Chapter -5

PROBLEMS OF MASS TOURISM

OF

HIMACHAL PRADESH
## Contents

| i.          | Adverse impacts on natural environment due to unplanned tourism | 210 |
| ii.        | Over construction of Hotels and Land degradation              | 217 |
| iii.       | Deforestation                                                | 219 |
| iv.        | Air Pollution                                                | 221 |
| v.         | Municipal Solid Wastes (MSW)                                 | 222 |
| vi.        | Water Pollution and Crises                                   | 223 |
| vii.       | Mitigating Measures                                          | 224 |
| viii.      | ECOTOURISM: – Making Himachal Green                          | 226 |
Problems of Mass Tourism of Himachal Pradesh

The discussions and analysis of the facts and figures in the study brings to fore that tourism in Himachal Pradesh has been increased by more than double in case of domestic tourists and more than 15 times in case of foreign tourists during the period 1993 to 2004. Tourism is a complex ambivalent phenomenon and its impacts on destinations are numerous and varied. As an industry it generates money, employment and increase, the income potential in almost every sector of economy. The benefits arising from the tourism have been highlighted in the first chapter of this study. Despite having lot of benefits from the promotion of tourism, it has also created several environmental, Sociocultural and economic problems and that’s why tourism came under severe criticism. Now the role of tourism to the development process of a destination is at crossroad and it is a topic of substantial debate. Saving the environment is a global issue that’s why this study has a special focus on the impacts of Mass tourism on the environment and ecology. A majority of researches have portrayed tourism as a positive force in development of economy of a destination but few have expressed the opinion that modern Mass tourism is a negative force too. Many scholars question even its economic desirability because a bulk of the income generated by tourism seep out from the destination area as people other than the locals hold the business at the destination. There is also considerable income leakage in the form of benefits to tour operators, trekking and travel agencies based in large urban centres outside the State. Thus host population does not get any real benefit.

Since most of the researches on the impact of tourism are of recent origin. This issue faces a host of methodological problems. It is often difficult to distinguish between changes resulting from tourism development and those caused by other developmental activities in the economy of a nation. There is often an absence of information regarding the conditions prior to the advent of tourism in a destination and therefore a lack of baseline from where changes can be measured.

In Himachal Pradesh tourist inflow discloses a marked geographical concentration to a few selected areas though other areas are having same tourism potential but due to lack of good accessibility and infrastructure facility, a state of unequilibrium has been created. This unequilibrium exerts pressure on the ecosystem of that area and also creates disturbance to the ecosystem.
Foreign tourists coming to India
+ Domestic tourists
At Principal Destination

Fig. 5.1

D denotes destination

Well-known tourist destinations with mass tourism
Lesser-known tourist destinations but having great tourism Potential

State of unequilibrium in the flow of tourists to the destinations.
Many environmental problems are arising at many locations in Himachal Pradesh like - Kullu, Manali and Shimla due to increasing pressure of tourism and due to the over construction of hotels, deforestation, air pollution, solid waste, water pollution. Thus some mitigating measures should be taken to lessen the load of different forms of pollutions. Hotel construction registered its highest growth in this region (about 38%) during 80s due to terrorism in Jammu and Kashmir. One-quarter of the hoteliers and tourists consider deforestation as one of the topmost problems arising due to unregulated tourism. Air pollution studies over a four-year period (1999-03) period show that suspended particulate matter (SPM) has gone up to 118 mg/m³ at Manali during summers. A study of the total waste generated shows that the proportion of decomposing waste (nearly 63% in Kullu and 72% in Manali and 70% in Shimla) is higher than that of non-biodegradable.

Indiscriminate throwing of municipal solid waste into rivers and in valleys is common practice in these tourist spots. As a result river water is continuously being polluted. To mitigate all these problems, a complete ban on further construction of large hotels needs to be enforced along with regulation of tourists and strict enforcement of emission standards for vehicles. Segregation of wastes at its source and production of biocompost from the biodegradable waste could be an important way of dealing with the solid wastes.

The advent of tourism activity and its unregulated growth particularly in few areas has resulted in a dramatic increase in the number of hotels, and unmindful of the number of tourists. There was an increased need for hotel accommodation during 1990s when the majority of the tourists from Jammu and Kashmir state turned towards peaceful Himachal. This inflow exerted such great pressure that over-construction of hotels took place in a big way. The surrounding forests were also exploited largely not only for timber but also for fuel. Along with continuing deforestation, air pollution has been observed. The forest cover has decreased but the number of tourist vehicles particularly during the peak summer season has increased. This resulted in high emissions of pollutants in the ambient air causing health risks to natives and tourists alike. Total SPM and other gases were the major forms of pollutants. The aesthetic beauty of the tourist spot diminished due to high solid waste generation compounded by inadequate infrastructure facilities to tackle it. Indiscriminate throwing of solid
waste into river has caused water contamination. Continuous drying up of springs in the hill spots has also posed a serious threat to water supply of the region. As a result, tourists, hosts and many other living organisms in the region have begun to feel the impact of water crisis. Rivers being the major source of drinking water and the only option for future water this cannot be allowed to surpass the level of pollutions.

The tourism resources that the tourists see and visit in Kullu valley are mainly its unique, broad, beautiful landscape features, blooming orchards and ancient temples. In addition they come to the area to see the beautiful scenic valley and traditional townships. The important tourist resources in Kullu, Manali and others are primarily a combination of both religious and scenic places. Beautiful alpine pastures, snow capped mountain peaks, orchards and coniferous Deodar trees attract many nature lovers. Other tourist attractions include temples, hot water springs and baths and beautiful picnic spots of snow capped peaks with glaciers and moraines, broad valleys with blossoming orchards and meandering rivers. Mountaineering, adventure sports and winter snow sports are also undertaken in the area.

These tourist spots occupy strategic positions in the geologically fragile and ecologically delicate region of the northwestern Himalayas. These areas should be the high priority areas from environmental conservation point of view of the Himalayas and similar mountain tourist spots of the world where tourism pressure exceeds the available infrastructure so as to establish a harmonious relationship between people and nature. The arrival of tourists in the Kullu valley is directly related to the facility of road transport. Up to the 80’s tourism was in juvenile stage of its growth and therefore no adverse impacts arising out of accommodating these numbers in various important destinations of Himachal Pradesh. The interrelationships among host-tourist-nature at that time could be said to be holistic and ecofriendly. However, in the late 80s and 90s traffic of tourists rose exponentially. This rapid growth in the number of tourists was a golden period for hoteliers and travel agents but for environmentalists it was a nightmare. Construction of hotels was in full swing and environmentalists began to perceive the danger signs not only to environment but also to the tourist industry.
Besides enhancing the scenic beauty, forests have a vital role in regulating temperature and rainfall, and minimising adverse impacts arising due to over interference on the part of human beings. Forests also determine economic activities, development and livelihood of the people. They control the climate and regulate the hydrological cycle, protect soil erosion and stabilize carbon, nitrogen and oxygen contents in the atmosphere. Initially, these tourist spots were rich in forest cover, fauna and water resources. Forests were full of Deodar (Cedrus deodara), Tosh (Pinus webbiana), Rae (Abies smithiana), and Kail (Pinus wallichiana). These species were covering the high altitude areas of Rohtang Pass with dense coverage. Nowadays, this tree line is receding and exists only between Marhi-Kothi and Manali. Even in Marhi-Kothi, there were dense deodar trees during recent decades but now nothing remains except for a few dead tree stumps as these trees were cut indiscriminately for timber. Many efforts by the local forest department to revive these species in the region have so far failed. Similarly, in the Solang valley, the winter sports site, the villages were known for deodar trees, one was said to have the largest in India. The situation today is very different. The trees here are sparse due to high biotic pressures.

Air pollution has also started to exceed permissible levels in many parts of the Himachal Pradesh particularly when tourist inflow is very high and other human activities increase. The permissible levels of air quality are necessary with an adequate margin of safety, to protect the public health, vegetation and property. Based on National Ambient Air Quality Standard (NAAQS) set by Central Pollution and Control Board, New Delhi, the permissible limit to SPM on national level is 100 mg/m³ for 24 hourly/8 hourly monitoring for sensitive areas like Kullu and Manali and Shimla. For gaseous pollutants- sulphur dioxide (SO2) and oxides of nitrogen (NO2) permissible limit stands 30 mg/m³ to each gas for sensitive areas. Air pollution has also started to exceed permissible levels particularly in summers when tourist inflow is very high. Some of the Himalayan towns, with high pressure of tourist activities, are not lagging behind the country's metropolitan cities in terms of air pollution. They have either reached the threshold limits or have begun to cross it in towns such as Dehradun (323.0 mg/m³), Shimla (142.4), Guwahati (93.3) and Shillong (42.2). In 1997, Dehradun showed annual average SPM level to be more than twice the permissible level.
Fig. 5.2
Air Quality at Shimla in Winter

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO2</td>
<td>9</td>
<td>11</td>
<td>17</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>NOx</td>
<td>11</td>
<td>13</td>
<td>17</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>SPM</td>
<td>60</td>
<td>78</td>
<td>60</td>
<td>75</td>
<td>72</td>
</tr>
</tbody>
</table>

Fig. 5.3
Air Quality at Manali (Kullu Distt) in Winter

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO2</td>
<td>8</td>
<td>9</td>
<td>13</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>NOx</td>
<td>9</td>
<td>11</td>
<td>18</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>SPM</td>
<td>65</td>
<td>71</td>
<td>65</td>
<td>79</td>
<td>86</td>
</tr>
</tbody>
</table>

Standard limit for SO2 is 30 mg/m³
Standard limit for NOx is 30 mg/m³
Standard limit for SPM is 100 mg/m³

Source: Pollution Control Board Shimla
Fig. 5.4

Air Quality at Shimla in Summer

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO2</td>
<td>14</td>
<td>17</td>
<td>23</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>NOx</td>
<td>11</td>
<td>13</td>
<td>17</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>SPM</td>
<td>88</td>
<td>97</td>
<td>60</td>
<td>102</td>
<td>107</td>
</tr>
</tbody>
</table>

Fig. 5.5

Air Quality at Manali (Kullu Distt) in Winter

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO2</td>
<td>8</td>
<td>9</td>
<td>13</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>NOx</td>
<td>9</td>
<td>11</td>
<td>18</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>SPM</td>
<td>65</td>
<td>71</td>
<td>65</td>
<td>79</td>
<td>86</td>
</tr>
</tbody>
</table>

Standard limit for SO2 is 30 mg/m3
Standard limit for NOx is 30 mg/m3
Standard limit for SPM is 100 mg/m3

Source: Pollution Control Board Shimla
Shimla - the queen of the hills - in Himachal Pradesh recorded the maximum SPM level of 217 mg/m³ in 1997. By the strict enforcement of preventive measures it has decreased in 1999 but the fact is that it is near to the threshold limit and high even in certain parts of the Himalayas.

Mountainous tourist spots with their snow-capped peaks appear very beautiful and grand from a distance. But when they are observed at close quarters, in the absence of inefficient mechanisms of collection, transportation and disposal of wastes, they have become the dumping grounds of garbage, for the simple reason that the waste generation is higher than the infrastructure available, with the managing authorities, to handle it.

Per capita per day waste generation at global level shows wide variation from country to country. For Canada it is 2.7 kg, for Switzerland it is 2.6 kg, for USA 1.96, France 0.9-2.5 kg and in U.K. 0.9 kg. Waste generation generally is proportional to the country's living as well as economic standards.

On average, per capita waste generation in India is 0.67 kg a day. The waste generation in and around the Valley of Flowers, in Uttarakhand hill state was noted to be 0.253 kg/capita/day. In the Himalayan valleys the wastes are mostly dumped into the rivers for convenience. This pollutes drinking water and affects the health of hosts as well as guests.

Water is life. Without the supply of good quality water, tourists cannot fully enjoy the places that are scenically beautiful and attractive. In tourist areas, neither tourists nor hosts can be happy and healthy unless clean and adequate and uncontaminated water is made available to them. Therefore, water quality may have the same value in attracting tourists as the scenic forests, good hotels, quality air and general cleanliness of the tourist spots. Eighty per cent of the country's drinking water needs is met from ground water.

In the Himalaya the main sources of drinking water are streams, springs and rivers, some areas also have hand pumps for drinking water. Amongst these sources, rivers and streams seem to be most affected by human interferences. As the springs are
drying up, the pressure is high on the rivers that are difficult to harness due to high economic costs and pollution.

Adverse impacts on natural environment due to unplanned tourism

Table No 5.1

<table>
<thead>
<tr>
<th>Forms of Activity</th>
<th>Pressures on</th>
<th>Adverse impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over construction</td>
<td>Land</td>
<td>Increase in disasters (deforestation, floods, cloud bursts and landslides, etc.)</td>
</tr>
<tr>
<td>Increase in roads</td>
<td>Forests</td>
<td>Soil erosion, landslides, floods</td>
</tr>
<tr>
<td>Fuelwood</td>
<td></td>
<td>Air pollution and shrinkage in forests</td>
</tr>
<tr>
<td>Timber extraction</td>
<td></td>
<td>Air pollution and loss of forests cover</td>
</tr>
<tr>
<td>Forest fires</td>
<td></td>
<td>Drying up of springs</td>
</tr>
<tr>
<td>Trekking, hunting &amp; poaching</td>
<td>Fauna</td>
<td>Disturb wildlife habitat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduction in wildlife</td>
</tr>
<tr>
<td>Increase in road traffic</td>
<td>Air</td>
<td>Increase in air and/or noise pollution and respiratory problems begin</td>
</tr>
<tr>
<td>Waste dumping</td>
<td>Water</td>
<td>Water borne disease/ contamination of water sources, fading scenic beauty</td>
</tr>
<tr>
<td>Sewage disposal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Over construction of Hotels and Land degradation
Taking 1993 as the base year, hotel constructions in Himachal Pradesh within a decade increased by 115%. It is now clear that the state of Himachal Pradesh have experienced speedy and increased hotel construction. One of the main reasons for this upshot in construction is thought to be the rise of militancy and insurgency in the neighbouring state of Jammu and Kashmir. Tourist activities started to dwindle there while in Himachal Pradesh there was an increase because of diversion of domestic as well as foreign tourists from the disturbed State. This period of tourist growth proved economically beneficial but environmentally it has been disastrous for the State’s natural resources.
Table No.5.2

<table>
<thead>
<tr>
<th>Year</th>
<th>No of establishments</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>762</td>
<td>-</td>
</tr>
<tr>
<td>1994</td>
<td>904</td>
<td>18</td>
</tr>
<tr>
<td>1995</td>
<td>1023</td>
<td>13</td>
</tr>
<tr>
<td>1996</td>
<td>1180</td>
<td>15</td>
</tr>
<tr>
<td>1997</td>
<td>1208</td>
<td>2.3</td>
</tr>
<tr>
<td>1998</td>
<td>1217</td>
<td>0.7</td>
</tr>
<tr>
<td>1999</td>
<td>1241</td>
<td>1.9</td>
</tr>
<tr>
<td>2000</td>
<td>1434</td>
<td>15.5</td>
</tr>
<tr>
<td>2001</td>
<td>1504</td>
<td>4.8</td>
</tr>
<tr>
<td>2002</td>
<td>1562</td>
<td>3.8</td>
</tr>
<tr>
<td>2003</td>
<td>1643</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Source: Deptt of Tourism and Civil aviation, Government of Himachal Pradesh, Shimla.

Tourism growth has provided different types of jobs such as hotel employees, travel agents, tourist guides, transport operators and as mediators between guests and hosts who help to communicate the idea about the availability and suitability of accommodation and transport in a tourist spot where normally the tourists remain strangers. A tourist spot develops through the creation of infrastructure such as accommodation and roads. Local products become available due to the entrepreneurial activities of local people. These related activities provide a boost to the income of local communities and encourage further developments.

With the increase in tourist pressure to Kullu valley. It is converted the peasant village of 650 households into overbuilt town with more crown category accommodation than native structure of slate and shingles- fertile agriculture field miserably regressed for tourism growth and land prices soared beyond the reach of locals.

Tourist growth continues in an unregulated and uncontrolled form. Developments and activities are continuously needed to meet the demands of the increasing number of tourists. Key sites such as the Rohtang Pass attract large number of visitors with
respect to the recreational resource capacity and available road facilities there. The high seasonal inflow in surrounding picnic spots of the major tourist towns like Manali ultimately gives impetus to more hotel construction leading to adverse over-construction, deforestation for hotel timbers, furniture, fuel and other uses. The unregulated inflow of tourists brings a higher number of vehicles; it creates traffic congestion that causes ambient air pollution by way of high vehicular emissions up to the sub-alpine or alpine picnic tops. The study showed that of the 750 vehicles per day to Rohtang Pass plying in summer, over 87% belonged to tourists. Thus, as a combined effect of biomass burning in winter in the hotels as well as villages and the high number of plying vehicles in summer, ambient air pollution in the form of SPM increases, sometimes more than its permissible level for these sensitive areas.

Another environmental issue that arises is the management of solid waste. For example, the daily visitors at Rohtang Pass generate 1,335 kg per day solid waste. This results in an accumulation of 122 tonnes in the three months from April to June. The waste disposal problem is greatest in the outskirts of major tourist spots, where there are no formal disposal schemes or financial support to manage the waste.

Deforestation

Of the total land cover in Himachal state, 59% of the area is devoted to forest. The remaining 41% comprises high and medium alpine pastures, grazing lands and blank surfaces. Kullu district, has only 16.5% forest area of Himachal. The major species of trees that have been exploited indiscriminately for timber in building of houses and hotels over the years are Deodar and Kail.

To gauge the existing status of forests in the eyes of the public, a perception study among hoteliers and tourists was done. 30% hoteliers, 35% domestic tourists, 65% foreign tourists and 55% local residents strongly felt that the forests had degraded. Most of the respondents ranked deforestation as the most significant environmental component adversely affected by tourism. So deforestation is thought to be a matter of deep concern in the ecologically sensitive areas of Kullu, Manali and Shimla.

Pine trees which once dominated the skyline of the village have given way to large colossal concrete structures, which are dangerously perched on the hills. The hill side has been defaced beyond recognition and today amidst fertile fields rise heavily
fenced ‘summer homes’ that dwarf the humble rural dwellings.\(^4\) This aspect requires immediate attention. Regarding the over construction, 40% hotelier, 48% domestic tourists, 69% foreign tourists and 76% of the locals are of the view that due to increase in tourism over construction took place. In the same way 22% hotelier, 11% domestic tourists, 23% foreign tourists are of the view that tourism created pollution of water bodies. 46% of the locals are of the view that increase in tourism has direct relation with the water pollution.

Table 5.3

<table>
<thead>
<tr>
<th>Forms of degradation</th>
<th>Hoteliers</th>
<th>Domestic Tourists</th>
<th>Foreign Tourists</th>
<th>Locals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deforestation</td>
<td>30</td>
<td>35</td>
<td>65</td>
<td>55</td>
</tr>
<tr>
<td>Garbage</td>
<td>30</td>
<td>30</td>
<td>50</td>
<td>58</td>
</tr>
<tr>
<td>Water pollution</td>
<td>22</td>
<td>11</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td>Over-construction</td>
<td>40</td>
<td>48</td>
<td>69</td>
<td>76</td>
</tr>
<tr>
<td>Sewerage problem</td>
<td>35</td>
<td>22</td>
<td>14</td>
<td>61</td>
</tr>
<tr>
<td>Air Pollution</td>
<td>45</td>
<td>59</td>
<td>71</td>
<td>83</td>
</tr>
</tbody>
</table>

According to existing laws in Himachal, every household is entitled to standing trees for the purpose of timber at nominal rates under timber distribution (TD) rights. TD holders have to pay less than the market rate of the same wood. Under these TD rights, as they are called, right holders get a deodar tree for rupees (Rs) 1 to 7 only (currently about Rs 48=1US$), the market rate of which is very much higher. The massive difference in the price of timber is largely responsible for its diversion for the purpose of hotel construction and resulting deforestation.

According to the data collected from the Forest Department, Govt. of Himachal Pradesh 543 m\(^3\) of wood was used during construction of 40 hotels at Kullu and 3,855 m\(^3\) woods in 84 hotels at Manali. An average of 13.6 m\(^3\) per hotel at Kullu and 45.9 m\(^3\) per hotel at Manali. Of the total wood used by volume in hotel industry, the larger
and higher categories of hotels use more wood and cause relatively higher pressure on the available forest resources.

The perception study of contractors or hotel builders showed that Deodar trees are the most commonly used timber (64.3% and 87.6% at Kullu and Manali respectively). Therefore, it can be concluded that Deodar is a highly threatened species. Such practices indicate an alarming signal to conserve these highly important tree species aesthetically helpful in attracting tourists and ecologically conserving surrounding environment.

**Air Pollution**

The most striking values of SPM were derived during the Dussehra festival that is celebrated every year in Dhalpur ground, Kullu. The average SPM figure for four days was found to be 358.6 µg/m³ and ranged from 262.8 µg/m³ (23 October 1999) to 411.2 µg/m³ (26 October 1999) during four sampling days. In this festival that continues for seven days, around 200,000 pilgrims, villagers and tourists participate. The dust is the major source of SPM during this festival as the festival ground is almost bare. It is quite clear that SPM mean values cross the permissible level at both the spots; as the number of tourists increase, the SPM values also increase proportionally. The level of air pollution in the winter season is also quite high. This is mainly due to burning of fossil fuel, in large quantities, by native inhabitants and sometimes by hoteliers during electricity failure in winter. Monsoon season has the lowest SPM values due to washout effects of rains and very few numbers of tourists during this period.

SO2 and NO2 concentrations were in excess under specified 24-hour standard duration for sensitive areas (15-30 µg/m³) during summer season in Manali. During 1999-03, trace gas concentrations of SO2 and NOX were within detection limits. But it is increasing continuously. June and October were the important months when tourists and Dussehra enthusiasts visited Kullu-Manali complex in large numbers causing atmospheric pollution from their vehicles.
Municipal Solid Wastes (MSW)
The main sources of solid waste are hotels, residential colonies, hospitals and other business and office establishments. The total waste generated from all these sources during the peak tourist season was estimated around 56 tonnes, 30 tonnes and 48 tonnes per day at Kullu, Manali and Shimla respectively. Of the total waste generation, hotels were responsible for 12 tonnes, 20 tonnes, and 27 tonnes of waste at Kullu, Manali and Shimla respectively. Residential colonies contribute 44 tonnes at Kullu, 8 tonnes at Manali and 18 tonnes at Shimla. Hospital waste is below 0.11 tonnes for all the three locations, which is a little higher in case of Shimla. It is unfortunately also treated as a MSW and dumped at the bank of river Beas mixed with other MSW. At Kullu, more solid waste is generated throughout the year as the local population is much higher than that of Manali.

The authorities managing solid wastes (Municipality and Naggar Panchayat) are capable of lifting about 20% of the wastes at Kullu and 27% at Manali, mainly from those collection points that have good link roads. Waste collection points in areas devoid of any access to trucks and tractors remain uncleared.

The main constituent of solid wastes is the readily biodegradable waste (RBW) that comprises mainly rotten vegetables, fruits, waste foods, leaves and organic matters. The next category of waste was biodegradable waste (BW). This consisted mainly of paper, rag/cloth, wood, hay and straw and coconut peels. Solid waste contain 60% RBW and 40% BW. Out of this 40% BW more than 50% created by the tourists during the peak season.

The recyclable but non-decomposing waste category is classified as non-biodegradable waste (NBW). The NBW group consisted primarily of plastic, glasses and metal. Town of Kullu, and Shimla produced around 37%, 26% and 41% of NBW respectively. This share low in summer because some Rag pickers and Kabariwalas (or recycling party) lifted the discarded recyclable waste from NBW. Climate being very cold during winters most of the Rag pickers migrate to the plains. Therefore, the NBW such as plastic, glass, metal, rubber/leather were high during winters.
In Dharamshala too increase in number of tourists result in increase of municipal waste: In the absence of proper system of disposal, garbage is being dumped along hill slopes, bringing stink to the salubrious environs of the town. The situation is not different at Dalhausie too, lack of parking space, problem of disposal of garbage and neglect of khajijiar lake can be easily noted along with acute shortage of water during peak tourist season.

Water Pollution and Crisis
A Study conducted by the State Pollution Control Board revealed that the water of river Beas showed dissolved oxygen (DO) as 12.0 milligram per litre and pH-8.3 at 11.4°C temperature. Another study in 1999 showed dissolved Oxygen varying from 7.2 to 9.5 milligram per litre. At another site, near where a sewage effluent outlet from Bhuntar enters the river, dissolved Oxygen was only 3.5 milligram per litre and pH 6.6 with water temperature at 18°C. This considerable decrease in dissolved Oxygen signals the deteriorating water conditions in river Beas. Chemical oxygen demand (COD) also has higher values (2.2 to 18.0 milligram per litre). It further indicates that river water is getting more and more polluted and contained a critical level of bacteria contamination and unfit for the human consumption without a treatment. This is because the sewage from the hotels and residential units does not undergo any treatment and is discharged into the natural water resources. Chloride concentrations in river water is also increasing and causing a serious threat to fish culture in the Kullu valley.

As water is a primary need of humankind, a serious decline in water quality and quantity has been noted. The rapid growth of Shimla's population along with ever increasing number of tourist arrivals has led to an unbeatable stress on basic amenities especially on drinking water. The town has a very old water supply system and as against the requirement of about 80 lakh gallons water per day, Shimla and its suburbs get about 55 lakh gallons water per day. The results of these studies indicate that a critical environmental health risk has begun to emerge in these mountainous regions. In the absence of any treatment system, sewerage discharge from these and other similar areas ultimately flows to heavily populated areas. Untreated raw sewage, and septic tanks, wherever they exist, contaminates river water. Current conditions have
mounted the incidence of water borne diseases including cholera, dysentery, hepatitis, etc.

Therefore the two most important concerns in the Himachal Pradesh that require immediate attention are:

- Drinkable water is found in limited quantities from the prevalent sources such as springs, lakes, hand pumps, streams or rivers. Thus becoming scarce as the traditional sources of water are drying up continuously.

- Whatever water is available is polluted by the prevalent practices of garbage dumping and direct effluents discharge into rivers.

Mitigating Measures

During 1993-200 the construction of hotels has more than doubled. Only regulated tourism and a complete ban on multi-storied hotel structures can establish and maintain a balance between the available hotel accommodation and overall inflow of tourists. The number of tourists that are allowed to enter a particular spot during a particular time should be determined keeping in mind available accommodation and civil infrastructure.

The smaller the size of accommodation structure, the more likely it is that environmental constituents will be conserved. Ecofriendly constructions and regulated tourist traffic could ultimately minimizes deforestation. An ecofriendly tourist spot might have a green-belt cover of two-third of its total geographical area. Degraded slopes, prone to landslides could be brought under schemes for the plantation of shrubs, plants being used both as measure of conservation and as additional attraction for tourists.

The regular/continuous monitoring and further investigation should be instigated where air pollution limits are exceeded on two consecutive occasions. There is considerable scope for enforcing, improving and replacing of existing laws pertaining to motor vehicles to curb air pollution. For example, all old buses could be converted to compressed natural gas (CNG). Cars and taxis could be converted to clean fuel. All
vehicles irrespective to their size and capacity ought to be required to meet emission standards. The standards, fixed by the Supreme Court of India for the National Capital Region since 30 June 2001, should be extended to the whole nation and especially to fragile locations. The use of improved quality petrol could be considered with a provision for the reduction of tax on the import of battery driven microbuses. In the hills, air pollution is compounded by poor road conditions whereby dust gets added to the vehicular emissions. So an emphasis on metalled roads along with better traffic management would be a suitable approach to adopt.

Waste Management is a critical aspect of tourism management studies in mountain environments. Unless suitable technologies and management strategies for solid waste collection, transportation and disposal are evolved, the scenic and pristine beauty of tourist places in the hills will continue to degrade. There is no single solid waste management solution for all three broad categories of waste, so a separate solid waste management option suited to each category of waste needs to be adopted. The study of segregated waste and its compositions strongly suggest that the waste can be tackled through biocomposting (readily biodegradable and biodegradable waste) and reuse and recycling (non-biodegradable waste) measures. The readily biodegradable and biodegradable waste that form a major share of the waste compared to non-biodegradable, have adequate potential for biocomposting. For non-biodegradable waste, reuse and recycling are the only options. Many items that have the potential for reuse are simply waste due to negligence of visitors. Non-biodegradable that remain unattended are the worst enemies of nature yet these could be recycled providing economic benefits. With the active participation and co-operation of hoteliers, tourists, non-governmental organisations, municipalities, research institutions and local government the problem of solid wastes from the region could be eliminated through the practice of biocomposting, reuse, and recycling.

Water quality problems are closely connected to waste disposal. At present, much water pollution is mainly due to the direct and indiscriminate throwing of waste into the rivers and draining of town effluents, pesticides and insecticide residues into the rivers during rains. The practice of dumping municipal wastes directly into rivers needs to be controlled. Some essential preventive measures at hotel level also need to
be followed. The direct discharge of effluents into rivers ought to be banned and violation, if any, should be penalized by regulatory bodies such as Himachal Pradesh State Pollution Control Board. Besides, Department of Tourism, Government of India, should formulate strict environmental protection norms to be followed by hoteliers in all the highly sensitive areas.

Existing norms for environmental conservation and legislation governing all forms of development need to be clearly stated and strictly enforced. Most of this is considered by the general public not to be specifically targeted, meant and followed when considering the tourist and hotel industry. Yet the National Action Plan for Tourism of May 1992, clearly mentions preserving national heritage and environment. But success of legislation will only be effective if the local communities and external associations implement them in a participatory manner.

ECOTOURISM: – Making Himachal Green
The use of green clothes in the hospitals / clinics worldwide is indicative of the fact that it gives cool and calm effect to the psychology of a patient which helps him to recover fast. In the same way Green tourism gives calm and cool effect to our VIG’s (very important guests), the Tourists.

Ecology: – Ecology deals with the interrelationship of living organisms and their environment. It also deals with the relationship of different organisms with each other. As man is also an organism, we can say that ecology is man’s relation with the environment.

Environment is used in common language to describe the surroundings. Environment may be external or internal. But, here we refer to the external environment or just environment.
It has been realized that environment has a very strong influence on living organisms (plants, animals, man). All living organisms such as plants, animals and man have their influence on external environment. Similarly, environment including air, light, temperature, humidity, water land feature like mountains, plains, valleys, rivers desert, ocean, lakes, ponds, soil, water falls and costal areas, etc. also influence the
living organisms (plants, animals and man) because they provide natural habitat to organisms, living in that environment. Any change in the environment directly influences the living organisms.

Thus the relationship between tourism and environment is a delicate balance between development and safeguarding the environment. Therefore, long term and environmentally sound planning is a primary requisite for maintaining a balance between tourism and environment, and for ensuring that tourism is a sustainable development activity.

Thus, to maintain the ecology and environment of a place of tourism interest the concept of Eco – tourism came into consideration. Eco- tourism refers to the nature tours that put heavy emphasis on conservation of the natural environment.

Institute of Eco- tourism, Thailand opines, “eco-tourism’s first priority is to green existing tourist activities.\(^{11}\)

**Eco-tourists;**

Most of the rapidly growing tourism developments are not in accordance with the natural environment, and often result in the deterioration of many tourism paradises, a conservation spirit has sprung from the hearts of some tourists who now feel the need to preserve the country’s natural treasures. They are called the Eco-tourists.\(^ {12}\)

Ecotourism is **defined by the Ecotourism Society** as: purposeful travel to natural areas to understand the culture and natural history of the environment, taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of the natural resources beneficial to local people.

The following components are essential for eco-tourism:

- Nature and culture friendly tourism activity.
- Nature based tourism
- Beneficial to all (local people, tourists, tour operators).
- Educational to tour related people.
- Satisfactory to tourists in the sense of education as well as giving good services and a sense of having contributed to conservation of culture and
nature.

Involving local participation as guide, resource persons, guests, housekeepers, museum owners.

Sustainable well-managed and long term of limited natural resources.

This definition of eco-tourism given above is either called new tourism or alternative tourism as opposed to the present day mass tourism.

The greening of the existing tourism activities can be taken by providing consultancy service to tour operators on how they make existing tours more eco-touristic. Furthermore, the advice will also be forwarded to hotels on how they can economize while contributing to the conservation of the resources. Thus, we must work to promote India as the green destination in the coming years.

Eco-tourism, aqua tourism, sustainable tourism, wild life tourism, etc. are inter-related with the environment and conservation. They provide an excellent opportunity to form an equation between utilization of the resource and development of resources as they deal with both expenditure and with income. Protection of the environment and conservation of natural resources, no doubt, will demand huge expenditure; but adequate funds could be generated through mobilization of income from tourism development, when in liaison with identified sectors that work for the national conservation strategy for environmental protection and with the objectives of national culture policy, becomes sustainable.

The eco-tourism sites are mostly the protected areas like national Parks and wild life reserves. Tourism helps in earning foreign currency. It also plays a role in the disappearance and destruction of ecology, the degradation of coral reefs, the pollution of seas, the destruction of marine life. No wonder that many other tourism related environment disasters are growing. We find natural resources as selling points, which can be used to attract tourists. But then we ignore the fact that after they are sold we cannot bring them back.

Tourism can be helpful, provided it is controlled. The solution of the problem is not necessarily to cut down the number of tourists but to ensure better management of our tourism resources combined with the improved enforcement of the law. Like the other sectors of the development tourism can have both positive and negative
impacts. Negative impacts are very minor in keeping the view of the benefits from tourism.\textsuperscript{13}

Tourism has positively benefited the environment by stimulating, historic sites, monuments and wild life. Recreation and tourism are normally the primary objectives of establishing and developing national parks and many other types of protected areas. These natural protected areas are becoming major attraction and constitute the basis for the development of Eco-tourism Different case studies have shown that eco-tourism gives direct financial benefits that cost of maintenance and development of the parks. In addition eco-tourism also generates employment and helps in the development of the surrounding areas. The public in these areas is becoming aware that environmental protection increases their economic gains by increasing the numbers of tourists. In many countries surveys have indicated that the more protected areas, National parks, Bio-reserves are developed, because they are key attraction for the tourists. Thus, many projects have been undertaken in many developing countries that should contribute both environmentally and economically to improve the quality of life style of the peoples living in these areas. Farm or rural tourism is also developing in countries like U.K., France; thus encouraging the farming as also the development in the countryside; thereby discouraging excessive rural-urban migration.

The environment (natural and cultural both) constitutes the basic asset of the tourism industry. If the carrying capacity of this asset is exceeded, it can deteriorate and may be irreversibly damaged. Mass tourism in the hills has produced environmental damage of this kind. Thus, it is necessary to encourage eco-tourism (green tourism) to protect the ecology and environment of our country and to minimize the negative impacts of tourism on ecology.

\textbf{How ecotourism differentiate from the nature based tourism}

Though ecotourism emphases learning as an outcome of the interaction between ecotourists and the natural environment. In this way, ecotourism is differentiated from nature based tourism activities that are more leisure based or those which are adventure oriented. Ecotourism is knowledge based sustainable tourism. Thus, ecotourism is a form of nature based tourism that strives to be ecologically, socio-culturally, and economically sustainable while providing opportunities for appreciating and learning about the natural environment or specific element thereof.\textsuperscript{14}
Hard and Soft ecotourism

Ecotourism can be classified into two broad categories, hard (active) and soft (passive). Soft ecotourism is usually associated with “steady state sustainability” or having the area in the same condition, as it was when they arrived. While the hard ecotourism supports “enhancement sustainability”, or improving the condition of the physical and natural environment through donations and volunteer activity (such as tree planting). Now this is the time to support this active concept of ecotourism.

Mass tourism is considered to be inherently unsustainable, the adoption of ecotourism placed the already existing nature based tourism to an ideological niche and thus identified as the conscious opposite to mass tourism. Thus mass ecotourism should be recognized, celebrated and exploited as a great opportunity for the enhancement of the tourism industry as well as natural environment.

What should one has do to Promote Ecotourism

The National Committee on Tourism (NCT), which submitted its Report to the Government of India in1988, examined the ecological aspects of tourism in India’s context in great detail. According to the NCT “till recently, it was assumed that tourism industry would not adversely affect the ecological resources. However, the upsurge of world tourism in the seventies and in India during the eighties has shown that unrestricted use of these for tourism purpose can bring in its wake unforeseen adverse effects.

It is now realized that tourism is an important activity and it should not spoil the environment. There are the other human activities, which cause damage to the ecology and environment. Unmanaged tourism can be a disaster but organized tourism can contribute to the development of areas worthy of conservation as well as determine the level of development. To sum up we can say that tourism can be of much help to environment protection.

Eco-tourism by itself becoming increasingly an attraction for a growing number of leisure seekers.

Small and local is beautiful - Ecotourism is concerned with small scale, locally owned, built, and managed facilities. Ecotourism has three important benefits for developing countries:
1. facilities and infrastructure are simpler and less expensive than those demanded by conventional mass tourism;

2. being locally owned and operated ecotourism projects are not caught up in the need to conform to corporate Western multinational tourism concerns, and therefore can have a much higher input of local products, materials and labour. This means greater multiplier effects in the local economy, and also reduces import leakages and the remittances from expatriate labour which result from large-scale, foreign owned operations;

3. profits accrue locally instead of flowing back to the parent country /State.

Thus ecotourism can be promoted without excessive capital requirements and infrastructure developments. Though this may mean there is no need to build a concrete hotel with air-conditioning and TV, it does not mean that nothing needs to be done to cater for ecotourists. It is very important that a quality experience be offered. Quality includes considerations such as the amount and type of information and interpretation, the environmental and cultural sensitivity and skills of guides and park managers, the level of professionalism, dedication and hospitality exhibited by all involved, the degree of local community involvement, the direction of fees paid by the ecotourists to conservation and local community development projects.

The rapidly developing awareness of environmental damage is very much pronounced among the visitors too. Hotels must make a conscious to be eco-friendly. Environmentally compatible growth through energy conservation, new method of garbage disposal, and information can be of much help. Hotel must propagate the guests, the virtues of conservation through a series of do's and don'ts. While promoting tourism the interest of ecology & environment should be fully kept in view.

- Group tourism should be encouraged so that group discipline discourages misbehavior by stray tourists.
- Tourism development plans must be formed in keeping the environmental aspect of tourism
It will be essential to take the assistance of social anthropologist, environmentalists / wildlife lovers to design programs for the conservation of biological diversity through Biosphere reserves and National Parks.

Selective and regulated wild life tourism should be permitted after carefully assessing the carrying capacity of the concerned National Parks or the sanctuary.

If wild life tourism has to be developed it will be absolutely necessary to think of maintaining a balance between tourism and ecology of the region.

While planning tourism related projects we must remember that comforts and pleasure to the tourists must not be provided at the cost of nature and wild life. But, only necessary facilities should be provided to the tourists without creating any ecological imbalance anywhere.

Hill tourism has its own peculiarity. It offers a new direction in tourism promotion and development. In order to give protection to ecology and environment of these fragile regions, it will be necessary to encourage guided tourism.

Long term planning and environmentally sound planning is a pre-requisite for maintaining a balance between tourism and environment and for ensuring that tourism is a sustainable development activity.

Mass teaching should be provided to the general people for understanding the ecological as well as touristic value of the place of tourist interest.

Easy accessible and non-polluting transportation should be provided.

Proper planning should be executed for the development of eco-tourism.

Through planning process, we must ensure the development of tourism infrastructure in conformity with the environmental consideration; also by educating the investors about the importance of environmental issues in planning of tourism projects.

Natural resources should be properly maintained and managed for getting the long-term benefits.

Experts think that resorts built at very high altitudes in the mountains causes serious damage to the natural environment. In order to protect the environment, it is essential that in future resorts should be built at the foot of the mountains; where the main infrastructure should be concentrated. Roads
should go no further than the center of the resort and from there access to the ski slopes and beauty spots should be exclusively by means of footpaths and cable cars or Chair lifts, because they are ideal means of transport in a mountain setting. They do not noticeably disturb the environment, since they are silent and do not pollute the air with gases.

- There must be equilibrium of economic and environmental interest.

- There should be a new concept in which economy and ecology should go hand in hand. Locals should participate in planning, management and solution of the tourism created problems.

- Tourism should be taught in schools as a socio-economic subject, so that children learn how exploitative tourism is and that how it adversely affect our heritage; and also the benefits of sustainable tourism. Then, Indian tourism will begin to blossom.

- As far as the tourists are concerned, they should choose travel agencies that are concerned with environment protection. Before traveling they should be asked to study the place they will visit, so that trip will be worthwhile.

- The beach tourism of India is the most attractive to the overseas tourists. Therefore, more attention is needed for managing the coastal regions.

- All the tourism related people from hotels, restaurants, transport companies and Government Offices, are to assemble regularly to discuss the way to encourage tourism and business operators to realize and jointly take responsibility in improving the environmental conditions.

- A green charter can be drawn up for the tourism industry.

- Environmental awareness' should be created among the tourists and the local people. Environmental Education and Awareness There are initiatives underway in India to improve environmental education in schools, however it is still obvious that lack of environmental education and information for students (from pre-school level up), the general public, tourists and local communities alike is a major problem in developing sustainable ecotourism. Environmental education and information dissemination is of prime importance to the realisation of genuine, sustainable ecotourism or nature tourism in India. There is a need to educate the tourists, both present and potential, both domestic and international.
- The hotels landscape and architecture should be improved in an environment friendly manner.
- Conservationists, representatives of the states and investors should get together to formulate such tour packages for the Himalayan region, which ensure that the ecology of the Himalayas is duly protected.
- Appreciation awards and financial assistance should be given to the NGO's and societies working for the promotion of eco-tourism.

Ecotourism/nature tourism cannot be solely developed by the Ministry or government agency of tourism as tourism crosses over many sectors. There is a need for strong interagency cooperation and linkages. This could be achieved through a sustainable (Eco) Tourism Taskforce. The Task-force could be responsible for working towards the development of a national ecotourism or nature tourism strategy for India, which could have as goals the establishment of a sustainable (Eco) Tourism Association and Sustainable (Eco) Tourism Commission like in many foreign countries. Further, ecotourism needs cooperative, collaborative arrangements between Government at all levels, parks, NGOs, local communities, tour operators. In developing a national ecotourism strategy, these stakeholders need to be fully included in the process.

Tour operators are an extremely important component of successful ecotourism. The way they function, their choice of destination, the way they package and sell trips, the type of support services they provide, and their cost structure, are all important factors to understand how to make changes in the way nature tourism impacts host countries. It is important that the role of private small business in the tourism industry be recognised and encouraged. Private operators (or guest houses or guide services etc) are often smaller than government owned operations. They have the potential to be more efficient, flexible and innovative in a carefully controlled and regulated ecotourism market.

Objectives of Ecotourism Promotion
- to have a business plan that outlines environmental ethic and practice.
- to promote use of environmentally friendly products and engaging in recycling practices.
- to provide good quality pre and post information to the intending visitor.
to contain high local/indigenous participation/expertise.
- to provide high integrity interesting/entertaining educational/interpretive information.
- to provide high level of staff training about the natural and cultural environment.
- to provide high net benefit for the local community.
- to provide visitor experiences to the relatively undisturbed natural environment.
- to have management plan (including capacity limits or limits to acceptable change).
- to involving personalised/guided small group interaction.
- to insist visitors to use low/medium cost/low impact accommodation and infrastructure.
- using facilities that are ecologically designed and operated.
- monitoring and response.
- contributing revenue to, or is part of conservation programme.

Above discussion conclude that the people are primarily responsible for destruction of natural gifts and also the main source for its recovery and maintenance through wise use and for this they must travel on a right path. A path to recognize mass eco tourism as opposed to mass tourism. The path, which makes Himachal Green and ecotourism destination.
References

1. Central Pollution Control Board Government of India New Delhi.
5. Study conducted by Kunial and Jain in 1999.