

CHAPTER VIII

Summary, Conclusions and Recommendations

- **Short Summary**
- **Conclusions**
- **Recommendations**

CHAPTER VIII

Summary, Conclusions and Recommendations

8.1 Short Summary

Historically Darjeeling was part of the kingdom of Sikkim. In 1835 the king of Sikkim through a Deed of Grant gave a portion of the Darjeeling hills to the British for establishing a sanatorium. In 1839, Darjeeling got its first Superintendent, Dr. Campbell. The Darjeeling Municipality was established in 1850. Darjeeling was declared a Non-Regulation District till March 1937. After the independence of India in 1947, Darjeeling became a part of the state of West Bengal. A separate district of Darjeeling was established consisting of the hilly towns of Darjeeling, Kurseong, Kalimpong and some parts of the Terai region. The district was placed thereafter in the Presidency Division. The district is at present under the Jalpaiguri Division. The Gorkha-dominated hill areas of the whole Darjeeling district are under the jurisdiction of the Darjeeling Gorkha Autonomous Hill Council since its formation in 1988.

Populations have a birth rate, that is, the number of young produced per unit of population per unit of time, a death rate, that is, the number of deaths per unit of time and a growth rate. The major agent of population growth is births, and the major agent of population loss is deaths. When births exceed deaths, a population increases; and when deaths exceed additions to a population, it decreases. When births equal deaths in a given population, its size remains the same, and it is said to have zero population growth. The rate of population growth is the rate of natural increase combined with the effects of migration. Generally speaking, however, these migration effects on population growth rates are far smaller than the effects of changes in fertility and mortality.

The Darjeeling district offers the most remarkable example of growth of population stemming mainly from immigration from outside. The period of Dr. Arthur D. Campbell's Superintendence from 1839 saw the growth of settlements and of population in the district. The increase of population was greatest in Kalimpong, where the wasteland was rapidly brought under cultivation by new

settlers, chiefly, from Nepal. Already during 1901–11 the population showed a decline in the rate of increase and shrinkage of the volume of immigration. Migration, density of population and patterns of distribution of settlements are important considerations for development. The growth of population is quite high in Darjeeling region and the population became double in between 1931 to 1971 and this rapid growth is partly due to migration from other areas.

During 1901-11 there was a decline in the rate of growth of population. The Bengal Census of 1872 returned the population of the district at 94712 persons (males, 53057; females, 41655) thus classified: - Hindus, 69831; Mohammedans 6248; Buddhists, 1368; Christians, 556; others, 16709. In 1901 the population was 249232 showing an increase of 12 percent, compared with an increase of 43 percent in the previous decade. In 1901 it was found that 61 percent of the population was of Nepalese origin; 27 percent were tribes and scheduled castes; while the Bhutias formed a bare 3 percent and the Tibetans 1 percent of the population. If we take 1911 as the base, the rates of growth of population in Kalimpong and Kurseong towns are higher than that of Darjeeling town. Further, in the post independence period the rate of growth of urban population is lower than the rate of growth of rural population. The (crude) index of growth of urban population in 1961 is 127 and in 1971 it is 133.

Darjeeling and Kurseong towns historically developed as the centres for tea plantation. Kalimpong town was a traditional centre of Indo-Tibetan trade. The population of the urban area of Darjeeling district was subject to considerable seasonal variation. The most favourite summer resort of Eastern India, Darjeeling received large number of visitors in the towns of Darjeeling, Kurseong and Kalimpong.

Development is related in various ways to population change. The early settlers of Darjeeling were mostly agriculturists. Soon, the British established experimental tea plantations; these eventually gave rise to a successful commercial tea industry around 1856. Tea estates developed all around Darjeeling in the second half of the 19th century. During this time immigrants flooded in to work in construction sites, tea gardens, and other agriculture related projects. Although in terms of total trade value, tea ranks much below coffee. Economically tea is an extremely valuable

source of foreign exchange, including the hard currencies, for a number of developing countries, particularly Ceylon and India. It is the second leading item of India's export trade and the tea industry provides employment for about a million workers, besides being the mainstay of the plywood industry.

In 1841, Dr. A. Campbell, the first Superintendent of Darjeeling, brought Chinese tea seeds from Kumaon and planted them in his garden in Darjeeling town. By the end of 1856, tea had been planted in many areas in and around Darjeeling. By 1874, there were 113 tea gardens in Darjeeling district only. Tea cultivation is the great industrial feature of Darjeeling district – conducted almost entirely by means of English capital and under European supervision. The first Indian owned tea established in 1876. India Tea Association formed in 1881. The tea industry was almost confined to the hills of Darjeeling and the sub-mountain tract of the Dwars (or Dooars) in Jalpaiguri. In 1897 there was 186 gardens, with 55822 acres under tea, employing 32897 persons permanently and 14108 persons temporarily and producing nearly 12 million lb. Plantations Labour Act passed in 1951. Tea Act introduced in 1952. The Tea Board of India was setup for the promotion of tea drinking within the country and abroad in 1953.

Tea industry is not only the mainstay of the hill people of Darjeeling but also the backbone of the hill economy. A good number of the tea estates are situated in the two subdivisions, i.e., Darjeeling and Kurseong. By 1905, the tea industry became the staple industry of Darjeeling and about one-third of the entire population depended on the tea estates. The tea industry has been of considerable importance in the national economy of India. India remains the world's largest producer, consumer and exporter of tea.

The tea plantation workers are mainly the immigrants or the descendants of migrants from various parts of the country and even from the neighbouring countries. The tea garden workers in Assam and Dooars are mainly the tribals from Bihar, Orissa and Madhya Pradesh while the entire work force of Darjeeling hills are exclusively of Nepalese origin (Sharma, 1999).

The tea industry influences growth of many industries. The plywood industry owes its origin to the development of the tea industry. Most of the fertilizers used in

tea industry are of Indian manufacture. The tea industry has provided a stimulus to the development of means of communications and transportation and forestry. Most of the roads in the areas producing tea have been constructed by the tea gardens. It may also be noted that the Darjeeling Himalayan Railway service between Siliguri and Darjeeling connecting the plains and the hills were originally started for sending essential supplies like coal, fertilizer, machinery, building materials from Calcutta to Darjeeling via Siliguri and for sending regular supply of tea from the Darjeeling gardens to the Calcutta market.

Apart from promoting balanced regional development, the tea industry also helps in maintaining an ecological balance. A small number of industries in fact provide a better example of sound environmental management than tea. Tea gardens do not pollute air or water. Historically, Darjeeling did not develop without tea industry. The tea industry is passing through great difficulty. The number one problem of the industry is that the consumption of tea is not increasing as fast as the production. As a result, price of tea is declining and so the profitability.

Entry for foreign tourists into the Darjeeling hill areas was closed following the Indo-China war in 1962. Consequently, infrastructure development suffered. This restriction was lifted in 1985 and the number of tourists, particularly the foreign tourists visiting Darjeeling increased markedly. Tourism can be the largest source of income for developing nations. Tourism is an important economic activity in this mountain area generating incomes and employment for the local population. From 1980 to 1987 the number of tourists visiting India increased from 800,000 to 1.1 million. Tourism is widely recognized as the world's largest industry.

In the Kalimpong subdivision land was withheld from development under tea, Government's policy being to reserve that area for forest and ordinary cultivation. Cinchona cultivation was introduced by the government in 1862. At Mongpu the Government Cinchona Plantation is situated. Nowhere in the administrative reports of Darjeeling district Gazetteers or travellers' reports, any mention of the migration pattern of the Nepalese in cinchona plantations of Darjeeling hills, is mentioned. The cinchona Plantation workers had peasant background of Nepal and Sikkim. Rest of the working population was enticed from the local people. The migration into the

Cinchona plantation was family based and thus their socio-economic life was shaped and moulded by the plantation system. The total population of the workers is 6354. Among the plantation workers, there are 586 (47.6 percent) males, 284 females (23.1 percent) and 302 (24.5 percent) child workers. Any emphasis on the tea industry as the most potent factor for growth of population in the district should not minimize the role-played by general agriculture. All the Nepalese immigrants could not obviously be absorbed in the tea plantations because, while the immigration of these people continued, the tea plantation area could not be extended indefinitely due to various ecological and other constraints. Those who could not be absorbed in the tea plantations embraced agriculture by and large, though many among them were engaged in the trans-Himalayan trade between Tibet and the East India Company.

The phenomenal growth of the population since 1872 is due to two main causes, the development of the tea industry and the influx of settlers to exploit the wastelands of the district. The larger part of this population was composed of incoming agriculturists. Considering growth rate rank (1981-91) of the districts of West Bengal, out of 17 Darjeeling district stands in 2nd rank. There has been marked acceleration in urbanization process in the district of Darjeeling. The percentage of agricultural area to total geographical area has increased in Darjeeling district considerably. In Darjeeling district 41.75 percent of the geographical area is under forest. Prior to independence, more than 63 percent of the total areas of Darjeeling district were covered with dense forest. The number of married males is more than that of married females in Darjeeling district. Migration is although as old as human history, the massive population movements of the modern times have wider social, economic, political, demographic and ecological implications. The importance of migration in the region has been overwhelming.

The Darjeeling Himalayan Railway opened in 1881, facilitating rapid communication between the town and the plains below. The purpose of the Darjeeling Himalayan Railway was to reduce the haulage rates of essential commodities (such as rice) to Darjeeling and to improve the economic viability of local industries such as tea production. Earlier, the DHR had put Darjeeling on the world tea map. It was practically aimed at carrying the tea to the plains. The road system of the district as well as the Darjeeling Himalayan Railway system facilitated trade.

From 1861 onwards Darjeeling as a commercial centre attracted attention of mercantile community. With the improvement of communications, great quantities of tea would be exported to Sikkim and Tibet replacing brick tea imported from Lhasa and China. The imports increased greatly during 1860-63. The Imperial Bank opened its Darjeeling branch in September 1922. It also provided funds for tea gardens in the district. A branch of Lloyds Bank was opened in 1935, which also provided funds for tea gardens and general banking facilities. The growth of population also facilitated trade.

Work involves not only actual work but also effective supervision and direction of work. The proportion of population engaged in agricultural sector declines in the long run. The share of the agricultural sector in total product (national income) declines with economic development. The decomposition of the working force over decades may point out the relative shift in the structure of the work force associated with country's economic development. Initially at a static level of the economy, primary sector is most important as compared to secondary and tertiary sector. At a matured stage of economic development the tertiary sector becomes most important engaging the largest working population of the country. The participation rate in the tertiary sector in Darjeeling is much higher than the secondary sector. Though the primary sector in Darjeeling is now the largest sector, the tertiary sector is also growing rapidly and it can be predicted that in the year 2036 the tertiary sector would rise above the primary sector. And that implies a definite shift will be there in occupational structure from primary sector to tertiary sector.

In the town of Darjeeling there were three medical institutions – the Eden Sanatorium for Europeans, the Lowis Jubilee Sanatorium for natives and the Victoria Memorial Dispensary for natives and Europeans. In the interior of the hill region there were charitable dispensaries at Kurseong, Kalimpong, Pankhabari and at Pedong. There was also a small independent medical mission at Sukhia Pokhri close to the Nepalese border. The medical facilities available in three hill subdivisions of Darjeeling district are gradually increasing after the independence. Darjeeling records the highest number of hospitals-beds per unit of population compared to any other district in the State. The male life expectancy rate in Darjeeling in 2001 was 67 and

the female life expectancy rate in this district in 2001 was 71. In the year 1974 the infant mortality rate per thousand live births was 44.6. In the year 1981 the deprivation index of infant survival for the district of Darjeeling was 0.310 and in the year 1991 the deprivation index of infant survival for the district of Darjeeling was 0.760. The male infant mortality rate in 2001 was 39 and the female infant mortality rate in 2001 was 43. The human development index rank of this district was 4. Again the gender development index of the district of Darjeeling was 0.60 and the gender development index rank was 2.

When man caused damage to the basic natural resources necessary for survival, i.e., water, soil, forests, the atmosphere, etc, then it is called Environmental Degradation. Economic activity affects the environment in diverse ways. Steep gradients of the hill slope create ideal conditions for soil wash and rapid depletion of land resources. The immediate effect of pervasive poverty is the depletion of forest and forest resources. Survival needs of the impoverished rural communities often lead to human entry into forests, and illegal felling and timber-smuggling, resulting in rapid decline of forest cover which aggravates soil erosion and other environmental problems. The woodcutter on the hill hardly realizes the effect of felling trees and laying bare the hill slopes. The network mechanism of road system, construction of lodges, cottages etc. has eroded many forest areas in Himalayas which result floods and droughts, flash floods, landslides, failure of hill slopes, climatic changes, soil erosion and sedimentation of lakes. Tourism, especially mass tourism results in adverse impacts, leading to environmental stress. Tourism activities also result in soil erosion, change in plant cover and species diversity. The rapid increase in tourist population has also resulted in the creation of high-density urban areas lacking in aesthetic value. The rapid increase in urban and tourist population and the associated building activities results in landslides nearly every year.

8.2 Conclusions

The consequences of population growth on economic development have attracted the attention of economists ever since *Adam Smith* wrote his *Wealth of Nations*. Economic and demographic development can be said, go hand in hand. Population growth affects economic development in two ways, firstly, by promoting

economic development and secondly, by retarding economic development. Migration of people from one area to another could be important instrument for achieving economic development. Population growth is basically influenced by three sets of factors: (a) the economic rationality of having large or small families, (b) the socio-cultural context influencing preferences for large or small families, and (c) health care systems and nutritional status, which determine human ability to control or cope with biological processes. Long-term trends in population reflect changes in all three sets of factors. The different paces at which these factors change have led to long periods of high population growth or low population growth.

Birth rate and death rate are the decisive factors that influence the size and shape of the population and therefore their importance in population studies is crucial. In addition to these, factors like marriage rate, belief regarding social status and marriage, age of marriage, orthodox customs related to marriage, early marriage and its effects on the health of the mother and the child, child infanticide rate, maternal death, still birth, resistance power, level of medical services, availability of nutritious food, purchasing power of the people, etc. also affect the birth and death rate.

Economics and demography are mutually related to each other. Demography studies regional distribution of the population. The regional distribution of population deeply affects the economic activities and economic factors of the society. In the same way, economics also helps to provide useful information to demography.

The word migration denotes movement of population with the change of residence. Migration is an outcome of economic and political change. Economic growth creates disparities in wealth among countries and among areas within countries. The importance of migration for developing countries cannot be overestimated. Migration is a major factor in economic development and manpower planning. A town will have net immigration of population from other areas during a particular period if its natural rate of population growth (birth rate-death rate) over the same period is less than the census growth rate. In some districts like Jalpaiguri, Darjeeling and Dinajpur, there were wastelands available for cultivation. There was a 'constant' influx of labourers from Nepal for employment in the tea gardens of Darjeeling. Migration from Nepal to take up land for cultivation in Kalimpong

continued in 1879-80, and in 1875-76. Demography views tourism as a form of temporary migration (Jafari, 2000). Except for tea and timber, there is practically no other major industry in the areas (Datta, 2003).

The two most significant contributors to the development of Darjeeling's economy were tourism and the tea industry. The establishment of the first tea plantations on a commercial basis in 1856 at Aloobari and at Lebong created a great demand for plantation labour in the district. From around this time, immigration of plantation labour caused by the opening of tea gardens has been a major factor in the population increase of the district. The tea industry is extremely labour intensive industry. More than a million workers in India are directly employed in the tea plantations and manufacturing industries at the present time. In addition, a large number of people find employment in a range of supplementary industries associated with tea plantations – for example, among others, ply-wood, tea chests, aluminium foil, metal fittings, fertilizers, insecticides, transport, warehousing and business and trade related with the industry. The workers in the tea plantations of Darjeeling district were predominantly Nepalese who came as indentured labour. In 1892 a Tea District Labour Association was formed to undertake recruiting. From 1947 there has been a steady decline in the labour force in tea plantations all over India.

Throughout the world tourism has emerged as a major sociological and economical factor. The turnover figures are indeed tremendous. It will not be an exaggeration to say that tourism has now become the largest industry in the world. Tourism is not only an economic activity of importance to national development, but also an important medium of cultural exchanges among nations of the world.

Rapid population growth is a major cause of environmental degradation and rapid use of resources leads to increased pressure on the use of country's resources with the result that there is air and water pollution, loss of biodiversity and soil degradation. Rapid population growth depletes resources and threatens sustainable development. Thus rapid population growth and environmental degradation go hand in hand.

The environmental problems of a country depend on its stage of development, economic structure, production techniques in use and its environmental policies. Urbanisation, which is the concomitant result of economic development and industrial growth, has led to atmospheric pollution. Increasing vehicular traffic is the most important source of air pollution. Agricultural and industrial development along with urbanization and spread of infrastructure combined with population growth has led to environmental degradation. Environmental degradation ‘harms human health, reduces economic productivity and leads to the loss of amenities.’

Deforestation also causes environmental problems. Deforestation leads to felling of trees and of natural plant growth for setting up industries, and building towns, roads, highways, and dams, etc. this destroys flora and fauna. It leads to localized flooding in hilly and adjoining areas. There is loss of human and animal life. The green landscape changes into factories, residential and commercial buildings. They produce more heat, noise and pollution, which bring environmental degradation and ultimately, result in death of humans and cause of birth defects and genetic mutations.

Another environmental problem is of soil degradation, which is caused by water and wind. Soil erosion in hilly areas is caused by rain and rivers, thereby leading to landslides and floods. Deforestation, overgrazing and step farming in hilly areas further cause soil erosion. All types of soil degradation reduce soil fertility.

Every country is endowed with unique phytogeographical and agro-ecological diversity comprising of a wide variety of agro climate zones and plenty of plant and animal species. The biodiversity is found in forests, grasslands, mountains, wetlands, deserts and marine ecosystems. Economic growth leading to expansion of agriculture, reckless exploitation of forest and mineral wealth and development of projects in biodiversity areas has led to the destruction of habitats. Consequently, there has been extinction of plant, animal and microbiological species and loss of genetic resources.

Rapid population growth leads to environmental damage. Scarcity of land use to rapidly increasing population pushes large number of people to ecologically sensitive areas such as hillsides and tropical forests. It leads to overgrazing and cutting of forests for cultivation leading to severe environmental damage. Moreover,

the pressure of rapid growth of population forces people to obtain more food for themselves and their livestock. As a result, they over-cultivate the semi-arid areas. This leads to desertification over the long run when land stops yielding anything. Besides, rapid population growth leads to the migration of large number to urban areas with industrialization. This results in severe air, water and noise pollution in cities and towns.

Increased tourism in the Himalayan Mountains has led to rapid road construction to the villages closest to the major attraction sites. The road construction activities are not only boon to the hill people but they disturb the hill ecology and environments unless precautions are taken to ensure that these facilities are created without damage to hillsides, slopes, forests fields, grasslands and human settlement. Unplanned and unscientific construction of roads leads to destruction of local fauna and flora and damage to soil and water regimes.

8.3 Recommendations

We may make the following recommendations for the betterment of the present as well as the future generations of the hill economy of Darjeeling.

Firstly, sustainable development should be the most important endeavor for the policy-making agencies. The goal of sustainable development stands for a concept that reconciles the improvement of man's economic and social living conditions with long-term security of the natural basis of life. Stabilizing population is an essential requirement for promoting sustainable development with more equitable distribution and poverty alleviation. The rising population has serious implications on food and water security, health care, rural and urban services and sustainability of ecosystem.

Sustainable development means that development should keep going. It emphasizes the creation of sustainable improvements in the quality of life of all people through increases in real income per capita, improvements in education, health and general quality of life and improvements in quality of natural environmental resources. Thus sustainable development is closely linked to economic development. It is a situation in which economic development does not decrease over time. Sustainable development is development that is everlasting and contributes to the

quality of life through improvements in natural environments. Natural environments, in turn, supply utility to individuals, inputs to the economic process and services that support life.

Accordingly sustainable development has many objectives. Besides increasing economic growth and meeting basic needs, the aim of lifting living standards includes a number of more specific goals such as 'bettering people's health and education opportunities, giving everyone the chance to participate in public life, helping to ensure a clean environment, promoting intergenerational equity.' Thus meeting the needs of the people in the present generation is essential in order to sustain the needs of future generations.

The damaging effects of economic development on environmental degradation can be reduced by judicious choice of economic and environmental policies and environmental investments. Choice between policies and investments should aim at harmonizing economic development with sustainable development.

Public awareness and participation are highly effective to improve environmental conditions. Conducting of formal and informal education programmes relating to environment management and environmental awareness programmes can go a long way in controlling environmental degradation and keeping the environment clean. Public participation can also render costless and useful assistance in afforestation, conservation of wildlife, management of parks, and improvements of sanitation and drainage systems. Use of indigenous institutions and local voluntary organization can render much help in educating the masses about the harmful effects of environmental degradation and the benefits of keeping the environment clean.

There are many international conventions and agreements on environmental protection and conservation, which every country is expected to follow. They include the Montreal Protocol regarding the phasing out of ozone-depleting chemicals. The Basel Convention which relates to the control of the transboundary movement and disposal of hazardous wastes among others, there is the Rio Declaration on Environment and Development and the Agendas 21 which is the operational programme for sustainable development. Then, there are the GATT clauses on Environment. Not all countries are signatories to the various agreements and

conventions. There is threat of trade sanctions against countries that do not honour agreements relating to biodiversity protection or greenhouse gas emissions but many countries do not adhere to them.

To conclude, sustainable development aims at accelerating economic development in order to conserve and enhance the stock of environmental, human and physical capital without making future generations worse off.

Secondly, roads and buildings should be made following the proper legal outline because these three hill subdivisions are situated in a highly earthquake prone area. Landslips cannot entirely be prevented but they can be checked by proper protective measures. Turfing and afforestation of bare slopes, well-directed and efficient drainage, reduction of the steepness of hill slopes by terracing, outward protection of the soil-cap by means of revetments and buttresses, protection of the harder rock outcrops, systematic quarrying in hillsides and control of the erosive action of streams and waterfalls are some of the measures, which give useful protection.

Thirdly, eco-tourism may be an option for the hill economy of Darjeeling. *The International Eco-tourism Society* defines eco-tourism as ‘responsible travel to natural areas that conserves the environment and improves the well being of the local people’. A responsible tourism should leave nothing but the footprints. It would be organized in such a way that the adverse impact on the nature is minimized and welfare of the local people, improved. The main idea is to achieve a *growth with resource enhancement of environment and nature* (GREEN).

Varying interpretations and definitions of eco-tourism currently exist. The eco-tourism umbrella seems to shelter all kinds of outdoor travel-related products-- from beach hotels that happen to be near a rain forest to a national park visit, guided bird watching, or scientist-led Antarctic cruising. It also encompasses adventure expeditions, such as trekking and river rafting, as well as less rigorous trips to culturally exotic or archaeologically important locations.

The general concept of eco-tourism arose when conservationists realized the potential benefits in combining people's interest in nature with their concern for the

environment. Eco-tourism should be consistent with its environment and arise naturally from activities those are natural to the area. The local communities have to impose regulations that limit tourism within the carrying capacity of the area. Tourism should be managed in such a way as to minimize its adverse impact.

Eco-tourism is decentralized in nature and seeks to integrate rural development. Eco-tourism should ideally generate revenue for conservation of natural and cultural wealth and afford cultural exchange among rural and urban population. But its most avowed objective would be to attain a balance between nature and human beings.

The civil society organizations in Darjeeling have been performing active role in the field of education, health, environment and other socio-economic problems confronting the local communities. However, no concerted efforts have been taken so far either by the government or non-government agencies in the field of eco-tourism. A strong cultural connection with the nature and natural resources has to be developed.

In essence, preservation for tomorrow drives most of the discussion about a kinder and gentler tourism. For the future, balances need to be struck between our interest in visiting a place, the carrying capacity of the destination, and the well being of all that live there.