

Mass Tourism & Environ- Infrastructural Crises of Shimla City: A Case Study

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Abstract: Shimla is one of the best tourist destinations in India. Pleasant weather of Shimla, panoramic beauty of Himalayan tract, Colonial heritage & charm attract tourists from every corner of the World. However, like all colonial hill stations of India, it also has been saturated with urban set up and tourism activities. In present days, this city is facing environmental as well as infrastructural crisis due to over population practice of mass tourism. Water crises, deforestation, environmental pollution, rapid pollution growth, lack of accommodation facilities, over population of monkeys etc are the serious issues in present day Shimla. This paper deals with present infrastructural-environmental problems of Shimla city highlighting the possible measures in an analytical approach.

Keywords: Shimla, Mass Tourism, Environ –Infrastructural Problem, Environmental Degradation

Objectives

Objectives of the case study are as follows;

- i) To study present scenario of tourism and tourist flow,
- ii) To study the environmental and infrastructural problems in shimla,
- iii) To highlight the possible measures of these problems etc.

Data Base and Methodology

This is an extensive case study to understand tourism profile of Shimla and problem related with it. To understand these, primary field work has been conducted with tourists, hoteliers and local people of Shimla during 01.06.14 to 21.06.14 for opinion study. Total 109 tourists, 55 hotels and 60 local peoples have been taken for purposive random sampling survey. Collected data were compiled and analyzed by specific statistical methods. Secondary, data has been collected from Tourism information centre, Shimla, office of Himachal Pradesh Tourism Development Corporation (HPTDC), Municipal Corporation of Shimla. Official websites of HPTDC, Municipal Corporation of Shimla and other government institutions of Himachal Pradesh were also used to harness data. Oral narrations have been conducted with the local people, scholars and expert of Himachal Pradesh University regarding the facts. Personal observation also helped to understand several facts related with tourism activities, environmental and infrastructural problem of Shimla. Primary data were collected to understand the nature of the problems and secondary data have helped to analysis the cause and consequences of the problems respectively.

1. Introduction

Tourism is a popular leisure activity. This leisure activity can play important role in maintaining social harmony, reconciling conflicts and may part in enhancing excellence in community skills. (John Dodd 2012) Tourism also helps to assimilate culture and social bondage. It is noticed that cultural attraction and events acts as strong magnet for tourism. (K.J. Borowiecki, and C. Castiglione

2014).Tourism activities has several beneficial impact. However, it has also negative impact in culture, society and environment. Even in last decade, tourism was considered as pollution free economic sector. But in contemporary World, this scenario has been changed with promotion of mass tourism. Mass tourism is now great threat on ecology and sustainability. (Marzouki Mehdi et al. 2012). Excess practice of tourism can also hamper infrastructural establishment of a place. Shimla is a classic example of this scenario.

Shimla, 'Jewel of the Crown' (Pubby Vipin 1996) is one of the famous tourist destinations of India. It was developed and nourished by British rulers for their own needs. Shimla is famous for its' pleasant climate, panoramic beauty and colonial heritage. It is not only famous among the Indian tourists but also to the foreigners who visit India. In 2011-12 total 3608020 tourists visited Shimla city (Final Report for Himachal Pradesh – Tourism Survey 2012) Shimla is also a week end destination for Delhi, Chandigarh, Amritsar, Ambala, Jalandhar etc north Indian cities. However, Shimla is over exposed and city has been congested enough. Environmental quality has also been degraded with deforestation, solid waste, air pollution and presence of excessive amount of dust particles in road sides. There are also some fundamental infrastructural problems in the city; scarcity of water, lack of space, transport, waste disposable, over population of monkey etc. It is true that consumerist city life and excessive tourism practice responsible for environmental degradation in Shimla. Once the 'Queen of Hill Stations' (Pubby Vipin 1996), now has been become jungle of concrete. The present study is an extensive field work to understand the chronic environ-infrastructural problems of Shimla related with mass tourism. This study is based on primary as well as secondary data emphasizing on perception and opinion of tourists, persons engaged with tourism sector, local peoples and experts regarding the fact.

2. Study Area

1.1 Location

Shimla (31°6'12' N 77°10' 20' E), is the capital City of northern state of India Himachal Pradesh. Shimla city is located in the district of Shimla which is in South East

portion of the state. Shimla district is bounded with Mandi, Kullu, in north, Kinnaur in east, Uttarakhand in north east and Solan and Sirmur in south. This is the only class one city of Himacahal Pradesh having one Municipal Corporation with 25 wards. Total area of Municipal Corporation is only 19.99 sq. km and area of urban agglomeration is 35 sq km (Official Portal of SMC 2014) Shimla city is 380 km away from National Capital Delhi and 120km away from Chandigarh.

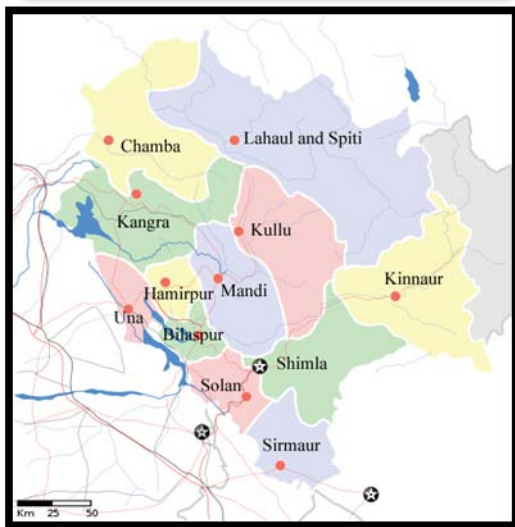


Figure 1: Location of Shimla

1.2 Tourism Attractions

Shimla is a wonderful hill station which is bearing panoramic beauty and colonial charm. Shimla has a tradition of tourism since its evolution. People from almost every part of the country visit this city. It is also a weekend destination for several north Indian cities. Pre-independence colonial structures still are the prime attraction of Shimla, such as the Viceregal House (present day IAS) , Christ Church, Town Hall, Auckland House, Gaiety Theatre, Gorton Castle etc. (Pubby Vipin 1996) These heritage sites are mainly situated in between Jakoo Hill and Prospect Hill and now these have been declared as Heritage Site. The Mall road and the Ridge are the prime attraction of tourists and famous for evening roaming since British period. Other, tourist areas of the city are Jakoo Temple, Kali Bari, Sankat Mochan Temple, Tara

Devi Temple, Annandale, Potter Hill, Glenn etc. There are several tourist spots in surrounding areas of the city and visited by tourist during their staying in Shimla such as Kufri, Narkanda, Naldera ,Chail, Tattapani, Hatkoti, Fagu, Sarahan etc.

3. Understanding the Environmental - Infrastructural Problems of Shimla through Sample Survey

To properly understand the problems of Shimla, tourists, hoteliers and local people have been surveyed with specific questioner schedules. They have been asked about their opinion on problems of Shimla which is affecting them directly or indirectly. Data were collected from different parts of the city to avoid homogenous data.

2.1 Profile of Tourists & Their Problems

Total 109 tourists were surveyed from different parts of the city such as the Mall Road, the Ridge, Jakoo Temple, Kali Bari, Summer Hill, Lakkar bazaar. Purpose of the tourist survey was to understand about the problems of the tourists in Shimla. However, in this case study tourists were also asked about their basic information such as their place of origin, educational qualification, occupations, purpose of their visit and activities in Shimla because these information help to understand status of the tourist and authenticity of their provided data.

Among the surveyed tourist 67.27% were male and 32.72% were female. Numbers of male tourists are high in number because target sample was group leader of the tourists and in maximum cases they were male persons. During the survey both domestic and foreign tourists were found, 76.36% were domestic and rests 23.64% were foreigners. Domestic tourists were found from several states of India; however majority of them came from West Bengal, Delhi, Chandigarh, Haryana and Punjab.(fig; 2) Foreign tourist were found form Russia, Chili, Iceland, U.K, Israel, South Africa and Canada, hence contribution of Russia is maximum (Fig; 3).

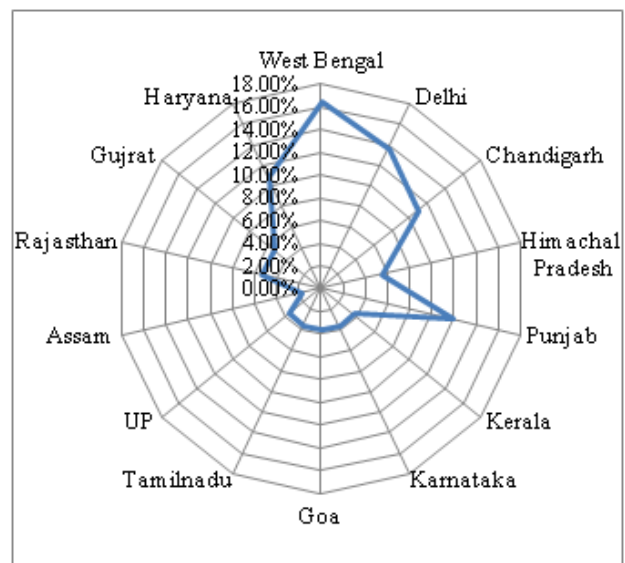


Figure 2: Origin of Domestic Tourist

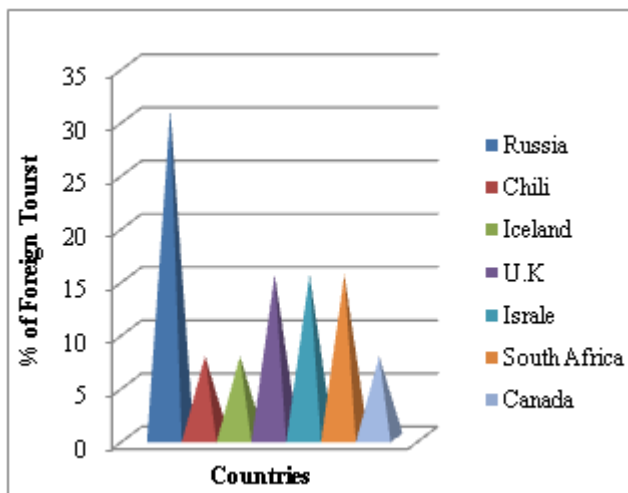


Figure 3: Origin of Foreign Tourist

Source: Primary Data

Educational qualifications of the tourists were very satisfied which assure the quality of harnessed data. Maximum educational qualification was found PhD and minimum Graduate. Educational qualifications of the tourist are as given in table no 1.

Table 1: Educational Qualification of Surveyed Tourist

Sl	Educational	Percentage of Tourist
1	Graduate	32.72
2	Post Graduate	34.54
3	B. Tech	7.27
4	M. Tech	3.63
5	M.Phil	7.27
6	P.hD	14.54

Source: Primary Data

Surveyed tourist stayed in different parts of the city (table: 2) but maximum were staying at YMCA, all of them were foreigners. YMCA provides very good accommodation for foreign bag packers.

Table 2: Accommodation Location of the Surveyed Tourist

Sl. No.	Location of Accommodation /Hotel	Percentage of Tourist
1	Near AG Office	21.8
2	YMCA	23.64
3	Near High Court	18
4	Back side of Christ Church	12.72
5	Cart Road (Both Side of Victory Tunnel)	14.54
6	Summer Hill	9
Total		100

Source: Primary Data

The surveyed tourist were asked about their opinions on problems of Shimla, noticed or faced by them. Responses were varied in several issues but maximum (30.90%) of them agreed that water is the main problem in Shimla and others are as shown in fig: 4. However, a well section of tourists (10.9%) informed that they had no such problem in Shimla.

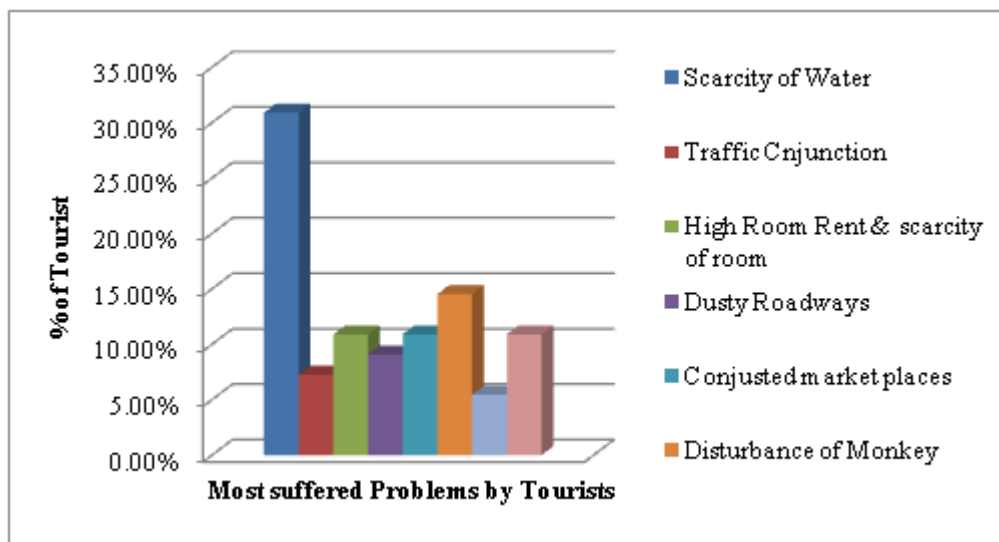


Figure 4: Most Suffered Problems by Tourists in Shimla

Source: Primary Data

2.2 Profile of Hotels & Their Problems

The hoteliers are directly engaged with tourism sector and they are well aware of the environmental- infrastructural problems of Shimla. So it is very important to survey the hotels. Mainly budget hotels were selected for the case study because these are maximums in number and true representer of the city. Hoteliers were asked about some basic

information of their hotels such as location of hotel, year of establishment, accommodation facilities and more specially problems faced by them to run their business and problems of tourism sector in Shimla Hotel surveyed was conducted in different pockets of the city (fig: 5) to understand the spatial difference of the problems if any.

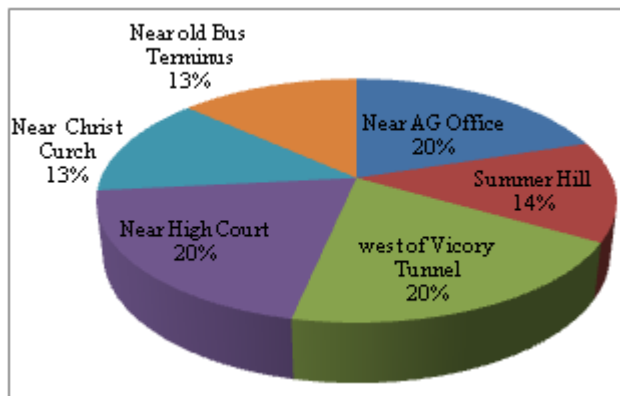


Figure 5: Locations of Surveyed Hotels

Source: Primary Data

Surveyed hotels are comparatively old because construction of new establishments is strictly prohibited in city core science last two decades. Both side of Mall road are under heritage site. No, such hotel was found in core area which was built after 2000. However, hotels of the Summer Hill, outside the city core are comparatively new, established in between 2001-2010.

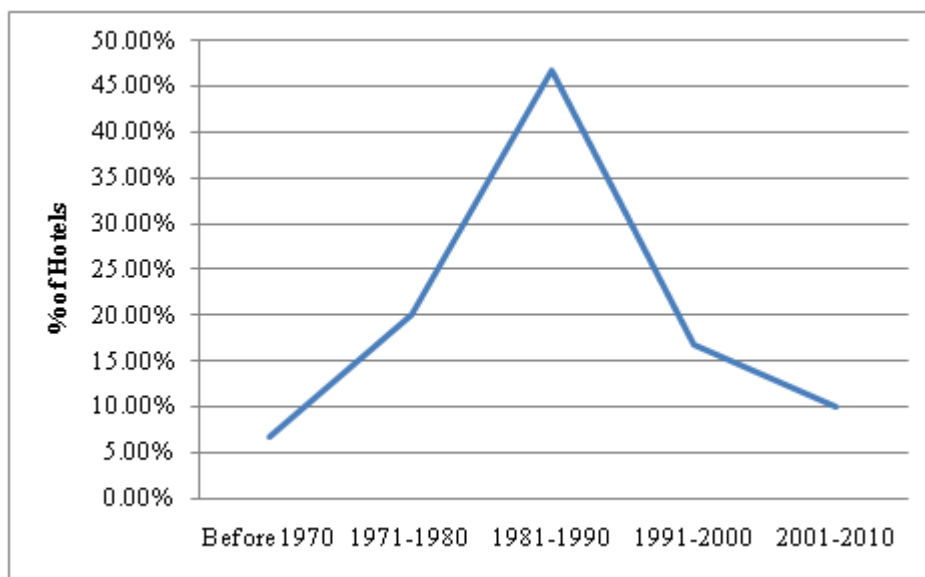


Figure 6: Decadal Establishment of Hotel

Data Source: Primary Data

All the Hoteliers were asked that whether they have any extension plain of their hotel or not. They replied that though hotel business is profitable in Shimla but they can't extent their establishment due to restriction on construction in city core. Whereas, Hoteliers of Summer hill area informed that a few tourist prefer to stay in these budget hotels because of distance from the city and they are depended on the persons who come with assignments of Himachal Pradesh University. So, they have no, such extension plan in near future though availability of land is not an issue here. When the hoteliers were asked about main problem to run their business in Shimla, they unanimously mentioned that scarcity of water is affecting them most. They very elaborately informed about the other problems and these all are infrastructural and environmental problems. Other main problem except water varies hotel to hotel and these are as fig: 7.

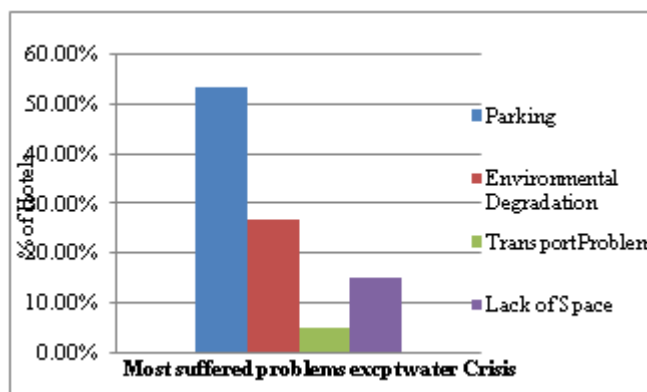


Figure 7: Most Suffered Problems of Hotels

Source: Primary Data

2.3 Local People's Perception on Problems & Tourism of Shimla

It is very important to study the perception of local people regarding the problems of a particular area. So, sixty local people and member of the civil society were surveyed in Summer Hill, Jakoo Hill Baileauganj and Rambazar area. Though, local inhabitants are not directly engaged with tourism activities in Shimla, but they have concrete ideas about the problems of Shimla. Here, again it was conformed

that water is the main problem of the city. So, they were asked to highlight the worst affecting problem except water crises. Then several problems were highlighted by the local people. These are as in fig: 8;

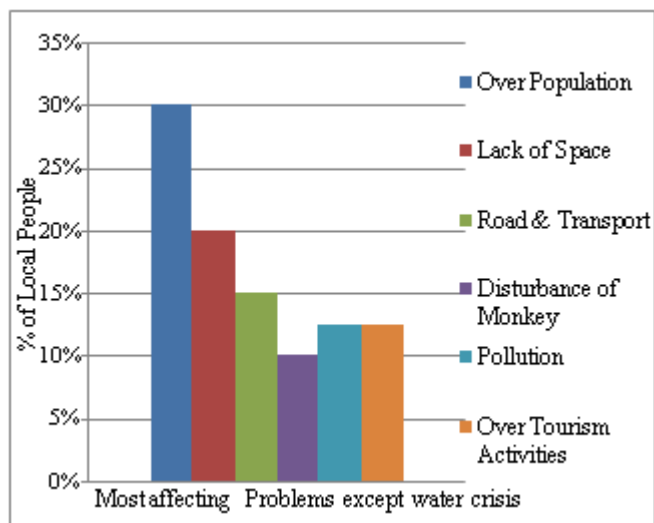


Figure 8: Local People's Opinion on Problems of Shimla (other than water crisis)

Source: Primary Data

As 12.50% surveyed local people mentioned over tourism practice is a serious problem of the city. So, it was also tried to understand the local people's perception on tourism activities. They were asked about their opinion of present day's tourism activities in Shimla. Their answers are categorized into four groups; as tourism is - a) beneficial & encourage able, b) Should be practiced in control manner, c) Over exposed must be restricted and d) irrelevant answers.

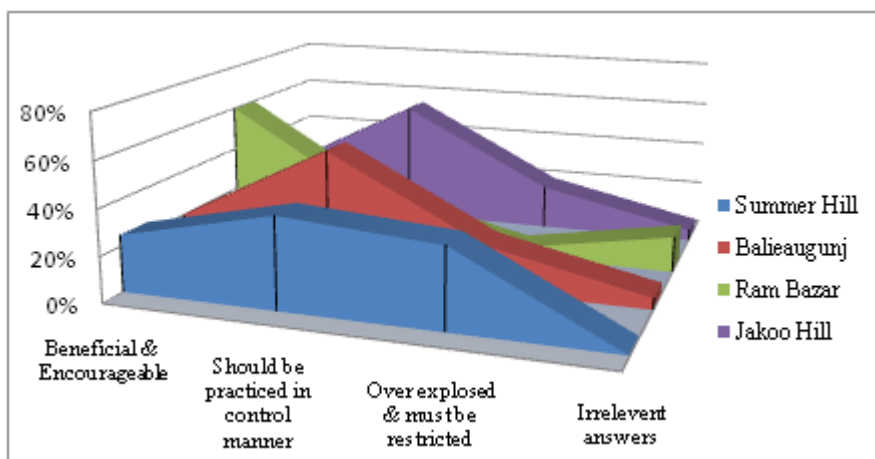


Figure 10: Perceptions of Local People on Tourism activities in Shimla.

Only majority people of Rambazar area (fig: 10) answered that tourism should be encouraged as it is a market place, strongly depended on tourist flow. However, major portion of the local people advocated that though tourism is the backbone of economy in Shimla city but it should be practiced in control manner. They also told that tourists come here for the pleasant weather and panoramic beauty but due to over tourism practice prolong infrastructural problem is being chronically accumulated. Now it is clear that over tourism practice in Shimla should be restricted with proper rules and regulation. Otherwise, environmental condition and infrastructure of the city would be affected seriously

4. Findings

- i. Shimla is visited by tourists from different state of India and abroad,
- ii. Water is the main problem of Shimla city during peak seasons.

- iii. Other infrastructural problems are lack of space, poor transport system, lack of road,
- iv. Over population, excess tourism practice are responsible for environmental degradation
- v. Local people do not prefer uncontrolled tourist flow.
- vi. Over population of monkeys is becoming a new threat.

5. Environmental - Infrastructural Problems of Shimla City and Present Scenario

From the questioner survey one thing has been clear that Water Crisis is the serious problem in Shimla. Other infrastructural issues which have been highlighted are over population, lack of space, parking problem, road and transport problem etc. Some environmental issues also are matter of concern such as pollution, solid waste management, deforestation, and over population of monkey. Causes of these problems should be understood properly to overcome them effectively.

4.1 Water Crisis

Water crisis is the main infrastructural problem in Shimla. This city is facing severe water crisis mainly during peak seasons of tourist flow. The average annual precipitation is 157.5 cm, heavier than the surrounding plains. During winter this region also experiences snowfall due to western disturbance. In spite of this optimum precipitation, the people of Shimla are facing water crisis due to steep orography. Precipitate water wasted as run-off towards lower areas. The ridge is a unique water divider. Precipitated water of east side of ridge moves towards Pabber River which is the part of Ganges river system and ultimately reaches to Bay of Bengal. Whereas, precipitated water of west sides of ridge moves towards Satluj River, tributary of

River Indus which meets Arabian Sea. Actually, shimla is receiving optimal precipitation, but maximum are being wasted due to geomorphic factors.

Shimla has got its indigenous water supply projects in 1875 by the British rulers. Initially the supply system was for only 16,000 people and maximum 5000 visitors in summer. Britisher constructed a reservoir on ridge with a capacity of 4.54 million liter /day. (Official Portal SMC 2014) Catchment area of this project is a spring within Dahli forest, 12.85 km away. However, it was not sufficient for the growing population of Shimla. So, after that a few projects were developed and these are;

Table3: Details of Sources of Water in Shimla City

Sl. No.	Source Name/ River Name	Transmission Type	Year of Start	Installed Capacity (ML/D)	Quantity of Water Produced (ML/D)	Supply to SMC (MLD)		
						Non Lean Period	Lean Period	
1	Dhalli Catchment Area	Gravity	1875	4.54	1.80	0.23	0.20	
2	Cherot Jagroti Nallah	Pumping	1914	4.80	3.86	3.86	2.65	
3	Chair Nallah	Pumping	1914	2.50	3.00	2.50	1.42	
4	Nauti Khad (Gumma)	Pumping	1924& 1982	24.06	19.75	24.06	16.80	
5	Ashwani Khad	Pumping	1992	10.06	10.80	10.80	6.30	
	Sub Total			=SUM(ABOVE) 36.62	=SUM(ABOVE) 33.55	=SUM(ABOVE) 37.36	=SUM(ABOVE) 24.52	
6	Tube Wells –10 no.	Average water supply (37.36+30.00)= 33.68 million letter /day (ML/D)					2.63	
	Total						30.00	

Data Source: www.shimlamc.gov.in/file.axd?file=2009%2F12%2FChap8.htm

The present water requirement for Shimla City during peak tourist season for a total population of 284635 is 39.85 Million Letter /Day as against the average supply of 33 ML/D. Thus, there is deficit of water supply near about 7 ML/D, which increases up to 17 ML/D during summer due to shortfall of snow or rain in previous winter (Official Portal SMC 2014). Therefore, the average shortfall in water supply is 12 ML/D as on today.

During the survey, this matter was experienced widely through conversation with local people, hoteliers and tourists. Local people and hoteliers informed that it is the worst factor which is hampering tourism as well as daily activities of the inhabitants. Even 30.9% surveyed tourist also admitted that they are facing the water problem most than other aspects. In budget hotels of the city, washing cloths and using of extra water is strictly prohibited. From this restriction it would be easily understood that there is scarcity of water in Shimla. During the peak season hotel are facing severe crisis of water. To overcome this problem they arrange water tanker. Supply of water through tankers is becoming profitable business in Shimla. During survey these type of water tanker were noticed in city.



Water Tanker, Substitute of Supply Water

4.2 Accommodation Problem:

difficult to get a preferable room without advance booking in shimla.

Accommodation is a serious problem in Shimla during the peak seasons (April, May, June). During this time it is

Table 4: Tourist Flow in Shimla during Peak Season

Month	Domestic Tourist	Foreign Tourist	Total	Average tourist/Day*	Total no. of Bed in Shimla
April	556721	34680	591401	19713	Total numbers of available beds in SMC area are 14000 (approx), including 236 hotels, 9 Dharmashala, 1 youth Hostel and bed & break- fast scheme home stays.
May	624671	37030	661701	21345	
June	779686	39234	818920	26417	

Data Source: 'Final Report for Himachal Pradesh – Tourism Survey April 2011- March 2012'

* Average done by arithmetic mean (Total Tourist / no. of days in a month)

So, there is a serious problem of accommodation in shimla. From the no. 5, it is clear that in June averagely 26417/day visit Shimla against only 14000 beds (approx). Usually the hotels arrange extra beds beyond their capacity and the excess tourists are getting their accommodation. For example, single rooms are being converted to dabble or double bed rooms used for four people unofficially. In this way the hotels are not earning extra money illegally, but putting extra pressure on environment and infrastructure too.

4.3 Over Population, Space and Infrastructural Problems

Space is serious issue in Shimla. Total area of city core or municipal area is just only 19.99 square km (Official Portal of SMC 2014). According to 2011 census total population of the city is 169758 consisting 93364 male and 76394 female. (Shimla city census data 2011) Population growth rate is 16.21%, very high in respect to other Himalayan tracts. Population density is 8492 person/ square km, very high in compression to other hill stations such as Manali, Naital, and Dalhousie etc. 24.6% of urban population lives only in Shimla (city population census data of H.P 2011) though initially it was built for only 16000 population and 5000 visitors. Now the City is over populated bearing the same infrastructure of British era. Major portion of the city is under heritage zone, so any type of developmental work could not be done there. The city core is very much congested. The main roads were developed in colonial period only to serve a few thousand populations. But with passage of time, increasing population and tourist inflow has aggravated the problems (Anand Bodh, May 28, 2013).

The city is on ridge, so steep gradient is a great problem of connectivity. Due to steep roads and sound economic condition huge number of city dwellers use own car. Number of registered vehicles in Shimla has been increased from 16,450 (1995) to 48,000 in 2011, of which 67% are private vehicles. (TOI, Oct 13, 2014) However, road density of Shimla, is only 9.58 km/square km, (Road Transport, MOSPI 2010), very poor in respect to other cities such as Delhi (19.93 km/square km), Chandigarh (18.57km/sq km). Vehicle density is 823/km road in Shimla. Moreover, the Mall road is usually close for the public vehicle so traffic conjunction is a regular event here. Sewerage system of the city is 117 years old; need to be replaced with modern equipments.



Congested and poor Infrastructure of Shimla

4.4 Parking Problem

Parking is a serious problem in Shimla, basically for the hotels besides mall road. The city is very congested so there is lack of parking space. There are few parking plazas in city but not sufficient due to large number of floating vehicles. Some, people park their car far away of their place of staying that creates problems to them. Moreover, due lack of parking space traffic conjunction is becoming regular event in rush hours.

4.5 Pollution and Environmental Degradation

Once, Shimla was famous for pleasant and fresh environment. People used to come here for mental and

physical rejuvenation. Pollution is being increased alarmingly with urban expansion and increasing number of vehicular movements. Dust particles (SPM) near the roadways have become serious issue. Other pollutants such as SOx and NOx are well within safe range and it is mainly due to presence of healthy vegetations. Vegetation can control pollutants like CO₂, CO, NO, NO₂, SO₂, SO₃ but cannot absorb suspended particulate matter (SPM). A major portion of the hill slopes of the city are consists with schist and garnet schist which are very frazil in nature. These frazil rocks are sliding on roads and are being dust with pressure of vehicle's wheels. So, that SPM amount is very high in the city. Most affected area is the cart road and surroundings. Noise problem is also a serious matter of concern in market areas during peak hours.

Table 5: Ambient Air Quality of Shimla

Pollutant	Amount of pollutant in air	Safe Range
SPM	847.27 µg/m ³	200µg/m ³
SOx	37.52µg/m ³	80µg/m ³
NOx	66.66µg /m ³	80µg/m ³

Source: (<http://www.shimlamc.gov.in/page/General-Profile.aspx>)

4.6 Deforestation:

Due to over construction work in late 80s and 90s decades several part of the city deforested mainly in Lakkar Bazar and Ram Bazar areas. Both side of Cart Road has become jungle of concrete. But after 2000 Govt. has taken serious steps to resolve this problem. Shimla is now known for its Urban Forest. It is one of last surviving urban forest in the country. The urban forests absorb air pollutants and improving air and water quality.

Table 6: Encroachments of forests in Shimla

Sl. no	Administrative Area	Forest Area (in Hectare)	Quality of Forest	No. of Encroachments
1	SMC Area	832.40	Reserved Forest (21%) Un-classed Forest (79%)	916
2	SADA Area (Tutu, New Shimla, Dhalli, Ganahatti, Kufri and Shoghi)	4680.00	"C" Category	77
Total		5512.40		993

Source: <http://www.shimlamc.gov.in/page/General-Profile.aspx>

The forests share near about 55% of the Shimla Planning Area. The predominant species in the forest are Deodar, Pine, Oak, Kail, Rai and Rhodendron. The wild life has migrated towards deeper forests and is limited to Pheasants.

Govt. is running forestation programme that is enough misguided. The places which were once covered with oak trees are now being replaced by the pine. It is simply because of versatile use of pine. The wood, resin of pine have economic values, so pine is much more profitable than oak. [Pranab kr. Das 2013] But what is profitable to man it does not matter to nature. Oak is a unique plat, member of Quercus genus that lives for a long time. Oak lives create a layer of black subsoil which nourishes the scrubs and bushes with the organic matters that is very much effective against soil erosion and landslide. But pine does not grow leaves, but the needles are acidic in nature that creates a smooth dry bed that does not soak water. This condition prevents the soil to grow under brushes that causes land slide and faster run-off. [Pranab kr. Das 2013]

4.7 Problem of Solid Waste Disposal

Moreover solid wastes are polluting the market areas badly. Garbage is deposited in vats in huge numbers which is also spreading out by dogs and monkeys, creating environmental degradation. Shimla is plastic free zones hence wrapper of cheeps, chocolates and other food item are found here and there that polluting the soil and it is very dangerous for sinking areas of the city.

4.8 Over Population of Monkeys and Languor

During the primary survey both tourists and local people have informed about the disturbance of monkeys and

Languor. Monkey are become serious problem in city of shimla. They have become so fearless that they can rob anyone anywhere basically kids and female. In 2010 Situation was so bad that Govt. allowed farmers to kill monkey to protect their crops. In 2011 Mr. Devki Nandan Koushik made a public litigation over the issue in high court and wrote a letter to Chief Justice. (Himachal Watcher 15.03.2013). High Court suggested that State Govt. and Municipal Corporation of Shimla should obey Wild Life protection act and do the needful steps. Now SMC has decided to make a monkey camp in Tutikandi, over one acre area. Now, present there are near about six lakh monkeys and Languor in Shimla and surrounding areas (Himachal Watcher 15.03.2013). Monkeys are not only creating problems to local people and tourist, but also hampering crops of the farmers.

Now, monkeys and languor are well adopted with the human behavior and physiology. These two creatures used to stay in forest area and took food from there. But, with the expansion of settlement area, they have come with the contact of human. Primarily, they were indulged by people on spiritual ground. People usually feed them and thus monkeys and languor have become fearless. Moreover, their food habit has been changed because they are getting food very easily from garbage vat or provided foods. When, they are not getting food easily, they are snatching forcefully. In case of monkey attack it was noticed that female and kids are the soft target. The Alfa males and female monkeys having baby are the most dangerous. It was also noticed during the survey that monkeys are in higher numbers in temple areas where they are being provided food or in those areas where settlement and forest both are closely associated. Usually monkeys and languor are staying in forest and coming to settlements for easy access of food.



Monkey attack is a regular event in Shimla



Source of Alternative food

6. Conclusion & Suggestions

Shimla is still bearing the past charm and glory. Though, it is facing various problems but every year thousands of tourists are being increased. During the survey when the tourists were asked would they prefer to visit Shimla again, everybody answered positively. Actually the rapid urbanization, uncontrolled practice of mass tourism and related urban centric activities are responsible for environmental and infrastructural degradation of Shimla. (Fig: 11). So, tourism should be practiced in such a way that beauty and charm of the city should not be affected. Policy makers should respect the perception of local people on tourism in Shimla to implement future development planes.

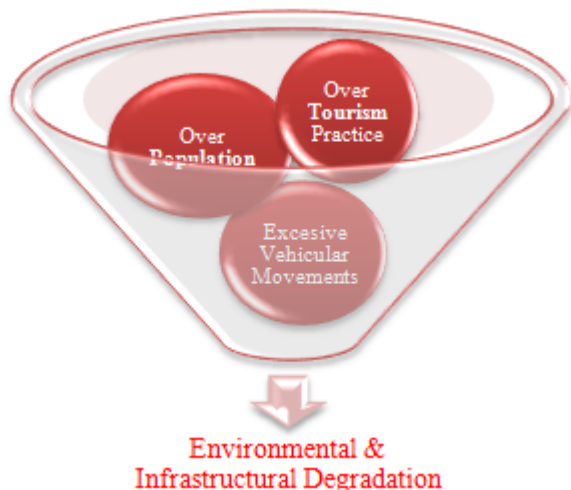


Figure 11: Causes of Environ-Infrastructural Degradation

Some measures could be adopted for Shimla city which will improve the infrastructure of the city and local people, tourists both will be benefitted. But before implementation of these measures perceptions of common people on tourism should be kept in mind. These are;

- i) Water problem of Shimla should be solved immediately. Bulk water could be supplied from river Pabber and Giri. Old water pipe line should be replaced and maintenance of pipe lines and reservoirs should be done in a regular interval.
- ii) Rain Water Harvesting could be good alternative for water conservation in Shimla. Shimla is receiving adequate amount of rainfall and that should be preserved. Govt. could take various methods such as tax relaxation or deduction on electric bill etc to encourage common people and hoteliers. Some hotels have already adopted rain water harvesting scheme such as Silverine, Sukh Sagar, Hotel Blossom, Kalra Regency, Willow Bank etc.
- iii) The best way to prevent landslide in high mountain areas is to return back of Oak trees. It has proven that oak has the capability to compaction the lithology with organic matters than pine or other gymnosperms. Forestation of oak can be accelerated with social forestry with the cooperation local governing bodies and participation of local inhabitants.
- iv) Shimla is now very congested. The ridge and Mall road are the prime attraction. It is very important to create an alternative of the Mall so that maximum tourism activities could be replaced from the city core. In this context more tourism resource such as park, entertainment arena, and amusement park could be developed in sub-urban areas such as Tutu, Chota Shmla, Sanjouli, Kasumpti etc.
- v) Cart road of Shimla should be wider for free movement of traffic and more parking lots should be produced both sides of cart road so that parking problem as well as traffic conjunction could be solved. BOT model could be applicable for parking projects.
- vi) Now, time has come to think alternative mode of transport for Shimla. Due to fragile mountain, metro rail could not be developed in Shimla. But cable car, Sky Bus, Mono Rail could be developed as Light Mass Rapid Transit System. This LMSPD could be join city core with the sub-urban areas. In this way, regular traffic problem could be solved and as well as environmental condition could be improved.
- vii) Public transport system should be improved with frequent of bus or cab service even after dark so that increasing number of private vehicles could be controlled. It was noticed that Govt. vehicles mainly HRTC buses are emulating maximum. Vehicles those are older more than 15 years should be banned in Shimla and surrounding areas.
- viii) CNG could be good alternative as fuel to run city service bus to check pollution. Moreover, green tax must be introduced on other state vehicles to control excess vehicular movements.
- ix) Shimla itself a heritage city and there are several heritage establishments. These are important tourist destination too, so regular maintenance must be going on.

- x) Beautification of Shimla is very important. More park, road side lam post, garden could be introduced if space are available. Awareness board or heading should be given in Monkey prone areas to aware tourists and local people.

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