
SUMMARY

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The magnificent diverse landscapes and rich cultural heritage of the Sikkim have contributed to the rapid growth of tourism. The Sikkim Himalaya became the foremost center of trekking and mountaineering in the Hindu-Kush Himalayan region. Its unique flora and fauna, rugged terrain and religio-cultural history make it a place of environmental pilgrimage. Trekking travels link this once relatively remote part of the world with the global economy and provide new opportunities for economic development. There has been a considerable economic benefit to the local population, which was previously largely dependent on subsistence farming or the government sector for employment. The changes is most strikingly evident in the Yuksam and Khecheopalri Lake area where the economic development of the different stakeholders contrasts sharply with the living standards of nearby people who have not become involved in tourism sector. It is too early to proclaim that this region is a model for achieving local development through tourism. But the experience to date suggests that locally based tourism development is possible in formerly remote areas and offers hope that the environmental and socio-cultural effects of tourism can be addressed through the combined efforts of local residents, community institutions, national and

state policies and institutions, concerned operators of tourism business, and responsible tourists.

The present study on “Economic Benefits and Conservation Linkages from Tourism Development in the Sikkim Himlaya” was undertaken with the following main objectives: (i) to study and compare the relationships between tourism, market trends, tourism-related revenue distribution patterns and to predict the impact of future growth in two sites (Yuksam and Khecheopalri) of West Sikkim; (ii) to assess and identify possible interventions that strengthen the capability of local people and local communities to derive maximum economic benefits from tourism and (iii) to identify mechanisms for increasing entrepreneurial skills and capacities to expand resources among local stakeholders involved in ecologically sound and socially responsible tourism and other development activities.

The Yuksam-Dzongri-Goechha La trekking corridor with an altitudinal variation of 1750-3700 m asl is a 45 km long trek located in the southwestern part of Khangchendzonga National Park. On this corridor Yuksam is the only settled village, with 11 settlements and 274 households with a total population of 1572. Another sites the sacred Khecheoplari Lake, is situated in the amidst of forest revealing its pristine set up at an altitude of 1700m asl in the western part of Sikkim. The lake

has the watershed area of 12 km² of which 91 ha drains directly to the lake and bog.

Salient findings

1. The number of tourists visiting to Sikkim is growing in a very fast rate during recent year. The main reason of this high growth in tourist influx was mainly due to the relaxation in regulation that opened a number of new areas for both domestic and foreign visitors, and the tourist facilities developed in Sikkim as a whole in recent years. The real growth of tourist number in Sikkim has started from 1980 onwards. Until 1980, the state hosted only 10,000 visitors, which eventually increased to more than ten times in 1998. In 1989 about 46416 visitors arrived in Sikkim in which 96% were domestic and 4% foreign visitors, while in 1998 about 143410 tourists visited Sikkim, out of that 93% were domestic and 7% foreign visitors.
2. Tourism in the study sites is a highly seasonal activity. Flow of visitors distinctly has two peaks annually with low profile in January to March and July to September and high inflow during mid March to June and October to Mid December. During the spring and autumn seasons, the Sikkim Himalaya offers ideal conditions for recreation and trekking.

3. The Yuksam-Dzongri-Goechha La corridor inside the Khangchendzonga National Park is the most popular trekking destination in Sikkim. Trekking/adventure travel in this trail started in 1960. Sikkim State opened its borders to foreigners in 1980. The rise of Sikkim popularity as a nature travel destination began in 1990. The period 1992-97 showed a steady rise in the number of tourists who entered for trekking purposes. In 1997 about 2002 visitors came exclusively to trek in the high mountains. The Himalayan Mountaineering Institute (HMI) also conducted 8 training courses consisting of 1379 trainees.
4. In 1998 out of 143410 visitors coming to Sikkim only 13% arrived Khecheopalri Lake. There is a general perception that the majority of the tourists come for recreation but in case of Khecheopalri lake the visitors came for both recreation and pilgrimage. The data on tourist's flow in this lake were not properly recorded and maintained. The visitor numbers have grown from 16068 in 1997 to 18713 in 1998. During 1998 visitor arrivals comprised of 10913 tourists and 7800 pilgrims.
5. As per the purpose or reason of visit to the area, pleasure (45%) is the most important reason for visit for all categories of tourists. It has been observed that pilgrimage is the main purpose of visiting

the Khecheopalri Lake, while Yuksam-Dzongri-Goechha La corridor has been used mainly for trekking purposes.

6. Lack of promotional measures in Sikkim is a great hindrance to selling its tourism products. Presently the promotional activities adopted by Sikkim based tour operators are advertising in Indian News Papers and Magazines, selling to direct walk-in clients, few operators with proven service are handling referral business from Nepal, and a few of them are handling business from foreign individual motivators and agents. Some operators have established electronic communication while one has a website.
7. About 15 TAAS (Travel Agent Association of Sikkim) agents actively operated treks on the Yuksam-Dzongri-Goechha La route with 303 pax (persons) and non-TAAS members for 591 pax in 1997. A few agents also operated short trek or walk on the Pemayangtse/Khecheopalri/Yuksam/Tashiding route. The trek price for foreign visitors varied between US\$25 to US\$50 per person per day depending on the group size and services provided. Some times the trek price as low as US\$15 per person per day has been quoted in a competitive situation or in the case of walk-in clients where probably service level was sacrificed. Agents who are more aware of the trek market in Nepal and other parts of India seem to have quoted between US\$35 to US\$60 per pax per day to position the

product more realistically in terms of competitive trek products in Nepal. But there are also low quality treks being operated by some agents who undertake treks from clients at a given price. The trek price was low for domestic visitors and varied between US\$15 to US\$35 per person per day depending on the quality of service. Most of the income generated by tour operator is from guided trek. The estimated total turnover from tourism was at Rs 11729280 (US\$286080) in 1998. Only 13 agents are spending 10 to 25% of revenue on marketing activity.

8. The multiplier effect of the revenue earned in tourism have both increased non-tourism employment and enlarged the market for local agricultural products. The net State Domestic Product of Sikkim (SDP) at constant prices significantly increased from Rs 3316867904 in 1993-94 to Rs 5856043839 in 1997-98. The sectoral distribution indicates that the tertiary sector predominates, contributing nearly 43% of the total SDP.
9. The overall literacy rate is significantly higher in Yuksam area than in the Khecheopalri. The female literacy rate (43% and 46%) is lower than the male (54% and 57%) at both the sites. Stakeholder wise in Yuksam and Khecheopalri area, the highest literacy rate (74% and 80%) was recorded in hotel/lodge owner families.

10. In 1996 out of the total 274 households only 133 households were involved in tourism sector, which has increased to 174 in 1997 and reached 189 by the end of 1998. In Yuksam, 69% of the total households are involved in tourism related activities. Out of that 5% were engaged in hotel/lodges, followed by 14% pack-animal operator, 66% porters, 9% fair price shop and 6% tea stall. In Khecheopalri Lake site, only 3% of the total population is involved in tourism sector because majority of the tourist are day visitors and spend 2 to 3 hours only.
11. In Yuksam-Dzongri-Goechha La corridor, about 13.07% of the land owned by the lodge/hotel owner, followed by 11.40% by pack-animal operators and 11.68% by the porter. The fair-price shop owners have only 1.65% of the total land and rest by non-tourism involved families. The teashop owner does not possess any land in Yuksam as most of them are outsiders and migrated to Yuksam from Bihar. In Khecheopalri Lake site, only 11% of the land are owned by the households involved in tourism sector and 89% by the non-tourism involved families.
12. Growth of visitors has been responsible for significant changes in employment and income generation, which lead to improve socio-economic condition of the local people. People of both the sites have reoriented their local economy around tourism. In 1997, about

46% and 7% of the households had income from this source. Since then, involvement in tourism related activities have risen to 69% and 22% in 1998.

13. The economic well being of any region is normally refers to the accumulation of various possession by the family and the source of income. In 1997, the total income of all the stakeholders in Yuksam and Khecheopalri area were Rs. 6622983 and Rs 969800 which has increased to Rs. 7124146 and Rs 1075130 in 1998. In 1998 out of the total income the people involved in tourism sector contributed 70% of the total income, whereas 30% by non-tourism sector in Yuksam area and 30% by tourism and 70% by non-tourism in Khecheopalri. The economic development leads to change in food consumption pattern as income grows. With an increase in income, total calorie intake and the consumption of other food increase.
14. Analysis of forest and other land-uses revealed that dense mixed forest decreased in the past few decades with increase of open mixed and degraded forests. The five class-I land-uses, were identified occurring in both the sites. A total of 84% and 77% of the lake and trekking corridor area had forests. Majority (34%) of the forestland was under degraded category (crown cover, 20%), 19% open forest (crown cover 21-40%) and 19% dense (crown cover > 40%) in Yuksam-Dzongri-GoechhaLa corridor, whereas in

Khecheopalri lake site it is dominated by open mixed forest (41%), followed by dense mixed (23%) and degraded forest (21%). Agriculture was the predominant non-forest land-use, occupying about 14% of the total area in trekking corridor and 13% at the lake site. About 3% and 1% area fall under wasteland category (rock outcrop and landslide). In case of the lake area, major changes were recorded in the form of bog area expansion. The Conversion of dense mixed forest to open mixed forest and then to degraded forests has been mainly attributed to fuel wood and timber extraction, fodder collection and grazing. Agriculture land expansion in the lake watershed had a major impact on the lake ecosystem through increased sediment deposition.

15. The high demand of firewood, fodder and timber provides threats to the surrounding area of the Yuksam-Dzongri-Goechha La corridor and Khecheopalri Lake. Chopping and lopping of highly preserved tree species for firewood, fodder and timber has made tremendous pressure on some selective species in this area.
16. The fuel wood consumption rate was 24 kg/day, as estimated for household in the area during 1997-98. Consumption of the commercial alternative source of energy, i.e., kerosene and LPG (14% and 3%, respectively) was insignificant. There was no evidence of non-conventional sources of energy being used by any

of the stakeholders. The consumption rate of fuel wood varies as per different stakeholders. Total 2437 Mg yr⁻¹ fuel wood was consumed by stakeholders at the Yuksam village out of which 2264 Mg yr⁻¹ consumed by local community followed by 101 Mg yr⁻¹ by hotel and lodges, 45 Mg yr⁻¹ by HMI, and 26 Mg yr⁻¹ by other stakeholders. Whereas in case of Khecheopalri total 1126 Mg yr⁻¹ was consumed out of that 670 Mg yr⁻¹ by local community and 456 Mg yr⁻¹ by trekker's hut and tea shops.

17. Animal husbandry in both the sites is mainly dependent on the surrounding forests. These forests are heavily lopped along the trail route, lake surrounding forests and margins of the settlements. The grazing pressure of Yaks and Dzos are seasonal and more prominent in the alpine zone. The livestock populations of Yuksam-Dzongri-Goechha La corridor have increased from 1530 in 1996 to 1708 in 1998. Where as there were 304 domesticated animals in Khecheopalri lake area. The Yak/Dzo and cattle need about 33 kg of green fodder per day, whereas sheep and goats required about 15 kg per day.
18. A survey of households in the villages of Yuksam and Khecheopalri Lake showed that a double-storied building/lodges needs about 600 to 700 ft³ wood. Generally large timber poles are harvested for making ceilings, doors, windows and beams. Medium size poles are

used for furniture and repairs. Small size poles (mainly bamboos) are cut for making cattle sheds or temporary huts.

19. Dependence on fuel wood for energy is causing serious deforestation problems in trekking corridor and Lake Site. The pressure is far greater in Monastery forest than in the trail forest outside Khangchendzonga National Park. The consumption of fuel wood varied amongst stakeholders with respect to different physical and economic factors causing serious deforestation problems in the trail and Lake Site. The widespread switching over to inferior quality of fuel wood species is the indicator of pressure in the forests of both the sites. The fuel wood continues to be the prime source for cooking in trekking corridor, while commercial alternative energy sources contributed very little. Enhancing the supply of fuel wood through plantations and reducing the fuel wood demand through providing alternate source of energy can facilitate these.
20. The heavy inflow of visitors during the religious festival showed some negative impacts on the serenity of the lake specially in the form of noise, littering, garbage dumps, and resource extraction. Garbage quantification in 1998 after the festival showed that the total garbage collected was 452 kg out of which 625 was biodegradable and 38% non-biodegradable wastes. The total

garbage collected during the tourist season was 2375 kg in and around the lake.

21. The economic valuation of ecotourism was conducted in Yuksam-Dzongri-Goechha La corridor and Khecheopalri lake area. A contingent valuation method was used to estimate the Willingness-to-pay (WTP) for conservation and protection of natural resources in both the sites. The results showed that the response is emphatically positive. The survey received good response from local communities, pilgrims, domestic and foreign visitors for their willingness to conserve the area. The analysis reports a mean WTP per visitor per visit that was higher for foreign visitors than domestic visitors. Local community members were also willing-to-pay for environmental management. The multiple regression on WTP reveals that the attitudes of respondents, their visitation rate, and number of aspects of the area they considered valuable, were important determinations of WTP for trekking corridor and lake site. Variables attain the expected sign and they are statistically significant.

22. As per the contingent valuation method for the entire sample, using mean of variables, the estimated willingness-to-pay for the management of trekking corridor and Sacred Khecheopalri Lake are US\$8.84 and US\$7.19 by the foreign visitors and US\$1.91 and US\$

2.51 by domestic visitors per trip, whereas US\$6.20 and US\$0.88 for local community annually and US\$2.16 for local pilgrims per visit, respectively. This shows that the foreign visitors had higher recreational/conservation value than the domestic visitors and local community members.

23. Incorporating with the estimated values of the consumer surplus for their visit to Khecheopalri Lake was derived as US\$661 and US\$1562 in the first and second equations, respectively as per the travel cost method. Recreational/Sacredness value per visitor was US\$3.87 as per the consumer surplus. Total number of local pilgrims to Khecheopalri Lake was 7800 in 1998, the annual aggregate recreational/sacredness value for the pilgrims amounted to US\$30186.
24. The lake has recreational and biodiversity values for domestic and foreign visitors, and more sacredness value for the Sikkimese people. The demand curve function for recreation increased with decrease in travel cost and distance for Sikkimese pilgrims. The lake showed high recreational/sacredness values that were attributed to conservation of the site for biodiversity and pilgrims.
25. The hypothesis “ if income generation is dependent on the continued availability of biodiversity, then those entrepreneurs and stakeholders will have to act upon economic incentives to conserve

the resources on which income depend”, this hypothesis held true at both the sites. A number of conservation related activities organized by stakeholders to conserve and clean the area.

26. The issues addressed in this study regarding conservation involvement, socio-economics, and substitutability should allow further understanding of ecotourism’s role in conservation.