CHAPTER - I
INTRODUCTION
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1.1 Introduction

Tourism has been one of the fastest growing industries since it was formally recognized at the global level in the 18th Century (Mitra and Chattopadhya, 2003). The advent of mass tourism in the second half of the 20th Century faced direct protest and criticisms by the rise of environmental movement across the world. With the increasing scale of tourism activities in the natural areas, the environmental conditions at some stage could not absorb tourism development and increased the adverse impacts on the functioning of ecosystem caused by the tourism development (Ross and Fennell, 2003). It is no doubt that the growth and development of tourism industry has been causing positive and negative impacts at the tourist destinations ever since it was considered as a means for economic development. Nevertheless, the positive impacts of tourism industry provide the opportunity for income, employment, regional development, cultural understanding between host and guest, etc, whereas the negative the impacts create various ecological and environmental hazard and socio-cultural erosion. Besides the unavoidable adverse impacts, tourism also enhances the protection and transmission of cultural and historical traditions, thereby contributing to the conservation and sustainable management of natural resources, the protection of local heritage and a revival of indigenous cultures, cultural arts and crafts. (http://www.gawler.sa.gov.au, 2010).

Thus, carrying capacity of the tourist destinations must take into account while dealing with the mass tourism activities. Further, community participation is fundamentally imperative when the issue of sustainable development is debated and discussed in theory and practice. And, nature-based tourism is one of the forms of
alternative tourism, which is contrary to the mass tourism. Many studies have also described the nature-based tourism as one of the forms of ecotourism that embraces the nature and culture for visitor satisfaction and preservation of the priceless cultural objects and pristine beauty with active community participation. When the demand for nature-based tourism destinations is growing at the global level and the western countries have taken several conscious and punitive approaches to preserve the originality of nature-based tourism. Ooty, as an enchanting hill station with all qualities to be a nature-based tourism, seems to be afflicted with the mass tourism activities. With this backdrop, the study is an attempt to present the findings of qualitative and quantitative data analysis collected from the primary and secondary sources to analyze and interpret critically on the construct of Carrying Capacity, Community Participation and Sustainable Tourism.

Numerous empirical studies have been carried out to find the well-defined and well-accepted remedies to the perennial and chronic issues of maintaining carrying capacity and ensuring wholehearted and unconditional community participation. These two paradigms have formed the core dimensions of the study to analyze the need for sustainable nature-based tourism in Ooty.

1.2. Conceptual Overview of Carrying Capacity

The evolution of the concept of carrying capacity was evident in the research before the term carrying capacity was officially coined. William Godwin, who calculated the number of humans that the world could support in the future, followed the first-ever carrying capacity calculation method in 1820. At the same time, Zimmerer (1994) asserted that the concept was first established in laboratory experiments with cultured microorganisms during the 19th Century. However, the
term “Carrying Capacity” was officially recorded in the US Secretary of State in 1845. Previously, it was used to measure for “poundage” then it was replaced by the “tonnage” measurement of shipping industry.

In 1870, carrying capacity was first applied to living organism and natural system; later in 1870, Willam applied the carrying capacity concept in rivers and the winds for hunting practices of natives’ people of Santo Domigo. He found that carrying capacity measurement was about how much meat the natives’ pack could carry back from the mountain at the end of season. In 1887, a study incorporated in the Charles is related to bees and pollen of specific flowers. Later a Corpusclum was fastened to every available process and the carrying capacity of lag was indefinitely increased during the study. McCool and Lime, (2001) have given one of the earliest studies of the evolution of Appraisal and Application of carrying capacity in the recreational tourism sites during the 18th Century. Nathan (2007) has mentioned about the usage of carrying capacity calculation for various subjects, such as Wildlife Management, Chemistry, Medicine, Economics, Engineering and Population Biology.

According to Coccossia et al, (2001) the numbers of tourists per unit of time or density of tourist spot are important factors for tourism development at a particular tourism spot. Further, it indicates that carrying capacity is one of the authoritative methods for calculating the physical capacity of places. Even though, debates and discussions are taking place to find the methodical solution to deal with the capacity limitations from the scientific point of view, more studies are suggested to evolve the well-tested scientific formula for carrying capacity calculation.

Getz (1987) has identified six different approaches of determining the carrying capacity in order to tactfully tackle the problem. These approaches include tangible
resource limits, tolerance by the host population, visitor satisfaction, excessive rate of growth of change, cost benefit based on the capacity-based evaluation, capacity-based system approach and objectively assessed policy for the planning and decision making. Further, Management by Objective (MBO) is a well-defined approach that embraces the Visitor Impact Management (VIM), Limits to Acceptable Change (LAC) and Resource Protection Frameworks (RPF) of tourism carrying capacity.

In 1997, the UNWTO (United Nations World Tourism Organization) defines the concept of carrying capacity that is as follows; “the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic and socio-cultural environment and an unacceptable decrease in the quality of the visitors’ satisfaction” (cited in PAP/RAC 1997, p. 5). Hunter, (1995) distinguished four different types of Carrying Capacity. Physical Carrying Capacity (PCC) is the limit of a site beyond which wear and tear starts taking place or environmental problems arise. Psychological (Or Perceptual) Carrying Capacity (PCC) is the lowest degree of enjoyment that tourists are prepared to accept before they start seeking alternative destinations. Social Carrying Capacity (SCC) is the level of tolerance of the host population for the presence of tourists and their behaviours in the destination area and/or the degree of crowding users (tourists) are prepared to accept by others (other tourists). Economic Carrying Capacity (ECC) is the ability to absorb tourism activities without displacing or disrupting desirable local economic activities.

Bezbaruah, (1999) linked the relationship of carrying capacity with ecological, socio-cultural impact and visitor experience. However, the existing relationship
cannot always be quantified adequately, but an understanding of the same can help maintain the carrying capacity better. Negi and Manoher, (2004) emphasized on the awareness for the carrying capacity, that is essentially important for the tourism industry in order to plan for maintaining sustainable tourism. McCool and Lime, (2001) insisted for carrying capacity as a part of sustainable management of tourism development. Gunn and Var, (2002) dwelled on the design and management of tourism destinations to guide the visitors in order to reduce the damage of environment without manipulating the design. They suggested that visitors ultimately would get educated and experienced to be conscious and cautious towards the environment and ecology.

Carrying capacity can be effectively managed and maintained by the creation of various zones at the tourist destinations. Zoning the national and public park is one of the key planning and management tools for ensuring the carrying capacity management. Zones are established on the basis of natural resources and their needs for protection and capacity to absorb recreational involvement. Zones are meant for special preservation of wilderness, natural environment, and outdoor recreation and park services. Rollins, (1993) illustrated, however, that zoning is primarily based on natural resource and does not define the types or levels of recreational opportunities that can occur within the regions of the park.

Nelson, (1991) suggested that there are 11 different types of zones to manage the carrying capacity for conservation management. These zones are as follows: Category I- scientific reserve/ strict nature reserve, Category II- national park, Category III - national monument/ natural landmark, Category IV- Nature conservation reserve / managed nature reserve/ wildlife sanctuary, Category V -
protected landscape or seascape, Category VI - resource reserve (interim conservation unit), Category VII - natural biotic area/anthropological reserve, Category VIII - multiple use management area/managed resource area, Category IX - Biosphere reserve, Category X - World heritage site and Category XI - Wetlands of International Importance.

Thus, carrying capacity is a burning issue reflecting upon the management of natural resources for sustainable tourism development in hill stations. Zoning the destinations can provide ways and means to measure the PCC that leads to making perceptual, economic, social and economic carrying capacity. Hence, the concept of carrying capacity is no longer confined to the academic discussions and it is now an integral part of planning and development for long-term tourism growth.

1.3. Community Participation

The word ‘community’ has been used in combined sense to represent a group of citizens in a given geographical location. Godde, (1998) defines that community is based on “shared profession, religion, geographical location and interest in tourism” or on “the interactions and relationships between the many groups”. He explained that “Community-Based Tourism” (CBT) could be tourism de-facto planned and managed by a group of individuals/households comprising the community as a communal enterprise. It could also be managed by a private entrepreneur whose activity or agenda is set by community for which they are accountable to it.

Keshav, (2005) recommended and distinguished two types of community development namely “general and ad-hoc”. The general community development programmes are mostly social in nature and have a long-term perspective, whereas the ad-hoc type of programmes is problem specific and have a short-term perspective.
Murphy (1985) viewed that inputs from the respective community groups could provide a balance to the sustainable tourism objectives of business sector and would possibly encourage greater variation and local flavor in the future projects, while Simmons (1994) contended that residents of destination areas are seen increasingly as the nucleus of the tourism product. Against this, Mowforth and Munt (1998) described the drive for local participation as a “general fashion”, Further it suits the western sensibilities and is politically expedient to know about the local participation in their own future. It is self-deterministic in nature even when the end result may be indistinct from an externally run tourism development.

Keogh, (1990) stressed that negative impact on local community can be minimized and Ap, (1992) accentuated that local economies may be revitalized. Wearing, (2001) described that the success of sustainable nature-based tourism (ecotourism) can be achieved efficiently if community members are involved in the planning process from the beginning. Further, likelihood of conflict and misinformation can be reduced largely if local community members are actively involved in ecotourism planning. Gill, (2004) suggested that planning should be done with the help of local community rather than involving others to design plan for ecotourism development.

Robinson, (1999) discussed about teamwork, partnership and co-management with local community and culture as part of the wider sustainable development agenda that encourages cultural democracy as a legitimate policy goal in itself. Community Based Enterprises (CBEs) often take the form of a structural collaboration in which members of the community hold key roles in providing
accommodation, food, crafts, transportation and guide service. Thus, community participation functions as an early warning system and helps managers avoid or plan for decisions that would otherwise cause conflict with the local population.

Dogan, (1989) recommended that there are five stages of strategies for adjustment to tourism by using the residents’ model. It includes resistance, retreatism, periphery protection, revival and implementation and Butlers’ Destination Life Cycle Model (DLCD) for the residents to get adjusted with the tourism. Doxey, (1975) found four stages of the behaviour of host community members near the destinations. The attitude of local community in the first stage is ‘euphoric’ and they welcome the guest without having any prejudice about the impact. The same community expresses ‘enmity’ very badly to the tourist and tourism. This change of attitude occurs when community considers tourism is a destroyer of socio-cultural milieu. It so happens that the influx of tourists and the quantum of development make the tourist destination ‘unsustainable’. The local community attitudes have been elucidated more in the Dogan’s model and Butler’s model. There is a fundamental change in the attitudes of community members from the first stage to the last stage in those models.

Marien and Pizam, (1997) suggested that sustainable tourism cannot be successfully implemented without the straight support and involvement of those who are affected by it. Hence, evaluating a community’s sensitivity to tourism development is the first step in planning for continuous tourism development. Bramwell and Sharman (1999) suggested that a “stakeholder–driven approach” could help avoid conflicts that are more politically legitimate to improve the coordination of policies by promoting consideration of the wide-ranging effects of tourism.
Thus, it is understood from the conceptual background of community participation that the role of community is paramount in striking a balance in tourism development. Further, community plays a critical role in preserving the natural and cultural resources and extending their cooperation for sustainable tourism development.

1.4. Carrying Capacity and Community Participation for Sustainable Nature-Based Tourism

Carrying capacity and Community Participation are two different concepts in the contemporary tourism research when the issue of sustainable development is embedded until the last decade. Nonetheless, alternative tourism, carrying capacity and community participation are interrelated and inseparable in the 21st Century (Soleimanpour, 2005) when the objectives are set for achieving sustainable tourism development. The nature-based tourism is one of the lead forms of alternative tourism, that faces perpetual problems from the local community and visitors when the former is discontented with the socio-economic benefits and the later is dissatisfied with the congestion, pollution and crimes. Further, it is a daunting challenge before the planners and policymakers to deal with the burning problems like environmental degradation, air, noise and radioactive pollution, carbon emission, green house effect, deforestation, contamination of river, lake and sea waters, vanishing polar ice and global warming (Narasimmaraj & Parida, 2009). Hence, it is the need of the hour to reduce mass tourism activity and its ill-effects on the natural environment. This particular research work builds argument that carrying capacity and community participation are two important perspectives to study about the management of nature-based tourism resources when Ooty has grown into a mass tourism destination.
Ap (1990) focused on the Social Exchange Theory that has emerged as a dominant paradigm to shape the understanding of community. This theory concentrates on the extent to which residents receive something from tourism when it is recognized as an industry. Further, it explains about the way that people can be adaptable to the inherent power imbalances of development. In general, local communities seldom follow the sustainable practices in any part of the world since the livelihood of the local community is entangled with the availability of local resources. If there does not exist the active local participation, achieving sustainable nature-based tourism will become impossible.

Tourism is one of the world’s fastest growing industries and the largest income generators for emerging countries like India. Yet, the vast superstructure and resource needs of tourism such as water consumption, waste generation and energy use can have tremendous negative impacts upon local community and the environment. If the optimal utilization practices are not followed or managed, local community would suffer of the scarcity natural resources and consequently, the particular destination would lose the competitive advantage due to the lack of minimum of resources to meet the demand of tourism industry. This study aims at studying the relationship between carrying capacity and community participation with special reference to the nature-based tourism in the hill and mountain ecosystem.

The Niligiri Biosphere Reserves, established in 1886 and recognized by the UNESCO as the natural heritage site, is one of the first Biospheres reserves in India. The protected site is an integral part of the Western Ghats in India. It is a biodiversity hotspot and is the home to the rarest amphibian species in Asia (Shanker, 1997). The
Nilgiris is one of the oldest mountains and the biosphere reserve with 3,300 species of flowering plants. Of these, 132 plants are endemic. Apart from these natural attractions, other man-made attractions have been attracting both domestic and foreign tourists since the British Administration brought it to the limelight during the colonial rule. This has resulted in more tourist arrivals to Nilgiri, especially at Udhagamandalam.

Environmental degradation induced many researchers worldwide to carry out empirical research work about the negative effects of tourism development. Majority of the studies have illustrated that more negative impacts of tourism and its recreational activities on species and ecosystems take place due to the infrastructure and building construction. Nevertheless, the nature-based tourism needs minimum infrastructure and it needs to be promoted in a responsible manner. The current practices of tourism in the Nilgiris region do not seem to adhere to the environmental norms to protect it from the massive exploitation of natural resources for meeting the developmental needs. At the same time, local people, who are dependent on these resources, may face acute shortage of natural resources in the future. Hence, tourism, as it is one of the branches of nature-based tourism, does not obey the existing rules and regulations leading to affect sustenance of the local people.

In general, the scope of the nature-based tourism includes the forests, hills, mountains, coasts, backwaters, mangroves and islands. The profit maximization objective of tourism service providers and establishments of accommodation units knowingly or unknowingly tend to hamper the ecological system at various destinations. Natural resources are vital tourist attractions globally and many such sites undoubtedly exceed the limit of carrying capacity, thus causing the direct
negative impacts on the natural resources of the destinations to the maximum possible extent. Hence, the surroundings tourism areas are the direct victims of the uncontrolled, unsustainable and unexpected tourism growth.

As a result, this thesis puts forth two important paradigms such as the carrying capacity and community participation for sustainable nature-based tourism in an ecologically fragile destination like Ooty. It presents the conflicts of need for nature-based tourism development and preservation of ecological, social and cultural resources and economic benefits of local community.

1.5. Statement of the Problem

Ooty, the famous hill station known for its natural scenic beauty, has not been exempted from the ruins of excess tourism growth for the last two decades. Being a famous destination in southern part of India, this destination has been attracting hundred thousands of tourists from all corners of the world. Moreover, infrastructures required by the visitors have been built to make their sojourn more comfortable and pleasurable. In fact, visitors are attracted with the serenity of the hill stations and with the facilities and amenities. As a result, entrepreneurs have found plenty of business opportunity in investing in tourism business with the sole objective of making profit at the cost of the environment and ecology. More particularly, negative impacts of tourism are related to the excess carrying capacity limit, thus creating permanent loss to the natural habitats. Therefore, sustainable tourism development is accepted globally as a befitting instrument to offset negative impacts as a result of the growth of mass tourism. In this backdrop, this research is intended to focus on the nature-based tourism in Ooty and its direct impact on the ecology and environment.
The concept of nature-based tourism has gained importance since 1980s. After the concept of sustainable development was deliberated at the Stockholm Declaration in 1972. The paradigm of sustainable tourism is universally accepted to help protect all forms of tourism and alternative forms of tourism, especially nature-based tourism. Moreover, nature-based tourism within two-and-a-half decades accounted for one-third tourism market in the world.

Kreg et al, (1998) reported that ecotourism/nature tourism was growing globally three times faster than the tourism industry as a whole. More specifically, nature tourism is growing at 10 per cent to 12 per cent per annum in the international market. It is more of eco-friendly in nature and respects indigenous culture by providing local employment opportunity and preservation and conservation of the natural environment.

Therefore, majority of the natural destinations have adopted the well-being of local people and the destination. With this backdrop, Ooty, the Queen of Hill Stations, has unique attraction, rich biodiversity and natural beauty. Ooty has been receiving on an average about 2.5 million tourists annually. An average 20,000 to 25,000 visitors throng to Ooty everyday (Venugopal, 2001). Therefore, the uncontrollable tourist arrivals and the entries of vehicles have been the direct threats to the sustainable nature-based tourism. If this impact prevails for longer period time, Ooty will witness devastating look and it will become the most hazardous site. Thus, the need-of-the-hour is to control and regulate the inflow of tourists by embracing a form of alternative tourism. The present study is taken up with the primary attempt of analyzing the carrying capacity and community participation for sustainable nature-
based tourism with a well-defined model for sustaining the pristine nature-based tourism.

Nature-based tourism is one of the emerging tourism attractions and it provides socio-economic and cultural benefits to the local people. Ooty is not an exception in view of the multifarious linkages between tourism and its socio-economic development. The Government of Tamil Nadu has underscored the development of nature-based tourism (ecotourism) in Ooty to support the socio-economic development. The fragile forest and rich biodiversity of Ooty needs to be preserved for the future generation without causing further damage. Studies on the tourism development in Ooty are very rare and mostly sketchy in nature. The first problem is non-availability of factual data supporting the contributions of tourism to the socio-economic development of Ooty.

Some studies have highlighted the magnitude of growth and development of tourism in Ooty, while other studies have outlined the natural forest of Nilgiris along with the soil condition and deforestation in Nilgiris. Many organizations and NGOs have studied biodiversity, flora and fauna, and some other studied about the indigenous people and their cultures. Thus, few researchers have studied about the geographical perspectives of Nilgiris. In this light, the existing literature clearly shows the inadequacy of empirical studies in the area of tourism and its impacts on the ecology, environment and socio-economic development. More specifically, a comprehensive analysis of the impact of growing mass tourism development has been undertaken.

Even though, tourism is traditionally one of the revenue-making industries in Ooty and the extent of utilization of natural environment and its contribution to local
economic development, employment opportunities and income generation is an integral part of the tourism development. Hence, there is a need for assessing natural resource utilization for tourism industry and local community members through this seminal research. This study attempts to fill this void by exploring the important issues pertaining to the growth of mass tourism development and to give the solution for managing the negative impacts of mass tourism through the implementation of the sustainable nature-based tourism in Ooty.

1.6. Rationale of the Study

Substantial amount of studies were conducted from the perspective of the impact analysis of mass tourism. However, studies have not focused on the carrying capacity and community participation as the two fundamental problems from the perspective of the nature-based tourism. Majority of studies have revealed the impact of tourism on the ecology and environment from macro perspective. However, carrying capacity as an important indicator for striking a balance between tourism destinations and conservation of environment has not been studied comprehensively. So far, no studies have combined the concept of carrying capacity and community participation as an important tool for sustainable nature-based tourism.

Nevertheless, all the studies conducted so far on Ooty have focused on ecological, environmental and agricultural impact on the economy of the hill station. Hence, those studies have little focused on the contribution of tourism to the socio-economic development in Ooty.
Thus, the current study “Carrying Capacity and Community Participation for Sustainable Nature-Based Tourism – An Empirical Study of Queen of Hill Stations Ooty” has attempted to fill the gap in the theory and practice.

1.7. Scope of the Study

This work represents a maiden attempt on the nature-based tourism in Ooty. It has wider scope than what has been attempted so far. It tries to provide its contribution to the Ooty’s sustainable nature-based tourism, socio-economic and employment opportunities to the local people. It also examines the effectiveness of tourism policy in achieving the well-determined objectives of the government in the tourism. The findings of this study would through light on the existing situation and will help the preservation and conservation of Ooty for future generation. It will also help the tourism planners and policymakers of TTDC (Tamil Nadu Tourism Development Corporation), Forest Department, and HADP (Hill Area Development Programme) in Ooty identify priority areas in their development efforts. The study needs significant policy implications. The scope of the study is well focused on the major destinations such as Avalanche, Cairn Hill, Botanical Garden, Rose Garden, Dodabetta Peak, Glenmorgan, Kamaraj Sagar Dam, Kalhattty Waterfalls, Mini Garden, Ooty Lake & Deer Park, Parsons Valley, and Pykara Dam & Boat house, Pykara Waterfall, Wenlock Downs and Valley View. These places are considered as most attractive tourist spots in Ooty (http://www.tamilnadutourism.org/, 2010). The scope of the study has also included the understandings of tourists, community members and tourism service providers. The present research has made attempt to use an effective scientific research design by considering all identified objectives and pre-estimated scope of the study.
1.8. Major Objectives

After ascertaining the research gaps, this study has set five major objectives to carry out the research work and provide pragmatic solutions for the protection of sustainable environment in Ooty for the future generation. The objective is

- to study the growth and development of tourism and its impacts;
- to find out cause and effect of mass tourism;
- to study the interdependence between tourism development and stakeholders participation;
- to estimate the operation of carrying capacity; and
- to find out workable solution for sustainable nature-based tourism.

1.9. Major Hypotheses

Hypothesis is one of the essential qualities of any good research. It is a specific statement of prediction to draw tentative conclusion to the problems on which studies are carried out. The purpose of the study is to explore some area more thoroughly in order to develop some specific hypotheses or prediction to be tested in the course of the study. A single study may have one or many hypotheses (www.socialresearchmethods.net, 2009). The present study has identified the following hypotheses from the extensive explorative study.

- There are no significant differences of mean ranks across the factors determining the destination attractions.
- There are no significant differences of mean ranks across the factors disturbing the tourists.
- There are no significant differences across the educational qualifications of the respondents (Tourists) when they are influenced by the travel motivations.
• There are no significant differences of mean ranks across the factors determining the civic amenities, assessment of ecological and environmental damage.

• No significant differences exist across three groups of community members on the type of tourism activities carried out in Ooty.

• There is no significant association between the location of village and the magnitude of tourism impacts in their localities.

• No significant association exists between the location of villages and their involvement in environmental conservation at tourism destinations.

• There is no significant association of opinions between male and female tourism service providers on the direct and indirect community participation in the tourism activities.

• There is no significant association between the provision of eco-friendly facilities and the type of tourism establishments involved in delivering services.

• There are no significant differences in opinion among the tourism service providers involved in tourism industry adopting the sustainable tourism plan for the immediate future.
1.10. Research Design

1.10.1 Sources of Data

A wide range of literature was collected from many institutions, libraries, Government Departments, NGOs, and private organizations for thorough understanding of problems and formulation of the research objectives. In the initial stage, much literature survey was done through the secondary data sources. Several research journals, books, periodicals and databases have been referred to trace the evolution, growth and development of nature-based tourism development, principles and practices. All these sources were used to collect information to make clear understanding of the concepts, roles, functions, issues, challenges, problems and prospects of nature-based tourism development.

All the reviews of literature were methodically reviewed to develop a strong theory about the construct of nature-based tourism. To gain more idea and knowledge on the nature-based tourism concepts, in-depth interview study was also conducted with academic experts, government officers, planners, policymakers, tourism service providers and NGOs. The outcomes of the interview were recorded and analyzed systematically. Finally, several variables or indicators pertaining to the carrying capacity and community participation were included in three different sets of questionnaires for tourist, community and tourism service providers. All the questionnaires were administered to elicit responses from these three major stakeholders in Ooty. FIGURE 1.1 illustrates the step-by-step research design for carrying out the research work.
FIGURE 1.1
Step-by-Step Research Design for Carrying Out the Research Work

Stage-1

RESEARCH DESIGN

Exploratory Study (Review of Literature, In-depth Interview, Field Visit,

Descriptive Study (Pre Pilot Survey)

Stage-2

DATA COLLECTION

PRIMARY DATA
Inventory
Interview
Observation
Questionnaire

SECONDARY DATA
Reports
Documents
Official data
Guide books
Other sources

Stage-3

DATA PROCESSING

Analysis

REPORT WRITING

Interpretations of Data

Stage-4

RECOMMENDATIONS

Recommendation for Govt. & Local Community

Recommendation for Future Research
1.10.2. Sample Design

A convenient sampling method was adopted for the collection of data. The primary data have been collected through a well-designed questionnaire from the 450 tourists, 350 local community members and 110 tourism service providers. All these tourist respondents were interviewed at Avalanche, Cairn Hill, Botanical Gardens, Dodabetta Peak, Glenmorgan, Kamaraj Sagar Dam, Kalhatty Waterfalls, Mini Garden, Ooty Lake & Deer Park, Parsons Valley, Pykara Dam & Boat House, Pykara Waterfalls, Rose Garden, Wenlock Downs and Valley View.

From the local community, 350 respondents were selected conveniently. These respondents were stratified in five major categories based on their geographical location of the local people. Those who stayed near Botanical Garden (100), Rose Garden (75), near Boat House (60), near Doddabetta (65) and other tourist spots (50). The number of respondents were selected in proportion to their ratio in the total population.

From the tourism service providers, 110 respondents were chosen on the basis of convenient-cum-judgment sampling. The respondents were classified in three categories such as travel agencies, tour operators and transport providers (35), accommodation operators such as hotels, lodges, guest houses, youth hostels, restaurants, roadside hotels second category (45) and art galleries, souvenir shops and boutiques shops (30). The numbers of respondents selected were in proportion to their ratio in the service. All the service providers were interviewed at their shops, organizations, hotels and restaurants. Finally, the filled-in questionnaire were collected from 410 tourists (91), 320 local community members (89) and 100 tourism service providers(91) and all those questionnaire were retained for coding and
analysis. The filled-in questionnaires were coded in the SPSS 16 datasheet for the final analysis.

1.10.3 Primary Data Collection

With a view to assessing the potential for nature-based tourism in Ooty, primary data were collected from the three important stakeholders. The researcher himself administered the questionnaire and used the scheduled method wherever necessary. Similarly, secondary data were collected to explain the objectives of this study and to help formulate hypotheses. Published journals, books and government reports were also referred to gather necessary data. Various officials from the Department of Tourism, Forest and Horticulture in Ooty and Chennai were approached with a close-ended and open-ended questionnaire with regard to the statement of problem of study. However, major portions of the secondary data were collected mainly from the Tamil Nadu Tourism Development Corporation (TTDC), Hill Area Development Programme (HADP), Department of Economics and Statistics, Department of Forest, Ooty Municipality and Department of Environment & Soil Conservation of the Government of Tamil Nadu.

The secondary data collected from those courses include tourist arrivals, number of hotels, total forest area, protected area, average vehicle entries into town, population census, municipality role in cribbage disposable system, environmental pollution and soil erosion in Ooty.

1.10.4. Questionnaire Design

Three sets of structured questionnaire were tested in pilot study and some of questions which did not evoke any responses were dropped from the questionnaires. The researcher met the respondents in person and collected information in the
scheduled questionnaire. The questions are related to age, education and income, motivation of travel, tourist activities and current problems faced by the tourists. The relationship between nature tourism and tourism was collected by eliciting opinions from the tourists.

To understand the local people perspective, the researcher met the respondents in person and collected information in the scheduled questionnaire. The information pertaining to age, education, income, employment opportunities and present condition of tourism growth, degradation of forest and environment, current carrying capacity problem in Ooty and future plan to the extent of dependency on natural environment and impact of deforestation on the livelihood of people was also collected.

The researcher also approached the tourism service providers in person and collected information in the structured questionnaire from the tourism service providers, such as hotels, travel agencies, tour operators, restaurants, souvenir shops and boutique shops. Tourism service providers, types of the organization, types of services, contribution of tourism services provided to protect the nature environment, role of service providers in tourism growth and development in Ooty were also collected.

1.10.5. Statistical Tools Used

All the collected data were analyzed through statistical techniques with the help of SPSS 16 software package such as mean, standard deviation, factor analysis, Chi-Square test, Anova test, etc.
1.11. Contours of the Thesis

The thesis is divided into five chapters.

**Chapter I** focuses on generally on the introduction about tourism trends, objectives, significance, scope, hypotheses, methodology of the study, organization of chapters and limitations.

**Chapter II** presents a detailed review of literature for defining concept, issues and challenges related to the study.

**Chapter III** provides an overview of Ooty and its attractions and basic facilities such as road, transportation, food stalls, accommodation, parking, rest rooms, shopping malls, and entertainment. This chapter also provides the information on current tourism trends and its impact in Ooty. Further, the exceeding carrying capacity due to mass tourism impact is also analyzed in this chapter.

**Chapter IV** focuses on the primary data analysis. All the output of the primary data were analyzed and interpreted. Further, this chapter is subdivided into three parts namely; analysis of opinions of tourists, community members and services providers.

**Chapter V** provides findings of the study, suggestions to the government and other organizations regarding innovative ideas and the implementation of sustainable nature-based tourism in Ooty without affecting the natural environment. Finally, conclusion and policies for implications are mentioned in this chapter.
1.12 Limitations of the Study

Despite making sincere efforts, the researcher came across some limitations that would have affected the quality of the study. These are the following limitations.

- The researcher collected primary data from the on-site. It was not possible to visit all the places of tourist interest and villages in and around Ooty due to the constraints of time and cost.

- The size of sample is another limitation. The sample size for all three respondents was determined by applying judgment. This has basically been resorted to due to the fact that adequate care was given in the pilot study to trim the unwanted or parsimony variables. However, the size of the sample might not be used for drawing the final findings. There is a limitation of generalization of the study because of the use of convenient sample method.

- Many respondents were hesitant in giving some demographic information like Income, Age, Educational Qualifications, Place of stay, Use of mode of Transport, Use of water and Energy, Designations, etc.

Despite these limitations, the present study shall definitely be useful for the researchers, planners, policymakers and administrators to take guidance from the findings and suggestions along with the model to implement the principles of sustainable nature-based tourism in Ooty.