them under the current state of infrastructural facilities and policies. The scope for expansion and improvement of existing facilities and diversification of tourists in other areas needs to be assessed in order to enhance or cope with this type of carrying capacity. In Gandruk, for example, facility constraints in terms of electricity are likely to adversely affect both social and biophysical carrying capacity unless tourist products and areas are diversified.

Although it appears that the identification of critical areas has begun in a limited way, a great deal of work still remains to be done. In order to mitigate poverty, develop new products, define safe minimum standards, and so on, the identification of critical areas is of utmost importance. Critical areas currently appear to be viewed only in terms of their negative characteristics, whereas the positive characteristics, reflecting the value of HER, still remain to be assessed with a view to promoting community and tourism development. It is therefore necessary for ACAP to begin developing new products and new areas and to integrate these products and areas into community development (areas 2 and 6), not only in order to enhance the carrying capacity of the whole region but also in order to avoid development that is unsustainable (areas 3 and 5), as may result through overcrowding.

An important part of community development has been the formation of grassroots' institutions. Such institutions have been formed to protect HER and promote both MCD and MTD. Although it is extremely difficult to predict whether institutions such as those already formed will be sustainable or not, these institutions are currently playing a critical role in their communities. Simply pumping resources into rural areas without local management capabilities being developed is unlikely to achieve development. Human resources can be developed, but they need to be organised so as to promote social capital, which is equally important for sustainable development. Local institutions such as those being formed by ACAP and GDP are therefore considered to be critical institutions, and they need to be monitored and evaluated periodically in order to resolve problems and enhance the management capabilities of local areas.

A strong link between community development and tourism will also depend on improving the status of women. Women in the mountain areas have shown their capability as good managers of lodges and households, as well as of natural resources. Income-generating activities that enhance women's income will not only help women improve their overall status but can also bond

community and tourism linkages. Both ACAP and GDP have made breakthroughs in this respect, to judge by the results from the case study areas and other reports on GDP.

Command and control are given too much time to fail and economic incentives too little time to succeed. Both direct and indirect economic incentives should be used to smooth the uneven distribution of costs and benefits of conserving and developing the mountain environment and also as a policy tool for correcting market failure. However, for incentives to function well at the community level, they should be supported by appropriate policies at the national level.

Although ACAP has created a number of incentives by assigning management responsibility to local grass-roots' institutions, a great deal of work still remains to be addressed in this area. These include provisions for more direct incentives in the area of income-generating activities and compensation mechanisms for losses caused by wildlife and poverty programmes among the poorest of the poor. Besides the general focus on social programmes, income-generating activities need to be greatly emphasised.

The new type of tourism envisaged will require a strong institutional setting at the grass-roots' level in order to maintain close links between tourism and community development. Currently, Gorkha Development Project (GDP) is supporting a number of activities at the grass-roots' level in order to improve the socioeconomic well-being of the poorest of the poor in the district. Following a grass roots' philosophy, it has established a strong grass-roots' institutional framework to carry out development activities. Thus GDP already has a strong institutional presence in the district. Therefore it is recommended that GDP should be given the mandate for the overall supervision of mountain tourism for local community development in Gorkha.

If a new institution is established for developing tourism, it will require considerable time and effort to organise communities to participate in tourism development, and scarce resources would be used to duplicate work. This could have negative implications for the current work being carried out by GDP.

However, GDP will require additional resources to develop MCD and MTD. In the northern foothills, resources are already being generated in the form of trekking fees. Sixty per cent of these have already been committed by the government for the area's development. This money should be made available

to GDP to carry out both MCD and MTD in this area. GDP should additionally motivate the private sector to invest in tourism in the areas identified.

Current activities carried out by GDP should be strengthened or modified to promote tourism- related goods and services. ACAP has a great deal of experience in tourism, and GDP should study its successes and combine them with its own advantages in order to promote both MCD and MTD. An effective system will be required to monitor the latter as well as the environment.

Tourism markets must be tapped and new products developed and marketed. The present trends in tourist demand need to be analysed in order to develop these new products. As discussed in Chapter 8, marketing should not be a problem, if the right products are developed. Developing new products and improving accessibility to them will promote the local marketing of products to the tourism sector.

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ICIMOD

ICIMOD is the first international centre in the field of mountain development. Founded out of widespread recognition of environmental degradation of mountain habitats and the increasing poverty of mountain communities, ICIMOD is concerned with the search for more effective development responses to promote the sustained well being of mountain people.

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.

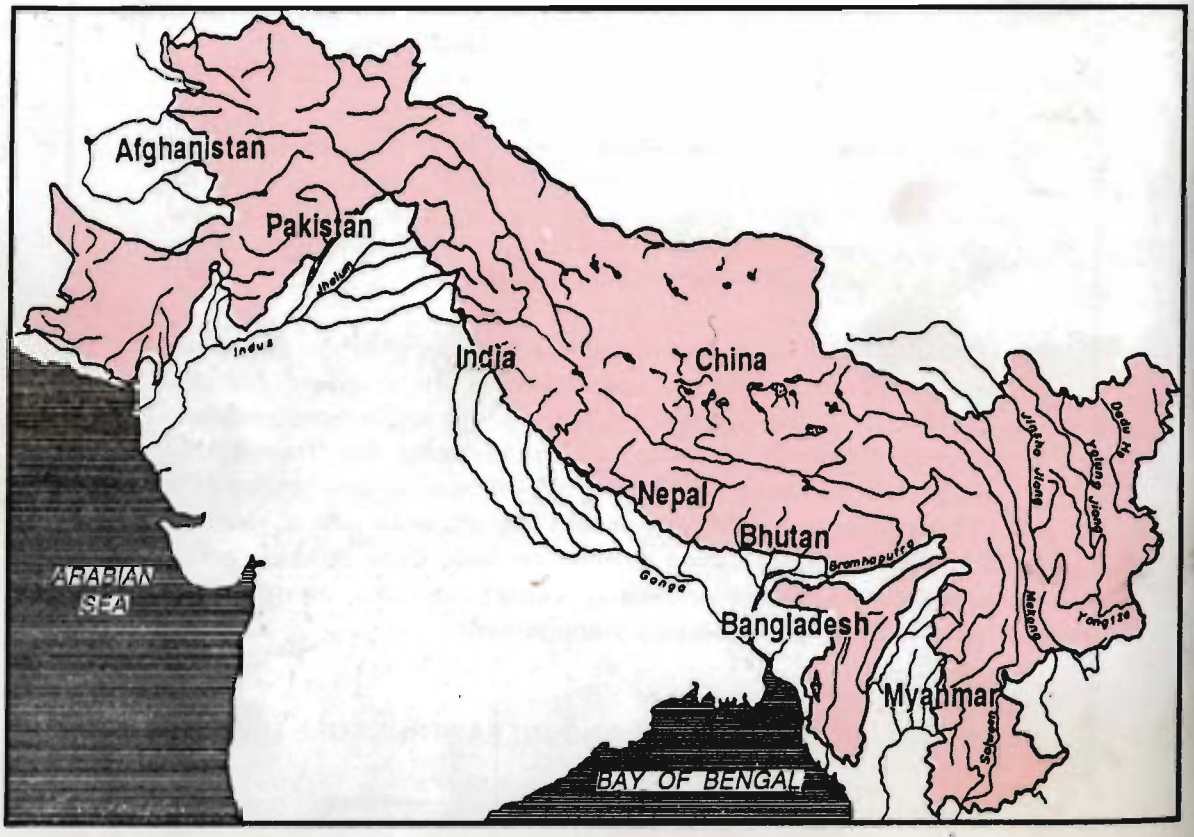
ICIMOD serves as a multidisciplinary documentation centre on integrated mountain development; a focal point for the mobilisation, conduct, and coordination of applied and problem-solving research activities; a focal point for training on integrated mountain development, with special emphasis on the assessment 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 consistitutes one of the thematic research and development programmes at ICIMOD. The main goals of the programme incude 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.

Participating Countries of the Hindu Kush-Himalayan Region

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



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