

CHAPTER - VII

SUMMARY AND CONCLUSION

Sikkim, a tiny mountainous state lies in the biodiversity hotspot of Eastern Himalayas. Since 1975 rapid developmental activities started and face of the mountain gradually changed to give the present landscape. The lifeline of state is its strong natural resources. The economy of Sikkim revolves around the productivity derived from agriculture sector. Industry whether small or large scale is virtually insignificant due to non-availability of suitable land, cheap labour and market. The traditional way of human interaction with the environment is clearly noticed in the context of Sikkim. More than 70% population still directly bank upon forest and natural vegetation for their livelihood.

The Sikkim Himalayas form a contiguous part of prominent mountainous region threatened with severity of ecological disaster. The high hills are gradually nurtured destroyed for human need. The negative effects of development are threatening terrestrial and aquatic life. The catastrophes such as landslides, hailstorm, erosion, are common across the length and breadth of the state. Sikkim is a consumer state and population is growing at faster rate. As a result solid waste management, basic amenities remain as an unmet challenge before the planner. The emphasis on development planning under- went a major shift between the year 1975-2004. In the seventies the stress was mainly on industrialization to achieve rapid economic growth. Recent development efforts in Sikkim have been designed for improving living conditions and infrastructure development. Very small habitable space in Sikkim is left open and untouched by human activities. However, there is regional disparity and inequality in economic growth pattern. The development is lopsided, such problems are common everywhere due to feasibility predicament.

Agricultural land is limited to narrow, rugged mountain and alpine climate discourage cultivation. The compact form of settlement is seen in the lower belt especially in the towns and agricultural fertile areas. However, harsh climatic areas are devoid of human population. The length of road is extended; as a result, growth and development of administration and urban centers are taking place in the villages. The block development offices are being constructed in almost all the 32 constituencies in Sikkim. Around these administrative centers, other amenities facilities have been coming up rapidly. Over and above there exist a symbiotic relationship between nature and men. Man being the most intelligent animal and technologically most advanced, tries to make use of the environmental resources for his personal gain. In doing so, man affects and modifies the environment and thus environmental conditions are changed by human activities. When the environmental changes brought in by man exceeds the critical limit then the environmental degradation starts.

The pioneer study on environmental degradation and impact of tourism in Sikkim depicted significant findings and generated enthusiasm and scope for further work in the same line. The brief highlights of major findings, discussed in the foregoing chapters are being briefly summarized herewith.

In chapter one aspect of history and geography has been dealt with, where short history of Sikkim and its physical features including flora, fauna, natural wealth are given due importance. The relief, drainage, mountains, vegetation, soil, glaciers, cave, lakes, and biodiversity etc. have been given equal weightage in describing physical feature of Sikkim Himalayas. This chapter makes reader familiar with natural wealth of Sikkim.

In chapter two population characteristics and socio-economic features ranging from migration, growth, distribution of population, literacy, educational standard, religion, ethnic composition, workforce, per-capita income, domestic products, food habit, health scenario, land use, agriculture, horticulture animal husbandry, livestock etc. have been discussed in detail. Attempt has been made to relate and correlate each parameter with states of environmental condition in Sikkim. It is revealed from the study that there is a constant

increase in population followed by education, agriculture and health infrastructure. In each parameter, infrastructure-building activities are taking place. Such developmental activities have encouraged people to migrate from primary to secondary and tertiary sectors. As a result, occupation structure has changed in the locality. The infrastructure development has also led to cutting of earth, removal of vegetation and invited natural calamities like land slide, erosion in the Sikkim Himalayas.

Environment is the only thing Sikkim can loose either in the name of tourism or infrastructure development. Two things are certain in Sikkim firstly tourism growth and secondly growth of urban centers and human population. At this juncture stress on environment due to pressure on ecosystem and ecological imbalance is bound to take place. Though Sikkim has nearly 46 percent of area under forest, virgin landscape, un scaled mountains, perpetual glaciers, abundant flower and plants, untouched, unpolluted and crystal clear water bodies; transparent atmosphere to delight soul, body, mind and human heart, yet there lies unlimited material need and greed to be obtained from resources. Easy earning at the cost of ecosystem and tendency to grab natural wealth for personal satisfaction found prevailing in the study area. This cruel action of human mind against nature needs to be replaced by kind heart to save the environment from further bleeding.

Chapter three is devoted for highlighting the major tourist destinations in Sikkim. where all the places of tourist destinations are discussed at length. From the write up, it is revealed that most of the tourist destinations are located in higher altitudes. The destinations Gurudongmar, Dzongri, Nathula, Thangu, Changu, Memenchu, Yumthang lie above 2438.28m from the mean sea level. At this Alpine climate, precious medicinal plants and high value flora and fauna co-exist. Trekking to Green Lake, Dzongri and other peaks in Sikkim also take place at high alpine regions. Besides Mt. Sinolchu, Kabru, Johsang, Tent peak, Singalilia range, Chola range lie above 2743.06m from the MSL. The Maenam and Tendong peak, Rhododendron of Barsey, Sinchor of Uttaray and wild life and National Parks lie in the elevated regions of Sikkim Himalayas. All these hotspots have been the playground for various tourist

activities. Therefore there exist every reason to be alert on environment front and embark on construction strategies to save world's few left over biodiversity resource of Sikkim Himalayas.

Chapter four throws lights on various active agents contributing to environmental degradation. The major actors in degradations are discussed in detail. Deforestation due to diversion of forestland for construction of infrastructure like road, power plant and buildings, followed by high dependency ratio on forest for fodder and fuel is prominent. Further, plucking of flowers and plants from the trek route with some instances of bio-piracy have been recorded. In the process of hydropower development, dams, bridge, roads and horizontal concrete colonies have replaced large agriculture and forestlands. In the dam site, blasting explosions have led to crack and joint development and water sources have been drying up day by day. The Government of Sikkim has declared the areas along the roadside extending from Rangpo to Ranipool as Industrial area. Hence various industries such as CIPLA INDIA LTD, PIPES, POLYMER, INK etc have been setup. These industries are not only polluting the surrounding environment but also generating unmanageable non-degradable solid waste. As a result entire area in the vicinity have remained unfit for agriculture etc. Further population and rate of urbanization has been growing up rapidly. The growth of tourism along the roads and villages has resulted in landuse change duly affecting the agriculture and cropping system. Mining activities in the selected areas have further led to land degradation thereby misbalancing the existing ecosystem. Though steps have been taken by the state Government to combat environmental pollution yet growing numbers of vehicles have resulted in air, noise, and land pollution.

In chapter five various impact of tourism has been discussed. Wherein it is revealed that economic benefit in the form of increase in per-capita income and employment generation is discussed in respect of multiplier effect. The direct and indirect benefit from tourism services helps penetrate income towards grass root level. Secondly socio-cultural impact showed negative aspects, wherein cross culturisation sometimes tend to invade local

culture, cuisine and costume. It is witnessed that in the wake of tourism influx there is a constant erosion of tradition, dress pattern and food habit. In toto, negative impacts on host society in greater than positive impacts. Thirdly tourism development is seen parallel to destruction. Wherever there is tourist activity some kind of environmental pollution is noticed. However with the strong political will the concept of sustainable development by introducing environmental impact assessment, carrying capacity and destination management have been introduced in the sphere of developmental activities. Hence, the hilly state may achieve eco-tourism growth in future. In this chapter findings of field survey have also been incorporated to analyse the level trend and magnitude of impact of tourism on environment, economy society and culture. The behavioral attitudes of visitors have been highlighted to understand their level of environment consciousness.

In chapter six, mention has been made on prospects of eco-tourism in Sikkim. It is perceived that Sikkim has every potentiality to grow as eco-tourism capital of India. If the concept of sustainability, carrying capacity and Environmental Impact Assessment is practiced in toto tourism can sustain in the long run. The eco-tourism destinations have also been identified and described at length.

Finally in chapter seventh, brief description of overall findings have been underlined by highlighting the measures taken by the Government towards balancing dichotomy of tourism and environment. The writing of the thesis has been put to an end by pointing out some suggestions and recommendation in the conclusion.

RECOMMENDATIONS

The Western developed world has enough of material wealth but scarcity of spiritual wealth. Spiritually the west is depriving the most. In the wake of globalization and consumerism the custom, tradition, folklore, supernatural power, rituals festivals, meditation, enlightenment etc. have been vanished form the western land. Where as Sikkim reserves virgin nature and unspoilt beauty any grandeur of mountain ranges, folklore, custom and rituals.

It is this aspect which entices foreign tourists to pour into small but beautiful Sikkim. This place is often compared with Swiss of the East. Many tourists do not imagine Sikkim to be so beautiful and they get wholly absorbed with local tradition and manifest by wearing local dress, eating traditional food and enjoying the multi-community and cross cultural syncretism.

Further steps must be ensured by the government, local bodies, NGOs developers, operators, suppliers, visitors, local communities and all players to strike a balance between tourism growth and socio-cultural, economic and environmental degradation. The recommendation is discussed in the following paragraphs in different headings.

A. SOCIO-CULTURE

1. Cultural heritage center displaying community wise dress, pattern, rituals, religion, tradition folklore, dance, music, language, food habits, script, with a tourist village would be essential to set up. Excursion to these centers may help students and youths to get along with their cultural ethos.
2. Fair and festivals displaying rich cultural diversity must be organized annually so as to familiarize ethnic culture locally.
3. Encouragement and incentives to rural folk of remote areas towards preservation of their cultural and natural heritage. Training may be organized for such people in the state museum, art galleries and community centers.
4. Light and sound shows at night at Gangtok, Namchi, Rabdantse, and Yuksam may further enhance symbolic tourist activities.
5. Establishment of artifact, museum, art gallery and interpretation centers.
6. Awareness camps and incentives for youths to promote and preserve their culture and tradition and display such antique items frequently.

7. Restoration of historic and religious institutions, architectural façade and save them from pollution, decay and destruction.
8. Monastic tourist circuit may be planned out to cater the needs of religious tourists.
9. Gorkha, Bhutan war, Hooker trail and silk route may be explored as trek and trail route, as it is historically significant.
10. Traditional styled wooden building needs to be preserved and constructed with a view to maintain aesthetic beauty.
11. Local craft, sculpture, painting, play, music, dance should be encouraged and exhibited.
12. Tourism promotional fairs must be organized to put offbeat tourism.

B. ENVIRONMENT

1. Resource mapping and carrying capacity of all the tourist destinations must be done before the development project is initiated.
2. Enforcement of eco-tourism principles must be made mandatory to all the players in tourism industry.
3. Feasibility report, environmental impact assessment and environment management plans must be drawn in advance.
4. The infrastructure development such as road, hotels, *yatri niwas*, and wayside amenities should be constructed in harmony with nature.
5. Awareness to stake holders and local community in various field of environment and socio-cultural impact should be extended.
6. In order to combat vehicular pollution a "Yatayat Nagar" would be ideal to be established 5-10 km away from the main town. Shopping centers should be free from traffic congestion, however light vehicles may be permitted.

Besides, planting of flowers and trees may be encouraged further to achieve green roads.

7. Movement of stray dog and animals should be prohibited in residential and town areas.
8. Trekkers and mountaineers should be informed to follow the prescribed code and everyone should be legally binded .
9. Permits to trekkers should be awarded on the basis of carrying capacities of the trekking area and strict vigilance and monitoring should be done to avoid congestion in geologically weak plates.
- 10 The growth of super structure and building construction must be checked and permission may be granted as per the geological/geographical/environmental report. Sikkim falls under seismically active Himalayan zone, hence wooden structure should replace the concrete structure.
11. Development of off season crops, floriculture, sericulture, medicinal plants, should be encouraged and support price may be granted to the farmer/growers.
- 12 Special care must be paid to protect threatened and endangered species of flora and fauna.
13. Need of reduction in the use of ecologically unfriendly substances such as CFC, asbestos, pesticides, toxic, infections, explosive and flammable items.
13. Workshop and training should be imparted to mountaineers/ trekkers with guidelines, code and ethics to be followed during the course of trek/tour.
14. Solid waste, garbage disposal and amenities should be provided in the entire tourist destinations.
15. Tourist taxi drivers spend maximum time with the tourists, they are sometimes called the *ambassadors on wheel* but they often mislead tourists. Therefore, lessons on value driving, moral and ethics must be taught to them.

16. Skiing, hang gliding, horse riding, yak riding, water sports, camping must be introduced.
17. Harnessing water, wind and solar energy and replacement of firewood by LPG, kerosene should be encouraged further.
18. Dry lakes should be artificially devoted for boating and adventure sports and ecology around the lakes may be preserved.
19. Water sports, adventure sports skiing, hang gliding, yak driving, horse riding and golf course should be promoted.
20. Environment auditing concept should be introduced in every matter related to environment.
21. Compulsory environmental education including forest, wildlife, cultural, heritage etc. at school level should be started with proper curriculum.
22. The state should be regarded "environmentally/ecologically fragile protected zone" in Sikkim.
23. Environmental impact assessment, management plan and catchments area treatment plan for all the development projects may be made mandatory. The environment impact assessment and the environment management plan should be carried out extensively.
24. The legislative ban on the use of non-biodegradable materials like plastic, polybags etc. have not been enforced in toto. Measures should be initiated in implementing such praiseworthy rules.
25. The offices and institutions should be aesthetically and environmentally sound, it may be achieved by greening the available space.
26. Minimum diversion of forests land for non-forestry purposes and compensatory afforestation schemes should be the priority of forest managers.

27. Initiation of afforestation may help reduce biotic stress on natural forests. Enforcement of laws and regulations for integrated development is essential.
28. Protection, conservation and development of medicinal plants, herbs and other non-timber forest produce, bamboos, herbal gardens etc. may be initiated at grassroots level.
29. The herbal gardens, smriti vans created at 166-gram Panchayat units need further improvement and encouragement.
30. Special emphasis on public relations, publicity, extension and awareness as well grievances relating to environment needs to be made access to public in general and NGOs in particular.
31. The attempts of state Government to eliminate use of agro-chemicals and make Sikkim an "Organic State" need further acceleration.
32. Department of ecclesiastical and culture and heritage should be partners in promoting and preserving cultural heritage, temples, monasteries and other religious centers of socio-cultural importance.

C. OTHER RECOMMENDATION

- Health Resort in the hot spring areas at Ralong, Borong and Yumthang along with massage, herbal treatment and traditional disease healer, local ethnic food would help be beneficial in many ways.
- Establishment of 5 star hotels, spa and resort for high spending tourists may enhance economy of this region.
- Need is felt in setting up of banquet hall and conference halls for educational, conference, and industrial tourists. Highly reputed Institutions may hold training, seminars and out door training.

- Provision of radio transmitting station, weather forecasting and natural calamities readressal forum for quick delivery mechanism help minimize eco disaster.
- Introduction of yoga, meditation, spiritual activities with herbal knowledge and first aid with the help of a trained teacher. Practical session on use of herbal medicine may help preserve existing herbal wealth.
- Fair and festival displaying variety of socio cultural component must be held annually, as it helps in realizing the importance of inter cultural richness.
- Tourism promotional fairs must be introduced to cater the need of deluxe tourists for economic gains.
- All the developmental activities should be carried out only after examining thorough report of social, environmental and physical carrying capacity of project site.
- Awareness programme on socio-cultural values, fairs and festivals, tradition and culture, flora and fauna and sustainable eco-tourism must be inculcated into the minds of local people, visitors and players.
- Human resource development must not be undermined, all the existing manpower should be given refresher course towards enlightening themselves in sensitive tourism business.
- Tourist stroll late night, there are discos beating and bread eating till midnight. Hence, proper protection measures should be ensured.
- Organize workshop, seminars, symposiums, Congress and trainings of national and international standard.
- Research and development must be encouraged so that impact analyses and achievement assessment go hand in hand.

- Local small-scale industry like food processing, honey, craft making, woodcarving, and herbal treatment should be encouraged.
- In tourist activity, reward and punishment with award should be declared for motivation and bringing about sense of betterment and fair play through competition.
- Alternate highway a project in the pipeline must be realized as soon as possible so as to minimize traffic congestion and the present 31 NH should only be used as one-way traffic.
- Airport, a project in pipeline should be completed in time in order to achieve and attract quality tourists.
- Off-season tourism should be promoted by introducing festivals, sports and exhibition events.
- Sikkim or Gangtok should have a brand name like Jaipur is known as pink city.
- Ethnic cuisine should be made available in the restaurants.
- Hygiene and cleanliness in hotels and restaurants should be regularly monitored to ensure environmental safety.
- Price hike during peak season should be controlled administratively, in order to protect the interest of local population.
- Ropeway, chair lift should replace road connectivity in ecologically fragile areas.
- Golf course, cave tourism, bird watching help generate off-season tourists.
- Botanical gardens, zoological parks with herbarium set up may attract educationist, students and researchers. So in technical and agriculture, floriculture, horticulture institutions, laboratory should be instituted for research

work with the provision of all varieties of flora fauna and endangered species.

- Museum, art gallery, painting and natural history museum is a must for cultural tourists.
- Mountain safari in wildlife sanctuaries with guidelines and code should be initiated and implemented as soon as possible.
- Permit system should be made access through single window, as it helps in discouraging hawker and brokers.
- Behaviour of divers in motor syndicate and guidelines for hoteliers should be tourist oriented.
- The influx of foreign tourists especially harbingers of fresh culture 'Hippies' may alter cross-cultural fabric of local community. So impact awareness camps should be held regularly.
- Establishment of an international tourism research institute and opening of chapter of IITTM is a must.
- Passing of bad remarks by using filthy words and derogatory remarks to low budget tourist should be checked and defaulters should be dealt with seriously. It helps in correcting individual behaviour and responsibility.
- Pollution abatement strategies should be applied with strict reinforcement of laws governing environment protection.
- Application of reuse, recycle and refuge of solid waste and waste utilization programme is need of the hour.
- Taxing and pricing for producing hardest substances.
- Grass root political involvement of Panchayats needs further strengthen in the field.
- Long term planning with blue print of development may help in achieving sustainable development.

- Involvement of NGOs, clubs and local stakeholders in the process of development.
- Bioremediation and biotechnological method of conservation may be adopted.
- Conservation of nature by controlling soil erosion, landslide, watershed etc. is an urgent task before the Government.
- Diversion of tourist from concentration in Gangtok to other peripheral area for regional growth is the solution to minimize environment problems and maximize economic benefit.

CONCLUSION

The recent growth of tourism in Sikkim is controlled by two main factors firstly Sikkim offers peaceful atmosphere free from militancy, insurgency, strikes and political turmoil. Secondly diversion of tourist traffic from Kashmir and Katmandu, owing to risk of life and prevailing instability and insurgencies. The importance of Eastern Himalayas have held fascination for mankind ever since exotic nature stood up as an element of human interest. If Swiss became playground of Europe, Darjeeling since 1835 served as sanatorium for hot and fever stricken British from Kolkata, the then British Capital, Sikkim Himalayas will surely be the Alps of the East. After the advent of mass and social tourism, some tourist slipped off their way to explore virgin Himalayan kingdom of Sikkim. The Mt. Kanchendzonga the guardian deity of Sikkim was first ever ascended in the year 1955 and 1977 respectively. However the climbers had to remain 2 m below the summit as a mark of respect and to uphold the sacredness and Sanctity. It was after Sikkim's merger with Indian Union in 1975, massive infrastructure beefed up and paved the way for tourism development. As a result sudden unplanned and haphazard booming of concerts and population took place. The construction of schools, hospital, roads, offices encouraged rural-urban migration and large number of people were employed in Gangtok and other districts of Sikkim. The influential

Sikkimese people became access to Delhi, Kolkata, Mumbai and other metropolis and imitated similar building design, which they copied and pasted in the ecologically fragile state of Sikkim. During this period steep slope and seismically sensitive earth strata experienced the birth pain of six to seven story concrete dwelling houses. Those tall buildings became the business hub and center of attraction and status symbol for the elite and privilege section of society. With the growth of egoistic population, competition of concretization inflicted adversely into the minds of affluent people in the nook and corner of the state. Thus tradition of materialistic fulfillment became the heritage and legacy in Sikkim. Through passage of time landscape of Gangtok, Pelling, Namchi witnessed *matchbox civilization*, with the erection of multistory buildings. The compact and congested buildings leave no space for air circulation, park, gardens, grounds etc. The Department of Urban Development and the then Gangtok Municipal Corporation remained like a dead man and mother nature was murdered, defaced and raped mercilessly. The process of erection of buildings further multiplied with multiplying number of tourists and like a cancer it proliferated towards the remote villages as well.

With the available housing loan schemes floated by various banks the process of concretization and cementisation became an unending process. The ultimate result ended up with the fact that the influential people of society so-called owners and landlords amassed massive wealth from their tenants. Even today Sikkimese mindset has remained static; people are displaying their material wealth by erecting sky crappers and putting their lives in danger of natural calamities.

Irrespective of rock strength, contour, landslide, fragile and sensitive ecosystem, road connectivity touched the highest upto Gurudongmar (5790.91m), Nathula (4266.99m) Dzongu, Yumthang, Karzee etc. with blacktop at the cost of greeneries. Forest bungalows, rest house, and offices have been constructed in the alpine mountainous topography mainly in Gnathang, Ravangla, Thangu, Muguthang, Lachen, Yumthang etc. In the water sources, bamboo nallas are replaced by concrete tanks and steel pipes. Besides, the man and animal paths (village cart road) in the countryside are

replaced by concrete flooring and natural lakes are encircled by cemented footpath. In this way, the process of concretization and cementisation affected major portion of lithosphere in Sikkim. This has not only disturbed and degraded ecology but also jeopardized the life of flora, fauna and human beings. As a result water sources are drying up, deforestation, land, soil, water, soil and noise pollution are looming in the atmosphere. Landslide, soil erosion and rural transformation are prevalent everywhere. Vehicular growth further aggravated the problem and hydropower projects are inviting another sudden catastrophic. Besides industry, mining activity and impact of westernization, modernization, and globalisation have eroded natural and cultural wealth of Sikkim. The government has been successful in organizing festivals and opening cultural centers for various communities in Sikkim. Traditional *melas* and exhibitions are organized to awake and aware the local community.

While pondering into the steps taken by Government towards achieving sustainable balance growth, it can be said that: though its lately realised for restoration of environmental impact yet its not too late to initiate rapid recovery process. Through democratic decentralization, gram panchayats have been empowered to create and maintain smritivan, social forestry and herbal garden in each gram panchayat units. Accordingly water source development and green roads plans are carried out by the panchayats in the villages.

Furthermore students, teacher, police, individuals, community, clubs, NGOs have been involved for the cause of better environment. Massive awareness campaigns are carried out at the grass route and there exist a great political will to save environment. Therefore if proper check and balance is guaranted Sikkim will remain environmentally healthy for future.