

**An assessment of recreational value of Periyar Tiger Reserve and
the distribution of tourism income among stakeholders.**

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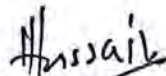
June 2013

Certificate


This is to certify that Mr. Subish Sebastian has carried out an original piece of research in partial fulfilment of Master's Degree in Wildlife Sciences of Saurashtra University, Rajkot. The topic of his dissertation is "An assessment of recreational value of Periyar Tiger Reserve and the distribution of tourism income among stakeholders." The study was carried out under our supervision from December 2012 to June 2013. We hereby certify that this work has not been submitted for any degree to any University.



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Contents

Sl. No	Topics	Page No
	Summary	6
	Acknowledgement	9
Chapter 1	Introduction	10-23
1.1	Introduction	10
1.2	Study area	13
1.3	Literature Review	19
1.4	Specific objective	23
1.5	Hypothesis	23
1.6	key Question	23
Chapter 2	Recreational value	24-38
2.1	Introduction	24
2.2	Methodology	28
2.3	Result	31
2.4	Discussion	38
Chapter 3	Benefit sharing among various stakeholders	39-61
3.1	Introduction	39
3.2	Methodology	42
3.3	Results	53
3.4	Discussion	56
3.5	Conclusion	60
Chapter 4	Attitude of local communities	62-77
4.1	Introduction	62
4.2	Methodology	63
4.3	Result	66
4.4	Discussion	76
4.5	Conclusion	77
Reference		78-82

TABLES

Table 1	Awareness about world heritage site	36
Table 2	How many visitors think declaration of PTR as WHS is justified	37
Table 3	EDC's and the number of families involved in tourism.	47
Table 4	Income/employment status of stakeholders	49
Table 5	Comparison of local share among three major stakeholder	56
Table 6	Percent respondents in income class	64
Table 7	Gender wise classification of stakeholders	65
Table 8	Education wise classification of stakeholders	65
Table 9	Age wise classification of stakeholders	65
Table 10	Percentage awareness of the benefits derived from PTR.	66
Table 11	Conservation attitude in percentage	67

FIGURES

Figure 1	Periyar Tiger Reserve	15
Figure 2	State wise distribution of visitors	32
Figure 3	Indian nationals Vs foreign nationals	32
Figure 4	Gender of respondent	33
Figure 5	Education status of respondents	33
Figure 6	Occupation status of respondent	34
Figure 7	Income classes of respondents	34
Figure 8	Reason for visiting PTR	35
Figure 9	Rrate of satisfaction scale	35
Figure 10	Recreational value of PTR	36
Figure 11	Suggestion for improving the tourism potential in PTR	36
Figure 12	Final demand curve for recreational value of PTR	38
Figure 13	Eco tourism revenue details.	40
Figure 14	Representation of local community	48
Figure 15	Percentage share to the local community	50
Figure 16	Dependency level of various stakeholders	51
Figure 17	Chain showing the beneficiaries of sustainable tourism.	52

Figure 18	Economic benefit to local community	58
Figure 19	Percentage respondents aware on conservation of forest & eco system services	59
Figure 20	Awareness towards conservation of forest and eco system services as per income level of the respondents	66
Figure 21	Percent respondents in income categories, agreeing to conserve wildlife and reason/ benefits of conservation	68
Figure 22	Percent male and female aware of benefits of forest conservation and eco system services derived therein	69
Figure 23	Percent male and female respondents' agreeing to conserve wildlife and Reason/ benefits of conservation	70
Figure 24	Awareness of respondents (%) as per their educational qualification, towards conservation of forest and eco system services	71
Figure 25	Percent respondents in education qualification, agreeing to conserve wildlife and Reason/ benefits of conservation	72
Figure 26	Awareness of percent respondents in age categories towards conservation of forest and eco system services awareness	73
Figure 27	Attitude of percent respondents in different age categories towards conservation of wildlife and reason/ benefits of conservation	74
Figure 28	Percent stakeholder respondents' opting for conservation of wildlife and reason/ benefits of conservation	74
Figure 29	Revenue generated from tourism since 1996-97 till 2012-13	75

Summary

Protected Areas (PA) are cornerstone for biodiversity conservation and their role in maintaining flow of ecosystem goods and services is now being acknowledged. But it is difficult to justify their creation when demand for employment, infrastructure increases, and thus government may take decision looking at the short term economic prosperity. When economic wealth generated through development activity and compared to the income generated from PA, the former does over shadow the income generated from PA conservation. But in doing so, the other benefits of conservation remain unaccounted. These benefits range from provision of fuel, fodder, food, to local communities at local scale, and provision of clean water, air purification, and aesthetic and bequest value at regional or larger spatial scales. Accounting of the services such as recreational value provided by the PA can help generate support for conservation at all spatial scales. The Periyar Tiger Reserve (PTR) is a popular tourist destination visited by the people by national and international tourists.

Ecotourism programs are implemented in PTR as an integrated conservation and development project for sustainable development of local communities, and to create awareness as well as to promote conservation. The success of this program can be largely attributed to its charismatic flagships species and its unique water safari where tourists can enjoy the wildlife in scenic background on either side of the Periyar Lake. Encouraged by the success of tourism, more and more communities have enrolled themselves in different activities which are either directly or indirectly connected with tourism.

Being the most visited and popular PA, it becomes imperative to explore the recreational value of the PTR. Also, since local communities living in and around PTR are traditionally dependent on the reserve's resources and are being involved in ecotourism activities, it is essential to assess the distribution of ecotourism benefits stakeholders. It is well known that support for conservation can be generated if the communities are obtaining benefits from conservation linked tourism. But the monetary leakages in community based tourism or ecotourism often undermine the support for conservation. Thus, PTR being an ecotourism site, it is crucial to know the monetary leakages occurring onsite in PTR and how this revenue

related linkages and leakages mould the attitude of stakeholder towards biodiversity conservation?

The recreational value of PTR was calculated using the Zonal Travel Cost Method. This method helps to derive the demand function for the site. Questionnaire survey was carried out to know the socio-economic status, the monetary flow in the household; examine people attitude towards PTR. One hundred twenty five in-depth interviews were conducted among eight major stakeholders whose dependency on tourism was very high. For assessing the best existing model which underlines the principles of ecotourism, the tourism was classified into three kinds, first one Tourism run by private party, secondly Tourism run by local community, and finally Tourism run by Periyar Tiger Reserve's EDCs.

The recreational value of the reserve was estimated as Rs. 44176299.32. With the cost per visitor being Rs. 63.56 the consumers' surplus was large, showing the willingness of visitors to pay for wildlife recreation. The socio economic study reveals that the 'Tourism Programs' run by EDCs are the best models providing 100% share to local communities, followed by the home stays run by local communities. Monetary leakages were highest in case of resorts (82%), followed by 20% leakages from home stay, while no leakage was observed at EDC. The leakage of 20% is due to the link with foreign players like tour operators and other resorts who market their products. Even though resorts that the private player run programs claim as ecotourism, only 14.9% of share goes to the local community.

The results obtained indicate that the conservation attitudes are not influenced by income class, education, gender and age of the respondents. Attitude of local community is highly positive towards forest and wildlife conservation, which can be attributed to the benefit sharing approach developed by Forest Department. The findings indicate that the participatory approach and benefit sharing are good means to promote sustainable use of natural resources.

High consumer surplus for visits to PTR suggests that recreational value of PTR is higher than the current expenditure by the people. Thus, there is a possibility of increasing the ecotourism fee, which would contribute to higher turnover for the forest department. Tourism income is not equitably distributed among stakeholders. The percent of locals employed in

profitable ecotourism ventures was less, resulting in 82% monetary leakages. Support for conservation is very high among all stakeholders in PTR but this scenario or this state can't be clearly attributed to the benefits derived from the tourism. Forest department play a major role in creating awareness. Conflict among stakeholder group about the revenue sharing and the mode of aggressive marketing does not affect their perception about wildlife. Occupation does not affect the attitude of stakeholders. Benefits derived from tourism lead to positive attitude of local communities and enhance conservation support among local communities. Higher employment of locals in the resorts, massaging parlours and as taxi and tour operators would lead to sustainability of ecotourism in PTR. Capacity building and financial assistance to the locals would enhance local employment and minimize monetary leakages and thus increase benefits to the locals.

Acknowledgement

Given the opportunity to study Recreational value of Periyar Tiger Reserve and was tempted to find whether the desired ecotourism objectives is achieved through the outcome of the study. I find ecotourism very promising in its idea which gives practical application to Sustainable Development theory.

Firstly, I would like to acknowledge and thank my supervisors, Dr. Ruchi Badola, Dr. S.A. Hussain and Prof. V.K. Uniyal for their guidance and supervision. They gave me the opportunity to accomplish this study and provided advice throughout the whole process of this study.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Natural resources are crucial for the wellbeing of humans as they provide the basic facility for the survival by supplying direct and indirect benefits to human kind. Nature also provides global food security, nutrition, maintains quality of air, water and soil. These services of natural ecosystem are called ecosystem services (MEA 2005).

The alteration in these services and functions for improving the living standard of human beings can only question the fate of human existence. Because of its incomparable nature with other man-made service and goods, natural ecosystem service hardly gain any weightage during policy making which leads to the irreversible damage, both on ecosystem as well as human kind. Therefore, it becomes vital to quantify these services in the language every one can understand i.e. Economics. Since these are incomparable, the best way to value them is on the basis of substitution that is how much they have to pay or invest if they have to substitute the service with the artificial one. When such estimations were broadly executed, it was estimated that the global ecosystem service is worth of US \$ 33 trillion per year which is almost double of global gross national product of US \$17 trillion per year (Costanza 1997).

Another major challenge of 21st century is poverty and biodiversity conservation (Nyaupane and Poudel. 2011). Even though the conventional method of conservation through isolated Protected Area unit achieved some initial success of preserving the biodiversity, population explosion and rising poverty complicated the existing scenario as people were alienated from their traditional land and had to bear the cost of conservation (Mishra et al. 2003). Therefore, some trade off mechanism became inevitable to achieve a win-win strategy through effective financial mechanism for sustainable development with an active participation of local communities, which eventually led to the concept of Integrated Conservation and Development project (ICDP). Its success depended upon the planner's understanding of complex issues and integrating it over the whole planning process (Badola and Hussain 2005). Therefore, ecotourism is considered as site specific, conservation friendly package

which have the potential to improve the socio-economic status of local communities in a sustainable way.

Ecotourism is one of the fast growing sub-sectors of tourism. According to the UN World Tourism Organization, there was a rise of international tourist from 25 million in 1950 to 664 million in 1999 (Griffin 2002) and in 2012. It reached one billion marks and has generated mass revenue of US \$ 1032 billion in 2012 whereas the developing countries earn revenue of US \$ 339 billion from international tourists. This clearly depicts the high impact of tourism on local livelihood and its potential to boost micro as well as macro economy. Being a rapidly growing sector in less industrialized country (Goodwin and Walpole 2000), tourism has the potential to boost economic benefits to the host countries by increasing foreign exchange, employment opportunities, and improving socio-economic conditions leading to the greater market stability (Goodwin and Walpole 2000). Tourism can play a major role in changing the attitude of local communities by reconciling conservation and developmental objective participation and collaboration of all stakeholders. Since local communities are deprived of the basic rights in protected areas, ecotourism is viewed as a means of providing sustainable benefits to local communities who bear the greatest opportunity costs of protection. Therefore, high economic benefits of recreation sites act as key component to generate public support and also help to revive the lost historic bond between culture and environment. Some studies show that non-consumptive recreation can enhance the protected area effectiveness (Reed and Merenlender 2008).

Such sustainable resource utilization can never be achieved without proper systematic planning and operation of all stakeholders. There should be enough arenas to showcase the wealth of ancestral knowledge of natural resource of indigenous community. Market should be created for their local goods and services (Scheyvens 2007), which in turn will helps to maximize benefits of conservation and minimize leakages in economical outputs (Ollenburg and Buckley 2007). According to few critics, tourism only resulted in creating more inequalities between the developed consumer nation and developing hosts as the economic capital and control were usually from outside sources resulting in leakages, external dependency, and an unequal distribution of benefits and costs. While global players enjoy the benefits of protected areas (Balmford and Whitten 2003), local communities have to bear the

opportunity cost (Matiku 2008). Since majority of local labors are unskilled as well as lack of capital to cater the global demands of tourism, their condition can even become worse. Same scenario repeats at national level, where the rift arises because of the metropolitan core and the rural periphery. These latter areas are often marginalized by their geographic remoteness, resulting in lack of interaction with the market. These are further repeated in regional (Walpole and Goodwin 2000) and local scales and the ability of the host population to minimize such leakages depend largely on the equitable local benefits. Therefore, it is necessary to reduce leakages as they can hinder the sustainable growth of rural economy.

India is one of the 12 mega diverse countries in the world having the widest network of protected areas (Bhardwaj and Badola 2008) which constitute 102 National Parks, 520 Wildlife Sanctuaries, 56 Conservation reserves, 4 Community Reserves, another 218 proposed Wildlife sanctuaries, covering 5% of geographic area of India. It is a developing economy where 37% of 1.2 billion people are still below poverty line, and whose finest natural resources are mostly confined in and around protected areas. The prevailing socio-economic condition in these areas can force people to depend upon these natural resources for their day to day survival unless or until an alternative source of income is generated (Nyaupane and Poudel 2011). These scenarios forced the management to enforce protection of natural resources through preservation techniques since they thought it can be managed as convention isolated unit. No doubt that these approach help to conserve significant part of biodiversity but in this process, they fuelled the rift between protected area and people. Therefore, it becomes a necessity to approach such issue of management more scientifically as continuous utilization of natural resources without proper monitoring system damages and degrades the value of ecosystem, putting all wildlife in danger. This is where site specific programs like ICDP are highly recommended. These programs help to conserve biodiversity by uplifting the socio-economic status of local community by not only providing them an alternative livelihood to reduce their dependency on nature but also by encouraging and empowering local community in sustainable conservation strategy.

A healthy economy exists only with a healthy environment (Costanza 1997). Even though the dynamics of economics and environment is tightly connected, they are continuously ignored at the time of finalizing short term goal without long term framework. In a rapidly growing

population, it becomes impractical to think of a situation where all demands can't be met in sustainable way. But on the other hand, large scale degradation of eco system has resulted in growing inequality, which turned out to be one of the major factors causing poverty and social conflict (MEA 2005).

Success of any development program depends upon the planner's understanding of the complex issues and thereby integrating it in the planning process (Badola and Hussain 2005). Planning process should reconcile both conservation and developmental objective. Socio-economic criteria must be considered and the grass root participation and collaboration of stakeholders should be ensured (Bhardwaj and Badola 2008).

Periyar Tiger Reserve (PTR), a part of Western Ghats World Heritage Site, is one such protected area where people live in close harmony with nature. Being a potential ecotourism destination, it contributes significantly to the local as well as surrounding economy. A large number of employment opportunities are created along with the revenue generation, which can lead the local community to the path of sustainable development.

Inputs in terms of eco-development and ecotourism for the past two decades have resulted in the effective management of this PA and socio-economic status of local livelihoods. With a growing population around 2,25,000 living within a 2 km radius of PTR and their considerable pressure on the forest resources for their sustenance may hinder the long term conservation strategy. Therefore it is important to know whether the recreational potential can address the socio economic stability/ upliftment of various stakeholders and their attitudes towards biodiversity conservation.

In ecotourism, linkages and leakages act as an indicator to check the involvement of local community regarding their empowerment, involvement in capacity building, awareness, strength of their institution and their socio-economic conditions. The ultimate aim of sustainable tourism is to strengthen the network of biodiversity conservation.

1.2 STUDY AREA: Periyar Tiger Reserve

Periyar Tiger Reserve (PTR) is situated in the Cardamom Hills and Pandalam Hills of the Southern Western Ghats of peninsular India between latitudes 9° 15' and 9° 40' N and

longitudes 76° 55' and 77° 25' E at an altitude of 750-1500 m asl (Fig.1). This high potential recreational area of Western Ghats (biodiversity hotspot and recently as world heritage site) is turning to be the hub of tourism and its development activities are linked to the growth of tourism. Millions of people in the name of wildlife tourism as well as pilgrim tourism visit PTR every year. In other sense a major portion of economy of this place is depended on PTR. Historically the area now encompassed within PTR was under the administrative control of the erstwhile State of Travancore. An area of 600 sq km was declared as the Periyar Lake Reserved Forest in 1899. The core area of 350 sq km within the wildlife sanctuary was declared as a national park in 1982. PTR was designated as one of India's Tiger Reserves in 1978 and was declared as an Elephant Reserve in 1991. PTR forms part of a contiguous and compact forest block of 3,000 sq km in the southern Western Ghats. This is designated as Tiger Conservation Landscape of regional importance. In 2007, the core or critical tiger habitat of PTR was notified with an extent of 881 sq km and extent of 44 sq km of Periyar Wildlife Sanctuary Proper is proposed as the buffer for tiger reserve. That define the present area of PTR is 925sq km. Undulating terrain of PTR lies between 750m to 1500m with the lowest altitude at Pampa and the highest peak is Kottamala with an altitude of 2019. The area receives an average rainfall of 250-300cm from both the southwest (June-September) and northeast (October-December) monsoons. Nearly 225,000 people live within a 2 km radius of PTR and depend on its natural resources directly or indirectly for fuel wood and non-timber forest products (World Bank 1996; KFD 2003a). Estimates suggest some 20,000 to 30,000 people in the immediate vicinity are substantially dependent on PTR for their livelihoods.

1.2.1 Physical features and climate

Undulating terrain of PTR lies between 750m to 1500m with the lowest altitude at Pampa and the highest peak is Kottamala with an altitude of 2019. The area receives an average rainfall of 250-300cm from both the southwest (June-September) and northeast (October-December) monsoons. However, the highest rainfall is during the southwest monsoon with the maximum rainfall in July. While the average temperatures ranges from 15°C and 31°C. Fluctuations in rainfall and temperature can be correlated with extend of fires and availability of water.

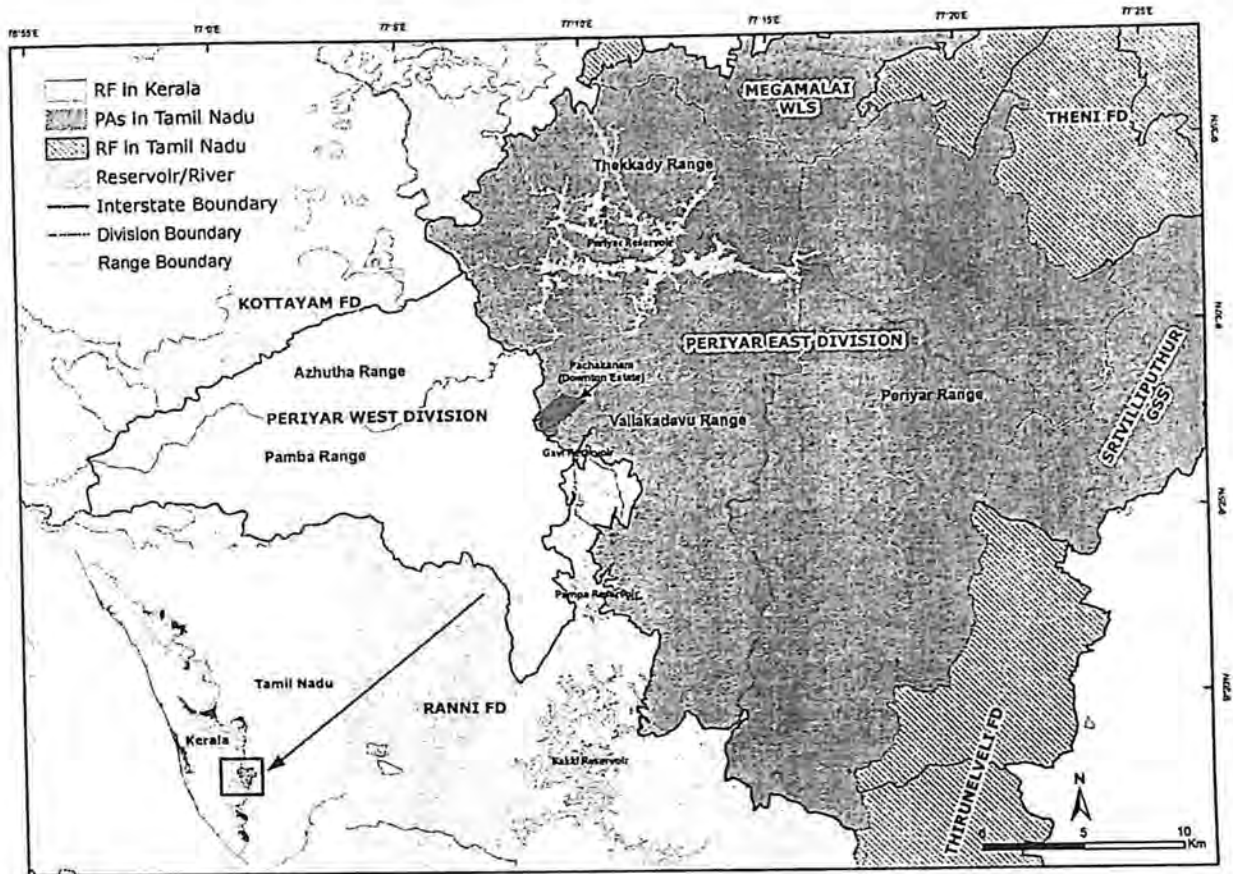


Figure 1. Periyar Tiger Reserve

1.2.2 Flora

A total of 1965 species of flowering plants, from 823 genera and 159 families, have been documented from PTR, in which 26% species are endemic to Western Ghats. Major classification of vegetation is based on broad principles of Champion and Seth (1968) classification. Vegetation of PTR is categorized into the following 6 types:

- 1) Tropical evergreen (305 sqkm)
- 2) Tropical semi evergreen (275 sqkm)
- 3) Moist deciduous (98 sqkm)
- 4) Grassland (12 sqkm)
- 5) Eucalyptus plantations (55 sqkm)
- 6) Reed patches (5 sqkm)

Tropical evergreen and semi evergreen dominate a major portion of PTR (74.6%) while moist deciduous forests form 12.7% and Eucalyptus (*Eucalyptus grandis*) plantations occupy about 7.1% and the Periyar Lake, a manmade reservoir built in 1895, forms 3.5% i.e. 26 km² of PTR area. The core area is categorized as evergreen forest with tall trees and closed canopy. Some of the dominant species are *Dalbergia latifolia*, *Vateria indica*, *Mesuaferrea*, *Myristica dactyloides*, *Hopea parviflora*, *Pterocarpus marsupium* and *Terminalia spp.*

There are 1965 species of flowering plants belonging 823 genera and 151 families (Sasidharan 1998). Periyar Tiger Reserve is known for its medicinal richness. Around 350 medicinal plants are reported from reserve which can be used to create opportunity for local community in the field of Indian medicine.

1.2.3 Fauna

PTR supports a high animal diversity with 63 species of mammals, 323 species of avifauna, 72 species of herpetofauna, 55 species of fishes and 119 species of butterflies. PTR supports some globally threatened wildlife species, including the lion-tailed macaque *Macacasilenus*, tiger *Panthera tigris tigris*, Salim Ali's fruit bat *Latidenssalimalii*, Asiatic wild dog *Cuon alpines*, Indian elephant *Elephas maximus*, king cobra *Ophiophagus hannah*, Nilgiri tahr *Hemitragushylocrius*, slender loris *Loris tardigradus*, great hornbill *Buceros bicornis* and Nilgiri marten. There are 180 species of butterflies reported from PTR, of which 19 are endemic to Western Ghats.

1.2.4 Ecological value

PTR acts as a catchment for the Mullayar, Periyar, Pamba and Azutha rivers. The Mullayar and Periyar rivers join to become the Mullaperiyar River that has been dammed to form the Periyar Lake. The Periyar Lake irrigates about 680 sq km of agricultural land in Theni, Ramanad and Dindigul districts, lying within the neighbouring State of Tamil Nadu (KFD 2003). Water from the Periyar Lake is also used for hydro-power generation in Tamil Nadu.

1.2.5 Conservation significance

PTR is one of the potential locations for tiger conservation because of its habitat quality and quantity which covers large area of both Kerala and Tamil Nadu. The mosaic of habitats in PTR, which supports an estimated population of 35-40 tigers are free of anthropogenic settlements and conflicting demand on natural resource. It also supports other predators like leopard and wild dog. Apart from this, a large number of Western Ghats-endemic species of flora (519 species of flowering plants and 350 species of medicinal plants) and fauna (7 endemic species of mammals, 14 birds, 17 reptiles, 12 amphibians, 16 fish and 20 butterfly species) enhances the conservation value of these forests.

1.2.6 Catchment value

Catchment potential is considered as the greatest value of PTR which is considered to be the important abiotic factors that decide the matrix of biodiversity (Manoharan 2000a). The longest river in the state, the River Periyar originates from these forests. The Periyar Lake with an extent of 26sq km is an important water source to Tamil Nadu for irrigation, drinking and power generation purposes. The river Pampa, the holy river for millions of Sabarimala pilgrims, originates from the core area of PTR. During the year 1979-1980, the irrigated area by Periyar Lake is estimated to be 69325ha which has later increased to 92963ha in Theni and Madurai districts in Tamil Nadu during 1994-1995. The lake also provides drinking water for Kumily town and adjoining areas. A large proportion of the wildlife in PTR is also directly or indirectly dependent on water from Periyar Lake.

1.2.7 Cultural and social value

Uniqueness of PTR is not only reflected in its biodiversity but also on all frames of life. This land of biodiversity gives birth too many of the myths, rituals and festivals of the six tribal (Mannan, Paliyan, Urali, Malamchandaram, Ulladar and Malarayan tribes) communities associated with PTR. Sabarimala in Samba range and Mangaladevi in Thekkady range are the two important religious shrines that attract millions of pilgrims annually. Both temples possess immense archaeological significance. Hunting palace of Maharaja of Travancore is situated inside the Sanctuary.

1.2.8 Tourism value

PTR is a land of scenic beauty and visual splendour with undulating mountains interspersed with fast flowing streams, the lake, and evergreen forests etc which attract tourists from all around the world. Even though the intrinsic value of reserve is high but the economic valuation of PTR is yet to be done. PTR is a globally renowned tourism destination owing to its scenic beauty and visual splendour. The panoramic view of the undulating mountains interspersed with fast flowing streams, the lake and marshy meadows attract tourists from all around the world, cementing its place on the world tourism map as a must-see destination. The diverse array of wildlife visible on the lakeshore when bamboo-rafting on Periyar Lake, with the wind blowing in your face; the sights, sounds and smells of pristine, unspoilt nature when trekking in the forests of the Reserve; the multifarious cultural peculiarities of tribal communities living in and around the Reserve – all these are experiences of a lifetime and carve everlasting pictures in the minds of millions.

The economy of PTR is mainly contributed by two broad categories i.e. tourism and hydrology. Since being an internationally renowned Tourism destination, PTR attracts large number of foreign as well as Indian tourism which not only boost the local economy (Rs. 200 crore /annum) but also contribute substantial revenue to the state of Kerala which is estimated to be 13 crore (Annual forest report). Being a hub of tourism, various stake holders- Home stay, hotels, resorts, travel agencies, guides etc have prominent presence in PTR. The famous shrine, Sabarimala is located inside PTR turn out to be a major source of income to the fringe area people.

1.2.9 Communities in and around PTR

Although there are no human settlements within the core of PTR, the north-west and southern fringes of the reserve in Kerala state are heavily populated. Nearly 225,000 people live within a 2 km radius of PTR and depend on its natural resources directly or indirectly for fuel wood and non-timber forest products. Estimates suggest some 20,000 to 30,000 people in the immediate vicinity are substantially dependent on PTR for their livelihoods. This includes approximately 5000 people belonging to Mannan, Paliyan, Urali, Malamandaram, Ulladar and Malarayan tribes, who have distinct eco-cultural association with the forests of Periyar.

This high human density has put severe pressures on PTR and some of the important threats to PTR's natural resources.

1.2.10 Non-Timber Forest Products (NTFP)

NTFP's harvested was one of the major occupations of tribes in PTR for both commercial and subsistence purposes. NTFPs they usually collect include: black damar, *Canarium strictum*, nutmeg *Myristica* spp., thatching grass *Amaranthus spinosus* and *Themida cymbaria*, giant honey *Apis dorsata*, reed bamboo *Ochlandra travancorica*, Asiatic honey *Apis cerana indica*, cinnamon *Cinnamomum malabatum*, and mahsheer *Tor khudree*. Illegal collection as well as over exploitation of NTFP reduced drastically after the successful introduction of EDC which not only provide them an alternative livelihood but also sense of importance. Livestock grazing was considered to be a major threat in PTR as they result in the outbreak of disease such as foot-and-mouth disease which is transmitted from domestic cattle to wild animals and a grazing competition can be a limiting factor for other herbivores (Bhardwaj and Badola 2008), but these issues were tackled through the active participation of community. Even though grazing is still there, but the numbers grazed is very low.

1.3 LITERATURE REVIEW

The concept of ecotourism was contributed to literature by Hector Ceballos-Lascurain. He defined it as, "*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 manifestation (both past and present) found in these areas* (Ceballos-Lascurain 1987)". This apparently contributes to the protection of natural environments, conservation of endangered species, creation of employment opportunities and the empowerment of communities. Even before this, the ecotourism was in practice in South America as well as in Africa (Griffin 2002). These are the places where they understand the difficulty encountered to protect wildlife in increasing conflict scenario without active support from local communities. The backing from locals is possible only if they receive benefits in return for their good will. Thus, ecotourism is regarded as the best site-specific option for under-developed and developing countries.

According to census obtained, the world has seen a rise of International tourists from 25 million in 1950 to 664 million in 1999 (Griffin 2002). As per the 2011 report, it reached 980 million and generated revenue of US \$ 919 billion in export earnings in the year 2010. Ecotourism, as its most preferred subset, has an estimated growth rate of 10-15 % (Panos 1997). Many individuals and organizations have contributed their own definition for ecotourism. Ceballos-Lascurain (1996) defined ecotourism as, "*Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features, both past and present) that promotes conservation, has low negative visitor's impact and provide for beneficially active socio-economic involvement of local population.*" The term 'ecotourism' has become a brand for marketing with an attractive reference to a responsible travel to natural areas that conserve the environment and improve the well-being of local people. Indigenous populations possess maximum knowledge about the area and they have a good deal of information regarding the practical and ancestral knowledge of the natural resources of the concerned area. Thus, ecotourism acts as a tool to maintain this historic bond between the culture and the environment. In practice, the terms 'ecotourism' and 'cultural tourism' are often used merely as marketing tools (Thomlinson and Gertz 1996).

Being recognized as the biggest buzzword of conservation biology, ecotourism has the potential to bring community-based conservation to the existing scenario. It aims to ensure that members of local communities have a high degree of control over the activities taking place and receive a significant proportion of benefits. Ecotourism has emerged as a vast business domain that influences socio-economic fabric by allowing the local communities to share the equity of benefits. As any other form of tourism, it has the potential to impact local ecology and culture. Therefore, it acts as a suitable mechanism necessary for the analysis of the social, economic, psychological and political impacts on local communities as well as on biodiversity.

At the same time, viewing ecotourism as something that can cure the malicious effects of tourism is a real danger as ecotourism seeks the most remote and less developed area which is vulnerable to cultural disruption and environmental degradation (Cater 1993). Since the sector is cheap and economically viable to explore, the amount of tourist influx, pressure on

the fragile ecology and dilution of local culture is high. Therefore, a proper planning becomes necessary for the successful implementation where conscious effort is taken to maintain the integrity of local culture and environment.

As ecotourism is viewed as an important tool for conservation, it is necessary to assess the recreational value of such destinations. Although there are many studies that involve the calculation of recreational value through travel cost, very few studies, however, have examined the value of international ecotourism in developing countries (Menkhaus and Lober 1995). In India, recreational value of 'Corbett Tiger Reserve' is estimated which highlight that the benefits of CTR outweigh cost (Badola et al. 2010). This estimation will provide baseline data for policy makers while implementing programs in such eco-sensitive zones.

Another major challenge of 21st century is 'conservation' and 'poverty alleviation'. These two can be achieved through effective financial mechanisms such as income generated by ecotourism that is nothing but the recreational service of ecosystem achieved through biodiversity conservation. This is suggested as a fundamental component of sustainable economic development of a community (Turner et al. 2012). Few researches show that tourism in the rural areas of developing countries are expanding at a rapid pace and is often a primary means of income in those areas (Lacher and Nepal 2010). According to World Tourism Organization, the role of pro-poor tourism is widely appreciated as an active tool for sustainable development, but the success of such tourism depends upon the linkages and leakages of tourism revenue. With a growing population around 2.25 lakh within a radius of 2km from PTR and their considerable pressure on the forest resources for their sustenance may hinder the long term conservation strategy. Therefore it is important to know whether the recreational potential can address the socio economic stability/ upliftment of various stakeholder and their attitudes towards biodiversity conservation. However, the actual tourism potential of the Reserve and the distribution of benefits from the Reserve are never examined. It is widely believed that economic benefits from the Reserve may influence stakeholders' attitude thus making them proactive in conservation. "The economic evaluation of Periyar National Park" was estimated by Bulov and Lundergren (2006), where he estimated the recreational value of PTR to be 15 million USD. The sample size of Bulov and Lundergren (2006) was small (129 questionnaires) and the time constraint restricted the study to one

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tourism season (5th-8th May), where as PTR got two tourism season i.e. summer tourist(March to June) and winter(September to January), therefore the survey is seasonality biased, which can seriously influence the outcome of study. Therefore a detailed study is necessary to address these drawback to examine whether his study over or under estimate the recreational value of PTR.

In a developing country like India, eco-development programs are required to maintain the harmony with the PA and local communities as they support the better well-being of communities through economic upliftment. As a result, with the support of World Bank Global Environment Facility, eco-development projects were implemented in 7 reserves including PTR to reduce the dependency of local communities on reserve as well as to improve their attitude towards conservation. Like other protected areas in the world, PTR is surrounded by local communities which depend on natural resources for additional income, resulting in the loss of biodiversity with the marginal economic gain. Therefore 72 EDCs are formed as an offset solution to reduce their dependency or to compensate them. Among these, 5 EDCs are purely engaged in tourism.

The India Eco-Development Project around Periyar Tiger Reserve (PTR-IEDP) in Southern India received US\$ 6.0 million, of which 43.2% was spent on community-based conservation activities. The PTR-IEDP was internally evaluated as 'successful'. Successful conservation outside the protected area can be attributed to the efficient integration of protected area with the other land use rather than following the policy of preservation through isolation. There is a strong need to accommodate monetary benefits to minimize the negative impact on biodiversity. For that, effective policy is required to be implemented and it is to be achieved only after assessing the surrogate value of ecosystem services. The rationale behind environmental valuation is to understand people's preferences about environmental goods and services.

The study conducted by Bhardwaj and Badola (2008) highlight the importance of long-term conservation and management of protected area through the active participation of local communities which can be achieved through eco-development programs. It also highlights the economic upliftment as well as an alternative source of livelihood for the local communities. But according to a result from the research of Sanjay Gubbi (2009), project

beneficiaries in comparison to non-beneficiaries showed little support for wildlife conservation. 71.1% of respondents were aware of IEDP's objectives, but receipt of community benefits did not influence their attitude towards conservation. A similar research conducted by Arjunan et al. (2005) in KMTR highlight that the EDC programs neither reduce local community's dependence on reserve biomass nor improve their conservation attitude.

The linkages between the conservation measures of PTR and the benefits of Mullaperiyar Dam are assessed by Manoharan (2000b). It highlights the importance of direct utilization of water between two states-Kerala and Tamil Nadu, and also addresses the necessity of a mechanism to ensure contribution for conservation measures from those who enjoy enormous economic benefits. As the struggle to balance conservation and development continued, the need to evaluate what works and what doesn't become increasingly important.

1.4 SPECIFIC OBJECTIVES

- a. To evaluate the recreational value of Periyar Tiger Reserve.
- b. To examine the distribution of ecotourism revenue among stakeholders.
- c. To assess the attitudes and perception of stakeholders towards services provided by PTR and its fringe forests.

1.5 HYPOTHESES

- The recreational value of PTR is equitably distributed among stakeholders.
- Benefits derived from tourism influences conservation attitudes of stakeholders towards PTR and the fringe forests.

1.6 KEY QUESTIONS

This study tries to answer key question that helps to examine proximate factors that can contribute to the socio economic growth of the communities.

- What is the recreational value of PTR?
- How is the ecotourism income distributed among various stakeholders?
- Whether Ecotourism in PTR is economically sustainable?
- What are the level of awareness and attitudes of stakeholders towards the services provided by PTR?
- Whether economic benefits have a positive influence on conservation attitudes of stakeholders?

CHAPTER 2 RECREATIONAL VALUE

2.1 INTRODUCTION

Valuation of Ecosystem services provides mechanism for optimizing investments in biodiversity conservation and directing them to where they are most useful (Kinzig et al. 2007). The concept of ecosystem services is those services which are necessary for the better well being of human kind. Service can be provisioning, regulating, supporting and cultural that people perceive to be important. The total economic value of environmental resources consists of its use and non-use values, in which use values are further classified as of direct use value, indirect use value and Option Value where as Existence value as non use value.

2.1.1 Provisioning services

Food and fuel wood: 80% of the needs of poor people are met from surrounding environment.. In India, people documented nearly 40% of 1600 flowering plants as useful product. The amount of fish catch is estimated in the world is about 108 million tons in which 91million tones are from marine and 17 million tons from freshwater (WRI 1998).

Commercial wood and non wood product such as game, fruits, gums, resins and medicinal plants have high productive value which are harvested in the wild and sold in both national and international market are of productive value or Medicinal products which are of high medicinal and economic value were discovered and extracted from wild for example medicinal practice like ayurveda, sidda, Chinese and other traditional medicines are discovered as potential drugs from the in wild. Fishes are the major sources of protein consumed by billions of people in the world. In that marine act as a primary source of protein with continental shelf providing 95% of total marine fish catch. It is estimated that, 123 million tons of fish, crustacean and molluscs are harvested each year globally generating a revenue of more than a billion US dollars but since large quantity is going for local consumption, uncertainties prevails in estimating the total harvest. This is a sector which provides large number of job opportunities.

2.1.2 Regulating Services

Protection of water and soil: Biological communities play an important role in eco system. The leaves foliages, grass communities increase the water holding capacity of the soil, a way to regulate the hydrological cycle or watershed by avoiding soil erosion thus buffering ecosystem from the extremes of flood and drought. In 1980, New York state invest 1.5 billion US\$ to maintain forest on the watershed surrounding its reservoir, which otherwise would cost 8-9million for setting up a water filtration plant. A similar study conducted in India in Bhitarkanika national park to estimate the value of ecosystem service of mangroves highlights the loss incurred per household was greatest in the village that was not sheltered by mangroves (Badola and Hussain 2005). Aquatic communities play an active role in breaking down and mobilizing toxic pollutants such as sewage, industrial waste. According to Costanza et al. (1997), 18 trillion US \$ per year is estimated for aquatic communities in global water treatment and nutrient processing.

2.1.2.1 Climate Regulation

Plants communities plays an important role in global climatic change as they act as green lung in converting carbon dioxide thus reducing the amount of CO₂ present in atmosphere. They provide cooling effect which help to bring down energy consumption and increase se comfort and work efficacy. Tropical rainforest retain humidity in their atmosphere through evapo-transpiration and influence the Partial stabilization of climate.

2.1.2.2 Species Relation and Environmental monitors

High yielding commercial crops have its gene in wild varieties and the loss of such genes from wild is considered to be huge loss to human community. And the role of insects, birds and bats in checking the agriculture pest and the way they induce pollination in plants earn huge economic benefit to human kind. About 150 species of crop plants in United States requires insect pollinators (Buchmann et al. 1997). Some species in our eco system are highly sensitive and their contribution in environmental health monitoring is appreciable. Rock lichen which are sensitive to atmospheric fluctuation will be killed if the toxic content in the air is high, thus acting as a good indicator species.

2.1.3 Supporting Services

Habitat or Supporting Services underpin almost all other services. Ecosystems provide living spaces for plants or animals; they also maintain a diversity of different breeds of plants and animals.

2.1.3.1 Ecosystem Productivity

Human needs for national resources dominate approximately 40% of the productivity of the terrestrial environment (MEA 2005). The demand for food, fodder, and fuel wood combined with over grazing; over harvest of natural resource deteriorate the health of the environment. Coastal estuaries are areas of high productivity for commercial and non commercial aqua product. And any damage to the coastal estuaries will directly affect fish productivity. Composition of eco system is complex and a better understanding of energy flow in and out of the system affect the productivity of that system. For example, extinction of bee community can cause drastic decline of agricultural productivity.

2.1.3.2 Nutrient cycling

Nutrient cycling within an ecosystem is a key process that sustains life and is responsible for the continuous existence of biological communities like detoxification and decomposition of wastes, renewal of soil fertility, purification of air and water. Hundreds of millions of people in the world still rely on such fertility to boost their agricultural productivity. A comparative study conducted in Bhitarkanika National Park, India shows the nutrient richness of mangrove soil from agriculture land. It clearly shows the difference in nutrient content in mangrove over non-mangrove areas is about US\$3.37 million for the nutrients in 145 km² of mangrove forests. the economic value of nutrient cycling is difficult but an average can be estimated from replacement cost method that takes into account the amount of fertilizers required to keep stable level of fertility in the soil as a proxy value for nutrient cycling. Through this way the value of nitrogen fixation in natural ecosystem is estimated to be \$5.5 trillion and that of phosphorus is US \$ 240 billion.

2.1.4 Cultural Service

Cultural Services include the non-material benefits people obtain from contact with ecosystems. They include aesthetic, spiritual and psychological benefits. The Service can favour recreation and mental and physical health, Tourism, aesthetic appreciation and inspiration for culture, art and design, Spiritual experience and sense of place etc.

2.1.4.1 Recreation and Ecotourism

Ecosystems provide many recreational services which are of non consumptive values. In united nation, \$6million is being estimated from sports fishing industry. Tourism is one of the fastest growing industries in the world. Ecotourism has traditionally been a key industry in east African countries such as Kenya and Tanzania and is increasing becoming a part of tourism in many American and Asian countries. Provisions from ecotourism are aesthetic beauty, cultural, intellectual and spiritual inspiration.

There is growing concern about environmental issues and an increasing demand for recreational activities and resources. Since the 1970s, increasing pressures on natural resources and the social costs of over-exploitation have been recognized as important issues on the global agenda. Consequently, social costs of resource-depleting human activities and benefits provided by natural resources have gained importance. Thus recreational value provides a better understanding of the problem, facilitating management in decision making. The applicability of the framework and techniques for valuing ecosystem services are evaluated in light of the challenges posed by the complex, non-linear nature of many ecosystem services (Chee 2004). Decisions concerning ecosystem management are often complex, socially contentious and fraught with uncertainty. Even though there are two alternative methodologies exist to estimate the recreational value, the travel cost method (TCM) and the Contingent Valuation Method (CVM). CVM potential visitors asked to reveal their willing to pay to a site of high recreational value. But this method does not account for visitors' actual behaviour (Guha and Ghosh 2009). Travel Cost Method (TCM) on the other hand proves to be the most effective and refined method than contingent valuation as it is based on revealed preference rather than stated preferences (Chaudhry and Tewari 2006).

In a developing country such as India the contingent valuation method (CVM) cannot always correctly evaluate the recreational value of an environmental resource because of parallel economy involving different categories of middle to upper income groups of visitors (Chaudhry and Tewari 2006). According to Guha and Ghosh (2009), CVM should be avoided when there is a market for the service to be valued. I used the travel cost method (TCM) to overcome this obstacle, which is a more acceptable methodology for valuing recreational services.

2.2 METHODOLOGY

In ecotourism, linkages and leakages acts as an indicator to check the involvement of local community in terms of economic empowerment, involvement in capacity building, awareness, strengthening of their institution and their socio economic condition. Both secondary and primary data was collected from relevant sources, and each of these is discussed in detail in following sections.

2.2.1 Site selection

The selection of study site was based on the effective range of tourism. Therefore, Periyar Tiger Reserve is selected for the study since the park is known for its community involved tourism. For this study, the working definition of "local economy" was restricted to the village communities living within Kumily panchayat. These are the only places in the immediate vicinity where tourists come into contact with local people. These are also the communities which carry the opportunity costs of protecting the park.

2.2.2 Collection and review of secondary information

In the first stage of the study, all secondary information was collected and analyzed for better understanding of tourism trends, socio economic condition, managerial issues and Stakeholder analysis. Available secondary information relevant to the study was collected from the existing documents and official records of forest department. These include their management plan, peer reviewed research publications and reports, Ph D thesis etc. Information about the demographic status of communities in Kumily panchayat which consist of 19 wards was collected from Panchayat office. Other information about the structure, size

and function of the stakeholder communities are collected from Kerala Tourism Information Office, Panchayat and Forest Department. The magnitude of local and international tourist and the income generated from them is also estimated from secondary data collected from PTR Forest Department.

2.2.3 Travel Cost Method and Primary Data Collection

Travel Cost Method has been adopted for evaluation of recreational sites by Hotelling (1947). It is used to estimate economic use values associated with ecosystems or sites that are used for recreation (Chaudhry and Tewari 2006). The basic premise of the travel cost method is that time and travel cost expenses that people incur to visit a site can be used as a proxy for computing the recreational value of that site. Thus, people's willingness to pay to visit the site can be estimated based on the number of trips that they make at different travel costs. This is analogous to estimating people's willingness to pay for a marketed good based on the quantity demanded at different prices (Chaudhry and Tewari 2006). The underlying principle behind the TCM is when travel cost increases, visitation will decrease, which is nothing but the Law of demand. It explains the direct relationship between distance and number of trips made to the recreational site, i.e., more trips will be taken from an area close to the recreational site than otherwise (Ahmed et al. 2007). From this an empirical curve can be estimated for recreation value of the site.

The use of TCM often follows two routes. The Individual Travel Cost Method (ITCM) considers the number of visits a single visitor pays to a site within a specified period. ITCM, however, cannot be applied to sites that receive few multiple visits by the same visitors. In such cases, the Zonal Travel Cost Method (ZTCM) is adopted. The final results of TCM data help the managers to quantify consumer surplus (Guha and Ghosh 2009).

2.3.3 Zonal travel cost method approach (ZTCM)

ZTCM was used to collect the data for the evaluation of recreation value (Badola et al. 2010) of PTR. In ZTCM, quantity demanded is represented by visitation from zones to the site rather than the number of times a single visitor visits the site within a period. Visitors originating places are categorized into zones. Sampled population was divided into different zones on the basis of the state of origin of the tourists. Zonation is actually made in circular

form but in this study, I considered respective states as Zones, as it would be difficult to estimate the population of circular zones. Another assumption is that the tastes and preferences of visitors across the zones are homogeneous (Guha and Ghosh; Bharali et al. 2012). One of the important aspects is that most of the tourists are multi-site tourists and these respondents may visit many sites during their trip (Tobias and Mendelsohn 1991; Guha and Ghosh 2009; Bharali et al. 2012). Therefore, a questionnaire is developed where respondents were asked to give an estimation of percentage of how important the visit to the park was there in their journey. Personal interviews with tourist were conducted at the entrance of the boat landing- The place where people wait at least for an hour or half for boat trip. Personal information like visitors name, age, occupation, state, group composition, salary details, household income details and the purpose of visit (Religious purpose, recreation, trekking, official, others), time taken and spend were interviewed. Information on varying parameters is collected during questionnaire survey which was carried out at the entrance of the Boat-landing (Guha and Ghosh 2009; Badola et al. 2010). A single respondent from each visiting group was chosen for interview (Bharali et al. 2012).

To standardize information on the different variables utilized in the study, distance was measured as the distance (in kilometers) between the capital of the state of origin and the sampling site. For tourist profile information about income, age, education status and state of origin was collected. Reason for trip was asked to find out most attractive cultural services of the study area. To calculate the travel cost information about mode and cost of travel, group composition, and cost of stay, food and expenditure on services provided by local people were gathered. Time spent on travel (both side) and time of stay in the area was evaluated on the basis of hourly wages.

Questionnaire and interview were designed in such a form where relevant information was collected on the following parameters:

- Demographic profile of the individual tourists
- Number of visits made
- Expenditure incurred in travelling to the site, boarding and lodging facilities.

Questionnaire survey was carried out from the month of Dec 2012 to April 2013. Within this period around 480 samples were randomly collected which represented the share of visitors from various zones.

2.4. Data analysis

The total cost of travel is calculated for each tourist by adding the travel cost and the monetary value of the time spent in travel to get to site. The travel cost is the cost of round trip used while the cost of time spent is estimated using the wages per hour for the particular visitor. Cost of travel was calculated by summing cost of distance travelled, and fare paid for journey. Cost of distance was calculated by maintenance cost of vehicle used per km per visit, cost of fuel and taxes paid on the way to PTR. This includes the cost of stay, the entrance fee, cost of food and charges for hiring guides at the place. These clubbed together gives the total cost of travel. The regression analysis was done to get an equation that relates visits per capita to travel costs. The number of visitors at different travel cost is then plotted (using regression analysis) to get a demand curve.

2.5 RESULTS

2.5.1 Profile of respondents

During tourist survey, I interviewed 480 people out of which 71 interviews were incomplete so was discarded from the final analysis. Remaining 409 questionnaire were used for final analysis. Out of 409 respondents, Maximum number i.e. 24.53% of visitors are from Maharashtra followed by Kerala (21.87%), Tamil Nadu (13.87%) and the least are from the states of Himachal Pradesh and Chhattisgarh (0.27%) (Fig.2). Most of the respondents are from India (91.69%), remaining 8.31% are foreigners (Fig. 3).

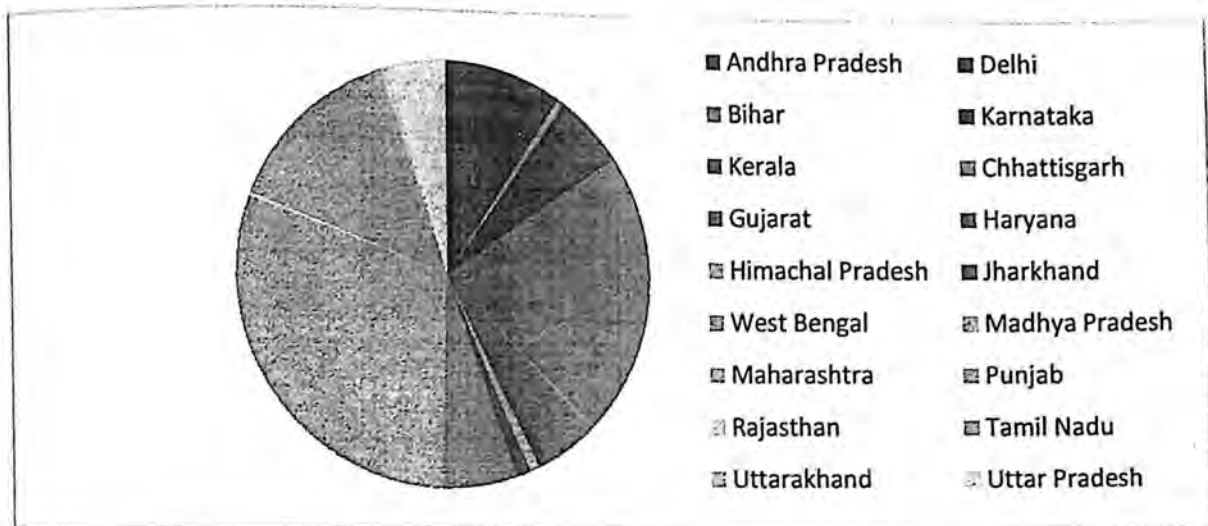


Figure 2. State wise distribution of visitors

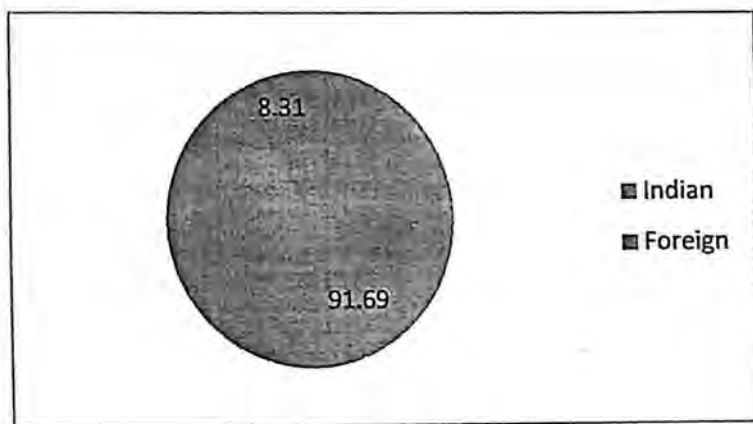


Figure 3. Indian nationals Vs Foreign nationals

Out of total respondent, 94.38 % (n=386) were male and 5.62 % (n=23) were female (fig.4). Out of 409 respondents, Post graduates (43.03%) and graduates (42.79%) constitute around 85% followed by higher secondary (7.82%) and very few illiterates (0.73%) (fig.5). Most of the respondent were in private job (45.72%), followed by business (20.78%), government sector (15.16%), 9.05% are self employee and the least visitors are from agricultural sectors (fig. 6). where 67.46% of respondent belong to Income class 22070-42069 INRS/month, 59.33% belong to income class 2069-22069 INRS/month, 37.32% belong to 82070-82069 INRS/month (fig. 7).

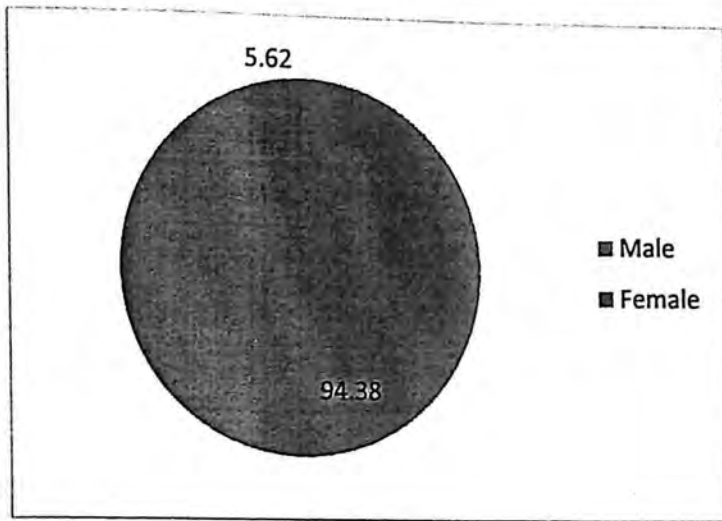


Figure 4. Gender of Respondent

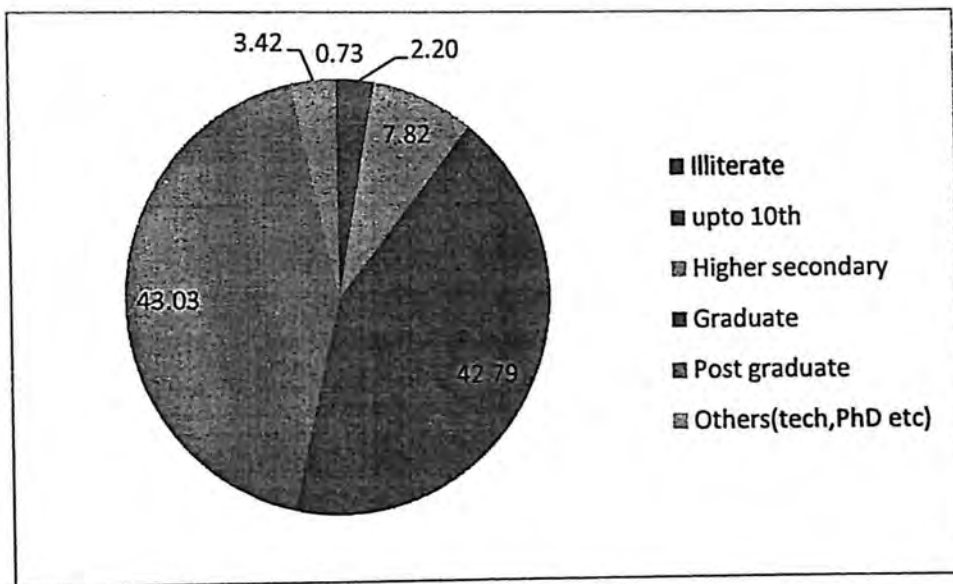


Figure 5. Education status of respondents

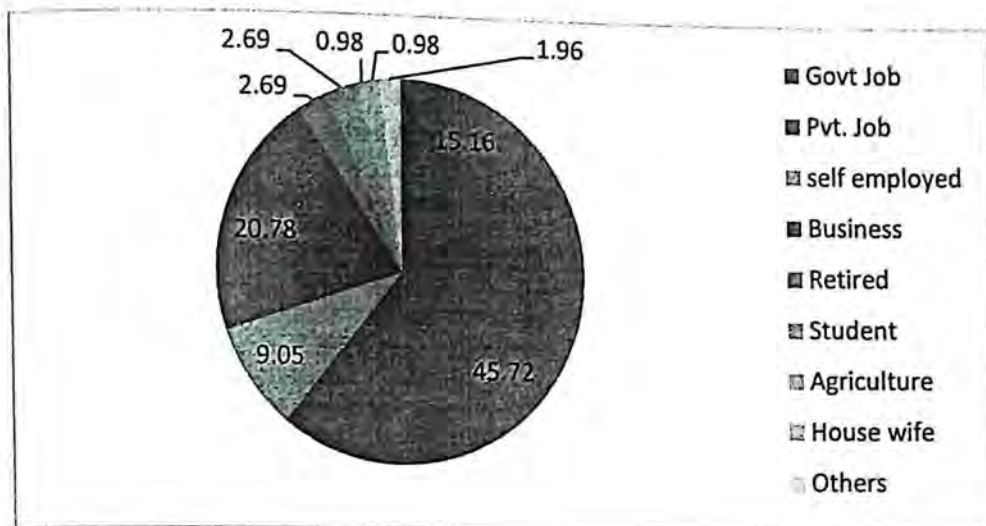


Figure 6. Occupation status of respondent

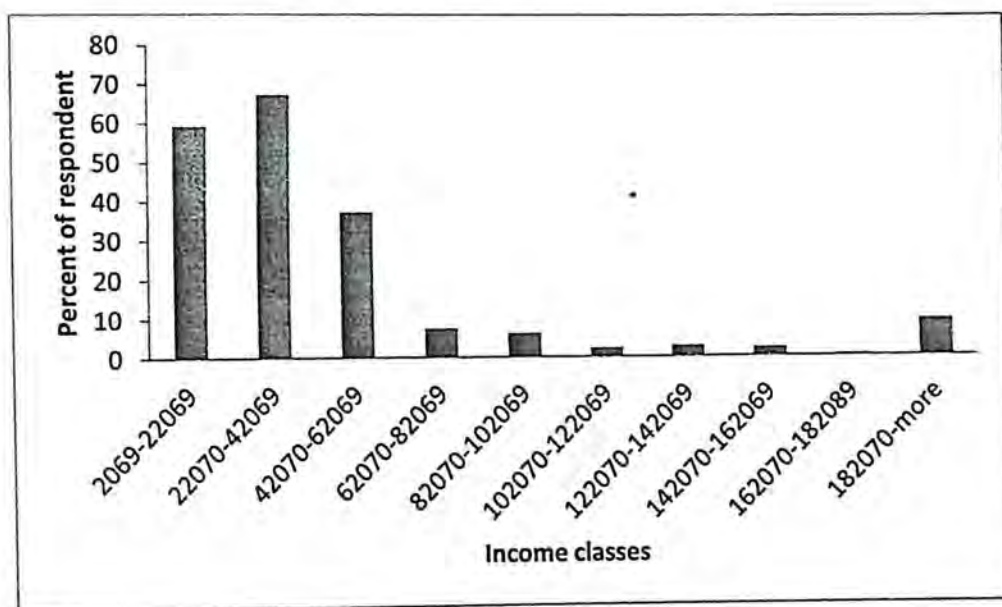


Figure 7. Income classes of respondents (per month)

2.5.2 Tourist behaviour profile

Boating is turnout to be the most attraction for the tourists (59.9%) followed by farm visit (10.51%), elephant ride (9.54%), ayurvedic massage (6.60%), nature walk (6.60%), bamboo rafting and border hiking (2.69%) (fig.8). 45.72% of respondent rated their level of satisfaction is very Good followed by 35.94% who expressed the level of satisfaction to be Good, while 13.69% expressed very high satisfaction level where as 4.65% don't have good

experience (Fig. 9). According to the survey, majority of the respondent consider the value of recreational value are between 50-75% followed by 23.72% of respondent in 25-50% and 19.56% of respondent between 75-100% where least value of respondent consider the recreational value is below 25 (fig. 10).

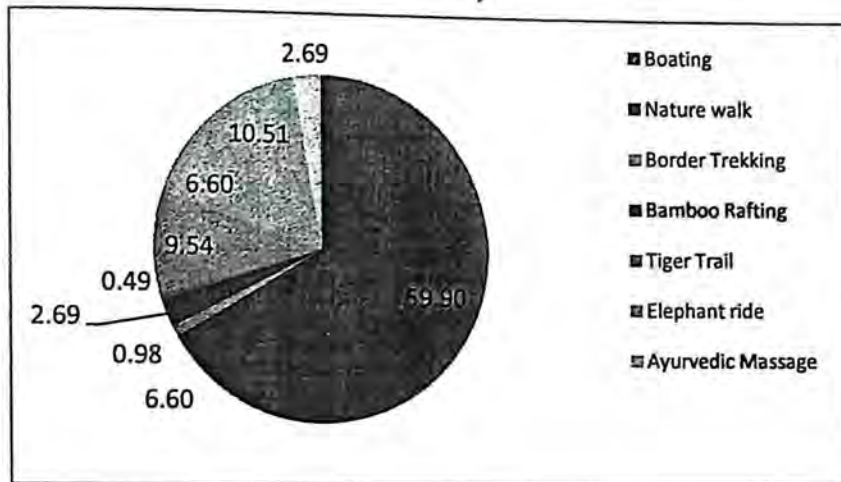


Figure 8. Reason for visiting PTR

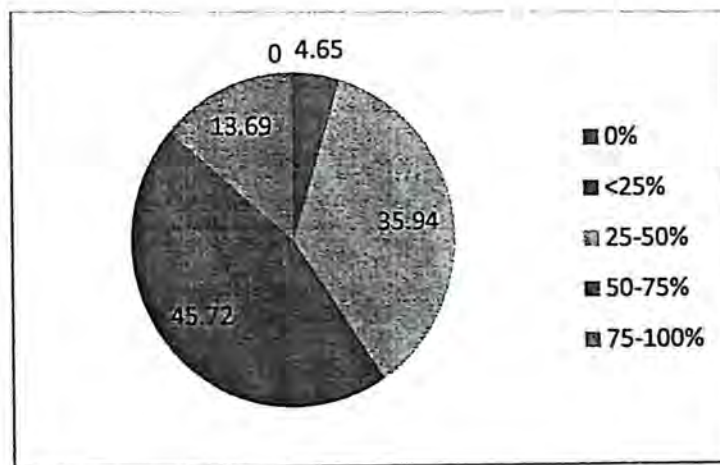


Figure 9. Showing the rate of satisfaction scale

Tourists are not satisfied with the infrastructure facility available at PTR. 44.25% of respondents' complained about the lack of better toilet facilities. 43.77% of respondents believe that more boat trip should be included to cater the need of ever increasing tourism while 0.98 % highlights the necessity for drinking water facility. 11% of respondent have no suggestion (Fig. 11).

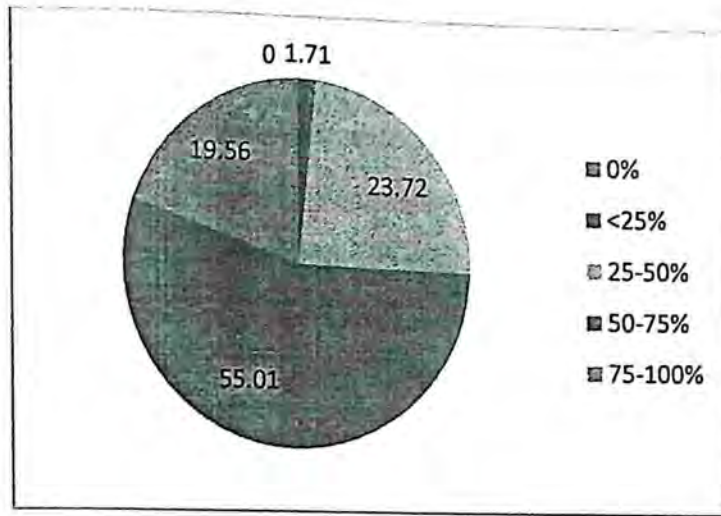


Figure 10. Rating of Recreational Value of PTR

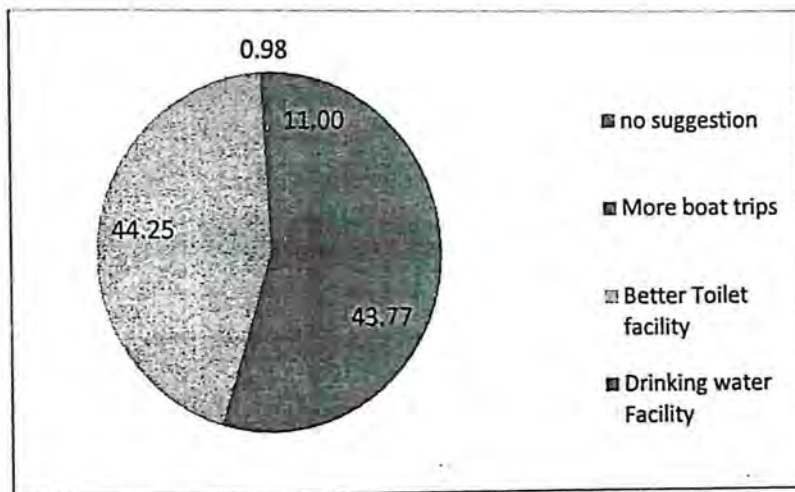


Figure 11. Suggestion for improving the tourism potential in PTR

2.5.3 Heritage status of PTR

52.08% respondent is aware of the world heritage status of Periyar Tiger Reserve while 94.87 % of visitors are aware about the conservation status of Periyar Tiger Reserve (Table 1).

Table 1. Awareness about world heritage site

Awareness about World Heritage Site status	Percent of respondent
Aware about World Heritage Site status of PTR	52.08
Aware about conservation status of PTR	94.87

Out of 52.08% (n=213) of respondent 50.37% believes that it is justifiable to declare PTR as part of World Heritage Site while 21.76% don't find it justifiable whereas 27.87% of people have no opinion about this.

Table 2. Visitors who think the declaration of PTR as WHS is justifiable

Declaration of PTR as WHS is justified	Percent of respondent (%)
Justified	50.37
Not justified	21.76
Do not know	27.87

The number of visitors at different travel cost is then plotted (using regression analysis) to get a demand curve. The regression equation $y = -0.0071x + 970.58$ ($R^2=98.1$) of per capita travel cost was used to get the potential number tourists on hypothetical travel cost which were further used to calculate the final demand curve (Fig. 12). The area under the final demand curve is the consumer surplus. Consumer surplus is the difference between the maximum price a consumer is willing to pay and the actual price they do pay. If a consumer would be willing to pay more than the current asking price, then they are getting more benefit from the purchased product than they spent to buy it. Thus it is the extra utility which consumer gets over utility of its market value. This is the economic estimation of the recreational services of the site. The area under the final demand curve is the consumer surplus or the estimated recreation value of the study area, which is Rs. 44176299.32 in total and Rs. 63.56 per visit.

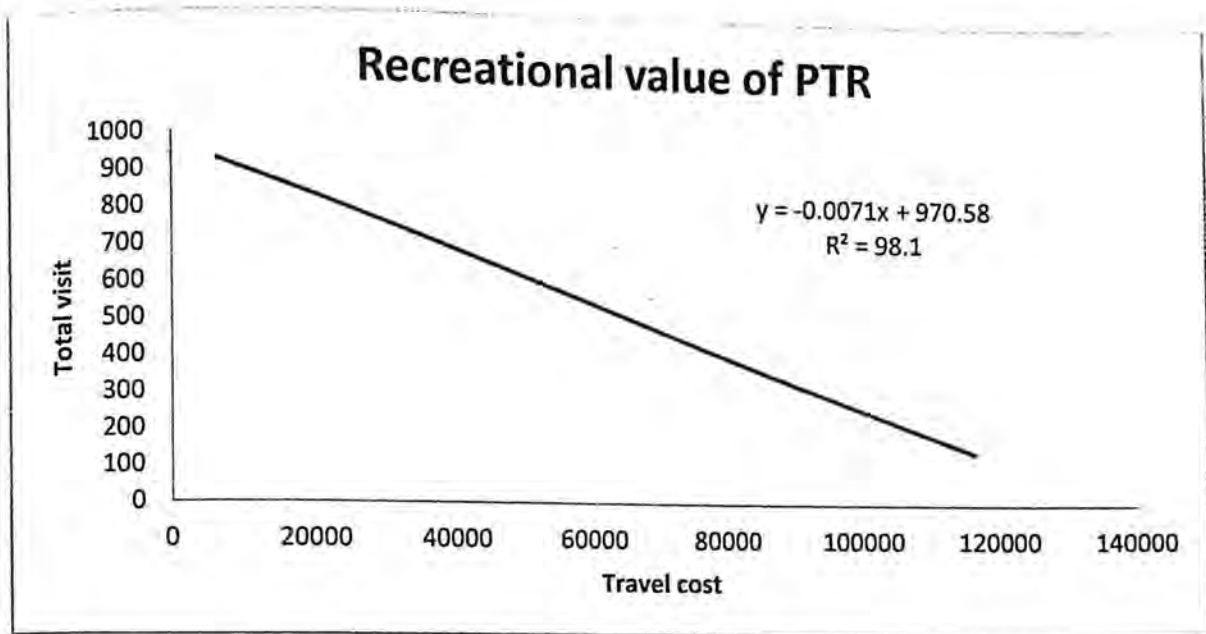


Figure12. Final demand curve for recreational value of PTR

2.6 DISCUSSION

Periyar Tiger Reserve is one of the best managed eco-tourism destination in South India. By increasing the revenue of visitor's entry fee, it will help the authorities to solve a major problem, that is, fund for park welfare. Most of the tourist visiting PTR are attracted because of it high recreational value. Even though highly potential and dynamic ecotourism packages are available in PTR other than boating, the response from the visitors are very low. Main reason for this is the lack of tourist's knowledge about these ecotourism programmes. Therefore a well-crafted publicity campaign should be conducted for the promotion these packages. Another major reason for this is the lack of interest shown by private tour operators. It is mainly because of the percentage of commission allotted to the guides or travel agent by forest department. The commission allotted by Forest department to tour agents or guides are only 10% of their program tariff where as other stakeholders like Resorts and Home stays pay a commission of 20-25%, massage parlour, farm tourism and elephant ride offers a commission of 50%. Therefore, the tour operators direct their guest to the programmes where they get high financial returns. Thus the tourism potential of the park is not properly utilized.

CHAPTER 3

BENEFIT SHARING AMONG VARIOUS STAKEHOLDERS

3.1 INTRODUCTION

Tourism in Protected Area is considered as a sustainable developmental solution which has a very less impact on biodiversity if it is properly managed with a long term goal. It can even act as an important tool for biodiversity management. Recreation is a direct-use value of an ecosystem (Hein et al. 2006) and its valuation is important since it helps to estimate the economic benefits provided by these recreational sites rather than under-estimating the benefits which can otherwise support policy and decision making (Balmford and Whitten 2003).

Ecotourism in developing countries are considered as a tool to generate foreign revenue, that too in an environmental friendly manner. This helps to reconcile the bridge between conservation and economic development in an environment where human population increase at an alarming rate around the large unit of protected area. Thus socio economic impact becomes a major factor which helps to address the arising or the existing issues of conservation. It is generally measured done on the basis of benefits for local communities. In this current study, I mixed two general approach that is generally used for the calculation of economic activity i.e. through input-output analysis (Walpole and Goodwin 2000) and also by incorporating the concept of Livelihood where other dimensions like food security, empowerment, quality of employment, local multiplier effect etc are taken into consideration to get an overall view along with economic gain.

Every year PTR experience an increase in visitation rate of tourists, both in terms of Indian as well as international visits. In the year 2012-2013, around 6.9 million tourist visited PTR, which is 8% higher than the visitors in 2011-2012 along with the increase of 18.21% of tourism revenue making it one among the attractive Protected Area in India. This economic rise can be attributed to the rise in number of ecotourism programs other than boating.

An increase in annual arrival of tourist is because of its landscape beauty and its proximity to wildlife on either side of river bank during boating which is complimented by the trend of flagship species concept in attracting tourism. This type of wildlife tourism is considered as surrogate of biodiversity conservation since they have the potential to generate funds and public support by improving the socio economic state of local community leading to the inculcation of more ecotourism programs resulting in rise in tourism revenue with the slight rise in the number of tourist. Which otherwise play a major role in influencing the attitude of stakeholders by improving their livelihood. However, only a limited number of studies have examined the recreational value of Protected Area, and even less has assessed distribution of these benefits among stakeholders.

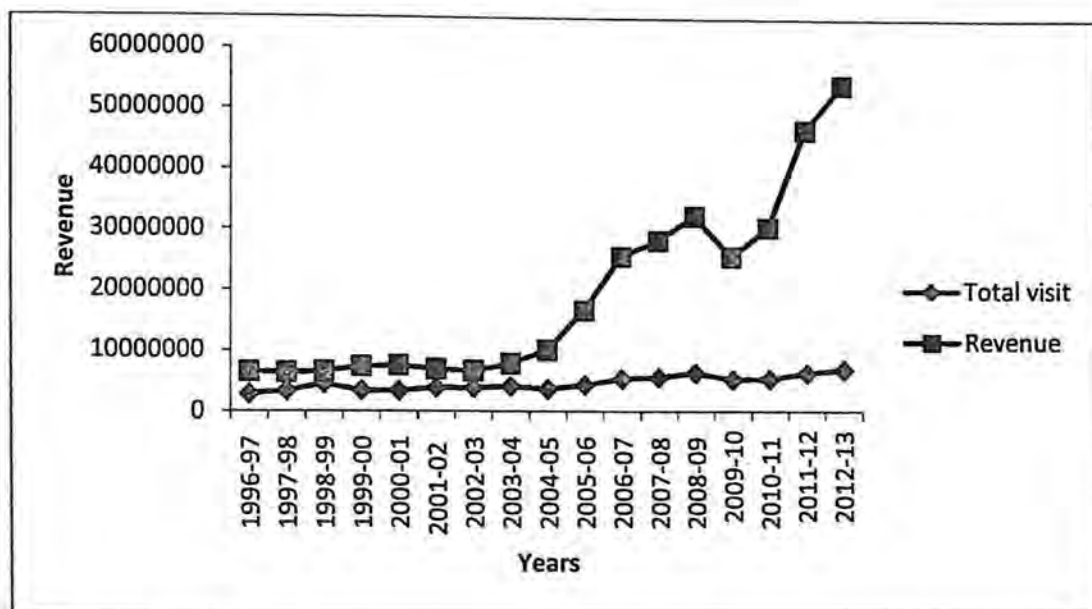


Figure 13. Revenue generated from tourism since 1996- 2013

According to this survey, 6949690 tourists came to Periyar Tiger Reserve in the year 2012-13. Tourism generated Rs. 54209920 of revenues by forest department. An around 6000 people are directly or indirectly dependent on tourism jobs in the region. As any other destination of tourism, Thekkady city is also an example for tourism altered economy. As tourism revenue increase with the increase in tourist, more and more infrastructure is erected to cater the needs of tourist or to improve tourism potential. The Primary agro economy

slowly shifted to tourism. As a result, more and more agriculture land is converted into concrete jungle of resorts, home stays, lodges, massage parlours, Kashmiri, spice shops etc.

Therefore it become essential to evaluate whether ecotourism in PTR is economically sustainable, how the benefits are distributed and whether this distribution is equitable across society. Understanding who benefits from Protected Areas and who does not is the first step to widen participation and engagement with nature conservation across society (Rastogi et al. 2010). The assessment of recreational benefits is not only in terms of income but it should cover much wider angle. *“Well-being is not only about increased income. Other dimensions of poverty that must be addressed include food insecurity, social inferiority, exclusion, lack of physical assets, and vulnerability (Ashley and Elliot 2003)”*.

3.1.1 Concept of Sustainable Development

Sustainable Development depends mainly on three dimension, they are Socio economics, Ecological and Socio cultural sustainability. And these are the founding principles of ecotourism which promotes harmless tourism to an ecologically sensitive destination without adversely affecting their traditional culture as well as by improving the social economic state of local community. In my study, Sustainable development is calculated from the equity employment opportunity, equity of share and diversity of economic activity (Tsaour et al. 2006; Wallace and Pierce 1996).

3.1.2 Impact on Local economy

For studying the impact of tourism revenue on local economy and these can be achieved by applying two concepts i.e. Multiplier effect and Profit leakage. Tourism is not an isolated sector. It acts as an umbrella sector which lay the basis foundation for economic multiple effects. It can be primary, secondary or tertiary beneficiaries of tourism venture which further helps to increase the economic activity. Multiplier effect can be direct where the effect is generated when the tourist directly purchase their goods and service. In indirect effect, the goods and service brought by the ventures for tourist and third is induced effect where the income generated from of indirect and direct effect is spent again.

3.2. METHODOLOGY

Benefits to the local communities are the central theme of the research where I look into quantitative magnitude of benefit sharing and of leakage in which a proportion of revenue flows out of local economy. Therefore it becomes necessary to evaluate the impact of tourism on local economy by employing those methodology or criteria which are essential for socio-economic valuation.

Socio economic sustainability or sustainability of ecotourism is carried out to assess the impact of tourism on local economy. And there are two ways of approaching the given objective. Firstly, employing a method to do calculation in the form of input-output analysis which helps to analyze various relationships within an economic system as a whole rather than individual component. In this methodology, monetary term can act as a best indicator to assess the success of ecotourism in that region (Walpole and Goodwin 2000). But the major concern is that, even though the cost benefit method is clearly a tool to measure the impact of tourism, it won't attain a complete picture until or unless the concept of livelihood is incorporated.

3.2.1. Stakeholder analysis

Stakeholder analysis is a useful tool for managing stakeholders and identifying opportunities to mobilize their support to attain particular goal (Brugha and Varvasovszky 2000). First and foremost step is identification of key stakeholder. Key stakeholders are those people or institutions who are either potential beneficiaries or the people adversely affected. The first objective was to identify the stakeholders of PTR and to create a stakeholder profile. For identification of stakeholders a number of methods namely Participatory Rural Appraisal (PRA), Focal Approach and Snow Ball Technique are used. PRA was conducted to identifying key stakeholders, both potential and powerful; who can influences the successful running of any program and also throws light on their socio economic background. The Focal Approach was conducted where stakeholders list of PTR was prepared after consulting with key stakeholders. Along with that applied the Snow Ball Technique where each stakeholder are requested to list other potential stakeholders, thus ensuring all stakeholder groups have been identified (Rastogi et al. 2010). And Reputational Approach where I consulted

knowledgeable individuals for their suggestions to enumerate the stakeholders (Rastogi et al. 2010).

Next step was to assess the importance of stakeholder, their interest and their potential impact on tourism. What are their expectations from tourism or what benefits they derive? These can be derived from secondary information or through consultation with potential stakeholders.

3.2.2. Socio economics status

For a better understanding of socio-economic scenario regarding the circulation of tourism revenue in the economy in a broader way, several characteristics are assessed to measure the impact of study. The socio-economic criteria assessed were:

- Economic impact on the regional economy
- Impact on Stakeholders
- Socio-economic sustainability

For assessing the impact on regional economy, details of business statistics and information from various stakeholders are required. Here the objectives to measure are purchase, employment and tax paying for each study site on different stakeholders (mainly resort, home stay and EDCs). Multiplier effects and leakage are taken into account. Multiplier effects are nothing but the expenses of one person becoming an income of another person. Since it is a laborious process and will deviate from the current topic, we will only be assessing 'Multiplier effects' in a broader way. With expert interviews, the multiplier effects in the regional economy are assessable (Tobias and Mendelsohn 1991). Leakage is the proportion of that revenue which flows out of or does not reach the destined region, and which can be accessed through expert interview and business statistics. Since most of the resorts and homestays are already established, import of capital and building material cost is excluded. Therefore, the indicators mainly employed to measure leakage are: Import of vegetables, non-vegetables, dairy products, laundries, which have a direct connection with local economy. They also act as a major indicator to assess the sustainability of tourism fed local economy, apart from that employment of foreigners, outflow of profits, payment for promotion and travel agencies are major indicator for sustainability. Leverages can be estimated for each

stakeholder, and can be analyzed and compared among the major stakeholders like resorts, home stays and EDCs.

Local communities mainly look into the benefits derived from tourism, which is otherwise the central theme of this study. Therefore, community respondents were asked whether they were benefited from tourists and whether tourism was good for the community or not, and the nature of benefits were noted and enrolled.

Indicators like employment opportunity, reasonable employment income, perceived equality of working possibilities, stability of commodity prices and diversity of economic activities (Wallace and Pierce 1996). Equality of working opportunities implies that jobs are assigned according to qualification instead of ethnic origin or gender. Diversity of economic activities mainly means that ecotourism is sustainable when not reducing traditional activities. These can be accessed through data triangulation of employees and informal interviews with stakeholders.

3.2.3. Impact on stakeholders

Empirical analysis of the study helps to measure the socio-economic impact of tourism on relevant stakeholders. To measure the socio economic impact, a questionnaire survey and focused group interview were conducted. The questionnaire is schedule in such a way that the information on number of family, level of education, alternate occupation and sources of income is collected.

3.2.3.1 Source of income

Most of the stakeholders interviewed (76%) depend on tourism for their major source of income. Farm tourism, taxi and forest guards are the 26% of stakeholders whose income comes from agriculture, other travels and as wages respectively. Even though some Homestays owners act as guides or as taxi drivers or runs coffee shops are also include in this 76% as these are the subsectors and or branches of main tourism market. Within the study area, eight stakeholders were identified and analyzed.

3.2.3.2 Resorts

A resort is a place used for recreation, attracting visitors for various purposes like tourism; their facilities range from ten bedrooms to 75 rooms of three categories such as deluxe, super deluxe and premium deluxe. From off seasons to season price varies from a range of 500 to 3000 INRS. In my study, I included nearly 36 resorts out of 41. Most of the resorts are owned by multinational companies like Mahindra club, Sterling groups, Leela groups, KTDC, Muthoot group, Shalimar groups etc where each resorts runs in an area of 250 cents to 25000 cents. The resorts which are run by local communities are lesser in size with comparatively limited facilities except few. These are the sectors which generate maximum job opportunity in and around PTR. At present around 1500 people are employed in this sector in which 50% are local. Estimate annual turnover from these ventures (Private resort and Local resorts) is around Rs.667700000 which project them as the most important and powerful stakeholder among all others.

They have high visitor rate and high annual turnover when compared to the rest of stakeholders. Over the years, resort owners become major stakeholders who have the power to influence the policy making both financially and politically.

3.2.3.3 Homestays

Homestays is a form of tourism that allows the visitor to rent a room from a local family to better learn about their local lifestyle and culture. Like many other destination in the world, Kerala government is promoting as a means of developing their tourism industry. Periyar Tiger reserve is one of the finest examples where local people with minimum investment when compared to resorts are sunning successful tourism programs throughout the year. When more and more tourist starts flowing towards the destination, it not only help in empowerment of local communities but also made them aware of their cultural and biodiversity value.

Homestays offer a friendly environment where visitors get an opportunity to interact with the family members to know about their lifestyle and tradition. For better marketing, they have to boost their cultural and biodiversity value and their knowledge and marketing skill decides the future reference from their visitors to their friends.

3.2.3.4 Farm tourism

Thekkady, a part of Iuka District is known as the spice garden of Kerala. Most of the people were engaged in agriculture before the advent of tourism, mainly plantations like cardamom, pepper, clover apart from coffee and tea plantation. The concept of farm tourism mushroomed when tourist who come from long distance got nothing other than boating in Thekkady, After two hours of boating, spending the rest of time leading to the origin of farm tourism concept where visitors are taken to a well maintained farm to see the medicinal and spice plantation and how organic agriculture is promoted. This acts as a risk proof for big agricultural farms whose harvesting success mainly depends upon the unpredictable monsoon. They also give 50% commission to guides for marketing their venture. Some highly organized sector employ elephant ride to promote tourism. Since they charge Rs. 800 for elephant ride with 50% commission for guides, maximum guides tries to bring visitors to few farm with elephants like Elephant Junction etc.

3.2.3.5 Guides

Tourist guide is a person who guides visitors in the language of their choice and interprets the cultural and natural heritage of an area, which person normally possesses an area-specific qualification usually issued or recognized by the appropriate authority.

Tourism guides tariff varies from package to package. But the most common guide's commission from various stakeholders is: 20-25% from resort/night, 15-25% of room tariff per night from Homestays, 50-60% commission for package from massaging centres, Elephant ride, cultural show- Traditional dance and Martial arts and farm tourism, another 20% as commission for product purchased by tourist from Kashmir shop and other handicraft and spice shop and 10% commission from forest department according to the package taken.

There arise areas of conflict where even taxi drivers do aggressive marketing where authorized guides do a professional approach. For getting the profit from package, some guides start smart marketing policy of arranging rooms even for Rs. 250, where the compensate the loss through commission they derive from other programs, Unauthorized guides are always in conflict with other stakeholders because of the aggressive marketing where they demand more commission per guest. Another area of concern is forgery where

they use the same entrance ticket for more than one tourist. Entrance fee for Indian tourist is Rs. 15 while it is Rs. 300 for foreigners.

3.2.3.6 Massaging parlours

There were 18 plus massaging centre of which 11 were surveyed for this study. Most of the centres are run by local communities involving trained ayurvedic physiotherapist and assistants while others are from immigrants who are permanently settled for more than ten years. They packages ranges from simple massages to power packed packages which runs for weeks or month.

3.2.3.7 Eco development Committee

This is part of ICDP where community is complimented with socio economic benefits for encouraging conservation. The concepts assess and benefit sharing becomes the slogan where active participation of community is achieved for biodiversity conservation. Around 72 EDC are active in Periyar East and Periyar West. In East alone, 32 EDC's are there. For my current study, I involved 5 EDC's which are directly depended on ecotourism (Table 3).

Table 3. EDC's and the number of families involved in tourism.

Sl. No	EDC	Families Involved
1	PETS	64
2	Ex-Vayana bark collector	12
3	Tribal Trekkers	20
4	Tribal Heritage	19
5	Vidiyal Vanapathukappu Sangam	17

When the number of tourist increased from 15751 in numbers for ecotourism activities to 38082 visitors, That is doubled from the year of 2004- 2013, the revenue generated increased from 63,64,250rs to 2,12,56,130rs in the respective year that is 3 times greater than the year it's started.

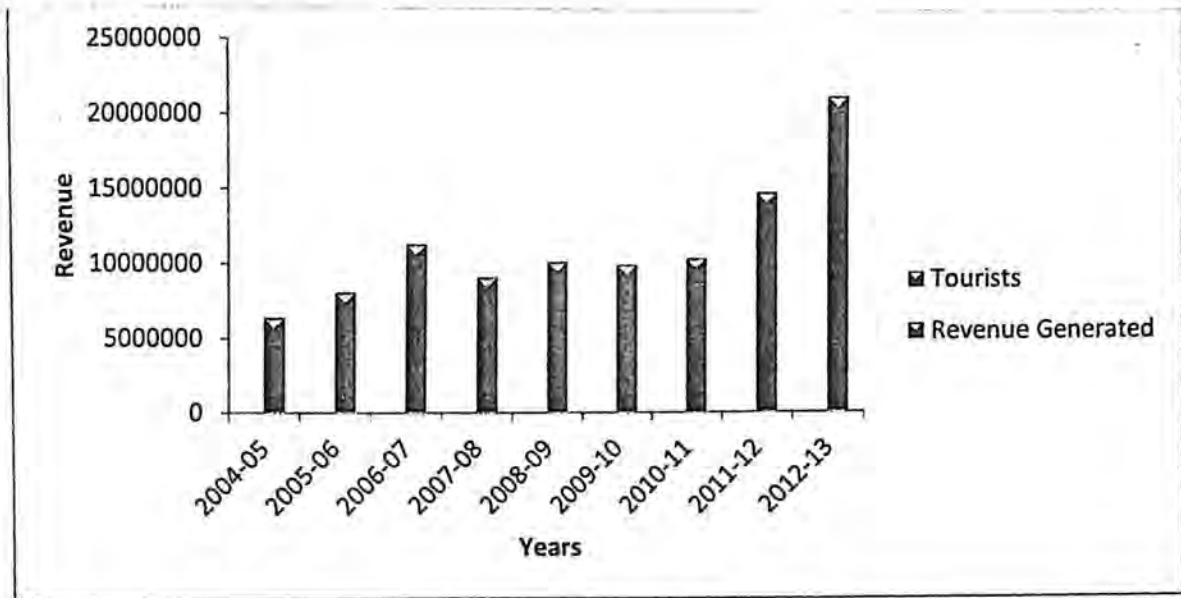


Figure 14. Eco tourism revenue details.

3.2.3.8 Transportation

Transportation is a major sector in tourism industry. Therefore travels are included in study to get a framework of how tourism interlinked with various sector. Competition is really high in this sector since there is large number of competitors. Nearly 300 cars and 500 plus Autos are there in Thekkady. Almost all transport business is owned by local people and they also act as guide sometimes. Big resorts like Mahindra Club, Sterling group's etc made tie up with local travel agencies or taxi owners to avail there service according to the need of company.

3.2.3.9 Kashmiri Shops

These are people especially traders of handicraft goods and jewels who migrated along with the family to south India. 40 % of the kashmiris are settled in Thekkady for the past 15 years. They used Aggressive verbal marketing when tourist passes by their shops. A most of the times, tourist express their annoyance because of this style of marketing. They also pay 20-25% of purchase as agent commission. Since 100% of people employed are Kashmiris, Local share from this sector is none.

3.2.3.10 Income/employment status of stakeholders

With the analysis of key financial figures, one can already approximately estimate the economic impact. The figures required are: financial turn-over, expenses, employment and tax payment.

Table 4. Income/employment status of stakeholders

Stakeholder	Number	Age annual income	Total employee	Local Employee	Total salary/annum	Local share/annum
Resorts	35	667700000	1239	711	19122000	100005000
Homestays	28	7610000	28	28	7610000	7610000
farm tourism	6	4600000	27	27	195000	195000
Massaging centres	11	5325000	32	21	5325000	3625000
Taxi	11	2442000	220	180	2442000	2442000
Guides/ Tour operators	15	3234000	40	40	3234000	3234000
EDC Staffs	15	21256130	132	132	13178880	13178880
Kashmiri shops	4	1200000	2	0	140000	0

3.2.3.11 Source of water

83.33% of Resort in PTR depends on bore well for water security. 22.22% of Resorts in Periyar Tiger Reserve have water harvesting system and 33.33% of resorts have ground water recharging facility. While rainwater harvesting mechanism and ground water recharge facility is only executed in 25% and 10.12% of Homestays in PTR respectively. Groundwater recharge facility is 100% in farm tourism along with bore well and open well since their primary source of income is agriculture and the success and failure of crops depend on how we harvest and utilize rainwater.

3.2.3.12 Alternative source of electricity

50% of Resort in PTR depends on solar energy for alternative source of energy along with Kerala state electricity board while it is around 57.14% in Homestays home stay followed by zero percentage in farm tourism.

3.2.4 Socio economic sustainability

In the following, the socio-economic impact is examined on its sustainability. The study does not consider the sustainability of economic growth; it rather focuses on local socio-economic sustainability of economic activity. Hence, the following indicators are employed: equality of employment, leakage and diversity of economic activities (Wallace and Pierce 1996).

3.2.4.1 Equality of employment

Equality of employment stands for the opportunities that communities derive from employment vacancy. According to the principle of ecotourism but not all lodges are following the principles of eco lodges. 57.4% of employees working in resorts of PTR are local but most of them are menial labors. Qualification stand as bench mark for selection criteria since the Resorts want to run profitable business.

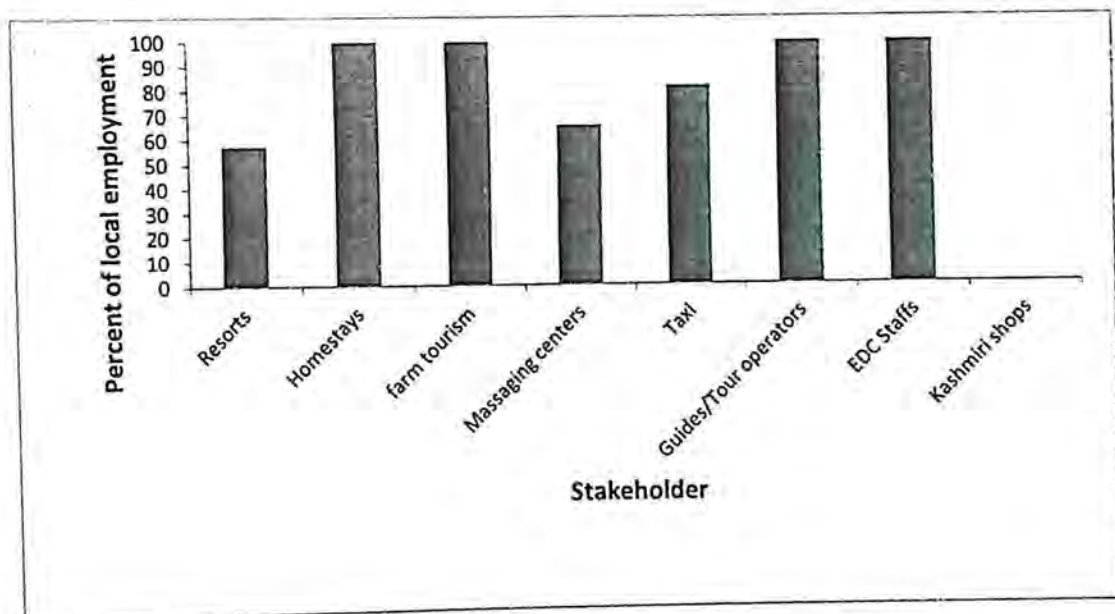


Figure 15. Representation of local community

3.2.4.2 Leakage

Profit leakage, the process through which tourism income leaves the destination economy and reduces the local economic potential of tourism, must be considered in any impact evaluation. Resorts of the area have an annual turnover of Rs.667700000 in total, where local people work on small wages. It was found that only 14.9% of share goes to the local community in terms of wages. It turns out to be a disturbing factor for socio-economic sustainability. Even though this trend is disturbing, secondary sectors are getting economic benefits from these ventures. From my survey on 35 resorts, Rs.51235000 is annually spent on vegetables, non-vegetables, dairy products and laundry which are directly supplied by local ventures.

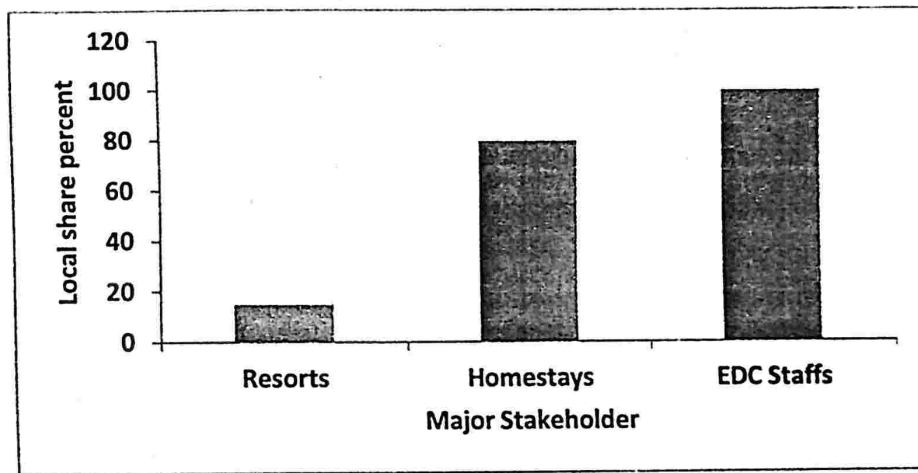


Figure 16. Percentage share to the local community

3.2.4.3 Diversity of economic activities

Diversity of economic activities means that tourism did not induce abandonment of traditional activities. For a thorough assessment the actual economic diversity must be compared with the state before tourism development. From study, it's clear that tourism not only boosted the traditional activities of the community but also give rise to so many other sectors like agriculture, manufacturing etc. But the economic dependency of stakeholders is really high. But the study doesn't focus the dependency of primarily and secondarily on ventures directly depended on tourism. Therefore judging community dependence on tourism is difficult. But the dependency of stakeholder gives a rough framework of primary and secondary sector's dependency level.

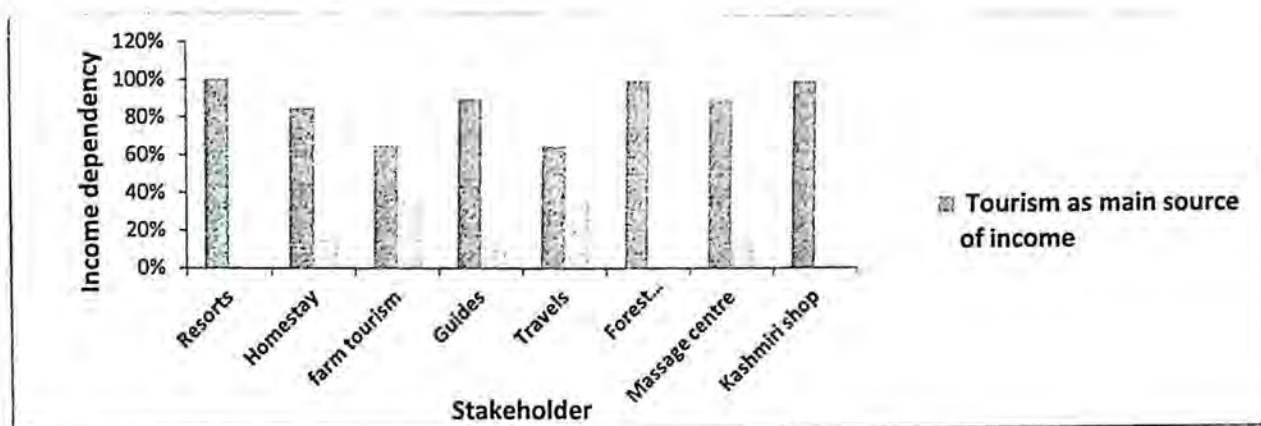


Figure 17. Dependency level of various stakeholders

Eight stakeholders are identified to get an overall picture but the choice is restricted to three main headings to get a better understanding of existing tourism pattern and sustainability, They are divided into three parts and compared;

- a) Tourism run and executed by Eco developmental committee.
- b) Tourism run and executed by Local Community.
- c) Tourism run and executed by Private players.

The revenue that is generated is distributed and utilized in these three sectors and is calculated to estimate income distribution which give a fairly large picture of Income generated and distributed among various stakeholders. And from the above information, the equity of shares going to local community is calculated along with the leakage. For a better understanding, details like revenue earned by each stakeholder, there employment details, i.e. number of total employees versus local employees and salary profile i.e. how much is the total salary allotted, from which how much percentage goes to locals is calculated and compared.

Guides and Taxis are avoided since they act as freelancers and engage in different fields respectively. To avoid any seasonal effect of conducting the survey, both the peak seasons are included in the study- December- January and March - May. To access the economic impact of ecotourism on local economy, Structured and semi-structured questionnaires are administered for primary data collection (Scheyvens 1999), with representatives from each stakeholder group. The questionnaires are prepared differently for major stakeholders or sections; and here they were undertaken for the proprietors of the home stays, resorts,

restaurants, guides, farm tourism operators, taxi owners, travel agents, spice shops, massaging and handicraft centres. All interviews are conducted in an informal manner in a relaxed environment.

3.3 RESULTS

3.3.1 Stakeholder analysis

Through stakeholder analysis, eight key stakeholders of PTR are identified through the above mention methodology. They are Forest department & EDCs, Resorts & lodges, Homestays, Kashmiri shops, massaging parlours, guides & travel agents, taxi's and Farm tourism operators. Among these Tourism run by Forest department, Resorts and homestays are identified as major power because of their stake and influence over decision making.

A questionnaire survey was conducted for about 125 respondents. 125 samples were selected randomly, which included 35 resorts, 28 homestays, 15 tour guides and travel agents, 6 farm tourism owners, 11 massaging parlours, 4 Kashmiri shops, 11 taxi drivers and 15 EDC staffs. All interviews were conducted with the full willingness of the respondents. A detail of tariff per head, number of tourist included per trip, total duration program, guide charge etc are used to calculate the revenue generated. In places where monetary data is highly confidential, average occupancy rate is collected along with the seasonal and off seasonal tariff. Informal interviews with other staffs of the firm are carried out to cross check the validity of data. From this information annual turnover is estimated, along with the total salary and the percent of share which goes to the local community.

Information regarding the amount generated by major stakeholder was collected, from which income earned by local community was estimated. There are 72 active EDC in and around PTR. Under my study area 36 EDCs are active out of which only five are involved in tourism. Therefore, the rest are omitted from the survey. In every interview special care was taken to get in depth of the existing scenario by involving stakeholders of all age-group. The house head, whether husband or wife, was interviewed based on their availability. Evening time was selected for homestay interview; therefore the opinions of entire family (Wife, grand parents, children) are taken.

3.3.2 Socio-economic aspects

3.3.2.1 Tourism operated by private players

Resort provide job opportunities for around 1500 people and among them, around 750 are from local communities. Most of the resorts are branches of some main resort, like Elephant court- a resort of Vijaya group; Wood and Spice, a Sterling Group resort etc.

3.3.2.2 Tourism operated by local community

I have included the homestays and few resorts owned and run by local communities. Homestays are specialty of Periyar Tiger Reserve where members of the communities realize the potential of tourism and cater it along with its traditional hospitality. Here, one family allot a portion of their house to the visitors, serve them the warmth of their hospitality, and explain them the tradition and culture of the land which they visit. In this way, the tourist or the visitor gets the essence of the richness of the ethnicity and their way of living more deeply. This kind of tourism also exercises a profound influence on tourists at both social and psychological level. The memory of that place tends to stay with them throughout their life, enriched with the experience they encounter while being there. In my survey, 70% of foreigners I interviewed stated their preference to stay in an ambience where they gain more knowledge about the place and people. They give high preference to those places which put them in touch with the primal spirit of the location they are visiting. Another reason is that, these places are economical as compared to other resorts and they offer supreme services at nominal rates. Homestays business is usually run by the head of family with the active support from their wives or family

3.3.2.3 Tourism organized by Forest department through EDCs

EDCs were launched in Periyar Tiger Reserve as an innovative approach to promote non-consumptive use of biodiversity with the active participation of local communities. The successful story of ecotourism was scribbled when the innate knowledge of tradition community of reserve which once used to hunt and smuggle forest products were used to enlighten the tourists about the rich culture of the reserve. Thus, hardcore poachers and smugglers turned green guard strengthened the protection against various illegal activities

inside the sanctuary. Since they had a better understanding of the area, their support proved highly favourable for the tourism sector. This way they also found a new means to earn their livelihood, thereby benefitting both themselves as well as the Government. This collaboration also gave way to the proper conservation practices in such areas which were once threatened by destructive activities.

The success of assessment and benefit sharing transformed ecotourism as an important option for linking local community livelihood with the protection and preservation of Protected Area. At present, 76 EDCs are active in both Periyar East and West. In which 36 are in Periyar East. Among them, 5EDCs are engaged in promoting and conducting ecotourism programs.

Institutional Mechanism of EDC consists of Ministry for forest acts as the head of Periyar Tiger Foundation while the Field Director acts as the Executive Director who is assisted by other professional staffs, technical staffs etc.

This Community based protection-oriented ecotourism aims at reducing the negative dependency on PTR. The ecotourism activities are designed in such a way that it reduces the tourism pressure on biodiversity. Numbers of programs are taken along with the guard who is patrolling that area- that is, protection-oriented tourism is introduced, where the tourist becomes a part of jungle patrolling along with the forest department. The revenue collected from the programs is directed into the park welfare fund from which all members get their monthly wages. The Park Welfare Fund is exempted from taxes and guarantee 100% linkages, where total revenue is used for the community welfare.

Table 5. Comparison of local share among three major stakeholders

Stakeholder	Annual turnover (INR/Yr)	Employees		Salary (INR/Yr)	Local share/annum	Percentage
		Total	Local			
Resorts	667700000	1239	711	19122000	8805000	14.90%
Homestays	7610000	28	28	7610000	7610000	80%
EDC Staffs	21256130	132	132	13178880	13178880	100%

3.4 DISCUSSION

3.4.1 Leakage detrimental factor sustainable tourism

Revenue leakage in tourism is high that it may exceed over 50% from developing countries. This type of trend is detrimental to any place that promotes ecotourism for sustainable development. Private tourism Operators whether it's multimillion resort or Global tour operators, tend to have a higher economic impact than community-based tourism operators due to their global marketing and promotion skills, better infrastructure, and aggressive marketing policies whereas local community lacks such marketing skills, infrastructure, experience and exposure. This highlights the need for empowering local communities. Therefore alternatives should enable a range of local investment opportunities from cooperative ventures to partnerships with local enterprises. Their main objectives should be to empower local people and reduce leakage, thereby keeping more tourism revenue in local hands for a locally directed development.

The study result suggests that tourism in PTR is benefiting local economy as well as host community but the magnitude of economic share is comparably lower than the foreign players. Success of tourism in PTR produced many spin of activities like massage, farm tourism, cultural promotion, etc. Even agro sector is not an exception. Before the invasion of tourism into the agro economy, economic activities revolve around production of cash crops like cardamom, pepper, tea, coffee etc. People were mostly employed in agricultural sectors

for livelihood, and whose success and failure depend upon the availability of rain. Their dependency was such that in the event of natural calamity they had faced uncertainties in Income as well as livelihood option. When tourism booms, more and more people become self-reliant. It acts as a shock absorber from agricultural loss due to natural calamity or wild animals.

It also create opportunities for both direct and indirect stakeholders mainly carpenters, building contractors, real estate brokers, electricians, laundry people, vegetable vendor, dairy products, cold storage etc as more and more resorts, restaurants, homestays, shopping malls mushroomed all over Kumily panchayat and surrounding areas.

Key Macro Economic indicators or the Input Output analysis never define sustainable tourism until and unless overall growth of the local economy take place where each sectors are interconnected in such a way that the growth of one sector lead to the growth of other sector. That means development should not be confined to just one sector, leaving the rest. In case of Periyar Tiger Reserve, we identified key stakeholders who are getting direct benefits from tourism like resorts, homestays, lodges and hotels, guides, taxi, massaging units, farm tourism etc. Apart from this, there is a secondary market which depends heavily upon primary market. The secondary market comprises of cold storage, diary product, vegetable vendors, laundry service, electricians, contractors, engineers, carpenters etc. In turn, secondary market is closely connected with the tertiary market like agricultural and aqua cultural farms and other global consumer market goods. An interdependence of one sector over another is relatively evident here and without it, one cannot frame the proper concept of sustainability. Sustainable development finds its practical application through Ecotourism. It is the largest industry with direct and indirect network whose growth is directly proportional to the growth of other sectors and job provider in and around Periyar Tiger Reserve.

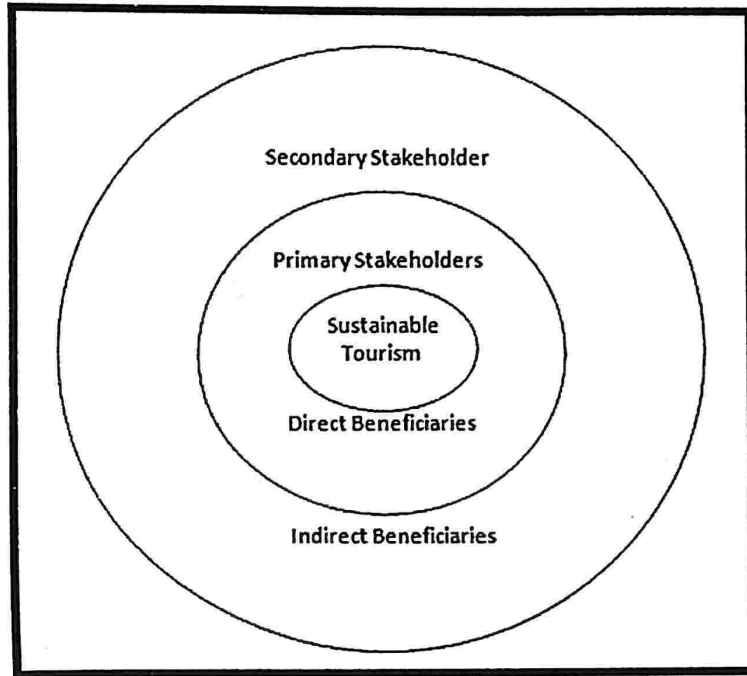


Figure 18.Chain showing the beneficiaries of sustainable tourism.

The trend which was clearly noticed during the survey was little alarming. Most of the tourist comes to the destination through tour packages offered by leading tour operators in developed centres. Since they developed a good business collaboration with well furnished resorts, they are able to provide packages in reasonable rates which otherwise cost few more penny from individual tourist. As a result, these packages come in the form of cooked food where everything is catered according to the need and leisure of tourist, which are more comfortable and economical. Therefore, even before starting their journey, the so-called economic benefits which act as an important factor for improving the living standard of local communities is channelled back to the central core as explained by Frank 1967 in his theory of underdevelopment. *“In global economic system, there lies developed core and underdeveloped periphery, where raw material from periphery is transported to the centre and is exported back to periphery as manufactured goods. As time passed, valued of raw material declined, while there was a steady rise in the value of manufacture good. This steady flow of capital from periphery to central which is termed as leakage is detrimental to the economic development of periphery”*.

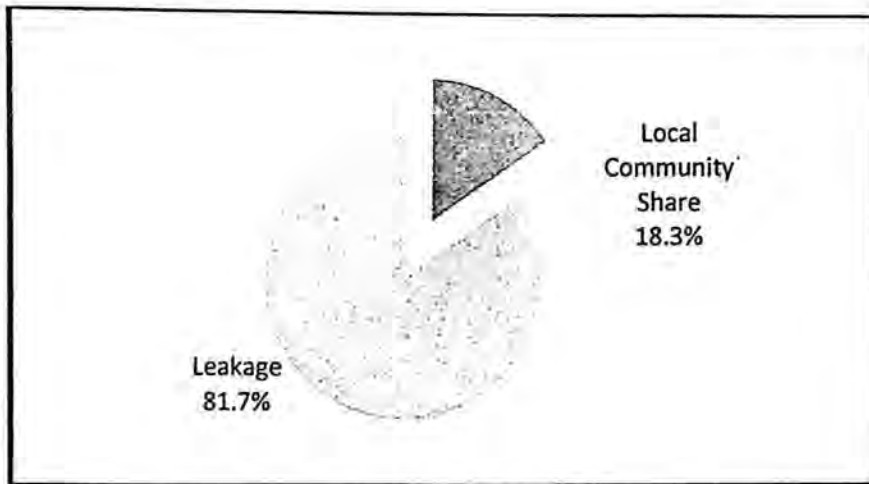


Figure 19. Economic benefit to local community

As the struggle for sustainable development continue, it is essential to strike the balance between conservation and development. For achieving the goal of ecotourism in changing tourism scenario, effective and innovative tourism strategies should be deployed.

In one hand, rural community were deprived of their traditional land, rights to use natural resources like NTFP, fuel wood etc, and are forced to carry the burden of conservation cost. But on other hand, large scale degradation of eco system is resulted in growing inequality, which turned out to be a major factor causing poverty and social conflict (MEA 2005). Same is applicable in tourism. Therefore a growing concern is that the same scenario can arise in ecologically sensitive destination where leakages in tourism revenue push local community in a bad economic state.

3.4.2 Social set up

This study reveals that local residents depend on outside network support for local tourism development. Thus they develop their business networks which come at the cost of certain percentage of their income. And the effective marketing tool they employ is mouth to mouth marketing and by maintaining better customer relationship. Attitude towards conservation of wildlife is almost similar among family members who are involved in tourism especially Homestays where each members act their part in promoting their venture. They realize the importance of biodiversity promotion and its recreational value as an importance source for economic growth. Conservational attitude is high among all stakeholders even in agriculture sector after the concept of farm tourism become becomes a potential tourism. Tourism acts as

shock absorber from erratic nature of monsoon which sometimes cast devastating effect. Another major concern is the unequal distribution of tourism benefits. This disturbing trend arising in PTR is similar to the theory of underdevelopment stated by Frank 1967. Income generated creates an unbalanced distribution of income among various stakeholders. This scenario exists because of the rising trends of global tour operators which channel or decides the trend of tourism. This highlights the need to clearly address these issues, so that protected areas may get the support of local people, which may lead to sustainable development. Tourism development in PA is considered as an incentive by Convention on biological diversity and UNDP to local people in return of their support for biodiversity conservation. Thus, an increasing recognition caters a solid base for integrated conservation and developmental project. Periyar Tiger Reserve (PTR) turns out to be a good example for ICDP.

3.5 CONCLUSION

Tourism in Periyar tiger reserve got the potential for sustainable development. It will only be successful when the communities manage the venture but in this case, foreign ownership already made their stake in and around reserve therefore that highlight the necessity of corporation between two major stakeholders. Nearly half the employment opportunities are going out, enough regulation is necessary to create more employment opportunity for local. Around 58% of local are employed in lodges and resorts. Even though this figure is high, there is enough further improvement. Employment opportunity can be increased further since the educated and eligible human recourse are available. Proper network should be developed with resorts, tour and travel agents with Homestays, massaging par lour, taxi etc owner by local community that will help to reduce the discomfort that arise between each stakeholder.

Private tour operator and resorts a well defined upper edge over local community based Homestays and tour operations because of their better infrastructure. Leakage is identified as a key ingredient the hampers the sustainability of responsible tourism. Therefore to reduce leakage resort should employ more locals. A better network should be melded among global tour operators with the local travel agents as well as tour operator and through them they are executive their local tour packages.

They study suggest that ecotourism is benefitting local economy along with the creation of jobs in primary as well as in secondary markets. Depended sectors are indirectly connected with tourism are growing along with tourism sectors like diary product, vegetables, non vegetables, engineering of varying categories as well as other miniscule sectors. Profit leakage by foreign ownership is turning out to be a major concern as more and more players are coming in all stakeholder categories. When resorts make tie up with travel agent or tour operators, the entire economy is going back to the developed core rather than being utilized in periphery which can be highly detrimental to sustainable tourism.

CHAPTER 4

ATTITUDE OF LOCAL COMMUNITIES

4.1 INTRODUCTION

Attitude is considered as a major tool for evaluating the public perception, understanding and acceptance and their impact on conservation objectives. When positive factors enhance conservation objective, negative factors turn highly detrimental. Therefore, for a better conservation and management of natural resources, community's attitude must be studied and their needs and aspiration should be taken into account (Badola et al. 2010). In India, close to 275 million rural people depend largely on natural resources for their livelihoods. Wildlife conservation in India is often viewed as factor whose success depends upon the support of local people which is linked to the direct benefits communities derive from PAs.

Demonstration of high economic benefits of recreation sites is considered as key component to generate public support and revenue for biodiversity conservation/ PA management. No consumptive recreation can reduce the PA effectiveness (Reed and Merenlender 2008). Role of local communities in biodiversity conservation was negligible before the concept of ecotourism. Once the true potential of ecotourism was revealed, it was welcomed by both the conversationalist and the local communities. Locals started playing active role in applying conservation strategies and also in implementing them in and around protected areas (Drum and Moore 2005).

It is important to note that the personal cost and benefits of various intervention programs along with socioeconomic and demographic character influence the behaviour of each stakeholder. Only a very few studies have been undertaken to reveal the direct relationship between such site specific programs and their influence in supporting biodiversity conservation (Nagothu 2003) which stress on the prevailing lacunae.

The study assumes that economic benefits through activities such as tourism in PAs can influence local communities and engender their support for conservation i.e., by making an assessment of the benefits from tourism. It also attempts to analyze the people's attitude

towards conservation and critically examine the factors that can be detrimental for sustainable ecotourism.

As the struggle for sustainable development continues, it is essential to strike the balance between conservation and development. For achieving the goal of ecotourism in changing tourism scenario, effective and innovative tourism strategies should be deployed. On one hand, rural communities were deprived of their traditional land, rights to use natural resources like NTFP, fuel wood etc, and were forced to carry the burden of conservation cost. But on the other hand, large scale degradation of eco system has resulted in growing inequality, which turned out to be a major factor causing poverty and social conflict (MEA 2005). Growing concern is that the same scenario can arise in ecologically sensitive tourism destination where leakages drive local communities in a bad economic state.

4.2. METHODS

Stakeholder analysis was done to assess the substantial difference among stakeholders towards conservation and benefit sharing. Quantification of all objectives were obtained by questionnaire surveys and interview with different stakeholders, where they were asked to comment on benefits as well as the effects of ecotourism like job creations or negative influence of local culture etc.

Stakeholders were interviewed using a predesigned questionnaire and representatives were taken from each stakeholder group for assessing their awareness and attitude. The questionnaire had both closed ended and open ended questions pertaining to the conservation awareness and attitude towards PTR. Randomly 125 samples were collected which included 35 resorts, 28 Homestays, 15 tour guides and travel agents, 6 farm tourism owners, 11 massaging parlours, 4 Kashmiri shops, 11 taxi drivers and 15 EDC staffs. All interviews were conducted with the full willingness of the respondents. Interviews were of thirty to fifty minutes. In some cases, it went up to two hours. In every interview, special care was taken to get in to the depth of the existing scenario by involving stakeholders of all age groups. The house head whether husband or wife was interviewed based on their availability. Evening time was selected for Homestays interview, therefore the opinion of entire family (wife, grand

parents and children) was taken since they are also a major stakeholder. Focused group interview with selected staffs was also carried out to understand the problem.

These interviews allow in-depth analysis of people's feeling and their perspective. The questionnaire was broadly divided into four sections that provided information on the following aspects:

- a) Household demographic
- b) Socio economic information
- c) Conservation attitude
- d) Attitude towards tourism

In all the questionnaires, both open and closed ended question types are used to evaluate their attitude towards biodiversity conservation. The differences in levels of awareness and attitude were examined. Four factors that influence the attitude of **stakeholders** are Age, Gender, Education and Income class. Therefore respondent are divided according to their following category and analyzed.

4.2.1 Income distribution of stakeholders

For evaluating the influence of income on survey result, they are divided into three classes according to the category of low income class, middle income class and high income class.

Table 6. Percent respondents in income class

Income class	Total Respondent	% Respondents
<60000	4	3.2
60000-300000	78	62.4
>300000	43	34.4
Total	125	100

4.2.2 Gender wise distribution of stakeholders

To check whether gender influence the attitude towards conservation, respondent are divided into their respective genders and analyzed (Table 7).

Table 7: Gender wise classification of stakeholders

Gender	Total Respondent	% Respondents
Male	83	66.4
Female	42	33.6

4.2.3 Education wise distribution of stakeholders

To evaluate the influence of education on stakeholder attitude, respondent are divided according to their educational qualification and analyzed.

Table 8. Education wise classification of stakeholders

Education	Total Respondent	% Respondents
>10 th	17	13.6
>12 th	28	22.4
Graduate	52	41.6
Masters	20	16
Others	8	6.4

4.2.4 Age wise distribution of stakeholders

To evaluate the influence of age on stakeholder attitude, respondent are divided according to their age class and analyzed.

Table 9. Age wise classification of stakeholders

Age Class	Total Respondents	% Respondents
20-30	20	16
30-40	41	32.8
40-50	46	36.8
50-60	18	14.4

4.3. RESULTS AND DISCUSSION

4.3.1. Attitude towards conservation of forest and ecosystem services awareness

Attitude of people towards forest is found to be highly positive among the stakeholders. Hundred percent of the respondents highlighted the importance of conservation and recreational value of PTR. The respondents were also aware of the climate regulations (97%) and water purification (81%) (Fig. 20). The results indicate that the stakeholders of PTR are highly aware of the ecosystem services provided by PTR and the benefits derived from these ecosystem functions.

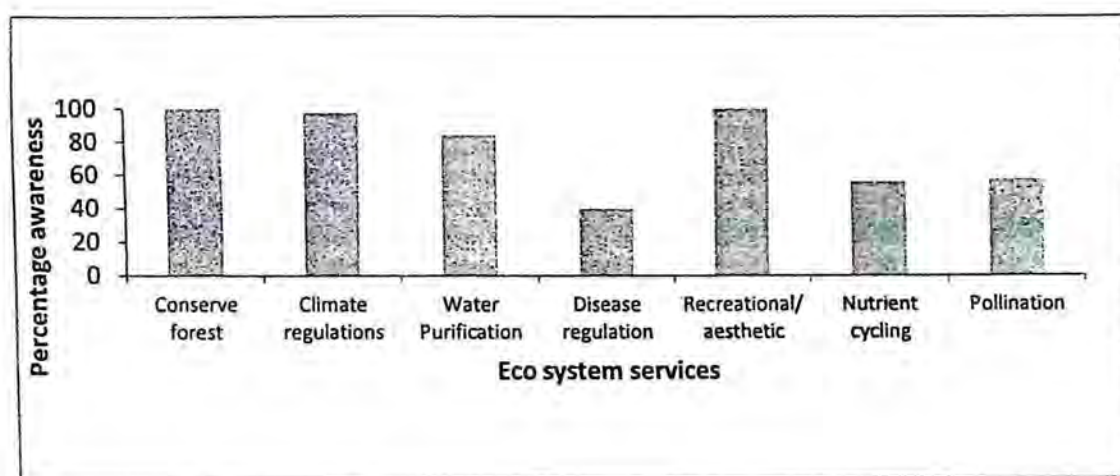


Figure 20. Percentage respondents aware on conservation of forest and ecosystem services

For better understanding, I classified respondents into 5 scales according to the level of their awareness:

Table 10. Percentage awareness of the benefits derived from PTR.

% of awareness	Code
0-20	Bad
20-40	Fair
40-60	Good
60-80	Very Good
80-100	Excellent

From the results, it is found that the stakeholders possess excellent knowledge of the benefits derived from Periyar Tiger Reserve (80-100%) (Table 10). The benefits derived cover the knowledge of the respondents regarding climate regulation, water purification, and recreation value of PTR. But when it comes to other major aspects such as disease regulation, nutrient cycling, and pollination, their knowledge is found to be good in general, but not admirable. Hence, they need to be taught the scientific aspects of benefits and develop a scientific attitude towards the profit withdrawn from the reserve.

4.3.2. Attitude towards conservation of wildlife and reason/ benefits of conservation

Table 11. Conservation attitude in percentage

Awareness	Conserve Wild Animal	Aesthetic Beauty	Recreational Value	Right to Live	Threat to human	Conflict	No benefit
Aware	125	91	90	122	0	0	0
Not aware	0	34	35	3	0	0	0
%	1	72.8	72	97.6	0	0	0

Interpretation: Attitude towards the conservation of biodiversity is very high. Zero levels of threat and conflict authenticate their opinion or can act as a major reason for their opinion. Even tribal and farm people reported their encounter with wild animals but the threat was always negligible. When asked about the need to conserve the biodiversity, preferably animals, 100% (Table 11) of stakeholders consider it to be the birth right of an organism to live their life, while 72% (Table 11) of them consider their aesthetic beauty and high recreational value which attract tourists and adds to yet another reason to conserve these species.

4.3.3 Whether attitude towards conservation of forest and awareness of ecosystem services varies with income class

Interpretation: The stakeholder group was divided into three major income classes to check whether the attitude towards forest conservation varies along the scale but irrespective of income distribution, attitude of stakeholders remain positive. Still, there is a wide variation in ecosystem service awareness. Excellent rating is given to services like climate regulation,

forest conservation and recreation which are advantageous since they have to pay reasonably less amount of price; otherwise they need to pay electricity bills because of ACs, fans, etc. Water purification and security is another major reason stated by them to conserve the forest. But in low income earning sector, these are highly rate and are considered to be an important reason. But recreational service got the unanimous support from all stakeholders since they are well aware that because of this protected area millions of tourists visit their locality every year (figure 21).

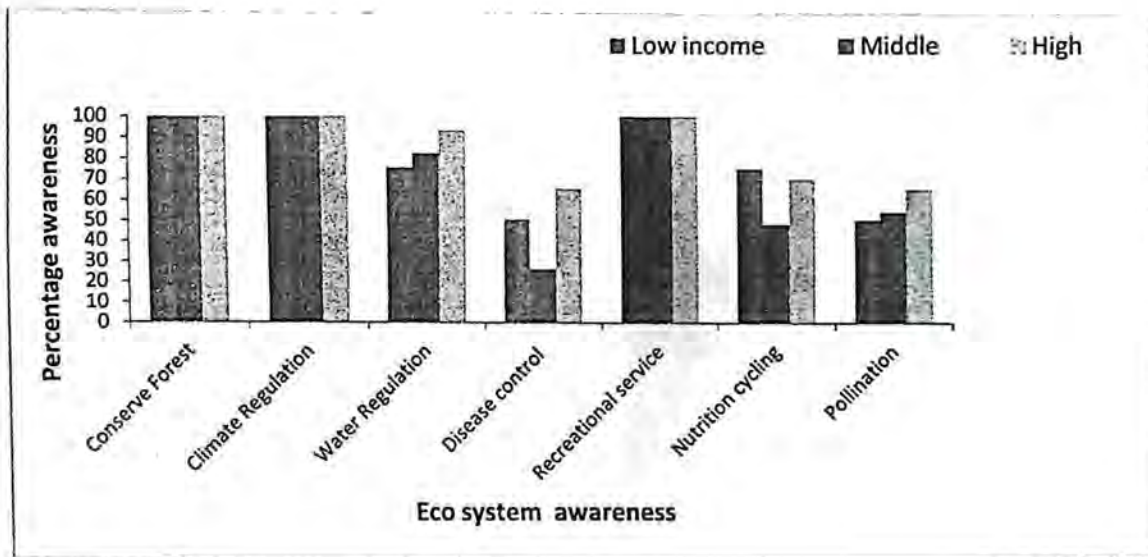


Figure 21. Awareness towards conservation of forest and eco system services as per income level of the respondents

4.3.4 Attitude towards conservation of wildlife and reason/ benefits of conservation

100% (Fig. 22) respondent attitude towards wildlife conservation is excellent. Zero levels of threat and conflict authenticate their opinion or can act as a major reason for their opinion. Even tribal and farm people mention about their encounter with wild animals but the threat is always negligible. When asked about the reason for conservation, 100% (Fig.3) of stakeholders consider it to be the birth right of an organism to live their life while +70% (Fig.3) of respondents consider their aesthetic beauty and high recreational value which attracts tourist and add up to yet another reason to conserve these species. They do have full knowledge regarding their source of income which depends largely on tourism because of the rich biodiversity of the area they inhabit.

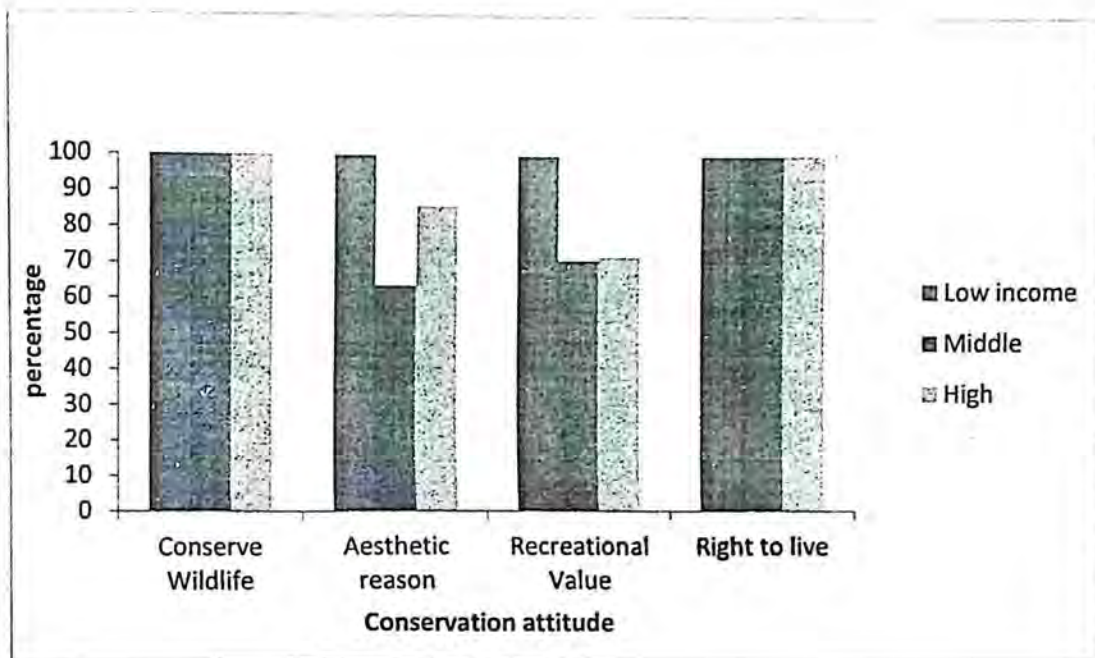


Figure 22. Percent respondents in income categories, agreeing to conserve wildlife and Reason/ benefits of conservation

4.3.5 Whether attitude towards conservation of forest and ecosystem services awareness is gender biased

From the above data, it can be inferred that the conservation attitude and awareness regarding climate regulation and recreation are very high irrespective of the gender. Whereas, the knowledge regarding ecosystem services such as water regulation, disease control and pollination were found higher among males than in females. Awareness regarding nutritional cycling was higher in females which infer that they engage themselves more in different aspects of biology such as dietary and breeding patterns.

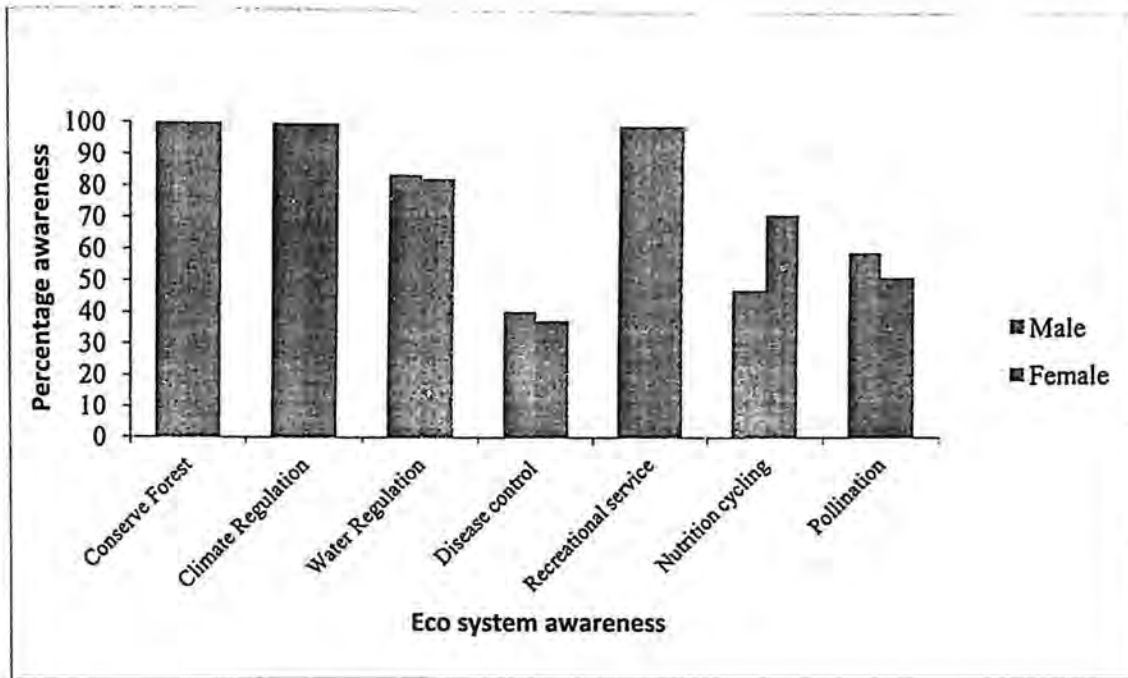


Figure 23. Percent male and female aware of benefits of forest conservation and eco system services derived therein

4.3.6 Attitude towards conservation of wildlife and reason/ benefits of conservation

100% respondent attitude towards wildlife conservation is excellent. 100% of individuals, irrespective of gender, consider it to be the birth right of an organism to live their life while +70% of respondents consider their aesthetic beauty and high recreational value which attracts tourist and add up to yet another reason to conserve these species. They do have full knowledge regarding their source of income which depends largely on tourism because of the rich biodiversity of the area they inhabit. Hence, it can be deduced from the information obtained that the attitude of individuals towards conservation of wildlife is not gender-biased.

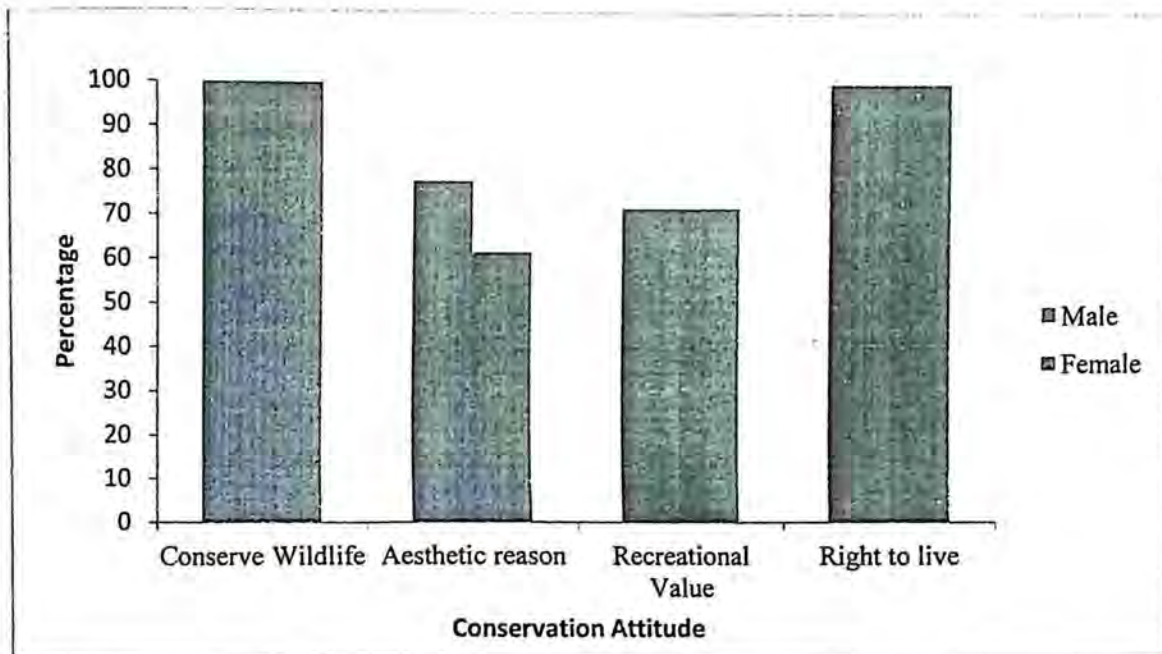


Figure 24. Percent male and female respondents' agreeing to conserve wildlife and Reason/benefits of conservation

4.3.7 Attitude towards conservation of forest and ecosystem services awareness

It can be inferred from the above data that 100% student's attitude towards wildlife conservation is positive. Zero levels of threat and conflict authenticate their opinion or can act as a major reason for their opinion. They were also highly aware regarding climate regulation and recreational activities in and around the reserve area. Post-graduate respondents possessed excellent knowledge regarding water regulation in comparison to the ones who were not equivalent in the qualification. Higher secondary and intermediate respondents possessed good knowledge of water-regulation, nutrition cycling and pollination in comparison to the more qualified respondents since they were more active in the field work in the reserve. Awareness regarding disease-control was 80% among the post-graduate respondents since they were educationally qualified enough to understand the symptoms, preventions and treatments, whereas it was found to be too low among the higher secondary and intermediate degree holders.

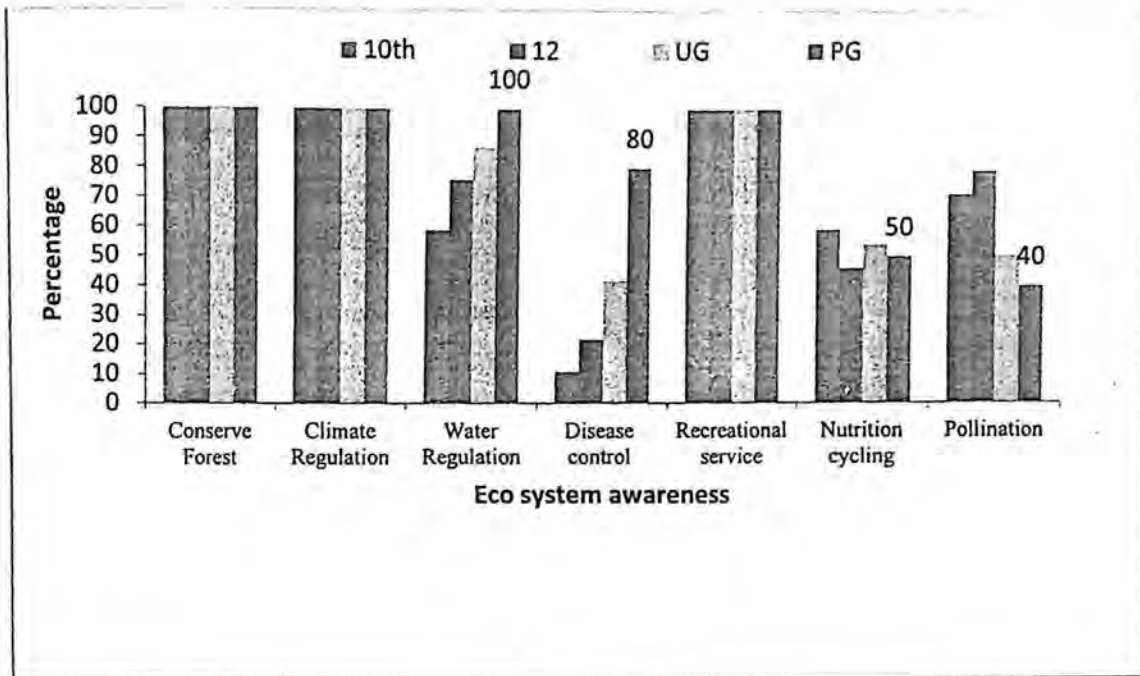


Figure 25. Awareness of respondents (%) as per their educational qualification, towards conservation of forest and eco system services

4.3.8 Attitude towards conservation of wildlife and Reason/ benefits of conservation

Interpretation: 100% respondent attitude towards wildlife conservation is excellent. 100% of individuals, irrespective of their educational qualification, consider it to be the birth right of an organism to live their life while +70% of respondents consider their aesthetic beauty to be the reason which attracts tourist and add up to yet another reason to conserve these species. They do have full knowledge regarding their source of income, which depends largely on tourism because of the rich biodiversity of the area they inhabit. Hence, it can be deduced from the information obtained that the attitude of individuals towards conservation of wildlife is not largely influenced by their educational qualification. Apparently, they all are well-aware of their responsibility towards wildlife conservation.

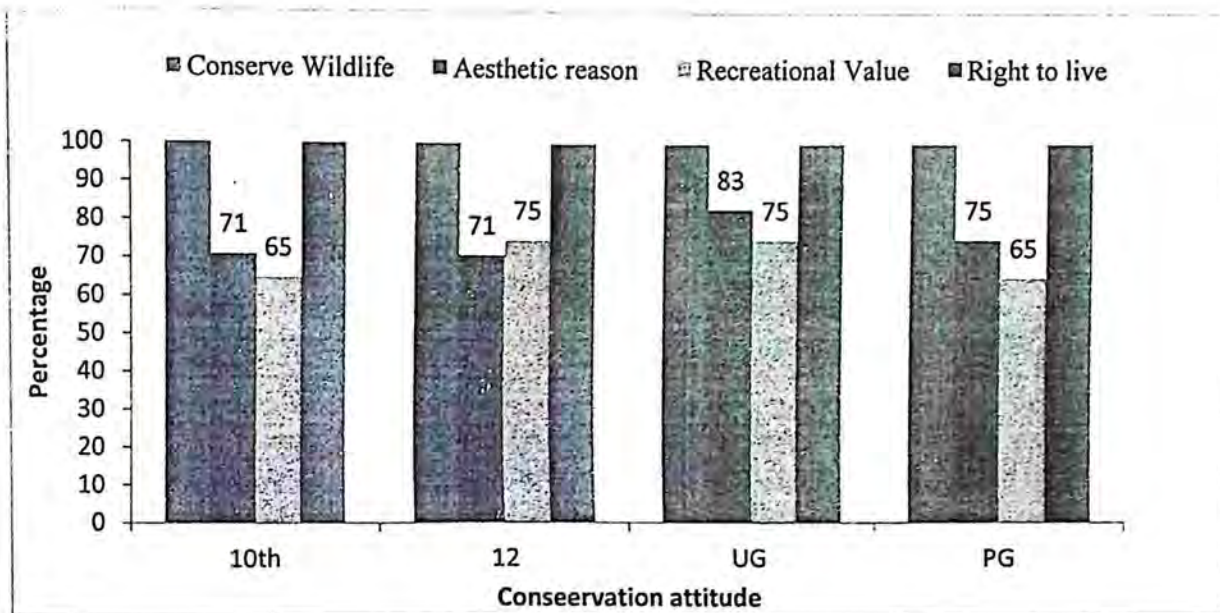


Figure 26. Percent respondents in education qualification, agreeing to conserve wildlife and Reason/ benefits of conservation

4.3.9 Attitude towards conservation of forest and eco system services awareness

From the above data, it can be inferred that the conservation attitude and awareness regarding climate regulation and recreation services are very high irrespective of age of the respondents. Whereas, the knowledge regarding ecosystem services such as disease control and nutrition cycles were found higher among the younger respondents. Awareness regarding water regulation was good in respondents regardless of their age

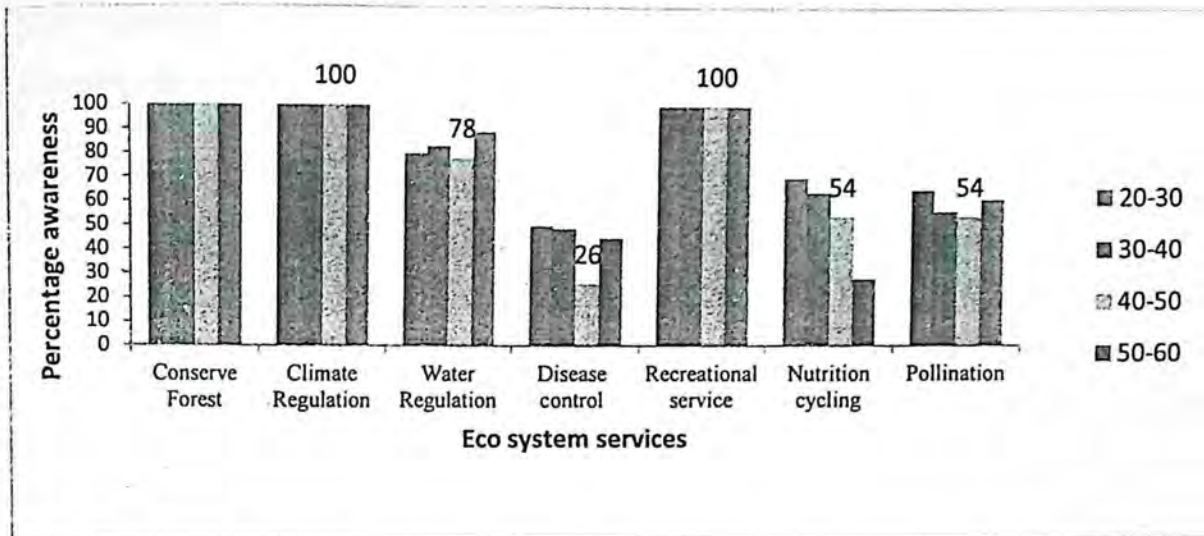


Figure 27. Awareness of percent respondents in age categories towards conservation of forest and eco system services awareness

4.3.10 Attitude towards conservation of Wildlife and Reason/ benefits of conservation

100% of respondents, irrespective of their age, consider it to be the birth right of an organism to live while more than 70% of respondents till 40 years of age consider their aesthetic beauty and recreational activities to be the reason which attracts tourist and add up to yet another reason to conserve wild species.

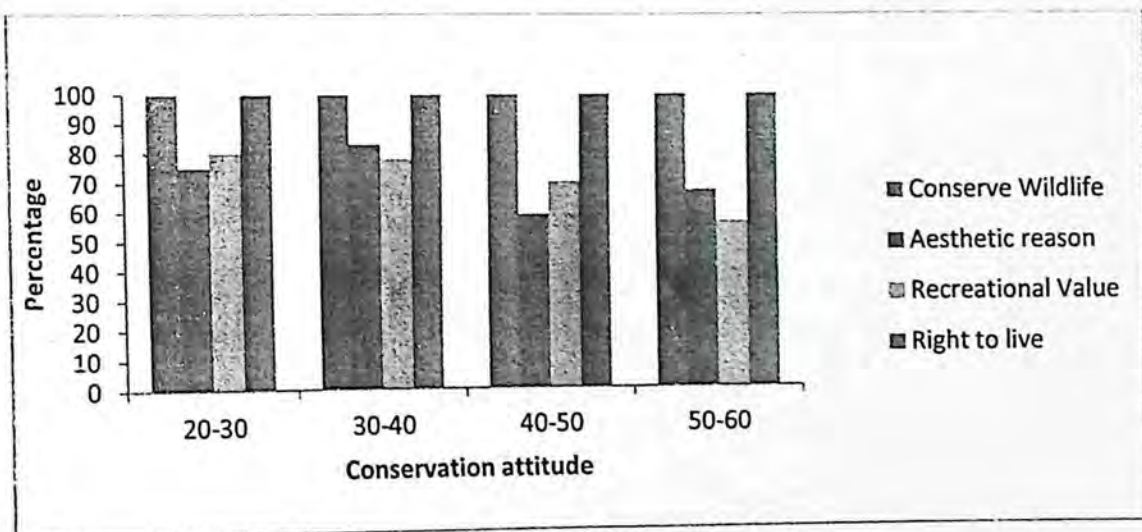


Figure 28. Attitude of percent respondents in different age categories towards conservation of wildlife and reason/ benefits of conservation

4.3.11 To analyze whether attitude towards conservation of wildlife and reason/ benefits of conservation vary among stakeholders.

Stakeholder across all the section highlights the importance of wildlife conservation. 74.3% and 72.2% (figure 10) of stakeholders from resort and Travels are of opinion that a major reason for protecting wildlife is to promote tourism while only 44.8% (figure 10) of Homestays share the same opinion. 100% (figure 10) of respondent belonging to category of Guides, farm tourism as well as EDC members highlight the importance of wildlife conservation for the promotion of tourism. Percentage of perception is very low among Kashmiri shops and massaging units it is around 50% and 54% respectively (Figure 10).

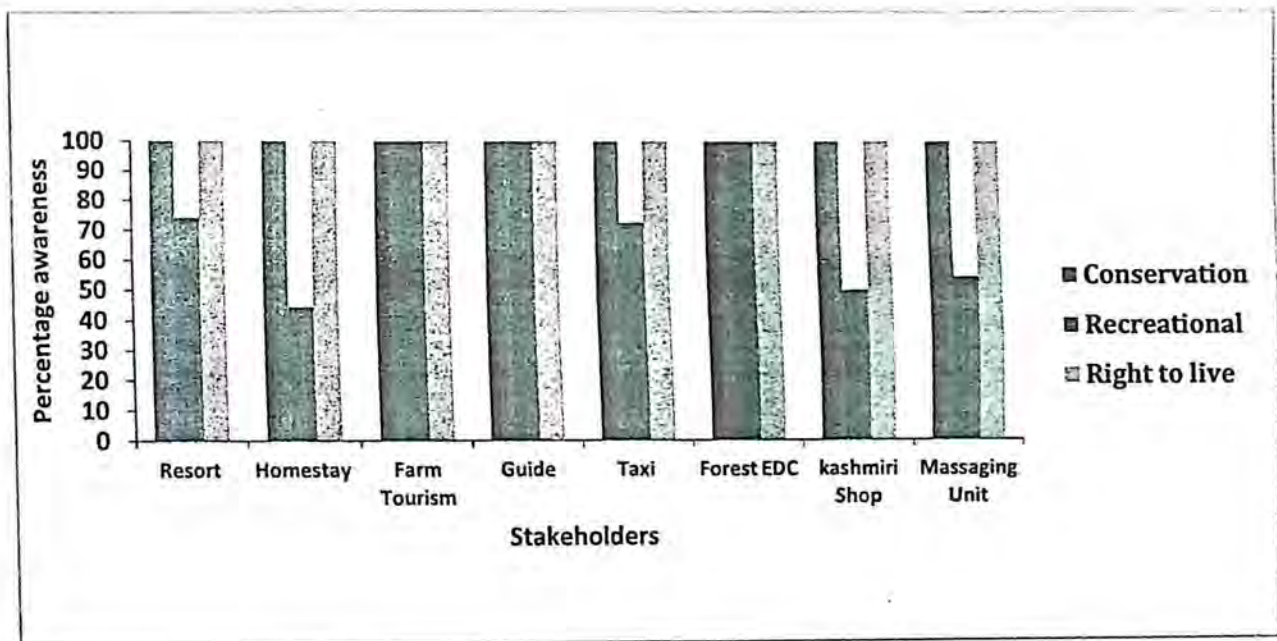


Figure 29. Percent stakeholder respondents' op ting for conservation of wildlife and reason/ benefits of conservation

4.4 DISCUSSION

The use of economic incentives is an attempt to induce effective and sustainable use of natural resources. It is highly likely that local communities, particularly those that live within close proximity to national parks, will be willing and able to use natural resources in a sustainable way only if they were to have significant tangible economic benefits accruing to them.

Successful conservation outside the protected area can be attributed to the efficient integration of protected area with other land use rather than following the policy of preservation through isolation. There is a need to accommodate monetary benefits to minimize the impact on biodiversity. For that effective policy should be implemented and it can be achieved only after assessing the surrogate value of ecosystem services. The rationale behind environmental valuation is to understand people's preferences about environmental goods and services.

Stakeholder's analysis on conservation attitude reveals that conservation principle is high among stakeholders irrespective of their whereabouts i.e. local or foreign player. Forest department plays a major role in creating such awareness through active participation and involvement of all stakeholders (eco-clubs in school). For active participation and involvement of local people participation in conservation and management activities and improve attitudes can be attributed to focused Education and awareness programmes.

Results indicated that 100% of the respondents who derive benefits from ecotourism have positive attitude towards conservation. There is positive correlation between benefits obtained by local people from wildlife tourism and their support for protected area existence. This suggests that benefit sharing of non consumptive utilization of eco system services can influence the people's attitudes towards conservation. The results indicated that conservation attitudes were not influenced by education, age of respondents, gender and whether they have worked for national park or not.

A recent boat tragedy in Periyar lake in September 30th in the year 2009 which takeaway 45 lives followed by three months complete ban on recreational boating made them realize the value of PTR and importance to protect it from adverse impact. This was even an eye opener for multinational resorts to realize the importance of better management of Protected Area.

During this time, majority of resorts, lodges and Homestays were running in loss without tourist. Other stakeholders are not an exception. The people who are totally depended on tourism were on the verge of financial breakdown. After that tragic incident, a local journalist used to visit park every day and actively cover all activities happening inside the reserve to public whether it positive or negative. Stakeholder does meet with forest department regularly to know about the updates and play an active role in policy making. Friendly cricket match and other sports between forest department and major stakeholders like resorts helps to maintain a better relation with custodian of natural resources as well as with their fellow stakeholders. A better harmony with the custodians of natural resource can influence positive attitude towards biodiversity conservation.

4.5 CONCLUSION

Support for conservation is very high among all stakeholders in PTR but this scenario or this state can't be clearly attributed to the benefits derived from the tourism. Forest department play a major role in creating awareness especially through programs like nature club in all educational institutes in nearby vicinity which plays a major role in spreading awareness and creating positive feed back for nature. Wildlife week celebration which is organized by all stakeholders along with forest department plays an important role in cementing the link. When all these are subjected along with economic gain, it acts as a solid foundation for building up such attitude. Even though there are some conflict among stakeholder group about the revenue sharing and the mode of aggressive marketing, but this got nothing to do with their perception about wildlife. Therefore the study results can not clearly confirm the hypothesis that benefits from tourism lead to increased conservation support among local communities.

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Q:1 Recreational Value of Periyar Tiger Reserve Questionnaire Sample

Interviewer: Subish S

Wildlife Institute of India

S. No:
/201

Date: /

Tourist Profile

1. Name of visitor:
2. Age:
3. State: Country:
4. Gender: Male/ Female
5. Group Composition

Male	Female	Children(>18)	Total

6. Education: None/Primary(1-10th)/Secondary(12th)/University(Ug/Pg)/Others(Specify).....
7. Occupation of Visitors:
8. Monthly Income of Visitors:
9. Monthly Household Income:

0-10,000 (Rs)	
10000-25,000	
25,000-50,000	
50,000-75,000	
75,000-1,00,000	
Above one lakh	

10. Location: Urban Dweller/ Rural area
11. Average Distance of PTR from the origin of Trip

12. How much time you spent: a) To reach this place: b) Time spent at PTR:

13. Who paid for the Trip: Self/ Family(Friends)/Company/Govt

14. Purpose of the Visit

Reason for visit	I	II	III	IV	V	VI
Religious						
Recreation						
Trekking						
Educational trip						
Official tour						
Others						

15. Cost of Travel

Mode of Travel	Travel cost in Rs
Air- Road	
Train- Road	
Air- Train- Road	
Personal Vehicle(Fuel Cost)	
Hired Vehicle	
Public Transport	
Total Cost	

16. How much do you spend on

Food and beverages	
Hiring Guides	
Stay/ Lodging	
Massage	
Boating	
Shopping(Spice/ Handicraft)	
Other Miscellaneous	

Visitors Behaviour Profile

1. Have you been to PTR before
2. Number of times you visit PTR a year ? How much you spend during last trip?

Time (Days/ hrs)	Cost (Rs)

3. Have you noticed any change in the place after your visit? Yes/ No; if yes, what-

Change	<25%	25-50%	50-75%	75-100%
Cleanliness increased/ deteriorated				
No. of trees increased/ decreased				
No. of shops increased/ decreased				
Basic facilities are better now				
No. of tourist increased/ decreased				
No. of building increased/ decreased				
Any other (specify)				

4. Activities and Level of Satisfaction

Activities	Less than 25%	25-50%	50-75%	75-100%
Boating				
Nature Walk				
Cloud Walk				
Green Walk				
Border Trekking				
Bamboo Rafting				
The Bamboo Grove				
Jungle Inn				
Bullock Cart Discoveries				
Jungle Scout				
Tiger Trail				
Farm visit				
Ayurvedic Massage				
Elephant ride				
Spice & Handicraft shopping				

5. Rate your experience in PTR.

Excellent	Very Good	Good	Average	Poor

6. How is the accommodation in PTR.

Excellent	Very Good	Good	Average	Poor

7. What type of accommodation you prefer in PTR.

Name	I	II	III	IV	V
Resort					
Lodges					
Home stay					
Tribal Hut					

8. What do you rate the recreation value of PTR.

Excellent	Very Good	Good	Average	Poor

9. Do you like to visit any other National Park instead of PTR? Yes or No

10. If so

Whether the number of visit is more than PTR	Yes	No
The amount spend is more than PTR	Yes	No
Distance of that NP is more than PTR	Yes	No
Frequency of visit is more than PTR	Yes	No

11. Would you like to have improved Recreation service is PTR? Yes or No.

12. If so, please mention

13. Do you belong to some environmental friendly organization? Yes or No

14. Do you know this place is a World Heritage Site/ Tiger Reserve?

15. What do you understand by World Heritage Site?

16. Do you think this place is rightly declared as World Heritage Site?

17. What do you think is the best way of advertisement in PTR?

Website	
Promotion Video	
Newspaper ads	
Social Networking sites	
Tour guides/ packages	
Friends/Family	

Q:2

Home Stay: Socio Economic survey

1. Name of Home stay:
2. Name of Respondent:
3. Sex:
4. Religion:
5. Where are you originally from:
6. Family composition

Adults	Children	Total

7. Family Profile

Name	Education	Occupation	Monthly income

8. How many single rooms:

Double rooms:

9. Tariff ranges b/n:

10. Average Occupancy rate/ month:

11. What is your annual turnover from tourism:

12. What do you think is the most fascinating program for tourist in PTR?

Activities	Less than 25%	25-50%	50-75%	75-100%
Boating				
Nature Walk				
Cloud Walk				
Green Walk				
Border Trekking				
Bamboo Rafting				
The Bamboo Grove				
Jungle Inn				
Bullock Cart Discoveries				
Jungle Scout				
Tiger Trail				
Elephant Ride				
Massage				
Farm Visit				

13. Other offered packages:

Packages	Tariff(Rs)
Massage	
Elephant ride	
Trekking	
Farm visit	
Others if any	

14. Mode of advertisement:

Website	
Promotion Video	
Newspaper ads	
Social Networking sites	
Tour guides/ Travel agents	
Tie up with other home stay/ Resort	
Family/ Friends	

15. Agent/ guide commission in percentage:

16. Whether they are offering food to guest?

17. What type of cooking fuel do you use ?

- a) Biogas b) Firewood c) LPG d) Induction stove

18. Whether they organize camp fire? if so how frequent?

19. What was their previous occupation?

20. Number Vehicle owned(Four wheeler):

21. Property owned/land owned:

22. Three Major challenges they face

- a)
- b)
- c)

23. Are you aware of ecosystem services:

Climate Regulation	Recreation/Aesthetic service
Water and air purification	Nutrient cycling/ enhancing agri prod
Disease Regulation	Pollination/ pest regulation

24. Do you think, it is necessary to conserve forest? yes or no

25. . If so, why you want to conserve

- a) It attracts tourist
- b) Protect Plants and animals
- c) It support livelihood
- d) Provide resources
- e) For aesthetic value

26. If Not, why

27. How the condition of forest can be improved?

28. What do you is the most attracting animal for tourist in PTR?

Subject	Less than 25%	25-50%	50-75%	75-100%
Elephants				
Tiger				
Indian Gaur				
Birds				
Others				

29. Is it important to conserve the wild animals? Y/N

Yes	No
Aesthetic beauty	Kill people
Recreational value	Kill livestock
Right to live	Damage crop
	No benefit for society

30. If tourism is banned in PTR, what will you do?

Ans:

Q:3

Resort

1. Name of the resort:
2. How many rooms :- Double room: Single room:
.....
3. Tariff ranges b/n :- Double room: Rs..... Single room: Rs
4. Average occupancy rates: Double room: Single room:
.....
5. Average annual turnover from tourism:
6. Other offered programs:

Program or Packages	Charge Rs

7. Mode of advertisement:

Website	
Promotion Video	
Newspaper ads	
Social Networking sites	
Tour guides/ packages	
Other chains of resorts	

8. Total number of staffs:
9. Number of staffs from local communities:
10. *Their designation or salary package to know where they stand in the firm?*
11. Whether resorts involved in community development programs: Yes or No
12. If so what all activities?

a)

b)

c)

13. Agent/ guide commission in percentage:

14. How many vehicles they own?..... .

15. Who are the service providers:

Vegetables	
Milk	
Stationary	
Others, if any	

16. Three Major challenges they face:

d)

e)

f)

17. Do you think, it is necessary to conserve forest? yes or no

18. If so, why you want to conserve

- f) It attracts tourist
- g) Protect Plants and animals
- h) It support livelihood
- i) Provide resources
- j) For aesthetic value

19. If Not, why

20. Are you aware of ecosystem services:

Climate Regulation	Recreation/Aesthetic service
Water and air purification	Nutrient cycling/ enhancing agri prod
Disease Regulation	Pollination/ pest regulation

21. How the condition of forest can be improved?

22. What do you is the most attracting animal for tourist in PTR?

Subject	Less than 25%	25-50%	50-75%	75-100%
Elephants				
Tiger				
Indian Gaur				
Birds				
Others				

23. Is it important to conserve the wild animals? Y/N

Yes	No
Aesthetic beauty	Kill people
Recreational value	Kill livestock
Right to live	Damage crop
	No benefit for society

24. If tourism is banned in PTR, what will you do?

Ans:

Q:4

MESSAGE PARLORS

1. Name of the parlour :
2. Number of employees :
3. Number of employees from local communities:
4. Tariff ranges b/n :
5. Other offered packages :
6. What is your average monthly income:
7. Mode of advertisement: Agents/tie up with other home stays/internet
8. Agent/ guide commission in percentage for bringing tourist:
9. Other sources of income :
10. Whether they depend on alternative livelihood? if so.....?
11. What was their previous occupation?
12. Three Major challenges they face:
13. Do you think, it is necessary to conserve forest? yes or no

14. If so, why you want to conserve

- k) It attracts tourist
- l) Protect Plants and animals
- m) It support livelihood
- n) Provide resources
- o) For aesthetic value

15. If Not, why

16. Are you aware of ecosystem services:

Climate Regulation	Recreation/Aesthetic service
Water and air purification	Nutrient cycling/ enhancing agri prod
Disease Regulation	Pollination/ pest regulation

17. How the condition of forest can be improved?

18. What do you is the most attracting animal for tourist in PTR?

Subject	Less than 25%	25-50%	50-75%	75-100%
Elephants				
Tiger				
Indian Gaur				
Birds				
Others				

19. Is it important to conserve the wild animals? Y/N

Yes	No
Aesthetic beauty	Kill people
Recreational value	Kill livestock
Right to live	Damage crop
	No benefit for society

20. If tourism is banned in PTR, what will you do?

Ans:

Q: 5

Forest staff/EDC

1. Name of the interviewee :
2. Age :
3. Languages Known :
4. Qualification/Education :
5. Family size :
6. Nativity :
7. Monthly income :
8. Eco tourism packages available

Activities	Tariff(Rs)	No of Tourist (2002)	No of Tourist (2012)
Boating			
<u>Nature Walk</u>			
<u>Cloud Walk</u>			
<u>Green Walk</u>			
<u>Border Trekking</u>			
<u>Bamboo Rafting</u>			
<u>The Bamboo Grove</u>			
<u>Jungle Inn</u>			
<u>Bullock Cart Discoveries</u>			
<u>Jungle Scout</u>			
<u>Tiger Trail</u>			

9. Number of local people involved in each programs
10. Number of crime reports reported in each beats and the type of crime?
11. Three Major challenges they face
 - g)
 - h)
 - i)

12. Are you aware of ecosystem services:

Climate Regulation	Recreation/Aesthetic service
Water and air purification	Nutrient cycling/ enhancing agri prod
Disease Regulation	Pollination/ pest regulation

13. Do you think, it is necessary to conserve forest? yes or no

14. If so, why you want to conserve

- p) It attracts tourist
- q) Protect Plants and animals
- r) It support livelihood
- s) Provide resources
- t) For aesthetic value

15. If Not, why

16. How the condition of forest can be improved?

17. What do you is the most attracting animal for tourist in PTR?

Subject	Less than 25%	25-50%	50-75%	75-100%
Elephants				
Tiger				
Indian Gaur				
Birds				
Others				

18. Is it important to conserve the wild animals? Y/N

Yes	No
Aesthetic beauty	Kill people
Recreational value	Kill livestock
Right to live	Damage crop
	No benefit for society

19. Three Major challenges faced by department?

20. If tourism is banned in PTR, what will you do?

Ans:

Q6: KASHMIRI HANDICRAFT SHOPS/SPICE SHOPS

1. Name of Interviewee :
2. Name of Shop :
3. Educational Qualification :
4. Number of employees :
5. Monthly turnover :
6. How long you have been here in PTR :
7. Do you have any alternate livelihood :
8. From where you get the raw materials :
9. How much you spend for raw materials :
10. How much(rent) you pay for the shop :
11. Do you think, it is necessary to conserve forest? yes or no
12. If so, why you want to conserve
 - u) It attracts tourist
 - v) Protect Plants and animals
 - w) It support livelihood
 - x) Provide resources
 - y) For aesthetic value

12. If Not, why

13. Are you aware of ecosystem services:

Climate Regulation	Recreation/Aesthetic service
Water and air purification	Nutrient cycling/ enhancing agri prod
Disease Regulation	Pollination/ pest regulation

14. How the condition of forest can be improved?

15. What do you is the most attracting animal for tourist in PTR?

Subject	Less than 25%	25-50%	50-75%	75-100%
Elephants				
Tiger				
Indian Gaur				
Birds				
Others				

16. Is it important to conserve the wild animals? Y/N

Yes	No
Aesthetic beauty	Kill people
Recreational value	Kill livestock
Right to live	Damage crop
	No benefit for society

17. If tourism is banned in PTR, what will you do?

Ans:

Q:7

GUIDES

13. Name of the Guide :
14. Name of Firm(If employee) :
15. Age :
16. Languages Known :
17. Qualification/Education :
18. Family size :
19. Nativity :
20. Tariff ranges b/n : Rs...../Day(Trip)/ (per head)
21. What is your annual turnover from tourism:
 What percentage of total income:

22. Other offered packages :

Packages	Fee/ Commission (Percentage)
Resorts	
Home stay	
Farm visit	
Trekking(Bird watching etc)	
Massage	
Spice & Handicraft shop	
Elephant Ride	
Others if any	

23. Mode of advertisement: Agents/ tie up with other home stays/ internet(social networking sites)

24. What do you think is the most fascinating program for tourist in PTR?

Activities	Less than25%	25-50%	50-75%	75-100%
Boating				
Nature Walk				
Cloud Walk				
Green Walk				
Border Trekking				
Bamboo Rafting				
The Bamboo Grove				
Jungle Inn				
Bullock Cart Discoveries				
Jungle Scout				
Tiger Trail				
Elephant Ride				
Massage				
Farm Visit				

25. Whether you depend on alternative livelihood? Yes or No

26. If so.....?

27. What was the previous occupation?

28. Awareness of Guide

a) PTR is a part of World Heritage Site? Yes or No?

b)

c)

29. Three Major challenges you face:

a)

b)

c)

18. Your suggestion to improve the conditions?

19. Do you think, it is necessary to conserve forest? yes or no

20. If so, why you want to conserve

- a) It attracts tourist
- b) Protect Plants and animals
- c) It support livelihood
- d) Provide resources
- e) For aesthetic value

21. If Not, why

22. Are you aware of ecosystem services:

Climate Regulation	Recreation/Aesthetic service
Water and air purification	Nutrient cycling/ enhancing agri prod
Disease Regulation	Pollination/ pest regulation

23. How the condition of forest can be improved?

24. What do you is the most attracting animal for tourist in PTR?

Subject	Less than 25%	25-50%	50-75%	75-100%
Elephants				
Tiger				
Indian Gaur				
Birds				
Others				

24. Is it important to conserve the wild animals? Y/N

Yes	No
Aesthetic beauty	Kill people
Recreational value	Kill livestock
Right to live	Damage crop
	No benefit for society

25. If tourism is banned in PTR, what will you do?

Ans: