

Sustainable Tourism Development in Nepal : Evaluation and Perspectives

A.M. Boselli, G.U. Caravello, A. Scipioni¹ and A. Baroni

Istituto di Igiene-Università di Padova, Via Loredan, 18 - 35131 PADOVA, Italy

1. Istituto di Chimica Industriale, Università di Padova, Via Marzolo, 09 - 35131 PADOVA, Italy

KEY WORDS Himalayan Region. Tourism. Resources. Economic Growth.

ABSTRACT Nepal is a little country situated in the central part of the Himalayas. Although the country is rich in extraordinary natural beauty, its morphology hinders development and there are few sources of raw materials. Closed to the outside world until 1952, Nepal has had, in recent years, an extremely weak and unstable economic growth: at present the pro-capita income is US\$170 p.a. and nearly 71% of the population lives below the poverty line. Agriculture is the main economic activity making up 58% of the Gross National Product and employing 79% of the work force. With the opening of the country to the outside world, tourist activity is set to become the main source of income: in the Himalayan district of Khumbu, for example, more than 65% of the families depend economically on tourism. In 1991, 292,995 tourists visited Nepal, with an increase of about 167% over the last ten years. This rapid development of tourism, has, on one side, produced positive effects, including an increase in income of the population, but, on the other hand, it is causing profound social, environmental and cultural modifications through migrations, deforestation, loss of biodiversity, pollution, cultural contamination etc. Therefore, it is necessary to promote, in Nepal, policies for sustainable touristic development or, alternatively planned and regulated to control the impact on nature and local populations in order to conserve the resources on which it is based.

INTRODUCTION

Within the framework of "Progetto Strategico" (Strategic Project) Ev-K²-CNR denominated "Geographical-physical-naturalistic-anthropic and medical-physiological relief of the Himalayas and Karakorum" our field unit has to evaluate the hygienic-sanitary and environmental situation of the Khumbu Valley and, above all, investigate the quality of drinking-water resources and water transmitted diseases as regards both resident population and touristic fluctuations (Baroni, 1993).

Thanks to the construction of roads and improved air connections, tourism, in recent years has become one of Nepal's principal economic resources. In the eighth development plan for the period 1992-1997 the Government of Nepal analyses the present situation in detail, including not only existing problems but also prospects connected with increases in tourism (NPC, 1992). The relevant points can be summarised as follows:

- 1) there are inadequate infrastructure for developing not only existing tourist places but also potential ones;
- 2) the areas open to tourism are still too few (Annapurna-Khumbu-Terai are the main towns) and the pressure on the environment in these places is becoming more tolerable.
- 3) till now, touristic planning has given scarce attention to the protection and promotion of environmental, cultural, social, religious and artistic assets, which are the essential resources of the touristic product.
- 4) There is no appropriate policy of incentives, rules, regulations and their effective installation.

Until today, therefore, in Nepal, as in many other countries, tourism has only been considered as an answer to economic problems without evaluating its impact on the physical, social, and cultural environment and the loading capacity of the area (Boselli, 1993).

There are many reasons (Jansons Verbeke, 1993).

- 1) Tourism is a fast-growing sector: The initial investment costs are relatively low compared to other industrial activities. The economic returns arrive earlier than other industrial projects and the benefits to the local popula-

tion can be considerable.

- 2) Tourism is still considered to be a pollution-free industry despite the ever more frequent signals of environmental degradation, especially in the most vulnerable touristic areas.
- 3) In many regions and countries, tourist development is considered prestigious beginning with projects for large-scale infrastructures such as airports and transport facilities.

This 'unidirectional' approach, however, has been gradually changing ever since the negative aspects of tourism became more apparent (Krippendorf, S., 1982) and the number of reports on attempts to equate the benefits and the costs of tourism are growing continuously (Krippendorf, 1982; Mason, 1992; Pillman-Jansen-Verbeke, 1993; Singh et al., 1993).

In order to develop strategies for the promotion of sustainable tourism the interaction between tourism and the environment must be analysed in its widest meaning. Thus, there must be an evaluation of the touristic impact on various spheres, the natural and developed environment, population, and social organization. The space required by touristic activities and infrastructures, for example, can upset existing physical and functional structures of the environment. The interaction between tourism and the social environment can cause friction between the social behaviour of the visitors and the community. The behaviour of technology-loaded tourists, often offends local rules and taboos leading to negative attitudes in the local population. Thus, their autonomy is crippled as there are no comparable consumer goods of self-glorification, over the tourists, for the perfect integration of the local population with the environment. Contacts between tourists and local populations, therefore, tend to be purely commercial and superficial (Jansen Verbeke, 1993).

The problems connected to the increased on the environment are revealed when the physical, social and cultural facilities of the zone become saturated.

The challenge to developing a sustainable tourism, therefore, lies in the promotion of a touristic policy that is able to identify the critical limits early on as regards both the environmental material or other through a continuous monitoring of the values (Williams, 1990):

- 1) efficiency and efficacy of the product
- 2) influence on the economic growth of the region
- 3) influence on the lifestyle of the local residents
- 4) influence on the natural systems of the environment
- 5) coherence with the social structure and local culture

With the above in mind the eighth development plan for the period 1992-97 of the Government of Nepal is under way, aimed at promoting a tourism that harmonises the economic benefits with the environmental and cultural protection of the country.

SUBJECT-MATTER

The Aim of the Study

Nepal is a little State situated in the central part of the Himalayas (JHA, 1992), bordering China to the North and India to the South, East and West (Fig. 1).

The country is divided into three natural regions: the relatively level zone in the South with altitudes ranging from 60 to 305m; the hilly central area, ranging from 305 to 4,800m and the mountains, in the North, rising from 4,880 to 8,800m.

The overall surface, amounting to 147,181 sq. km, represents 0.09% of the total land surface.

The country has been ruled by a constitutional monarchy since 1990. Administratively the country is divided into 5 regions, 14 zones, 75 districts and 33 municipalities.

Sources of Data

In October 1992 we carried out first field-



Fig. 1. Nepal : Study Area of Ev-K²-CNR

work at Kathmandu to collect useful data. We, therefore, consulted both national and international agencies for information on the state of the waters, on diseases transmitted by waters, on the consistence and characteristics of the population and, on the state of the environment and the impact of tourism. We were, thus, able to collect a great mass of data, including demographic data, to link to the ecologic and economic data, in order to identify the various options open to us. In April-May 1994 we made a second trip, concentrating on the Khumbu Valley.

METHODS

The method that we applied to analyse the data was to compare with the principles of sustainable ecology in order to evaluate the possible difference between these and the true envi-

ronment of the country. With this aim we drew up a list of characteristics that distinguish a more positive, sustainable tourism (soft) from one that is more negative and economically narrow (hard) (Table 1). The characteristics cited in the table can be grouped in variable that reflect three significant aspects of tourism : Organisation (Sociofacts), principles, policies and organised forms, Environment (Artefacts), environmental strategy and planning, Population (Mentifacts), images, attitudes and behaviour between tourists and hosts (Jansen-Verbeke, 1993).

The quantization of the check-list allows us to set out an Index of Touristic Positioning (IPT) showing the touristic phenomena on a percentage scale ranging from the most 'hard' to the most 'soft' forms. Thus, any situation can be brought into focus immediately.

The Greezo Value (VG) of the IPT is ob-

Table 1 : Characteristics of tourism (Jansen-Verbeke, 1993)

<i>HARD</i>	<i>ORGANISATION</i>	<i>SOFT</i>
<i>Sociofacts</i>		
1 short term		long term
2 fast progress		slow progress
3 rash action		well considered action
4 great leaps		step by step
5 offensive		defensive
6 quantitative		qualitative
7 uncontrolled		controlled
8 no regulations		regulations
9 no resistance to change		(strong) resistance to change
10 maximal benefit		optimal benefit
11 prices		values
12 tourism is big business		alternative forms of tourism
13 economic objectives		socio-cultural & economic objectives
14 economic benefits		balance of assets and liabilities
15 social costs for the community		other solutions
16 special interest groups		general community interest
17 external control		self-control
18 dependent of real estate developers		involvement of local entrepreneurs
19 imported labour		local labour
20 capacity in function of high season peaks		working on seasonal dispersion
21 quantitative personnel management		qualitative personnel management
22 standard holiday packages		individual holiday programmes
23 aggressive selling techniques		customer freindly approach
24 aggressive use of communication		modest publicity
<i>Artefacts</i>		
1 spatial expansion without planning		spatial organisation without planning
2 focused on projects		focused on concepts
3 sectorial-dispersed projects		integrated plants for the area
4 dispersed construction		selected locations
5 tourism all over		delimiting the tourist zone
6 space consuming		space budgeting & preservation of open spaces
7 new buildings		renovation of old buildings
8 meeting the demand		selective towards market demand
9 preference for private transport		stimulating public transport
10 international architecture		vernacular architecture
11 growth		development
<i>Mentifacts</i>		
1 mass tourism		individual tourism
2 time is money		relaxed
3 fixed programme		improvisation on the spot
4 rapid transport		adapted transport/possibly low
5 comnaded behaviour		free choice
6 cosmopolitan behaviour		attempt to adapt to local customs
7 comfort and passivity		dynamism & activity
8 little knowledge about the destination		previous study of the destination area
9 no notion of the local language		attempts to communicate and assimilate
10 chasing for souvenirs		explore the local supply
11 international restaurants		local eating places
12 hates alienation		looks for alienation
13 standard accomodation		experiments for local facilities
14 evaluation of the experience : "Been there and done that !"		Evaluatin of the experience = personal enrichment, leraning, continuation of the contacts, return visit!

tained by summing all the points attained from the variables according to the following elements : Hard=1, Mixed=2, Soft=3. These estimates are attributed to each variable by a panel of researchers made up of field workers at the Project Working Station Ev-K²-CNR and also tourist operators. The value is standardised according to the following formula :

$$IPT = \frac{Vg - Min}{Max - Min} \times 100$$

where

VG = Value of raw score

Min = Value of minimum score obtained by assigning the minimum estimate (1) to all the variables.

Max = Value of the maximum score obtained by assigning the maximum estimate (3) to all the variables.

This index, however, only gives us the characteristics of the tourism that we are interested in and not the degree of influence as regards the negative aspects (Hard) and positive (Soft). These aspects are present in the touristic phenomena under consideration and even more so in the three groups of variables (Sociofacts, Artefacts and Mentifacts) that condition the phenomena itself. Consequently, we estimated the values of each group of variables resulting in a Coefficient Multiplier (CM) for each of these according to the formula.

$$CM = \frac{N \text{ Max}}{N \text{ Var}}$$

where

N Max = density of the variables for the most numerous group

N Var = density of the variables for the group under consideration

The application of the CM to various raw scores of the group of variables under consideration gives the Total Estimated Score (PTP) by which each percentage contribution of each modality of the three groups of variables is calculated.

RESULTS AND DISCUSSIONS

The data collected have been elaborated ac-

cording to categories that we think are specially suitable for analysing the touristic phenomena of the country : its demographic profile, economic situation, touristic impact, and, our special example of the Khumbu valley.

Demographic Profile

In the last decade the population (CBS, 1991) has increased from the 15,022,839 inhabitants in 1981 to 18,462,081 in 1991 with an annual growth rate of 2.08% (2.01% in developing and 0.5% in industrialised countries). 7.8% of the population lives in the mountains, 45% in the hills and 46.6% on the plains : In 1971 the percentages were 8.7%, 47.7% and 43.6%, respectively showing that the population migrated down from the mountain-hill zones to the more level agricultural areas in the 1981-1991 period. An initial move towards urbanisation is shown by the 9.6% of the population living in urban areas compared to 6.4% in 1981.

The population is very young, with high birth and death rates; in fact the 0-15 age group represents 41.2% of the total population while those over 50 represent 11.1% (Fig. 2).

The above indicates a start towards demographic transition as can be clearly seen in the total fertility estimated at 6.54% in 1975-80, at 5.90% in 1980-85 and at 5.7% in 1985-90 (Fig. 3).

Economic Situation

Nepal is one of the poorest countries in the world, with an annual pro-capita income of US\$ 170 (W.B. 1992); at present 71% of the population lives below the poverty line.

The country has very few raw materials and its irregular morphology slows down development and hampers building and the maintenance of the infrastructures, above all those for transport. Closed to the outside world until 1952, Nepal has had, in the last ten years an extremely weak and unstable economic growth.

The principal activity is represented by agriculture that manages to supply 58% of the gross national product (1989) and employs 79%

Age (years)

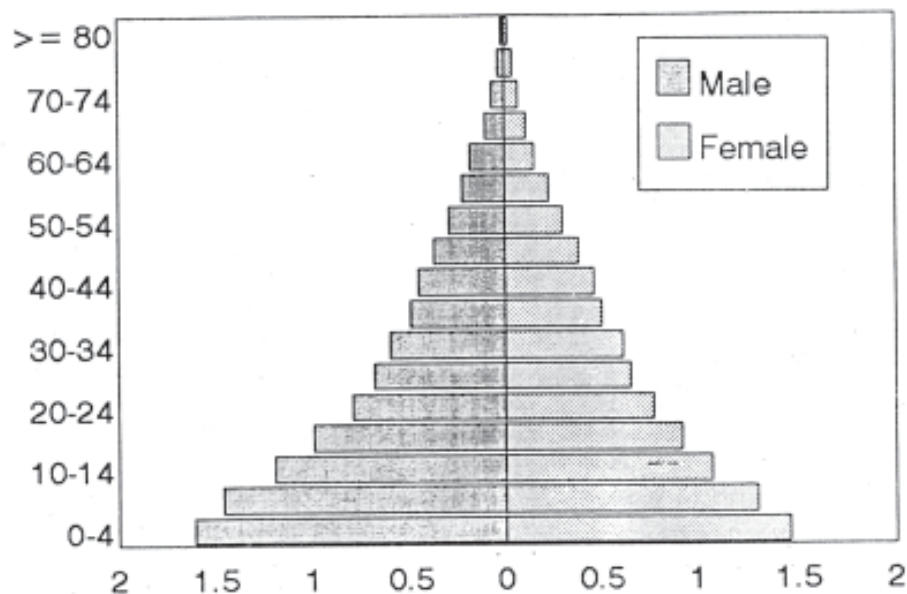


Fig. 2. Population by age and gender, 1990

Source : U.N., The Sex and Age Distribution of Population, 1990

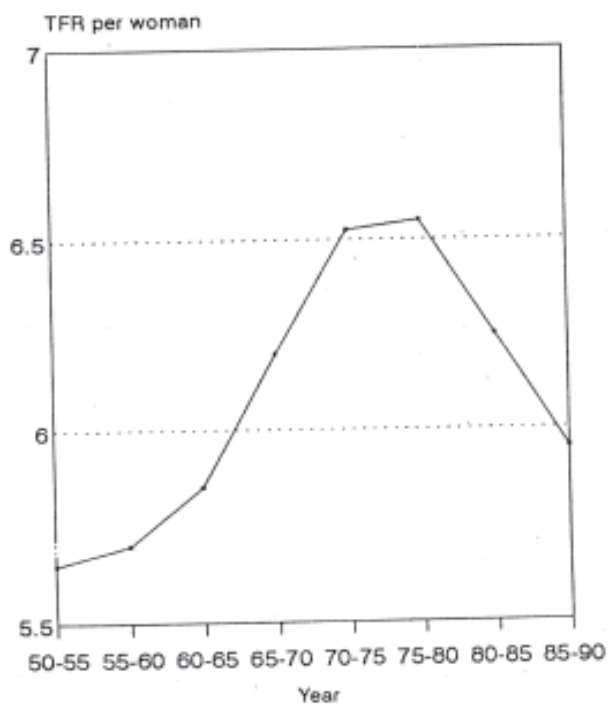


Fig. 3. Total fertility rate (TFR), 1950-1990

Source : U.N., World Population Prospects, 1990

of the work force.

However, this is a sector which is very sensitive to climatic risks and market fluctuations.

The industrial sector is still in the initial phase; there are few activities, nearly all are artisan and they are all concentrated in the Kathmandu Valley. This economic sector supplies 14% of the Gross National Product with a very low number of workers. Today, tourism represents 3.7% of the Gross National Product of the country and is the main source of foreign exchange : US \$ 58,600,000 in 1990 against US\$ in 78,000 in 1962.

Touristic Impact

The number of tourists in Nepal increases from year to year; from 50,000 in 1971 to 175,448 in 1982 up to 292,995 in 1992 with an increase of 580% over 20 years (BS, 1993). The biggest concentration of visitors, 33.4% of the total, is in the last 3 months of the year.

The majority of the tourists are male, 60.6% of the total in 1992, and belong mainly to two age groups: 16-30 years 32.98% and 31-45 32.26% (Table 2).

The development of air traffic has become an extremely important means for carrying tourists in Nepal, more than 91% of the total, thus demonstrating that it is a great support for touristic promotion. The majority of visitors in 1991 came from Europe, (33.56%), followed by India (31.57%), USA (6.5%), Japan (6.1%), Australia (2.83%), other countries (17.73%).

For 60.36% of the visitors the reason for the visit is leisure (Table 3).

The number of hotel rooms in the period 1982-1991 increased from 26,038 to 27,090, an increase of 4%, and more than 80% are concentrated in the Khumbu Valley.

Stay periods are variable : from the data supplied by the Department of Tourism (CBS, 1991) it can be seen that, in 1988, more than

Table 2 : Tourist arrivals by age and sex, 1982-1991

Year	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Male	108.54	111.405	115.757	113.563	136.967	152.493	166.276	146.040	15.5311	177.574
Female	66.944	68.000	60.877	67.426	86.364	95.587	99.667	93.905	99.574	115.421
Total	175.448	179.405	176.634	180.989	223.331	248.080	265.943	239.945	254.885	292.995
<i>Age Groups</i>										
0-15	8.656	10.018	15.274	9.497	12.243	13.289	15.668	10.332	10.620	17.174
16-30	61.438	60.638	66.334	58.861	73.656	83.321	86.047	78.099	85.903	96.634
31-45	55.638	56.498	52.820	61.528	71.694	78.969	85.582	77.975	82.292	94.539
46-60	33.951	35.140	29.620	33.520	42.707	46.648	51.044	47.052	49.388	54.320
Over 61	15.765	17.111	12.586	17.583	23.031	25.853	27.602	26.487	26.682	30.328

Source : Department of Tourism - Kathmandu

Table 3 : Tourist arrivals according to reasons for visit, 1982-1991

Year	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Pleasure	136.693	132.350	140.592	128.517	163.217	184.979	200.775	180.973	161.839	177.370
Trekking and alpinism	23.507	24.198	15.010	28.707	33.609	36.164	36.937	40.093	39.999	42.308
Business	7.374	9.801	8.137	10.416	10.863	11.781	12.008	2.630	11.728	14.601
Official	7.166	8.479	9.399	9.230	8.825	8.882	9.781	12.275	26.578	37.274
Pilgrimage	-	-	-	-	-	-	-	-	6.713	9.103
Conference	-	-	-	-	-	-	-	-	2.838	5.441
Other	708	4.577	3.496	4.419	6.076	6.274	6.442	3.974	5.190	6.898
Total	175.448	179.405	176.634	180.989	223.331	248.080	265.943	239.945	254.885	292.995

Source : Department of Tourism - Kathmandu

76% of the visitors stayed in the country for a medium long period (13.8% for 8-15 days; 24.8% for 16-30 days; 37.8% for more than 31 days) and only 23.3% for a short stay (1-7 days). By comparing this with the data for 1979 (79% medium-long period and 21.2% short stay) it can be seen that, over a ten year period, the situation is changing, even if very slowly, towards a tourism of shorter stays.

By applying the methodology of the list of characteristics we noted that, at present, Nepalese tourism cannot be classified either as high impact or as low impact (Table 4), but can be placed in a mixed situation (IPT=52.04%); according to the criteria used, it will become an environmentally destructive tourism, if the aim is only economic growth, or, otherwise, it can

aim at a tourism respecting the overall environment if the goal is sustainable development.

In order to obtain useful feedback to the criteria of proposed interventions, we estimated the degree of influence of the negative factors (H) and positive (S) present in Nepalese tourism.

The application of the CM (sociofacts CM=1, artefacts CM=2.18, mentifacts CM=1.17) to the raw scores of the three groups of variables gives a percentage as reported in table 5. It can be noted how the variables belonging to the aspect "mentifacts" compare well to the positive criteria of Nepalese tourism, contributing to nearly 40% of the overall estimate (PTP). On the other hand, the remaining variables indicate a more negative situation as

Table 4: Values given to the variables presented in table 1 which characterise the three aspects : Organisation (sociofacts), environment (artefacts), population (mentifacts) according to the scale considered : high impact (hard=1), medium impact (mixed=2), low impact (soft=3)

	Organisation (Sociofacts)				Environment (Artefacts)				Population (Mentifacts)		
	H	M	S		H	M	S		H	M	S
1	0	0	3	1	0	2	0	1	0	2	0
2	0	0	3	2	1	0	0	2	0	0	3
3	0	0	3	1	3	0	0	3	1	0	0
4	0	2	0	4	0	0	3	4	0	0	3
5	0	2	0	5	0	0	3	5	0	0	3
6	1	0	0	6	0	2	0	6	0	2	0
7	1	0	0	7	1	0	0	7	0	0	3
8	0	0	3	8	0	2	0	8	0	0	3
9	0	2	0	9	0	2	0	9	1	0	0
10	1	0	0	10	0	0	3	10	0	2	0
11	0	2	0	11	1	0	0	11	0	0	3
12	0	2	0	Total	4	8	9	12	0	2	0
13	0	2	0					13	0	2	0
14	1	0	0					14	0	2	0
15	1	0	0					Total	2	12	18
16	1	0	0								
17	0	2	0								
18	0	2	0								
19	0	0	3								
20	1	0	0								
21	0	2	0								
22	1	0	0								
23	0	0	3								
24	0	0	3								
Total	8	18	21								

52.04%

↓

0%

HARD

MIXED

SOFT

100%

Value of Index of Touristic Positioning in Nepal

Table 5 : Percentage contribution to the values of the three groups of variables to the total allotted score (PTP)

Values	Impact			TOT
	High(H)	Mixed(M)	Low(L)	
Sociofacts	5.4%	12.2%	14.3%	31.9%
Artefacts	5.9%	11.8%	13.3%	31.0%
Mentifacts	2.3%	13.9%	20.9%	37.1%

regards organisation and planning, indicating, however, a mixed quality (M) for many factors. The setting up of a programme designed to act on these factors would induce a sure increase in the quality of tourism towards sustainability.

The Question of the Khumbu Valley

The Khumbu is part of the district of Solukhumbu in 1976, which extends for nearly 1,148 sq. km and includes many peaks superior to 7,000 m and three at 8,000 m in the Himalayan chain. The most outstanding peak is Mount Everest, or Sagarmatha in Nepalese or Chomolungma in Tibetan, which, with its 8,846.10m. $\pm$ 0.39 (Poretti, 1993) really represents the 'Roof of the World'. At lower levels, between the 4,330m. of Dingpoche and the 3,440 m. of Namche the park includes, within its boundaries, the houses of about 3,500 Sherpas (Corbellini, 1991) : Khumjung and Khunde (860 inhab.) - Namche Bazar (540 inhab.) - Pangpoche (300 inhab.) - Valle del Bhote Kosi (700 inhab.).

The main ethnic group present in the Khumbu, the Sherpa is of Tibetan-Burmese origin and their rapid transformation, in contrast with the other ethnic groups in neighbouring zones, is due to the cultural and economic influence induced by tourism.

Until 1950, the Khumbu economy was based mainly on agriculture, yak raising including cross breeding and the local trading with the Tingri district in Tibet (Cereals in exchange for salt and wool). The opening of the Khumbu to tourism, after the ascent of Everest in 1953, the consequent building of bridges, schools, Khunde hospital and Lukla airport (2,800 m.), has modified the traditional economy and social or-

ganisation of the population, giving an extraordinary opportunity to Sherpa population. In 1986 more than 65% of the families in Khumbu depended economically on tourism (trekking, alpinism, hotel and shop management) (Sherpa, 1987).

The agriculture work is left to the women and to the salaried workers coming from the south of Solukhumbu (Solu).

Mountain-climbers were the first tourists to Khumbu but their impressions, amply publicised, about the Everest region and local population soon attracted many new visitors.

In 1964, 20 tourists visited Khumbu; in the touristic season, autumn-spring, of 1972 3,200 (Mishra, 1973), more than 7,000 in 1985 (Sherpa, 1987). 11,366 in 1988 and more than 20,000 at present. The Khumbu tourists are extremely heterogeneous, their ages range from less than one year to more than 80 and they come from every country in the world : the most numerous from the USA followed by Japan and both East and West Europe. The Indian tourists, even if they are among the most frequent visitors to Nepal, represent a small percentage of the trekkers in the Sagarmatha Park (Mishra, 1973; Pawson, 1984).

Trekking in Khumbu is mainly seasonal. The monsoon rains sweep away paths, bridges, obscure the mountains and hamper air journeys in the Himalayas so that there are few tourists in summer.

From October to December the weather is often relatively fine, perfect for the interested visitors to admire and face the highest mountains in the world. This is the most popular season for trekking: The second trekking period extends from March to the beginning of May when the pre-monsoonic phase of great instability starts.

The first visitors to Khumbu found lodgings in private houses thanks to the traditional hospitality of the Sherpa. With the increase in the number of tourists, the residents began to be paid for the traditional food; in Namche Bazar, compulsory for all Khumbu tourists, a house

that offered board and lodging to visitors to the monastery to Tengboche, became the first 'Sherpa Hotel' in Khumbu, offering simple food and a place to sleep against payment. After this first hotel, there have been dozens and dozens added in the village along the main trekking routes. Today, Namche alone has about 18 hotels for tourists and a number of tea-shops for the traders from the southern regions who arrive for the weekly market.

Along all the main trekking routes, many dwelling have been converted into lodges by simple putting up a sign and, in some cases, a menu: at Namche-Khunde-Khumjung-Tengboche-Pangboche-Periche-Lobuche-Dingbuche-Dole-Gokyo and other places in the Sagarmatha National Park. Considering all Khumbu the number of hotels and lodges has increased from 7 in 1973 to 81 in 1991 with about 20,000 beds. This has produced wealth for those Sherpas with property in these villages or with means to purchase them.

Tourism has also been responsible for the opening of many small shops, often in small premises in front of hotels and lodges, supplied with a vast range of goods for the tourists.

Tourism provides an income to a group of people besides the Sherpa families of the Khumbu, especially at Namche where there is a growing number of paid workers coming from the poorest villages of Solu or other ethnic groups—Tamang or Raj who have been left out of touristic development, or from poor Sherpa families. In exchange for board, lodging and a small wage these workers cut wood, do house work, look after the animals and work in the fields, or are building labourers.

Tourist development gives the local population a chance to invest even outside Khumbu; Sherpas own and manage nearly all the trekking agencies in Kathmandu, others invest the profits from tourism in shops or hotels in the capital and other tourist places. Khumbu, therefore, has become, today, an island of wealth and the Sherpas represent one of the richest ethnic groups in Nepal (Brower, 1991).

However, the increase in tourists has also produced negative effects both in the civil society and the natural environment.

The first negative impact arises from the unequal opportunity to benefit from tourism.

Even if nearly every family in Khumbu is involved in one or other touristic activities, for many this is limited to a few weeks as porters or farm hands.

The second negative impact comes from the fact that the increase in wealth, coming from tourism, is used to construct, as we have said, a myriad of houses and hotels with the consequent increase, above all in the mountain zones, in the use of firewood to cook and heat. Thus, the forests are over-exploited with inevitable environment degradation (Jeffries, 1982). The average consumption of firewood, in the region of Khumbu as been estimated, at 6-7 kgs per tourist per day (Jha, 1992). Notwithstanding the laws of the national park which prohibit camping, the use of firewood for cooking and the collecting of wood for sale, many groups continue to break these laws. Besides, there is still no regulation governing the use of firewood in the hotels and tea-houses.

In recent years, the Park management has introduced some traditional local usages into the administration of the forest and thanks to which the Sherpas have managed, for a long time, to administer, in an ecologically correct way, their forest inheritance. In this way, the forest guardian (Shing qi nawa) was reinstated: elected by the annual assembly of the local community with the job of supervising the exploitation of the forest resources. This is an important attempt to use not only the local authority and culture but also to involve the population in the protection and appreciation of their own natural resources (Basnek, 1992).

Deforestation is not the only environmental problem of the zone. Environmental degradation is being caused by overcrowded camping sites and hotels, and incorrect waste disposal which, linked to the careless personal hygiene of both local and population and tourists, pro-

voke health problems.

Moreover, the flux is influencing local customs and provoking social problems in traditional societies and often pushing the young to urbanisation and emigration.

CONCLUSION

The challenge that Nepal has to face today is how to promote tourism without comprising the natural, cultural and social environment of the country *i.e.* to develop a tourism that does not consume nature, that promotes the value of 'awareness' instead of 'consumism', that sustains the development of the country and not only its economic growth.

Thus, in order to obtain a more 'soft' tourism as defined in the previous analysis, a special effort must be made to modify some basic principles and policies (sociofacts) that above all sustain economic profit. In addition there must be greater cohesion in environmental strategy and planning (artefacts) without compromising the life-style of the population and tourists (mentifacts).

In order to obtain these objectives the policy of the Nepalese Government should be based on some points that have not been fully expounded in the eighth development plan:

1) plan touristic development by reducing touristic pressure in some areas (*e.g.* the Sagarmatha National Park which attracts 18.54% of the trekkers every year-Annapurna which attracts 61.85% of the terkkers) by developing new routes.

2) extend the protected surface with the constitution of new traditional parks and reserves

3) control the impact of tourism on the local population in the decisions concerning touristic development; the more the population benefits from the tourist industry the more it will be stimulated to sustain a touristic plan respecting the basis resources.

4) promote the participation of the population in the decisions concerning touristic development; the more the population benefits from

the touristic industry the more it will be stimulated to sustain a touristic plan respecting the basic resources.

5) transmit to the younger generations the values and traditional practices so that they may be respected and maintained. The local populations, in fact, are conscious of their own precious natural resources to be able to manage them correctly.

6) critical aquisition of cultural and economic models of other countries that have to be adapted to the traditions and local technologies capacity. One example of this is the luxury hotel. The Everest View (US \$ 300 per day) built up by the Japanese in a panoramic position near the runway of the little airport of Shyanboche (3,720 m), is rapidly becoming degraded because of lack of tourists. This is because the luxury category represents only 2.5% of visitors to Khumbu (HMG, 1977) and the problems of accessibility to a hotel at 3,800 m. and corresponding mountain sickness which can affect non-acclimatised visitors.

7) education of the tourists and operators who must be taught to respect the natural and cultural beauty of Nepal and the absolute need to protect it.

8) develop integrated projects for the development of alternative energy to the use of wood, such as sun, wind and hydroelectric power. In fact, Nepal has an immense hydroelectric potential; with only 0.09% of the world's land surface, it is estimated to hold 2.27% of the total potential world hydroelectric power.

Only 0.2% of this potential is exploited at present while theoretically, Nepal possesses an estimated hydroelectric potential of 83,000 MW (Sharma, 1992).

The development of this potential energy could have both positive and negative repercussions on the environment. Positive, for the ready availability of energy which could produce development and economic benefits, the possibility of constant irrigation, reduction of deforestation and erosion of the soil, reduction of the non-renewable resources imported for the pro-

duction of energy, etc. Negative, for the flooding of fertile and cultivated lands in artificial basins, with consequent destruction of flora and fauna, radical changes in the habitat of aquatic species in the case of big dams, etc. The negative impact could be reduced, for example, by using only small scale hydroelectric plants.

In conclusion, Nepal has all the potential to promote a sustainable tourism if it can overcome a limited economic approach, as has not happened in many industrialised as well as developing countries.

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