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The Potential for Ecotourism Opportunities to Reduce Poverty in Yercaud, India

A thesis presented in partial fulfilment of the requirements for
the degree of Master of Environmental Management at Massey
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Abstract

Unsustainable development worldwide, is leading to a variety of environmental, social and economic issues. Economic growth which impacts these three pillars of sustainability, affects the current populations' ability to meet their needs or those of future generations. For many developing countries, tourism is an economic developmental tool that can contribute to their economy. However, unsustainable tourism, such as mass tourism, exacerbates socio-environmental issues and can be contributory factors to poverty and environmental degradation. Additionally, strategies to alleviate poverty and conserve the environment may conflict with each other, reducing their efficacy. These issues can be most pronounced in popular tourist destinations and highlight the need for a win-win solution.

This research investigated the potential for ecotourism in the Yercaud Taluk, India, by identifying human and physical resources - including the natural and cultural features - available for development. It also identified socio-environmental problems to highlight the necessity for a win-win poverty alleviation and conservation strategy. Yercaud is a popular domestic tourist destination receiving large numbers of visitors, further emphasising the need for sustainable tourism and the vital requirement for successful implementation of ecotourism.

A mixed methods approach using surveys, semi-structured interviews, personal observations and an attractions inventory was utilised. Data was captured regarding tourist preferences and destination attractivity factors based on tourist motivations; resident socio-economic data and incidences of poverty based on the presence of certain indicators; the state of the environment; and development requirements for tourist attractions.

Study findings are site-specific, but the framework can be utilised in other tourist destinations. Results revealed that a tourism demand existed for ecotourism and that there are resources available for ecotourism development. However, degradation of natural and cultural resources poses a risk. Most importantly, environmental degradation significantly threatens the continued existence of the Taluk, including its tourism industry. As such, it is recommended that future development is sustainable, preserving biodiversity, the environment and community features.

Keywords: Ecotourism, poverty alleviation, sustainable development, Yercaud, India.

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CHAPTER 1: INTRODUCTION

1.1 Background

Tourism is the fastest growing and largest economic sector worldwide and over the period of 2011-2012, international tourist arrivals reached over 1 billion (UNWTO, 2013). Countries seeking a tool to aid in the development of their economy are therefore looking to tourism, as this industry continues to grow. However, large influxes of tourists can result in negative impacts upon the three pillars of sustainability, namely, environment, society and economy. Mass tourism and its impacts can be observed worldwide and are the worst in popular tourist destinations that have not adequately planned for sustainable development. Damaging the three pillars of sustainability threatens the destination's ability to provide valuable ecosystem functions and services, as well as the potential for continued tourism. Yercaud is a popular tourist destination and has experienced increasing economic growth and tourist interest in the last few decades. Consequently, a greater desire has emerged to develop tourism and this has resulted in increased pressure on ecosystems that, in turn, exacerbate socio-environmental issues in the area.

Ecotourism is a form of tourism that was officially defined in the 1980s. Since then, it has been evolving and current ideal ecotourism practices promote sustainable tourism; tourism which considers "its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (World Tourism Organization, 2005). With destinations facing increasing rates of poverty and degradation of environments, the need for a win-win solution is necessary. As such, ecotourism is a potential solution that could help contribute to poverty alleviation and conservation efforts and help encourage more sustainable development.

1.2 Problem Statement

Yercaud is a popular domestic tourist destination. However unsustainable human activities and practices, both past and present, have negatively impacted the environment resulting in: micro-climatic changes; significant loss of flora and fauna (biodiversity); environmental degradation and poor living conditions for a proportion of the population (Balaguru, John Britto, Nagamurugan, Natarajan, & Soosairaj, 2006; Saravanan & Rao, 2012). Economic activities, including tourism in its current state, are not sustainable and threaten remaining biodiversity.

Previous studies have showed that much of the forest is highly degraded despite its protection status as a reserve forest (Balaguru et al., 2006; Jayakumar, Ramachandran, Bhaskaran, & Heo, 2009). Impoverished residents are in a situation of being unable to improve their situations and may be contributing to its degradation in order to subsist.

Other studies have highlighted that: further research is required into tourism development in Yercaud; economic benefits are not evenly distributed with vulnerable communities seeing little to no benefits from tourism growth; and joint conservation and social development strategies are required (Balaguru et al., 2006; Kadavul & Parthasarathy, 1999; Meganathan, Selvakumar, Prabu, Pandian, & Kumar, 2009; Saravanan & Rao, 2012).

In situations where tourist destinations have unsustainable development, environmental degradation and poverty are common. This case study identifies the need to create an alternative activity that people can participate in and is more environmentally conscious. As a predominantly nature orientated destination, Yercaud has the potential to be a sustainable ecotourist destination which would help to reduce poverty and protect the environment. However, little research has been conducted to contribute towards this goal by assessing the potential for ecotourism, or justifying the need for sustainable development through identifying social and environmental problems.

1.3 Aim of Research

The aim of this research is to investigate whether ecotourism is a feasible 'win-win' solution for aiding vulnerable communities and conservation in the area through identifying demand, supply and resources for development.

1.4 Objectives

1. Identify vulnerable communities and assess their living conditions
2. Identify environmental problems in the area
3. Evaluate existing tourist attractions
4. Identify undeveloped local resources for ecotourism development
5. Determine potential for community involvement in ecotourism
6. Identify current tourist market
7. Determine the potential demand for ecotourism

1.5 Limitations of the Study

Published information regarding the state of the environment of Yercaud Taluk is a limiting factor, consequently personal observations and communications were used in this study. As such, statements about the state of the environment have limited scientific evidence and may not provide a complete background to the condition of biodiversity in the area.

Time and funding limitations meant that questionnaires were conducted during the off-peak tourism season, at major tourist attractions and different accommodation types. The results presented may be biased or limited in the applicability of tourist responses if significant differences exist between tourists visiting patterns. Similarly, the condition of tourist attractions and facilities may not be applicable for the entire year. Some attractions and facilities appeared to be under poor maintenance, but might be better maintained during peak tourism

seasons. Responses may also differ if particular groups of tourists were excluded because they did not frequent the survey locations.

Residential data is subject to bias due to the nature of the situation and sampling method. Villagers may have exaggerated or responded inaccurately to economic questions believing that they could receive financial benefits if they appeared to be struggling. Additionally, they may have feared facing repercussions for activities which are restricted or illegal despite questionnaires remaining anonymous. Resource constraints and accessibility were limiting factors in village selection for administering surveys. It was not feasible to visit villages that were very difficult to reach, due to remoteness or lack of proper roads. Resident results presented may be biased and may not be a representative sample of the target population.

With regards to applying this research to implementing ecotourism, this study instigates part of the examination required to develop ecotourism in the Yercaud Taluk. Attempts to utilise the results and conclusions from this research to implement ecotourism, without further research or proper consideration, risks jeopardising opportunities for genuine conservation and poverty alleviation efforts. Findings are incomplete with regards to all the information required for successful application of authentic ecotourism. To complete the tourism assessment process in Yercaud Taluk, an assessment of the following areas should be included: the supporting infrastructure and services; overall competitiveness of Yercaud; human resource and institutional capacity; and costs and benefits associated with the project.

1.6 Contribution to Knowledge

The Shevaroyan Hills on which Yercaud Taluk is situated are an important biogeographic region with a deficiency in literature concerning its environment, community and economic activities. This study contributes to knowledge surrounding ecotourism; in particular, it focuses on the assessment of the potential for ecotourism at a destination in an Indian setting. Majority of ecotourism cases deal with the efficacy of an ecotourism project or the changes associated with it following its implementation. Examples of the tourism assessment process are not

common in the literature, including the assessment of the feasibility and potential for ecotourism at a destination prior to implementation. This research enriches literature regarding ecotourism as a possible strategy for dual poverty alleviation and conservation. It also analyses current conditions and development that would be required.

1.7 Thesis Outline

Chapter 1: Introduces the research and provides an outline of the problem being researched and covers the research aim, objectives, limitations, contribution to knowledge and outline of the thesis.

Chapter 2: Describes the research site, Yercaud Taluk and highlights key environmental, social and economic aspects of the destination and provides evidence showing the need for investigation into sustainable economic activities in the area.

Chapter 3: Examines relevant literature and covers concepts required for the research. It provides background information about tourism, ecotourism, and poverty alleviation and conservation. Poverty alleviation and conservation strategies are compared and contrasted.

Chapter 4: Outlines the processes and methods completed to carry out the research. The tools used to gather data and analyses are explained.

Chapter 5: Presents results. Data is rendered in the form of descriptive statistics and contingency tables

Chapter 6: Discusses the results over three main categories: issues, supply and demand. These are examined in the research context of: environmental, community and tourism issues; environmental and community-based supply; and current tourism and ecotourism demand.

Chapter 7: Draws conclusions about the feasibility of implementing ecotourism in the Yercaud Taluk and provides recommendations. Details further research required to implement valid ecotourism practices.

CHAPTER 2: RESEARCH SITE

The first chapter outlined the issue facing the case study site and that of tourist destinations around the world. This chapter explores this problem in the context of the case study by describing the research site. A description of the state of the environment, community, and economy is provided based on information gathered from the literature and personal observations. This background highlights tourism features and growing environmental and socioeconomic issues found in the area by also exploring historic accounts. Various issues were apparent during the research period which helped reinforce the necessity for this research.

The chapter is divided into several sub-headings to span information about existing features and characteristics of the area. Subjects covered include: site description, including a national overview; environmental features, such as climate and biodiversity; social components including history and culture; economic activities and their impacts; and tourism features and trends. Insight into the area provides justification for the research and methods implemented. It was also a guide for what key data to pursue, as well as which methods and tools would be best suited for the destination.

2.1 National Setting

India has one of the largest and most diverse economies in the world. However, due to its large population, it is also one of the poorest (“India,” 2013). It is the second most populous country with a July 2013 estimate of 1.2 billion (CIA, 2013). The World Bank uses two poverty lines based on purchasing power parity (PPP) to assess levels of poverty and absolute poverty. PPP is a technique to determine a currency value that would be equivalent to each country’s purchasing power after taking into account the exchange rates between them. Using PPP permits the adoption of an international poverty line, which can be applied to different countries and allows for global comparisons. In 2010, 32.7% of the Indian population lived below the international poverty line of \$1.25 per day (PPP); concurrently 68.7% of the population lived on less than \$2 per day (PPP) (World

Bank, 2013). While there have been improvements in the proportion of people living under \$1.25 a day, the total number has still increased. In 1981, the poverty rate as a ratio of the total population was 60%, which decreased to 42% in 2005 this equated to 421 million and 456 million people, respectively (Mozumder & Tuck, 2008).

Other concerns include the various environmental issues which can be found in the country. Ecological issues that can be seen in the country include deforestation, soil erosion, desertification, air pollution, water pollution, and biodiversity loss (CIA, 2013). India has 614 animal species and 321 plant species listed as critically endangered, endangered or vulnerable in the 2012 IUCN Red List of threatened species (IUCN, 2012). The most vulnerable groups - those suffering from poverty - often heavily depend on the environment to create a livelihood. When environmental health decreases, they are commonly the worst affected as they may be unable to subsist on the land they depend on (Khatri, n.d.). The added impacts of climate change create additional strains for this group (World Bank, 2013).

Tamil Nadu is one of 28 states and is located at the southernmost part of the peninsula. It is the eleventh largest state, with two major geographic features: the Western Ghats' Nilgiri hills (an important biodiversity hotspot in India) and the lower Eastern Ghats (Anonymous, 2003). Socially, it fares better than northern states; human development indicators for this state are comparable to those in developed countries (World Bank, 2011). Furthermore, poverty rates in this state are lower compared to overall rates for the country (17.1% and 29.8% total poverty rates respectively for 2009-2010). 2009-2010 rural-urban ratios for this state are also better compared to overall country performance, with 21.2% and 12.8% of Tamil Nadu's rural and urban population respectively being under the poverty line. These rates are lower than national figures for rural and urban poverty, at 33.8% and 20.9% respectively (Ministry of Finance, 2013). These figures are derived from a poverty line definition based on monthly per capita consumption expenditure (MPCE), which computes national poverty lines at Rs

673 for rural areas and Rs 860 for urban areas. Both these rates are equivalent to less than USD\$0.50 a day (Ministry of Finance, 2013).

2.1.1 Study Site – Yercaud Taluk

The Eastern Ghats run parallel to India’s East Coast and constitute an important biogeographic region, despite being a broken mountain range. It is identified as an area of major plant diversity with a variety of unique floral species (Miller, 2009), and is home to many endangered native flora and fauna; 100 of the 3,000 species of flowering plants found in the area are known to be endemic to the region (Miller, 2009). The Eastern Ghats is made up of several forest vegetation types. Increased economic activities along coastal regions have led to exploitation of these unique forest ecosystems for wood fuel and fodder purposes (Miller, 2009).

Yercaud is one of nine Taluks (an administrative division) located in the Salem District. It is situated on the Servarayan (anglicised as Shevaroy or Shevaroyan) Hills which are found on the lower Eastern Ghats, in northern Tamil Nadu (Saravanan & Rao, 2012). It was, and still is, one of the major hill stations in India (Baker, 2009). Figure 1 shows the location of the Taluk relative to state and national boundaries.

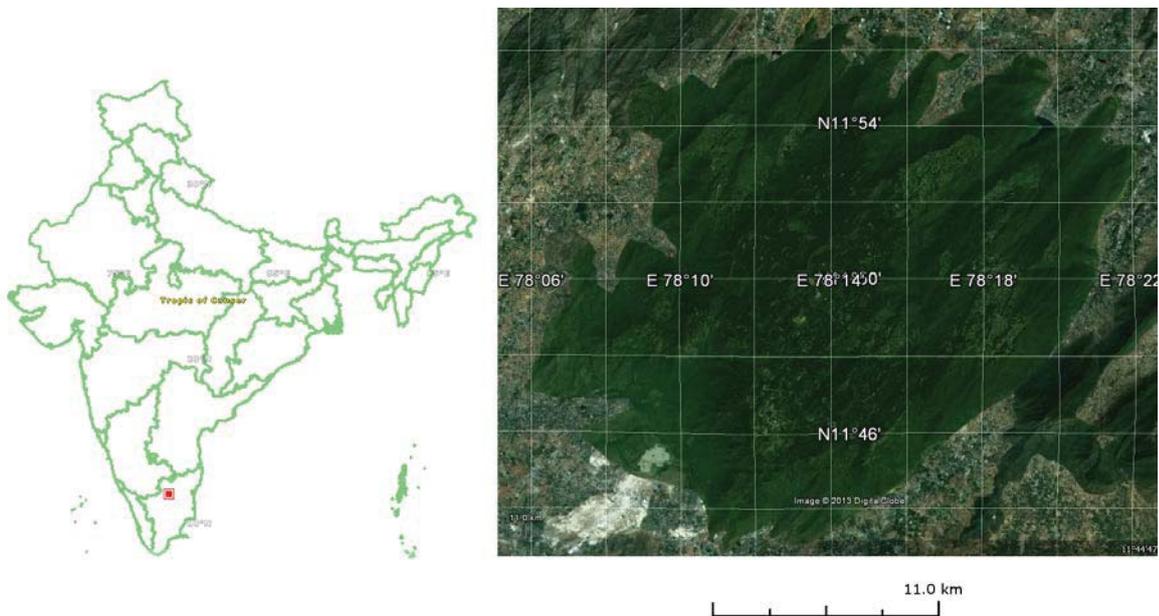


Figure 1: Map showing location of Yercaud Taluk in India and Yercaud Taluk as outlined in green.

The administrative extent of the Taluk is 382.75 km², making it the smallest in the District (Government of India, 2001). However, the Shevaroyan Hills extend further to encompass an area of 469.9 km² (Balaguru et al., 2006). The Taluk is further divided into nine Panchayats. The main town is also known as Yercaud and most allusions to Yercaud refer to the town rather than the whole Taluk. As a Taluk, Yercaud has much to offer - the 2011 census identifies 87 villages, inclusive of the town and 25 villages within the Reserve Forest (Government of India, 2011). Information regarding these villages is hard to find, as previous government records claim they are uninhabited. Discounting these 25 Reserve Forest villages leaves 62 villages, according to the census. On the other hand, other records list between 63–108 villages. However, most residents and records identify 67 villages in the Taluk. During fieldwork, additional villages were visited, which could not be found in other records. Thus, the exact number of villages is difficult to ascertain. A list of Panchayats and their respective villages can be found in Appendix 1. The list is based on census data and personal observations.

2.2 Environment

The Shevaroyan Hills are not a biodiversity hotspot like the Western Ghats, due to their broken geography and drier climate, but locally are an important site. The presence of Reserve Forest (which constitutes a protected area) amongst a drier agricultural landscape adds weight to its local import.

2.2.1 Geography

As a hill station, Yercaud sits at an elevation approximately 1200 m higher than the surrounding plains. Its highest peak is at the Shevaroyan Temple, on Cauvery Peak, at a height of approximately 1623 m above sea level (Google Earth, 2013).

The Sanyasimalai reserve forest is located on the slopes of the Shevaroyan Hills and is counted as part of the Taluk (Balaguru et al., 2006; “Shevaroy Hills,” 2013). The soil type in the area has been classified as ‘red loamy and lateritic’ and is common in tropical rainforests. While deep, these soils are predisposed to leaching and thus have low fertility.

Archaean crystalline rock - such as amphibolite, leptinite, garnetiferous granite and charnockite - make up the area along with bauxite and magnesite mineral resources. Bauxite, magnesite and granite are important resources in the area providing the basis for mining and quarrying in the area. The laterite on the Shevaroy was found to have considerable bauxite stocks, mostly in six hilltops. The flat tops of these hills were at elevations of about 1800 m and were deemed to have the best source of bauxite reserves (Geological Survey (U.S.), 1986).

Yercaud town has two lakes, Big Lake (Emerald Lake) and Small Lake (Ornamental Lake). A historic photograph of Big Lake can be seen in Figure 2 while Figure 3 shows Big Lake in the 1980s-1990s. Figure 4 is a view of the lake in 2012 showing the considerable development that has taken place within the last two to three decades. Both of these are natural lakes in comparison to the artificially created lake at Ooty (Anonymous, 2003), a more popular hill station visited by tourists. However, a 2006 study showed that the Yercaud Lake had high counts of faecal contaminants and were not suitable for drinking or recreational purposes. This can indicate that there are serious water borne problems that can pose a threat to human and animal health (Rajakumar, Velmurugan, Shanthi, Ayyasamy, & Lakshmanaperumalsamy, 2006).



Figure 2: Historic view of Big Lake (Nicholas and Company, 1875).



Figure 3: View of Big Lake in the 80s-90s (Unknown, n.d.).



Figure 4: Recent view of Big Lake (Peter, 2012).

In addition to the two lakes in Yercaud, there are several smaller lakes and bodies of water around the Taluk, which many villagers rely on for water. A second study was conducted to investigate water quality around the Taluk. At the 25 sites sampled around various villages, several exceeded safe fluoride levels as outlined by the World Health Organisation (WHO). 20% of pre-monsoon and 16% post-monsoon season samples indicated poor water quality, and 8% of pre-monsoon season water samples were very poor quality (Florence, Paulraj, & Ramachandramoorthy, 2012). Water quality around the Taluk varies and it is important to note that the most important body of water, tourism-wise, has poor environmental health to the extent that it poses a health risk to people.

2.2.2 Climate

Yercaud has always been popular for its climate as it is more temperate than the surrounding plains. The local tourism guide implies Yercaud's climate is better than other hill stations, such as Ooty and Kodaikanal, because its lower altitude makes it less cold and damp (Rotary Yercaud, n.d.). The summer season starts in March and extends to June, and is the most popular season for tourists to visit, while winter extends from October to February.

Temperature records appear to vary. The official Tamil Nadu Tourism website provides an average temperature of 13 °C to 30 °C with a maximum temperature of 30 °C. A climate profile based on data from the past two decades can be seen in Figure 5. It shows the average high and low temperatures for each month, including maximum and minimum recorded temperatures. As can be seen, the average minimum temperature tends to stay above 20 °C; lower temperatures are recorded as extremes rather than the norm. Historically, however, the weather would remain a maximum average of 23 °C and would fall to a minimum of 16 °C or less (Wilson, 1888) and shows how the climate has changed over the last century.

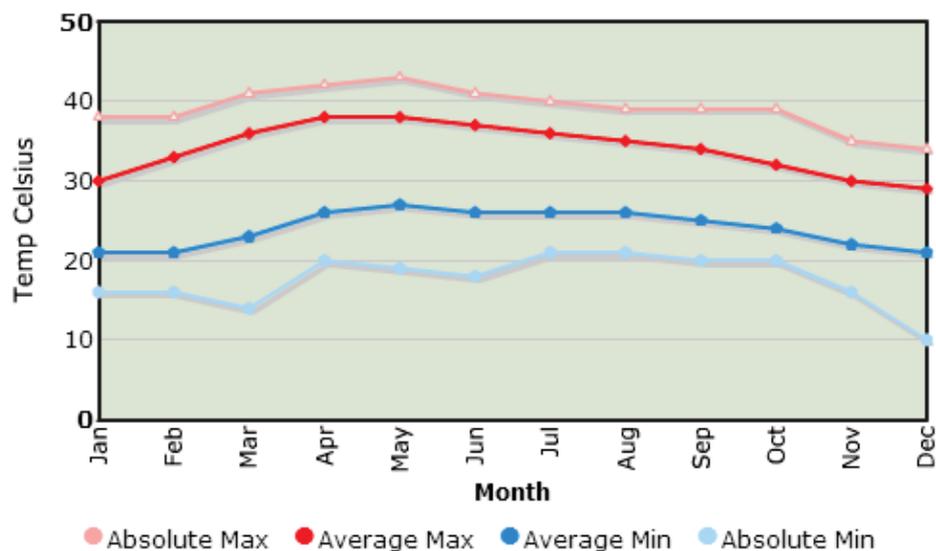


Figure 5: Yercaud temperature averages and extremes based on the last 20 years (Weather2, 2013).

The mean annual rainfall is 1638 mm with 850 mm for the foot hills (Balaguru et al., 2006). This matches with a historical figure that states rainfall averaged about

1650 mm (Wilson, 1888). However, during 2012, rainfall in Yercaud was less than half this amount. There are two monsoons which are responsible for most of the rainfall in Yercaud - the southwest and northeast monsoons - which occur mostly between the months of July to September (Rotary Yercaud, n.d.). However, the Western Ghats block much of the rain-bearing clouds from the South West. As such, the Eastern Ghats, and thus the Shevaroyan Hills, are drier in comparison and not as lush (Anonymous, 2003).

2.2.3 *Flora and Fauna*

Over the last several decades, human activities have greatly diminished the diversity of flora and fauna species present on the hills. A historic account written by Francesca Wilson, a European resident of the Shevaroyan Hills in the late 1800s, highlights the awe she and her companions felt as they viewed the landscapes and forests of these hills. While it does not provide extensive descriptions about the different species found in the area, it does show that species of current interest were prevalent in the area, but have since become locally extinct.

Wilson states that at the time when the hills were first being developed around 1825, they were entirely “covered with deep forest, and were full of wild beasts, tigers, panthers, bison, bears, hyenas, wild pig etc.” (Wilson, 1888, p. 32). Figure 6 shows a leopard that was shot near Small Lake - further proof of the presence of these now-endangered animals in the Shevaroyan Hills.



Figure 6: Leopard shot near Small Lake (Unknown, 1928).

Jackals, porcupines, deer, flying fox (fruit bats) and pythons were other common animals found in these hills, but it is difficult to say whether they are still present. Human activities, degradation of the forest, and lack of understanding mean that local fauna are met with hostility. In addition, the current state of their habitats cannot support the species that were once found in the area.

The main fauna species that can be found on the Shevaroyan Hills can be seen in Table 1. Additionally, there are: approximately 121 species of birds (the complete list can be found in Appendix 3), at least one species of crab, numerous insects and various frog species (one of which is shown in Figure 7). There are no studies on fauna present on these hill ranges, and communications with locals have not provided definitive evidence of the presence of many other species. As such, they have not been mentioned in this work. The choice to exclude these species is based on the fact that many residents believe that they are still present without concrete evidence. In turn, this may cause experts and officials to incorrectly believe that these fauna species are still extant in the area and thus there is no need for management to ensure their continued existence locally.

Table 1: Documented fauna species on the Shevaroyan Hills.

Common Name	Scientific Name	Comment
Rufous horseshoe bat	<i>Rhinolophus rouxii</i>	New phonic type
Gaur, Indian bison	<i>Bos gaurus</i>	Vulnerable listing on IUCN Red List
Madras tree shrew	<i>Anathana ellioti</i>	Not vulnerable, however, are uncommon to see
Indian palm squirrel	<i>Funambulus palmarum</i>	Very common, starting to become pests
Yercaud day gecko	<i>Cnemaspis yercaudensis</i>	New species described in 2000
Beddome's Coral Snake	<i>Calliophis beddomei</i>	Data deficient
Southern Ghats Slender Gecko	<i>Hemiphyllodactylus aurantiacus</i>	Least concern



Figure 7: Unidentified example of one of the species of frog observed in Yercaud.



Figure 8: Unidentified crab species found in Yercaud.

On the other hand, flora species have been more closely studied in this area, with a number of studies investigating the uses of ethnomedicinal plants from the region. Balaguru et al. (2006), identify 322 plant species; Table 2 shows the 24 species that

are endemic, while Table 3 shows the status of the IUCN red-listed plant species found on the Shevaroyan Hills.

Table 2: Endemic flora species and their distribution (Balaguru et al., 2006).

Distribution	Species Name
Local Endemic (endemic to Eastern Ghats)	<i>Crotalaria shevaroyensis</i>
Regional Endemic (endemic to Peninsular India)	<i>Peperomia dindigulensis</i> , <i>Vaccinium neilgherrense</i> <i>Miliusa eriocarpa</i> , <i>Litsea oleoides</i> , <i>Neolitsea scrobiculata</i> , <i>Curcuma neilgherrensis</i> , <i>Eranthemum capense</i> , <i>Dolichandrone arcuata</i>
Indian Endemic (endemic to India)	<i>Neonotonia wightii</i> , <i>Elaeagnus indica</i> , <i>Decalepis hamiltonii</i> , <i>Jasminum trichotomum</i> , <i>Ixora notoniana</i> , <i>Pavetta blanda</i> , <i>Psychotria octosulcata</i> , <i>Randia candolleana</i> , <i>Wendlandia angustifolia</i> , <i>Mallotus stenanthus</i> , <i>Tetrastigma sulcatum</i> , <i>Pamburus missionis</i> , <i>Leucas diffusa</i> , <i>Shorea roxburghii</i> , <i>Chionanthus mala-elengi</i>

Table 3: Status of IUCN red list plant species (Balaguru et al., 2006).

Species Name	Red listed categories
<i>Buchanania lanzan</i>	Lower risk
<i>Celastrus paniculatus</i>	Vulnerable
<i>Cycas circinalis</i>	Threatened
<i>Decalepis hamiltonii</i>	Endangered
<i>Gloriosa superba</i>	Lower risk
<i>Nothopegia colebrookiana</i>	Data Deficient
<i>Pseudarthria viscida</i>	Lower risk
<i>Santalum album</i>	Endangered
<i>Sapindus emarginata</i>	Lower risk/Least concerned
<i>Smilax zeylanica</i>	Vulnerable
<i>Terminalia arjuna</i>	Lower risk
<i>Gardenia gummifera</i>	Endangered
<i>Michelia champaca</i>	Vulnerable
<i>Symplocos cochinchinensis</i>	Lower risk
<i>Rubia cordifolia</i>	Critically endangered
<i>Gnetum edule</i>	Endangered
<i>Naravelia zeylanica</i>	Vulnerable
<i>Hemidesmus indica</i>	Vulnerable
<i>Withania somnifera</i>	Vulnerable
<i>Stephania japonica</i>	Vulnerable
<i>Evolvulus alsinoides</i>	Lower risk
<i>Gymnema sylvestre</i>	Vulnerable
<i>Vernonia arborea</i>	Endangered
<i>Polystachya concreta</i>	Endangered

Of particular interest is the species *Vernonia shevaroyensis*, which is not included on this list. Only two wild specimens have been found on the Shevaroy hills. To date, no other specimens of this species has been found elsewhere, although it has been successfully propagated by the BSI institute in Yercaud for conservation (Rajannan, 1992). However, there exists very little information or research available about this species to ascertain its importance or status.

2.2.4 Forest Vegetation

Wilson (1888) once described the shola - a forest type consisting of dense mixed evergreen and semi-evergreen forest found in mountain regions of southern India - as a beautiful attraction well worth seeing. In particular, Wilson commented that trees were a great feature of the Shevaroyan Hills as there were many of “extraordinary size and beauty”. The Shevaroyan Hills have been found to share some major species in common with the shola of the Western Ghats making it the only hill range on the Eastern Ghats to exhibit this characteristic (Balaguru as cited in Balaguru et al., 2006).

49.5% (232.61 km²) of the Shevaroyan Hills is covered in forest of varying types. However, these forests are isolated in that they occur in very small patches, are not extensive as they once were, and are badly degraded. They are more prone to damage due to the large extent of forest that is in close proximity to human activities, especially harmful activities like mining (Balaguru et al., 2006). Other human activities in the area, such as logging, burning and grazing animals have contributed to forest degradation considerably. Figure 9 shows the vegetation types currently found on the hills. These forest ecosystems are highly fragmented, which can be seen in the vegetation map. Southern Thorn scrub is the most extensive vegetation type - it contributes to 46.2% (107.36 km²) of forest cover, despite being a highly degraded vegetation type (Balaguru et al., 2006). On the other hand, evergreen and semi-evergreen forest (such as Shola) is sparse, at 0.5% and 4.5% of total forest cover respectively (Balaguru et al., 2006)

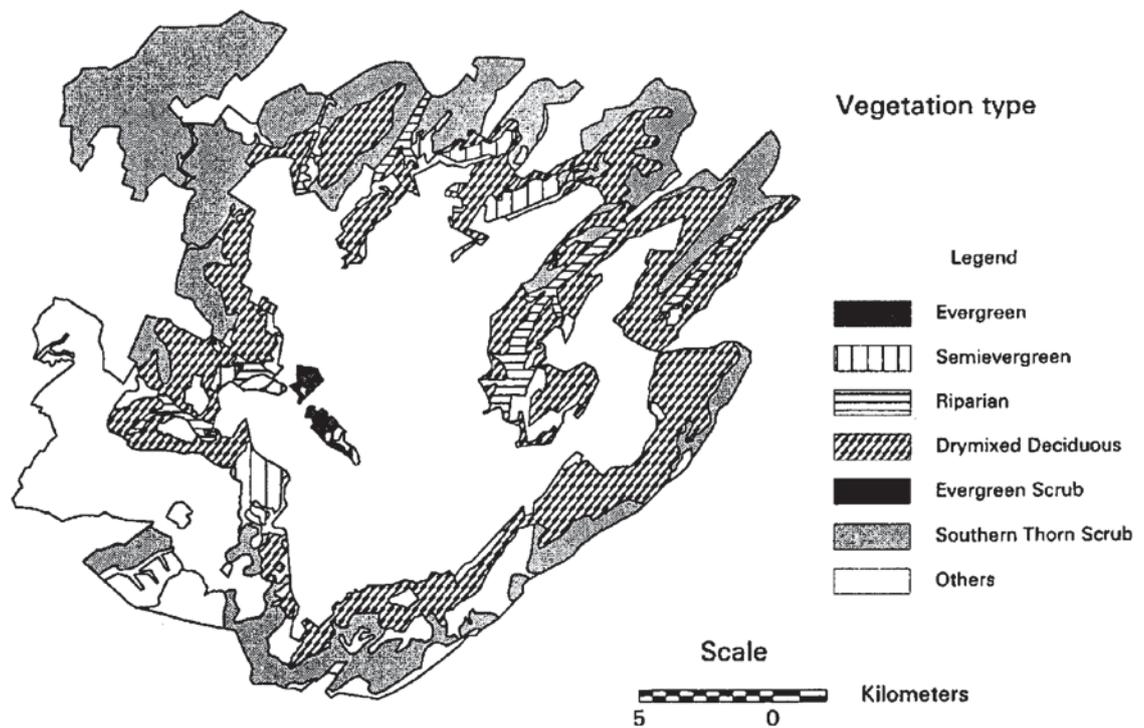


Figure 9: Vegetation types of Shevaroyan Hills (Balaguru et al., 2006).

2.3 Community

According to the 2001 Indian census, the entire population of Yercaud was considered rural. Additionally, in comparison to other local municipalities, it had the highest scheduled tribe (tribes recognised by the government as indigenous to the area) population at 62.7% (Government of India, 2001). In the 2011 census, rural (72.3%) and urban populations (27.7%) were distinguished and the population had risen from 39,080 to 41,832.

Literacy rates are quite low and may be a reflection of the area's rural status or its high tribal population, as only 45.3% of the population was identified as literate in 2001. In 2011, this had risen to 56%, of which 57.5% of literate individuals were male (64.4% of total male population) and 42.5% were females (48.2% of total female population) (Government of India, 2011).

Table 4 shows the literacy rates between rural and urban populations. It can be seen that these figures varied significantly, with 29% of rural individuals being

literate in comparison to 77% for those in urban environments (Government of India, 2011).

The distribution of children aged 0-6 in rural and urban areas can also be seen in Table 4. Children make up a slightly larger proportion of the rural population compared to the urban population, with 11% versus 8.8% of their respective populations. This in itself is not an issue, but the number of rural children leads to the question of whether this large population has adequate access to similar services and goods offered to the urban population.

Table 4: 2011 Yercaud Taluk census data comparing rural and urban populations (Government of India, 2011).

2011	Population			Child population in age group 0-6			Literates		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<i>Total</i>	41832	21047	20785	4331	2214	2117	23585	13562	10023
Rural	30264	15188	15076	3314	1721	1593	14688	8736	5952
Urban	11568	5859	5709	1017	493	524	8897	4826	4071

The tribal people of Yercaud are referred to as Malaiyalis, which designates the fact they are inhabitants of the hills, ‘malai’ meaning ‘hill’ or ‘mountain’(Campbell, 1839). They are not to be confused with Malayalees, speakers of a language of the same name originating from the state of Kerala. Table 5 shows that during the 2001 census, scheduled tribes were the dominant group in Yercaud in comparison to scheduled castes and other castes.

Table 5: 2001 Yercaud Taluk population characteristics (Government of India, 2001).

	Total	Scheduled Caste	Scheduled Tribe	Other Caste
Total	39080	5277	24491	9312
Male	19834	2587	12199	5048
Female	19246	2690	12292	4264

Complete 2001 census data for Yercaud Taluk can be found in Appendix 2.

2.3.1 Culture and History

Wilson (1888) notes that Yercaud was already being visited by Government officials long before the Nilgiris, a hill station on the Western Ghats that was

developed in 1819. Circa 1825, the Collector of the Salem District (the chief administrative and revenue officer) Mr M.D. Cockburn, started to develop the hills. He planted a variety of plants, such as pears, peaches, and coffee (which proved to be a valuable crop to the area), and built the first non-native buildings.

It was around this time that the institution of Hill stations was being developed by British colonists to recreate a piece of England in India, where they could feel at home. Additionally, it provided a cool respite from the heat of the plains and many visited in the belief that it was good for their health (Baker, 2009; Spencer & Thomas, 1948). It grew to become a popular summer resort for Europeans and several bought land to establish houses and estates (Rajannan, 1992; Wilson, 1888).

While European occupation of the area is relatively well documented, the history of Malaiyalis in the area is harder to discern. Thurston (2004) describes the population from the information he gathered in the late 1800s. It was noted that in comparison to the ancient Toda hill tribes of the Nilgiris, the Malaiyalis of the Shevaroyan Hills were recent migrants to the area. They were Tamil-speaking people from the surrounding plains. The primary dissimilarity between the people from the plains and Malaiyalis was the 'kambli' the Malaiyalis wore (see Figure 10) - the kambli being a blanket which was worn only by males in a "triple capacity of great coat, waterproof, and blanket" (Thurston, 2004, p. 153).



Figure 10: Historic photo of a group of Malaiyalis. Males can be seen wearing the kambli draped over their shoulders (Thurston, 2004).



Figure 11: Modern photo of group of Malaiyalis.

However, there is evidence of Neolithic and Iron Age settlements based on the discovery of various implements by Robert Bruce Foote in 1864 (a British geologist and archaeologist with the Geological Survey of India) (Rajes, n.d.; Ramesh, 2013) and there are two tales about how the Malaiyalis migrated to the Shevaroyan Hills. The first is that the tribe belonged to a caste of cultivators (called Vellala) who emigrated from the sacred city of Kanchipuram during the rule of Muhammadan in Southern India. Among them were three brothers who all went to different hill ranges in the Salem district, with the eldest settling in the Shevaroy. Thus, the Shevaroyan Malaiyalis are called the 'Peria' (big) Malaiyalis while the Malaiyali tribes on another hill range are called 'Chinna' (little) Malaiyalis. The alternative story states that Kariraman, a Malaiyali deity, took up a new abode and three of his followers followed him with their families. The three followers, Perianan, Naduvanan and Chinnan (the eldest, the middle man and the youngest), arrived in the Salem district and proceeded to take different routes to their respective hill ranges Periamallai, Nadumallai and Chinnamalai (Thurston, 2004).

2.4 Local Economy

The primary economic activity on these hill ranges is coffee production. The practice was first established in 1820 on the Grange Estate and has been economically important for the area since then (Rotary Yercaud, n.d.; Wilson, 1888). This crop requires a certain amount of shading, and a few plantations have retained native shola for this purpose. Others have instead opted for silver oak, commonly referred to as a 'cash crop', and extensive monocultures of silver oak are a familiar sight (see Figure 12). The multi-tiered method also uses pepper plants. In recent years, however, coffee plantations have not been faring well; there have been cases where plantations have been sold to land developers as rising costs make the practice uneconomical (Rajes, n.d.).



Figure 12: Silver Oak monoculture in Yercaud Asambur (Unknown, n.d.).

The other significant industry in the area is bauxite mining, which started in the 70s. These mining activities should have ceased in 2003 when the mining lease expired, but continued until reserves were reportedly exhausted in 2009. Remaining activities were to be limited to the removal of bauxite waste, and the reclamation and rehabilitation of the mines. However, illegal mining outside of these restrictions was still continuing in late 2011 (Times of India, 2011). Despite claims that mitigating practices would be put in place for reclamation, none were observed at any of the sites. Throughout the whole mining process, the company responsible carried out their activities controversially without environmental consideration, creating a large negative impact on both the environment and people (Special Correspondent, 2011).

Granite is another important mineral resource in the area and personal data collection revealed that quarrying of this resource does exist locally (Sugirtharaj, 2012). There is uncertainty, however, as to the extent of this activity as well as its impact on environment and people. Personal observations showed some villagers employed in the blasting, excavation and chiselling of the granite.

Other economic activities include fishing, agriculture, and rearing livestock. Big Lake has been a fishing spot in the past, however, fishing of late has been scarce; furthermore, it is potentially hazardous as studies have showed that the water quality is very poor. Agriculture and rearing livestock are other important sources of income for many villagers. However, this may not be sufficient to meet needs. Many have sold their small plots of land in order to gain short-term wealth, which allows them to pay off debts and send their children to higher education.



Figure 13: Fishing on Yercaud Lake (Unknown, n.d.).

2.4.1 Infrastructure and Development

There are 75 roads spanning a total of 122.06 km in the Taluk, but it was observed that many of these roads are in poor condition (large potholes, uneven surfaces or untarred), even to key tourist sites such as Kiliyur Falls. They can be difficult to travel on with normal vehicles and can be flooded during the monsoon season. The road to several villages are in similarly poor condition, and in some cases more so.

The number of educational and medical facilities can be seen in Table 6 and Table 7 respectively. From personal observations, there now appears to be more private schools than the numbers given for 2001.

Table 6: Educational Facilities in Yercaud Taluk (Government of India, 2001).

Educational Facilities	Panchayat Based/		Total
	Government Schools	Private Schools	
Primary Schools	30	5	35
Secondary Schools	10	0	10
Higher Secondary Schools	1	2	3
<i>Total</i>	41	7	48

Table 7: Medical Facilities in Yercaud Taluk (Government of India, 2001).

Medical Facilities	
Government Hospitals	1
Government Primary Healthcare Centres	2
Supporting Healthcare Centres	12
<i>Total</i>	15

Table 8 shows the number and type of potable water facilities available in Yercaud. As can be seen, there are a large number of open wells and bore wells. Many are susceptible to pollution and contamination, posing a health risk. There are 73 electric pumps in comparison to the number of potable water facilities. Villagers who use the remaining water sites are forced to manually collect water and carry it back to their homes. Similarly, electric pumps also pose a problem to villagers. There are frequent power cuts during the day, with electricity being available for a short period only. As water cannot be pumped at these times, it is stored. . The use of generators is common in Yercaud. However, generators require fuel and this is an expensive practice. For many this is unlikely to be a viable option.

Table 8: Potable Water Sources in Yercaud Taluk (Government of India, 2001).

Potable Water Facility	Total	Working	Permanently Dried	Temporarily Dried
Open Wells/ Surface Wells	159	95	24	40
Bore Wells	81	62	14	5
Electric Pumps		Total		
Overhead Water tank	35			
Mini overhead water tank	38			
<i>Total</i>	73			

2.5 Tourism

Yercaud has long been established as a summer resort since European colonists first frequented it in the 1800s. Visitors would originally 'go to the hills' as it was a popular activity that was deemed to be restorative for British colonists (Baker, 2009). Now, however, its popularity has shifted towards the domestic market. The main attraction continues to be the climate, landscape and views, offering a cooler contrast to the surrounding drier rocky hills of the plains (Rajannan, 1992).

Yercaud is colloquially known as 'poor man's Ooty', reflecting the fact that compared to its sister town, it is cheaper and more affordable than the more expensive and developed Ooty (Saravanan & Rao, 2012). Saravanan & Rao (2012) state that Yercaud has not had the opportunity to explore its tourism potential to the world. Moreover, despite claims to the contrary, current tourism practices in Yercaud do not adhere to the principles of ecotourism; they neither improve the wellbeing of the local people nor consider the health of the environment (Saravanan & Rao, 2012).

The peak tourist season is March to June, coinciding with the summer months in India. The Summer Festival is held during this time, in the month of May. This festival usually sees a large influx of tourists. Relatives of children boarding at Montfort School (located in Yercaud town), constitute another large regular influx of visitors as relatives of the students are permitted to visit during specific weekends and school events.

The bulk of tourism development is in the main town of Yercaud. There are a large number of hotels/lodges (over 100) in the town and a large number of extensive housing plots found throughout the Taluk. The majority of tourists remain in this area to view the nearby attractions. Subsequently, this is where a large majority of environmental degradation and pollution is evident.

2.5.1 Tourist Attractions

There are various attractions in Yercaud, the majority of them within close vicinity of Yercaud town. Many are natural attractions, but a few are cultural. Examples are listed in Table 9.

Table 9: Tourist attractions found in Yercaud Taluk.

Natural Attractions	Description
Ladies Seat	Historic elevated viewpoint overlooking Salem city
Pagoda Point	Elevated viewpoint overlooking plains with old religious stone pagodas
Big Lake	Lake with boating facilities for recreation
Botanical Survey of India	Botanic gardens house rare and endangered plant species
Rose Garden	Collection of rose varieties
Children's Seat	Elevated viewpoint of Salem city with children's play area
Gents Seat	Elevated viewpoint of Salem city
Lake Park	Small park alongside Big Lake
Anna Park	Small park with a bonsai garden near lake
Deer Park	Children's recreation park with some animals on viewing
Small Lake	Small lake near Montfort school
Kiliyur Falls	Natural waterfall located away from the town centre
Climate	Cooler climate than the surrounding plains

Cultural Attractions	Description
Sri Raja Rajeshwari Temple	Temple dedicated to the Goddess Sri Raja Raheshwari
Shevaroy Temple	Historic underground temple
Sri Chakra Maha Meru Temple	Temple dedicated to Shri Lalitha
The Grange	Historic building built in 1820s

2.6 Summary

The Yercaud Taluk is one of the three major tourist hill stations in Tamil Nadu with tourism trends indicating further growth. Additionally, it constitutes an important biogeographic feature as part of the broken Eastern Ghats mountain range. Increasing development and destructive human activities in the area have greatly reduced biodiversity and contributed to a variety of environmental and socioeconomic issues. Studies in the area regarding tourism, conservation or poverty - while limited - indicate that current activities are unsustainable, providing the opportunity to research a solution to benefit the residents, tourists and the environment.

CHAPTER 3: LITERATURE REVIEW

This chapter aims to provide a background for the research being undertaken by analysing important concepts and definitions from the relevant literature. This promotes a greater understanding about the research themes and highlights the need for this research.

This chapter is split into several sections. The first section defines tourism, looks at the different forms that it takes and considers its impact upon the three pillars of sustainability - society, economy and environment. The second section looks at poverty, comparing and contrasting alleviation strategies to identify the best methods to tackle this issue. The third section looks at conservation, outlines the challenges associated with it, and identifies the best solutions based on the related literature. The fourth section looks at issues that arise between poverty alleviation strategies and conservation strategies, followed by a section which explores win-win solutions for both these issues. The final section defines ecotourism after examining the literature for the most suitable definition to match the research site. This form of tourism's efficacy as a poverty alleviation strategy and as a conservation strategy is investigated. The chapter concludes by looking at ecotourism at a national level.

3.1 Tourism

Tourism is the largest and fastest growing economic sector with international global tourist arrivals increasing 4% over the period of 2011-2012 to reach 1.035 billion 2012 (UNWTO, 2013).

3.1.1 Definition

Jafari's definition engenders a holistic view of tourism and explains it as:

The study of man (the tourist) away from his usual habitat; of the touristic apparatus and networks responding to his various needs; and of the ordinary (where the tourist is coming from) and the non-ordinary (where the tourist goes to) worlds and their dialectic relationships (2003, p. 585)

This definition is helpful as it considers the tourists' interactions with their destination and host community. However, as it refers to the activity of tourists, it does not include the temporal aspect of tourism and it raises the question of how much time a person can spend at a destination to be considered a tourist. The United Nations World Tourism Organisation (UNWTO) defines a tourist as a visitor travelling outside of their usual environment for less than a year (Department of Economic and Social Affairs, 2008); however, this does not include 'day-trippers'. It is also useful to consider the reason for the trip - the UNWTO states that any purpose, whether business, leisure or other personal reasons, would classify a travelling individual as a tourist. The exception would be if they were travelling to be employed by a resident entity at the destination (Department of Economic and Social Affairs, 2008).

As can be seen from these definitions, tourism cannot be fully understood without defining 'tourists' as well. A complete concept thus considers the activity, systems and individuals associated with tourism. For the purposes of this study, tourism will be defined as the activity of individuals interacting with environments outside of their usual locale and the systems associated with these activities. It is limited to individuals travelling to the destination for less than one year for any purpose except for employment at the destination.

3.1.2 Travel-based Tourism Types

Tourism can be categorised into three forms based on the type of travel occurring. These are: domestic tourism and travel, which involves the activities of a resident travelling within their country; inbound tourism and travel, involves travel to a country by a non-resident and their activities within that country as part of their trip; outbound tourism and travel, involves travel outside a resident's country and includes their activities within the other country (Department of Economic and Social Affairs, 2008). As identified in the tourism definition, there are various motivations for the trip - this will often define the activities undertaken by tourists at their destination and thus the form of tourism that they are participating in.

3.1.3 Tourist Classification and Typologies

Over the years, different forms of tourism and knowledge have evolved. This has resulted in a variety of tourist typologies being defined. This variety recognises that tourists are not a homogenous group. As the tourism phenomenon is shaped by the individuals perpetuating it, it is valuable to understand them and the diversity of tourist types. Investigating tourist motivations and values can provide an insight into the different forms of tourism arising and create a better understanding of development.

One of the simplest methods of classifying tourists is to identify the reason for the trip, such as for business, leisure, or visiting friends and family (Jafari, 2003). This is commonly seen in statistical surveys, which often categorise tourists based on such aforementioned reasons. These can provide an insight into trip characteristics and choices that the tourist will make. For example, business travel might be characterised by last minute bookings, with cities as the destination rather than resorts. Furthermore, business tourists are more likely to visit during weekdays and travel during non-business hours such as evenings or early mornings. They are more likely to be the target of associated tourism businesses, as this group is usually educated and wealthy (Jafari, 2003). As can be seen, this simple method of tourist classification can help provide a range of valuable information about tourists and their habits.

Cohen put forward two sets of tourist classifications (as cited in McMinn & Cater, 1998). The first was a four-fold classification consisting of two non-institutionalised typologies - the drifter and the explorer - and two institutionalised typologies: the individual mass tourist and the organised mass tourist. These classifications identify tourist behaviour and the probable subsequent impacts associated with them. However, use in identifying other characteristics, such as tourist movements and values, are limited. Cohen later proposed a new way to classify tourists by learning about their 'centre' (1979). A tourist's 'centre' is based on the individual's feelings about their home country and perceptions. This influences the types of experience that the tourist will pursue.

These experiences are grouped under the following types: recreational, diversionary, experiential, experimental and existential. For example the experiential tourist typology can be applied to a person who feels alienated in their own home country. This individual will therefore seek out different and new cultures to learn about and experience (Cohen, 1979). The classification categories are useful in identifying the types of experiences a tourist may be interested, but their definitions may be obscure or difficult to apply.

Smith (as cited in Jafari, 2003) uses a different approach by using the following factors to classify tourists based on destination interests: ethnic, cultural, historical, environmental and recreational. This approach takes into account what the destination has to offer, linking it with tourist interests. Smith also proposed other typologies; in particular, one typology is useful for determining the level of interaction between the tourist and the host community, and the subsequent changes in behaviour from this interaction. As cited in Jafari (2003), Smith considers the adaptability of the tourist, using the example of how an 'explorer' type tourist would be able to adapt and acclimatise to the host's culture, but a mass tourist would not be able to adjust to the host's lifestyle. Similarly, the host community's behaviour can be influenced through interactions with tourist culture with the level of change being determined by their adaptability.

The role that motivations and destination play in classifying tourists has been highlighted by multiple authors. Acott, Trobe and Howard (1998) note that it is plausible that tourist types have motivations that don't match up with the destination that they're visiting. For example, a business traveller might visit a resort, while an ecotourist might visit a non-ecotourist destination, such as an urban centre. As such, distinguishing tourists in these situations would require an investigation into their values and motivations. Observing behaviours at the destination would offer further clarification, as tourist actions would conform to their values. Furthermore, a single destination can be heterogeneous in the tourists visiting it, giving rise to a combination of typologies specific to the site. This can be seen in studies by McMinn and Cater (1998) and Wickens (2002). Both

destinations have different characteristics and histories and therefore have different types of tourists visiting the area.

These observations support the idea that creating tourist typologies is complicated. The prioritisation of different characteristics can result in different classifications and as such, requires multiple aspects to be considered before tourists are grouped into a typology. Furthermore, the aforementioned typologies should not be used to limit and bias categorisation of tourists by fitting them into the proposed genres. Instead they should be viewed as options which provide methods or criteria that can be used to classify and characterise tourists. However, recent literature on creating and characterising tourists is sparse, which may be attributed to a move toward site-specific studies. Therefore, typologies will not accurately capture the diversity of tourists at the destination without considering the study site.

3.1.4 Tourist Destination

A tourist destination is the geographical unit which the tourist visits. A town, city, village, island or region is not the only type of destination considered and this term can be extended to include self-contained centres or even moving destinations such as cruises (Jafari, 2003). It has been suggested that a tourist destination should be considered as part of a tourist product. While there is debate over this as the boundaries of a tourist product are difficult to define, Smith (1994) states that a common thread creates an ideal tourist product - the experience of tourism. This concept has five layers: the site, facility or equipment; service; hospitality; quality of perceived freedom; and quality of involvement. Tourist destinations are included in this definition and therefore can be subject to similar marketing schemes. One such marketing factor is the destination's perceived image, which has additionally been covered in the push-pull factors that attract or repel a tourist from a destination (Jafari, 2003).

Demand for a tourist destination can be summarised in a variety and combination of push factors (from the tourists' origin) and pull factors (attractivity) from the destination. Push factors can be summarised as the tourist's predisposition to

travel, and a variety of socio-demographic factors have been shown to affect push factors. Additionally, external factors such as the individuals' social circle has been shown to affect choice - for example, tourists visit an area based on a recommendation from friends and family, or because their companions wish to visit specific areas (Um & Crompton, 1990). Pull factors can be characterised by a variety of destination features related to the attractiveness of a destination. Destination attractiveness is determined by several features: attractions, amenities, accessibility, destination image, and cost (Jafari, 2003; Kozak & Rimmington, 1999).

Attractions are primary pull factors and can fall into: natural, built, cultural or social attractions. Destination amenities are not primary tourist motivations for visiting an area, but greatly enhance a tourist's experience by making the stay comfortable and feasible. Lack of amenities might thus prove to be a deterring factor (Jafari, 2003). Amenities include basic infrastructures, accommodation, transportation, catering services, entertainment, shopping facilities and visitor information. The presence of proper amenities contributes to the quality of a destination and therefore can increase the appeal of a destination and its attractions. Accessibility, how easy it is to reach a destination, is determined by transport infrastructure facilities available, such as airports, roads and railways. Tourist destination image - the way a tourist perceives the destination or what they believe and think about it - further influences decisions to visit particular destinations. Costs associated with the destination are one of the major deciding factors of destination choice and include travel costs, accommodation and participation in services and activities available (Formica, 2006). Primary influences for price variations for different destinations are based on seasonality, distance, and development (Jafari, 2003).

3.1.5 Sustainability

The growing tourism industry has facilitated a variety of changes, from improving infrastructures to preserving cultures. However, many forms of tourism are unsustainable, violating the three pillars of sustainability - economic, environment,

and social - outlined by the World Bank's Development Report (Khatri, n.d.; World Bank, 2003). Since the 1980s, the definition of the term sustainability has been applied to development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations General Assembly, 1987, para. 1). This definition covers two key concepts addressed by the World Development Report, which should be applied to tourism. The first of these concepts considers the impoverished, stating that "the essential needs of the world's poor" should be given overriding priority; the second concept states that the environment's ability to meet present and future needs should be limited by the state of technology and social organisation (United Nations General Assembly, 1987, para. 1).

Using these two concepts in conjunction with the three aspects of sustainability provides an outline, which can be used to identify and develop sustainable practices in relation to tourism. Thus in the context of this study, sustainable tourism provides benefits for vulnerable communities (primarily impoverished), either directly, or indirectly, and enhances economic gains, at any scale. It does not create social issues in the process, or damage social customs, nor harm the environment to the extent that it significantly reduces its ability to meet future needs. An additional concept to include, concerns the tourist destination as product, and a sustainable tourist destination is one which has the ability to attract first time visitors, as well as repeat visitors, while competing against newer and less explored destinations (Gee, Organization, & Network, 1997).

Carrying capacity is a separate, but related concept that can be used in conjunction with sustainability. In relation to the tourist destination, it refers to the maximum number of tourists that can use an area without a subsequent decline in the quality of the environment or the tourist's experience (Mathieson and Wall, as cited in O'Reilly, 1986). This definition does not explicitly meet the three core ideas of sustainability. However, O'Reilly (1986) recognises that there are three interrelated subsystems which each have carrying capacities of their own, and the aforementioned definition fails to reflect the economic and social characteristics of the destination. Despite its theoretical advantages, identifying the carrying

capacity of destinations prior to their levels being exceeded has been largely unsuccessful to date (Jafari, 2003). However, in spite of this drawback, it can assist in outlining clearer boundaries for sustainable practices. The impacts of exceeding these three subsystems are considered below.

3.1.5.1 Impact on Environment

Activities, individuals and systems associated with tourism pose a risk to the physical and environmental features of a destination. For example, the presence of tourists in fragile ecosystems, such as Antarctica, is sufficient to threaten the ecology. However, determining a physical and environmental carrying capacity of a destination is difficult due to multiple reasons. Various factors need to be taken into account as the degree of the impact varies based on: the infrastructure, policies and rules in place to mitigate the impact of the tourist population, and the form of tourism (Gee et al., 1997).

Attempts to identify environmental carrying capacity thresholds of a destination, before they have been exceeded have been largely unsuccessful. Multiple reasons have been cited for this including complexity - carrying capacity differs from destination to destination based on the destination characteristics, type of tourism present (e.g. mass tourism), and tourism/environment interface (Coccosis & Mexa, 2004). Additionally, identifying and policing the 'appropriate' level of activity to avoid exceeding the carrying capacity of a destination is difficult to determine. In particular, this lack of success has predominantly been attributed to the fact that: the concept lacks clear principles to calculate situations prior to limits being exceeded; and there is potential to wrongly assume that there is a simple negative relationship with increasing people on the quality of environment and tourist experience (Coccosis & Mexa, 2004). In some cases, infrastructure may be sufficiently well-developed that the environment can cope with large tourist populations.

Some of the primary issues associated with tourism include degradation of the natural environment and various forms of pollution. Butler's (1980) destination life cycle theory states, that a tourist destination moves through five stages. The

first is discovery, then involvement, development, consolidation and either decline, rejuvenation or stabilisation. At first visitors are independent and adaptive and there is little change to the destination. However, as popularity of the destination increases, tourists to the area increase and the destination undergoes changes to cater to their needs and preferences. This can result in visitors becoming less adaptive and more dependent on host community. Furthermore, the destination may become more commercialised and degraded, losing the original untouched qualities that initially drew tourists to the area (Butler, 1980; O'Reilly, 1986). Following this there are three possible results: a stabilisation stage where the number of tourists that visit, over time, levels out; a rejuvenation stage where tourism in the area undergoes a 'makeover' in order to revitalise its appeal as a tourist destination; or a decline stage where the area is unable to compete with newer attractions and eventually moves away from tourism as the market declines.

When a destination is overdeveloped, carrying capacity of the environment and other factors has been exceeded, the destination can enter the aforementioned decline stage, or stagnation stage (Butler, 1980). In this stage, the natural quality of the destination may be lost among an excessive number of manmade structures and may develop rural slums (Gee et al., 1997). The destination may attempt to meet unrealistically high demands for certain resources and facilities in order to benefit from tourist dollars. This can lead to overdevelopment in a short amount of time without regard to the environment. Natural and authentic cultural attractions may be degraded and overlooked in favour of creating imported artificial attractions in hopes of maintaining waning tourist popularity. Further, the destination may be adulterated to the point where its image is no longer reflective of its geographic environment (Butler, 1980). This means that the destination may have elements of development unrelated to local culture and environment, losing its original unique charm.

Table 10 outlines additional tourist issues and their subsequent negative impacts in natural environments (Gee et al., 1997; Lilieholm & Romney, 2000). Tourism factors which place a stress on ecosystem services and functions pose a greater

risk to human populations and the environment than other factors. Ecosystem services and functions are essential for survival and represent a variety of features and systems, such as food production, waste assimilation, water supply and pollination (Costanza et al., 1997). These anthropogenic impacts can hinder a tourist destinations ability to cope with tourists and its attractiveness.

Table 10: Potential negative environmental impacts associated with tourism in protected areas.

Factor involved	Impact on Natural Quality	Comment
Overcrowding	Environmental stress - including stress on ecosystem services and functions, change in animal behaviour, animal harassment and stress	Tourist, resident and wildlife irritation, potential for human-animal conflict or animal avoidance of habitat, reduction in natural quality, limit tourist numbers or improve regulation to cope
Noise pollution	Disturbance of natural sounds, change in animal populations and interaction -	Irritation/disruption to wildlife, residents and other visitors,
Air pollution	Climate change, acid rain, environmental stress - including stress on ecosystem services and functions, degradation of flora and fauna due to reduced health	Health hazard to tourists, residents, and wildlife, difficult to mitigate except by limiting activities which increase particulate air matter
Water pollution	Environmental stress - including stress on ecosystem services and functions, reduced aquatic plant and animal health, reduced animal health	Aesthetic loss and health hazard to tourists, residents, and wildlife
Litter	Impairment of natural scene, habituation of wildlife to garbage, contribution to pollution	Aesthetic loss and health hazard
Vandalism destruction	Mutilation and facility damage	Costly to fix and aesthetic loss
Vehicles and off-road driving	Wildlife mortality, soil and vegetation damage, contribution to noise, air and water pollution	Ecological changes, dust, disturbance to wildlife
Introduction of exotic plants and animals	Competition with native species, reduction of biodiversity	Public confusion regarding native and endangered species

Source: Adapted from (Gee et al., 1997; Lillieholm & Romney, 2000)

Tourism has been found to have some positive impacts by developing tourist attractions and infrastructure. Perceived revenue benefits from tourism can drive the restoration, conservation, or protection of tourist attractions (cultural, physical

and natural) (Gee et al., 1997). Additionally, increased tourist support and recognition can provide the necessary funding and outside interest required to develop these projects (Lilieholm & Romney, 2000). Locally, infrastructure improvements - such as roads, waste and water management systems - and revenue benefits from tourism can provide incentive for residents to accept more sustainable practices associated with the natural and physical environment (Gee et al., 1997).

3.1.5.2 Impact on Community

Many countries, including India, have looked to tourism as a tool for economic development. It can create job opportunities for residents, including vulnerable groups such as women. However these benefits may be inequitably distributed - in general, those who benefit most from tourism development are those who have the capacity to invest, which does not include impoverished residents in need of the economic benefits that tourism brings. Additionally, while women may benefit from employment opportunities associated with tourism, tensions may arise if males suffer from decreased self-esteem and the women attempt to maintain their traditional role alongside their new jobs (Gee et al., 1997). In some cases, tourist interest in culture has resulted in strengthening artistic traditions, traditional activities (festivals) and increasing residents' sense of identity (Gee et al., 1997). However, the authenticity and cultural meaning of traditional practices may be destroyed when they are modified to attempt to gain financial benefit from tourists and cater to tourist tastes. Tourist interest can also be intrusive as they can overstep boundaries and invade residents' privacy. Unsustainable tourism can therefore further perpetuate a range of environmental and socio-economic issues.

Concerns associated with tourism include negative social consequences and degradation, such as loss of traditional cultures, behaviour among youth that mimics tourists' behaviour, and declining moral value (Al-Oun & Al-Homoud, 2008). Mitigating this impact can be difficult as the host community may choose to adopt tourist culture despite tourist attempts to reduce their influence by adjusting to the host community's culture (Smith as cited in Jafari, 2003). One of the negative reasons for this willingness to abandon their ways is the belief that

the tourist culture is superior to their own - called 'passing'. Alternatively, the host community may believe they can benefit (or increase their existing benefits) from tourism development by taking this course of action (Jafari, 2003). In these cases, the minimum preventative action would include placing an emphasis on the importance of retaining the host community's own culture during the development of tourism.

Further social issues include resentment among the resident community towards unsustainable tourism development. This can subsequently lead to negative opinions and emotions towards tourists (Pizam, 1978). As such, the original aspects of destinations which resulted in their appeal - such as their social, economic and environmental qualities - should be protected for tourists and residents to create greater harmony between these groups (Brunt & Courtney, 1999; Harrill, 2004). Furthermore, incorporating input from the host community during development is more likely to achieve sustainable results. A variety of studies examine resident attitude towards tourism, but due to the dynamic nature of the elements associated with tourism (the environment, destination, economy and other factors), it is necessary to continually assess resident attitudes (Gursoy, Chi, & Dyer, 2009). Therefore, changing variables require regular reassessment of social attitudes for successful sustainable tourism development.

Tourism impacts differ based on community and a study conducted by Mason and Cheyne (2000) examined a rural community's attitude towards proposed tourism development. Their findings supported arguments put forward by others that due to the smaller size of the community, tourism is more visible and results in stronger attitudes and greater concerns (Capenerhurst, 1994; Pearce, Moscardo, & Ross, 1996). Similarly, a high guest/host ratio in a community of any size results in higher visibility of tourists and can increase social impacts in communities (O'Reilly, 1986). Hence, different types of tourism can have varying degrees of impact on the host community, and generally, positive attitudes are recorded towards perceived beneficial social and economic impacts - such as provision of recreation areas and job development. Negative attitudes are recorded towards perceived unfavourable impacts, such as traffic congestion and litter (Gursoy,

Jurowski, & Uysal, 2002; Mason & Cheyne, 2000; Milman & Pizam, 1988; Sheldon & Var, 1984).

Another factor affecting attitudes includes perceived cultural or perceptual distances between the residents and potential tourists. As identified by Sheldon and Var (1984), if there is a greater cultural difference between the two groups, then the social impacts are greater as well. For example, they found that residents strongly felt that tourists were not aware of their way of life, thus creating a disparity between the two groups (Sheldon & Var, 1984). This could easily be part of the reason why residents blame tourists for negative changes seen in their community such as increases in crime. This was not seen in the Mason and Cheyne (2000) study as it was conducted prior to tourism development, but it also did not seek to determine, or consider, whether opposition to development was influenced by any perceived potential cultural differences. Community conflict can result between community groups when differences in opinion occur regarding these cultural perceptual distances. An example of this is the demonstration effect where, younger residents often view certain tourist influences differently to older traditional residents. In particular, the loosening of their society's rules may be viewed as a positive change by youth, while traditional residents may view this change with hostility (Gee et al., 1997).

Gursoy and Jurowski (2002) expanded on this concept; their findings implied that residents who lived close to tourism resources and used them often had negative perceptions and were unlikely to support tourism development. This was attributed to the possibility that residents feared that their use of the resource would be impaired and was also identified in their later study. However, Jurowski and Gursoy (2004) applied this in context of the Social Exchange Theory, which identified that as a result of tourism and development, there was a risk of costs outweighing the benefits for residents. Conversely, residents living far from attractions perceived positive impacts from tourism and were more likely to support development (Gursoy et al., 2002; Jurowski & Gursoy, 2004). Harrill and Potts (2003) found this to be somewhat untrue. This, however, was additionally influenced by economic benefits as the neighbourhood further away from tourist

centres was financially independent from tourism and thus perceived less economic benefits and positive impacts. Thus, not only were perceptions toward tourism development location-dependent, but economically dependent as well. In contrast, both Sheldon and Var (1984) and Beslisle and Hoy (1980) found contradicting results. Sheldon and Var (1984) found that despite residents being exposed to high levels of tourism, they were generally positive towards tourism as they valued the increased employment opportunities, good maintenance and development of facilities. The authors commented that it was encouraging to observe this, as it showed the residents showed a lack of hostility and a sense of maturity in their attitudes. However, they also found that residents also felt that tourists were unaware of their way of life; that tourism exploited Welsh people; and they were more likely to stereotype tourists (Sheldon & Var, 1984).

A variety of models have aimed to capture the interrelated relationship between tourism, destination development and host community. These models have aimed to highlight developmental issues and to identify and realise positive and negative impacts of tourism. In regards to social approaches, there have been a variety of attempts to categorise residents, communities and tourists in order to gain a better understanding of their characteristics and their relation to tourism; this is seen in the 'Irridex' model proposed by Doxey (as cited in Harrill, 2004). This model states that there are four time-related stages which are linked to the number of tourists increasing in an area. At the first stage the population is 'euphoric' and residents welcome visitors; the next stage is 'apathy', where contact becomes more formal as residents take visitors for granted; 'annoyance' starts to spread through the population as the population is saturated with tourists and residents start resenting their presence; the final stage is 'antagonism' as residents openly express their irritation (Doxey as cited in Harrill, 2004).

3.1.5.3 Impact on Economy

Tourism dollars can contribute significantly to the local economy. However, tourism has been linked to inflated prices, unbalanced economic development, low paid seasonal employment, and rises in the price of goods, services and labour. Further local economic development can be hindered when tourist ventures fail to

employ workers from the resident labour force (Khatri, n.d.). These impacts, rather than contributing to development, can stunt growth. As such, unsustainable tourism ventures are unsuitable for poverty reduction or conservation strategies.

As highlighted by Harrill and Potts (2003), economic factors can significantly influence perceptions. In particular, economic benefit, or state of the local economy, has been used to predict resident attitudes towards tourism. Thus, a range of studies have been conducted which investigate economic dependence, with the most common assumption being, the more dependent communities or individuals are on tourism, the more favourably they view it (Harrill, 2004). This is supported by Pizam (1978), who found that in Cape Cod, the more dependent an individual was on tourism as a means of livelihood, the more positive their attitude toward it. However, Pizam also recognised that an individual's tourist contact also influenced their attitude alongside economic dependence. As such, despite support for this hypothesis, there are other important variables which work alongside economic dependency to influence attitudes.

Allen, Hafer, Long, and Perdue (1993) found that positive attitudes were observed where there were either low levels of both economic and tourism development or high levels of economic and tourism development. However, resident attitudes from communities with mixed levels of economic and tourism development were not as favourable. The authors speculated that positive attitudes were observed at low levels, since communities were not economically dependent on tourism, and had high expectations for its future development. At high levels the communities had recognised and obtained some of the benefits from tourism and thus had favourable perceptions towards tourism. However, it was identified that communities with high economic activity and low tourism development were economically stable and independent from tourism. This meant that residents did not observe economic benefits from tourism, and as such did not see a need for its development. Those with low economic activity and high tourism development had not seen any of the economic benefits that they might have anticipated with tourism development and as such were dissatisfied and held negative attitudes. In cases where communities placed a high economic dependence on tourism an

unbalanced tourist-host relationship can evolve. In such cases, hosts need tourists more than tourists need them (Horn & Simmons, 2002) and can result in economic instability for the community.

Gursoy, Jurowski and Uysal (2002) found that the economic wellbeing of communities had the strongest effect on residents' support for tourism development. Other studies tend to support this effect that economic costs or benefits have on resident perceptions of tourism. For example, Lawson et al. (1998) found that in all ten towns they sampled, residents agreed that tourism benefited the local economy of their community as well as other individuals. However, residents were less sure of personal economic benefits from tourism. Liu and Var (as cited in Harrill, 2004) found that residents also strongly agreed that there were economic benefits from tourism, but were uncertain about environmental benefits. Milman and Pizam (1988) also found that the major positive impacts on central Florida were economic, in the forms of employment opportunities; income and standard of living; town overall tax revenue; and quality of life.

However, there are negative economic impacts as well, often for those communities who are unable to develop mechanisms to cope with tourism. These are often perceived by residents as increases in the costs of living and prices of tourism products. This was clearly identified in several New Zealand towns by Lawson et al. (1998), where the residents felt the prices had raised costs in their living area and had priced tourism products beyond the resources of some domestic consumers. Residents also perceived negative economic impacts through subsidies paid as part of local rates which are used to offset expenses and support the tourism industry. This was especially a problem for towns with a high guest/host ratio which had a high economic dependence on tourism. However, Raglan - a similarly small town in New Zealand with a high guest/host ratio and high economic dependence on tourism - did not identify such issues. Instead, residents ranked economic benefits highly in questionnaires thus acknowledging the importance of tourism within their community (Ryan & Cooper, 2004). It

should be noted, however, that benefits were assessed in terms of jobs and local economy and did not venture to address living costs.

3.1.6 Tourism in India

The number of foreign international tourists arriving in India in 2011 was 6.29 million. In contrast, the number of global international tourists was 983 million. Domestic tourist visits around the country were 850.86 million (Market Research Division, Ministry of Tourism, Govt. of India, 2012). The annual growth rate for foreign and domestic tourist visits were 8.9% and 13.8%, thus showing that domestic tourism will continue to play a big role in the local economy.

The scale of domestic tourism far exceeds the scale of international tourism and there may be geographical reasons behind this e.g. in large countries such as USA, a greater number of domestics choose to travel within their country, than leave it. Such may be the case in India as the nation's own resources provide sufficient attractions to keep residents within their own country (Gee et al., 1997). However, the increasing domestic travel is likely to be primarily attributed to an increasing middle class population with greater disposable incomes. As a result, vacationing is becoming a more popular activity which drives travel and tourism (Baker, 2009).

Domestic tourism is a rapidly growing sector and many more people are choosing to explore and experience their own country. Various organisations believe that tourism could be a significant economic tool for developing countries (Gee et al., 1997). However, the focus has predominantly been on international tourism and in many Asian countries, including India, the promotion of domestic tourism is not given much priority. Recent years have seen greater investment in tourism development by the Department of Tourism with domestic earning expected to be greater than international tourist earnings (Rao & Suresh, 2001). Sustainable forms of tourism can contribute greatly to a destinations' economy and provide much needed employment for the vulnerable in the area. However, increasing tourism development results in greater tourism related environmental impacts (Rao & Suresh, 2001).

3.2 Poverty

In 2008, 1.29 billion people (22.7%) lived in extreme poverty, living on less than \$1.25 a day (World Bank, 2013). Comparatively, in 2012, the proportion of those living on less than \$2.50 a day was 50% of the world population (3 billion people), while 80% were living on \$10 a day or less (Statistic Brain Research Institute, 2012). The \$10 a day threshold is used to assess poverty in developing countries as this reflects the higher costs of living and is mostly characterised by the inability to live securely or comfortably (Lüsted, 2010). The 2008 recession (which still affects today's economy) puts a disproportionate pressure on this group as they lack the personal resources that allow higher income groups to cope with financial hardships. For the wider community, the impacts of poverty are felt when states use resources to combat this social issue ("poverty," 2013).

3.2.1 Definitions

Poverty is a state characterised by an inability to meet an individual's basic needs. Furthermore, the extent of deprivation has a bearing on the severity of poverty being experienced. Due to the range of basic needs an individual has and the complexity of the issue, there are a multitude of strategies that aim to meet these various needs. These definitions provide a guideline which can be used to identify indicators that explore what constitutes basic needs.

3.2.1.1 Poverty

The most basic and essential needs are those which enable an individual to survive and subsist. The deprivation of these needs result in poverty, and severity of deprivation varies due to the range of needs an individual has. The World Bank defines poverty as a "pronounced deprivation in well-being" and also explains the concept of 'well-being'. The UN provides a similarly comprehensive definition which is more accessible. This second definition considers what poverty entails for an individual and captures more than the physical struggles that the poorest face. This is outlined in the following paragraph:

Fundamentally, poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and clothe a family, not having a school or clinic to go to, not having the land on which to grow one's food or a job to earn one's living, not having access to credit. It means insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living in marginal or fragile environments, without access to clean water or sanitation (UN Statement as cited in, Gordon, 2005).

Thus, meeting an individual's basic needs is more complex than ensuring that an individual has sufficient food or access to clean water. It encompasses their well-being and the requirements to maintain this, such as social inclusion. Measuring all these features is difficult, but can be achieved through situational research and the use of poverty indicators.

3.2.1.2 Absolute Poverty

Absolute poverty is also referred to as destitution or extreme poverty. The severity of this situation is worse for individuals in this position compared to those living in poverty, as the lack of access to basic needs can be life threatening. Individuals in this group are characterised by living on less than \$1.25 per day, with wellbeing featuring secondary to survival. The Copenhagen Declaration highlights this fact in its definition:

Absolute poverty is a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to social services (as cited in Gordon, 2005).

Where the definition of poverty considers an individual's place in society, absolute poverty does not provide individuals the opportunity, or luxury, to look beyond their basic survival needs.

3.2.1.3 Relative Poverty

Relative poverty diverges from poverty and absolute poverty, as it is distinguished not by hardship, but the comparative deprivation of an individual's living situation in contrast to others in the same society (Barker, 1996). It is a measure of social inequality, defined by individuals having fewer resources and being unable to meet

needs as easily as those around them. There are a variety of examples of relative poverty in societies and Chossudovsky outlines two cases as observed in 1990 (as cited in Barker 1996). The first made the comparison of a Peruvian agricultural worker who paid higher prices for consumer goods than a person would have to in New York. The second example presented a Filipino peasant who worked two years to earn what a New York lawyer made in an hour (as cited in Barker 1996). As isolated cases, these individuals don't appear to be under any particular hardship and can lead to social acceptance of the situation. However, considering it in a larger context provides a different perspective on the differences in well-being and hardship. It illustrates the results and impacts of social inequality and invites further scrutiny.

3.2.2 Causes of Poverty

Accurately identifying the extensive variety of factors that can cause poverty is necessary in attempting to combat the issue. This can sometimes be complicated by difficulties in distinguishing between cause (e.g. poverty due to lack of education) or effect (unable to receive education due to poverty). Furthermore, recent studies acknowledge that poverty is not determined by simple cause-and-effect relationships. They are dynamic, part of a wider system interrelated with various practices and vulnerabilities contributing to the problem (Green & Hulme, 2005). Difficulties in identifying, or addressing, these can be major reasons for the failure of poverty reduction schemes. In general, causes can be categorised into a variety of groups, with interactions occurring between groups. For the purposes of this research, they have been broadly categorised into economic, environmental and social.

A range of economic reasons have been identified as possible correlates of poverty. These include an unstable government, corruption, unemployment, property owned, adverse distributive policies, low human and social capital, dominance of particular economic activities, changing trends in a country's economy and level of development (Green & Hulme, 2005; World Bank Institute, 2005).

Social reasons include: lack of opportunity, inadequate education, high divorce rate which causes feminization of poverty, a culture of poverty, overpopulation, presence of epidemic diseases such as AIDS and malaria, access and availability of infrastructure and social services, household size, gender, race or caste, age structure (Badrudin & Warokka, 2012; Green & Hulme, 2005). For example, in cases where men have died of AIDS in East Africa, their widows and children may have their land seized by the deceased's male kin. This results in a loss of security and self-sufficiency and can force them into situations of poverty (Ewelukwa, as cited in Green & Hulme, 2005).

Environmental factors can contribute significantly to poverty such as droughts, vulnerability of the region to natural disasters, remoteness, climate change, environmental degradation and associated problems such as declining agricultural yields, and various geological and ecological factors (World Bank Institute, 2005; World Bank, 2013). For example, environmental crises such as droughts and soil degradation can result in declining agricultural yields. This reduces food supply, results in increasing food costs, and affects the ability of individuals to meet their nutritional requirements.

3.2.3 Indicators of Poverty

Defining poverty as a deprivation of needs provides a range of indicators that can be used to identify those experiencing poverty and absolute poverty. The categories for these are: food; safe drinking water; sanitation facilities; health; shelter; education; information; and access to services (Gordon, 2005).

The various dimensions of poverty - low incomes, poor work and living environments, lack of education and unsafe water - can impact an impoverished individual's health. This can further exacerbate symptoms of poverty and can result in higher incidences of disease, illness, injury and lower life expectancies (Murray & Marks, 2008). Poverty related health ailments are the most pronounced in vulnerable groups such as women, children and disabled. Deprivation of health and health services contribute to the 22,000 children who die each day due to poverty (Statistic Brain Research Institute, 2012). Severe health deprivation occurs

when: women do not receive any of the following - treatment for a recent serious illness; antenatal care; assistance with birth; or a tetanus inoculation during her pregnancy - and when men do not receive treatment for a recent serious illness (Gordon, 2005). Deprivation of health occurs when women do not receive: treatment for a serious illness; minimum standard of antenatal care from a person trained in midwifery; when men do not receive treatment for a serious illness; or when men and women lack basic knowledge about HIV/AIDs transmission (Gordon, 2005).

Food deprivation, malnutrition or hunger results from a lack of access to adequate or proper food. Rising costs of food and disruption of global food supplies can help perpetuate this issue, with impoverished struggling to afford enough food to meet their household's nutritional requirement. Furthermore, the strain and stress of this situation can seriously impact health - physical and mental. Food deprivation is defined by the Body Mass Index (BMI) of the individual where basic deprivation is a BMI of 18.5 or below (underweight). Severe deprivation occurs at a BMI of 16 or below (severely underweight)(Gordon, 2005). Additionally, water deprivation is defined as: access to unimproved water sources such as open wells or open sources; or having to make more than a 15 minute walk (one-way) to reach a water source (Gordon, 2005).

Deprivation of sanitation facilities is access to unimproved sanitation facilities such as covered pit latrines etc. or no access to any toilets; severe deprivation of this commodity is the lack of access to any toilets of any type privately or communally in the vicinity of their dwelling. Education and information deprivation refers to youth who did not complete a primary education or are illiterate and a lack of access to some type of broadcast media at home. Severe deprivation occurs when youth have not received an education and are illiterate, while severe information deprivation refers to absolutely no access to any information sources even newspapers and telecommunication. Shelter deprivation occurs when three people or more are living in the same room; the house has no flooring, or inadequate roofing. Severe deprivation of shelter occurs in dwellings with four or more people per room; or in a dwelling with no flooring (Gordon, 2005).

3.2.4 Measuring Poverty

There are a variety of ways to measure poverty and this reflects the various hardships observed. Indicators of poverty are commonly used as measures of poverty and each are useful in their own fields for representing incidences of poverty.

The most commonly seen measure of poverty is the \$1 and \$2 (PPP) a day thresholds introduced by the World Bank in the 1980s. These are used to distinguish between poverty and extreme poverty and have since changed to \$1.25 and \$2.50 a day to reflect inflation. Many argue that these values are too low, or treat those living in the most extreme of poverty conditions the same as those living closer to the poverty line. Poverty lines are another measure of poverty and these vary from place to place due to differences in definition of basic needs. One of the earliest ideas of a poverty line was established by Rowntree in 1901. It was based on the income required by a person to survive at the subsistence level of food, shelter, clothing and other necessities. Essentially it equates to the minimum amount of money a person needs to meet their basic needs (Blackwood & Lynch, 1994). This amount varies from place to place to reflect the different costs of living.

Measuring deprivation in order to determine poverty of populations is the other main method utilised. Gordon (2005) states that poverty is the deprivation of two or more of the indicators identified on the deprivation scale (and outlined in Section 3.2.3) while absolute poverty is two or more on the severe deprivation scale. However, in using these methods there are several factors that should be considered, as ambiguities exist around the application of these indicators. For example, food deprivation might be considered in the context of a farmer who grew sufficient food on their land to meet their nutritional needs, but did not have any cash income; they would be unable to buy clothes, pay for healthcare and pay their taxes making it difficult to classify them as not living in poverty. Thus, this issue brings to light something that has not been considered, the necessity for essential possessions such as bedding and household equipment (Barker, 1996).

3.2.5 Alleviation Strategies

There are a variety of strategies to reduce poverty which can be categorised into different alleviation approaches. In particular, there are two main broad approaches which strategies can be categorised into, the first increases access and supply to basic needs while the second increases the income necessary to purchase or attain those needs.

Strategies to increase basic needs directly include building roads which can bring access to a variety of basic needs. It can reduce the remoteness of a region and make needs such as healthcare or education from urban areas available. This can additionally increase incomes as job markets may be more accessible. Improved infrastructure and technologies are tools that can be used to increase food supply and fuel demand for other goods. For example, by improving agricultural technologies available to impoverished, it is possible to increase yield output, ensuring that basic food needs can be met. Furthermore, improved infrastructure can make these better technologies more easily available, such as having proper road infrastructure to transport fertiliser for use in agriculture. Improving health care and education can be achieved if the right strategies are employed. Simple cost effective measures such as installing water filters can reduce illness from waterborne diseases, thus reducing the strain on health care facilities. Additionally it can increase educational benefits by reducing the number of school days missed by a sick child. Another strategy includes population limitation. Currently, improved sanitary conditions, better health and lowered mortality rates can result in increased population. As such, in combination with improving these basic needs, programmes have been put into place to attempt to reduce rapid population growth by educating people about family planning (“poverty,” 2013).

At a national level, Governments can implement policies and schemes to assist impoverished. These can come in a variety of policy types from subsidies on important items, to providing healthcare and financial aid. Strategies of increasing income to make basic needs more affordable typically include unemployment

compensation, welfare, economic freedoms, employment on public work projects and providing financial services. (“poverty,” 2013).

3.3 Conservation

Humans rely on the various ecosystem services that the environment provides, from fresh water to natural resources. With growing environmental degradation, habitat and biodiversity loss, the range, quality and capacity of ecosystem services provided is reduced. Growing awareness of human impacts on the environment and the resulting outcomes has resulted in the recognition of the importance of conservation.

3.3.1 Definition

The term conservation in the research context refers to the protection of particular aspects of the environment. It is often applied in conjunction with natural resource management models to study biodiversity loss and management solutions to halt or improve these losses. Conservation can be applied at various biological levels, from smaller species level to larger ecosystem levels (“conservation,” 2013).

3.3.2 Ecosystem Services

The environment provides humans with a multitude of resources and services that are vital to our survival and health. The collective benefits of these processes are known as ecosystem services and goods (Costanza et al., 1997). These services include clean air and drinking water, and an assimilative capacity for wastes that we generate. The environment provides four categories of services: provisioning, such as food and water production; regulating, such as climate control; supporting, such as crop pollination; and recreational benefits (Costanza et al., 1997). However, as populations grow, an increasing stress is placed on these services. The destruction of habitat which supports these services hinders and adversely impacts the human population’s survival, contributing to poverty.

3.3.3 Importance of Biodiversity

Biodiversity is important to human health as it provides various goods and services. Genetic diversity in food systems provides the foundations of crop development and food security. It promotes resistance and resilience to environmental stresses, including pests and diseases of crops and livestock, thus creating robust agricultural systems. Biodiversity loss and ecosystem change can increase the risk of emergence/spread of infectious diseases in human, plants and animals, including economically important livestock (Chapin III et al., 2000). It also provides important resources for medical research which can lead to developments in human medicine (such as medicinal herbs) (Newmark, 2002). In particular, loss of biodiversity can affect ecosystem functions, which in turn affect ecosystem services which humans and animals rely on for survival (Chapin III et al., 2000; Gamfeldt, Hillebrand, & Jonsson, 2008).

3.3.4 Reasons for Biodiversity Loss

Biodiversity loss can be attributed to a variety of human activities. These range from direct to indirect interactions.

Primary extinctions of species may occur from direct hunting to the point of extinction, or overharvesting, to the point where a population cannot recover and it becomes extinct. However, one of the main causes is deforestation and habitat loss. It is the permanent conversion of natural forest area to other uses, including agriculture, ranching, settlements and infrastructure. It does not include areas degraded by fuel wood gathering (Wood, Stedman-Edwards, & Johanna, 2000). Others include secondary extinction, when a species relies on another species, which has gone extinct, for its survival. Pollution, another factor, affects the health of the species and ecosystems. It can degrade a species habitat to the point where it can no longer survive in that environment. Introduced species from other environments, either through human introductions or accidental introductions can result in displacement of the native species if the new species is aggressive or more competitive. One of the most widespread reasons however, is global change. The impact of changing climate can alter a species habitat and make it untenable for its

survival (Wood et al., 2000). Further climate change has resulted in increasing temperatures, changing precipitation patterns, more frequent and longer lasting climate-related events which pose large risks for agriculture, food production, and water supplies. Such environmental issues have the greatest impact on poor people.

3.3.5 Strategies

Management strategies can be applied at various biological levels, such as at species population levels and ecosystems, and in situ or ex situ.

Ex situ conservation is usually a last resort in cases where the species is at imminent risk of extinction and involves removing a species from its natural setting. Species are then kept in facilities such as zoos, wildlife parks and aquariums. Captive breeding programmes may be used to increase numbers or release programmes to help sustain a wild population (Hunter & Gibbs, 2009). In situ conservation involves actions to maintain species in the wild.

Actions taken to conserve species in the wild often involve preserving habitats and at this point, strategies for ecosystem management and species population management merge. Ecosystem, or habitat, conservation may involve the removal of invasive species which compete with native species; habitat management, such as fire and flood control; habitat connections to reduce the impacts of island biogeography, restoration of degraded habitats to improve the species that can be supported in that environment, and protected areas which prevent any adverse human activities occurring within their boundaries (Hunter & Gibbs, 2009).

Management strategies may be introduced at a systematic level (through the implementation of environmental policies) or local level (local conservation programmes) (Wood et al., 2000).

3.4 Conflict between Poverty Alleviation and Conservation Efforts

Past poverty alleviation and conservation strategies have come into conflict. By outlining goals that are beneficial to both, these conflicts can be avoided. The conflicts can be summarised as follows.

Some poverty alleviation strategies involve increased development or financial aid. This can be at odds with conservation strategies if development is unsustainable, where natural resources are abused by putting perceived economic and financial gain ahead of environmental losses.

Conversely, conservation efforts can compromise poverty reduction (Adams, 2004). This occurs primarily through the formation of protected areas. For communities and individuals that rely on natural areas for sustenance and their livelihoods, this can have negative social impacts. In some cases, this may create indirect benefits for the poor, such as improved ecosystem services, but strict protected areas can create animosity and social conflict.

3.5 Ecotourism

Unlike conventional tourism, ecotourism has arisen in the last two decades as a form of tourism to benefit the environment and the community. The term has entered the mainstream industry, becoming more popular among both tourists and operators alike, but the risk of contributing to environmental and cultural degradation is still a high possibility in cases where it has been adopted merely in name and not practice as well.

3.5.1 Definition

Ceballos-Lascuráin was one of the first to formally define ecotourism:

travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas" (as cited in Weaver, 2001, p. 5)

Although this definition is effective in capturing the essence of what ecotourism is, Acott et al (1998) state that it is possible to have an ecotourist visit a non-ecotourist destination and for a non-ecotourist to visit an ecotourist destination. Additionally, Shores suggests that it is inappropriate as it focuses almost exclusively on the motives of the traveller, and not on the impacts that such travel has on the cultural and ecological environments of the setting (as cited in Fennell, 2001). Stewart and Sekartjakrarini similarly highlight the supply-side of ecotourism in suggesting that as an industry it has to be concerned with the host community, the resource base, and tour operators (as cited in Fennell, 2001).

As the research site is a predominantly natural destination, and is characterised by increased unsustainable development, an ecotourism definition which is sustainable and takes into account impact on the environment and community will be utilised. Thus, ecotourism can be defined using the sustainable tourism definition outlined by the World Tourism Organisation (WTO), as "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (World Tourism Organization, 2005).

3.5.2 Ecotourism vs. Other Forms of Tourism

As growing environmental awareness has spread amongst tourists, this new form was developed to reflect their environmentally minded motivations and values (Smith and Eadington as cited in Jafari, 2003). There are many monikers for a form of tourism that is sustainable, such as ecotourism, geotourism, nature tourism, green tourism, low-impact tourism, adventure travel and alternative tourism (Goeldner & Ritchie, 2006, p. 473) However, identifying the reasons for the popularity of ecotourism over other forms in literature, and the tourism industry is difficult to isolate. In the case of this research, this form was chosen based on a set of performance indicators outlined by Ecotourism Australia and Green Globe 21 and included (Gutierrez, Lamoureux, Matus, & Sebunya, 2005):

1. Direct contributions to the conservation of a natural area
2. Benefits to the local community

3. Interpretation and education so visitors better understand and appreciate nature
4. Opportunities to experience nature
5. Environmental sustainability
6. Cultural respect and sensitivity
7. Customer satisfaction
8. Honest and accurate marketing and promotions
9. Ecologically compatible infrastructure
10. Ethical standards and codes of conduct
11. Management and operational guidelines on minimizing impacts

There were other tourism types which are similar, but were not as comprehensive as ecotourism in meeting research objectives. Responsible tourism shared similar cultural aspects and is defined as culturally sensitive tourism. It promotes mutual respect between tourists and hosts, and includes the building of local pride and confidence in destinations. Sustainable tourism protects and increases future opportunities while meeting the needs of present tourists and host regions. The ecotourism definition utilised in this research uses a sustainable tourism definition. However, it was chosen over sustainable tourism for the destination's orientation towards nature. Nature-based tourism relies primarily on the natural environment for its attractions, however, lacks any emphasis on sustainability. Similar to nature tourism is adventure tourism with the added risk factor and higher levels of exertion associated with activities. Geo-tourism fits quite closely with the destination features as it is based on the destination's geographical character, including the environment, heritage, aesthetics and culture. Furthermore, it aims to maintain these features and aid in the welfare of residents. However, it is not as well-known as ecotourism and could require increased marketing if the form created confusion in the industry. Pro-poor tourism was geared towards helping poor people in the areas visited by tourists, but does not consider other aspects such as environmental impacts (Vashakmadze, 2008).

3.5.3 As a Conservation and Poverty Alleviation Strategy

Conservationists are increasingly promoting the argument that biodiversity underpins poverty reduction because of the importance of natural resources to the livelihoods and well-being of the poor (Walpole & Wilder, 2008). As such, strategies which have goals towards benefiting both the environment and community could have high chances of success.

Ecotourism provides an incentive for residents to conserve the environment as it is main attraction for the local tourism industry (Stronza, as cited in Appiah-Opoku, 2011). In rural regions it can stimulate economic activities and reduce rural-urban migration, which is a correlate for poverty (Wells, as cited in Appiah-Opoku, 2011). It also provides a potential alternative income to economic activities that may have been damaging to the environment. Additionally, the ecotourist spends more money than the average mass tourist. This would have a dual benefit of reducing the impact of tourism on the environment by staying within the destination's carrying capacity, while still generating an adequate income for residents. There have been ecotourism cases which have been successful and unsuccessful at aiding conservation. The differences between success and failure were difficult to target, but in some cases were a result of poor implementation, lack of communication and interaction with community and visiting tourists.

CHAPTER 4: RESEARCH METHODS

The appropriate tools and methods to carry out the research were identified by reviewing the literature and investigating the research site. These are outlined in this chapter and include the development of tools and the data gathering process implemented. The chapter is divided into sub-headings describing each data collection tool - processes employed in the field to gather data. The ethics of the research and data collection process is reviewed as well as limitations.

A mixed methods approach was used as several different methods and tools were required to collect the necessary data. There are four techniques used: survey data to collect quantitative data about tourists and vulnerable residents; interviews to collect more detailed information from vulnerable residents and key informants; an attractions inventory; and personal observations.

4.1 Research Design

The research strategy used involved a mixed approach method as described by Churchill (1979). There are several stages including the initial literature review, which gathered information regarding tourism, conservation and poverty. A study of the research site based on scientific and historic literature, internet based information, and communications with an ex-resident provided all the knowledge that could be found prior to first hand data gathering during fieldwork. It provided an understanding of what areas were lacking in information and what tools would be feasible in the field. Previous studies in the area have not focused on capturing tourist data or residential data - as such the tools developed aimed to capture as much information as possible. The strength of using a mixed approach method is the ability to capture detailed information about the research situation, as well as more generalised information from a large population to identify and create a more complete understanding about Yercaud, the residents, and tourists visiting the Taluk (Tashakkori & Teddlie, as cited in Sandelowski, 2000).

Three different methods were used to meet the objectives of this study. These were questionnaires, interviews and personal observations. Questionnaires were

used to gather information about vulnerable communities and assess the potential for their involvement in future ecotourism. Questionnaires were also used to identify the current tourist market and determine the potential demand for ecotourism. Interviews were used to identify further information regarding the target resident community; environmental issues in the Taluk; and undeveloped local resources for ecotourism development. Personal observations were made throughout data collection to capture unrecorded information that would assist in answering the research objectives.

Fieldwork started with collection of the most accessible data - interviews with key informants and stakeholders - to utilise time efficiently while surveys were translated. Additionally, this ensured that participants were available for interviews and was an opportunity to identify other key informants quickly. This permitted the identification of the target populations and feedback on resident surveys.

4.2 Questionnaire design

Survey lengths are usually kept as short as possible to ensure high and valid response rates (Layne & Thompson, 1981). However, the desired data could not be acquired by reducing the length. Recommendations for longer surveys suggest a less cramped layout with more “white space” to make them look easier to complete and thus increase response rate (Bradburn, Sudman, & Wansink, 2004). However, this was not viable with the questionnaires; while it was employed to some degree, creating more white space would have made them too long, impairing the advantages of this method.

The drawbacks of the long survey length were overcome through the method of administration. A paper-and-pen method was used and while it is more costly and time consuming, it also permitted the opportunity for further questions to clarify or gain additional insights not captured through the survey tool. This approach was a suitable choice for the situation as this permitted a representative and diverse sample. Additionally, personal interaction made participants more

cooperative - interviewers could raise the quality of responses by highlighting the importance of the respondents' contributions and of the research.

Both questionnaires were translated into Tamil, and then translated back to English to ensure that errors were minimal during the translation process and that the original meanings were retained (Iarossi, 2006). Additionally, two separate translators checked surveys to ensure their meanings were retained after translation. Leading questions, loaded questions, and double-barrelled questions were avoided. Multiple choice questions provided all reasonable response alternatives; an option for respondents to provide their own response was provided to ensure all possible answers would be captured.

Likert items were used extensively in both tourist and resident questionnaires to gauge attitudes of respondents. The scales did not follow traditional 5-point agree-disagree Likert scales as set out by Churchill (1979) and varied between questionnaires. To reduce confusion that might occur among structurally similar questions, different formatting was utilised to highlight the key terms.

Both survey tools utilised a cover page with similar information regarding the purpose and importance of the research. This was followed with details of the researcher including contact details, should there be additional queries regarding the study. Confidentiality of the participants was emphasised and approval of the ethics behind the research had been provided to confirm the authenticity of the survey.

4.2.1 Tourist Questionnaires

During the development of tourist questionnaires, particular attention was paid to collecting as much information about tourist preferences and motivations. This is to provide information which can be utilised by residents to improve and develop sustainable, but appealing attractions and services. Thus, survey length was longer than recommended at six pages. However, personal interaction with the respondents made participants more tolerant of the longer questionnaire and uptake of the questionnaire was high.

Easily answered introductory questions regarding demographic information and trip characteristics were designed to facilitate and encourage the transition into more detailed and sensitive questions. The latter questions concerned expenditure during their trip. The depth and detail required of the introductory questions were used to enhance understanding of the level of disclosure required for the questionnaire (Bradburn et al., 2004). The final question looked at tourist satisfaction of their experience in Yercaud. It followed previous questions regarding tourist destination attractivity factors, and important activities and services for respondents. A copy of the tourist survey (English) can be found in Appendix 4.

4.2.2 Resident Questionnaires

Development of resident surveys focused on identifying the characteristics of the target sample population and lifestyle circumstances. Further, it attempted to identify the human resources and knowledge that were available for utilising in ecotourism development. Many of these people have poor literacy skills and it was originally planned to conduct interviews alone to identify hardships which this population faced. However, as villages would be visited personally, using questionnaires would permit the collection of data on income and expenditure, which is lacking from the area. Furthermore, time and resource constraints made the use of interviews as the primary source of data collection for this population unfeasible in comparison to questionnaires. The questionnaires were translated into Tamil, but a translator was still required to administer the tool.

The introductory questions were designed to capture valuable demographic and lifestyle data. Questions regarding environmental interactions and opinions were to determine resident opinion and knowledge regarding their environment. Attitudes towards tourists were also measured. The final question explored how residents felt they could contribute towards tourism activities and services. It aimed to identify their confidence in being able to participate in a tourist related job or to identify in which areas training would be required for residents. Additionally, it identified a local resource base that could cater to tourist demands.

Additionally, interviews with several people who employed tribal villagers indicated that they were dissatisfied with their attendance at work. The generalisation was that this group of people was untrustworthy and lazy, attending work a few days out of the week. To investigate this claim a question was included in questionnaires. Several villages and other key informants were asked to offer explanations for this statement. A copy of the resident survey is found in Appendix 4.

4.3 Pretesting, Pilot Study and Implementation

Prior to wider implementation of surveys, pre-testing was necessary. This involved administering the survey to a small group of subjects and gaining feedback about any points of confusion or areas for improvement. These were then taken into account and the relevant changes made.

4.3.1 Tourists

Tourist questionnaires were checked by the researcher's supervisor prior to fieldwork being carried out. They were then tested on a small sample of tourists staying overnight. Three issues were raised by this sample group, these being that: the survey was too long; a bit repetitive; and the Likert scale questions a little difficult to understand. With this feedback, two changes were made. The Likert scaling, wording and numbering was modified so it would be more easily understood; and the length of the survey was shortened, by removing scaled structured questions which were similar to each other. A few tourists still felt the questionnaire was a bit lengthy, but feedback had improved greatly. Moreover, the issue of length was further circumvented through administering questionnaires using a paper-and-pencil method and remaining with the participant until completion.

4.3.2 Residents

Resident questionnaires were checked by the researcher's supervisor and later by key informants working with vulnerable community groups at the research site. Income and expenditure questions which were based on calculating figures

annually were changed to a monthly basis. Key informants pointed out that this would be more reliable as resident respondents lived on a weekly and monthly basis and did not keep track of their activities on an annual basis (Banerjee, Benabou, & Mookherjee, 2006). These questions were also applied at a household level rather than individual level to ensure information could be applied to children and other dependents in the household.

Questionnaires were then tested on a small sample of villagers that were identified and gathered by a key informant. A conventional pre-testing method was utilised; various questions were posed during debriefing to ensure that the sample group understood the purpose of the research, the questionnaire and to identify any issues that arose while answering them. This also provided the opportunity to ensure the key informant administered the questionnaires correctly as they were also acting as a translator for village visits. Doubts were raised regarding accuracy of their explanations regarding the research purpose and questionnaire as their proficiency in English was limited. This initial uncertainty was substantiated during a second excursion with the key informant and an individual who was also assisting the researcher. The assistant, who had some understanding of the language, pointed out that the reason for the research, and the survey tool was not being properly explained to participants.

Furthermore, there was the possibility of interviewer bias, as the key informant was well known to the target population and influential with them as well. To reduce the impact of interviewer bias and ensure that future questionnaires were conveyed as intended, a translator was engaged. The assistant observed another questionnaire session and confirmed that the translator had conducted the questionnaire more effectively. The translator was completely unknown to the participants, thus reducing interviewer bias that was likely occurring with the key informant.

The pilot study with the sample resident group brought up several issues which were addressed. Respondents commented that spacing was inadequate. Some found it insufficient because they had poor literacy/writing skills and required

more space to fit their sentences in. Later surveys therefore provided more space for responses (Layne & Thompson, 1981). To overcome literacy issues observed in the sample group, the questionnaire was read out to the respondents so they would not misunderstand questions. In addition, questionnaires would be filled out for them if a literate relative was not available to help.

4.4 Sample Design and Implementation

There are several problems associated with data collection through surveys. These include exclusion of certain groups through sampling methods, or inclusion of groups based on convenience, and survey tool limitations. The sampling methods used are described. Efforts were made to avoid the issues identified and any potential sampling bias that may have occurred is explained and described in the following sections.

4.4.1 Tourists

For the purpose of this research, the sample tourist population was identified as - individuals who were in Yercaud at the time of surveys and who were not permanent residents or worked daily in the Taluk. These people were asked to complete questionnaires when they were encountered. However, the characteristics of this sample population required a survey technique which took into account their mobile nature. For this reason, location sampling was utilised in combination with a paper-and-pencil method.

The sample population was selected based on their willingness to participate, their presence at a few popular tourist attractions and a range of accommodation options (from dormitories to luxury hotels) (Kalton, 2001). These were primarily completed during weekends with some opportunistic sampling during weekdays if tourists were present at tourist attractions.

Self-administering surveys using the paper-and-pencil method allowed the researcher to be mobile as well and capture a range of tourist types. This also ensured a high response rate as personal interaction meant that participants rarely refused to answer a questionnaire; were more receptive, as the interviewer

remained with the respondent until completion to collect the survey; and so were more likely to answer conscientiously. Responses are more reliable with this method as questions could be explained to respondents immediately if there was confusion and participants were less likely to be negative about the length of the survey.

4.4.1.1 Bias

There is potential for omission bias due to the sampling method used. That is, it is possible certain groups of tourists were excluded - tourists groups who chose not to visit the most popular attractions and stayed in accommodation options out of the main tourist area. Observations and personal communications showed that Yercaud is mainly a weekend attraction and very few tourists visit during the week (unless there are holidays). To compensate for this, multiple tourist sites and accommodation types were sampled.

4.4.2 Residents

The sample resident population was identified as vulnerable groups in the Yercaud Taluk - those that face hardships gaining access to safe drinking water, health, shelter, education, food and services. As such, to locate the sample population that fit this definition, the help of key informants was required.

Two key informants were able to indicate the target population, majority of whom lived in villages outside of the main town. Some residents were also sampled within the town of Yercaud. 16 villages out of 67 were sampled - including Yercaud - based on accessibility, time, relevance to research and potential for development based on the recommendations of key informants.

Two different sampling techniques were involved. The first key informant accompanied the researcher to villages. They arranged for people from a group they worked with, to gather and fill out surveys. They were predominantly women from different households and it was done during the evenings when villagers would be home from work. The second key informant organised excursions during the mornings while being accompanied by a translator and helper. Individuals and

households were chosen based on whether they were present at the time of the village visit and their willingness to fill out a questionnaire.

4.4.2.1 Bias

A combination of response bias and interviewer bias may have occurred during some village visits. Residents may have responded to questions with the idea that they might receive benefits if their living situation was exaggerated. This issue would have occurred with initial visits made with the first key informant (who ran a society to aid community groups). This could have led to residents believing that the researcher had visited to provide financial aid. Furthermore, the key informant may have given residents the impression that this was the researcher's intention, also resulting in a similar outcome.

Inclusive bias could have been introduced when the key informant gathered groups of people who they interacted with through the Society. As such, this group was a convenient choice and may not have been a representative sample. This potential bias was partially resolved by using a translator and visiting villages without a pre-organised meeting.

On the other hand, this second sampling method occurred during the day while working individuals were away and could have introduced omission bias. This was avoided by the fact that household members were aware of details, such as income, and possibly more aware of other details such as expenditure as they may have taken care of household shopping and other expenditures.

4.5 Interview Design

The depth of village and key informant interviews was not anticipated. As the survey tools were the main data gathering tool, the choice to include more detailed interviews was a result of the villagers' and participants' willingness to aid and provide information towards the research.

The initial development of interviews was designed to be short, at most 20 minutes in length. However, interview length varied greatly, ranging from 5 minutes to 60 minutes. In the case of village interviews which could be very long, this was due to

extra time the translator spent communicating between the researcher and participants. Furthermore, the number of participants was greater than expected, as only a few key informants were initially selected, but due to the enthusiasm for the research many additional people were eager to provide detailed information.

Original plans had included short questions about participants' opinions and knowledge regarding tourism in the area, the environment (biotic and abiotic features), and conservation. This was expanded to include questions regarding poverty and hardships faced by communities in the Taluk; additional information participants had regarding the background of Yercaud - as this was deficient in the literature; information regarding economic activities in the area; and more detailed questions regarding tourism and the environment.

Interviewees were various stakeholders in the regions and included: authority figures in the Taluk; members of non-governmental organisations and community groups who worked with villagers; accommodation owners and managers. As the opportunity presented itself to interview groups of villagers with more in-depth questions than originally planned, it was decided to take advantage of this. Key informant interviews were semi-structured and resident interviews were more unstructured, but followed along similar threads. Table 11 provides an outline of the interviews conducted.

Table 11: Interview Guidelines.

Semi-structured Interview Guidelines:

1. *Introduction*
 - a. Interviewer introduction
 - b. State research purpose
 - c. Reason for interviewing individual/group
 - d. Receive permission to record interview
 - e. Discuss preferred interview structure for interviewee i.e. Would they like to talk in general about topics or would they prefer if I asked questions first and then added to it
2. *Key informants:*
 - a. Personal Background
 - i. History in Yercaud
 - ii. Occupation/Business
 - iii. Personal interactions with vulnerable communities/tourists/environment
 - b. Yercaud
 - i. History
 - ii. Flora and fauna (past and present)
 - iii. Development trends
 - iv. Environmental issues and threats
 - v. Vulnerable communities and poverty
 - vi. Harmful economic activities in the area
 - vii. Yercaud statistics
 - c. Tourism and ecotourism
 - i. Personal suggestions for implementing ecotourism
 - ii. Threats from tourism
 - iii. Potential for ecotourism
 - iv. Potential threats from increased tourism
 - v. Undeveloped tourist attractions
 - vi. Tourism statistics
 - d. Other key informants who should be contacted
3. *Residents:*
 - a. Personal experiences
 - i. Difficulties or problems in daily life e.g. educating children etc.
 - ii. Negative experiences with tourism/tourists
 - iii. Negative experiences regarding aid schemes e.g. government schemes
 - iv. Problems from nearby economic activities e.g. coffee plantations
 - b. Environment
 - i. Threats to wildlife
 - ii. Threats to environment
 - iii. Personal opinions/attitudes towards environment and wildlife
 - c. Tourism and ecotourism
 - i. Undeveloped tourist attractions
 - ii. Local cultural attractions (festivals, traditions, cuisine)
 - iii. Personal opinions and attitude towards ecotourism development in the area
4. *Conclusion*
 - a. Further information to add

4.5.1 Bias

As with any qualitative work, there is potential for bias. This was reduced by maintaining and expressing impartial opinions as much as possible during interviews and genuinely displaying interest in participant's opinions and knowledge.

The use of a translator, in cases where a language barrier existed, ensured that unintentional cues from the researcher were not transferred to the interviewee in their speech.

The bias of the translator would be minimal as the participants were unknown to them; they were earnest and honest about helping the researcher; and their own motivations to help was enjoyment from being able to visit various villages and interact with different people.

4.6 SWOT Analysis

A SWOT analysis was conducted to assess the practicality of executing this project in Yercaud. It was completed using available literature about the area; personal observations of the target populations and some internet opinions about the area; personal assessment of available resources; and personal communications with stakeholders and key informants.

4.7 Attractions Inventory

A list of attractions was identified via tourist guides, the internet and key informants. Time constraints, accessibility and safety issues meant that not all potential attractions were visited. Existing popular tourist attractions were visited and assessed due to ease of access and current importance to tourism. Less popular attractions were difficult to visit due to their more remote location - these were natural attractions which to reach required trekking and would have been valuable attractions to develop for ecotourism or adventure tourism. Undeveloped attractions nearby, or in villages were difficult to identify. Many residents claimed there was nothing to see nearby and only Yercaud town had attractions that would

interest tourists. Ideally, without time constraints, personal identification of potential attractions would have been conducted. Attractions and their surroundings were critically analysed - they were categorised into natural or cultural and their location and ease of access considered.

Information gathered regarding attractions was then collated and organised into a table providing a brief description and location in the form of geographical coordinates. Two additional tables were created based on development required for ecotourism and environmental fragility of the area. The final table scores attractions, based on a range of factors to provide a final mark and ranking. The factors were based on those set out by Gutierrez, Lamoureux, Matus, and Sebunya (2005) and tailored to apply to the research site.

4.8 Personal Observations

These were made to describe events or behaviours that were pertinent to the research during interviews and the administration of questionnaires. Subjects were aware of the researcher's presence and purpose of the research. Personal observations were also used to record observed environmental issues using the researcher's environmental and ecological knowledge.

The main disadvantage about subjects being aware of the researcher and their purpose is the fact that they might modify their behaviour to portray themselves favourably or to their advantage. However, this approach has the advantage of being within the boundaries of the necessary ethical guidelines, as subjects are not deceived to make these observations (Price, 2010). These observations were valuable in that it provided a greater sense of understanding of the subjects and their circumstances, values and perspectives. Further, this enables more reliable and relevant conclusions to be drawn about the research.

While some interviews and surveys provided information regarding environmental issues, these did not fully capture the situation. Thus, personal observations were used to provide more detail to stakeholder identified issues and other issues observed by the researcher.

No form of analysis is used, but instead they are included in the discussion to enrich the data collected.

4.9 Research Ethics

The data collection processes presented a low risk to the researcher and participants. To ensure that all interactions in the field remained low risk, actions and precautions which were necessary were taken.

Personal observations were made overtly, while participants knew the role and purpose for the researcher's presence. Therefore, any form of deception was avoided. Additionally, any risk of harm from the disclosure of observations is avoided through maintaining the anonymity of vulnerable participants.

Questionnaires had the potential to cause discomfort due to the sensitive nature of some aspects. Questions are considered high risk if they cause discomfort or embarrassment. Sensitive questions regarding the participants' lifestyle and economic situation were posed in surveys. However, discomfort was reduced or avoided as participants knew they were free to leave questions unanswered if it distressed them. Furthermore, the reasons for the research were openly communicated, in particular the fact that the involvement of vulnerable groups was required. In situations where participants could not read or write; embarrassment was avoided by explaining and emphasising that their participation was important to aid the researcher and was for the individual's benefit and the wider community. Finally, all surveys are anonymous; there is no communication of survey number or region regarding sensitive information, thus ensuring participants cannot be identified

Interviews have been conducted in a similar manner. Where necessary, interviewees have remained anonymous. Voice recordings are secured and discarded once a transcript has been made to ensure confidentiality.

Social norms and appropriate code of conduct was observed while the fieldwork was carried out. A local translator acted as a chaperone for safety measures and to provide guidance for acceptable interactions.

The aforementioned activities ensured the researcher had a low impact and stayed within the bounds of the ethical guidelines as set out and approved by the Massey University Research Ethics Office.

4.10 Limitations

Several limitations were identified and are outlined below.

4.10.1 Data Collection

This study was conducted during the off peak season and as such, the same conclusions may not apply for those visiting during the peak tourist season. However, it is known for certain, from the present study and historical literature that the destination has been popular for its climate and that is very likely to be one of the main motivations for many peak season tourists for visiting the area.

Some data were not available. A particular example of this was seen in regards to getting information from the Botanical Survey of India (BSI) regarding unique/rare/endemic flora. Information regarding endangered, endemic or native species would not be released to individuals as the information falls under the Central Government and not the State Government jurisdiction. Authority to release information would have to be gained from them and would only be released to the Departmental Head in Massey University. The reason cited for this was the risk of smuggling and illegal trade of these species.

4.10.2 Sampling

One of the major limitations of the tourist questionnaires is that domestic tourists were the only ones surveyed. It was noted that a few international tourists were observed in Yercaud, but a refusal to participate in the study meant this tourist group could not be considered.

Due to time, resource constraints, survey length and characteristics of the target populations, sample sizes were limited and might be insufficient for statistically significant results.

4.10.3 Questionnaires

There was a trade-off between complexity and length of the survey and sample size. The more questions asked, the less likely tourists were willing to answer and participate. Thus, the number of surveys completed was limited. In the case of resident surveys, time constraints were the more important limiting factor as residents were willing to answer long questions and were eager to provide information. There is a chance that residents were answering with what they thought interviewers wanted to hear. Also, it appeared as though many participants had never been asked questions of this nature before (such as those associated with the health of their surrounding environment). As such, they may not have had sufficient time to give it proper thought to accurately reflect the situation.

Unfortunately, some typos were allowed to remain in the surveys. Although these errors were found the researcher decided against reprinting due to major technical problems (extensive power cuts made printing surveys challenging). Translation to Tamil required some reformatting, in some cases this meant the English version had to be readjusted, to ensure no confusion arose for the researcher and those assisting in administering the survey. In this process some typos have come through. Additionally, this could have resulted in the attractiveness of the survey being reduced marginally.

4.10.4 Respondents

Cultural conclusions drawn about residents could not be applied using other hill stations as the tribal populations vary considerably between them. Furthermore, there is a possibility that respondents did not fill out surveys honestly or accurately (in the case of not understanding questions).

CHAPTER 5: DATA ANALYSIS AND RESULTS

Data obtained using the methods of collection outlined in the preceding chapter have been presented here. This section details the analyses used and subsequent results and presents the information gathered from the survey tools. The data presented attempts to fill the gap in information available regarding two aspects: tourist characteristics and attitudes; and resident villager economic situations. Additionally, potential relationships were investigated to seek explanations for the situation observed.

The first section covers the analyses performed on data gathered. This leads into the results produced from this data exploration. The data did not require complex analysis, however, trends that were observed are presented or described to support results from descriptive analyses. Tourist data has been presented first and divided based on differing characteristics that were surveyed. Resident data follows in a similar pattern. The third section provides a SWOT result. It is based on the destination's potential for ecotourism development and has been completed using personal observations and survey or interview data. The final results section presents the attractions inventory put together from field notes and available literature.

5.1 Analysis

These descriptive statistics will be used to characterise and profile respondents (Churchill, 2009). It can be useful in demand forecasting for marketing and running promotions.

Data analysis primarily focused on questionnaire data and makes up the bulk of the results presented.

Extensive interview data was also gathered, which provided various valuable insights into the location and phenomena being investigated. The method in which they were handled, including reasons for this course of action, have been outlined below.

A SWOT analysis was completed using information gathered from informal interviews, survey comments, and personal observations. It evaluates Yercaud as a potential ecotourist destination.

The final component of the results section is the compiled inventory of existing and potential tourist attractions located within the Yercaud Taluk.

5.1.1 Questionnaires

Analysis of questionnaire data involved several stages. The initial step required input of data into a software package and Microsoft Excel was chosen for its ease of access, user-friendliness and range of basic functions available.

Tourist and resident data were inputted into separate Microsoft Excel workbooks; this provided an easy platform to clean data, check for accuracy of data entry and consistency of responses to interrelated questions (Iarossi, 2006).

Descriptive statistics were completed in Excel, while a few more advanced analyses were completed in Minitab 16. Missing data required the use of an imputation technique in order to perform analyses. This process has been outlined below.

Most Likert item responses have been presented in a table showing the mode for each response item. Contingency tables investigating relationships were completed in Minitab 16.

5.1.1.1 Editing and Missing Data

After the input of data into Excel worksheets, a process of examining the responses to ensure they were logical, accurate and consistent was carried out. This also included coding and filling in of missing data (Iarossi, 2006).

Categorical responses were assigned a numerical code to make its use in analyses possible. In the case of non-legible or indistinguishable responses to survey items, these were coded to indicate that there was a response, but could not be categorised. These cases were assigned to 'other' where the item context permitted, or assigned to a similar category - this was an attempt to retain the

information despite lack of clarity. For questions that generated a large range of different responses (more than ten), responses were consolidated into broader categories or 'other'/related equivalent depending on their context. Item responses which had the lowest frequencies were those selected for reassignment into broader categories.

Tourist and resident missing data consisted of item non-response. A process of deductive imputation was possible in a few cases as it was possible to identify with a high probability what their answer would have been (Brick & Kalton, 1996). This is due to the survey method which allowed personal interaction with the participant; it was possible to gather the missing information through conversation with participants and fill in missing answers when the survey was returned to the interviewer. In other cases of item non-response, blanks were left to indicate the value "Not Applicable" which was later rectified during input and cleaning.

Missing data were not an issue for descriptive statistics, which are the predominant results provided from the surveys. However, in order to determine correlation between items it was necessary to impute data - correlation should only be done on complete data sets and case deletion would have risked introducing non-response bias. Missing data were dealt with using two methods. The first round involved case deletion of surveys missing large portions of responses. This occurred mostly amongst Likert scale items, which had multiple sub-items. These cases were missing more than approximately 80% of the variables used in analyses not including open ended questions. Following this a combination of hot deck imputation and mean imputation was utilised and Durrant explains them in greater detail (2005).

Hot deck imputation involved using values from similar cases to replace missing values (Durrant, 2005). For example, a student whose highest degree of education was higher secondary school, and had failed to provide their age were more likely to be younger than the mean of the sample population. Therefore, the value from a similar case was utilised instead of the sample age mean. Reducing the number of

cases that were dropped through these imputation methods maintains statistical power and reduces non-response bias.

These responses were coded for analysis, with some items requiring collation of data before being transferred to a more powerful statistical software package for further analysis. The choice of software package was Minitab 16; chosen for its ability to complete the desired analyses, ease of access and user-friendliness. Contingency tables (two-way tables) were completed on this platform (Ashcroft & Pereira, 2003).

Items removed from analyses occurred due to high number of non-response or uncertainty regarding accuracy of responses associated with those items. The tourist survey had two questions which met these criteria. These were Questions 7b and 8. The first had poor response rates, while the second generated too much confusion to ensure accurate responses. The resident survey had one question with poor response rates- Question 15 and its sub-questions. This was likely due either to confusion on how to answer the question or lack of genuine information to supply. The responses have not been included in the results section, but the information has been used to supplement other concepts and observations.

5.1.1.2 Descriptive Statistics

In the case of presenting survey data, descriptive statistics can be a strong and effective method of analysing the data (United Nations Statistical Division & National Household Survey Capability Programme, 2005). Thus, survey items have been summarised through the use of graphs and tables. This method of analysis also highlights the presence of outliers in data and several were identified in various items. Outliers were excluded from subsequent analyses to ensure accuracy and credibility of data if there was no valid explanation for its presence (Iarossi, 2006).

The extensive use of Likert items throughout both surveys meant that a simple percentage and tabulation would be insufficient to properly visualise and present data (Churchill, 1979). For tourist surveys, Likert items were collated and represented in a table showing the mode for each item response (Jamieson, 2004).

Due to the nature of responses in resident surveys, however, a table showing mode, mean and standard deviation was chosen to display Likert item data and the variability in responses.

5.1.1.3 Contingency Tables

Contingency tables were used to display the relationships between two items and required the use of Minitab 16 to cross tabulate. These were used for both tourist and resident surveys and subsequently had a 'heat map' style applied to highlight different frequencies across item variables. This is an effective and simple method for displaying information regarding the relationship between two items with multiple categories.

5.1.1.4 Correlation

Strength of relationships between items was measured through the use of correlation coefficients. Correlation between parametric variables utilised Pearson's correlation coefficient while Spearman's rank correlation coefficient was utilised for non-parametric variables (Ashcroft & Pereira, 2003). A p-value for correlation coefficients was also generated. This was also used to determine whether correlation between variables differed significantly from zero.

In cases where coefficient values were greater than 0.5, the variables were investigated further using more advanced analyses. However, tests such as Kruskal-Wallis or Chi-square did not provide any constructive information.

Most correlation coefficient values were either weak (0.0 - 0.3) or moderately strong (0.3 - 0.7). As many of the correlation values showed a low moderate relationship, only values greater than 0.5 and with a significant p-value were considered suitable.

5.1.2 Interviews

While it was decided that qualitative analyses would not be feasible, the information gathered was utilised throughout to supplement observations and survey data. Interviews were transcribed; however, no analyses were carried out

on interviews, as the main focus was to examine information gathered through the survey tools.

Information from interviews of key informants was utilised in various ways. Key informants who dealt with residents provided valuable information which was used to help shape questionnaires presented to residents. Other informants provided information regarding the research site which was utilised in Chapter 2, as available literature did not provide adequate coverage. Information was also used to complement survey data and is used to provide more in-depth insights in the discussion, Chapter 6.

5.2 Questionnaire Results

A total of 268 surveys were collected over a two month period (August-October 2012) from tourists and residents in the Yercaud Taluk. This involved visiting several tourist spots and residential villages.

For both tourist and resident questionnaire results, descriptive statistics have been presented first to provide characterisation of these groups and are followed by analyses which investigate relationships of interest to the research.

5.2.1 Tourist Surveys

A total of 138 tourist questionnaires was gathered, with participants having been approached at tourist attractions and accommodations. All survey data was utilised in analyses except if they were deemed outliers. Additionally, during cleaning of data, answers that were illegible were discarded and contributed to the following values obtained for survey completeness. 118 (86%) surveys had completed no less than approximately 90% of the questionnaire; and only 5 (4%) surveys had completed less than approximately 50% of the questionnaire. Each Likert sub-item within attitude questions was treated as an individual question. As such, each unanswered Likert sub-item contributed to overall completeness.

5.2.1.1 Tourist Profile

Table 12 shows demographic data collected from tourists visiting. *Male vs. Female:* As it can be seen, there are a larger percentage of male respondents. There are two reasons for this. The first is that when groups were approached to fill out questionnaires, the males would predominantly fill them out; secondly, there was an obvious discrepancy between the population of male and female tourists. *Tourist occupations:* these varied greatly and those classified as 'Employed' come from a range of backgrounds, such as politicians and Government officers, while 'Other' contains unidentified groups and included at least one retiree. The largest groups are students followed by, businesspeople and those involved in the IT industry. These professions usually require a university degree and consequently tourists visiting the area can be expected to be well educated. *Tourist Caste:* A significant proportion of tourists are not from any caste or tribe at 56%. This is followed by the backward caste which made up 9% of tourist respondents.

Table 12: Tourist profile.

	No. of Respondents	Percentage of Respondents
Gender	128	
Male	89	70%
Female	39	30%
Profession	138	
Student	38	28%
Business	30	22%
Information and communications technology	19	14%
Employed	16	12%
Healthcare	6	4%
Engineer	5	4%
Homemaker	6	4%
Agriculture	3	2%
Science professional	5	4%
Other	10	7%

Age Group: Yercaud is visited by a largely younger population, see Figure 14. They fall between the ages of 16 to 35. Retirees, who would be expected to make up the over 50 age groups make up less than 10% of visitors to the area. The average age is about 30 years old.

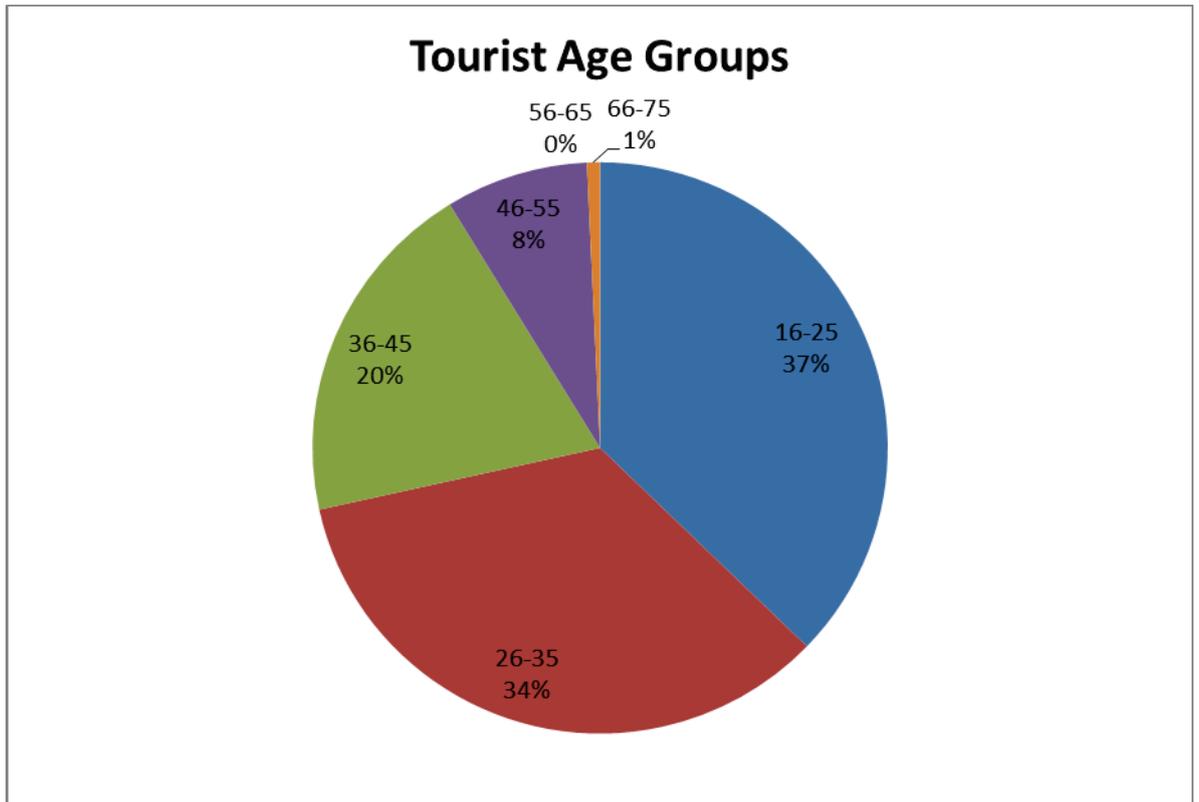


Figure 14: Age groups of surveyed tourists visiting Yercaud Taluk.

Tourist Income: Figure 15 shows that the largest income bracket which tourist household incomes fall into is the 'Rs 250,000 - 500,000' category. This makes up 29.3% of the 116 item responses provided. Less than 10% of tourists had a combined household income of over Rs 2,000,000

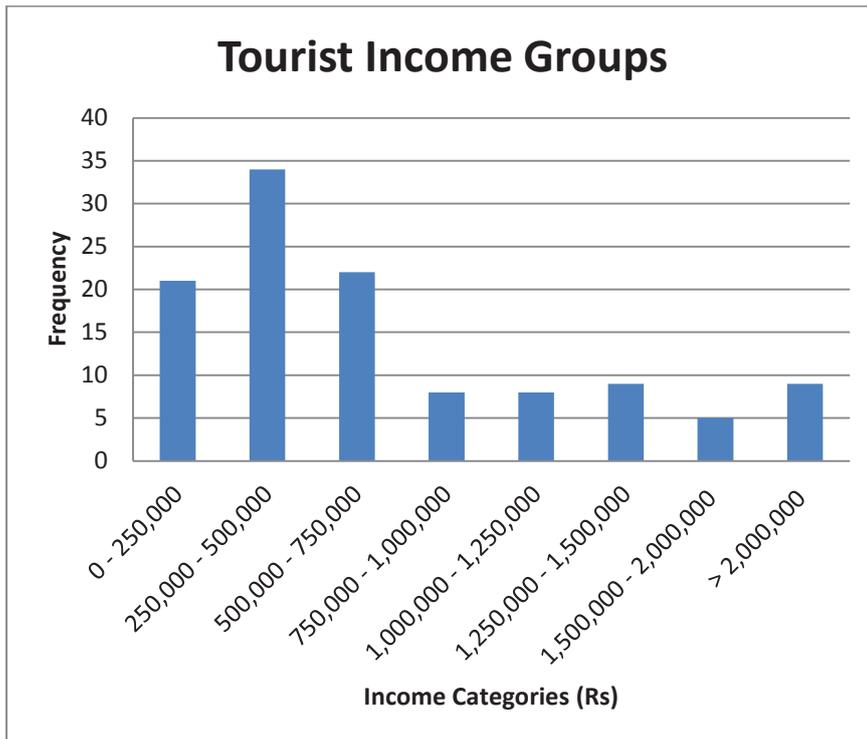


Figure 15: Combined annual household incomes of tourists visiting Yercaud Taluk.

Education: Over 50% of those visiting held a university degree and nearly 30% had a post-graduate degree. This reinforces the concept that tourists are well educated (Figure 16).

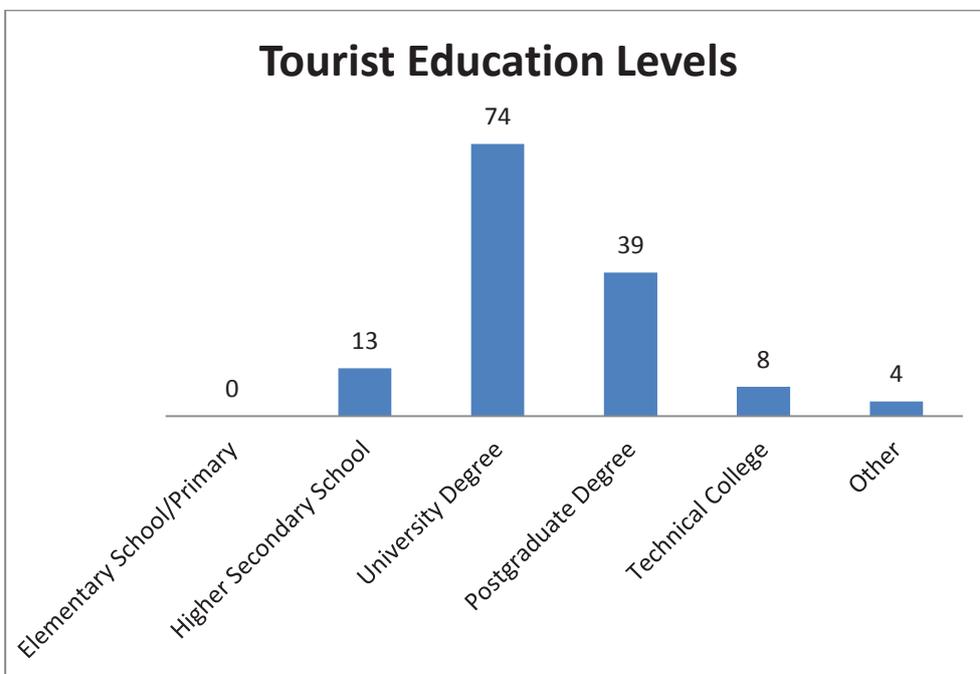


Figure 16: Highest level of education of tourists visiting Yercaud Taluk.

5.2.1.2 Tourist Trip Characteristics

First time vs. Repeat Visitor: A large percentage of tourists are first time visitors (62.5%), but a considerable number are repeat visitors (37.5%) to the area. This can be seen in Table 13. *Arrival Day:* 10.3% of visitors arrived between Monday and Thursday while the vast majority, 90%, arrived on Friday or the weekend

Table 13: Tourist trip characteristics.

	No. of Respondents	Percentage of Respondents
First Time visitor	85	62.5%
Repeat Visitor	51	37.5%
Tourist Arrival Days		
	127	
Monday	2	1.6%
Tuesday	1	0.8%
Wednesday	7	5.5%
Thursday	3	2.4%
Friday	25	19.7%
Saturday	68	53.5%
Sunday	21	16.5%
Length of Stay (days)		
	136	
	1	27
	2	58
	3	40
	4	7
	5	4
		19.9%
		42.6%
		29.4%
		5.1%
		2.9%

Frequency of Past Visits: Of the 51 repeat visitors, seven (13.7%) were guardians or relatives of Montfort School boarders. These individuals regularly visited Yercaud and contributed to those making more than 15 visits. Six tourists, who had visited more than five times, were not associated with Montfort boarders, instead visiting for leisure.

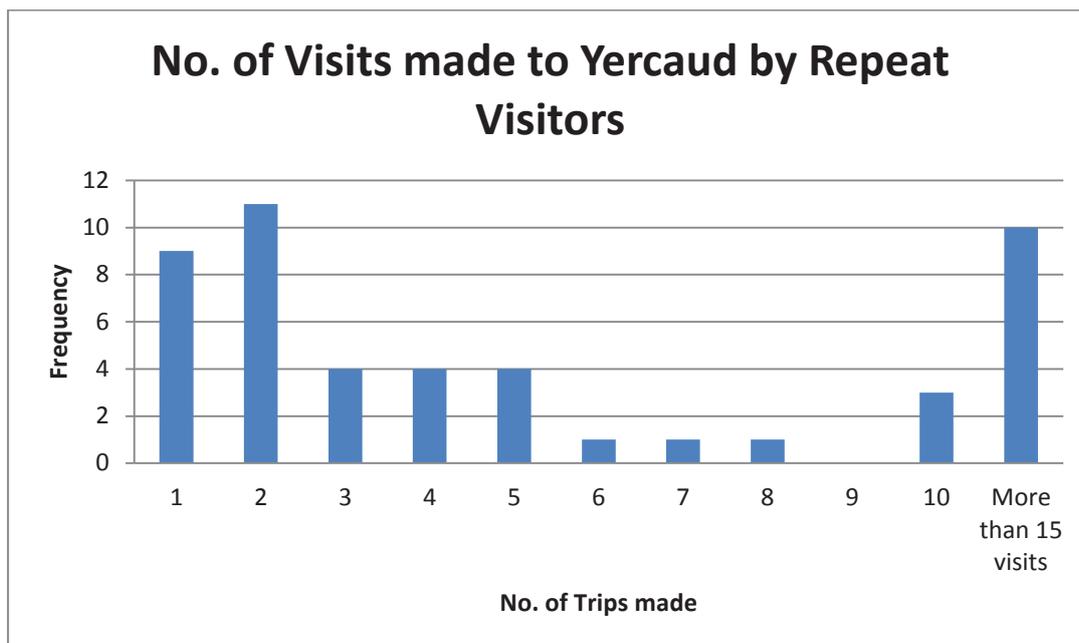


Figure 17: Number of visits made to Yercaud by repeat visitors.

Length of Stay vs. Arrival Day: Table 14 shows the relationship between duration of stay and arrival day. Higher numbers can be seen where patches are darker. Lower counts have lighter gradations. Predictably, tourists arriving on Friday or Saturday are most common while tourists staying for 2-3 days make up most of visitors at 72%.

Table 14: Length of tourist stay vs. tourist arrival day.

		Arrival Day							Total
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
No. of days	1	0	0	0	0	1	23	1	25
	2	1	1	0	1	15	33	3	54
	3	0	0	1	1	9	9	17	37
	4	0	0	3	1	0	3	0	7
	5	1	0	3	0	0	0	0	4
Total		2	1	7	3	25	68	21	127

Tourist Expenditure: Figure 18 shows the total amount that tourists spent on their trip to Yercaud. Expenses included: transport to reach Yercaud; transport within Yercaud; meals; activities; shopping; entertainment; and accommodation. The asterisks in the graph indicate outliers; these have been retained as there were

reasonable explanations for their presence. Some outliers were excluded; for example, in one case Rs 50,000 was put down as total expenditure, which could not be explained by accommodation type, size of group, or length of stay. Outliers that have been retained included a couple staying for 3 days. Their high expenditure value could be explained by staying at an expensive resort which would have contributed to at least a third of their expenditure. Another outlier was the case of a group of sixteen people – all family members whose expenses were shared between them all. Out of 117 responses, the median is Rs 6,000 with a lower quartile of Rs 2,950 and upper quartile of Rs 11,700. Minimum and maximum values are Rs 150 and Rs 40,000 (including outliers). A low value can be contributed to the fact that the question asked, what their expenses had been so far. As such, some tourists may have just arrived at Yercaud, while others may not have stayed overnight and therefore did not accrue many expenses.

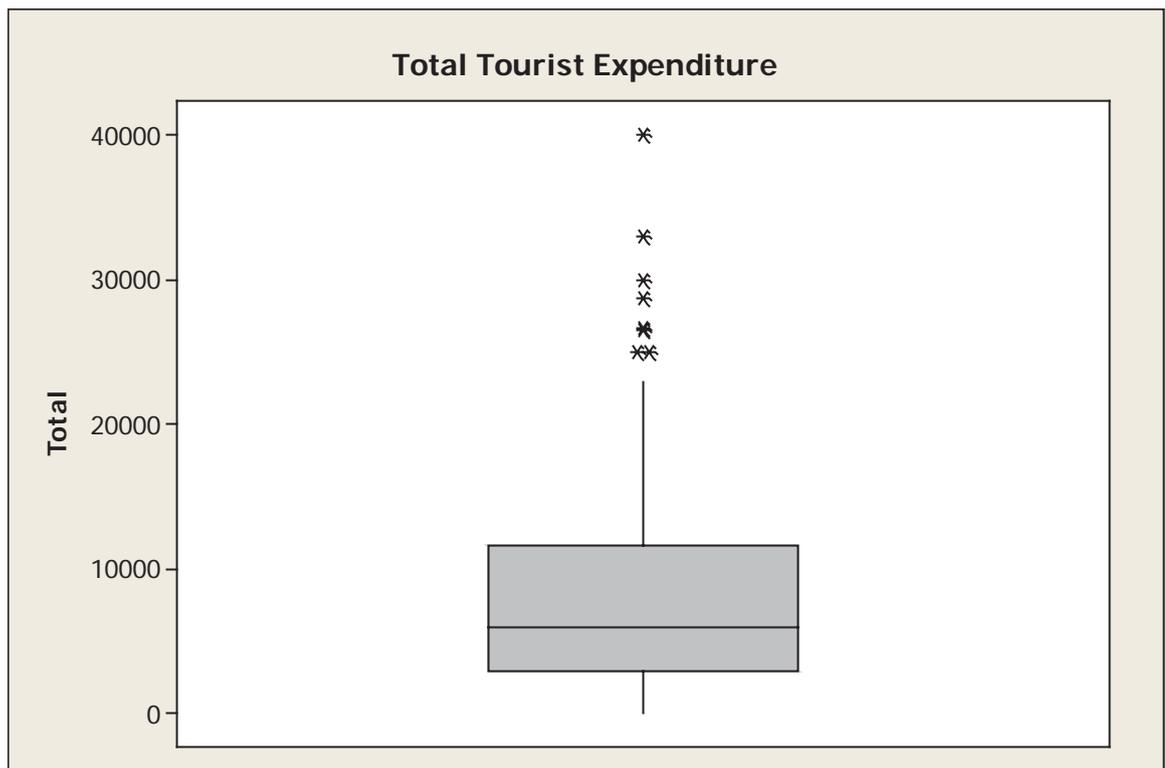


Figure 18: Total expenditure for tourists visiting.

5.2.1.3 Tourist Group Characteristics

Tourist Origin (State): All respondents were from India and were domestic tourists. The few international tourists approached were unwilling to participate. This can be seen in Figure 19, which shows tourist origin. All tourists surveyed originated from five different states in India, each of which share a border with the state of Tamil Nadu where the destination is located. Tamil Nadu contributed the most tourists to Yercaud, followed by Karnataka and Kerala.

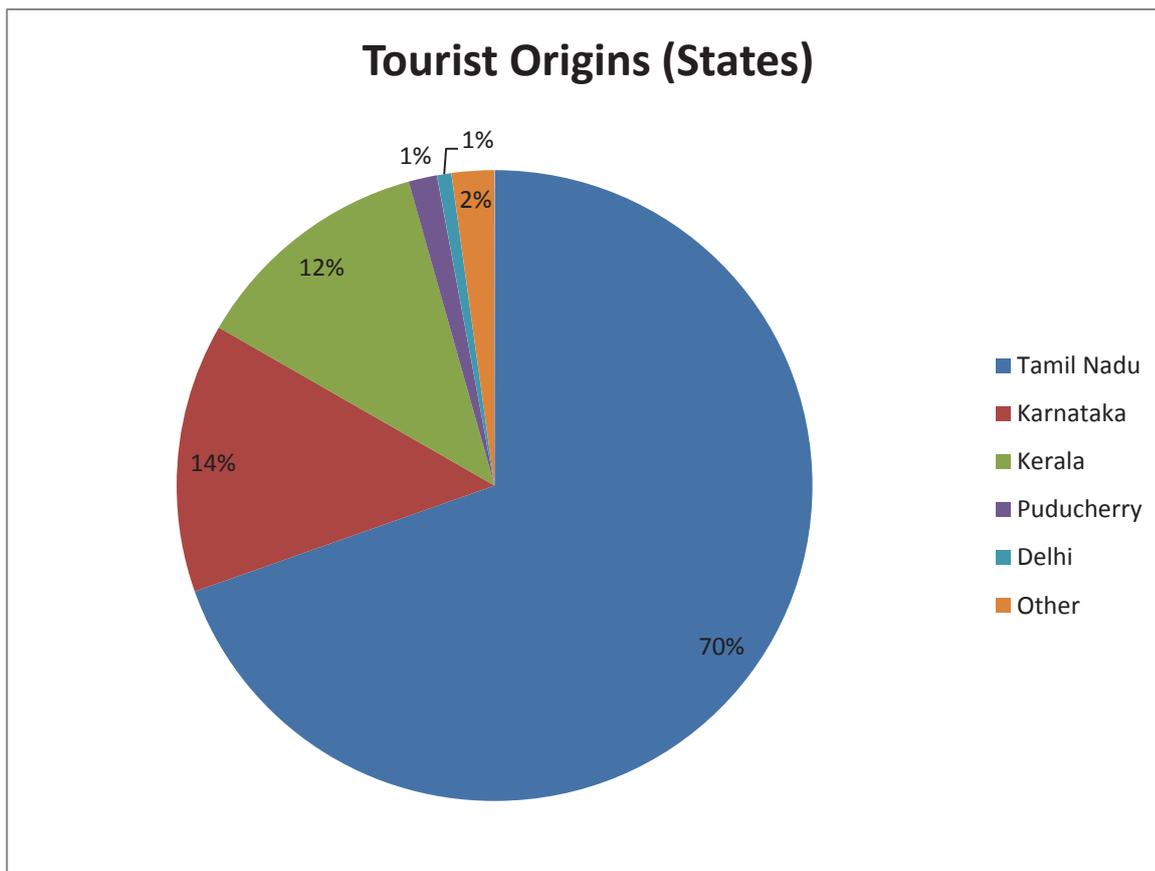


Figure 19: Tourist state of origin in India.

Tourist Origin (City): Tamil Nadu contributes the most tourists overall and this is also reflected by the most common tourist origination by city. The second most common city of origin is Bangalore, in Karnataka. Chennai is the most common tourist origin.

Table 15: Tourist city of origin.

Tourist Origin (City)	No. of Respondents	Percentage of Respondents
	138	
Chennai (Tamil Nadu)	38	28%
Bangalore (Karnataka)	19	14%
Salem (Tamil Nadu)	12	9%
Coimbatore (Tamil Nadu)	11	8%
Tirupur (Tamil Nadu)	6	4%
Dharmapuri (Tamil Nadu)	6	4%
Trichy (Tamil Nadu)	5	4%
Other	41	30%

Main Tourist Origins: Figure 20 shows Yercaud relative to the main tourist origins, and to the State of Kerala. Bangalore is the closest at approximately 230 km away, while Chennai is 360 km.

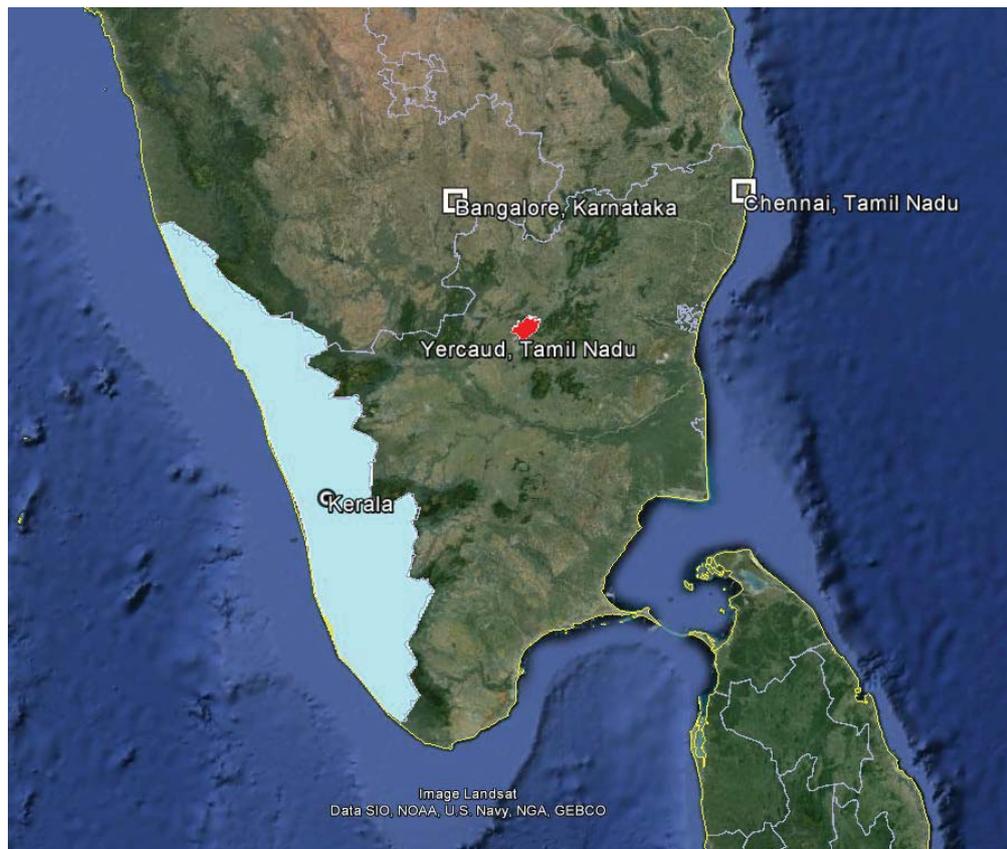


Figure 20: Location of most common tourist origin in relation to Yercaud.

Duration of Stay vs. State Origin: Table 16 shows that unlike other states, those from Tamil Nadu are the only tourists to spend more than 3 days in Yercaud.

Table 16: Length of stay vs. state of origin.

	State of Origin					Total
	Tamil Nadu	Karnataka	Kerala	Puducherry	Delhi	
No. of days 1	22	4	1	0	0	27
2	35	11	8	2	1	57
3	27	4	8	0	0	39
4	7	0	0	0	0	7
5	4	0	0	0	0	4
Total	95	19	17	2	1	134

Travel Group Size: Majority of tourist groups travelled in sizes of one to five people. Larger groups than these consisted of large families and groups of friends travelling together. The largest consisted of students travelling for a school trip and had up to 60 in one group.

Table 17: Group characteristics.

Travel Party Size	No. of Respondents	Percentage of Respondents
		135
1-5	69	51.1%
6-10	38	28.1%
>11	28	20.7%

Group Relationship: Figure 21 shows that tourists were most commonly travelling with family (30%), or with friends (35.5%). The high proportion of family travellers is in line with increasing family market trends. The high proportion of tourists travelling with friends was observed to be groups of males. A single person who was travelling alone was a relative of a Montfort School boarder.

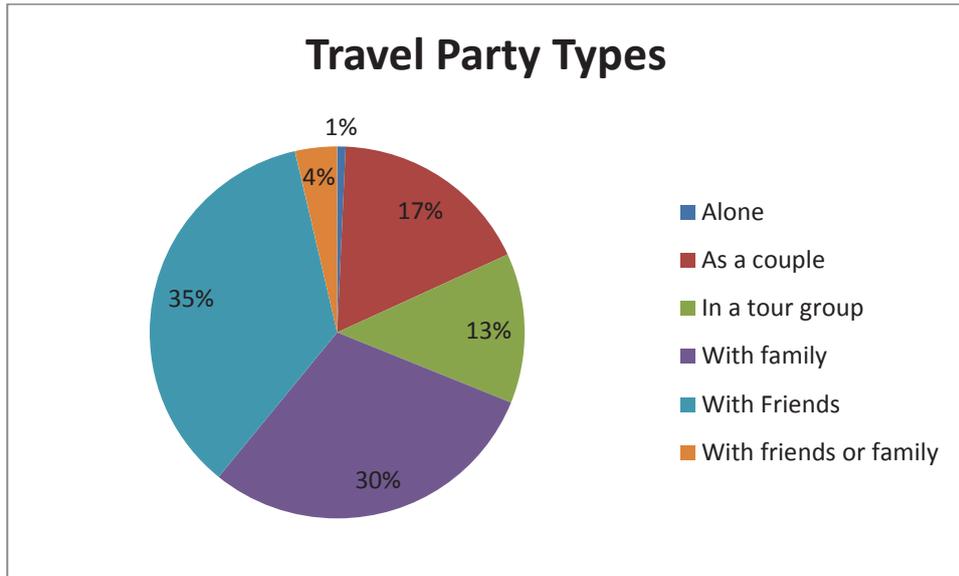


Figure 21: Travel party types.

5.2.1.4 Tourist Movements

Attractions Visited: Figure 22 shows that the most popular attractions are - Emerald Lake (Big Lake), Pagoda Point, and Lady's Seat – which are centrally located.

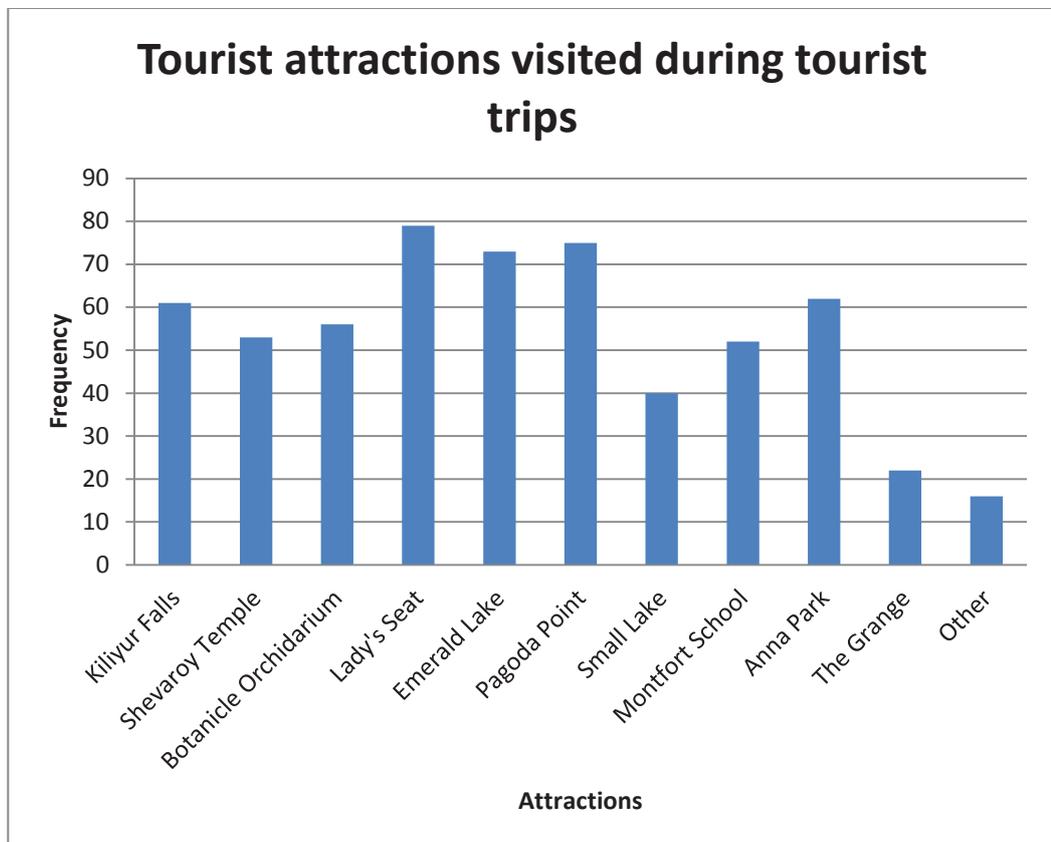


Figure 22: Tourist attractions visited.

Transport (External): Figure 23 shows that most tourists travel to Yercaud using personal transport. Following this, most people have hired or joined a tour bus in order to reach Yercaud. Other transport options used by tourists to reach Yercaud included the use of trains in combination with other transport types, such as cars or buses.

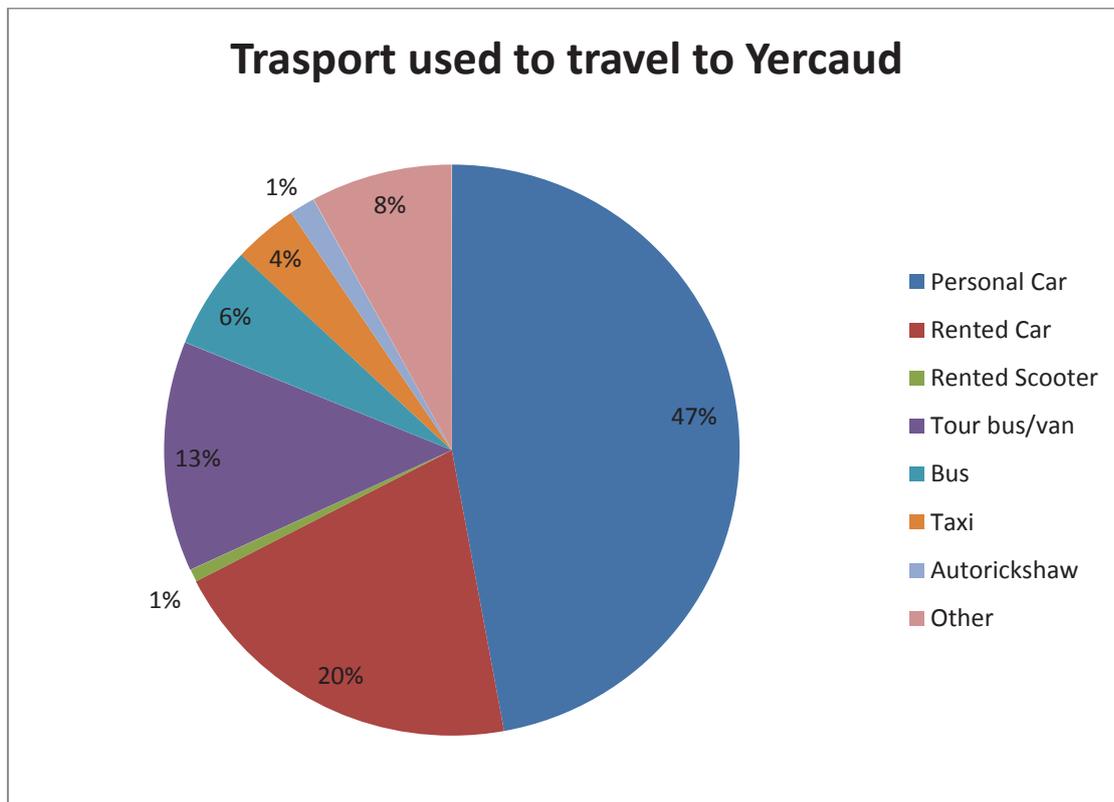


Figure 23: External transportation options used by tourists to reach Yercaud.

Transport (Internal): Table 18 shows that the most popular method to travel around Yercaud remains the use of a tourist's personal car. Following this there are several options that were used with the most popular being rented cars and tour buses. Those who indicated 'other' included those who chose to walk around Yercaud.

Table 18: Tourist transport used within Yercaud.

Transportation Types used Within Yercaud	No. of Respondents	Percentage of Respondents
Personal Car	65	50.4%
Rented Car	28	21.7%
Rented Scooter	1	0.8%
Tour bus/van	18	14.0%
Bus	8	6.2%
Taxi	5	3.9%
Auto rickshaw	2	1.6%
Other	2	1.6%

Accommodation: Figure 24 shows that the most common accommodation types are resorts followed by hotels. Only 7% of tourists stayed in a boarding home/homestay environment and one tourist owned their own house in Yercaud.

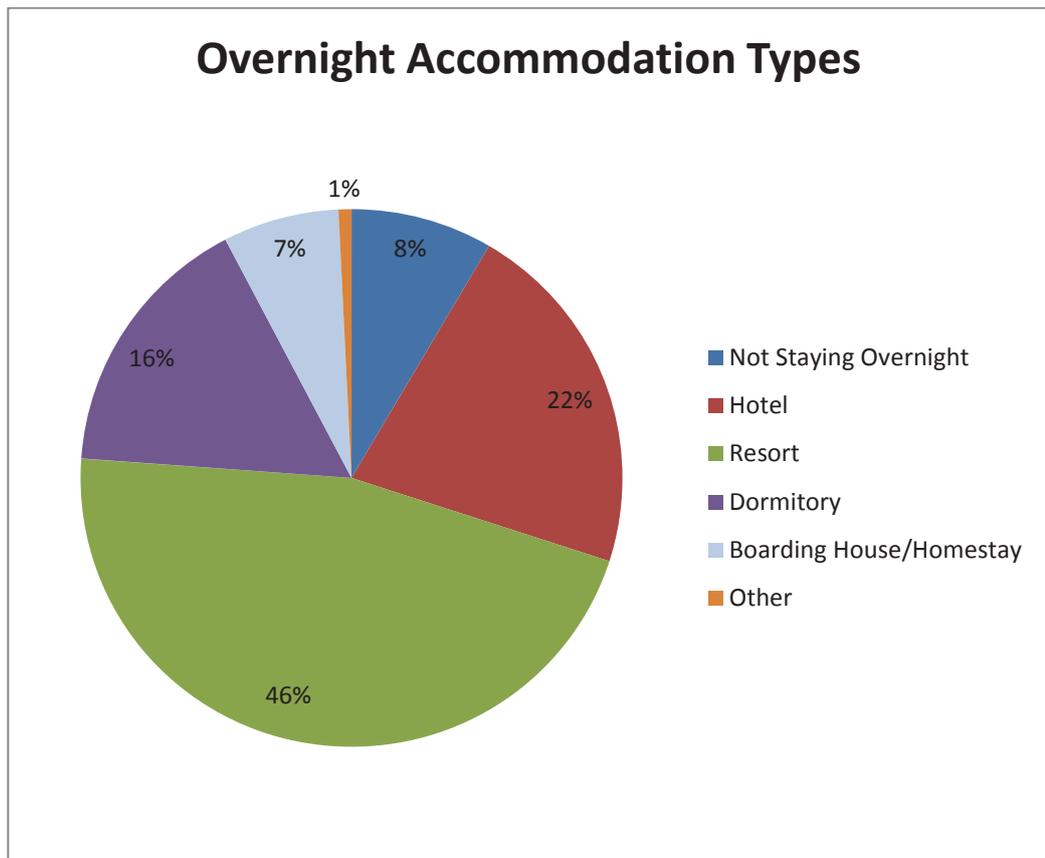


Figure 24: Overnight accommodation used by tourists.

5.2.1.5 Tourist Attitudes

Likert item responses have been presented in the following tables. *Destination Attractivity*: As can be seen the most important factor influencing tourist decisions was good weather. Other important factors included: the quality of the landscape and scenery; and the ease of access to Yercaud. Table 19 shows the degree to which factors affected tourists' choice in visiting Yercaud.

Table 19: Yercaud destination attractivity factors affecting tourist choice.

Destination Attractivity Factors		Not at all	Neutral	A little	Moderately	A lot
Natural	Good weather conditions					●
	Quality of natural scenery & landscapes/environment					●
	Opportunity to see wildlife	●				
	Opportunities to learn about and experience nature				●	
	Opportunity to see unique plant or animal species		●			
Cultural	Opportunity to visit and learn about a traditional community		●			
	Visits to temples or religious sites	●				
Infrastructure & Services	Quality and range of accommodation options				●	
	Opportunity to stay in local homes (boarding/guest house)	●				
	Quality and range of restaurants				●	
	Quality of activities/accommodation/services match with price paid				●	
	Good local transportation system between tourist sites		●			
	Facilities and entertainment available for children				●	
	Yercaud is easily accessible					●
	Easy to reach tourist sites				●	
	Roads to destination are in good condition				●	
	Tourist sites are safe to visit				●	
Recreational	Opportunities to participate in adventure/sports activities				●	
	Opportunities to participate in relaxing activities				●	
Other	Potential for business investment/development in Yercaud				●	

Correlation between Factors: Several destination attractiveness factors were moderately correlated. Questions with the same themes are related, showing that respondents answered consistently. Figure 25 shows interrelatedness between factors. Cultural, recreational and other factors showed no correlation. Infrastructure and services were distinguished into separate categories by tourists. The trend observed, showed that tourists answered related questions similarly e.g. those who indicated a high level of influence from ‘good weather conditions’ on their decision were similarly likely to indicate a high level of influence from the ‘quality of natural scenery and landscape’.

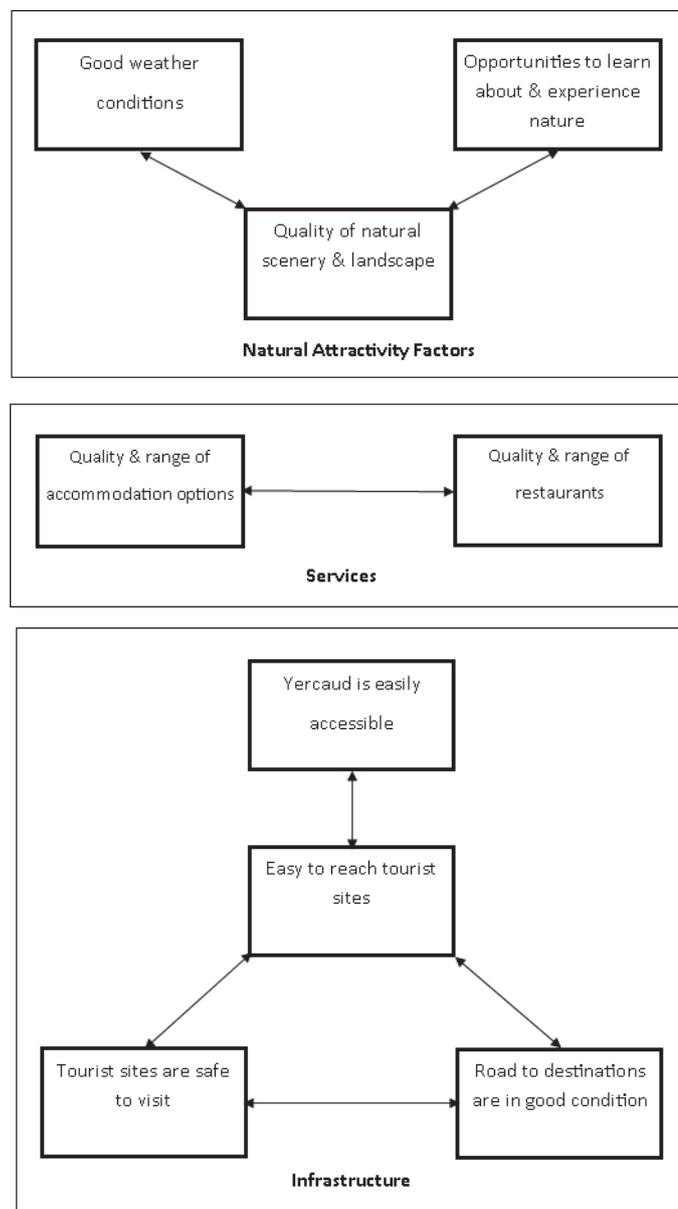


Figure 25: Destination factors showing mild correlation.

Tourist Activities and Services: As can be seen in Table 20, the most important tourist activities/services are hiking/trekking and entertainment for children. Those of least interest or import are fishing, horse-riding, and harvesting own fruit. Neutral positions were held about volunteer environmental programmes; art and craft performances; spiritual inspiration; shopping and organised entertainment.

Table 20: Important activities and services associated with tourist holidays.

	Important Tourist Activities & Services	Not at all	Neutral	A little	Moderately	A lot
Natural	Hiking/trekking/camping					●
	Wildlife viewing or bird watching				●	
	Fishing	●				
	Visiting parks, natural sites or gardens				●	
	Swimming/boating				●	
	Biking				●	
	Horse riding	●				
	Volunteer conservation programs e.g. tree planting			●		
	Visiting coffee or spice plantations					●
	Visiting agricultural lands or orchards					●
Cultural	Attending art, craft or music performances (e.g. dancing)		●			
	Visiting cultural heritage sites or historical places				●	
	Visiting small towns or villages				●	
	Spiritual inspiration		●			
	Harvesting your own fruits/vegetables	●				
	Farm stays (experience an agricultural/estate lifestyle)				●	
	Boarding houses/home stays				●	
	Traditional practices and products				●	
	Herbal or natural medicinal practices and products				●	
Services	Restaurants				●	
	Shopping		●			
	Organized entertainment		●			
	Entertainment for children					●

Correlated Activities and Services: Several preferred activity options were correlated, showing relationships which cannot be detected from the summary of tourist activity preferences. Figure 26 displays linked preferences. Fishing and volunteer programmes have different levels of importance as seen in the earlier graph; however, despite this difference there is a moderate trend where the level of preference for one is exhibited at a similar level for the other. This trend has been observed in all the other variable pairs included in Figure 26.

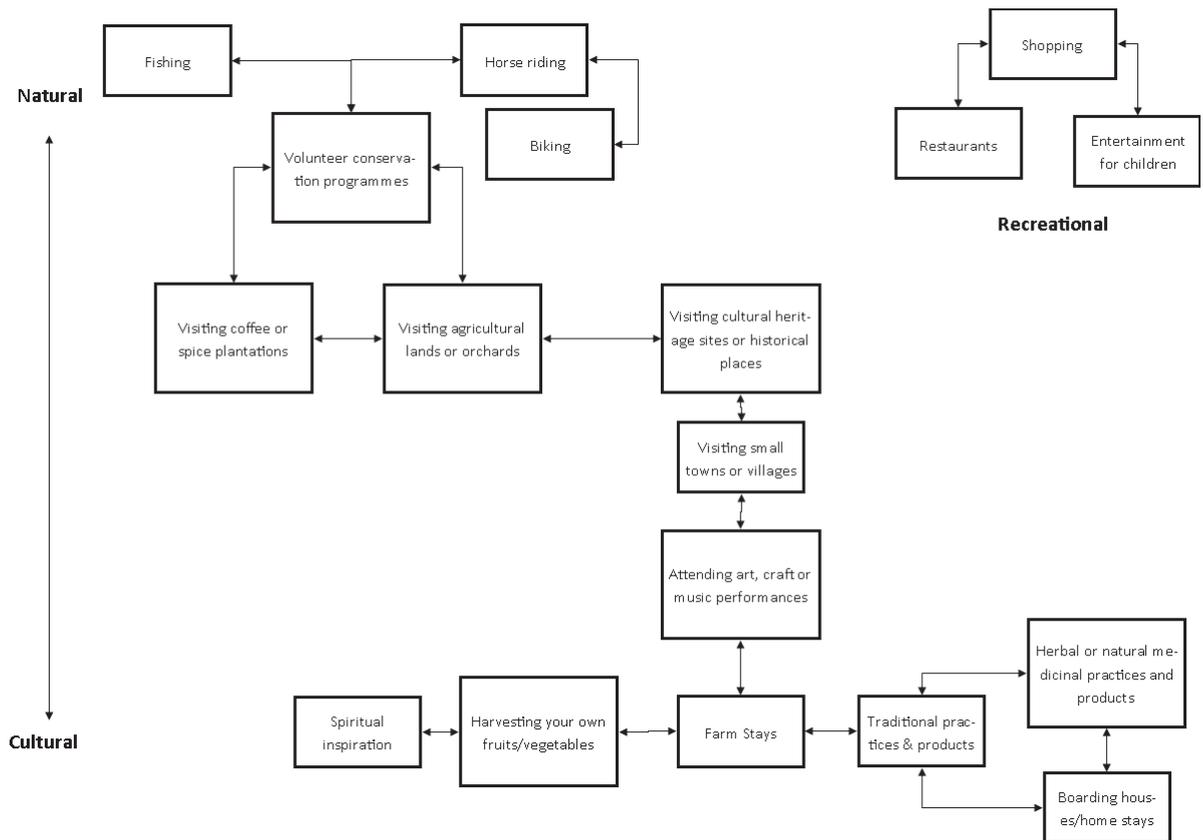


Figure 26: Moderately related tourist activities and services.

Tourist Satisfaction: Table 21 shows that tourists were dissatisfied in two areas - the lack of diversity in adventure and sports activities and the lack of shopping opportunities and facilities. Viewing and learning about local wild animals was 'not applicable' reflecting the poor diversity of wildlife (particularly large mammals) present in Yercaud.

Table 21: Tourists' satisfaction of their experiences in Yercaud.

	Tourist Experience	Not Applicable	Very Unsatisfying	Unsatisfying	Satisfying	Very Satisfying
Nature	Viewing and learning about local wild animals	●				
	Viewing and learning about local plant life				●	
	Viewing natural areas				●	
	Nature learning experiences				●	
	Local environmental conservation efforts				●	
Culture	Traditional ways of life in local community				●	
	The quality and availability of locally made products				●	
Infrastructure	Local transport to tourist sites				●	
	Facilities/entertainment for children				●	
Services	Local's attitudes towards visitors				●	
	Local cuisine and drinks				●	
	Admission prices to tourist sites				●	
Recreation	Stores/shopping opportunities			●		
	The diversity of adventure/sports activities			●		

Correlated Experiences: Some experience variables were moderately correlated, with tourists exhibiting equivalent levels of satisfaction among related variables. For example, those reporting satisfactory experiences of 'nature learning experiences' also reported satisfactory experiences of 'viewing natural areas'. This also applies to those who reported unsatisfactory experiences (Figure 27).

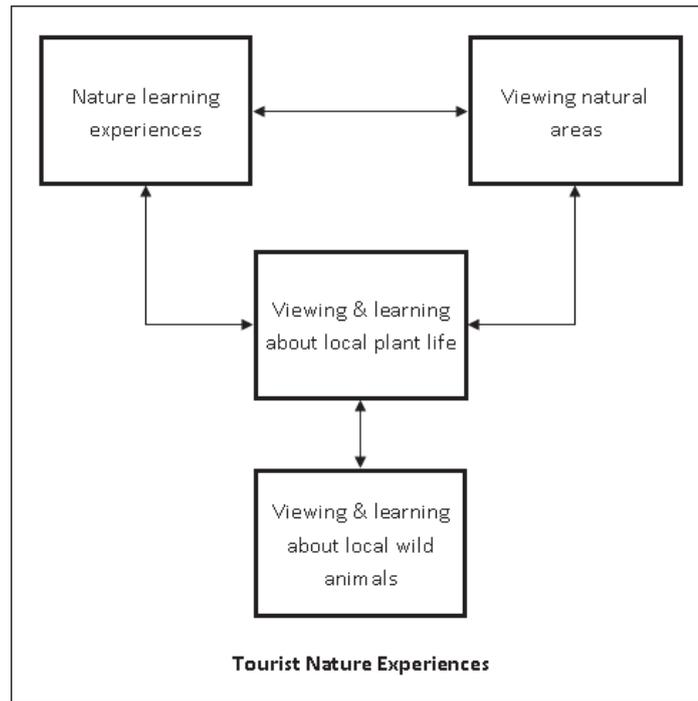


Figure 27: Correlated tourist experiences.

5.2.2 Resident Surveys

A total of 130 surveys were completed by residents from 14 villages around the Taluk. These villages have been included in the tourist map in Section 5.4. No survey was 100% complete. However, they were cleaned and edited, resulting in 128 (93%) surveys being no less than 80% complete and 2% being no less than 60% complete. Despite incompleteness, all surveys were still utilised. Missing values were imputed to allow for analyses to be performed on data.

5.2.2.1 Resident Characteristics

Marital Status: More than 75% of those surveyed were married with no respondents being divorced or separated. *Males vs. Females:* Due to the sampling methods, there are a slightly higher proportion of females to males surveyed. *Tribe/caste:* 75% were Malaiyalis, the scheduled tribe of the Shevaroyis. 19% stated that they belonged to a scheduled tribe or caste without providing further clarification. *Language:* Less than 10% of those surveyed spoke English, or Urdu - the only other language that was spoken by some respondents.

Table 22: Resident characteristics.

	No. of Respondents	Percentage of Respondents
Marital Status		
Married	97	77.6%
Single	21	16.8%
Widowed	7	5.6%
Divorced/separated	0	0.0%
Gender		
Male	49	46.7%
Female	56	53.3%
Caste		
Malaiyali	64	75.3%
Scheduled Caste	3	3.5%
Backward Caste	2	2.4%
Other	16	18.8%
Languages Spoken		
Tamil	119	92.2%
Tamil & English	8	6.2%
Tamil & Urdu	2	1.6%

Age Distribution: Figure 28 shows the age distributions of surveyed residents. There were initial concerns regarding accuracy of age responses - some participants were unsure about their age and provided estimates. The residents were clearly underestimating their ages by at least a decade. This was noticed amongst those with little to no schooling and so those with less than five years of study (equivalent to finishing Primary school) were excluded. However, after comparing figures there was little difference made by excluding this subset. Excluding this population decreased the average age by two years. As such, this population subset was retained and the following figures show that much of the population is younger than 40; 24% were between the ages of 26 and 35 while 38% of respondents were between the ages of 36 and 45.

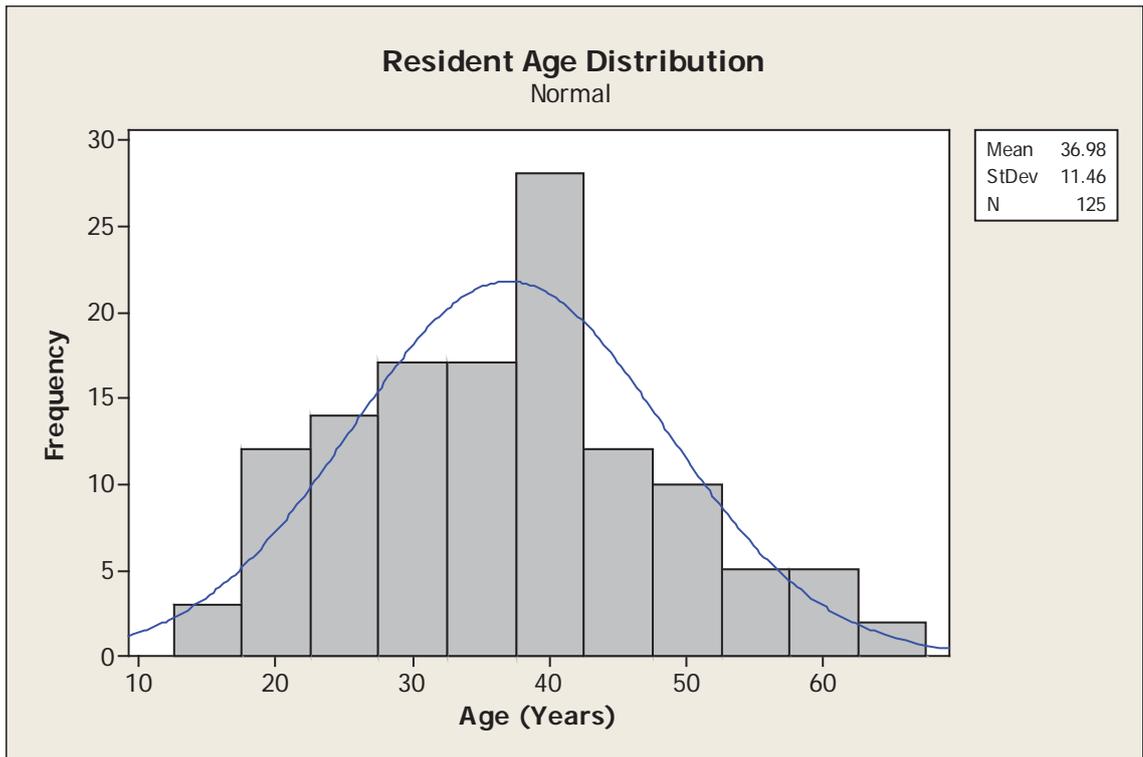


Figure 28: Distribution of surveyed residents' ages.

Education: A notable proportion of those surveyed had received no schooling at 14.6% (Figure 29). However, 47% of them had attended higher secondary school (10-12 years of schooling) with 6% having completed degrees such as mathematics and electrical engineering degrees.

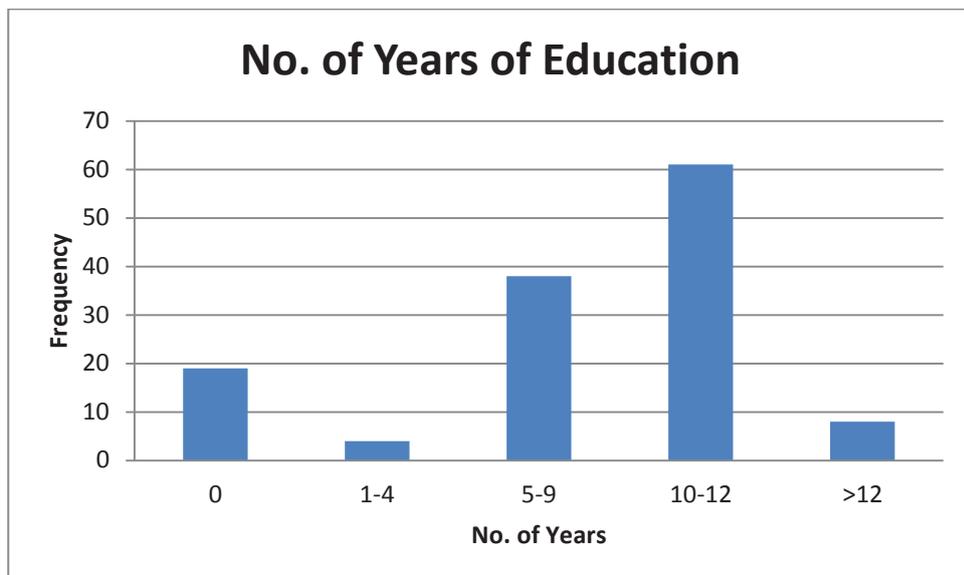


Figure 29: Number of years of education undergone by residents.

Resident Work Areas: Only 5% of respondents worked in a tourist area and 14% worked in Yercaud (Figure 30). Those working in the village, held positions as local shop owners, teachers and village health nurses. Those labelled as other, consisted of drivers and several unspecified responses.

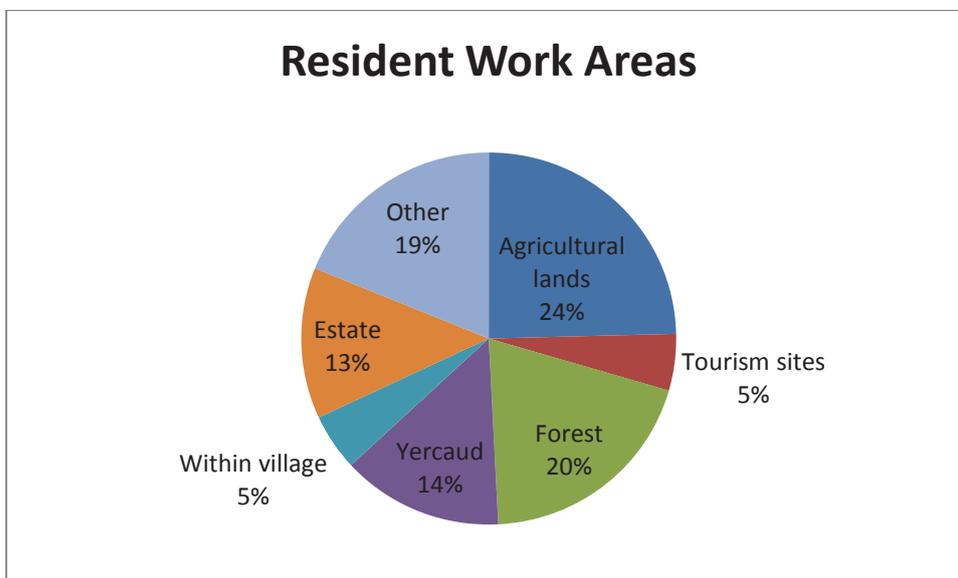


Figure 30: Work areas of residents within Yercaud Taluk

Days Worked vs. Age Groups: Table 23 shows the distribution of number of days worked by each age group. To claims that tribal residents tended to work less than 5 days a week, results showed that less than 5% of those surveyed fell into that group. There are also 16 year olds who work 20 days or more as can be seen in the first row of the table. Furthermore, those in the 56 to 65 age group do not work less than 20 days a month.

Table 23: Age group vs. number of days worked per month.

	No. of days worked per month											
	14	15	16	20	22	23	24	25	26	28	30	31
16-25	0	0	0	4	1	0	2	4	1	1	2	0
26-35	1	2	0	7	0	1	3	6	2	0	0	0
36-45	0	0	1	16	1	2	3	10	3	0	3	1
46-55	0	1	0	2	0	0	1	5	2	0	3	1
56-65	0	0	0	3	1	0	1	2	1	0	0	0

Alternate Occupation Skills: Table 24 presents data gathered from villagers, rating the extent to which their current skill set could be applied to in these work areas. It

is obvious that an overwhelming number believe they are unable to apply themselves to these alternate areas. However, there are some areas where they exhibit some confidence in applying their skills and '1', '2' and '3' correspond to 'a little', 'moderate', and 'a lot' respectively. In order to report on these areas, those who have indicated 'not at all' have not been included in the following table. Respondents who indicated 'other', mainly suggested working on estates or working as coolies. The former refers to plantation related work such as coffee picking and clearing weeds. The latter refers to hard labour. In particular, it is associated with the numerous rapid construction projects occurring in Yercaud Taluk with coolies completing much of the work with no proper machinery. Additional areas provided included agriculture, masonry work, education, electrical and timber business. The main areas where residents believe they can apply themselves (as indicated by mode) are those related to tourism. These are also characterised by relatively low positive responses. Using the mean presents the same areas with the addition of plantation work to potential alternative skill areas.

Table 24: Alternative skill areas as indicated by residents.

Alternate Skill Areas	Number	Mode	Mean	Std Dev
Fruit cultivation	19	1	1.5	0.6
Coffee/spice plantation	63	1	2.0	0.9
Cattle/poultry rearing	51	1	1.7	0.8
Crop farming	35	1	1.8	0.8
Fishing	7	1	1.3	0.5
Hunting	6	1	1.2	0.4
Environmental conservation projects	12	2	2.1	0.7
Retail & wholesale	17	2	1.6	0.6
Tourism	11	3	2.1	0.8
Boarding home/homestays	25	3	2.3	0.8
Farm-stays	3	3	2.7	0.6
Timber products	16	1	1.6	0.6
Non-timber products	10	1	1.8	0.8
Ethno-medicine	11	1	1.5	0.7
Restaurants	19	1	1.7	0.7
Other	22	2	2.2	0.6

5.2.2.2 Household Characteristics

Household size: The largest household consisted of 12 individuals, both adults and children. 34.6% of households had a household size of five people with 46.9% of households having less than five people per household and 18.5% having more than five. The largest number of adults found in one household was nine. 50% of households had two adults while 46.2% had three or more. The largest number of children found in one household was five. 27.7% of households had no children; 27.7% had two children and 30.8% had more than two children. *Land ownership:* Two respondents owned their house alone, while one person said they lived on government land. This latter case occurs when individuals occupy government land for a period of many years. In this instance they had occupied the land for nearly 30. Nearly 50% of residents did not own any land and at most residents owned 3 acres (Table 25).

Table 25: Resident household characteristics.

	No. of Respondents	Percentage of Respondents
Ave. no of Individuals in household		
Adults	3	
Children	2	
Amount of land owned (acres)		
None	64	49.2%
<1	22	16.9%
>1	41	31.5%

Household Income: 90% of respondents earned between Rs 0-7,500 per month and only 10% earned greater than Rs 7,500. Majority of residents were in the Rs 2,500 - 5,000 income bracket at 44.5%.

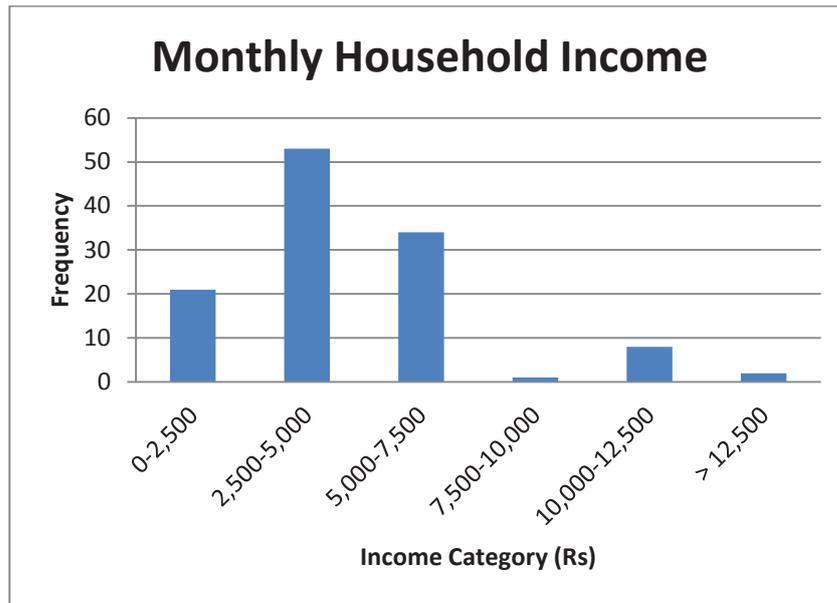


Figure 31: Residents' combined monthly household income.

Household Employment: Majority of households had family members who worked in plantations and agriculture (Figure 32). In some cases, individuals had more than one employment area and this was reported by indicating multiple work areas. Those that indicated 'others' reported individuals working as teachers, tailors, coolies, store keepers and masonry workers, electricians and office workers.

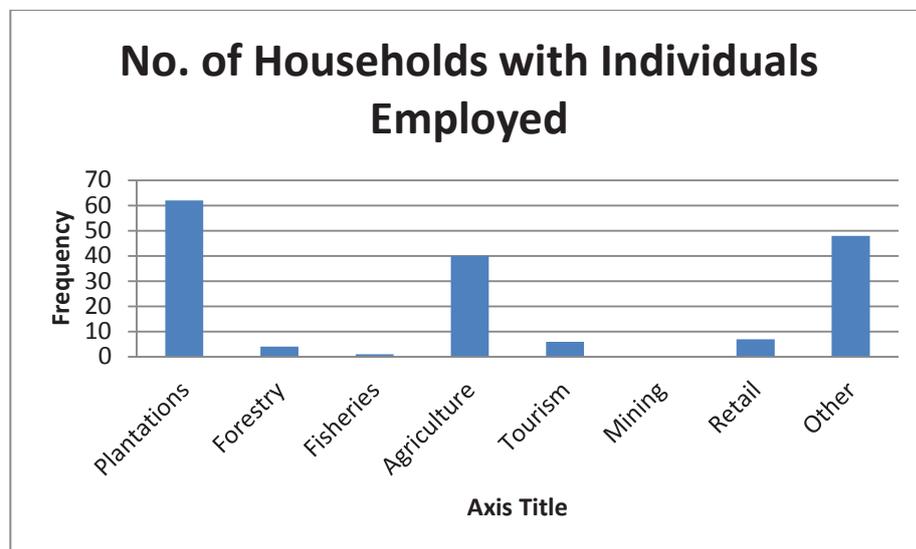


Figure 32: Number of households with individuals employed in various fields.

Income Sources: Most residents have indicated that their household either had no source of income, or just a single area (Figure 33). In the case of residents with

'zero sources of income', it is possible they did not understand the question and therefore answered with a blank, or zero.

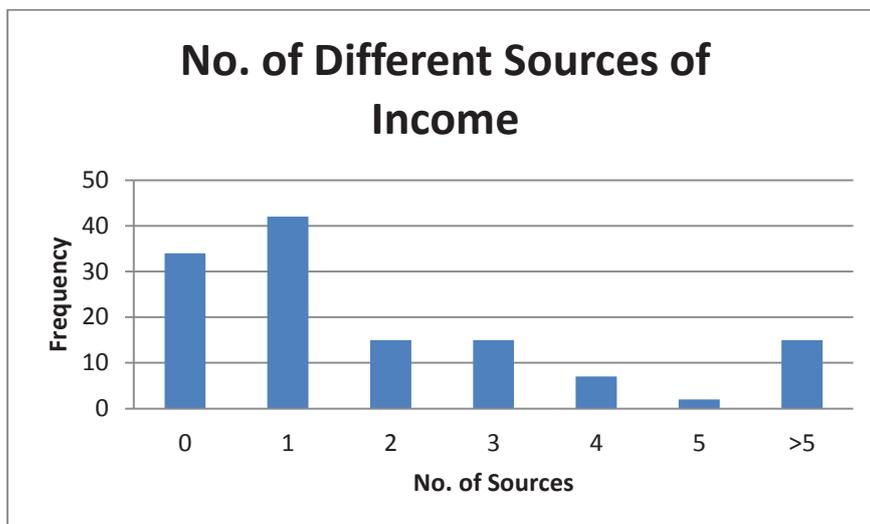


Figure 33: Total number of sources of income for residents.

Based on mode (where '1', '2' and '3' correspond to 'a little', 'moderate', and 'a lot' respectively) the most significant household income sources are from stores and tourism (Table 26). This is also backed by looking at the means, which also indicate additional significant income sources such as civil service and other. Other sources of income provided by residents included income gained from working as wood cutters (usually of silver oak), coolies and drivers.

Table 26: Sources of household income.

Source of Income	Number	Mode	Mean	Std Dev
Livestock	32	1	1.7	0.8
Agriculture	50	2	1.9	0.8
Coffee, spice plantations	57	1	1.8	0.8
Fruit orchards	26	1	1.5	0.8
Sale of medicinal plants or non-timber forest products	15	2	1.6	0.6
Stores	16	3	2.1	0.8
Sale of timber (logs)	15	2	1.6	0.5
Sale of timber products	13	1	1.7	0.8
Civil service	12	2	2.1	0.8
Quarrying/mining	3	1	1.0	0.0
Tourism	13	3	2.5	0.9
Other	16	2	2.0	0.8

Household Debt/savings: Figure 34 is an optimistic calculation as monthly income used the higher interval in the income category to calculate debt and non-debt. Regardless of this fact, 42.9% of 112 households surveyed had expenditures which exceeded their monthly income, while 57.1% had the opposite occurring. On average, households had Rs 46 leftover after paying their expenses (standard deviation \pm Rs 3801).

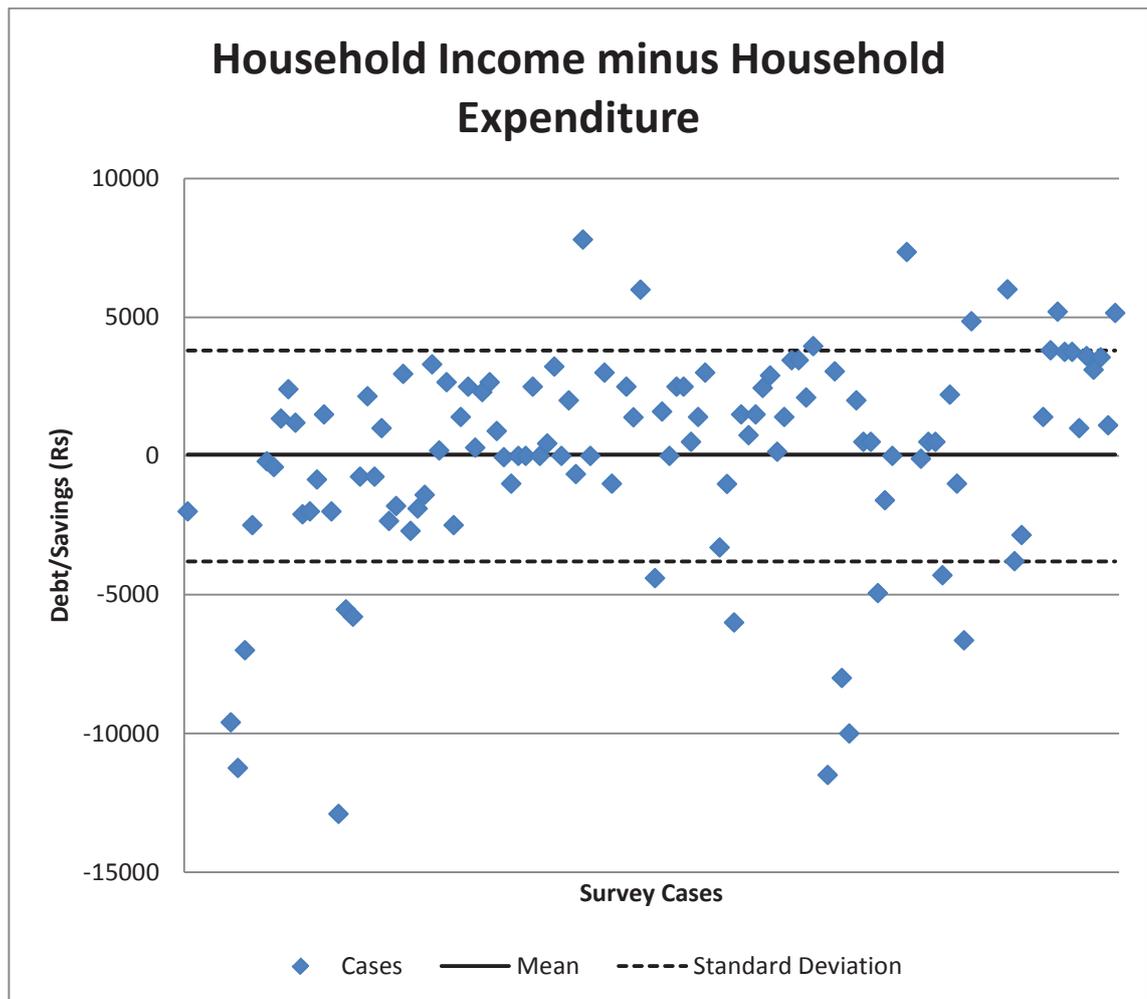


Figure 34: Debt or savings based on household income and expenditure.

5.2.2.3 Resident-Environment Interactions

These questions were designed to assess: benefits gained from surrounding environment; the degree of interaction between residents and the environment; and capture information about positive and negative attitudes. Question 15 of the resident survey had a poor response rate and was of poor quality; however, it did provide some insight. Based on the level of response, it could be determined that

residents had the most positive feelings and benefits from the forest, followed by the lake, while wildlife provided the least benefits. Table 27 shows the environmental perceptions of residents. There were very few respondents who believed that their environment is at risk; only three out of 130 respondents felt that both the Lakes' and Forests' health were at risk. Overall, residents also felt wildlife was a nuisance because there have been frequent human-animal conflicts. Most conflicts are with Gaur, which have killed people in the past, and snakes, as many residents working on estates and fields are vulnerable to being bitten by them.

Table 27: Resident environmental perceptions.

	Yes	No
Opportunity for tourists to see wildlife	29	62
Forest Health at Risk	37	64
Lake Health at Risk	5	77
Undeveloped tourism opportunities surrounding lake/forest	28	70

		Lake Health at Risk	
		Yes	No
Forest health at Risk	Yes	3	21
	No	2	49

5.2.2.4 Resident-Tourism Interactions

These questions aimed to: identify residents with current tourism-related jobs and how much they relied upon tourism for their income; establish current exposure to tourism and attitudes towards tourists; pinpoint current issues with tourism; and identify potential employment areas for residents. *Tourism Industry:* Six respondents indicated that they worked in a tourism related profession and that they maintained this position year-round. Table 28 shows that no respondents relied on tourism for their entire income. The highest level of reliance fell within the 61-80% interval. *Attitude towards Tourists:* Four residents held a neutral or unfriendly attitude towards tourists, with majority as 'friendly'.

Table 28: Tourism interaction characteristics.

	No. of Respondents	Percentage of Respondents
Percentage of Income gained from Tourism	11	
0-20%	3	
21%-40%	4	
41%-60%	2	
61%-80%	2	
81%-100%	0	
Attitude towards Tourists	108	
Very Friendly	32	29.6%
Friendly	72	66.7%
Indifferent	2	1.9%
Unfriendly	2	1.9%
Very Unfriendly	0	0.0%

Tourist Interaction Levels: Figure 35 shows that 41% of residents have never interacted with tourists and a further 28% do not interact with tourists on a regular basis. A small percentage (17%) interacts with tourists on a daily basis.

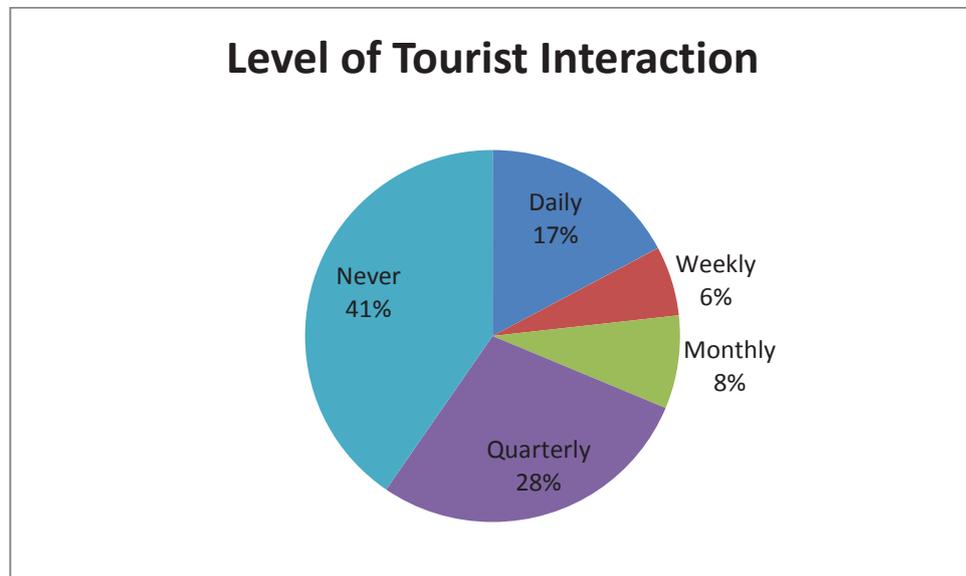


Figure 35: Level of tourist interaction during the past year.

Tourism Related Skills: Table 29 displays the tourist related activities and services that residents believe they can participate in based on their current skill set and knowledge. Responses indicating 'not at all' were not considered due to the large

number in this category. '1', '2' and '3' correspond to 'a little', 'moderate', and 'a lot' respectively and based on mode, areas which residents felt they could contribute to the most included: environmental conservation projects and hosting/participating in cultural or religious events.

Table 29: Resident skill areas which can be applied towards tourist activities and services.

Tourist related skills and knowledge	Number	Mode	Mean	Std Dev
Wildlife tour guide	63	1	2.0	0.8
Nature tour guide	63	2	2.0	0.8
Wildlife warden	34	1	1.8	0.8
Park caretaker	22	2	2.1	0.8
Environmental conservation projects	40	3	2.4	0.8
Boating operator	12	1	1.6	0.7
Plantation owner/operator	41	1	1.6	0.7
Hosting/participating in cultural or religious events for tourists	44	3	2.2	0.8
Create range of unique locally-made products	22	1	1.6	0.8
Teaching tourists about your culture, way of life and heritage	31	2	1.9	0.7
Cultural and heritage site tour guide	23	1	2.1	2.2
Ethno-medicine practitioner/educator	16	2	1.9	0.8
Retail or wholesale	10	1	1.9	0.9
Providing boarding house/home-stay accommodation	22	1	1.5	0.7
Providing farm-stay accommodation	8	2	2.0	0.8
Transporting tourists around destination and between tourist sites	27	2	2.2	0.8
Providing facilities and entertainment for children	43	2	1.9	0.8
Providing relaxation activities	30	1	1.3	0.5
Providing food stall/restaurant	24	2	2.1	0.7
Providing horses/donkeys for trekking	4	1	1.8	1.0

5.3 SWOT Results

The following SWOT analysis of Yercaud Taluk has been compiled based on information gathered from participants and personal observations (Table 30). It evaluates the various strengths, weaknesses, opportunities and threats that are associated with Yercaud as a potential ecotourist destination.

Strengths and weaknesses are internal features. The former make Yercaud desirable or increase the possibility of ecotourism being implemented; the latter

are likely to hinder the implementation of ecotourism. They are limitations which tourists and the tourist industry currently face. Opportunities and threats are external factors. They can directly or indirectly aid or obstruct the development of ecotourism or impact current tourism trends.

Table 30: SWOT for developing ecotourism in Yercaud Taluk.

Strengths	Weaknesses
<ul style="list-style-type: none"> - Temperate climate in comparison to surrounding lower altitude tourist destinations and plains - Lower altitude than Ooty: <ul style="list-style-type: none"> · Does not take as long to reach destination from foot hills · Not as cold and damp - Centrally located in South India <ul style="list-style-type: none"> · Close to large cities, such as Chennai and Bangalore - Many viewpoints and excellent landscapes - Have some unique local products such as honey, coffee and herbs - Within destination, attractions are close to each other - Many little quiet villages with their own charm where people can seek solitude from crowds - Friendly community - Cleaner air and less crowded and polluted than populated cities (including Ooty) - Variety of interesting crops are grown, such as coffee and pepper - Unique threatened and protected animals such as Gaur, which can act as a draw - 120 different bird species that can be seen - Reserved forest status which could be marketed if forest is protected and restored - Natural Lake 	<ul style="list-style-type: none"> - Poor signage or information regarding the area, sites and facilities - Poor environmental record including failure to maintain environmental policies and behaviours - Unskilled/untrained local community - Poor infrastructure, lack proper sewage and amenities - Excessive housing development - Loss of unique cultural traditions - Environmental degradation, especially of Lake and forest - Heavy (and often dangerous) traffic up narrow Ghat road
Opportunities	Threats
<ul style="list-style-type: none"> - Changing tourist market: <ul style="list-style-type: none"> · Increasing family market is expected to grow · Emerging business and student group market that could visit during the weekdays - Growing awareness about the environment and ecotourism - Strong demand from tourists (off-peak, but equally likely for peak season tourists) for a natural experience - Competing hill station destinations are either overdeveloped or underdeveloped (Ooty or Yelagiri) 	<ul style="list-style-type: none"> - Warmer climate: tourists starting to find it hot - Poor environment: Degraded forest and few wild animal species remaining to attract tourist interest - High rate of development of land into dense house plots - Not as well developed as Ooty/Coonoor for facilities - Recession results in lower spending, with tourists looking for a cheap services and products - Climate change: popular for cool weather and lack of rain affects water reserves, crops and tourist visitation numbers - Whatever changes are made in Yercaud are mimicked by other destinations to compete and gain tourist attention - Yelagiri Hill Station is more attractive and pristine - promotes adventure activities. Source of competition for tourists seeking nature experiences. - Ooty Hill Station and Coonoor are more developed for tourists - provide multiple sources of natural and cultural attractions

Overall, while there is potential for the implementation of ecotourism, or alternatively more sustainable tourism in the area, there are considerable obstacles too, such as deterioration in destination, poor environmental quality, lack of proper environmental practices, and the need for human resource and destination development. Competition from other hill stations is also a threat factor stressing the need for Yercaud to develop a competitive and sustainable edge over other destinations.

5.4 Attractions Inventory

The primary pull factor of tourist destinations is the presence of attractions – both the number and their appeal. As such, the tourist attractions inventory for Yercaud Taluk below (Table 31) itemises current tourist attractions. The information in this table is based on either personal observations where the attraction was visited or literature when constraints prevented the opportunity to visit the attraction. Figure 36 shows the locations of tourist attractions located near the town centre and, as can be seen, most are in this area with few attractions located further away from the town centre (Figure 37).

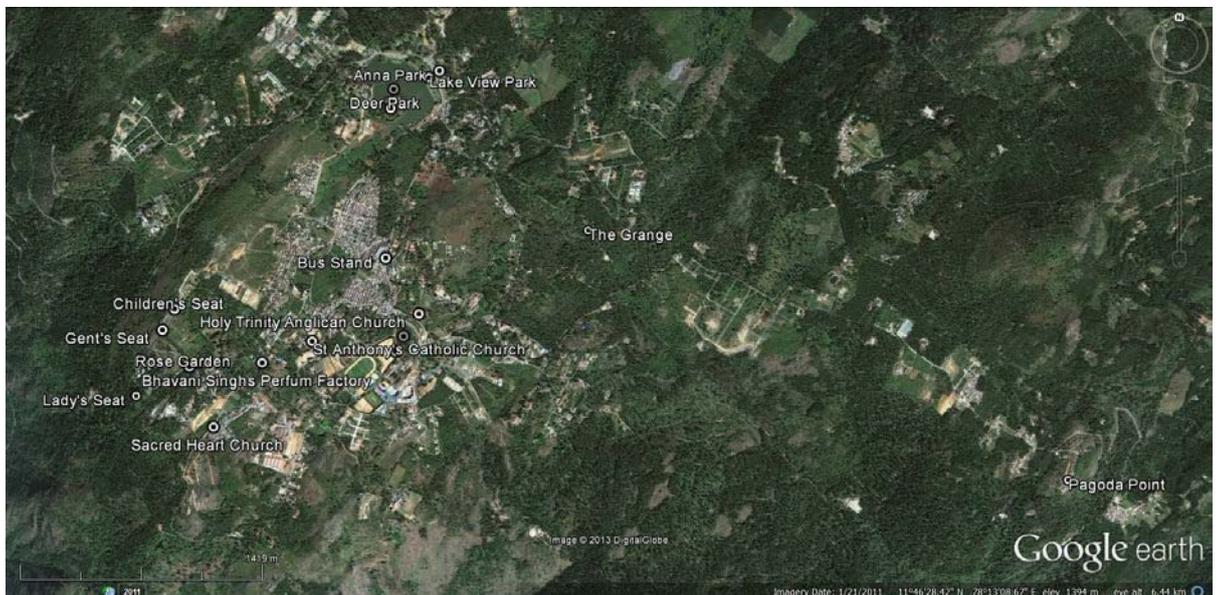


Figure 36: Tourist attractions located near Yercaud town centre.

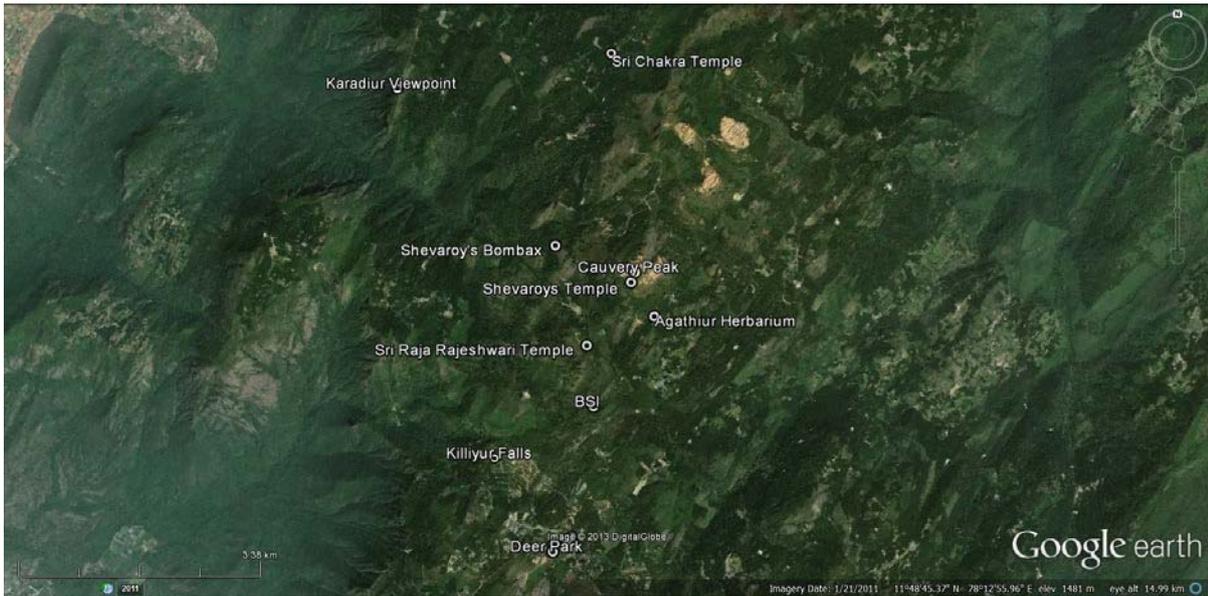


Figure 37: Tourist attractions located away from Yercaud town centre.

Table 31 presents the natural, cultural and historic attractions currently found in Yercaud Taluk. Attractions are predominantly natural and easy to access.

Table 31: Attractions inventory (natural).

Name	Description	Coordinates	Ease of Access
Lady's Seat	Elevated panoramic viewpoint of the neighbouring city (Salem) and surrounding environment/landscape. A telescope house has also been built. In the past, European women are said to have frequented this spot. Since then it has been known as Lady's Seat	11°46.23600' 078°11.93000'	Easy
Pagoda Point	Elevated panoramic viewpoint of the nearby village (Kakkampady) and surrounding environment/landscape. So named because of the presence of ancient stone pagodas at this lookout. A temple has recently been built here which detracts from the natural beauty	11°46.01250' 078°14.36400'	Easy
Big Lake (Emerald Lake)	Natural lake in the centre of the township. Has boating facilities. Surrounded by parks and some shola forest. Popular attraction with tourists. Originally surrounded by thick shola forest which is now sparse	11°47.05350' 078°12.56017'	Easy
Botanical Survey of India	Botanical garden and orchidarium run by the BSI. Houses various species of local and exotic plant species. One of two orchidariums run by BSI	11°48.01200' 078°12.84100'	Easy
Cauvery Peak	Said to be an extinct volcano and is the highest point on the Shevaroy hills. Many beautiful views of the surrounding	11°48.87900' 078°13.10700'	Easy

	landscapes and villages. Nearby bauxite mining has diminished the beauty of the landscape			
Shevaroy Bombax	Large tree on private land. Undescribed and only one of two found. Local story says that this is the same type of tree that was used to make Jesus' cross	11°49.15000'	078°12.56500'	Easy
Rose Garden	Landscaped gardens with a variety of roses. Additional features being developed include a small amphitheatre, water feature, walking path, children's playground, a number of sheltered ornamental viewing platforms	11°46.30900'	078°12.03600'	Easy
Children's Seat	An elevated viewpoint that has been themed towards children. Salem can be seen as well as the town of Yercaud	11°46.45900'	078°11.99800'	Easy
Gents Seat	A small elevated viewpoint themed towards men. Carnival activities are offered as a secondary attraction/entertainment attempt for those visiting the lookout	11°46.40400'	078°11.96700'	Easy-Moderate
Lake Park	A small enclosed park alongside the Lake	11°47.08417'	078°12.65600'	Easy
Anna Park	A small enclosed park with some flower displays and trees. It is said that this area was used by the European residents to play cricket	11°47.10233'	078°12.68500'	Easy
Deer Park	Small children's park with some animals in enclosures and a small playground. Maintained by Forest Department	11°47.00167'	078°12.54850'	Easy
Small Lake (Ornamental Lake)	Small natural lake in centre of town	11°46.38800'	078°12.60350'	Easy
Kiliyur Falls	A natural waterfall which is supplied by the surplus water from the lake	11°47.64533'	078°12.12850'	Difficult
Karadiur Viewpoint	A picturesque elevated viewpoint overlooking Danishpet and the surrounding relief. The village after which the viewpoint is named is situated 1km away	11°50.31833'	078°11.38683'	Moderate
Heaven's Ledge	A cliff top viewpoint and camping ground overlooking a village and the surrounding landscape. On clear days trains can be seen leaving the Railway station in Salem. Located on a private estate which is run as an eco-resort. Some walking/hiking treks start from this point	11°53.42742'	078°14.23032'	Moderate
Manjakuttai Viewpoint	Elevated viewpoint near the village of Manjakuttai	-	-	Moderate
Kottachedu	A teak plantation planted by the Government. The road traversing this forest also passes through bamboo and	-	-	Moderate-

Teak Forest	evergreen forest. Vaniar river passes through this area as well and overall it is a beautiful and scenic route which is the alternate Ghat road between Yercaud and the plains			Difficult
Arthur Seat	Elevated viewpoint providing a view of Big Lake, Yercaud Town and Cauvery Peak	-	-	Unknown
Silk Farm	Sericulture and cultivation of Mulberries. Demonstrations of silk being spun (Rajes & Sadanandan, n.d.)	-	-	Unknown
Bears Cave	A cave which goes deep into the hill. Located on private property which has one of the oldest Bungalows, Norton's Bungalow (Rajes & Sadanandan, n.d.). Local legend has it that Tipu Sultan escaped the British through this tunnel. Rockfall has blocked it, but 40 years ago a group travelled a few kilometres into it	-	-	Unknown
Bears Hill	Panoramic viewpoint of the Schools and Seminaries of Yercaud. Located diagonally adjacent to Montfort School on the South Eastern side of Yercaud (Rajes & Sadanandan, n.d.)	-	-	Unknown
Tipperary Viewpoint	Elevated viewpoint which provides a view of the Elephant Tooth Rocks and Salem. Part of Tipperary estate (privately owned), . It has recently been closed to sightseers (Rajes & Sadanandan, n.d.)	-	-	Unknown
White Elephant Tooth and Elephant Rock	Two white quartz rocks standing approximately 120ft high. One is located below the village of Gundur, while the other is located overlooking the Ghat Road (Rajes & Sadanandan, n.d.)	-	-	Unknown
Butterfly Swarms	Seasonal breeding leads to large swarms of butterflies. These are seen in certain areas and were observed particularly passing over the Ghat road	-	-	-
Climate	Temperate, cooler than surrounding plains with a monsoon season later in the year	-	-	-
Ghat Road	The hill road has 21 hairpin bends and passes through some semi-evergreen and scrub forest. Along the journey between Yercaud and the plains there are several stops ranging from small natural waterfalls and panoramic elevated viewpoints, to cultural shrines	-	-	Moderate-Difficult

Table 32: Attractions inventory (cultural).

Name	Description	Coordinates		Ease of Access
Sri Raja Rajeshwari Temple	Founded in 1983 and dedicated to the Goddess Sri Raja Rajeshwari. Located at the top of a hill towards Nagalur	11°48.44100'	078°12.79300'	Moderate
Shevaroy Temple	Underground temple. Long history in the area and has a sacred spring. Some iron age artefacts were found in the area	11°48.87900'	078°13.10700'	Easy
Agathiur Herbarium	Centre for herbal medicines and herbal treatments and sells various herbal products	11°48.64400'	078°13.27300'	Easy
Sri Chakra Maha Meru Temple	A Temple dedicated to Shri Lalitha (Tripura Sundari). Has the largest Sri Chakra (holy wheel)	11°50.55600'	078°12.96800'	Easy
Bus Stand	Bus depot, where buses arrive and depart. Surrounded by small clothes stores, fruit vendors, grocery stores and small businesses	11°46.59300'	078°12.55300'	Easy
Bhavani Singhs Perfum Factory	Factory where various plant and herbal essential oil products can be purchased	11°46.31900'	078°12.22700'	Easy
St Anthony's Catholic Church	An old Catholic Church	11°46.37500'	078°12.36000'	Easy
Holy Trinity Anglican Church	An old Anglican Church. Its cemetery is where most of the earliest inhabitants are buried	11°46.44600'	078°12.64400'	Easy
Sacred Heart Church	Oldest church in Yercaud	11°46.16100'	078°12.14400'	Easy
Montfort School	Large attractive school campus with various facilities (Rajes & Sadanandan, n.d.)	11°46.34900'	078°12.58200'	Easy
Retreat	Belongs to a religious society founded by St Don Bosco. Grounds overlooks one of the Elephant rocks (Rajes & Sadanandan, n.d.)	-	-	Easy
The Grange	One of the oldest buildings in Yercaud and is historically significant. It was also the site of the first coffee plantation. Currently a resort set amongst a multi-cropped plantation of silver oak, pepper and coffee. Some native trees remain	11°46.66933'	078°13.09033'	Easy

A variety of attraction types were considered and evaluated using a number of components. An overall profile of the attractions has been created (Table 33). This has been compiled based on the researcher's opinion from personal observations and information gathered. Each factor is rated on a scale of 1 to 5 to give the final attraction rank. They have been ranked in order of highest to lowest, with the highest ranking attractions being Heaven's Ledge (a natural attraction part of a larger ecoresort), and The Grange (a combined historical and natural attraction part of a plantation resort).

Table 33: Evaluation of tourist attractions in Yercaud Taluk.

	Scenic value	Biodiversity	Cultural value	Historical value	Uses and Activities	Community participation	Access	Product development	Totals
Heaven's Ledge	5	5	0	0	5	3	3.5	5	26.5
The Grange	4	3	0	4.5	5	0	5	3.5	25
Karadiur Viewpoint	5	4	0	0	4.5	2.5	3.5	4	23.5
Shevaroy Temple	3	1.5	4	4	3	1	4	3	23.5
Rose Garden	4.5	3	0	0	5	1	5	4.5	23
Big Lake (Emerald Lake)	3	2	0	1	5	2	5	3.5	21.5
Botanical Survey of India	4	5	0	0	3	0	4.5	4	20.5
Pagoda Point	4	1.5	0.5	0.5	3	2.5	4.5	3	19.5
Ghat Road	4	3.5	1	1.5	3	0.5	3.5	2.5	19.5
Shevaroy Bombax	5	4.5	0.5	0	1.5	0	4	3.5	19
Kiliyur Falls	4	3.5	0	0.5	4	0.5	3	3.5	19
Lady's Seat	4	1.5	0	1	2	1	5	3	17.5
Cauvery Peak	4	1.5	0	0.5	3.5	1	4	3	17.5
Kottachedu Teak Forest	4	3	0	1	3	0.5	3.5	2.5	17.5
Anna Park	3.5	1	0	0.5	2.5	0.5	5	4	17
Deer Park	3	2	0	0	3	0.5	5	3.5	17
Lake Park	3.5	1	0	0	2	0.5	5	4.5	16.5
Sri Chakra Maha Meru Temple	3	0	3	0	2	0.5	4	3.5	16
Children's Seat	3	1	0	0	2	0.5	5	3.5	15
Sri Raja Rajeshwari Temple	3	0	2.5	0	2	0.5	3.5	3.5	15
Holy Trinity Anglican Church	4	0.5	1	1	1	0.5	5	2	15
Sacred Heart Church	4	0	1	1	1	0.5	5	2	14.5
Agathiur Herbarium	3	0	0	0	2	0.5	4	4	13.5
St Anthony's Catholic Church	3	0	1	0.5	1	0.5	5	2	13
Bus Stand	2	0	1	0	1	1.5	5	2	12.5
Montfort School	4	0	0	2	1	0	5	0	12
Gents Seat	2	1	0	0	1	0	5	2	11
Retreat	3	0	1	1	1	0	5	0	11
Butterfly Swarms	0	4	0	0	3	0.5	1.5	1.5	10.5
Small Lake (Ornamental Lake)	1	1	0	0.5	1	0	5	1	9.5

Figure 38 shows the location of villages visited during the data collection period. Karadiur and Manjakuttai have developed viewpoints nearby, but are not well known or very popular amongst tourists yet. There are numerous other attractions on private land which in the 60's/70's, were open for public viewing and to residents for picnics but are now closed due to an excess of tourists. Other villages also had attractive qualities for tourism. These were predominantly scenic, and in some cases cultural. Overall, the villages in themselves provided a unique experience, with more pristine environments than Yercaud offered and a better quality nature experience. Friendly local interactions also contributed to the overall experience and showed that some interesting cultural aspects could still be evidenced.

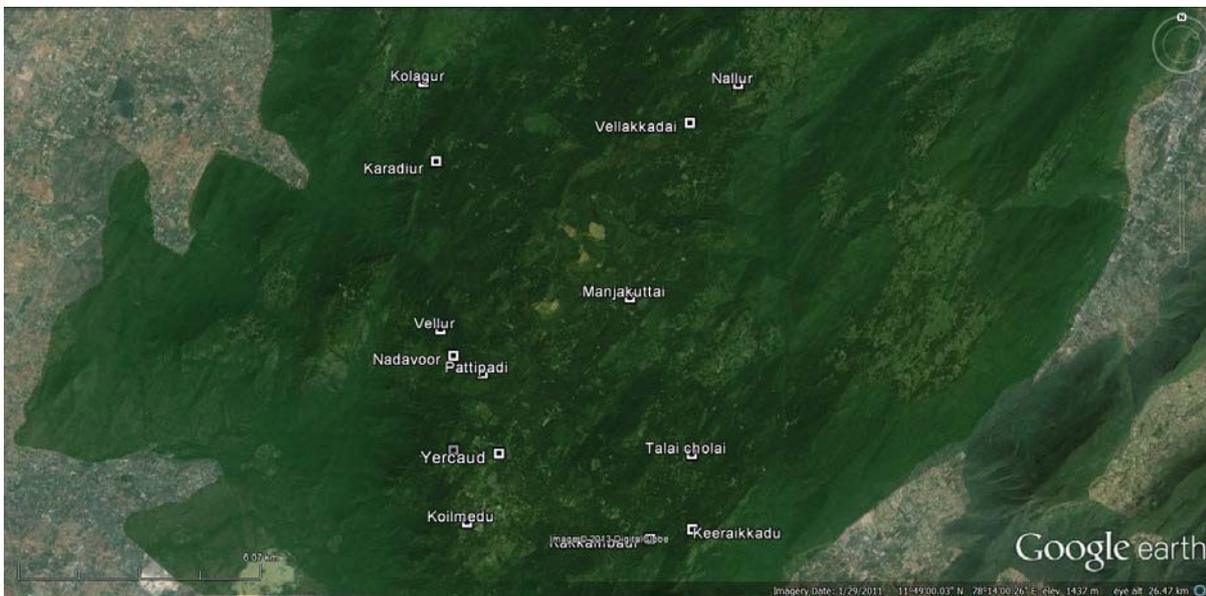


Figure 38: Location of villages visited in Yercaud Taluk.

CHAPTER 6: DISCUSSION

The current chapter discusses and explains the findings outlined in the previous chapter. Research objectives are answered over three sections: socio-environmental and tourism issues, supply and demand. Within these sections, the key research aspects of environment, community and tourism have been investigated where applicable. They aim to provide an argument for sustainable development - in the form of ecotourism - to benefit vulnerable community members and a fragile environment.

6.1 Socio-environmental and Tourism Issues

This research has identified three areas of need based on data collected from local stakeholders, tourists and personal observations. These are - environment, community and tourism - and are further supported by literature where available.

6.1.1 Environment

The following section about the environment is predominantly based on interviews, personal observations and a small number of studies. Surveys administered to residents included questions regarding three different aspects of the environment - the forest, lakes, and wildlife. Despite poor feedback, responses provided an insight into perceptions and opinions held by some residents. A number of environmental issues have been identified. These can impair the healthy operation of ecosystem functions and services in the area; result in reduced biodiversity; present health hazards to humans and animals alike; contribute to localised climate change; and negatively impact tourism in Yercaud Taluk.

6.1.1.1 Environmental Threats and Issues

Forest degradation and deforestation is one of the most significant environmental issues that has been observed - and supported by literature (Balaguru et al., 2006; Kadavul & Parthasarathy, 1999). Yercaud was so named because when it was first discovered there was a lake (yeri) surrounded by thick forest (caadu). Today, the

shola forest surrounding this lake is nearly non-existent. A few specimens remain of the original native shola, but over the years, illegal logging and lack of protection have contributed to its current state. Residents of the area since the late 1970s have commented on the sparseness of the shola in the centre of Yercaud town. One resident commented that the shola had been so thick during their youth that light barely passed through. In contrast, the same site now showed high levels of degradation. As can be seen in Figure 39, there appears to be little, to possibly no regeneration (lack of saplings), garbage is dumped there, and cattle and goats are seen grazing near or within the forest stand. As these forest patches are located within the centre of Yercaud town, it is understandable that there is a high level of anthropogenic pressure. However, reserve forests located on the sides of the Shevaroyan Hills appeared sparse as well, dominated mainly by scrub species rather than shola. Despite the forests' protected status, native shola (once the predominant vegetation type on these hills) makes up just a small percentage of the vegetation cover. Degradation is likely caused by multiple factors and the initial observation is that the distribution pattern of forest (encircling Yercaud Taluk) results in much of the treeline being exposed to anthropogenic influences. These factors include grazing of animals within the forest and destructive felling of forest for timber. Additionally, small isolated patches of shola face pressures of increased vulnerability, loss of regeneration ability, and reduction in ability to support the fauna species that once dominated them. These patches are made more vulnerable to degradation and can lead to a permanent loss of this vegetation type on the Shevaroyan Hills.



Figure 39: Remaining shola forest within Yercaud Town.

Land use change is steadily growing in the area, and potentially poses one of the biggest threats to the environment. Historically, shola forests were converted to coffee plantations and originally some shola species would have been used for shading. Now, silver oak has become a popular replacement for shola species, presenting a better financial opportunity as it grows fast and sells at a good price. With coffee plantations being the major economic activity in the area since the plant was first introduced to the area, large tracts of shola forest have been converted. However, plantation owners have commented on the rising costs of maintaining their plantations (including increased labour costs). The high real estate value in Yercaud presents a unique opportunity for many residents and this has resulted in some plantation owners selling significant portions of their land - providing them the opportunity to make a quick profit from land that was previously a financial drain. This trend is similarly observed amongst villagers and tribals. In contrast, for the latter, the choice to follow this trend stems from a lack

of financial security, with many selling land in order to be able to meet expenses (this included their children's educational costs, which was a prominent desire expressed by many tribal and village parents). This action creates several social problems for these groups and will be discussed in the ensuing community section.

Environmentally, the changing land use trend contributes significantly to unsustainable development in the area. Houses are now crowded together on plots in order to maximise on space, regulations (such as those on building sizes) are ignored, and there is serious doubt regarding whether proper waste management has been installed to deal with the higher housing densities. Most importantly, it is destroying the very attraction which draws tourists and individuals to buy property. For example, the most noticeable pattern observed in tourist preferences, was a desire to enjoy the nature and climate of Yercaud. However, this unsustainable development diminishes and degrades these environmental features, creating and contributing to multiple environmental issues - such as sedimentation and soil erosion which was observed in the Taluk. These pose long term threats, having the potential to become a force that drives away tourists and investors. An observant resident said 'they are on to a good thing'. Meaning when a person is seeing gains, they will continue with the pattern - content to benefit from the short term rewards rather than invest in more sustainable long term gains that could benefit a larger population.

Water issues, such as water pollution and scarcity are a major issue. In the case of water pollution, the main natural attraction - Big Lake - which is the source for the town water supply, provides an important example. Garbage was observed both within and near the lake edge and the town's rubbish dump was found to be present not far from the lake itself. Its smaller counterpart, which was once picturesque and attractive, is no longer an attraction and is heavily polluted with physical garbage. Road run off and faecal contamination is also highly likely for both these lakes as: both have roads and buildings adjacent to them; no proper sewage system is present and likely runs off into these water bodies during rain. This is supported by a study of Big Lake which showed high levels of contamination to the point that it presented a health hazard to both humans and

animals (Rajakumar et al., 2006). Water scarcity, has become a major issue for the Shevaroyan Hills. Multiple villages expressed the concern that they faced water shortages and this is further exacerbated by national climatic changes. In particular, monsoon rains are required to replenish water reserves and, changing rain patterns pose a significant threat to inhabitants. At the time of data collection, monsoon rains were later and lighter than usual. Plantation owners expressed the concern that this would decrease their coffee crop, and profits. For the wider community, other crops, which villagers rely on to survive, may be affected as well. Environmentally, the rains help control rising temperatures and fill water reserves. In contrast, water shortages did not pose an issue for residents in the past as shola forests are excellent water sinks and would have helped buffer water shortages for residents and fauna. At present this vegetation type is on the verge of disappearing, posing a serious risk to the future of this Taluk.

There are various other environmental issues present in Yercaud Taluk. These include, but are not limited to: heavy vehicular traffic, improper waste management, biodiversity loss, and detrimental human activities. Heavy vehicular traffic is one of the first problems observed when travelling on the Salem-Yercaud Ghat road. This issue is at its worst during weekends, holiday and peak tourist season, resulting in a high level of noise pollution (constant use of horns and engine noise). Additionally, the high level of traffic (cars, motorcycles, trucks/lorries, vans and buses) would be expected to contribute significantly to local air pollution, and contaminants in the form of chemical and particulate road run-off. A considerable amount of travellers are non-residents, resulting in a significant social issue for residents using the same road. Village residents who were asked to comment on environmental problems failed to highlight the issue of raw sewage management. There is no proper sewage treatment and management even in developed areas. The average household uses septic tanks which used to be cleaned manually by the untouchables (Dalit/Scheduled Caste). However, since the Government changed their status, there is no one to carry out this degrading job as manual cleaning remains the only method available at present. Observations - such as the smell of raw sewage and open drains in certain areas - imply that

even if there is a system, it does not function properly or efficiently. Furthermore, sanitary disposal of excreta and a reliable supply of safe drinking water are two of the most important means of improving human health and protecting the environment. Litter and garbage is obvious throughout Yercaud town. The most serious feature is the presence of a rubbish dump within 500m of Big Lake (Figure 40 and Figure 41), which could be contributing contaminants and garbage to the lake. As can be seen in the figures, they are also located in the immediate vicinity of a settlement. Loss of biodiversity has been a significant on-going issue since British settlement. However, there is poor information regarding fauna species present on the Shevaroyan Hills, their distribution or numbers. The primary statement that can be made is that species that were once widespread and common, are very difficult to sight now. Bauxite mining and granite mining are two human activities detrimental to environmental quality (not considering tourism). To date, bauxite has caused the greatest damage, with a number of published news articles bringing attention to the matter. Removal of bauxite has been shown to affect water retention by soil and has resulted in the loss of many important plant species, some with ethnomedicinal significance. Villages in the vicinity have complained about contamination of water sources from bauxite mining activities - with claims of illegal mining still continuing as recently as 2012 (Times of India, 2011). Granite mining also occurs on the Shevaroyan Hills, with impacts most likely to include clearing of land, soil erosion and disturbance to wildlife. Finally, despite some efforts being made over the years to attempt to halt environmental degradation, there has been a poor record of enforcement and maintenance.

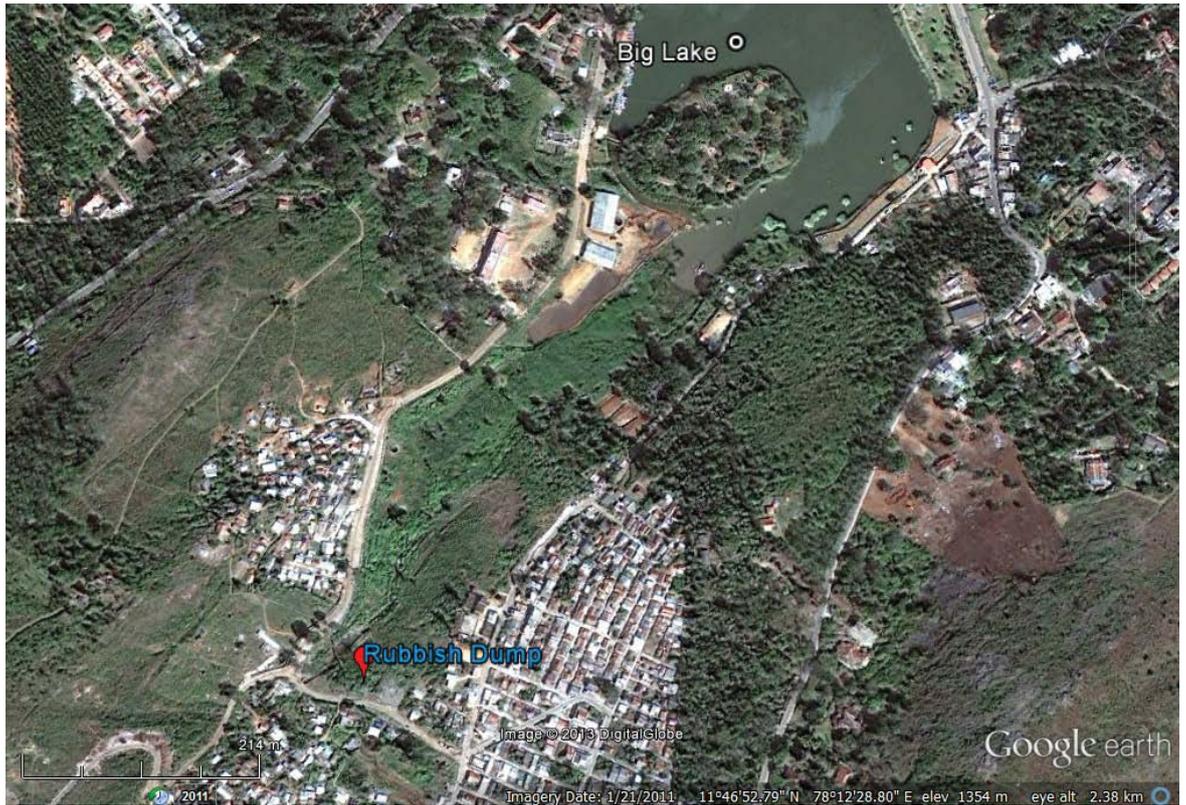


Figure 40: Location of a rubbish dump in Yercaud town relative to Big Lake and surrounding settlements (Google, 2013).



Figure 41: Outside wall of rubbish dump with some garbage spill over.

6.1.1.2 Environment-animal-community Interactions and Conflict

Human-animal conflict occurs with several animal species. The Indian Gaur is the primary cause of concern for residents as they are territorial animals, becoming aggressive towards perceived threats especially around their young. Due to habitat degradation and lack of access to water, Gaur have been venturing outside the forest and onto plantations and cultivated lands. Residents have reported increasing Gaur confrontations as their population increases, and degraded habitat is insufficient for their sustenance. These confrontations can lead to human injury or death. Additionally, these species cause extensive damage to crops, lands and man-made structures. Many residents were frightened of these animals and several reported property and crop damage. Gaur are an IUCN red-listed vulnerable species and are completely protected - residents are not allowed to injure or kill them. They are also very large animals, with a weight of over half a tonne, making it hard for individuals to deal with them. Snakes were another species that residents feared. In particular, many worked in plantations and cultivated lands, making it difficult to see them amid the vegetation and increasing the chances of getting bitten. The presence of monkeys, while not explicitly identified as an issue, did present some problems. Their numbers and distribution have grown and they are now found at higher altitudes than they used to be. They destroy crops and could be aggressive towards people, particularly at key tourist sites.

Tribal grazing activity has also impacted the health of the forest in two ways. Firstly, deliberate forest fires which are lit to create pasture for grazing animals affects regeneration of important forest species. Secondly, grazing animals, mainly goats, browse on young forest seedlings and shoots disrupting the growth of new plants. The forest department has attempted to limit goats in the area by banning them (Sugirtharaj, 2012). However, goats provide a good source of income for residents. While there are efforts to provide alternate sources of income, there is no indication as to whether residents accept these alternatives readily or how successful they are. Furthermore, residents appear to be unconscious of the poor state of the environment, which likely exacerbates this problem. In particular, if

their livelihood depends on these animals, they are unlikely to be in a position to think about the long term consequences, especially if it conflicts with their immediate survival. Banning goats therefore takes away an important income source and creates animosity or resentment. This was partially reflected by resident surveys - residents were scared away from entering the forest by watchmen protecting it and were barred from entering it.

6.1.2 Community

Information regarding the community has been derived from surveys, interviews and personal observations. The latter two data collection techniques were especially useful in identifying aspects that were not captured through the surveys. Over the years the community has been receiving help from three notable groups and individuals and is apparent in the data collected. Mother Louis, an Irish nun, has been doing social work in the Yercaud community for more than 60 years. She has been helping 'the poorest of the poor', using whatever money she had. As part of the Social Service Guild of Yercaud (SSGY), she has been financially aiding those seeking University degrees and who would otherwise be unable to cover the fees. She has helped repair and build hundreds of houses for individuals and families. She runs a crèche, so women have the opportunity to work and earn money without worrying about their young children. However, much of this work is reliant on funding. Since the economic crisis of 2008, she now receives less than a quarter of the amount that she did previously. As a result, her aid programmes have been scaled down and she is unable to help as many people (Mother Louis, 2012).

Deepam society is a non-governmental organisation that has, since 1996, sought to educate and assist tribals and previously discriminated castes. Education efforts range from housing and educating orphans and abandoned children, to helping parents fund part of their children's education. Additionally, they provide training in tailoring, simple electrical or similar trades that might assist them in finding a job. They educate villagers about health and assist in the setup of village self-help groups that help the entire community. This group is funded by overseas donations

and has successfully been increasing literacy rates since its development (Rajendran, 2012).

The organisation CRÈNIEO (Centre for Research on New International Economic Order) assists in healthcare, education, tribal empowerment, improving agricultural practices utilised by tribal farmers, provision of facilities (toilets) and environmental education. There appears to be considerable amount of focus on retaining tribal culture and traditions, as well as sustainable resource use and improving the environment (Jayaprakash, 2012). However, some programmes have not been successful, such as the tribal self-empowerment movement. Furthermore, some methods appear to be at odds with the local Forest Department's conservation efforts.

These organisations all contribute and succeed in reducing poverty in different ways; however, a social need still exists. In particular, poverty reduction methods should be developed to cooperate with conservation efforts to benefit the entire community.

6.1.2.1 Social Issues

Social issues in Yercaud town and villages differ. Within the town, certain areas - such as Longlipet and Melalaganburam - are the beginnings of slums. Houses are cramped together and living conditions are poor (Figure 42). There are no toilets or bathing facilities in some houses, and small ditches such as those seen in Figure 42 act as open, sewage drains for waste management. These areas have been expanding over the years and the SSGY has been helping in these areas by building and improving the houses. Additionally, those living in Yercaud town may not have housing. One interview with a woman revealed that she slept in her fruit stall near the lakeside and during heavy rains she would get wet.



Figure 42: Living conditions of those in Melalaganburam.

In comparison to Yercaud town, the surrounding villages have better sanitation and houses are not as cramped together. However, housing is still an issue - many still live in houses made from mud (a combination of mud and cow dung) or bamboo woven together and packed with mud. Villagers have lost the techniques and skills to maintain these houses properly resulting in houses that are deteriorating. These houses all have mud floors, as such, outlined by Gordon (2005), it can be categorised as shelter deprivation. More importantly, while outdoor air pollution may not be a problem at the moment for residents in Yercaud, these houses did not have a chimney or proper ventilation. This poses a large problem because the villagers illuminate, cook and heat their homes with fuels such as wood. A lack of electricity, equipment and money means that burning fuel is the only option to these people. This leads to indoor air pollution and it was noted that the insides of many of the homes were soot blackened especially around the cooking areas (Figure 43). It was observed on a few occasions when resident homes were entered, that the air was thick with smoke. Globally, indoor air pollution is responsible for 1.6 million deaths a year and long term exposure and inhalation of soot can contribute to respiratory diseases, lung cancer, and heart disease (World Bank, 2013).



Figure 43: Inside a villager's mud house with an open flame being used for lighting.

Literacy appeared to be quite high. However, it was noted that some participants required either the translator to fill in the questionnaire, or a literate relative. These participants were likely those who received no schooling and made up 14% of respondents, or those who had received minimal schooling (1-4 years, equivalent to primary school education) and made up 3% of respondents. It was noted, that mostly those who were younger (in their early 30s) had received a higher secondary education (10-12 years) and further education. Furthermore, there was a higher incidence of female respondents who had not received an education; including two younger individuals aged 25 and 32. Interviews with residents showed that many were concerned with the safety of young girls travelling to school and were afraid of molestation. In particular, this fear was stronger when girls had a long way to travel resulting in their arrival home late at night. Thus, in order for parents to protect their daughters, they would send them to the local village school, rather than to Yercaud. However, this was not feasible if

they wanted a proper education for their children as there are various issues with the village schools.

The prevalent problem with schooling is the lack of teachers and provision of school equipment. The problem is widespread, occurring in villages located far from Yercaud and also those stationed relatively close (such as Koilmedu). A total of 41 Government schools have been established to ensure all children can receive an education regardless of caste or the family's economic situation. Government schools charge no school fees. Additionally, there are many benefits. Children are provided with four uniforms annually; all their books and textbooks; school bags and footwear; writing equipment; lunches five days in the week; a cycle in their 11th year; and a laptop in their 12th year (Government School, 2012). However, much of the school equipment isn't distributed; the laptops at the time of data collection had arrived, but were not being given to students as teachers were awaiting permission to do so. School children are not receiving these benefits, thus forcing parents to buy the necessary items. Furthermore, the only higher secondary Government school in Yercaud Taluk is located in Yercaud town. Not all villages have schools and those wanting to study beyond secondary school are forced to travel to Yercaud. The cost, time, safety, and effort of doing this can be too great for some. The problem is further compounded by the fact that there are no teachers to teach certain subjects at the Government schools. These problems encompass all the Government schools. Many residents stated they did not want their children to be labourers like themselves and wanted to ensure their children received a proper education. Thus, despite extra costs, they sent their children to private schools. Furthermore, some residents referred to the schools in their village as 'Government aided'. It is an issue which might require clarification as it might provide insight into the aforementioned issues.

Transportation is a major issue for village children, those working outside of the village, or those requiring medical attention or facing an emergency. For many villages, bus services operate in their area once in the morning and evening but it does not properly coincide with school hours. Some children are required to walk long distances to reach a bus stop or to reach school. Children from Kolagur have

to walk 4 km to reach the main road where they can get transport, while some villages, such as Kakkampady, organise a van to take children to school. However, not every parent is able to afford the charges for the private transport. Villages such as Keeraikkadu and Talai Cholai also faced this same problem. This also makes it difficult for youth to attend career courses and Government training programmes. All of these schemes are in Salem - located at the foothills of the Shevaroyan Hills - youth have to travel to Yercaud first, before travelling to Salem. Transport costs and time required makes this infeasible and as such, many are unable to take advantage of the government training (Rajendran, 2012).

Comparing household expenditure against household income using an optimistic threshold reveals that 42.9% of 112 households had incomes which could not cover their expenses. This population is often forced into borrowing from any available sources in order to meet expenses. Alternatively they may fall into cyclical poverty, or a debt/non-debt cycle. Residents may earn sufficient one month (sometimes through picking up extra work) to cover their expenses and debt, however, this is not a permanent cash flow increase. As such, they may not be able to cover all their expenses during the next period and slip back into debt. In some cases, they may be forced to take illegal actions in order to get out of debt. Such actions usually involve felling a silver oak tree and making a one-off profit by selling it to cover expenses and debts. Residents indicated that their households earned between Rs 2,500 - 5,000. This is approximately Rs 82 - 164 per day, per household, with the average household consisting of five people (three adults and two children). Using the 2011 implied PPP conversion rate of 19.129, this equates to about \$4.3 to \$8.6 per household, and is less than \$2 a day per capita.

Usually, the most common source of income is from agriculture and plantations. However, there are multiple problems associated with this. In recent years, plantation owners have been hiring casual rather than permanent workers. For residents, this work does not provide a sustainable income as it is seasonal, usually peaking during harvest season. During the other seasons they must find alternative sources of income. Some are unable to find work. In one case, a woman's husband was a forest cutter, but there was no work available for him in Yercaud Taluk. He

was forced to move to Mysore (located approximately 280 km away) for work. This job provided an income for him to live in Mysore and to send money home to his family. If he had remained in Yercaud Taluk, he would have been unable to find work, or earn enough to cover expenses. Similarly, many residents lacked the stability that comes with regular and reliable employment. With employment opportunities in plantations and agriculture reducing, many residents are left vulnerable especially as many indicated that agriculture and plantations remained the predominant skill they possessed.

Due to insufficient funds, many tribals have sold their small plots of land, often to send their children for higher education. This short term gain of funds leads to long term impacts: loss of self-sufficiency and livelihood sustainability. Owning plots of land would have allowed villagers to live off the produce they grew and maintain cattle as they could graze them on the land. Most commonly, land developers buy the land from residents for housing plots. In some cases where tribals may be desperate for money, an unfair price may be paid for the land. The impact of housing plots on the wider community may include lowering of the water table, pollution of water sources, loss of biodiversity, soil erosion and overcrowding. This trend increases poverty as the money received for their land is insufficient for the long term, and they are now made reliant on their wages for survival. They now require a stable job and income (which they may not have) and are unable to grow any produce or graze animals. This is also likely a problem for those who own very little land and in both cases, attempts to make up for a lack of land may include grazing their animals in the forest.

There are many Government schemes and programmes, but problems were identified with many of them. While these schemes do in theory have the potential to reduce poverty, in reality they do not work efficiently primarily due to exploitation. Discussions with villagers revealed several issues and complaints. The primary issue is with the Public Distribution System (PDS). Under this system, ration shops distribute subsidised food and commodities to poor and low income families. It is designed to help alleviate poverty by making the basic necessary items more accessible and affordable. Each villager is allocated an amount of rice,

kerosene and other similar items at a subsidised rate. However, upon receiving their allocated amount of rations, they often find that some of it has been skimmed. For example, if a villager was expecting 1 kg of rice, they might only receive 800 g. They may find that it is very poor quality with the good quality goods being reserved for members who have made a deal with the ration shop employees. In other cases, they will not receive their ration at all as it has been sold by the ration employees to richer people/those running retail stores and food outlets. Or they have to wait for hours or return every day after travelling long distances because the employees are not there and have not informed the villagers. This trend is not unusual throughout the country and has been made a note of in the country's Economic Survey (2013). It can be seen that this inequity is more pronounced in rural areas, such as Yercaud, with higher income households receiving a higher proportion of subsidies (Figure 44). Another example of a disastrous scheme exists between the village of Kakkampady and the tourist attraction, Pagoda Point. A housing development project was implemented by the state government to build houses for lower income families for a significantly lower price. However, many said that even if they could have afforded the houses, they would not have been able to live there as the project did not take into account the total lack of water in the area. None of the houses were habitable for this reason and now stand in ruin. Of particular concern, is the lack of nurses and doctors at the 2 Government clinics which are located around Yercaud Taluk. Many residents say that, like the government school teachers, they do not come in. Additionally, residents do not feel like they are receiving proper care as they are treated with an injection and then sent on their way immaterial of their complaint.

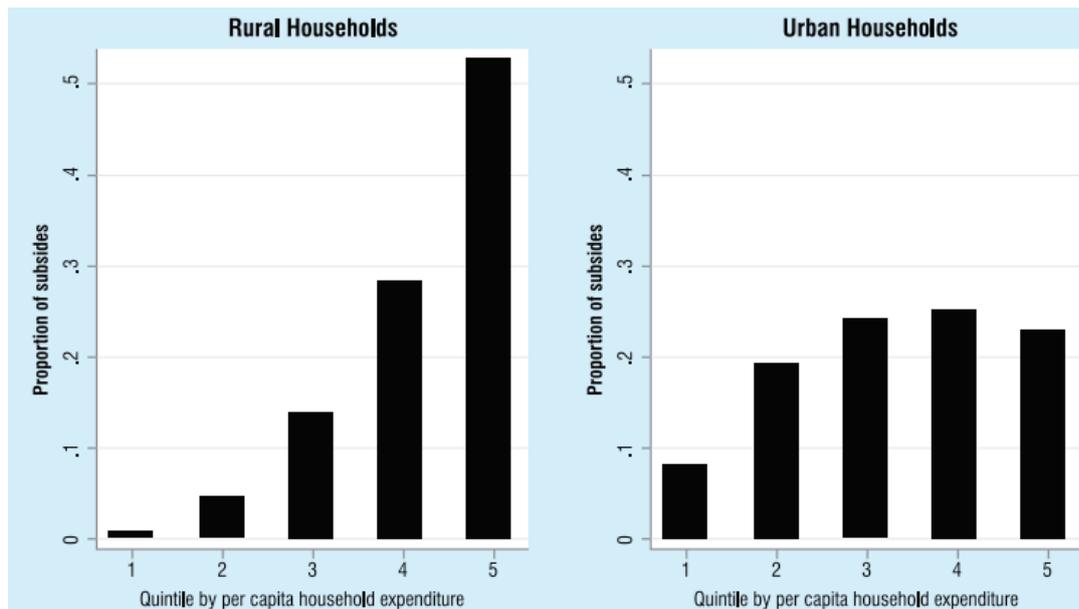


Figure 44: Distribution of shares of LPG across differing household income groups (Ministry of Finance, 2013).

Personal observations showed that there was social friction between tribal villagers/impoverished and town residents. The town residents felt that residents living in areas such as Melalaganburam and Longlipet (the poorer sections of Yercaud town) were not trust-worthy and it was not safe to walk through the area. Personal observations did not substantiate this claim. Instead, the primary social problems in these areas are poverty, poor sanitation and garbage. In other cases, residents felt that tribals were making monetary gains through dishonest means. This opinion originated from cultural changes observed amongst tribals - such as the abandonment of traditional ways, their ownership of cars and motorcycles and the newer houses they built. Residents view this change as greed and an attempt to live a 'high life'. However, these changes have occurred through necessity and the need to feel equal to those in Yercaud. Tribals view all these changes as positive development towards improving their lives and this is facilitated by the influence of those living in the towns and what they see on TV. Residents who held this view were predominantly people who relied on tribals for labour, mostly as coolies. Dissatisfaction has increased as tribals are becoming more independent and aware. For example, running plantations have become more uneconomical for plantation owners due to increasing costs, including the fact that the minimum wage for estate workers has increased to Rs 300 a day. Tribals are aware of this

fact, and that they might be able to earn a better wage from other work (such as construction), and so, they are less willing to engage in estate work. Instead, they would rather be engaged in a job which offers greater security, better pay, and which is less laborious. Residents on the other hand, view this behaviour as laziness and unreliability. The Director of the Brother's Salesian College has gained some insight into these people during the running of a village children's education programme. His observation was that there is laziness due to a lack of motivation. Their salary will not increase because they work better and as such they do the minimum amount of work to get the maximum salary. They do not have great dreams to motivate them to think bigger.

Most villages are predominantly made up of tribals, and over time, their culture has changed a lot. There are a number of reasons for this, but the most damaging was the opinion that they felt inferior to those living in the town. When in contact with tourist culture, it was defined as 'passing', but in this instance this was an inferiority based on dwelling and lifestyle differences between two different community groups. Tribals felt insecure, or were restricted to the point where they changed their mode of dress, religion and culture. After these changes were adopted they were more comfortable interacting with those in town and felt less inferior. Nowadays, they make more of an effort to dress better and make sure their houses were done up. Additionally, if they had the funds for it, they would invest in transportation vehicles. In other instances, tribals were restricted in their movements which led to the loss of some of their culture. In the case of their religion, tribals were prevented from entering the forest and they were unable to worship their gods who were said to live in trees in the forest. As a result they gradually changed over to the religion that was present around them, usually Hinduism, so now many of the younger generation are unaware about their heritage. Furthermore, as village populations were content and happy with changes, those surveyed expressed the opinion that it was unlikely that they would ever return to the old ways.

There are multiple other social issues that affect the area. In Yercaud town, there are numerous illegal stalls along the lakeside and the people running these stalls

come from all over Yercaud Taluk. These stalls are key to their survival as it is an important source of income and thus, they are greatly affected when this is taken advantage of by authorities and political people. These stall owners are often asked for money in order to retain the stall and the amounts vary. As a result, shop owners have to make up for the loss by asking tourists for higher prices than they would normally. Other residents have expressed the opinion that set rates, in general, are needed. This would similarly apply to these stall owners and could benefit both parties if there was a proper uncorrupted management system. Figure 45 is a photograph of a young boy who was observed helping with road construction work. No interviews or surveys revealed child labour to be a problem and this instance could be an isolated case.



Figure 45: Young boy observed helping with road construction work.

There is no regular/proper waste management system - rubbish bins around Yercaud are few, inadequate in size, overflowing and seldom cleared (Figure 46); garbage is piled into makeshift rubbish dumps wherever convenient. In general, rubbish is buried or burnt, including those in public bins. In particular, one main dump site was observed within 500 m of Big Lake and the Government School; and less than 200 m away from nearby village settlements. These conditions are unsanitary and pose a serious health hazard to inhabitants. While these areas are unmaintained and full of litter, surrounding houses are very well maintained - their living areas are clean and clear of rubbish, showing that residents appreciate their living areas being clear, but are unable to receive these services.



Figure 46: Example of public rubbish bin found in Yercaud.

6.1.2.2 Tourist Related Issues

Residents do not receive many benefits from tourism as development and tourist interest is mostly centred in Yercaud town. Karadiur, which recently had a viewpoint created, does not receive as many tourists as the main tourist attractions. However, the impacts are already evident - a few residents stated that they held unfriendly feelings towards tourists and others voiced the concern that their children's safety may be compromised with the greater number of people and cars going through the area. Furthermore, there are issues of promiscuous

behaviour occurring on the roads, forests and residents' properties. Residents do not like the behaviour especially when they find them on their property and this leads to friction between the two groups.

Heavy traffic on the Ghat road is a problem, because not only does it contribute to congestion, but drivers drive recklessly on these narrow roads. There are 21 hairpin bends and on numerous occasions there were several near misses during the commute to Yercaud. For residents, this can be a source of particular anxiety and vexation as tourists and visitors do not know the rules associated with hill roads.

Yercaud town relies on tourism quite heavily and residents who rely on tourist expenditure are being affected by the changing climate. In 2012, late monsoon rains meant that there was reduced tourist interest in the area as the temperature was not as cool (Times of India, 2012). Tourist interest is mainly focused on weather and natural experiences and changing tourist behaviours create problems for residents dependent on the same.

6.1.3 Tourism

Yercaud is primarily a weekend destination with mostly domestic tourists and a very small number of observed international tourists. In general, most tourists learnt about Yercaud through friends, were from Chennai and Bangalore, and were well educated. Most tourists tend to stay within Yercaud town as this is the area that has been developed to attract them. In contrast to the large influx of visitors during the weekend, there are barely any visitors during the week. Some residents expressed the opinion that there was much more to see and if people explored they would stay longer. Currently, attempts are being made to develop Yercaud to attract still more tourists. However, more planning should be put into developing a tourism product which attracts long term tourists who are environmentally conscious and spend more rather than increasing tourist numbers alone.

6.1.3.1 Issues Facing Tourism

One of the biggest issues is the changing climate. Delayed monsoon rains and higher temperatures mean that tourist interest is reduced as the weather no longer figures as an attraction. Rain is highly important in Yercaud to help control temperatures, fill water reserves, and ensure that natural attractions such as Big Lake and Killiyur falls have sufficient water to be a feature of interest. This was particularly an issue in 2012 and with good weather being one of the most important attractivity factors for tourists, changing climate can have a serious impact on future tourist trends.

Yercaud has a combination of features that are underdeveloped and overdeveloped. Despite Yercaud being the main tourist area, there is a lack of amenities and facilities for tourist use. Residents identified this as a major problem. There are no public toilets. They also identified a lack of drinking water and poor bus services, as possible issues for tourists. Furthermore, attractions appear badly planned as they are developed in such a way as to lose its natural attractiveness. Further development is being planned in the area and at the time of data collection a 40 acre botanical garden was being built. However due to a lack of developed attractions in surrounding areas/villages which encourage tourists to stay longer in Yercaud, tourists are mostly short term. Current attractions engage tourists for a short time before they move on to the next. The Rose Garden is currently being developed to fill in this niche, and due to the nature of its attraction, the development is appropriate. A similar development plan would not be as appropriate for other natural attractions highlighting the need for proper planning and investigation.

In comparison to two other hill stations, Yelagiri and Ooty, Yercaud sits in the middle in terms of development. Ooty has been identified as being overdeveloped and crowded by tourists. However, it has a variety of features which make it attractive. In particular, the town of Coonoor is located a short distance away from it which provides even more attractions to visiting tourists. Thus, Ooty has the advantage of a nearby secondary attraction. On the other hand, Yelagiri is the least developed out of these three hill stations. However, it also appears to be less

popular. As a small destination there are few attractions and instead they have capitalised on developing adventure sports and nature activities such as trekking. Identified as an important trekking location, it poses significant competition to the development of similar activities in Yercaud.

Stray dogs and monkeys were not identified as an issue by tourists and in general they were tolerated and treated with indifference. However, tourists observed at attractions were wary and uncomfortable when these animals were nearby. Monkeys may be drawn to the area by food scraps left around or alternatively from tourists feeding them. This behaviour encourages more monkeys to the area and while they can provide a momentary attraction, they can become aggressive. This poses a risk to tourists visiting the area and can affect their enjoyment.

6.1.3.2 Issues with Tourism

The most prominent impact from tourism is the increase in pollution. Several residents have referred to the high volume of traffic and the amount of garbage generated by this visiting population. In particular, plastic refuse (mainly plastic bags) appears to be the most visible issue, with resident surveys saying that plastic should be banned in the area. Longstanding residents of Yercaud resent newer residents and visitors to the area as they have seen the impacts of development on Yercaud. From deforestation to environmental degradation, these changes have been attributed to the growing popularity of Yercaud as a tourist destination.

Drinking and personal safety potentially pose an issue. In the case of the researcher visiting Kiliyur falls for data gathering, a group of men were observed drinking and behaving in a way to cause concern. When attempts were made to reach the attraction, two separate warnings were issued to the researcher regarding personal safety. As this was early afternoon on a weekday, such an issue was not anticipated. On a separate occasion when tourist surveys were being conducted, a drunken male tourist was inadvertently handed a questionnaire. Inappropriate conversation had to be dealt with sternly and evasive action had to be taken. This may be a similar cause for concern for many families and women traveling with friends.

One of the major issues with tourism in Yercaud is development to attract more tourists, sometimes under the guise of ecotourism. In many cases, this may be a marketing ploy or a lack of understanding of what ecotourism encompasses. As such, there is the need to distinguish between the two vastly different scenarios.

6.1.3.3 Development Required

Table 34 provides an assessment of the development required for each attraction, including current environmental and social issues.

Table 34: Development and issues with current attractions.

Name	Development Requirement	Environmental Fragility	Socio-Cultural Concerns
Lady's Seat	Proper waste management; better fencing for safety; proper and clean amenities within the area for men and women; aesthetic and natural landscaping; proper maintenance in all seasons; control over monkeys and stray dogs; improve infrastructure such as adequate lighting	Pollution from litter; over-development of small viewpoint has resulted in loss of natural beauty; barren with few forested areas; soil erosion nearby from tourism development	Drinking - rowdy, lewd, rude, unsafe behaviour
Pagoda Point	Proper waste management; proper and clean amenities within the area for men and women; aesthetic and natural viewing platforms; proper maintenance in all seasons; improve infrastructure such as adequate lighting; highlight original stone pagodas	Pollution from litter; loss of natural beauty and charm	Potential disruption of village life from large numbers of visiting tourists; increased traffic poses risk to children; increased male tourist population could expose women and children to harassment
Big Lake (Emerald Lake)	Proper waste management including removal of rubbish dump to a safe location; maintenance of facilities; restoration of surrounding shola forest; improve infrastructure such as sewage treatment and lighting; proper amenities; improve facilities, such as working fountains; management of water hyacinth and other pest species; reduce or mitigate impacts of development in vicinity; vegetate riparian strips and limit farming activities in immediate vicinity; ensure proper stream inflow and outflow for flushing of hydrological system	Water pollution and contamination from - sewage running into lake, poor waste management, farming activities in immediate vicinity, town rubbish dump located in close proximity; shola forest badly degraded - no re-vegetation or succession of younger saplings; over-crowding; surrounding development has resulted in significant sedimentation and soil erosion; uncertainty regarding flushing of lake system and thus build-up of contaminants	Poses a health and safety risk to tourists and residents

Botanical Survey of India	Proper maintenance of grounds; improved walking paths for safety; short guided tours or more informative signage	Potential damage to specimens due to tourist traffic	Potential risk of smuggling/theft of rare and endangered specimens
Cauvery Peak	Proper maintenance of grounds; improved infrastructure and amenities; proper lighting for safety; provide picnic tables; restore surrounding forest and scrub	Pollution from litter; nearby bauxite mining has heavily impacted - natural beauty of the area, affected water table/hydrology, degraded forest and environment, contaminated water sources, impacted beauty of landscape	Drinking - rowdy, lewd, rude, unsafe behaviour
Shevaroy Bombax	Nil - on private residence, but could be developed into a nature/heritage walk as the tree is located on an old coffee plantation with old bungalow	Potential for pollution from litter, potential for environmental degradation from exceeding carrying capacity if large numbers of tourists visit	-
Rose Garden	Currently being developed. Ensure proper amenities are available in the vicinity; mitigate impacts of development, such as soil erosion; infrastructure such as lighting; dining areas; safe children's playground; re-introduce native plant species/restore forest	Pollution from litter and poor waste management; impacts from development such as soil erosion	Drinking - rowdy, lewd, rude, unsafe behaviour
Children's Seat	Safer viewing platforms and fences; more child friendly and aesthetics should be orientated towards children; maintenance of grounds; improve infrastructure and amenities; child orientated attractions	Pollution and waste management; loss of natural beauty and charm from poorly planned development	-
Gents Seat	Maintain grounds; develop more aesthetically pleasing seating and shelter; develop/create better secondary attraction	Pollution and waste management; loss of natural beauty and charm from poorly planned development	-
Lake Park	Ensure safety - barrier between park edge and lake	Pollution and waste management; degraded shola forest nearby	-
Anna Park	Maintain grounds; improve infrastructure and amenities available in area	Pollution and waste management; degraded shola forest nearby	-
Deer Park	Maintain grounds and facilities; improve animal welfare; improve waste management in area; improve safety - reinforce bridge and replace broken platform and barrier	Surrounding lake at risk of pollution from activity in park; banks are not maintained leading to soil and concrete eroding into water - can lead to sedimentation and pollution of lake environment	-

Small Lake (Ornamental Lake)	Prevent pollution of lake from garbage, road run-off and faeces by planting riparian strip or similar/restricting nearby activity; improve water quality by improving flushing of system/introducing aquatic plants to filter water; clean lake of garbage; separate road from lake edge by creating a boundary; locate and repair fissure	Lake system heavily polluted and poor ecosystem health from lack of maintenance and mitigation of human activities in the area. A fissure has come into existence maybe due to intensive heavy machinery employed in nearby construction through which the water leaks out downhill	
Kiliyur Falls	Improve accessibility by making natural steps down to waterfall; ban plastics from area; improve infrastructure and amenities; improve signage; maintain area free of garbage	Pollution and waste management; degraded forest and shrub land; contamination of water source	Drinking - rowdy, lewd, rude, unsafe behaviour
Karadiur Viewpoint	improve infrastructure, provide lighting, amenities; proper waste management; develop Karadiur village as a secondary attraction; conserve surrounding shola forest and restore	Located in a degraded shola forest which would be sensitive to pollution and poor waste management	Potential disruption of village life from large numbers of visiting tourists; increased traffic poses risk to children; increased male tourist population could expose women and children to harassment
Heaven's Ledge	Camping experience could be even more 'closer to nature'	Vulnerable shola forest, could be threatened by high density of tourists	-
Kottachedu Teak Forest	Trekking paths	Vulnerable and degraded forest susceptible to further degradation with tourist presence or poor management; pollution of water ways and environment from poor environmental behaviours	Disturbance to locals
Butterfly Swarms	Improve habitat to encourage more butterflies to breed in the area; introduce temporary butterfly corridors to reduce population death from upcoming hill traffic when butterflies are migrating	Butterflies sensitive to poor environment - environmental disturbance in the area can lead to poor breeding and thus poor reproduction	-
Ghat Road	Reduce traffic flow e.g. by enforcing one way vehicular traffic on designated ghat road; implement safer driving practices	Large amounts of traffic; road run-off could be harming vulnerable degraded forest	
Shevaroy Temple	Investigate and re-implement old traditions and practices where feasible; improve waste management; improve facilities and amenities available; maintain and look after	Surrounding environment badly degraded from bauxite mining; fragile and in need of restoration	

sacred spring

Bus Stand	Improve and provide proper facilities and amenities for tourists; develop a Tourist information point for information regarding accommodation options; activities and attractions in the vicinity - might require shifting of some services from Hotel Tamil Nadu to a new centre specifically for providing information	Pollution of surrounding environment from poor waste management and animals being allowed to roam freely; no sewage system and there is a poor dense settlement nearby	Potential conflict between nearby poor settlement and tourists
The Grange	Improve facilities for tourists; include activities for tourists; include guides; develop the original fortress building into a historical attraction	Some shola trees remaining - highly degraded and risk of trees disappearing completely	

6.2 Supply

Using multiple sources, this research has identified two potential supply sources, from both the environment and community. These are based on existing resources and those which are undeveloped. Existing attractions are discussed while potential general attractions are described briefly to highlight features and possible development options.

The greatest supply potential exists in product development of a natural and cultural experience outside of Yercaud town in the form of village visits. These would provide tourists the opportunity to engage in nature-based activities and participate in or observe traditional practices. Novel cultural community practices would act as a potential new-visitor draw, while developing nature activities and relaxation activities could serve as potential repeat-visitor draws.

6.2.1 Environment

Despite widespread environmental degradation on the Shevaroyan Hills, the Taluk has several attractive qualities, predominantly in the form of scenic value. Over the years Yercaud town has lost this quality, which can still be found in the surrounding areas. Road routes are picturesque: they pass through dense plantations offering a closer nature experience; good quality landscape views; cooler climate through forested areas; opportunities for wildlife spotting, in

particular birds and colourful butterfly swarms (Figure 47); opportunities to see some native tree species and stands of original shola forest.



Figure 47: *Papilio polymnestor* (Blue peacock) observed near Asambur.

Villages offer a unique experience with several attractivity factors: most villages are set amongst appealing natural landscapes that offer natural experiences and landscape viewing opportunities; the village and surrounding landscape also offers several relaxation and nature activities, such as walking and trekking (Figure 48).

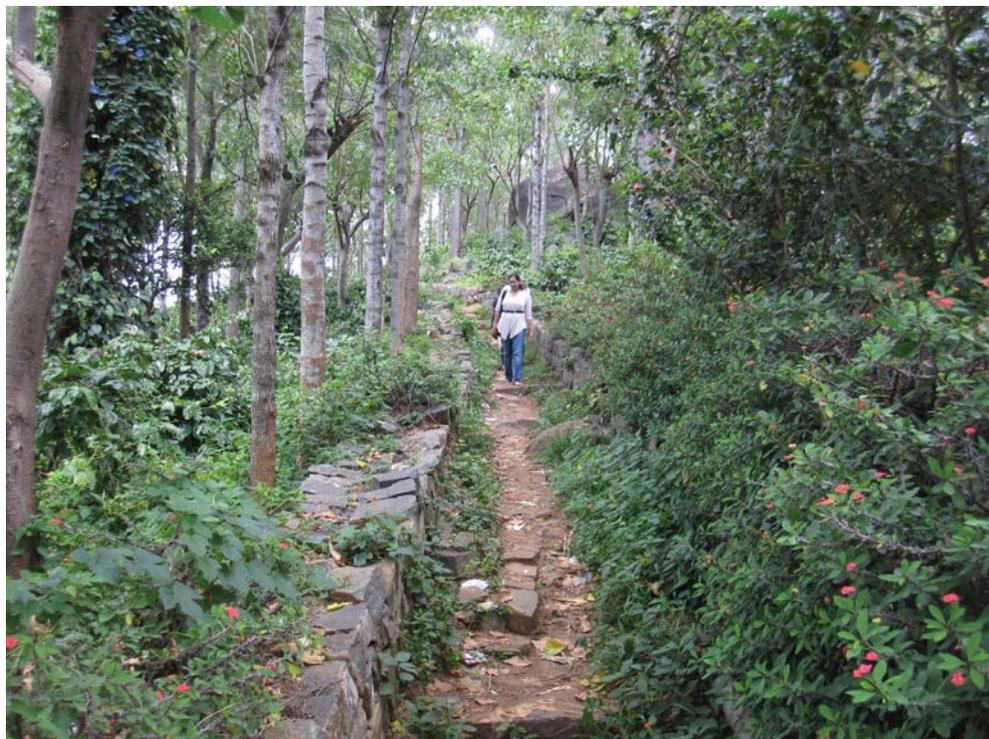


Figure 48: Walking path to Keeraikkadu.

Table 35 provides an overview of what each attraction provides in terms of current and potential uses. Only three of the following attractions provide a suitable overnight experience. In the case of Karadiur viewpoint, this would have to be developed sustainably. The other two, Heaven’s ledge and the Grange, are developed resorts. These three attractions also rated the highest for a number of factors. The resorts rated the highest as they already had multiple activities within their core attraction to provide tourists.

Table 35: Tourist attractions and their assessed current and potential use for tourism.

Name	Potential Uses	Potential Market Draw
Lady's Seat	Day and night viewpoint	Day trip
Pagoda Point	Day viewpoint, sunbathing, picnicking, trekking to nearby by village of Kakkampady, use as a draw to Kakkampady village for secondary attractions	Day trip
Big Lake (Emerald Lake)	Boating, swimming, children's entertainment; market and food stalls/vendors; lake walk; bird watching, Picnicking; relaxation activities; fishing	Day trip
Botanical Survey of India	Nature experience, view unique and rare plants, tour of unique and interesting plants, sale of plants	Day trip
Cauvery Peak	Picnicking, day and night viewpoint, relaxation spot, market and food stalls/vendors, kite flying, biking, recreational field	Day trip
Shevaroy Bombax	Viewing of unique and rare plant specimen	Day trip
Rose Garden	Children's entertainment, relaxation activities, theatrical shows, walking, plant viewing, bird watching	Day trip
Children's Seat	Day and night viewpoint, children's entertainment, relaxation activities, picnicking	Day trip
Gents Seat	Day and night viewpoint, relaxation spot, picnicking	Day trip
Lake Park	Relaxation activities, lake viewing spot, picnicking,	Day trip

Anna Park	Relaxation activities, picnicking, walking, plant viewing	Day trip
Deer Park	Relaxation activities, picnicking, walking, animal watching, bird watching, children's entertainment	Day trip
Small Lake (Ornamental Lake)	Fishing; toy boating	Day trip
Kiliyur Falls	Nature experience, trekking,	Day trip
Karadiur Viewpoint	Day viewpoint, picnicking, forest trekking, draw to visit nearby village of Karadiur, relaxation activities, potential wildlife viewing	Day trip; overnight stay
Heaven's Ledge	Viewpoint; camping grounds; relaxation activities; picnicking; bird watching; trekking; nature experience	Day trip; overnight stay
Kottachedu Teak Forest	Nature experience, trekking, picnicking	Day trip
Silk Farm	Educational experience; nature experience; children's entertainment, novelty shop	Day trip
Bears Cave	Experience nature, trekking, adventure activity	Day trip
Butterfly Swarms	Nature experience; leisure and relaxation activity; educational for family	Day trip
Ghat Road	Leisure and relaxation activity; viewpoints; nature viewing	Day trip
Shevaroy Temple	Spiritual, cultural and historical experience	Day trip
Bus Stand	Viewpoint and information centre for new tourists	Day trip
The Grange	Historical experience; plantation experience; leisure activities; walking; picnicking	Day trip; overnight stay

Unfortunately, existing wildlife on the Shevaroyan Hills is scarce despite many residents identifying multiple animal species they believed could be viewed in the area. However, it should be noted that the existence of these animals has not been properly substantiated and residents did not believe these animals offered any tourist viewing opportunities. Many residents did not recognise the attractive

factors of their village instead believing that only the tourist developed town of Yercaud had anything of value for tourism. However, it is just these less developed and pristine villages that are attractive for ecotourism rather than the more developed Yercaud.

6.2.2 Community

Villages offer a novel cultural experience previously unexplored as a tourist attraction in Yercaud Taluk. Attractivity features include: interaction with friendly locals which provides a pleasant cultural experience; an opportunity to observe remnant traditional practices; and opportunities to observe and participate in daily village life.

The most common tourist areas that residents believed they could apply themselves to, were: wildlife tour guides, nature tour guides, environmental conservation projects, and hosts or participants in cultural or religious events. While a few resorts and hotels use locals as trekking guides, it is not a common occurrence. This is likely due to a lack of development of these areas. However, both the environment and community are available for these products to be developed. The population is quite young; more than 50% were under the age of 45 and had received at least 10 years of schooling. Thus, residents are young, educated and in a good position to participate in ecotourism activities after receiving some training.

In general, Malaiyali culture does not differ significantly to what domestic tourists are accustomed to. However, they still exercise traditional practices (primarily because there are no alternatives) which could be of interest to tourists. There are several potential points of cultural interest to tourists and these include, but are not limited to: the cultivation and preparation of natural grains - chamai and ragi - using traditional tools (Figure 49); traditional practices, such as the collection of rock honey; traditional trades, such as blacksmiths (Figure 50); traditional methods not in use by others due to modern technology (Figure 51); traditional tattoos which adorn the tribal women only (now only found among the older

generation) (Figure 52). This tattooed woman said, once she died the only thing she could take with her were her tattoos.



Figure 49: Traditional implement used to remove husks from grains like chamai.



Figure 50: Traditional blacksmith at work with products in foreground.



Figure 51: Traditional method of cleaning pulping coffee.



Figure 52: Traditional tribal tattoos worn only by women.

6.3 Demand

To determine demand for tourism and ecotourism, several features were assessed. These included demographic characteristics, destination attractiveness (alternatively destination image that tourists had and which drew them to Yercaud), importance of different activities and services, and experience satisfaction of their stay in Yercaud.

6.3.1 Current Tourist Trends

Surveys showed that Yercaud is a popular destination among a younger tourist population. Furthermore, 55-73% of tourists were from middle class families. According to India's National Council of Applied Economic Research (NCAER), middle class in India are made up of two sub-groups. The first sub-group, 'seekers', earn an annual household income between Rs 200,000 - 500,000. The second sub-group, 'strivers' earned between Rs 500,000 - 1,000,000 (Meyer & Birdsall, 2012). Converting into implied 2011 PPP dollar (using a 19.129 conversion rate), this equates to about \$29 to \$72 per day, per household for seekers, and \$72 to \$143 per household for strivers. Using the NCAER definition, 29-47% of tourists who visited Yercaud were seekers and 26% were strivers. For an average length of stay (2-3 days) tourists spent between Rs 2,950 and Rs 6,000 for below average spenders; and Rs 6,000 and Rs 11,700 for above average spenders.

Additionally, groups were predominantly from large cities and travelled with friends or family in groups of 1-5 people in size. They are also most likely to use personal vehicles for transport, both to reach Yercaud and within Yercaud. Tourist visitation patterns also showed that tourists visited the main attractions in Yercaud, with the occasional tourist visiting less popular attractions such as Karadiur viewpoint.

6.3.1.1 Destination Attractivity

Completing a correlation analysis of destination attractiveness factors revealed three different tourist groups. Each group is characterised by placing importance on a different set of factors which drew them to Yercaud. Correlation did not show any

significant trends between demographic data, attractivity factors, activity and services preferences, and experience satisfaction.

The first tourist group are those interested in natural features. Principally, good weather conditions, quality of natural scenery and landscape, and opportunities to experience nature. The second group were interested in the quality and range of services provided, with regards to accommodation and restaurants. The final group were attracted by infrastructure features which were interrelated: ease of access to Yercaud, easily reached tourist sites, good roads and safe tourist sites. Thus, these three areas are important features of Yercaud and should be preserved and improved upon.

6.3.1.2 Tourist Preferences

The most important tourist activities were hiking/trekking/camping and entertainment for children. These are two areas which are poorly developed in Yercaud and which have the potential to be sustainably developed. Furthermore, there is the potential for local involvement in these activities, particularly hiking/trekking/camping.

In particular, two isolated groups were observed, those interested in recreational activities, and those interested in cultural/natural activities. Within the latter tourist group, there are many activities which are related and form a spectrum of cultural to natural activities. There was no clear boundary between these two groups, and thus at one end of the spectrum, there are those who are primarily interested in natural activities, and at the other end there are those primarily interested in cultural activities. It should be noted that at either end of these spectrums, that some activities have elements of the other in them, for example, 'harvesting your own fruit/vegetables' could also be considered natural.

6.3.1.3 Tourist Satisfaction

Tourists responded with "NA" regarding satisfaction viewing wildlife. This reflects the fact that there aren't many (or possibly any) animals of tourist interest. However, this could also be reflective of the fact that this has not been properly

developed. Yercaud has over 100 bird species which could be developed into a successful bird watching activity in the area.

Tourists identified two areas which were unsatisfactory - adventure sports and shopping activities. This reflects the lack of these activities and services on the Shevaroyan Hills. Shopping opportunities that would be in keeping with ecotourism principles and Yercaud's image would ideally offer the best development potential, particularly for its uniqueness to the destination. Surveys and interviews identified a few products which could be developed towards tourists. These were primarily natural products, such as coffee, rock honey, pepper, and a variety of fruits. In one instance, a unique product was observed which was made from coffee plant trunks. They were fashioned into various household items of furniture, but were made primarily as a hobby and for personal use (Figure 53).



Figure 53: Example of locally made product. Made from coffee plant trunks and unique to the area.

Overall results showed a greater number of satisfied tourists than dissatisfied, however, in some cases only a slightly larger proportion were satisfied in comparison to unsatisfied tourists. This trend is observed when comparing combined 'unsatisfactory' and 'very unsatisfactory' responses against the combined responses for 'satisfactory' and 'very satisfactory'. These areas were largely reported to be 'satisfactory' by tourists, but have a higher number of unsatisfied tourists than other factors: viewing and learning about local wild animals; local cuisine and drinks; traditional ways of life in the community; facilities and entertainment for children; and local environmental conservation efforts.

In general, many tourists are happy with their experience in Yercaud, primarily because the destination is better than surrounding areas. However, Yercaud is not a pioneer in ecotourism or environmentally friendly ways.

CHAPTER 7: CONCLUSIONS & RECOMMENDATIONS

The aim of this research was to highlight the need for a joint conservation and poverty alleviation strategy in the form of ecotourism. This also included identifying supply and demand for this form of tourism to assess feasibility of this development route. Data gathering has revealed that the state of the environment is in poor quality and that the community, while not in absolute poverty are in relative poverty and face many difficulties. Tourist surveys revealed that tourists were particularly drawn by the environment of Yercaud - the good climate, natural scenery and landscapes - and natural activities such as trekking. As such, there is potential to develop and invest in ecotourism to encourage tourism trends that benefit the environment and community.

The first section of this chapter outlines issues and recommended options to mitigate the impacts. The second section makes conclusions regarding the environment, community, and the potential for ecotourism development to benefit these two areas. The third section identifies further research necessary for the successful implementation of ecotourism.

7.1 Issues and Recommendations

Issues identified in the three areas investigated in this research are outlined with corresponding recommendations.

7.1.1 Environment

Extensive environmental degradation has been observed, predominantly from anthropogenic pressures. Some of the most damaging current trends include excessive development which poses a risk to all three research areas. These have been outlined in the table below.

Table 36: Environmental issues and recommendations.

Observed Issue	Impacts	Anthropogenic Factors	Recommended options
<i>Forsst degradation and deforestation</i>	<ul style="list-style-type: none"> • Reduction in ecosystem services <ul style="list-style-type: none"> - Reduction in availability of non-timber products (fruits, flowers honey etc.) - Water shortage/water table lowered - Reduced waste assimilation • Changing microclimate <ul style="list-style-type: none"> - Reduction in tourist interest - Reduction in crop yields, such as coffee • Habitat degradation and fragmentation <ul style="list-style-type: none"> - Human-animal conflicts - Inability to support fauna • Biodiversity loss • Loss of unique ecosystems <ul style="list-style-type: none"> - Reduced forest regeneration and succession 	<ul style="list-style-type: none"> • Poor enforcement of environmental protection rules • Illegal tree felling • Grazing of animals, such as goats • Lack of communication between coordinators of poverty alleviation and conservation programmes • Lack of understanding of forest dynamics • Intentional and spontaneous forest fires 	<ul style="list-style-type: none"> • Garner local resident support for environmental conservation efforts • Educational programmes • Stop grazing of animals in regenerating forest • Proper enforcement • Community led conservation programmes • Restoration projects with a focus on imitating original forest dynamics • Proper communication between relevant organisations • Use of ecotourism to increase support of environment projects
<i>Land conversion and unsustainable development</i>	<ul style="list-style-type: none"> • Monocultures result in reduced biodiversity • Loss of productive land • Loss of biodiversity • Loss of agricultural biodiversity • Land degradation • Pollution • Excessive development • Microclimate change • Reduction in natural quality of scenery and landscape • Habitat loss 	<ul style="list-style-type: none"> • Residents selling their land <ul style="list-style-type: none"> - Rising costs associated with running plantations - Insufficient funds and lack of financial security for needs and expenses • Corruption and dishonesty 	<ul style="list-style-type: none"> • Ensure policies to safeguard environment from excessive development • Proper enforcement of rules during development • Effective implementation of poverty alleviation programmes • Use ecotourism/tourism to support maintenance of natural scenery and landscapes • Create stable jobs, such as through ecotourism development to reduce the need to sell land • Seek outside funding to create conservation projects to maintain landscape
<i>Water shortages</i>	<ul style="list-style-type: none"> • Lack of water for crops - reduced crop yields • Lack of water for humans and animals • Environmental stress 	<ul style="list-style-type: none"> • Deforestation • Global climate change 	<ul style="list-style-type: none"> • Improve forest health • Implement effective afforestation schemes with aid of residents • Implement development projects to capture rain water
<i>Pollution (Air, water, noise)</i>	<ul style="list-style-type: none"> • Environmental degradation • Reduction in quality of natural scenery and landscape • Disruption to fauna • Poor water quality is a health hazard for tourists, residents and animals 	<ul style="list-style-type: none"> • Heavy vehicular traffic • Lack of proper waste management - rubbish dumps in close vicinity to water bodies • Faecal contamination from lack of proper infrastructure and sewage treatment facilities • Road run-off from close proximity to heavily used roads • Sedimentation from soil erosion caused by development • Bauxite and granite mining • Lack of enforcement of environmental rules 	<ul style="list-style-type: none"> • Enforce one way traffic on Ghat roads during weekends • Enforce safe driving • Encourage use of public transport to reduce number of private vehicles • Create safe public transport options that are not overcrowded • Raise the fee to enter Yercaud to contribute to carbon emission offset programmes • Construct proper infrastructure and waste/sewage management • Plant riparian or similar strips on lake edge to reduce contamination of lake water from road runoff • Enforce reclamation and restoration of mined area

7.1.2 Community

Various community issues have arisen due to unsustainable development in the area. Additionally, some conflicts have been identified between conservation and poverty alleviation efforts. Ecotourism would encourage better communication between coordinators of these two programmes. Furthermore, it would provide incentives for residents to aid in conservation efforts and potentially provide alternative sources of income. Additionally, other recommendations are made outside of those that ecotourism could provide in the following table.

Table 37: Social issues and recommendations.

Observed Issue	Consequences	Factors	Recommended potential solutions/options
<i>Lack of proper infrastructure and housing</i>	<ul style="list-style-type: none"> • Impacted health • Poor sanitation • Poor living conditions • Cramped living quarters • Indoor air pollution • Pollution 	<ul style="list-style-type: none"> • Lack of planning • Poverty • Poor infrastructure • Rural-urban migration for jobs • Lack of electricity (requires burning of fuels) and ventilation • Lack of proper waste management 	<ul style="list-style-type: none"> • Poverty alleviation and aid schemes to improve housing • Build proper housing and amenity facilities • Build proper infrastructure and sewage treatment • Educational programmes • Ventilation in houses • Provide alternative fuels that are cleaner burning
<i>Ineffective government schemes and corruption</i>	<ul style="list-style-type: none"> • Government loses money through lack of planning and corruption. Those in need are still left in need • Government schools fail to distribute school equipment • Government schools have insufficient teachers willing to work in rural areas • Only one higher secondary school which is distant to many villages • Parents still have to buy school supplies despite children attending Government schools • Unfair distribution of subsidies • Time and money lost waiting for distribution of subsidies • Lack of doctors and nurses at government clinics and they fail to provide proper care 	<ul style="list-style-type: none"> • Lack of planning and proper development • Corruption - bribery and threats - fear of those with political power • Improper policing of schemes • Self-preservation - fear of repercussions for not complying to threats • Medical and teaching staff lack motivation due to distance to their respective stations 	<ul style="list-style-type: none"> • Proper policing of schemes to ensure <ul style="list-style-type: none"> - Fair distribution of benefits - Staff complete their jobs well - Adequate staff are stationed at clinics and schools - Government employees are honest in carrying out their duties.
<i>Poor transportation</i>	<ul style="list-style-type: none"> • Unsafe for girls travelling long distance to school • Children in distant villages face a daily struggle to attend school • Costs of privately arranged transportation mean children have to walk • Children unable to receive a proper education due to costs and time associated with travel • Poor transportation to many villages makes reaching work, medical facilities, or career training courses difficult. 	<ul style="list-style-type: none"> • Lack of buses running at appropriate times • Poor infrastructure (roads) • Lack of buses travelling to more remote villages 	<ul style="list-style-type: none"> • Increase and improve bus services • Introduce school bus services • Improve infrastructure
<i>Low incomes</i>	<ul style="list-style-type: none"> • Poverty • Debt • Forced into illegal activities • Forced to take up additional work • Forced to borrow money • Unable to properly educate children (unable to pay fees, provide transport, or buy school equipment) • Selling of land <ul style="list-style-type: none"> - Graze animals in forest - Loss of self-sufficiency - Loss of livelihood sustainability 	<ul style="list-style-type: none"> • Lack of education and skill set • Shortage of jobs, except for lower paying labour positions (e.g. coolies) • Increasing costs • Lack of job security 	<ul style="list-style-type: none"> • Poverty alleviation schemes • Training schemes • Jobs with better wages • Alternate income sources to supplement jobs • Subsidies and support for low income earners • Improve infrastructure and technology to improve job conditions

<i>Land conversion and unsustainable development</i>	<ul style="list-style-type: none"> • Development of slums • Environmental degradation which affects health and livelihood • Increasing land prices • Unsustainable and excessive development 	<ul style="list-style-type: none"> • Poverty • Lack of financial security • Debt • Poor planning • Corruption 	<ul style="list-style-type: none"> • Policies to safeguard environment from excessive development • Proper enforcement of rules during development • Effective implementation of poverty alleviation programmes • Create stable jobs, such as through ecotourism/conservation development to reduce the need to sell land
<i>Human-animal conflict</i>	<ul style="list-style-type: none"> • Human injuries • Property and crop damage • Financial losses • Increased animosity towards conflicting animal species 	<ul style="list-style-type: none"> • Habitat loss and degradation • Lack of available water • Habitat encroachment 	<ul style="list-style-type: none"> • Improve habitat, restoration projects • Education and awareness • Fencing or other deterrents to keep Gaur away from properties
<i>Water shortages and pollution</i>	<ul style="list-style-type: none"> • Villages must buy water from town • Increased costs 	<ul style="list-style-type: none"> • Deforestation • Climate change 	<ul style="list-style-type: none"> • Improve forest health • Implement effective afforestation schemes with aid of residents • Implement development projects to capture rain water
<i>Pollution</i>	<ul style="list-style-type: none"> • Reduced health • Poor sanitation 	<ul style="list-style-type: none"> • Lack of proper infrastructure • Lack of proper waste management system • Lack of sewage treatment system 	<ul style="list-style-type: none"> • Improve infrastructure, waste management, and sewage treatment
<i>Conflict between conservation and poverty alleviation</i>	<ul style="list-style-type: none"> • Loss of income • Increased feelings of animosity towards environmental rules • Failed conservation efforts 	<ul style="list-style-type: none"> • Restrictions introduced without community consultation and mediation 	<ul style="list-style-type: none"> • Proper integration between the two programmes • Education regarding environmental importance • Alternative income sources
<i>Environmental ignorance or indifference</i>	<ul style="list-style-type: none"> • Can result in: <ul style="list-style-type: none"> - Environmental degradation - Pollution - Human-animal conflicts - Unsustainable development and practices 	<ul style="list-style-type: none"> • Self-preservation (meeting own needs) over environment • Lack of education and awareness 	<ul style="list-style-type: none"> • Educational programmes • Improving living conditions and poverty
<i>Loss of tribal culture</i>	<ul style="list-style-type: none"> • Loss of unique culture and knowledge • Loss of potential cultural attractions 	<ul style="list-style-type: none"> • Feelings of inferiority • Restrictions which make following of traditions difficult • Influence from other residents in town and TV 	<ul style="list-style-type: none"> • Education about uniqueness and importance of tribal culture • Ecotourism to promote sense of pride in tribal culture • Programmes to revive old traditions
<i>Differing social perceptions of community groups</i>	<ul style="list-style-type: none"> • Social friction and conflict • Distrust 	<ul style="list-style-type: none"> • Changing trends • More modern behaviour among tribals 	<ul style="list-style-type: none"> • Facilitation process to increase understanding and tolerance

7.1.3 Tourism

Unsustainable tourism development is affecting the major attractiveness qualities of Yercaud. There are several issues related to this and with the current mass tourism trend, which are outlined in the following table.

Table 38: Tourism related issues and recommendations.

Observed Issue	Consequences	Factors	Recommended options
<i>Pollution (Air, water, noise)</i>	<ul style="list-style-type: none"> Health Hazards Loss of tourist interest as natural attractiveness of destination is reduced 	<ul style="list-style-type: none"> Lack of planning Poor infrastructure Lack of proper waste management Large numbers of tourists 	<ul style="list-style-type: none"> Build proper infrastructure and sewage treatment Manage traffic flow, provide alternative transport up ghat road
<i>Unsustainable development</i>	<ul style="list-style-type: none"> Environmental degradation reduces tourist interest Overdevelopment Loss of natural scenery and landscape which attract tourists 	<ul style="list-style-type: none"> Unequal development - some areas overdeveloped, other underdeveloped Excessive development Intensive tourism development 	<ul style="list-style-type: none"> Proper policies and policing of development Proper planning with environmental and community consideration Reduce and implement development which is more suitable for destination features
<i>Predominantly weekend tourists during off-peak season</i>	<ul style="list-style-type: none"> Reduced income as most tourists only visit for 2-3 days 	<ul style="list-style-type: none"> Lack of attractions for longer tourism consumption 	<ul style="list-style-type: none"> Develop sustainable attractions which engage tourists for longer Attract a different tourist market during the week to reduce effect of seasonality Marketing to attract ecotourists who might spend longer and more in destination
<i>Excessive tourists in Yercaud town</i>	<ul style="list-style-type: none"> Environmental degradation and pollution Loss of natural attractiveness Over-crowding 	<ul style="list-style-type: none"> Excessive tourism development in town Lack of development of alternative tourist attractions (ecotourism in surrounding areas) 	<ul style="list-style-type: none"> Sustainable development of surrounding attractions to attract tourists away from town Improve infrastructure to deal with high density of tourists
<i>Competition from more and less developed hill stations (Ooty and Yelagiri)</i>	<ul style="list-style-type: none"> Loss of tourists to more appealing hill stations Reduced income from tourism Reduced destination attractiveness 	<ul style="list-style-type: none"> Unsustainable development Lack of innovative tourism development (such as ecotourism) Lack of directed tourism development, which is inappropriate for destination features 	<ul style="list-style-type: none"> Utilise ecotourism to gain a competitive edge in tourism market Directed and sustainably planned development
<i>Safety</i>	<ul style="list-style-type: none"> Tourists feel unsafe at attractions, in particular female tourists 	<ul style="list-style-type: none"> Lack of lighting and infrastructure Drinking and inappropriate behaviour Lack of presence of authorities 	<ul style="list-style-type: none"> Watch guards/security at remote or potentially unsafe attractions (e.g. Kiliyur falls)
<i>Predominantly domestic market</i>	<ul style="list-style-type: none"> Lower spending than international tourists, including shorter stays - less profit Environmental degradation and unsustainable development Opinion that area/attraction must be developed to obtain entertainment and satisfaction Some attractions and activities (Cultural, historical and natural) not as appealing as they might be to international tourists 	<ul style="list-style-type: none"> Different discriminations and attractiveness factors for domestic tourists Development geared towards domestic tourist tastes (development not suitable for destination features) Lack of quality control and examples of quality domestic tourist destinations to create a discriminative comparison of destination deficiencies 	<ul style="list-style-type: none"> Marketing and development towards international market Sustainable ecotourism development Pioneer quality attractions and activities to innovate tourism and create beneficial competition

7.2 Conclusions

Extensive environmental and social issues require immediate attention. In some cases, poverty alleviation and conservation efforts are insufficient or in some cases at odds with each other. As such, there is a need for a strategy which can jointly aid in both issues. Furthermore, the tourism industry in the area has been observed to have several unsustainable aspects. Ecotourism would offer a unique solution by contributing towards reducing the impacts of issues associated with these three areas. In particular, ecotourism could create more sustainable development. Currently, as a tourist destination, Yercaud is both overdeveloped and underdeveloped. Furthermore, as a predominantly nature orientated destination, much of the development is inappropriate for the destination features and does not make it unique or provide a competitive edge against competition. Furthermore, investigating tourist demand for ecotourism reveals a high orientation towards nature. Thus environmental preservation is important not just for promoting ecotourism but for maintaining current tourism trends. Sustainable development of cultural and natural attractions might provide opportunities to enter the international tourist market. However, current development trends are counterproductive to this goal.

7.3 Further Research

This research investigated the beginning stages required to implement ecotourism in the region. As such, there is further work and research required in order to ensure that ecotourism is implemented successfully and sustainably. This includes further talks/interactions with stakeholders, investigations into local and national policy that either hinders or furthers the opportunity for ecotourism implementation; more in depth investigations into infrastructure and services currently available as well as competitiveness of the destination; the biodiversity footprint of the area should be assessed for conservation and potential ecotourism uses; carrying capacity assessments should be carried out to determine suitable tourist densities. Additionally, more detailed tourism research could be conducted for efficient development of tourism products, including research which takes into

account the impact of climate change on tourist trends. Long terms environment and community studies should be completed to ensure development continues to be sustainable.

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APPENDICES

Appendix 1: Panchayats and Villages

Panchayat	Villages			
Manjakuttai	Manjakuttai	Old Manjakuttai	Athiyur	Kommakadu
	Asambur	Semmaduvu	Maruthayankadu	Mailapatti
Yercaud	Jarinakadu	Mundugampadi	Gundur	Yercaud
	Murugan Nagar	Theppakadu	Karungali	Koilmedu
	Tank pudur	Vasambadi	Kasikal	Ondikadai
	Kiliyur			
Nagalur	Kolagur	Puliyampatty	Chettiyapatti	Puliyamarathur
	Annanagar	Suraikkayapatti	Elavadi	S.t.nagar
	Nagalur	Thalurkadu	Karadiur	Kotadiyar
	Jayalalitha nagar	Veppadi	Melkaradiyur	Puthur
	Borderkadu	Melkolagur	Muluvi	
Velur	Pattipadi	Nadur	Kondayanur	Thalurkadu
	Akkaraiyur	Sonapadi	Velur	Thennamarakadu
	Ilayaramankadu	Thalur		
Vazhavanthi	Vazhavanthi	Mottukadu	Keeraikadu	Settukadu
	Aranmanaikadu	Parakadai	Kumbipadi	Thenkadakadu
	K. puthur	Puliankadai		
Semmanatham	Semmanatham	Poolakkadu	Mangalam	Senkalathupadi
	Arasamarathur	Pudur	Northenchedu	Solur
	Kadukkamarathur	S. puthur	Olakkodu	Mundasedu
	Periyakadu			
Thalaisolai	Thalaisolai	Pilleri	Pasipallam	Sengadu
	Kakkampadi	Pottukadu	Palathur	Thekkampadi
	Kedakadu	Samutharakadu		
Vellakkadai	Piliyur	Nallur	Melur	Piliyur tankpadi
	Anaikadu	Periyerikadu	Mottur	Salapari
	Karapara	Vellakkadai		
Maramangalam	Maramangalam	Kovilur	Kelaiyur	Northanchedu.k
	Arangam	Kuttamathikadu	Kombuthuki	Pelakkadu
	Chinnamadhur	Madhur	Koothumuthal	Senthittu
	Kalikadu	Mavoothu	Kottachedu	
Unknown	Nadavoor	Palakadiur	Cauvery peak	

Appendix 2: 2001 Census Yercaud Taluk

Panchayat	Revenue Village Name	Total			Scheduled Caste			Scheduled Tribe			Other Caste		
		Total Population	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1 Vellakadai	Vellakadai												
	Annaikadu	134	69	65	-	-	-	134	69	65	-	-	-
	Mottur	329	158	171	3	2	1	326	156	170	-	-	-
	Solambadi	260	137	123	-	-	-	260	137	123	-	-	-
	Nallur	554	281	273	-	-	-	545	275	270	9	6	3
	Mellur	511	245	266	-	-	-	504	241	263	7	4	3
	Vellakadai	711	356	355	33	17	16	530	267	263	148	72	76
	Puliyur	1134	556	578	105	56	49	998	484	514	31	16	15
	Total	3633	1802	1831	141	75	66	3297	1629	1668	195	98	97
2 Manjakuttai	Asambur												
	Athiyur	388	204	184	61	36	25	89	45	44	238	123	115
	Asambur	280	137	143	3	1	2	254	126	128	23	10	13
	Manjakuttai	734	358	376	127	59	68	192	90	102	415	209	206
	Semmaduvu	453	225	228	159	85	74	73	34	39	221	106	115
	Mailapatti	452	219	233	-	-	-	393	192	201	59	27	32
	Kommbaikadu	458	220	238	151	69	82	189	90	99	118	61	57
	Total	2765	1363	1402	501	250	251	1190	577	613	1074	536	538
3 Semmanatham	Semmanatha												
	Semmanatham	650	336	314	138	68	70	331	175	156	181	93	88
	Kadugamarathur	189	84	105	-	-	-	161	74	87	28	10	18
	Periyakadu	409	215	194	-	-	-	404	212	192	5	3	2
	Arasamanathur	74	40	34	4	4	0	70	36	34	-	-	-
	S. Puthur	31	13	18	-	-	-	31	13	18	-	-	-
	Mangalam	490	220	270	21	10	11	371	163	208	98	47	51
	Sengaluthupadi	430	237	193	-	-	-	430	237	193	-	-	-
	S. Northanchedu	455	216	239	94	43	51	234	117	117	127	56	71
	Solur	200	100	100	-	-	-	200	100	100	-	-	-
	Mundachedu	62	36	26	4	2	2	41	23	18	17	11	6
	Olavakadu	187	91	96	3	2	1	173	83	90	11	6	5
Total	3177	1588	1589	264	129	135	2446	1233	1213	467	226	241	
4 Nagalur	Muluvi												
	Sorakkapatti	349	176	173	-	-	-	270	139	131	79	37	42
	Kolagur	1217	624	593	17	9	8	1172	598	574	28	17	11
	Kotadiyar	612	298	314	29	14	15	514	252	262	69	32	37
	Elavadi	59	30	29	5	2	3	14	6	8	40	22	18
	Muluvi	323	153	170	-	-	-	311	147	164	12	6	6
	Puthur	657	321	336	44	20	24	537	267	270	76	34	42
	Veppadi	219	110	109	-	-	-	219	110	109	-	-	-
	Puliyampatti	69	36	33	-	-	-	62	31	31	7	5	2
	Nagalur	1188	575	613	620	298	322	277	137	140	291	140	151
	Total	4693	2323	2370	715	343	372	3376	1687	1689	602	293	309
5 Yercaud	Yercaud												
	Mundagampadi	398	195	203	67	32	35	262	124	138	69	39	30
	Killiyur	179	86	93	34	15	19	109	54	55	36	17	19
	Yercaud	8750	4707	4043	3081	1507	1574	216	107	109	5453	3093	2360
	Vasampadi	79	40	39	25	13	12	34	18	16	20	9	11
	Gundur	423	226	197	3	2	1	419	224	195	1	-	1
	Thappakadu	592	290	302	109	50	59	450	227	223	33	13	20
Total	10421	5544	4877	3319	1619	1700	1490	754	736	5612	3171	2441	
6 Vellur	Pattipadi												
	Kondaiyanur	515	261	254	-	-	-	515	261	254	-	-	-
	Sonapadi	397	201	196	-	-	-	397	201	196	-	-	-
	Vellur	604	308	296	-	-	-	569	288	281	35	20	15
	Pattipadi	922	467	455	145	75	70	716	354	362	61	38	23
Total	2438	1237	1201	145	75	70	2197	1104	1093	96	58	38	

Panchayat	Revenue Village Name	Total			Scheduled Caste			Scheduled Tribe			Other Caste		
		Total Population	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
7 Thalaisalai	Thalaisalai												
	Pilleri	556	289	267	-	-	-	538	277	261	18	12	6
	Thalaisalai	835	414	421	6	4	2	606	295	311	223	115	108
	Sengadu	545	273	272	91	43	48	405	202	203	49	28	21
	Pottakadu	608	308	300	57	27	30	481	244	237	70	37	33
	Kakkampadi	505	246	259	-	-	-	496	241	255	9	5	4
	Total	3049	1530	1519	154	74	80	2526	1259	1267	369	197	172
8 Valavanthi	Puthur												
	Puliyankadai	558	278	280	27	16	11	498	241	257	33	21	12
	Aranmanaikadu	110	54	56	-	-	-	79	42	37	31	12	19
	K. Puthur	858	433	425	-	-	-	800	402	398	58	31	27
	Keeraikadu	307	146	161	-	-	-	253	118	135	54	28	26
	Valavanthi	867	430	437	8	4	4	711	349	362	148	77	71
	Kumbipadi	173	83	90	-	-	-	172	82	90	1	1	0
	Total	2873	1424	1449	35	20	15	2513	1234	1279	325	170	155
9 Maramangalam	Pelakkadu												
	Kovilur	574	287	287	-	-	-	572	286	286	2	1	1
	Kombuthooki	370	171	199	-	-	-	370	171	199	-	-	-
	Koothumuthal	399	205	194	-	-	-	389	197	192	10	8	2
	Maramangalam	874	443	431	3	2	1	814	409	405	57	32	25
	Mavuthu	159	81	78	-	-	-	98	48	50	61	33	28
	Pellakadu	571	288	283	-	-	-	571	288	283	-	-	-
	Senthittu	678	342	336	-	-	-	369	181	188	309	161	148
	Northanchedu	244	125	119	-	-	-	244	125	119	-	-	-
	Arangam	529	255	274	-	-	-	526	254	272	3	1	2
	Mathur	568	288	280	-	-	-	568	288	280	-	-	-
	Chinnamathur	269	132	137	-	-	-	249	121	128	20	11	9
	Kottachedu	332	176	156	-	-	-	285	153	132	47	23	24
	Kelayur	464	230	234	-	-	-	401	201	200	63	29	34
	Total	6031	3023	3008	3	2	1	5456	2722	2734	572	299	273
	TOTAL	39080	19834	19246	5277	2587	2690	24491	12199	12292	9312	5048	4264

Appendix 3: Birdlist Yercaud (Lepage, 2012)

Common name	Scientific name	Common name	Scientific name
Phasianidae		Monarchidae	
*Painted Bush Quail	<i>Perdicula erythrorhyncha</i>	Asian Paradise-flycatcher	<i>Terpsiphone paradisi</i>
*Red Spurfowl	<i>Galloperdix spadicea</i>	Corvidae	
*Painted Spurfowl	<i>Galloperdix lunulata</i>	Rufous Treepie	<i>Dendrocitta vagabunda</i>
*Grey Junglefowl	<i>Gallus sonneratii</i>	Large-billed Crow/Jungle Crow	<i>Corvus macrorhynchos</i>
Ardeidae		Paridae	
Indian Pond Heron	<i>Ardeola grayii</i>	Great Tit	<i>Parus major</i>
Falconidae		Hirundinidae	
Common Kestrel	<i>Falco tinnunculus</i>	Barn Swallow	<i>Hirundo rustica</i>
Accipitridae		Dusky Crag Martin	<i>Ptyonoprogne concolor</i>
Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	Red-rumped Swallow	<i>Cecropis daurica</i>
Black-winged Kite	<i>Elanus caeruleus</i>	Cisticolidae	
Black Kite	<i>Milvus migrans</i>	Grey-breasted Prinia	<i>Prinia hodgsonii</i>
Brahminy Kite	<i>Haliastur indus</i>	Jungle Prinia	<i>Prinia sylvatica</i>
Short-toed Eagle	<i>Circaetus gallicus</i>	Genera Incertae Sedis	
Crested Serpent Eagle	<i>Spilornis cheela</i>	Common Tailorbird	<i>Orthotomus sutorius</i>
Shikra	<i>Accipiter badius</i>	Pycnonotidae	
White-eyed Buzzard	<i>Butastur teesa</i>	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>
Indian Black Eagle	<i>Ictinaetus malayensis</i>	Red-vented Bulbul	<i>Pycnonotus cafer</i>
Bonelli's Eagle	<i>Hieraaetus fasciatus</i>	White-browed Bulbul	<i>Pycnonotus luteolus</i>
Booted Eagle	<i>Hieraaetus pennatus</i>	Yellow-browed Bulbul	<i>Acritillas indica</i>
Columbidae		Black Bulbul	<i>Hypsipetes leucocephalus</i>
Spotted-necked Dove	<i>Streptopelia chinensis</i>	Sylviidae	
Emerald Dove	<i>Chalcophaps indica</i>	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>
Psittacidae		Greenish Warbler	<i>Phylloscopus trochiloides</i>
Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>
Blossom-headed Parakeet	<i>Psittacula roseata</i>	Timaliidae	
Cuculidae		Puff-throated Babbler	<i>Pellorneum ruficeps</i>
Common Hawk-Cuckoo	<i>Cuculus varius</i>	Indian Scimitar Babbler	<i>Pomatorhinus horsfieldii</i>
Common Cuckoo	<i>Cuculus canorus</i>	Tawny-bellied Babbler	<i>Dumetia hyperythra</i>
Blue-faced Malkoha	<i>Rhopodytes viridirostris</i>	*Rufous Babbler	<i>Turdoides subrufa</i>
Sirkeer Malkoha	<i>Taccocua leschenaultii</i>	Jungle Babbler	<i>Turdoides striata</i>
Greater Coucal	<i>Centropus sinensis</i>	Brown-cheeked Fulvetta	<i>Alcippe poioicephala</i>
Strigidae		Zosteropidae	
Collared Scops Owl	<i>Otus bakkamoena</i>	Oriental White-eye	<i>Zosterops palpebrosus</i>
Mottled Wood Owl	<i>Strix ocellata</i>	Irenidae	
Jungle Owlet	<i>Glaucidium radiatum</i>	Asian Fairy-bluebird	<i>Irena puella</i>
Caprimulgidae		Sittidae	
Grey Nightjar	<i>Caprimulgus indicus</i>	Velvet-fronted Nuthatch	<i>Sitta frontalis</i>
Apodidae		Sturnidae	
Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Jungle Myna	<i>Acridotheres fuscus</i>

Hemiprocnidae		Bank Myna	<i>Acridotheres ginginianus</i>
Crested Treeswift	<i>Hemiproctne coronata</i>	Common Myna	<i>Acridotheres tristis</i>
Coraciidae		Purple-backed Starling/Daurian Starling	<i>Sturnus sturninus</i>
Indian Roller	<i>Coracias benghalensis</i>	Chestnut-tailed Starling	<i>Sturnus malabaricus</i>
Alcedinidae		Brahminy Starling	<i>Sturnus pagodarum</i>
White-throated Kingfisher	<i>Halcyon smymensis</i>	Turdidae	
Common Kingfisher	<i>Alcedo atthis</i>	Pied Thrush	<i>Zoothera wardii</i>
Meropidae		Orange-headed Thrush	<i>Zoothera citrina</i>
Blue-bearded Bee-eater	<i>Nyctornis athertoni</i>	Eurasian Blackbird	<i>Turdus merula</i>
Green Bee-eater	<i>Merops orientalis</i>	Muscicapidae	
Upupidae		Oriental Magpie-Robin	<i>Copsychus saularis</i>
Common Hoopoe	<i>Upupa epops</i>	White-rumped Shama	<i>Copsychus malabaricus</i>
Ramphastidae		Indian Robin	<i>Saxicoloides fulvatus</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>	Blue Rock Thrush	<i>Monticola solitarius</i>
*White-cheeked Barbet	<i>Megalaima viridis</i>	Blue-capped Rock Thrush	<i>Monticola cinclorhynchus</i>
Coppersmith Barbet	<i>Megalaima haemacephala</i>	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>
Picidae		Rusty-tailed Flycatcher	<i>Muscicapa ruficauda</i>
Brown-capped Woodpecker	<i>Dendrocopos moluccensis</i>	Red-breasted Flycatcher	<i>Ficedula parva</i>
Rufous Woodpecker	<i>Celeus brachyurus</i>	Asian Verditer Flycatcher	<i>Eumyias thalassinus</i>
Lesser Yellow-naped Woodpecker	<i>Picus chlorolophus</i>	Tickell's Blue Flycatcher	<i>Cyornis tickelliae</i>
Black-rumped Woodpecker	<i>Dinopium benghalense</i>	Chloropseidae	
Pittidae		Blue-winged Leafbird	<i>Chloropsis cochinchinensis</i>
Indian Pitta	<i>Pitta brachyura</i>	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>
Genera Incertae sedis		Dicaeidae	
Common Woodshrike	<i>Tephrodornis pondicerianus</i>	Thick-billed Flowerpecker	<i>Dicaeum agile</i>
Artamidae		Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>
Ashy Woodswallow	<i>Artamus fuscus</i>	Plain Flowerpecker	<i>Dicaeum concolor</i>
Aegithinidae		Nectariniidae	
Common Iora	<i>Aegithina tiphia</i>	Purple Sunbird	<i>Cinnyris asiaticus</i>
Campephagidae		Loten's Sunbird	<i>Cinnyris lotenius</i>
Large Cuckoo-shrike	<i>Coracina macei</i>	Estrildidae	
Black-headed Cuckoo-shrike	<i>Coracina melanoptera</i>	Indian Silverbill	<i>Lonchura malabarica</i>
Scarlet Minivet	<i>Pericrocotus flammeus</i>	Scaly-breasted Munia	<i>Lonchura punctulata</i>
Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	Black-throated Munia	<i>Lonchura kelaarti</i>
Laniidae		Motacillidae	
Brown Shrike	<i>Lanius cristatus</i>	Grey Wagtail	<i>Motacilla cinerea</i>
Oriolidae		White-browed Wagtail	<i>Motacilla maderaspatensis</i>
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Olive-backed Pipit	<i>Anthus hodgsoni</i>
Black-hooded Oriole	<i>Oriolus xanthomus</i>		

Dicruridae

Black Drongo	<i>Dicrurus macrocercus</i>
Ashy Drongo	<i>Dicrurus leucophaeus</i>
White-bellied Drongo	<i>Dicrurus caerulescens</i>
Bronzed Drongo	<i>Dicrurus aeneus</i>
Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>

Fringillidae

Common Rosefinch	<i>Carpodacus erythrinus</i>
------------------	------------------------------

***Endemic (country/region)**

Appendix 4: Tourist Survey



Thank you VERY MUCH for taking the time to complete this survey!

Complete the survey by filling out the following form and returning it to the person who handed it out. Completion of the survey implies consent for me to use the data obtained for the purpose of the present study (anonymously). You have the right to decline to answer any particular question.

What is the study about?

This survey is part of a research project that aims to assess the potential to reduce poverty in Yercaud through ecotourism opportunities in the region. Participants in the study are local residents and businesses in Yercaud and visiting tourists.

Who is the researcher?

Melody Mendez is a Master's candidate at Massey University, New Zealand, with a background in ecology, plant biology and environmental management.

Contacts:

If you should have any questions regarding this survey don't hesitate to contact either myself at +91917 608 1582 or email: 07024347@uni.massey.ac.nz ; or my supervisor Associate Professor John Holland J.D.Holland@massey.ac.nz .

Confidentiality and ethics:

Each individual form is completely confidential. The information provided in this study will be treated confidentially and anonymously and will only be used for the purpose of this study. Your name will not be used to identify the completed questionnaire.

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research. If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), contact Professor John O'Neill, Director (Research Ethics), telephone (06) 350 5249, e-mail humanethics@massey.ac.nz.

TOURIST SURVEY

- 1) Which amount is closest to your combined annual household income (Rs)? (circle number)
- | | |
|------------------------|--------------------------|
| 1. 0 - 250,000 | 5. 1,000,000 - 1,250,000 |
| 2. 250,000 - 500,000 | 6. 1,250,000 - 1,500,000 |
| 3. 500,000 - 750,000 | 7. 1,500,000 – 2,000,000 |
| 4. 750,000 - 1,000,000 | 8. More than 2,000,000 |
- 2) What is your age? _____ 3) (Circle number): 1. Male 2. Female
- 4) What is your profession? _____
- 5) What is your highest level of education?
- | | |
|------------------------------|--------------------------|
| 1. Elementary School/Primary | 4. Postgraduate Degree |
| 2. Higher Secondary School | 5. Technical College |
| 3. University degree | 6. Other (specify) _____ |
- 6) Do you belong to a scheduled caste/tribe? (specify) _____
- 7) Is this your first time visiting Yercaud? 1. Yes 2. No
- 7a) If 'No', approximately how many times have you visited before? _____
- 7b) If 'No', during which months do you usually visit? _____
- 8) Have you visited some of the tourist sites surrounding Yercaud? 1. Yes 2. No
- 9) Which sites have you visited/plan to visit: (circle numbers)
- | | | |
|--------------------------|--------------------|---------------------|
| 1. Killiyur Falls | 6. Pagoda Point | 11. Silk Farm |
| 2. Shevaroy Temple | 7. Bear's Cave | 12. The Grange |
| 3. Botanical Orchidarium | 8. Small lake | 13. Other (specify) |
| 4. Lady's Seat | 9. Montfort School | _____ |
| 5. Emerald Lake | 10. Anna Park | _____ |
- 10) Are you travelling:
1. Alone
 2. As a couple
 3. In a tour group
 4. With family
 5. With friends
- 11) How many people are in your travel party? _____
- 12) In which city do you live? _____
- 13) How many days are you visiting this area? _____
- 13a) What day of the week did you arrive in Yercaud? _____

14) What are your reasons for visiting this area? Rank reasons for visiting (1 = highest)

- ___ Leisure
- ___ Business
- ___ Visiting friends and relatives
- ___ Education, short term (less than 1 year)
- ___ Volunteerism, short term (less than 1 year)
- ___ Other (specify) _____

15) If staying overnight, what type of accommodation are you staying in?

- 1. Hotel
- 2. Resort
- 3. Dormitory/hostel
- 4. Boarding house/home stay (in a home)
- 5. Other (specify) _____

16) How did you learn about Yercaud? _____

17) How did you travel to Yercaud?

- 1. Personal car
- 2. Rented car
- 3. Tour bus/van
- 4. Taxi
- 5. Motorcycle/scooter
- 6. Other (specify) _____
- 7. Bus

18) What is your primary mode of transportation while visiting? (circle one)

- 1. Personal car
- 2. Rented car
- 3. Rented scooter
- 4. Tour bus/van
- 5. Bus
- 6. Taxi
- 7. Autorickshaw
- 8. Other (specify) _____

19) How much have the following factors influenced your decision to visit the area? (circle number)

0 = Not at all 1 = A little 2 = Neutral 3 = Moderately 4 = A Lot

1. Good weather conditions	0	1	2	3	4
2. Quality of natural scenery & landscapes/environment	0	1	2	3	4
3. Opportunity to see wildlife	0	1	2	3	4
4. Opportunities to learn about and experience nature	0	1	2	3	4
5. Opportunity to see unique plant or animal species	0	1	2	3	4
6. Opportunity to visit and learn about a traditional community	0	1	2	3	4
7. Visits to temples or religious sites	0	1	2	3	4
8. Quality and range of accommodation options	0	1	2	3	4
9. Opportunity to stay in local homes (boarding/guest house)	0	1	2	3	4

	0 = Not at all	1 = A little	2 = Neutral	3 = Moderately	4 = A Lot
10. Quality and range of restaurants	0	1	2	3	4
11. Opportunities to participate in adventure/sports activities	0	1	2	3	4
12. Opportunities to participate in relaxing activities	0	1	2	3	4
13. Quality of activities/accommodation/services match with price paid	0	1	2	3	4
14. Good local transportation system between tourist sites	0	1	2	3	4
15. Facilities and entertainment available for children	0	1	2	3	4
16. Yercaud is easily accessible	0	1	2	3	4
17. Easy to reach tourist sites	0	1	2	3	4
18. Roads to destination are in good condition	0	1	2	3	4
19. Tourist sites are safe to visit	0	1	2	3	4
20. Potential for business investment/development in Yercaud	0	1	2	3	4

20) How important are the following activities and services to your holiday? (circle number)

	0 = Not at all	1 = A little	2 = Neutral	3 = Moderately	4 = A Lot
1. Hiking/trekking/camping	0	1	2	3	4
2. Wildlife viewing or bird watching	0	1	2	3	4
3. Fishing	0	1	2	3	4
4. Visiting parks, natural sites or gardens	0	1	2	3	4
5. Swimming/boating	0	1	2	3	4
6. Biking	0	1	2	3	4
7. Horse riding	0	1	2	3	4
8. Volunteer conservation programs e.g. tree planting	0	1	2	3	4
9. Visiting coffee or spice plantations	0	1	2	3	4
10. Visiting agricultural lands or orchards	0	1	2	3	4

0 = Not at all 1 = A little 2 = Neutral 3 = Moderately 4 = A Lot

- | | | | | | |
|---|---|---|---|---|---|
| 11. Attending art, craft or music performances (e.g. dancing) | 0 | 1 | 2 | 3 | 4 |
| 12. Visiting cultural heritage sites or historical places | 0 | 1 | 2 | 3 | 4 |
| 13. Visiting small towns or villages | 0 | 1 | 2 | 3 | 4 |
| 14. Spiritual inspiration | 0 | 1 | 2 | 3 | 4 |
| 15. Harvesting your own fruits/vegetables | 0 | 1 | 2 | 3 | 4 |
| 16. Farm stays (experience an agricultural/estate lifestyle) | 0 | 1 | 2 | 3 | 4 |
| 17. Boarding houses/home stays | 0 | 1 | 2 | 3 | 4 |
| 18. Traditional practices and products | 0 | 1 | 2 | 3 | 4 |
| 19. Herbal or natural medicinal practices and products | 0 | 1 | 2 | 3 | 4 |
| 20. Restaurants | 0 | 1 | 2 | 3 | 4 |
| 21. Shopping | 0 | 1 | 2 | 3 | 4 |
| 22. Organized entertainment | 0 | 1 | 2 | 3 | 4 |
| 23. Entertainment for children | 0 | 1 | 2 | 3 | 4 |

21) Approximately how much money (Rs.) did you spend during this visit to the area? (answer with only the amounts that you/spouse paid for)

<u>Transportation to reach Yercaud:</u>		Restaurants/meals	_____
Car	_____	Activities	_____
Bus	_____	Shopping	_____
Train	_____	Entertainment	_____
Other	_____	Accommodation	_____
<u>Transportation while here:</u>		Other	_____
Car	_____		_____
Bus	_____		_____
Taxi	_____		_____
Autorickshaw	_____		_____
Scoters	_____		_____

22) Would you recommend that a friend of yours visit this area? 1. Yes 2. No

22a) Give reasons for your answer

23) Based on your visit to Yercaud, how satisfying was your experience of: (circle number)

0 = Not applicable 1 = Very Unsatisfying 2 = Unsatisfying 3 = Satisfying 4 = Very Satisfying

1. Viewing and learning about local wild animals	0	1	2	3	4
2. Viewing and learning about local plant life	0	1	2	3	4
3. Viewing natural areas	0	1	2	3	4
4. Nature learning experiences	0	1	2	3	4
5. Local environmental conservation efforts	0	1	2	3	4
6. Admission prices to tourist sites	0	1	2	3	4
7. Local cuisine and drinks	0	1	2	3	4
8. Local's attitudes towards visitors	0	1	2	3	4
9. Traditional ways of life in local community	0	1	2	3	4
10. The quality and availability of locally made products	0	1	2	3	4
11. The diversity of adventure/sports activities	0	1	2	3	4
12. Facilities/entertainment for children	0	1	2	3	4
13. Stores/shopping opportunities	0	1	2	3	4
14. Local transport to tourist sites	0	1	2	3	4

24) Are there any other areas which you think need improvement?

Appendix 4a: Resident Survey



Massey University

Te Kunenga ki Pūrehuroa

இந்த ஆய்வை முடித்த நேரம் எடுத்ததற்கு நன்றி !

இந்த ஆய்வை முடிப்பதற்கு பிக் வரும் பக்கங்களில் உள்ள கேள்விகளுக்கு பதில் அளித்த பிக் இந்த விண்ணப்பத்தை உரியவர் வசம் ஒப்படைக்க வேண்டும். இந்த கேள்விக்கான பரதது பதில்களை எனது படிப்பிற்காக பயன்படுத்துகிறேன். உங்களுக்கு விருப்பம் இல்லை என்றால் பதில் அளிக்கவும்.

படிப்பின் நோக்கம்:

இந்த ஆராய்ச்சியின் மூலம் உள்ளூர் வாசிகள் இயற்கையைச் சேதப்படுத்தாத முறையில் அதனை உபயோகப்படுத்தி அவர்களின் வாழ்க்கைத் தரத்தை மேம்படுத்திக் கொள்ள வழிகாட்டப்படுகிறது. இந்த திட்டத்தில் பங்கு கொள்பவர்கள் 1. உள்ளூர் வாசிகள் 2. சிறு தொழில் செய்பவர்கள் 3. சுற்றுலா பயணிகள்

யார் இந்த ஆராய்ச்சியாளர் ?

மெலடி மெண்ட்ஸ் இவள் நியூசிலாந்தில் உள்ள மாஸே யுனிவர்சிட்யில் சுற்றுப்புற சூழ்நிலையியல் பற்றி ஆராய்சி செய்யும் மாணவர்

தொடர்புக்கு.

இது தொடர்பாக ஏதேனும் சந்தேகம் இருந்தால். 9176081582

Email : 07024347@uni.massey.ac.nz

J.D.Holland@massey.ac.nz

எனது மேற்பார்வையாளர் பேராசிரியர் ஜான் ஹாலண்ட்

இந்த ஆராய்ச்சிக்காக தங்களது கருத்துகளை பதிவு செய்யும் எந்த ஒருவடைய பெயரும் வெளியிடப்படாதவாறு பாதுகாக்கப்படும். இவை அனைத்தும் எனது படிப்பிற்காக மட்டும் எடுத்துக் கொள்ளப்படுகிறது.

இந்த ஆராய்ச்சியானது முழுக்க முழுக்க பாதுகாப்பானது என்று எனது சக ஆராய்சியாளர் மதிப்பீடு செய்து சான்றித்துள்ளார். மேலும் அதற்கு ஹியூமன் எத்திக்ஸ் கமிட்டி மதிப்பீடு செய்யவில்லை. இந்த ஆராய்சியானது நீதி நெறிக்கு அப்பாற்பட்டதாக தெரிந்தால் தொடர்பு கொள்ளவும் பேராசிரியர் ஜான் ஓ நீல் டைரக்டர் ஆப் ரிசர்ச் எத்திக்ஸ் (06)3505249

வீடு சார்ந்த கணக்கெடுப்பு

1. திருமண நிலை

1. திருமணம் ஆனவர். 2. திருமணம் ஆகாதவர் 3. விதவை 4. விவாகரத்து/பிரிக்கப்பட்டவர்

2. உங்கள் வயது என்ன ? 3. வட்டமிட்டு காட்டுக 1. ஆண் 2. பெண்

4. உங்களை சேர்த்து உங்கள் வீட்டில் எத்தனை பேர் வாழ்கின்றனர்?

பெரியவர்கள் குழந்தைகள்

5. அதிகபட்டமாக உங்களது கல்வி தகுதி என்ன ?

5. a) நீங்கள் பள்ளியில் எத்தனை வருடங்கள் படித்தீர்கள்:

6. நீங்கள் என்ன மொழி பேசுகிறீர்கள்?

7. உங்களுக்கு தோராயமாக எவ்வளவு நிலம் உள்ளது?

8. பின்வரும் வருமானத்திற்கு நீங்கள் எந்த அளவிற்கு சம்பாதிக்க வேண்டும் (எண்களை வட்டமிட்க.)

0 = எதுசுமில்லை 1 = கொஞ்சம் 2 = நடுத்தரம் 3 = குறிப்பிடத்தக்க

1. கால்நடை 0 1 2 3

2. விவசாயம் 0 1 2 3

3. டீ, காபி, மாசாலா பொருட்கள் 0 1 2 3

4. பழதோட்டங்கள் 0 1 2 3

5. மருத்துவ தாவரங்கள் மரம் இல்லாமல் காடுகளின் பொருட்கள் 0 1 2 3

6. கடைகள் 0 1 2 3

7. மரம் விற்பனை (பதிவு) 0 1 2 3

8. மர பொருட்கள் விற்பனை 0 1 2 3

9. உள்நாட்டு சேவை 0 1 2 3

10. குவாரி/செயலாக்கம் 0 1 2 3

11. சுற்றுலாதலம் 0 1 2 3

12. மற்றவை இருந்தால் குறிப்பிடவும் 0 1 2 3

9. நீங்கள் வழக்கமாக எங்கு வேலைக்கு செல்கிறீர்கள்?

1. விவசாய நிலங்கள்
2. சுற்றுலா தளங்கள்
3. காடழற்சு
4. ஏற்காடழற்சு
5. மற்றவற்றை குறிப்பிடவும்

10. உங்கள் வீட்டில் வாழும் நபர்கள் பின்வரும் வேலையை எத்தனை பேர் செய்கிறார்கள் என குறிப்பிடவும்.

- | | | | |
|-----------------|-------|----------------------------|-------|
| 1. தோட்டங்களில் | ..... | 5. சுற்றுலாதளங்களில் | ..... |
| 2. வனவியல் | ..... | 6. சுரங்க வேலை | ..... |
| 3. மீன்பிடி | ..... | 7. சில்லரை விற்பனை | ..... |
| 4. விவசாயம் | ..... | 8. மற்றவற்றை குறிப்பிடவும் | ..... |

11. உங்களது ஒருங்கிணைந்த குடும்ப மாதம் வருமானம் எவ்வளவு? (வட்டமிடுக.)

- | | |
|------------------|---------------------|
| 1. 0 - 2500 | 3. 7,500 - 10,000 |
| 2. 2500 - 5,000 | 5. 10,000 - 12,500 |
| 3. 5,000 - 7,500 | 6. 12,500 க்கு மேல் |

11. அ) மாதத்தின் எத்தனை நாட்கள் வேலை செய்வீர்கள்?

12. பின்வரும் குடும்பத்தின் மாத வருமான செலவுகளை குறிப்பிடுக.

- | | | | |
|----------------------|-------|--------------------------------------|-------|
| 1. வீட்டு | ..... | 6. போக்குவரத்து மற்றும் தொலைதொடர்பு: | ..... |
| 2. உணவு | ..... | 7. கலாச்சாரம் மற்றும் பொழுதுபோக்கு: | ..... |
| 3. சுகாதாரம் | ..... | 8. ஆடை மற்றும் காலணிகள்: | ..... |
| 4. கல்வி | ..... | 9. எரிபொருள் மற்றும் மின்சாரம்: | ..... |
| 5. வீட்டு பொருட்கள்: | ..... | 10. மற்றவற்றை குறிப்பிடுக : | ..... |

13. நீங்கள் என்ன ஜாதி? பழங்குடி இனத்தை சார்ந்தவரா

14. உங்கள் திறமையை பின்வரும் துறைகளில் எந்த வேலையில் அதிகம் பயன்படுத்துகிறீர்கள்

0 = எதுவுமில்லை	1 = கொஞ்சம்	2 = நடுத்தரம்	3 = நிறைய
1. பழசாகுபடி			0 1 2 3
2. டீ / காபி / மாசாலா தோட்டங்களில்			0 1 2 3
3. கால்நடை வளர்ப்பதற்காக / கோழி			0 1 2 3
4. பயிர் வளர்ப்பு			0 1 2 3
5. மீன்பிடித்தல்			0 1 2 3
6. வேட்டையாடுதல்			0 1 2 3
7. சுற்றுலா பாதுகாப்பு திட்டங்கள்			0 1 2 3
8. சில்லரை மற்றும் மொத்த விற்பனை			0 1 2 3
9. சுற்றுலாதளங்களில்			0 1 2 3
10. தங்கும் விடுதியில் / வீட்டில் தங்கி			0 1 2 3
11. பண்ணை வீட்டில் தங்கியிருந்து			0 1 2 3
12. மர வேலைபாடுகளில்			0 1 2 3
13. மரம் சார்ந்த பொருட்கள் அல்லாது			0 1 2 3
14. இன மருந்து			0 1 2 3
15. உணவகங்களில்			0 1 2 3
16. மற்றவற்றை குறிப்பிடவும்			0 1 2 3

15. கீழ்வருவன இடம் இருந்து நீங்கள் என்ன நன்மையை பெறுகிறீர்கள்?

1. வனவிலங்குகள்:
2. காடுகள்:
3. ஏரி:

15 a) முதல் மூன்று நன்மைகள் குறிப்பிடுக

வனவிலங்கு	காட்டு பகுதியில்	ஏரி
1 _____	1 _____	1 _____
2 _____	2 _____	2 _____
3 _____	3 _____	3 _____

15. b) அந்தப் பகுதியில் இருந்து கொண்டு உங்களுக்கு கிடைத்த வருமானத்தினை சதவீதத்தில் குறிப்பிடுக:

1. வனவிலங்கு: _____	0 – 20 %
2. காடுகள்: _____	21 – 40 %
3. ஏரி: _____	41 – 60 %
4. பொருந்தாது _____	61 – 80 %
	81 – 100 %

வனவிலங்கு

16. வன விலங்கு பகுதியில் நீங்கள் சந்தித்த பிரச்சனைகள் உண்டா ?

17. என்ன பிரச்சனை? வன மோதலில் போது ஏதேனும் நிதி இழப்பு ஏற்பட்டதா ?

17. a) வனவிலங்கு எப்படி நிதி இழப்புக்கு காரணமாகுகிறது?

18. நீங்கள் சுற்றுலா பயணி எனில் வனத்தை சுற்றி பார்க்க ஏதேனும் வாய்ப்பு உள்ளதா ?

1. ஆம் 2. இல்லை

18.a) ஆம் எனில் அங்கே என்ன விலங்குகள் உள்ளது?

காடுகள்

19. காடு சார்ந்து என்ன பிரச்சனைகள் உள்ளன ? / விதிமுறைகளை விவரியுங்கள்

20. காட்டுப் பகுதியில் தொடர்ந்து அச்சுறுத்தல் பிரச்சனை உண்டா ? 1. ஆம் 2. இல்லை

20.a) ஆம் எனில் எப்படி ? என்று விவரிக்க.

ஓரி

21. ஓரி தொடர்புடைய பிரச்சனைகள் /கட்டுப்பாடுகளை விவரியுங்கள்

22. ஓரிப்பகுதியில் தொடர்ந்து அச்சுறுத்தும் பிரச்சனைகள் உண்டா? 1.ஆம் 2. இல்லை

22. a) ஆம் எனில் எப்படி ? என்று விவரிக்க :

23. ஓரி அல்லது காடுகள் தொடர்பாக எந்த ஒரு முழு வளர்ச்சியும் அடையாத சுற்றுலா வாய்ப்புகள் ?
உள்ளனவா?

1. ஆம் 2. இல்லை

23. a) ஆம் எனில் என்ன வாய்ப்பு விவரியுங்கள்

சுற்றுலாதளம்

24. நீங்கள் சுற்றுலா தொடர்பான தொழில் ஏதேனும் செய்கிறீரா? (குறிப்பிடவும்)

25. உங்கள் வருமானத்தின் சதவீதம் கடந்த ஆண்டு சுற்றா நடவடிக்கைகளில் இருந்து வந்தது என்ன ?
(வட்டமிடுக)

1. 0 - 20%
2. 21 - 40%
3. 41 - 60%
4. 61 - 80%
5. 81 - 100%

26. நீங்கள் அனைத்து வருடங்களும் சுற்றுலா தளங்களில் வேலை செய்வரா ? 1. ஆம் 2. இல்லை

27. கடந்த ஓராண்டு காலமாக, நீங்கள் சுற்றுலா பயணிகளிடம் எப்படி தொடர்பு வைத்திருக்கிறீர் ?

(வட்டமிடுக)

1. தினசரி
2. வாரந்தோறும்
3. மாதமாதம்
4. கால் ஆண்டுக்கு ஒருமுறை
5. இல்லை

28. இந்த பகுதியில் சுற்றுலா வளர்ச்சிக்காக உங்கள் வீடு சார்ந்து அல்லது உங்கள் சமூகத்தில் அதிக நன்மைகளை வழங்க மாற்ற ஏதேனும் வழிகள் உள்ளதா ?

1. ஆம்
2. இல்லை

29. ஆம் என்றால் விளக்கவும்

.....
.....

30. சுற்றுலா பயணிகள் ஏற்ற விதிமுறைகளை கடைபிடிக்க வேண்டும் ?

.....
.....

30. a) சுற்றுலா பயணிகள் வரம்புமீறி செல்ல இடங்களுக்கு அனுமதி உண்டா ?

1. ஆம்
2. இல்லை

31. ஆம் எனில் விவரிக்கவும்

.....
.....

32. ஏற்காடு பகுதியில் சுற்றுலா / சுற்றுலா பயணிகளுக்கு எந்த மாதிரியாக பிரச்சனையை சந்திக்கிறார்கள் (குறிப்பிடவும்)

.....
.....

33. இப்பகுதியில் சுற்றுலா பயணிகள் பார்வையில் ஏற்படும் எண்ணங்கள் ?

1. மிகவும் நட்பு
2. நட்பு
3. அடைசியமாய்ப்புள்ள
4. அன்பில்லாத
5. மிகவும் அன்பில்லாத (விரோத)

34. நீங்கள் பின்வரும் சுற்றுலா நடவடிக்கைகள் மற்றும் சேவைகளை மேற்கொள்ள திறமை/ அறிவு எந்த அளவிற்கு உள்ளது? (வட்டமிடுக)

0 = எதுவுமில்லை 1 = கொஞ்சம் 2 = நடுத்தரம் 3 = நிறைய

1. வன சுற்றுலா வழிகாட்டி	0	1	2	3
2. இயற்கை சுற்றுலா வழிகாட்டி	0	1	2	3
3. வன காப்பாளருக்கு	0	1	2	3
4. பூங்கா பாதுகாவலர்	0	1	2	3
5. சுற்றுசூழல் பாதுகாப்பு திட்டங்கள்	0	1	2	3
6. படகோட்டுபவர்	0	1	2	3
7. தோட்ட உரிமையாளர்/ அதனை இயக்குபவர்	0	1	2	3
8. சுற்றுலா பயணிகள் கலாச்சார அல்லது சமய நிகழ்வுகளில் கலந்து கொள்ளும் பங்கு	0	1	2	3
9. தனிப்பட்ட உள்நாட்டில் தயாரிக்கப்பட்ட பொருட்கள் தனி மதிப்பை உருவாக்க .	0	1	2	3
10. உங்கள் கலாச்சாரம், வாழ்கை முறை பாரம்பரியம் போதனை முறையில்	0	1	2	3
11. கலாச்சாரத்தை கற்பித்தல் மற்றும் பாரம்பரிய தள சுற்றுலா வழிகாட்டி	0	1	2	3
12. இன மருந்து பயிற்சியாளர் / கல்வியாளர்	0	1	2	3
13. சில்லறையாக அல்லது மொத்தமாக	0	1	2	3
14. உணவகத்தில் / தங்கும் விடுதிகள் வழங்கி	0	1	2	3
15. பண்ணை விடுட்டில் தங்குவதற்கா வழங்குவதில்	0	1	2	3
16. சுற்றுலா தளங்களை சுற்றி காட்டுவதற்கு சுற்றுலா தளங்களுக்கு சுற்றுலா பயணிகள் செல்வதற்கு	0	1	2	3
17. குழந்தைகளுக்க் பொழுதுபோக்கு வழங்குவதில்	0	1	2	3
18. ஓய்வு நடவடிக்கைகள் வழங்குவதில்	0	1	2	3
19. உணவு கடைகளில்/ உணவகங்கள் வழங்குவதில்	0	1	2	3
20. குதிரை சாவாரி/ கழுதைகளை கூட நடந்து செல்வதில்	0	1	2	3