CHAPTER 4

REVIEW OF LITERATURE

In recent years (last about half century) many studies have been done on the processes and problems of urbanization (Reissman, 1964; Herbert, 1972; Johnson, 1976; Berry, 1973; Bose, 1973; Bardo and Hartman, 1982; Williams, et al., 1983; Clark, 1990; Carter, 1995; Mandal, 2000; Cochrane, 2003; Ramachandran, 2004; Nath, 2007 to name only a few). The accelerated interest in this area is due to an increasing recognition of the problems rising out of overurbanization. Although many scholars have studied urban processes in general (Herbert, 1972; Berry, 1973; Bardo and Hartman, 1982; Williams, et al., 1983; Mandal, 2000; Ramachandran, 2004; Nath, 2007 to name a few), knowledge of the process of urbanization in a city with colonial history and mountainous topography has remained very limited. The present study is first of its kind in which the author has tried to highlight the process of urbanization in a geographically and historically constrained city of Shimla. Geographically the city has been constrained because of its geomorphic location in a mountainous terrain (on a prominent ridge) and historically it is constrained because of its colonial antecedents.

PROBLEMS DUE TO URBANIZATION

Many (Herbert, 1972; Bardo and Hartman, 1982; Exline, et al., 1982; Williams, et al., 1983; Pannell, 1991; Petersen, 1999; Mandal, 2000; Jaber and Probert, 2001; Dutt and Noble, 2003; Sandhu, 2003; Nath, 2007) have studied problems arising out of urbanization. These problems can be categorized into physical and social problems. Amongst physical problems are shortage of houses (Kayastha and Kumar, 1990 and Sharma, 1997), lack of infrastructure (Williams, et al., 1983; Pannell, 1991; Petersen, 1999; and Jaber and Probert, 2001), overcrowding, (Hall, 1969; Bardo and Hartman, 1982; Williams, et al., 1983 and Sharma, 1997), increasing population (Mandal, 2000), excessive size, slums and squatters (Kumar and Singh, 1990), traffic and pedestrian congestion (Hall, 1969; Herbert, 1972 and Bardo and Hartman, 1982; Williams, et al., 1983), transportation and land use problems (Hathloul and Mughal, 2004; Lo and Yeung), waste disposal, pollution of air and water (Hall, 1969; Herbert, 1972 and Kayastha and Kumar, 1990), environmental degradation, urban expansion, loss of agricultural land (Bardo and Hartman, 1982), limited energy resources (Jaber and Probert, 2001), limited land and water resources (Hrimat, 2000), etc.
Xinhua (2005) states that urbanization also becomes a cause of geological disasters like landslides, land subsidence induced crevices, mud rock flows, etc. On the other hand Bardo and Hartman (1982) talked of another problem in the cities. They said that even though cities are serviceable they have areas with dilapidated conditions which also lack current standards of construction. Such areas they termed as ‘Gray areas’.

The problem of core and periphery differential arising out of urbanization was highlighted by Mandal (2000). According to him there is a difference in the characteristics as well as the problems of the core and the fringe areas of the city. Core areas have problems like worsening traffic, complexity of functions, increasing congestion, etc. whereas fringe areas are characterized by problems like dumping of heaps of garbage, residential quarters of low-income groups, slum areas, bad health, bad housing and living conditions, unemployment, influx of rural population, lack of provision of infrastructural facilities in, rural suburbs, insecure historical monuments, dilapidated roads, waste and sewage disposal, deteriorating environment, few transport facilities, etc. (Mandal, 2000).

Most of the urban problems, for many researchers (Herbert, 1972; Bardo and Hartman, 1982; Williams, et al., 1983; Sharma, 1997; Mandal, 2000 to name a few), arise out of one major problem of immense growth in the urban population. The root cause of many urban problems is the growing population of the city. Migration of people into the city is the major reason of this population growth. As the natural increase in the population of the urban centers and the rural areas is almost the same (Roy, 1993), it is only migration which leads to greater increase in the population in the urban areas (Hagget, 1972; Berry, 1973, Bose, 1973; Mountjoy, 1978; Dutt, 1983; Roy, 1993). This rural-urban migration is more pronounced, concentrated and uneven in the less developed countries (Herbert, 1972). Such a population growth gives rise to many other problems. Urban life requires a complicated set of services associated with housing, traffic, sewerage system, water and so on. As per Mandal (2000) in urban areas it is difficult to match the services with the growing population. The problems usually aggravate when the governmental institutions like municipality and corporations are short of money. Due to lack of skill and finances it becomes difficult to cope with a city that doubles its size every decade (Mandal, 2000).

The growing population in the urban areas leads to problems of shortage of houses and transportation facilities. Houses don’t grow in the same proportion as the population. The problem is aggravated by unplanned industrialization, profit motive, etc. (Mandal, 2000).
Transportation within and between cities is another critical problem for urban communities (Purdom and Anderson, 1980). Mandal (2000) has divided the problems of transportation in many types. These are problem of public and pedestrian transport, parking difficulties, high transport charges, accidents, traffic congestion, etc. The pattern of the urban transport depends on the structure of the city which depends on the geographical features of the area like its topography (Mandal, 2000). Further Bardo and Hartman (1982) suggest that traffic congestion has both human and economic consequences. He explains that due to traffic people get delayed in their trips, more time is spent in commuting, people become tired and irritable, families are separated for long periods and more money is required for commuting.

Studies done by Aggrawal (1997) and Cropper et al., (1997), and those reported in the Survey of Urban Health (1997, as quoted by Krafft, et al., 2003) suggest that there is a positive correlation between the level of urbanization and its negative impacts. The more the urbanization the more are the problems related to it.

Rapid growth in population along with urbanization brings structural changes in the economy of the place. This happened in the case of Singapore, Hong Kong, Tokyo (Benhart, 2003) and Mzab valley (Bouchair, 2004). Benhart (2003) found that Singapore has had a great economic growth. This economic growth led to an increase in automobile ownership. This, in turn, led to increase in air and noise pollution and traffic congestion. Similarly Hong Kong also suffers from severe pollution in almost every aspect from water to air (Benhart, 2003). Tokyo has a major problem of environmental pollution. Benhart (2003) has related the origin of the pollution problems in the Asian cities to their poor planning. He said that unfortunately the Asian cities were planned for present and not for the future growth.

Fenger (1999) suggests that amongst various types of pollution in a city the major one is air pollution. The constant increase in the number of people and vehicles due to the process of urbanization results in deterioration of the urban air quality and environment. Rapid growth of motorized traffic and widespread use of heating material like coal during severe winter months lead to pollution (Roy, 1993).

Due to the phenomenon of pollution, the local climate changes dramatically. Temperatures in the city become higher than its surrounding areas. According to Gates (1972) the cities are warmer, cloudier, dirtier, rainier, less sunny and less humid than the
surrounding countryside. This creates a sort of "heat-island" (Landsberg, 1970 (quoted by Schmid, 1974); Exline, et al., 1982; Einstein, 1999; Fenger, 1999).

Other than these physical changes, urban patterns affect urban sociology also. Laws (1995) opines that there is reciprocity between social relations and spatial structures. As per Narain (2003) the social problems of urbanization are in relation to the rate of urbanization. The faster the process of urbanization more are the problems. Overurbanization is the cause of urban pathology.

Urban pathology refers to the social problems prevalent in a city. These include those related with the changes in family and social values, disintegration of joint family system (Mandal, 2000), increase in crime, juvenile delinquency, (Sharma, 1997 and Mandal, 2000), prostitution (Berry, 1973 and Sharma, 1997), alcoholism and increasing number of saloons in city (Berry, 1973), drug addiction, suicide (Berry, 1973 and Sharma, 1997), shortage of urban services (Williams, et al., 1983; Pannell, 1991; Petersen, 1999; and Jaber and Probert, 2001), lack of social responsibility, unemployment, underemployment (Williams, et al., 1983, and Mandal, 2000), racial and social issues, westernization, etc. (Williams, et al., 1983). Nijman (2000) studied the problems of Los Angeles and Miami, and found that they share a number of important characteristics including social and spatial polarization, excessive materialization, weak social contacts, high crime rates and fragmented urban community.

In the case of American metropolitan cities as studied by Bardo and Hartman (1982), size of the city gives rise to many problems. The size of the city is the prime reason for most of its social problems (Herbert, 1972 and Bardo and Hartman, 1982). Williams et al. (1983) suggest that these problems range from traffic congestion to racial discord. Even the fiscal crises of cities can be traced to their sheer size (Hoover 1968 (quoted by Bardo and Hartman, 1982)). In a heterogeneous environment found in large cities with people of all classes, religions, status, races, etc., it is difficult to have programs and services for different needs and desires (Gluck and Meister, 1979 and Bardo and Hartman, 1982). Thus heterogeneity and diversified economic activities lead to a great number of crimes (Kulkarni, 1990). Besides this some sociologists have also said that in large population people feel lost (Simmel 1950 and Writh, 1938 (quoted by Bardo and Hartman, 1982)). Responsibility of each individual for another is less (Freedman, 1975 (quoted by Bardo and Hartman, 1982)). In such a situation there occurs differential flow of information as happened in 1967 riots (Bardo and Hartman, 1982). At that time people did not know each
other and they worked according to the stereotypes and half truths (National Advisory Commission, 1968 (quoted by Bardo and Hartman, 1982)). Not only this, for Thompson (1968, quoted by Bardo and Hartman, 1982) increased size of the city also increases land rates, labor cost, living cost, etc.

Besides the size of the city, many studies (Martin, 1967; Calhoun, 1962 (quoted by Bardo and Hartman, 1982)) have proved that the social pathologies are related to density of population or overcrowding in the city (Galle, Gove and McPherson, 1972 (quoted by Bardo and Hartman, 1982)). Places which are overcrowded like slums and squatters have a large number of prevalent urban pathologies. Age structure of the population is also closely related to crime, demand for facilities and services and many other social problems. For instance, teenagers and early adults are arrested on criminal charges more often than people in any other age group. More people in middle age group will lead to increased cases of drunkenness (Julian, 1980 (quoted by Bardo and Hartman, 1982)). High concentration of elderly people is associated with problems of poverty and increased demand for public health and welfare services (Bardo and Hartman, 1982).

Another reason for the social problems of American metropolitan cities has been the balkanization of local government (Bardo and Hartman, 1982). Balkanization refers to the division of governmental functions into many separate units, which decreases its authority and centralization. It has been associated to the ineffectiveness and inefficiency of the local government. Usually metropolitan growth in the United States has been associated with urban complexes made up of many small, autonomous political units. This leads to concentration of poor minority in the center of the cities and rich and well-to-do in the suburbs. This results in the decay of the central city (Bardo and Hartman, 1982).

Berry (1973) went further and studied crime in cities in detail. He tried to enumerate social causes behind it. These include: broken family, absence of social control, defective education, cinema, print media, alcohol, change in social values, etc. Amongst economic causes for crime were poverty, unemployment, industrialization, urbanization, etc. He called prostitution another type of social evil, as a city institution. Poverty, underage employment, bad working conditions, etc. were among the economic reasons behind prostitution. Rainwater (1970, quoted by Bardo and Hartman, 1982) found that poverty is the ‘product of modern, technologically complex, highly segmented socio-economic segment’. For increasing urban suicide rates, Sharma (1997) listed economic causes, which are problems in business, family and marriage, health, unemployment, poverty, etc.
Another major component of urban pathologies is prevalence and increase of mental diseases and mental instability (Sharma, 1997). Urban life is characterized by many physical irritations—excessive noise, the constant mechanical sound, visual attacks on the eyes by glaring multicolored lights, mass congestion, etc. This makes the urban life strenuous. There is strain from competition, conflicts, cultural diversity, insecurity, etc. in a city. There are also cases of disorganization of modern urban family. There is lack of family unity, decrease in family control, strife, laxity in marital bond, conflicts between parents and children, lack of security, less social protection in family crises, etc. (Sharma, 1997). All these factors lead to mental disorder in people. A city is also characterized by a number of migrants coming from diverse backgrounds. Narain (2003) noticed that these migrants often fail to adjust smoothly to the urban life. This leads to personal disorganization.

PROBLEMS OF URBANIZATION IN INDIA

Problems of urbanization in India were first talked about in 1960 in considerable detail at an international seminar held at Berkeley (California) (Bose, 1973). Two major reasons behind the problems of urbanization in India were found. One is rapid rate of population growth and the other is increasing rate of urbanization.

Constantly increasing urban population in India was recognized as the cause of excessive strain on the infrastructure of the cities. Rural-urban migration was said to be the main reason for the increasing urban population (Bose, 1973). This has resulted in acute problems like shortage of housing, lack of water, problems in sanitation and transport, lack of infrastructure, etc. Kaushik (2003) noticed that lack of infrastructure is leading to restricted economic development in some areas.

Major reason behind this increasing urban population has been migration. Nath (2007) identified three types of migrants in the city: First are farmers and agricultural laborers with small uneconomic land holdings back home; second are artisans who come in search of good income; and third are educated youth in search for education or employment. Higher migration of low skilled migrants in the city leads to problems (Dutt and Noble, 2003). This leads to the development of slums and urban poor developing their own culture of deprivation, poverty, lack of education and unsanitary living conditions, etc. Such migrants take up any job and live in any kind of situation and thus are instrumental in the development of slums. This is more prevalent in Asia. Thus it is said that urbanization in Asia has overwhelming negative consequences.
Higher rate of migration in a city puts burden on it (Nath, 2007). In rural areas people live in houses made up of local material with not much sanitation provisions. But when people move to towns, basic amenities like water supply, sanitary facilities, roads, transportation network, etc. have to be provided. Nath (2007) says all this takes approximately 10% of the total investment of the country. Thus urbanization is a costly phenomenon.

Maximum attention in India has been given to the problems of urbanization in its four metropolitan cities - Delhi, Mumbai, Kolkata (earlier called as Calcutta), and Chennai. Nath (2007) has identified problems of these four giant cities as: housing, food supply, shortage of water and electricity, transport, maintaining peace and security, restricting immigration, lack of infrastructure, proliferation of slums, pollution of water and air, congestion, overcrowding, sanitation, etc. (many of these are also recognized by Sivaramkrishnan, 1978). There is a preponderance of poor population and disparity in income distribution which have been the most distressing in urban India (Sivaramkrishnan, 1978).

Murthy et al. (2001) found that Mumbai has a high population density and uneven growth rate. This has happened due to rapid industrialization and urbanization, giving rise to many environmental as well as socio-economic problems. Many researchers (Munsi, 1972; Sivaramkrishnan, 1978; Praveen, 2004 to name only a few) have studied the problems of Kolkata city. Sivaramkrishnan (1978) has referred to Calcutta city as a ‘city in turmoil, an explosive metropolis, an urban disaster’ and so on. He coined “Calcuttaization” as a term to define urban decay. Proliferation of slums and squatters has been a major problem in Calcutta. Lewis Mumford (quoted by Sivaramkrishnan, 1978) has traced the evolution of the slums. According to him the process of industrial revolution, lack of housing and basic amenities, rising cost of land and other services has led to rising slum numbers.

The gigantic growth of a single metropolitan area, as in the case of Kolkata is very typical of Indian urbanization. This type of urbanization is not related to a hierarchical arrangement of the cities. This gigantic growth is one of the results of the present day underdevelopment. Kolkata has ‘enclave type’ (Zeveloy, 1989 (quoted by Sarkar, 1995)) of urbanization. Initially it was a rural society which started changing during the colonial period and got converted into urban society. The British started taking interest in the town. This attracted the poor people to move to the town in search for employment. They were ready to stay in the slums of the town. This led to the growing problem of squatter
settlement in the city (Dutt and Noble, 2003). Kolkata is a city with a colonial legacy. According to Munsi (1972) most of the problems prevalent in Kolkata like overcrowding, lack of basic amenities in low and medium density areas, the insufficiency of civic amenities, misuse of vertical space, the preponderance of the tertiary sector in occupational structure and the pressure of rural outmigrants are the reminiscent of the colonial period. For Munsi (1993) Kolkata originated as a primate city in the colonial period and has been referred to as the ‘birthmark’ of Indian urbanization. Such cities are carrying the legacy of being a large singular city dominating the urban scene in the post-Independence period (Praveen, 2004).

Other than Kolkata, Delhi is also one such city where roughly a third of the city’s entire population is living in squatter settlements (Haider, 2000 (quoted by Dutt and Noble, 2003)). Such population is not able to get all the basic amenities. Increasing population is resulting in the spatial expansion of the city. Due to financial constraints the cities are also unable to cope up with the increased demand for services like transport, etc. Increase in the number of vehicles is causing extensive noise and air pollution. This is resulting in environmental damage and affecting the health of the population of the city (Dutt and Noble, 2003 and Marh and Kumar, 2003).

Spatial extension of the city also affects the surrounding agricultural land. This has happened in the case of Pondicherry (Krafft, et al., 2003). Pondicherry is an example of a rapidly growing town. Its uncontrolled development is causing strain on the infrastructure and other amenities. Agricultural land in the surrounding area is being used for the development of other services like industry, residence, and transport. This has even led to the damage of the traditional water harvesting systems and flood problems. Nath (2007) found that Bangalore and Hyderabad are also facing similar problems. This is happening due to large clustering of industrial units. This is leading to immense pollution and traffic in the city (Nath, 2007) along with many other problems.

**COLONIAL TOWNS**

In many places, especially in most of the Asian countries, the history of present urbanization is related to colonial rule (Narain, 2003). Bose (1973) noticed that in some developing countries the process of economic transition commenced during the colonial period. Many cities came into existence at the beginning of the colonial period. In such cities the ‘proto-colonial’ antecedents are quite clear (Sadhukhan and Sadhukhan, 1991).
Not only the morphology but these cities have also inherited the economic, political and administrative set up from the colonial period. In case of India the ‘post administrative organization of space’ has largely been inherited from the British. The urban systems designed in the colonial period were according to the colonial goals (Bose, 1973; Bardo and Hartman, 1982 and Kant, 1989).

In colonialism, Daniel Clayton (2000, quoted by Harris, 2004) said, “native space is reproduced as an absolute space of colonist sovereignty”. On the contrary the world of the natives is imposed with prohibitions. One can see the forces implied in these areas. According to Fanon (quoted by Harris, 2004) colonialism leads to such a development that is “divided into compartments”. Development is only the characteristic of the settlers land.

Geographical dispossession is another major characteristic of colonialism (Harris, 2004). “Settler societies are premised on the elimination of native societies,” which were occupying ancestors land (Patrick Wolfe 1999, quoted by Harris, 2004). Thus, a new civilized society is superimposed on the former savage settlement. Settlers required land for all the activities. “Geographical layout” is such that a small portion of the land is given to the natives and the rest is with the “aggressive settlers society”, which was attained by dispossessing the natives. Such acts often led to cross cultural misunderstanding, which further led to violence. With time, settlers became the landholders and property owners. In this way, a colonial power reorganized the native society, mainly for economic advantage.

**Problems of Colonial Towns**

The actual development during the colonial period was limited and unbalanced (Bose, 1973). Colonialism ruled out planned growth of any town. During colonial period, towns were the foci of modernization suited to the British interest. They encouraged spatial heterogeneity and rarely provided stimuli for national development (Silva and Sollo, 1968 (quoted by Sarkar, 1995)).

According to Burse (1966 (quoted by Bardo and Hartman, 1982) since colonial cities had two major functions - they were either markets or administrative centers - they were used as a source for raw material and market for finished goods. In this process their own development was discouraged. For both the functions indigenous population was required for services (Buck, 1925; Kennedy, 1996; Kanwar, 1999; Pradhan, 2007). This attracted migrants from various places. Though later the status of the city shifted from
colonial to independent city, yet the same pattern of immigration remained at play. This resulted in rapid population growth and thus hyperurbanization. Same happened in the large sea ports in Asia during colonialism, which were the gateway cities. This function resulted in immense immigration and thus many other problems then and now.

The growth of primate cities like Calcutta and Djakarta were the result of urbanization in the colonial period (Bose, 1973). Such primate cities functioned essentially as trade and administrative centers. Their integration with the economy of the place and with the hinterland remained partial. Legg (2006) while explaining the haphazard and unplanned growth of the cities said that the colonial power established one dominant center and neglected the rest of the territory. Such cities also underwent rapid economic development, cultural change and urbanization (Bardo and Hartman, 1982). At the time of decolonization there occurred a shift in the city from the colonial to independent status leading to immense migration and thus hyperurbanization and primacy (Bardo and Hartman, 1982). Same happened in Africa, only the capital cities had the potential of providing the infrastructure for further growth (Mountjoy, 1978). Thus colonialism became one explanation of the present day primacy. The colonial urban area, like any primate city was characterized by an acute degree of congestion of people, sub-standard housing, deprived social and municipal services, etc. (Bose, 1973). Raza and Habeeb (1988) have suggested that the urban decay started in this period, as has been indicated in almost all the gazetteers, travelogues and reports.

Dual city development is another result of colonialism (Williams, et al., 1983). It is common in the less developed countries. Two types of commercial systems - the modern or western and the traditional or indigenous – coexisted in colonial cities (Williams, et al., 1983). This led to a diversified economy and thus uneven development of the place. The British changed the ‘traditional urban-industrial centers’ to ‘centers of service and commerce’ (Narain, 2003). This created a culture, a way of life, that was totally different (a transplant) from that found in the surrounding indigenous areas.

The colonial cities also had heterogeneous population most of whom were indigenous migrants or foreigners. The residential areas of the native population were segregated from that of the European colonists (Berry, 1973; Gluck and Meister, 1979; Stoddard, et al., 1986; Attoh, 1996; Sharma, 2000; Harris, 2004). Occupational segregation of ethnic groups was also attached to residential segregation in these areas.
Residential segregation was the prime feature in most of the colonial towns. History in the form of residential segregation portrays itself even in the present urban landscapes as in the case of Africa. The settler-colonial legacy of inequalities of income and segregation of residences is still very much present in its urban landscape (Attoh, 1996). While taking about the characteristics of the colonial urban space, Kumar (2006) says that the:

... Colonial urban space was not simply a physical entity, it was also a relational identity, created by interactions across boundaries of tradition, the pre-modern, and between the colonized and colonizers (p. 24).

Even in case of European/British colonial towns in India, the racial divisions were marked (Westlake, 1993; Crossette, 1999). The British dominated the higher areas in the town called as station while the lower areas or the bazaar were occupied by Indians. In the South Indian colonial town of Madras, the racial segregation got manifested as ‘Black’ and ‘White’ towns respectively for the ‘native Indian’ and ‘European’ populations (Kumar, 2006). The black town was further divided into several spatial units.

... space for different communities became communally constructed, and Right and Left-handed castes all occupied separate spaces based on the criteria of race, purity and pollution... The Black town in Madras was divided along the lines of religion, language, race, caste and class (Kumar, 2006, pp. 24-25).

Similar division of space was done in all colonial towns including the hill stations. The Indian (Black) areas were neglected and the most congested areas of the town (Berry, 1973; Kenny, 1995 and Sharma, 2000). The mixed race, or according to Berry (1973) the commercial group, residences were located between them. As studied by Dutt (1983) in case of the three presidency towns of Bombay, Calcutta and Madras, the residences in the European (White) areas were spacious, with broad streets, proper sewerage system, and water and electric connections. This part of the city was well kept whereas the native part of the city was ill planned with unsanitary conditions.

Other than residential segregation Stoddard et al. (1986) talked of social segregation too. Social segregation occurred according to the occupation of the people (Stoddard, et al., 1986). Gluck and Meister (1979) noticed that the elite resided near the center and close to the social institutions. The elites placed themselves in the center of the town, near the business center and the government. The lower class resided away from the center on the fringes (Gluck and Meister, 1979). This gap is still visible in many such cities (Gluck and Meister, 1979).
New Delhi, like many other Indian cities, was also a colonial space. Here besides the segregation of ranked civil servants in the city, segregation was also in terms of green space, parks, recreational grounds, educational institutes, private residences, commercial properties, etc.

Bardo and Hartman (1982) opined that the American colonial towns were initially small in size and performed important social and economic functions. Gradually there occurred an increase in their population. Same happened with the European colonial towns. This led to the breakdown of traditional class structures. Environmental conditions deteriorated and urban services became extremely bad. Cities suffered from pollution and poor water supplies. Besides this there occurred racial, social, class, religious and ethnic-based hatred also. By 1938 New Delhi also showed patterns of mixed landuse, congestion and haphazard developments (Legg, 2006).

European colonialism induced environmental hazards especially in the countries of Asia and Africa (De and Chattopadhyay, 1998). Introduction of tea, coffee, rubber and cocoa as plantation crops was the step which paid highly to the colonial powers. Such activities led to accelerated soil erosion, interrupted bio-diversity, and spread of epidemics and diseases.

The sanitary conditions of the colonial towns have been a topic of immense debate. Population increase, densification of urban living space, insufficient potable water supply, massive difficulties in drainage and sewerage system were the major urban problems of cities like Bombay and Singapore in colonial Asia. Bombay, for example, was one of the unhealthiest towns of the country. Similar was the case with Delhi also (Mann, 2007). Lack of funds, inadequate technology, inexperienced engineers and ignorant planners were amongst the few reasons which aggravated these problems further. For Kenny (1995) these problems of dense living and unsanitary conditions were particularly associated with Indian area. Mandal (2000) found that at some time the colonial rulers even adopted inhumane ways to tackle problems like squatter settlements. No alternative accommodation was ever offered to the population living in the squatter. This gave rise to more flimsy shelters in more unhygienic conditions on some other part of the area (Mandal, 2000).

Not only did the colonizers affect the physical, social and economic structure of a place but also the administrative structure (Kant, 1989). The motives of the colonist determined the administrative decisions also. Their motive in the Subcontinent was to break
down the homogeneity. Such administrative boundaries were formed which were in accordance to their motives.

As the colonial powers are now a part of the history, it is only the end products of the colonial process which can be analyzed. The origin of these colonial processes lies in the colonial period for which only sketchy information is available. The distortions brought during the long post-colonial period have complicated the matter further. As summed up by Raza and Habeeb (1988) following are the ways in which the colonial processes which were conditioned by the exploitative requirements of the imperialist rule (Raza, et al., 1975 (quoted by Raza and Habeeb (1988)) affected the pattern of urbanization in India:

1. A ‘suction mechanism’ was established by a few major cities especially the port cities established in the colonial period. These cities generated centrifugal forces for the rural settlements. This replaced the existing centripetal force between both the rural and urban settlements, leading to death of many old urban centers.

2. Earlier there existed a symbiotic relationship between the rural and urban areas. Both thrived on each other. Colonial period disrupted this relationship and led to either death of old urban centers or were made a part of the suction mechanism.

3. Colonialism did not encourage the self reliant growth of the industrial sector. It restricted the intersectoral transfer of the workforce. Thus a huge horizontal movement of the work force from the rural to urban areas led to two types of denudations. One is the decrease in the amount of labor in the rural areas and second is their unwanted increase in the urban areas.

4. New urban culture which was not rooted within the culture of the people, had developed. The rural-urban interface got fragmented. Both urbanism and ruralism took a back seat and became isolated instead of sustaining each other.

**Problems of Hill Stations**

Many countries of the world have hill stations. These include Pakistan, India, Sri Lanka, Myanmar (Burma), Malaysia, Indonesia, Vietnam, Philippines, U.S.A., etc. (Crossette, 1999). The Indian Subcontinent has a large number of them. During the British period the map of the Subcontinent was doted with hill stations in the form of colonial towns. Out of them some are still prospering while others have become stagnant. Many of them have lost their charm and the reason, for which they were created. Crossette (1999)
found that recently the old hill stations of Asia have grown so quickly that they have become victims of their own success. They are facing many problems arising out of overpopulation and environmental degradation.

Researchers like Bardo and Hartman (1982) and Sharma (1987) have found that hills and slopes give special ‘character’ to the hill station which also in addition to the problems due to urbanization gives rise to special problems. These problems are often associated with the designing of rail and street network, etc. (Ahluwalia, 1998). Construction of tunnels is often done to establish rail and road network but hilly terrain poses problems to it (Exline, et al., 1982). Evans (1998) states that such activities not only increase the cost of urban development but also lead to slope instability and landslides. Such developmental activities remove vegetation, which accelerates erosion and increases the rate of sedimentation downstream (Exline, et al., 1982). Kant (1995a) said that in a hill station primarily there are ecological problems and then are the developmental problems added to it, and both together make the situation worse.

Rapid growth has taken place in most hill stations leading to major changes (Sachthanandan, 2003). Rense (2003) found that the factors that originally attracted tourists to these hill stations are now attracting permanent residents. Burdening of the hill stations with population is leading to trash piles, choking drains, and fouling footpaths which are no longer pleasant to walk (Crossette, 1999). Sharma (1998) has listed challenges for a hill station as random deforestation, soil erosion (Kennedy, 1996), overexploitation, pollution problems, poor socio-economic condition, poaching of wild plant and animal resources, unscientific approach in the developmental activities and agro-farming, tourism mismanagement, etc. (some have also been listed by Crossette, 1999; Meshram, 2003 and Sriniva, 2003). Growing tourism industry is either leading to new problems or aggravating the existing one. Old hotels are struggling for their existence while new hotels are establishing themselves and transforming the skyline of the city (Crossette, 1999). All this is giving rise to ecological and climatological changes. Plant and animal species have started disappearing and the temperatures have started rising (Crossette, 1999).

**Hill Stations of India**

Hill stations in India are the “most representative legacy of colonial rule” (Sharma, 2005). With time the development of these hill stations produced their own contradictions.
The limited urban space in most of them has become increasingly populated and congested leading to many problems.

As suggested by Chauhan (2007) in the British period hill stations like any other colonial town were exploited (Raza and Habeeb, 1988; Kant, 1989; Kant, 1995a; Kennedy, 1996; Kanwar, 1999 and Pradhan, 2007). The British made the hill stations profitable. Commercial utility of the hill stations was their major motive which led to growth of the place. For instance, the urban growth of Darjeeling was highly related to the growth of tea plantation in the region (Banerjee, 1982; De and Chattopadhyay, 1998 and Pradhan, 2007). It was done at the cost of clearing huge areas of forest. De and Chattopadhyay (1998) opined that deforestation led to many environmental problems. As Wright (1998) has put it, the conventional European view of forestry was of producing timber. They never thought of preserving the resources (Kant, 1995a). Besides deforestation, done for the purpose of building timber, the forest resources and the stone quarries were main sources of revenue and construction in the hills. Urban growth of a place was related to its hinterland. As the urban space kept increasing the relation of the hill station with its surroundings kept strengthening.

According to Sachthanandan (2003) the hill stations like Shimla, Ootacamund (Ooty) and Kodaikanal had two main functions - one was as holiday resort and the other as administrative center. Ooty and Kodaikanal were the nodal centers for their region. These functions led to population growth in the hill stations. The major problems which these hill stations are facing are indiscriminate urban development, changing landforms, cutting down of trees and clearing of vegetation, conversion of agricultural land and pastures into urban land, spread of construction activity, uncontrolled spread of hoardings and sign boards, lack of adequate parking space, poor waste management, etc. (Sachthanandan, 2003).

Miriam (1998, (quoted by Rense, 2003)) specifically blamed the tourism industry in Ootacamund for its present environmental problems. For the growth of the tourism industry many developments took place. Slopes were leveled for the construction of the buildings. Such activities led to undue pressure on the environment, water scarcity and sewage disposal system, transportation problems, increasing pollution levels, eutrophication of water bodies, etc. Eutrophication in turn led to difficult fish survival in the water bodies.

According to Kenny (1995) hill stations in India were not only the transplanted British landscape but they were more than that. They were a place to show and implement the British imperialism. It was a place where they could legitimize their dominant role
(Kenny, 1995). The impact of colonialism can still be seen in the hill stations (Chauhan, 2007). The social relationship between the colonizers and the indigenous population was not very healthy. According to Chauhan (2007) the status of social welfare activities in the hill states was poor. Often there were no dispensaries or schools in hill stations (Chauhan, 2007). The hierarchical stratification scheme in the society of British India was highly pronounced in the hill stations (Kincaid, 1973) which is visible even today. Chatterji (2000), while studying three hill stations- Shimla, Ootacamund and Darjeeling- found that these towns were divided into two distinct parts: one was the Indian part and the other was the European part. Both were mostly separated by a 'sanitary gap'.

**Hill Stations in Himalaya**

Some hill stations were developed by the British in the Himalaya. The transformations in the Himalaya started with the time of colonialism (Sharma and Bhandari, 2006). The hill stations of the Himalaya are different from the hill stations of the southern India (Bhatt, 1998). Space limitation has been one of the major differences. There is relatively less space in the hill stations of the Himalaya. The Himalaya are highly vulnerable and are in great threat from the recent rapid urbanization taking place in the area. Further 'Mismanagement of urban development', as Ghosh (2007) has put it, has led to the growth of unplanned settlement leading to the natural resource depletion and many disasters.

**Environmental Degradation in Himalaya**

Transformation of the Himalaya dates back to the process of colonization in North east of India, in Assam around 1627 by the coming of first missionary (Kottupallil, 1990 (quoted by Sharma and Bhandari, 2006)). With this the transformation of the Himalaya began. Now these changes are taking place at a fast pace especially due to rapid growth of population, unplanned urbanization and consequent deforestation. Kant (1995a) has listed major problems of Himalayan region as: frequent geo-tectonic activities, climate and environmental changes, accelerated erosion, heavy construction (Sharma and Bhandari, 2006), drying up of springs and thus water shortage (Wilson, 1979; Wright, 1998 and Ghosh, 2007), changes in landuse and cropping pattern, decline in bio-diversity, energy crisis, increasing pollution, accelerated landslides, unplanned settlement, waste generation, traffic problems, air quality deterioration, etc. (Ghosh, 2007).
Ives (1992) has talked of a vicious circle at work in the Himalaya. According to him increasing population triggers this vicious circle. The increasing population in Himalaya (Gopalkrishnan, 1986) is leading to increased demand for different kinds of resources including the forest resource (Kayastha, 1994; Kant, 1995a; Sharma, 1998; Singh and Sharma, 1998). The vicious circle starts with the demand of forest resources and thus massive deforestation, deforestation leads to increased run off (Desai, 1986; Sharma, 1998 and Bhatt and Bhatt, 2003), and increased run off results into soil erosion and thus an increase in sediment load of the rivers. This increase in sediments takes place at the cost of loss of agricultural land. To compensate for the loss of agricultural land and thus to keep up the agricultural yield more deforestation is taking place. Deforestation is acting as a positive feed back mechanism for the vicious circle. Further deforestation is also leading to climate change and reduced rainfall (Ives, 1992). Desai (1986), while studying the environmental problems of Sikkim Himalaya added that deforestation is leading to the decrease in water retaining capacity of the soil and thus depletion of the water resources (Bhatt and Bhatt, 2003). They also observe that deforestation also affects the cultural environment as the culture of an area is conditioned by its natural surroundings.

The Himalaya are in process of complex geotectonic evolution (Wadia, 1975). It is ecologically more fragile than the adjacent plains region. Developments in the Himalaya reveal their adjustment in the complex environment (Kanwar, 1999). It has many rivers and their tributaries. As mentioned in the previous section, activities like tea plantation in Darjeeling, are done at the cost of forest and agricultural land (Banerjee, 1982). This has led to soil erosions, landslides (De and Chattopadhyay, 1998), disturbed water balance and also the floristic and animal kingdoms (Banerjee, 1982). Similarly are the problems highlighted by Singh and Sharma (1998) in the areas of apple cultivation. Multiple type of degradation, as mentioned by Dutta and Singh (1998), are taking place in the Garhwal Himalaya due to deforestation. Ecology is degrading, snow line is receding, landslide, erosion and avalanches have become common phenomena (Dutta and Singh, 1998).

Due to enormous scenic beauty, Himalaya and its hill stations are exploited by the tourists. Tourism has disturbed the socio-economic and cultural values in the Himalaya. The social evils like vandalism, prostitution, liquor consumption, drug trafficking, etc. have become commonplace (Dutta and Singh, 1998). Tourism has affected the forest ecosystem, grazing land, agricultural land and livestock. These changes have led to altered economic
activity (Dutta and Singh, 1998). In Darjeeling due to increasing tourists the problem of waste disposal has become prominent (De and Chattopadhyay, 1998).

The current problems in the hill stations of India have been inherited from the ecology of the region. For proper understanding Kant (1995a) has divided the ecological problems of the area into problems in the natural setting of the region, problems evolving overtime due to the interaction between man and nature and lastly problems arising out of increasing development. The developmental activities like infrastructural facilities, mining and quarrying and the commercialization of agriculture and forest resources accelerate these ecological problems (Kant, 1995a).

**Shimla**

Shimla is one hill station located in the Himalaya where similar problems are being witnessed. Some scholars have studied these problems prevalent in the city. The following section is an attempt to highlight such studies.

**Problems of Physiography**

Kant (1995a) has given three major sources of problems in Shimla city. These are - inherited ecology, colonialism and urbanization. Many of the present day problems in the city are due to the fragile ecology of the area, terrain, rugged and hill topography, steep slope, etc. (Bardo and Hartman, 1982 and Sharma, 1987). Sriniva (2003) suggests that the mountain geomorphology doesn’t allow concentrated development of settlements. After the onset of the developmental activities due to colonialism and urbanization these ecological problems have accelerated leading to problems like excessive erosion, landslides, flash floods, etc. (Misra and Shandil, 1993; Negi, 1993; and Maitra, 2003).

**Problems of Colonialism**

The developmental activities in the town started with the intrusion of the colonists. The problems of a colonial town as noted before added to the inherent ecological problems of the hill town. Colonists, due to their imperialist attitude, were highly destructive for the environment of the town (Kanwar, 1999). During their regime the natural resources were open for rapid exploitation to serve industrialization in the colonizing country. Resources
were not used on a sustainable basis. Not only the colonist but the princely states also neglected the resource management issues (Kant, 1995a).

The forest wealth was overexploited in Shimla (Kant, 1995a). Chauhan (2007) found that there occurred a gradual depletion of the forests. Subsequent deforestation had only made the inherent instability of the land more pronounced (Buck, 1925; Crossette, 1999). Nature was completely disregarded which led to serious problems like creep movements, sinking of some parts of Shimla, deteriorating sanitary conditions, etc. (Pubby, 1996). By around the mid nineteenth century, to ensure a systematic exploitation of the forest resources the British classified them and framed forest policies (Chauhan, 2007).

Most colonists did not realize the intensity of environmental destruction done by them. Some like Buck (1925, quoted by Crossette, 1999) found that indiscriminate cutting of wildflowers was done from Shimla and its surrounding region, most of which were used in decoration. Others noticed that Shimla was loosing its beauty and becoming less lovely (Barr and Desmond, 1978). The town had started expanding (Westlake, 1993). Initially the growth of the town was according to the purpose of sanatorium. Once Shimla was designated as the summer capital, the directions and modes of its urban growth entirely changed (Shandil, 1992; Maitra, 2003 and Pradhan, 2007). Its importance increased (Aggarwal, 1997) as it changed to a place of officialdom from a place of retreat. The higher levels of administration were set in the town (Pradhan, 2007). The town became multifunctional (Bhatt, 1998). With the increasing functions of the hill station the paraphernalia attached to the imperial power was also increasing (Buck, 1925; Kanwar, 1982; Kenny, 1995 and Kennedy, 1996). Urban amenities within the town increased in number (Crossette, 1999). In 1847, Mr. Edwards Gunj established an open market for the sale of the grains in Shimla. The Mall Road, a major shopping place, came up, consisting of goods shops and hotels. It served as an exclusive space for the Europeans. Beside the European merchants, Indian entrepreneurs also came up to the hill station (Pradhan, 2007). Many educational institutions also came up (Kanwar, 1982 and Kennedy, 1996).

Along with the increasing developments in the town its beauty was deteriorating. People had started disliking the town. For instance Lady Dufferin called Shimla a claustrophobic town (Barr and Desmond, 1978). For her activities like walking, riding, driving, etc. in the town were risky because of its topography. Lord Dalhousie (Westlake, 1993) and Lord Curzon (Kincaid, 1973) disliked the town for its problems. Natural environment was deteriorating (Westlake, 1993), wild life had started retreating (Crossette,
1999) and the town was becoming more crowded (Barr and Desmond, 1978). As noted by Kanwar (1982), Bhasin (1992) and Kenny (1995) by the end of the 19th century overcrowding especially of the Indian population was one of the most prominent and urgent problem of the city. Increasing population and overcrowding led to unsanitary conditions (Banerjee, 1979; Kenny, 1995 and Sanan, 2009), and congestion in the town especially in the bazaar area (Buck, 1925; Kanwar, 1982; Kenny, 1995; Kennedy, 1996 and Kanwar, 1999). This congestion proved to be dangerous as many incidences of fire took place (Buck, 1925 and Wright, 1998). This has been the most persistent problem of the town which was never solved. One of the evidences of the increasing pressure on the geology of the town was from the fact that frequent incidences of sinking (Pubby, 1996) and landslips (Buck, 1925) were taking place in the town.

Increased construction and thus modified environment of Shimla gave a picture of a metropolitan city. New modes of communication were set in. One such activity of construction was the Combermere Bridge (Pradhan, 2007). It was a clear evidence of the spatial expansion of the city. A number of roads like the Hindustan-Tibet road were constructed, for military and commercial purposes. The construction of Shimla-Kalka railway line was done. Vehicular traffic had been increasing year after year which hampered the pedestrian traffic (Bhatt, 1998 and Pradhan, 2007). Such were the problems of the town during the colonial period. By 1947, as Kincaid (1973) has put it, the British got bored of these problems in India, in the same way as they got bored of Irish and Palestinian problems.

**Problems of a City**

After Independence the morphology of the town has changed (Chatterji, 2000) and its problems have aggravated. Due to increasing population the problems of the town have increased manifolds (Shandil, 1992; Kaushik, 2003 and Sanan, 2009). For Westlake (1993) the most unfavorable change in Shimla was the physical deterioration of the town. The town has become very unhygienic (Paul, 2009). It used to be one of the cleanest towns but now has become one of the dirtiest. As concluded by Sharma and Bhandari, (2006) the heart of the city or the bazaar area is the most congested and unhygienic part of the city. It is following the same trend as of colonial period (Kanwar, 1982; Kenny, 1995 and Bhatt, 1998). It is becoming more and more crowded every day. Most of the old buildings are in
bad condition and many have got destroyed by fire (Buck, 1925). Due to deforestation in the city landslips have become a frequent phenomenon.

Many have tried to list major problems of the city. Problems recognized by different researchers include high population growth, shortage of housing (Banerjee, 1979 and Shandil, 1992), increasing cost of living (Kant, 1995b), poor sanitation (Sharma and Bhandari, 2006), congestion (Banerjee, 1979 and Shandil, 1992), increasing tourists, scarcity of land for development, overcrowding of activities (Sharma, 2002), infrastructure deficiency, increasing construction, deforestation (Verma, 1995; Sharma, 2002), water scarcity (Shandil, 1992; Sharma, 2002; Sharma and Bhandari, 2006; Singh and Pirta, 2007), sewage disposal (Sharma, 1987; Shandil, 1992; Misra and Shandil, 1993; Singh and Pirta, 2007), garbage disposal (Verma, 1995; Susharta, 1996; Singh and Pirta, 2007), retreating wildlife (Buck, 1925), the deteriorating environmental conditions (Sharma, 1987 and Najamuddin, et al., 2003) like rising dust levels and increasing level of atmospheric pollution (Misra and Shandil, 1993; Sharma and Bhandari, 2006; Singh and Pirta, 2007), which are causing eye irritation, chest congestion, etc., traffic congestion (Sharma, 2002; Singh and Pirta, 2007), narrow roads, parking problem (Westlake, 1993 and Chatterji, 2000), etc.

Guleria (2005) found that the main sources of pollutants are coal and garbage burning and the exhaust of the vehicles in the city. Kumar (1993), however, found a decreasing trend in air pollution of the city. The reasons according to him for the decreasing trend were the wash out effect due to precipitation and a decreasing trend in the usage of coal, wood and kerosene for heating. For the transport network of the city, Sharma (2002) explains that the road network of the city is obsolete. It was planned and constructed at the time of the colonial period. Both the kind and volume of traffic have changed. This has resulted in some bottleneck areas (Sharma, 2002). Connected to this is the problem of commercial landuse in the city (Banerjee, 1979). According to her there is lack of space for loading and unloading and problem of storage of produce in Shimla.

Another reason giving rise to high traffic on the roads is that the residential area is not in sound relationship with the working area (Banerjee, 1979). There are huge distances between the both. This leads to high traffic during the office hours. Banerjee (1979) has studied the problems of each landuse in Shimla. She noticed another problem of the residential landuse in the city that most of the government residences were outdated. They were designed to satisfy the need and way of living of high British officials but later they
proved to be misfit for the Indian way of living. She observed that the city has little land used in recreational activity (Banerjee, 1979). The hospitals are located in the most densely populated area of the city. These are not easily accessible. The population density in the city decreases from the core to the periphery. The irony is that population density figures of the city give a false image (Shandil, 1993). The population density is not uniform everywhere. Some negative areas within the city either do not have any population or have less population. As found by Shandil (1993) such negative areas are mostly in the northern slopes of the city where there is very little sunshine.

Shimla, like other hill capitals of Colombia and Mexico, faces problems due to tourism industry (Kanhere, 2003). Increasing tourists are leading to ecological damage, lack of amenities and services, extreme shortage of accommodation, changing architecture of the city, tall offices and apartments are replacing the traditional architecture, air pollution, employment problems and growth of crime. According to Sankhian (2001) these problems are acting like a negative feedback mechanism. They are in turn leading to a deteriorating state of the city and thus in turn a decrease in the number of tourists coming to the city.

Another cause for the growing number of problems in the city is of aging of the infrastructure. All cities face the problem of aging (Bardo and Hartman, 1982), in which the area of the city deteriorates, streets and buildings become outdated, etc. Similarly Shimla is also facing a similar problem of aging. Mehta (2003) has called Shimla city as ‘an aging queen amongst the hill stations’.