

# CHAPTER 6

# CONCLUSIONS

### **(6.0) Conclusions:**

In India, the need for environmental and urban planning has reached a critical point and thus implementation of novel approach for planning and development has become mandatory. In line with sustainable development, the reactions to current urban planning and design have led to a new alternative and futuristic approach called Eco-city planning and design which is non-damaging to the environment, brings efficient uses of resources with local skills, turns the negative aspects of technological advances to positive, guides good land use planning with compact forms, uses natural analyses in site selection and planning, combines environmental technologies in terms of renewable energy, explores sustainable transportation and infrastructure, uses geographic information technologies for ecological issues in the settlements. A strategic approach for generating the Eco-city plan of the three selected wards of the city using remote sensing and GIS approach has provided a case study for transforming any city into Eco-city at local scale.

The study has brought out changes that have occurred in Land use of Vadodara city over a period of 129 years. The analysis showed that the authorities have lost total control on the management of the city. Reason being that the land under vegetation had decreased rapidly while development at the periphery has not been properly monitored. The results also revealed that water body had reduced significantly. This suggests that if the trend will continue unchecked, there would be a time when there will be water crisis as already experienced in some parts of the city. The planning authority should endeavor for carrying out regular urban audit on land use changes. This will aid in determining the trend and direction of development in the light of the booming urban population. If

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precautions will not be taken, problems like poor accessibility, sprawl development at the fringe and other environmental problems are imminent. In other words, eco-ward plan proposed for three wards of the city will play a significant role in preventing the implications of dynamic and complex phenomenon of urban land use change.

Suitability is a powerful tool for green space system planning. It can help in finding a balance between different land-uses in the city as well as in formulating policies for UGS management. Suitability analysis carried out using GIS, identified suitable sites for the urban green space development. These sites will play a good ecological role and create elegant landscapes in the Vadodara city. Continued development and refinement of suitability analysis, particularly with GIS technology, helped in proposing suitable green space in the Proposed Eco-ward plan.

Eco-ward plan proposed for three different wards stated that the existing water areas, urban green spaces and other important natural resources should be strictly preserved. If wards are to be transformed in to the eco-wards, a greater awareness of the ecosystem services provided by a urban forest must not only be fostered among practitioners and scientists, but also among political leaders and the public. Urban vegetation cannot be occupied by other land uses. The green space system in the proposed plan is more systematic and decentralized than the existing situation. Very central to this is the need to establish green belts within the city, which would serve as reserve zones to support the urban populace to prevent sprawl taking hold of the functional region. More opportunities should be created to formally and informally educate the public on the roles that urban nature plays in reducing a city's resource and energy use, in improving air and water quality, in decreasing flooding, and in maintaining our physical and psychological well-being. Such education provides the

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foundation for change. This novel approach of Eco-ward development will not only help in improving the environment but will also improve the relationship between people and their natural and social environment which will lead to more sustainable urban growth. This developmental process will benefit the citizens of Vadodara through renewed and effectively managed environment system.

Transforming Vadodara into Eco-city implies a new vision of not only its physical form, but also of the way in which it is governed. It will be necessary to re-think the roles and responsibilities of municipal government, as well as those of other orders of government, to bring it into line with an integrated vision of sustainable development. Citizens must also be oriented to new and more significant forms of participation in urban planning and management. Despite of the progress of Vadodara city, its goal of becoming an eco-city is far from realized.