Chapter 3
Geographical Information System in Eco-Tourism

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ABSTRACT
Interest of the local population is an important consideration for sustainable development of a region. Researchers recently observed in their studies about the benefits the local population get while being involved in eco-tourism. Though many factors are considered to know how locals are benefited by eco-tourism, an interesting factor to be dealt with utmost care and concern is environmental and ecological issues arising out of these growth factors. All the possible technologies of computer application may be used to maximise the end needs of this specialised subject. One such application is GIS (geographical information system), which can be of great help in this concept. The GIS applications are recently used in the management of parks, facilities management, assessment of visual resources, and new areas identification for new tourism development initiatives.

INTRODUCTION
According to the World Tourism Barometer of the United Nations World Tourism Organisation (UNWTO), Foreign Tourist Arrivals or FTAs in the World Tourism Market is growing at an average rate of 4% each year and had reached a massive number of 1.2 billion in the year 2015. In fact, the demand for international tourism
remained robust in 2016 despite many challenges. International tourist arrival grew by 3.9% to reach a total of 1,235 million, and some 46 million more tourists travelled internationally compared to 2015 (www.unwto.org). The phenomenon of tourism has shown astonishing growth in the recent years. The widespread of this domain has turned it into a tool for development by contributing towards employment generation in various sectors, adding to the growth of the economy, as well as providing opportunities to and supporting the development of many MSMEs. Other positive impacts of tourism would include cultural exchange, environmental protection, improvement in the standard of living, creating a better image of the destinations and of course spread of the message of peace and harmony throughout the world.

With more and more places being developed as tourist sites/destinations, proper planning, development and operations have become critical since damage to the environment, community and economy is a price one cannot afford to pay. Thus, with the evolution of ethical travel, concepts such as sustainable tourism, green tourism, responsible tourism, eco-tourism, etc. are gaining momentum. These concepts provide a continual process of improvement and one which applies equally to tourism in cities, resorts, rural and coastal areas, mountains, and protected areas. It can apply to all forms of business and leisure tourism. These forms of tourism aim at achieving the goal of development of a destination without harming the environment or the surrounding. Multiple case studies have showcased the problems faces when tourism is not eco-friendly, which causes severe adverse environmental impacts caused by infrastructure development and measures taken to meet tourists’ demands, such as energy consumed and water resources provided, waste disposal and so on. Therefore, a proper management system in the sector of tourism development is crucial (Ulmasova, Sabrina, 2007)

GIS, being a tool for analysing and mapping of data, serves very effectively for tourism planners to predict various scenarios, trace the dynamics, and make appropriate decisions in tourism planning and implementation. It plays an important role in assessing the proper land use for tourism development, and also helps the stakeholders in use of spatial decision support systems in the tourism business.

What distinguishes GIS from other information systems are their abilities to represent, storing, managing, analysing, and visualising spatial and non-spatial data in an integrated environment. GIS, as spatial information systems, have found many possible applications in various fields, including business. It can also be a valuable tool for investigating specific questions that pertain to tourism development including location, the condition of the area, trends and changes, routeing to and through the site, and patterns associated with resource use. (Dye, Andrew, 2007)
Geospatio-Temporal Semantic Web for Cultural Heritage
Tomi Kauppinen, Panu Paakkarinen, Eetu Mäkela, Heini Kuitinen, Jari Väätäinen
and Eero Hyvönen (2011). Digital Culture and E-Tourism: Technologies, Applications
and Management Approaches  (pp. 48-64).
www.igi-global.com/chapter/geospatio-temporal-semantic-web-
cultural/49619?camid=4v1a