Conclusion

Urbanisation in the study area has become rapid and growth of population has exceeded present manageable limit. Therefore there is dire need of appropriate planning to maintain the fragile hill environment and sustainable development of the area offering tourism and tea production. Various aspects of the study area like geomorphology, population growth and natural hazards have been critically examined, and analysed to reveal the present status and to suggest future possibilities and action plan towards improving the quality of life of the habitat. Quantitative data with simultaneous qualitative information in time series has been collected through maximum effort and behavioural, structural and demographic changes have been studied. The emphasis in the present work is more on demography but other physical and social aspects have also been taken into consideration. The major findings may be summarised as follows:

- Population growth is the primary cause of urbanisation in the study area. Initially, it was Immigration, which helped in rapid population growth, but now it is migration and natural growth of the settlers. The growth of population in Darjiling P.S (excluding Darjiling town) was very high in the initial period but in recent decades it has substantially decreased (-4.69% in 2001). On the other hand, the town shows an unprecedented rate of growth especially in the last decade that is about 46% (2001). This indicates that the poor class daily wage earners are heading towards the town for better employment opportunities. The major habitation area i.e. the town however remains the same for the last 130 years (10.57 sq km). A majority of population of Darjiling P.S is concentrated in Darjiling town (65%). But out of this urban residential populace, 30% comprises of slum population (2001). This indicates that the urban municipal service is not capable of handling this population growth.

- Urbanisation in Darjiling P.S area has been accentuated due to two man power based Industries i.e. Tea and Tourism. The tea Industry has certainly provided employment and development of infrastructural facilities which in
Conclusion

turn has strengthened the economy of the area. At the same time, it has adversely affected the ecological balance by destroying forest cover, anthropogenic pollution through slumps, poor drainage system, and rampant use of toxic chemicals as pesticides and insecticides in the adjacent gardens. Loss of forest cover has brought in rapid and selective soil erosion which has ultimately led to landslides and decrease in tea plantation area. With the dwindling prospect of the tea industry of India and Darjiling in particular in national and especially in international markets in recent years, the alternative emerging area for Darjiling is tourism, which could be the only means of survival of the inhabitants. However, Darjiling should strive to meet international standards in tourism to augment its foreign revenue earnings.

- The tea industry and increasing settlements have changed the local scenario. From about 42% (1930) forest cover, the area has only 17% (2004) dense forest left under government control at present. Deforestation in government forest areas has been rapid since Independence (1947). Individual tea garden forests are no exception. The forest areas in individual gardens have decreased considerably. Forest areas taken over by the government have also become the victim of rapid deforestation. The main reason is lack of interest in forest care and its healthy growth. This has led to encroachment, extensions of plantations, collection of firewood and box planking for making tea chests. Deforestation certainly accentuated the rate and volume of slides and slips to a great extent.

- With rapid growth of population in the Municipality area and lack of any planning (land use plan) the township of Darjiling has grown in the most haphazard manner. As a result, most of the civic amenities like water supply, solid waste disposal system, and liquid waste disposal system are on the verge of collapse. The existing infrastructure was competent to handle a population of maximum ten thousand inhabitants but with the present population of more than a hundred thousand, the civic amenities are grossly inadequate.
Conclusion

- Thus the changes, contrary to sustainable development, are the major threats to the study area. Landslides are now inevitable and a regular feature in the town and in tea gardens due to deforestation, haphazard building construction on steep slopes and excessive use of pesticides and weedicides in neighbouring gardens making the soil acidic. The toxic and worst affected areas are Darjiling town and some of the tea gardens, namely Risheehat, Bannockburn, Phoobserling, Ging, Tukvar, Badamtam and Aloobari. Detailed investigations reveal that 10% of the bushes were destroyed due to slips and slides in the last ten years resulting in sharp fall in crop production.
- Mass deforestation has also resulted in rainfall variability and thus decline in crop production in the tea gardens. Most tea gardens have been suffering from drought conditions for the last five to six years. Thus quality and quantity are both being severely affected.
- Drastic changes in the land use pattern may be noticed in the study area. Forest has given way to tea gardens and settlement while tea garden and settlement areas have given way to contaminated wastelands.

The main recommendations in view of the above study are-

- Raise awareness through publicity and information and to educate all inhabitants about the environmental damages and protection as the only strategy for survival.
- Forbidding poachers from unplanned and illegal deforestation activities.
- Setting up of a satellite township near Ghoom to divert some of the present population of the town and check unequal growth.
- Revitalising the tea industry and opening up of the temporarily abandoned government gardens. This will control the migration of some of the rural people to the town area.
- More emphasis should be given on quality tourism in order to attract foreigners and earn foreign exchange which would boost the economic growth of the area.
Conclusion

- More dependence on alternative energy like mini hydel and wind power station and use of plastic bags for tea packaging so that forest woods are spared. This would prevent people from destroying forest cover.
- Reconstructing and improving the present system of sewerage and solid waste disposal and mandatory introduction of rainwater harvesting system in the township to overcome water supply crisis particularly during dry months.
- Identifying the hazard prone areas; special measures including legislation should be enforced to maintain proper drainage and forbid construction of high-rise buildings on steep slopes in the township. Mass afforestation programmes should be undertaken in tea garden areas, roadsides and other hill slopes. More emphasis on replantation programmes and introduction of bioorganic fertilizers should be encouraged. The stabilization of landslide and management of landslide prone areas must be taken by techno-scientific planning and expertise for immediate mitigation.
- The present land use system should be continuously monitored and reevaluated.
- Encouraging the local people involved in environment protection and restoration.

The Queen of the hill stations i.e. Darjiling town adjuncted to Darjiling P.S area needs immediate socio-technical support for sustainable development without which the very existence of the land and people would be in jeopardy. Politicians, bureaucrats, technologists and over and above the local people and also visitors must join hands to arrest the disastrous exploitation of the land through legal, personal and collective means. The Government (both State and Central) should declare this area as extremely sensitive and vulnerable and sound a red alert.