CHAPTER- 6

UPPER RANGIT BASIN : HUMAN ECOLOGY OF ECO-TOURISM

SECTION I

INTRODUCTION AND CONCEPTUAL ASPECTS

Mental attitudes differ from person to person, so do human wishes. Motivation for travel will also differ from individual to individual. Nevertheless, an attempt can always be made to classify human motives for travel :-

(a) **Rest and Relaxation**. When the humans work in a society of tension we want to get away from it, and seek physical and mental relaxation elsewhere, though temporarily.

(b) **Educational and Cultural.** Humans wish to see the way of life of other people, to study the beautiful natural sights of other countries, to acquire better knowledge and background of people living there, to visit cultural, scientific, technical and spiritual institutions of learning in other places, and to appreciate art, music, literature and cultural heritage of other societies.

(c) **Social and Historical.** Some are keen to visit historical sights in order to participate in history and better appreciate historical events, to gain new experiences by meeting new people, and to create personal esteem.

(d) **Health and Sports.** Another group may like to visit health centres and mountain resorts, to enjoy salubrious weather, to take part in sports or to join mountaineering expeditions.

(e) **Recreational Activities.** Activities such as swimming, trekking or hiking may be the pull factors for many.

Depending on choice and economical factors, tourism is sub divided into three categories – domestic, regional and international. Both, in terms of volume and also in terms of receipts, domestic tourism far exceeds the other two types. Regional tourism is much higher than international tourism in the case of both the variables.(Mridula and Datt, 1991)(1).

While domestic tourism involves redistribution of incomes within a country, international tourism adds to the resources of the host country.

For a number of developing countries, their natural environments continue to be source of significant economic benefits, attracting international and domestic visitors often in search of an authentic natural and some times a cultural experience. Detailed information on the number of visitors visiting natural areas and the amount of resultant economic activity in the developing countries, is both, difficult to obtain. Tourism associated with natural and protected areas has been, and continues to be growing sector in the global tourism industry.(Whelam, 1991; Brandon, 1996)(2,3). Of the estimated 55 bn Dollars in tourism receipts in the Third World, a significant portion of this in the early 1980s was the result of nature tourism activities (Whelan, 1991)(4).

Although not always concerned with the protected areas, it is estimated that annual global expenditure on adventure-related travel amounts to 110 bn Dollars (Adventure Travel Society, 1998)(5). Conservative estimates of the growth in demand for nature-related tourism range from 10-15 percent, while more optimistic forecasts go upto 30 percent (Brandon, 1996)(6), the variation due primarily the differences in the definition of the types of tourism included. Although difficult to generalise, for many developing countries, their natural heritage is a primary attraction for international visitors and the increasing numbers of domestic tourists.

Eco-Tourism

Associated with the growth of nature-related travel sector is the facet of eco-tourism. The Ecotourism Society defines ecotourism as, " Responsible travel that conserves natural environment and sustains the well being of people." (Lindberg and Hawkins, 1993) (7). In other words, ecotourism is the symbiotic relationship between tourism and environment which benefits the socio-economic condition of the local inhabitants and at the same time promotes tourism and protects the environment.

By harbouring environmental awareness, both, among local people and visitors and by linking tourism to social and economic development, it is potentially possible to conserve the natural and cultural heritage of an area, and to improve the living standards of the host region inhabitants. Ecotourism, if developed responsibly, and managed properly, can become a powerful instrument and strategy for the biodiversity conservation. It is a form of tourism that promotes tourism-environment linkages, and at

the same time, the host regions can take pride in what they have to offer for their people and the tourists.

Eco-Tourism in Sikkim

Most of the ecotourism activities in Sikkim are either in protected areas or cultural sites. Protected areas are the State Properties where ownership, control and management of resources and claims rest with the government. Rights for tourism purposes are with a variety of users including local entrepreneurs, communities, commercial tour operators (residents and also from outside the area and sometimes region) and government agencies such as the Forest and Tourism Departments. Permits are often issued by the Tourism and Forest Departments of the State Government with the intention of generating revenue and regulating visitor flow. Cultural sites of tourism interest such as monasteries and their sacred forests are under the control of local institutions. There is a unique example of Khecheopalri sacred lake where the legal rights lie with the State Government but the operational rights seem to be with a local institution, *viz.* Khecheopalri Holy Lake Welfare Committee.

The Eastern Himalaya is a recognized global site of high biodiversity value, and is facing growing threats from mass tourism. Sikkim is growing in popularity, and likely to attract increasing numbers of tourists interested in the cultural sites and protected areas of high biodiversity value. Tourism is a highly seasonal activity in the State- October through November and March through June being the two peak seasons. Since income and employment are dependent on the tourist flow, the income earned during the tourist season has to compensate for the lean tourist seasons. The seasonality factor, therefore, makes it more important to link tourism to local production systems.

As concern grows over the loss of natural heritage in the area, it appears this is an ideal time to facilitate ecologically and socially responsible tourism at key destinations to conserve the biological diversity of the area. Therefore a collaborative project of The Mountain Institute and G.B. Pant Institute of Himalayan Environment and Development with other collaborators, namely the Travel Agents Association of Sikkim (TAAS), the Green Circle and local NGOs with communities is being implemented in the West District of Sikkim. The Government of Sikkim has also played a key role at the various stages of the project implementation. The activities and roles of each stakeholder have

been presented in Table No 6.1. At the heart of the project are participatory approaches that link enterprise operation with conservation action, while merging traditional cultural practices.

Human Ecological Interactions

In Sikkim the target areas are the local inhabitants and sites to be visited. The interacting groups are : the local hosts, the interacting operators, NGOs and scientific institutes - each one of them functioning within the frame work of policy laid down by the government agencies, and policy planners.

At any one point of time, all individual groups may be interacting with one or more, and some times all the agencies named above. So as to ensure the tourists'satisfaction, locals' economical enhancement and environmental preservation, it is necessary that the links between all units function unhindered. The interaction between all agencies are best explained through the Tourism Interactional Web at Figure 6.1. Such an interaction within the parameters and principles of human ecology will benefit all *viz* the soil and geological factors, water bodies, the mountain tops, the faunal and floral diversity, the local populace, tour operators, researchers, government agencies and the tourists themselves.

Human Ecology Interactional Web clearly amplifies that an activity at one place (or inactivity at one place) has a profound affect on all other actors within the web. A broken link in the web may commence a chain of instability, resulting in degeneration of environmental factors on the left side of the web, disorganization of agencies on the right hand side of the web, tourist dissatisfaction who interact with both, the left hand side environmental elements and right hand side human agencies, finally culminating into a human, natural and economic disaster for the local inhabitants who interact with all elements at all times.

As and when, and if at all, the indigenous ecological knowledge of the local populace is given the weightage it deserves, then the dotted lines of local populace feed back may be converted into direct undotted ones. This could be a major step towards sustainability of ecosystems themselves, and the interrelationship between each of the elements as well.

TABLE NO 6.1

ROLE, RESPONSIBILITIES AND ACTIVITIES OF DIFFERENT GROUPS IN SIKKIM BIODIVERSITY AND ECOTOURISM PROJECT

(Sharma *et al*, 2000) (9)

Activities	Tour Operators	Community/NGOs	Government	TMI	GBPIHED
Role	To cover issues of conservation, policy and infrastructure development and management of Tourism industry TAAS/PTDA as key agencies	Preservation of natural and cultural heritage. Local stakeholders use natural resources	Government of Sikkim is responsible for policy formulation and resource control and management.	Dedicated to conserve mountain environment and cultural heritage trough education, conservation and development working with the community. To develop participatory and scientific monitoring	Focal institute t advance scientific knowledge to evol and demonstrate integrated manag ment strategies fo resource and susta ble development. and to pursue appl research.
Activities/Responsibilities					
Product and Site Enhancement	Fuel-wood reduction trekking hut, garbage, litter and sanitation management, health and safety measures.	Community forest management, conservation education and village beautification.	Infrastructure development and promotion of health and safety measures.	Enterprise destination enhancement	Technical input in choice of species a planting technique
Enterpre-nuerial skills and product development	Trekking staff training, new product development	Study tours for guides, lodge management, promotion of local food, micro-enterprise development	Tourism Department participation in training	Training input and organization	Green house vegetable production, composition and indigenous food promotion
Ecotourism marketing	Market trend survey to design and implement marketing strategies	Help in implementation of tourism promotion activities	Quality tourism development	Provide international experts	Provide local experts, study tours and workshop.
Planning, monitoring and applied research	Policy review, business survey and participatory monitoring	Community resource management	Policy review and implementation	Policy workshop	Participatory, biological, socio-economic and enterprise monito

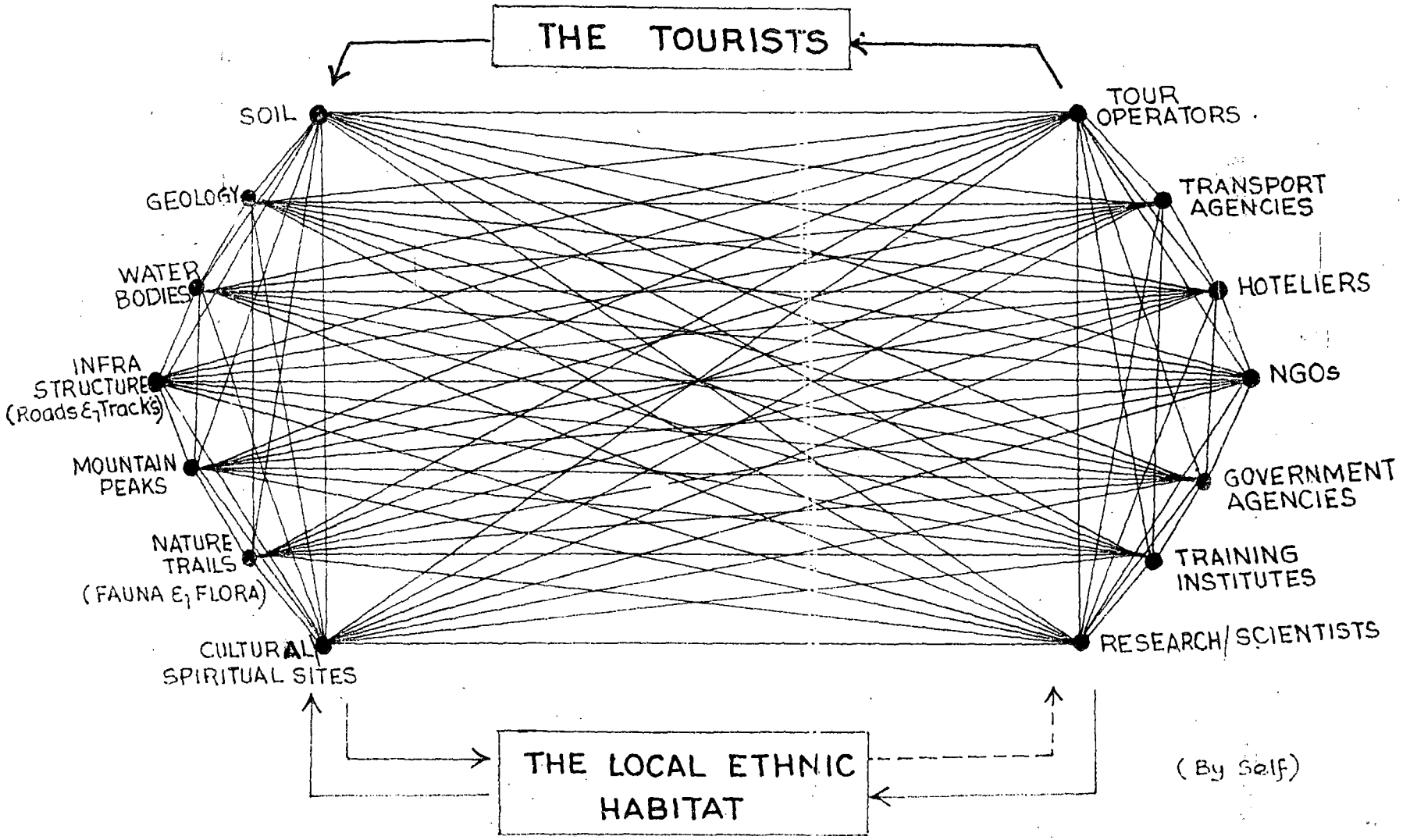
Table 6.1 (contd)

Activities	Tour Operators	Community/NGOs	Government	TMI	GBPIHED
Biodiversity preservation	Threatened habitats and areas are not exposed to tourists	Avoid disturbance and negative impact to wildlife	Signboard about vulnerable areas and species.	Plan activities with no negative impact	Carry out impact studies and monitoring
Cultural preservation	Trekking staff to inform visitors about culture and value	To be aware and feel pride about culture and tradition	Cultural site planning for tourism	Support in managing cultural site and museums	Support in the management of cultural sites

TAAS – Travel Agents Association of Sikkim. PTDA- Pelling Tourism Development Association, KCC- Khangdzonga Conservat Committee, TMI-The Mountain Institute, GBPIHED- G.B. Plant Institute of Himalayan Envrionment & Development.

HUMAN ECOLOGY OF ECO-TOURISM IN SIKKIM

INTERACTIONAL WEB



(By Self)

SECTION II

TOURISM ASSETS OF UPPER RANGIT BASIN

Introduction

Lack of any form of modernisation in itself is a unique attribute of the area, and when blended with natural setting, its makes Upper Rangit Basin very unique. Upper Rangit Basin constitutes areas that include heights from sub-Himalayan Regions, to the Kanchendzonga Massif. The people practice traditional customs of their respective ethnic groups and the unified Sikkimese hospitality. Its remoteness, its being on an independent salient from the State capital, adds to its attraction. The sheer beauty of the cold natural wilderness of Dzongri-Tsoka heights constituting Sikkimese polity and Tibetan culture; the rhododendron trails on the Singalila Range; the historical assets at Yuksom and the ruins of Rabdentse; the spiritual centres at Pemayangtse, Dubdi, Tashiding and Ralang; the Upper Rangit Basin attractions may be classified into two categories, namely, natural and man-made.

Natural assets include the endowments of the natural while man-made assets are both, tangible (monasteries), as well as intangible (culture).

NATURAL ASSETS

KHANGCHENDZONGA NATIONAL PARK

History

The Khangchendzonga National Park, Sikkim may be aptly called the haven of prized musk deer, elusive snow leopard and the shy Himalayan tahr, the Shapi of Sikkim. The National Park occupies a place at the apex amongst the high altitude National Parks in the country and is endowed with one of the most magnificent high altitude ecosystems in the world. The Park which has an elevation of 1829m to over 8580 m above mean sea level was commissioned on 26th August 1977 on the basis of the floral, faunal, ecological, geomorphological importance and the wildlife potentiality of the area. (Forest Department, Government of Sikkim – 1998) (15).

Location

"This National Park lies within the latitude 27 degree 25` and 27 degree 55` North and longitude 88 degree 40` East. It is situated in the North District where it occupies major portion of areas and in the West Districts of the State. It is a vast area extending from the portions of cold desert of Lhonak valley, ridges of Lachen in the North Districts to the historical place at Yuksom and extending upto as far as Boktok, Dhaphey Bhir and Nepal border in West Sikkim. The Western boundary of the Park runs along the international boundary between the Indian state of Sikkim and Tibet in the North and Nepal in the West Districts of the State..

Area

Originally it encompassed an area of 850 sq. kms and in the year 1996 it has been expanded to 1784 sq.kms. The necessity of its expansion was essential in view of its ecological, faunal, floral, geomorphological and zoological association and importance, and to bring potential areas under the Park for providing an insurance in their protection. With the expansion in its area, the Park alone now occupies as much as 25.14 percent of the land area of the State against 11.97 percent in the past. It is proposed as a Biosphere Reserve by including additional areas in North and also the Mainam Wildlife Sanctuary.

Land Tenure

The vast expanse of the Khangchendzonga is within the reserve forests. Except a small Tibetan village of Tibetan communities settled since 1959 in a place called Tsoka which comprises 10 houses now with a total population of 90 (Patrol report- September, 1998). There is no other village settlement inside the National Park. Since this small village occupying as much as 13 acres of land only and situated in an isolated pocket within the areas under proposal for tourism zone, this will have to be considered as part of the ecosystems of the Park. The only one decimating factor taking place is the grazing by a few cattle herds in the alpine land in the Southern extremity of the Park. They were enjoying this grazing right since centuries but the impact of grazing as per the recent survey has not been so degrading to the alpine environment. This could probably be due to less number of cattle. Even though, efforts are being made to evict them to areas available outside the Park. There is also a statutory order of the State Government banning the grazing inside the Reserve Forests.

Flora

The floristic wealth is rich and diverse, both in composition and value. The forests represent variegated plant communities which include diverse vegetational types corresponding to variation of climatic and edaphic factors. The area broadly comes under Champion's and Seth's classification type SUB GROUP 11B-NORTHERN MONTANE TEMPERATE FORESTS AND GROUP 12 HIMALAYAN MOIST TEMPERATE FOREST : SUB-ALPINE SCRUB FORESTS, ALPINE SCURB AND PASTURES.

Thus, the flora of the Park can be broadly sub-divided into three forest zones: -

(a) Temperate Broad-leaved Forest (1829-2730m).

(b) Mixed Coniferous Forests (2730-3650m)

(c) Alpine Scrub and Grasses (above 3650m)

The Temperate Broad-leaved Forests are dominated by ***quercus Lineata, Q lamellosa, Q. pachyphylla, Schima wallichii, Castanopsis spp,. Acer cambellii, Engelhardtia spicata, Juglans regia, Michelia cathcartii, Magnolia cambelli, Cinnamomum obtusifolium*** etc.

The mixed coniferous forests occur at higher altitudes with fir, ***Abies densa***, Maple, ***Acer spp***., Spruce, ***Picea morindoides*** and junipers ***Juniperous spp***., with associates of taller varieties of Rhododendrons and Bamboo ***Arundinaria spp***.

In the Alpine Scrub and grasses, the common shrubs and herbs found are. ***Meconopsis spp, Primula spp***., Dwarf Rhododendrons, ***Rheum spp.***,Prostrating junipers, ***Iris gentiana, Anemone, Delphinimum*** etc.

Besides, there are many medicinal herbs found in the Khangchendzonga. ***Aconitum spp., Picrorhiza kurrooa, Orchis latifolia, Nardostachys jatamansi, Rheum emodi, Panax pseudogisenq*** etc. are a few to mention here.

Fauna

Khangchendzonga National Park is a reservoir of gene pool with diverse habitats. The faunal wealth is also equally rich in content. The high altitude alpine and plateau regions harbour rare and endangered species of animals. The Snow Leopard of the alpine land holds the position at the apex of the biological pyramid. Himalayan Red Panda (State animal), Musk deer, Nayan or the Great Tibetan Sheep, Bharal or Blue Sheep, Himalayan Tahr- the Shapi of Sikkim, Marco Polo Sheep (reported), Leopard, Goral

Serow, Barking Deer, Lesser Cats, Wild dogs, Tibetan Wolf, Mountain Fox, Tibetan Fox, Himalayan Black Bear, Marmots and Monkeys are a few principal animals found in the Park.

Avi-Fauna

As the State is rich in bird life with around 550 species and sub-species, the Khangchendzonga also harbours many forms of avian beauty and rarity. The flamboyant high altitude pheasants which include Monal Pheasant, Tragopal Pheasant and Blood Pheasant (State Bird), Tibetan Snow Cock, Himalayan Snow Cock, Snow Partridge, Hill Partridge, Lammergier, Forest-Eagle Owl, Tibetan Horned Eagle Owl, Eagles, Falcons, Hawks, Snow and Rock Pigeons adapted physiologically for those special climatic conditions at high mountains add to the number of smaller bird-lives found in the National Park. They plumet down to lower elevations in winter only when the upper reaches are covered with snow and most vegetation has died down. The high altitude lakes form stop-over sites for some of the migratory water fowls *viz* Barheaded Goose, Eastern Goosander, Brownheaded Gull, Pintail, Grebes and Blacknecked Crane. These lakes are also the breeding grounds of some of the resident waterfowls *viz*, Brahminy Duck, Avocet, Coot, Shovellers, Pochards are a few to mention here.

MOUNTAINS AND PEAKS IN THE KHANGCHENDZONGA (High Altitude) NATIONAL PARK, SIKKIM

MOUNTAINS		HEIGHT IN METRES
1.	Mt Khangchendzonga	8585
2.	Mt Narsing	5825
3.	Mt Siniolchu	6886
4.	Mt Simvo	6811
5.	Mt Pandim	6691

	PEAKS	HEIGHT IN METRES
1.	Tent Peak	7365
2.	Talung Peak	7349
3.	Goechala Peak	6115
4.	Jhopuno Peak	5936
5.	Paki Lho Peak	4144
6.	Lamo Angdang Peak	5868
7.	Singdamringu Peak	3751
8.	Lhokhamburich	5497
9.	Yajuknamteng Peak	5643
10.	Kabur North Peak (or Kabru)	7338
11.	Kabur South Peak (- do -)	7317
12.	The Twins	7350
13.	Nepal Peak	7150

GLACIERS AND LAKES IN THE KHANGCHENDZONGA (High Altitude) NATIONAL PARK, SIKKIM

	GLACIERS	LAKES
1.	Zemu Glaciers – 26 Km long and about 300 m wide, largest in the area.	1. Lhonak Tso
2.	Tent Peak Glacier	2. Green Lake
3.	Nepal Gap Glacier	3. Langpo Lake
4.	Zumthul Phuk Glacier	4. Dudh Pokhari (Ome Chu)
5.	Tongshion Glacier	5. Bhale Dudh Pokhari
6.	Talang Glacier	6. Nor Pokhari
7.	Siniolchu Glacier	7. Sungmoteng Chho
8.	Simvo Glacier	8. Tikuchia Pokhari
9.	South Simvo Glacier	9. Majur Pokhari
10.	Twins Glacier	10. Leduwa Pokhari
11.	Hidden Glacier	11. Dalle Pokhari
12.	Thekang Kiong Glacier	12. Lam Pokhari
13.	Changsang Glacier	13. Tinkone Pokhari
14.	East Langpo Glacier	14. Sukhe Pokhari
15.	South Lhonak Glacier	15. Lamgepui Chho
16.	Jonsang Glacier	16. Kishong Chho
17.	Onglakthang Glacier	17. Shingo Chho
18.	East Rathong Glacier	There are several other unmaned lakes

FAUNA AND FLORA

See the Chapter 5 on Ethnobotany, and in other relevent sections in this Thesis.

NATURE TRAILS

Trekking

Trekking in Upper Rangit Basin can be a wonderful experience- an antidote to the stressed city life. While trekking one relishes the pure air and silence of the wilderness as one walks through luxuriant forests and landscapes and pass through quaint villages. Although every nook and corner of Sikkim from the sultry tropical forests in the south to the wilderness in the north is a trekkers' paradise, some of the popular treks that are identified are (Rai *et al,* 1998) (16) :-

(a) *Monastic Trek.* Pemayangtse-Sangacholing-Khecheoplri- Dubdi –Sinon-Tashinding- Ralang. (March to May and October to December).

(b) *Rhododendron Trek.* Nayabazar-Hillay/-Barsay-Dentam-Pemayangtse. (March to May).

(c) *Khangchendzonga Trek.* Yuksom-Bakhim-Tsokha- Dzongri-Thangsing-Zemathang/- Goechala and back. (Mid March to mid June and September to November).

(d) *Coronation Trek.* The first king Phuntshog Namgyal trekked from Gangtok-Rumtek-Sang-Yangang- Ravangla-Tashiding-Yuksom, and this trek has been established since then. The best time to trek through this route is October to December.

The Department of Tourism is planning to open trekking in the following proposed circuits in the Study Area :-

(a) Ravangla-Maenam-Yangang-Simchuthang-Sirwani.

(b) Ravangla-Maenam-Dadeillydaara-Borong/Sada.

(c) Rabdentse-Pemayangtse-Sangacholing-Khecheopalri-Norbugang-Dubdi-Tashiding.

MAN-MADE ASSETS

MONASTIC SPIRITUAL CENTRES

There are no remains of great archaeological interest in the study area except Rabdentse, but some of the Budhist monasteries are worth visiting. The monasteries of Sikkim apart from being the places of religious discourses, worship and meditation are the storehouses of many hand written religious books and murals, the part and parcel of Sikkimese cultural heritage. Some important religious places are given in succeeding paragraphs.

Pemayangtse Monastery. The sublime Lotus monastery lies North of Gayzing. Built in 1705 it is Sikkim's second oldest monastery. This ancient monastery is the headquarters of the Nyingmapa Buddhist sect of Sikkim. Inside are great murals filled with thousands of deities from the Tibetan Buddhist pantheon. On the top floor is a wooden sculpture, the Zandog-palri, which depicts the heavenly abode of Guru Padmasambhava. The main ritual masked dances of this monastery is held annually during the month of January.

Dubdi Monastery. Built by Gyalwa Lhatsun Chenpo in 1642, this is the oldest monastery of Sikkim situated on a hill top above Yuksam amidst a verdant tranquil forest. An hours walk uphill from Yuksom passing through cardamom fields, and lush green forest, the walk is well rewarding. The monstery has been able to retain its old design and architecture with beautiful wall paintings and old thankas.

Tashiding Monastery. Located in its majestic isolation on a helmet shaped conical hilltop, this monastery belongs to the Nyingmapa sect. Built in 1716, according to legend, Guru Padmasambhava shot an arrow and meditated on the spot where it had fallen. Tashiding was constructed on the spot, surrounded by deep forest and two rivers, the Rathong and Rangit. This monastery houses the sacred chorten. Thongwa Rangdol which according to belief, just a glimpse of the holy chortens cleanses one of all sins. The sacred Bumchu festival is performed here on the 14th & 15th of the first Tibetan calendar.

Ralang Monastery. The oldest monastery of Karma Kagyu sect in Sikkim is located at Ralang in the South Sikkim district. The full religious name of the monastery is Karma Rabdenling Gompa. The monastery was constructed in 1718 by the fourth Chogyal of Sikkim during 1717-1733 on his return from pilgrimage in Tibet. The monastery has recently been reconstructed on a larger scale with a huge golden painted statue of Lord Buddha inside it.

Khecheopalri Lake. This lake is set amidst the thick and luxuriant forest cover in West Sikkim. Khecheopalri lake is considered as one of the most sacred lakes of Sikkim, and it is believed that wishes are fulfilled when prayers are offered to the deities of the lake. Many domestic as well as foreign tourists visit this lake each year. The lake attracts many migratory ducks during the winter season. The Khecheopalri monastery is situated above the lake and is half and hours walk uphill. A large number of visitors come to this lake during the Khecheopalri Lake Festival which normally falls in the month of March.

SECTION III

IMPACTS OF MOUNTAIN TOURISM IN UPPER RANGIT BASIN

Mountain Tourism

The mountain people's daily needs are met through resources found in the Himalayas. Local demand for these resources is growing at a fast rate and thus leading to gradual over harvesting and environmental deterioration. Local people have no option but to continue to use the resources because development has not been able to mitigate poverty and generate new employment opportunities in remote mountain areas. Povery mitigation in the mountain region requires accelerated use of the reources and this has led to rapid environmental deterioration. The search for sustainable livelihood options under these conditions lies in harnessing natural comparative advantages. Tourism in the Himalayas has been gaining in popularity, and it has provided new opportunities and challenges. It has been able to provide income and employment opportunities to remore and relatively inaccessible areas. Mountain tourism has both positive and negative impacts.

Tourism has affected traditional land-use practices and brought about changes in crop cultivation and cropping patterns. Conversion of land forest to agricultural use, conversion of agricultural land to build lodges or tea stalls, leaving land fallow to rent out as camp grounds, etc are some of the changes brought about by mountain tourism. In some places, agriculture has become a second occupation to tourism-related activities. The main impacts of mountain tourism are changes in land use, garbage collection, littering, pollution, and increased demand for firewood :

Mountain tourism creates jobs to mountain people annually in the form of porters and other staff. Also, many women are employed in lodges and tea houses. The jobs created by tourism in mountain areas, however, are seasonal.

Wages paid to the porter accrue as income. But all income may not be retained within mountain areas as porters may come from other regions where tourism is not active. In the lodges, income accrues from accommodation and food payments. Income

leakage occurs as many items have to be imported to supply food and fulfil the needs of visitors.

Main Impacts

The impacts of mountain tourism may be grouped into three main headings. The impacts may be either positive or negative. It is not always possible to discern whether the impact is positive or negative, since its true manifestation may take many years. Also, tourism may not alone be responsible for the impact as many other factors may be inducing changes in the mountain environment, economy, and sociocultural practices of the mountain people. The main impacts witnessed in the case of the mountain areas of Upper Rangit Basin are briefly highlighted :-

(a) Environmental.

(b) Economic.

(c) Sociocultural.

Environmental Impacts

Land Use Patterns

(a) **Changes in Cropping Pattern**. The areas adjacent to Pemayangtse and Pelling, the areas on the road joining Ravangla-Sosing-Kewzing-Legship and the areas on the Tashiding salient upto Yuksom have maximum physical and social contacts with the tourists. The locals in these areas have learnt that cash crops bring quick cash returns to the house holds, thus motivating change. Patato, fruit and vegetable cultivation in the Home Gardens has increased replacing traditional staple crops such as 'buckwheat' or barley.

(b) Changes in the forest encroachment are mixed. The dense Maenam forest gets thinner by the year, giving space to new buildings. Within a period of three years from 1997 to 2000, a 1.5 km stretch of forest area along Ravangla- Ralang road has given way to human habitations resulting in forest clearance upto a depth of about 200-400 meters along the stretch. Similar thinning of forest is noticeable on the Western Pelling spur, and in the area around Sinon Gompa located North of Tashiding Market.

(c) The land on the Yuksom-Dzongri corridor finds a different kind of change in land use pattern. Land is left fallow to provide camp grounds replacing cultivation of traditional staple crops.

(d) In Yuksom-Dzongri Tsoka-Bakhim areas, pack animals are gaining ground compared to mulch animals, as they bring higher cash returns to households by carrying tourists loads. This may later result in added demands for fodder and grazing areas at the cost of forest land and wildlife.

Litter, Garbage and Pollution

Another major environmental problem created by mountain tourism on the Rhododendron trails and the Yuksom-Dzongri corridor region is the accumulation of the solid waste including human waste along the trails, in the campsites and in and around villages. Independent trekkers and local people are the main sources of littering. The organised trekking groups litter the campsites if their trek leader is not an environmentally conscious person. Porters and other local support staff also litter trails. Lack of awareness among the local villagers means they just throw all their rubbish in backyards or in the river or in the street, where it is spread around by wind or scavenging dogs, cats, rodents and birds.

The main components of solid waste found along the trail, at campsites and in the villages are mineral water bottles, batteries, toilet rolls, toilet paper, wrappers, metal cans and glass bottles. Visitors buy bottled mineral water from Yuksom, Gayzing, Pelling or Ravangla for their own safety but leave them behind on the trails or in villages. If the bottle is not damaged, it can be reused, but once it is damaged, it ends up as rubbish.

Estimates indicate that an average trekking group of 15 people generate about 15 kg of non-biodegradable, non burnable waste in ten trekking days. With thousands of trekkers in the mountains, the waste multiplies (Banskota and Sharma, 1998) (17).

Litter on the wayside is ugly and unhygienic. Time taken for various items to decay as given by ICIMOD (1997) (18) is as under :-

(a) Traffic tickets	- 2-4 weeks.
(b) Cotton rags	- 1-5 months.
(c) Ropes	- 3-14 months.
(d) Wool sock	- One year.

(e) Bamboo pole	- 1-3 years.
(f) Painted wooden skate	- 13 years.
(g) Tin can	- 100 years.
(h) Aluminium can	- 200-500 years.
(j) Plastic covers	- 450 years.
(k) Glass bottles	- Undetermined.

Forests

Three factors have increased the demand of firewood :-

(a) Tourists outnumber local people on the Rhododendron trails and Yuksom-Dzongri corridor.

(b) Although group tourists and independent trekkers are expected to use alternative sources of energy, they and the porters depend on firewood.

(c) Growing seasons in higher mountains are extremely short.

Economic Impacts

Economic impacts of mountain tourism can be viewed in terms of how different aspects of the mountain economy are affected by tourism expenditure and tourism development. The full impact of mountain tourism on mountain areas will depend on how strongly the tourism sector is linked to the mountain economy. (Banskota and Sharma, 1998) (19).

The current flow of tourists in the Upper Rangit Valley is not too large, and has no immediate implications on the local production system. The one sector that has particularly benifitted is the Sikkimese arts and crafts :-

(a) **Handicraft Centre, Tibetan Settlement, Ravangla**.

(i) The carpet weaving centre with looms of all sizes has grown in size and local sales have picked up. The carpets are of high quality , especially, those woven by Norwegian wool.

(ii) Wood carving centre products sales have been popularised.

(iii) Sale of Tibetan arts products, including literature have also picked up.

(iv) Kewzing handicraft centre sales have picked up.

(b) **Hotels and Resorts**.

(i) Between 1997 and 2000 , eight new tourist lodges have come up in Ravangla. of these, one tourist lodge 'Narsing Village Resort' is doing a booming business. It provides village kinds of facilities, though in Western style, and draws the richer variety of visitors.

(ii) Barring *momo* and noodles, ethnic foods such as *Kinema* and *gundruk* are still not popular with visitors from plains.

(iii) Guided tours, with reservations done at Calcutta, Delhi and Siliguri, for lodging as well as transport are on the increase.

(iv) Fresh employment has been generated in the lodges for the erstwhile and now abandoned tea garden workers at Ravangla.

(v) *Thangka* painters have been provided oppurtunity for jobs and for exhibitting their products in Narsing Village Resort.

(c) **Transportation**

(i) The Sikkim Nationalised Transport (SNT) buses are not very popular with the tourists.

(ii) Luxury coaches, mostly continue to be hired form Siliguri for package tours.

(iii) The 'Town committee' of Gyalshing, in order to promote maximum use of local jeeps and taxis by visitors, do not permit outside taxis to ply beyond Pelling. As such visitors are forced to hire local jeeps and taxis for visiting Khecheopalri Lake and beyond. For this action the Gyalshing Town Committee have procured a positive nod from the Ministry of Transport, Sikkim.

(b) **Guides and Porters**. The support staff in terms of guides and porters are required by trekkers and mountaineers on Rhododendron trails and Dzongri treks. The Sherpas and Limbus of West Sikkim are most benifitted by this requirements.

Trekkers, mountaineers and certain other tourists could have a greater impact on income in the Upper Rangit Basin. At present, in addition to what they import, group trekkers and mountaineers purchase most of their food items in Darjeeling and Siliguri prior to treks or expeditions. Many of these items, which include vegetables, eggs, milk

and other perishable food, could be produced locally. Encouraging the production of these items at Legship, Gayzing, Ravangla, Kewzing, Tashiding and Yuksom would benefit these areas even more than indicated above.

Tourism does not generate spontaneous benefits. Tourism is unlikely to bring community development unless efforts are made. Tourism development in mountain areas must be integrated with community development. Indigenous knowledge alone cannot help promote tourism in mountain areas. New knowledge
and technology will have to play a greater role. The economy of the Upper Rangit Basin cannot depend solely on food production. Alternatives need to be developed. The plans for the twenty first century must be based on comparative advantage paradigm. (Banskota and Sharma, 1998) (20).

Sociocultural Impacts

Mountain tourism in Upper Rangit Basin is likely to bring about and affect certain sociocultural changes in the local inhabitants of the area, such as :-

(a) Change in people's behaviour, dress, lifestyle, family and social structure due to modernizing trends.

(b) Values and expectations.

(c) Decline in local support for traditions and institutions.

(d) Peoples preference for tourist-related jobs over education.

(e) Pollution of sacred places.

(f) Changes in traditional architecture.

Not all effects are likely to be negative. Although not directly attributable to tourism, there are some positive impacts that can be identified :-

(a) Poverty alleviation.

(b) Awareness generation. (Education, health and hygiene, conservation of natural and cultural sites etc.).

(c) Development of infrastructure, settlements, cottage industry etc.

(d) Research on nature and spiritual/cultural related aspects.

(e) Publicity for the region and Sikkim.

Research. Many research studies have resulted from tourism. The monasteries of Pemayangtse and Tashiding have drawn research scholars and scientists from India and

abroad for deeper studies into Mahayana Buddhism and monastic systems. **International Publicity**. The area has received a great deal of publicity through casual visitors and tourists. A number of books on Sikkim, with details of the Rangit Basin have been printed. Many articles on subjects relating to Khecheopalri Lake, Rathong chu imbroglio, Bum chu festival etc have been published in international journals. All of these have generated an awareness about the unique natural and cultural heritage, as well as the problems to be addressed in the Rangit Basin.

Summary of Impacts

The main aspects, and negative and positive implication emerging from tourism in Upper Rangit Basin are summarised in Table No 6.2.

TABLE NO 6.2

SUMMARY OF IMPACTS OF TOURISM OF MOUNTAIN ENVIRONMENTS OF UPPER RANGIT BASIN

Negative Impacts		Positive Impacts			
Ecological/ Environmental	Sociocultural	Economic	Ecological/ Environmental	Sociocultural	Economic
Destruction of:- .Forests (energy) .Fauna(poaching) .Grazing land (camping)	.Cultural loss .Alienation .Xenophobia .Imitation of western culture	Encourages :- .Inflationary trends Conspicious consumption .Demonstration effect Imports for Tourism/leakages .Privileged treatment of tourist	Encourages .Ecological awareness .Conservation measures .Measures to hold pollution .Cleanliness in camp grounds parks/woodlands	Preserves :- .Cultural monuments .Folk traditions .Cultural properties .Artof History	Creates :- .Job opportunities .Foreign exchange .Additional income/tax .Better multiplier effect .Diversification of economy .Job for unskilled/semi-skilled
Pollution .Water .Air .Noise .Trash, garbage, trails, etc	Changes .Lifestyles .Native architecture ..Settlement patterns .Folk traditions .Customs	.Withdraws labour .Overburdened communal service .Overuse of scared resources .Uneven economic development .Tourist enclave	Helps :- .Maintenance of scenic landscape .Research/environmental impact studies .Retreat from marginal hillside farming	Responsible :- .Tourist .Space organization .Urbanisation .Increased communication .Modernisation of facilities	Improves : .Infrastructure .Local arts/crafts .Regional development .Standards of living
Degradation of :- .Landscape .Scenic appeal .Promotion of throwaway mentality .Congestion/overburdenling .Hygiene problems	Promotes :- .Moral laxity .Crime/gambling .Prostitution. .Drug addiction .Inferiority (locals) .Beggar mentality	.Seasonal dependence .Dependent on tourism .external domination (city)		Encourages :- .Education .Training of craftsmen/ expedition .Contact with outside world .Speedy knowledge .Rediscovery of lost traditions. .Fund mobilization.	
	Disturbs :- .Religious practices .Indigenous style .Social cohesion .Promotes neo-colonialism				

Source : Singh, T.V. The Kullu Valley : Impact of Tourism Development in the Mountain Areas. Study supported by ICIMOD; Himalaya Books, 1989

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