

A STUDY ON THE CONSERVATION PROGRAMS RANTHAMBORE NATIONAL PARK

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Abstract

Our "Future Earth" is dependent on their continuing to be thriving ecosystems and a global environment that is green. Nevertheless, in our day and age, the destruction of natural resources and the loss of biodiversity are both speeding up at a rate that is extremely concerning over the whole world. According to the theory of biodiversity, each and every living creature makes a contribution toward preserving the balance that exists in nature. It is situated in a zone of transition between a semi-arid desert and the peninsular area of India, which is characterised by sporadic periods of heavy precipitation. As a consequence of this research, an estimation of the economic worth of tiger tourism in RTR has been developed. The research also looks into the ways in which the economics of tigers are affecting the environment, in addition to the economy of the places that are nearby. It makes a major contribution to the ecosystem's overall economic well-being, which is important for maintaining forest health. In-situ conservation of RTR is an important approach that needs to be implemented in order to protect biodiversity and should be given priority. For this reason, mankind ought to protect, conserve, restore, and develop all ecological resources around the globe in a manner that is responsible to the environment so that it can be utilised by subsequent generations. The Ranthambore Tiger Reserve may be found in Rajasthan's Karauli and Sawai Madhopur districts. It is situated in the eastern part of the state, at the point where the Aravali and Vindhya mountain ranges meet. The Ranthambore National Park, the Sawai Mansingh Sanctuaries, and the Keladevi Sanctuaries are all a part of it, and each of these sanctuaries holds a special and significant position in the annals of conservation history.

keywords: *conservation, Ranthambore National park*

Introduction

Our economy in the twenty-first century is controlled by the availability of environmental resources and the ease with which they may be used. However, due to the enormous amount of pressure exerted by anthropogenic activity, the rate at which natural resources are being extracted from the earth has accelerated dramatically in recent years. Because of this, Land Use and Land Cover (also known as LULC) is constantly shifting, which has the most detrimental effect on the qualities of the ecosystem. Because of this, phenomena such as climate change, environmental degradation, overpopulation, genetic engineering, pollution, and depletion of resources are brought about as a direct result of these effects. These are causing changes in flora, biodiversity, air, water, soil, and land productivity (Xiubin 1996), all of which are highly detrimental to human beings and the future of the world. The current decrease in biodiversity may be traced back over the course of the past forty years, and the majority of the blame can be placed on habitat fragmentation and land conversion (Butchart et al. 2010; Krauss et al. 2010; Zapfack et al. 2002). The Intergovernmental Panel on Climatic Change (IPCC) calculated that 1.86 billion tonnes of carbon are emitted annually due to LULC

as a result of tropical deforestation. This phenomenon is a significant contribution to both global warming and the climate change that results from it. Therefore, the most effective method to make use of natural resources is a technique known as sustainable development. For instance, ecotourism offers a one-of-a-kind opportunity to bring in sources of money while causing no harm to the actual sites being visited. It is a well-established fact that each nation possesses a distinct collection of natural resources, which confers a variety of benefits, including the amelioration of poverty, the increase in carbon storage and sequestration, the protection of watersheds, the regulation of natural hazards, the maintenance of food security and agricultural services, the enhancement of medical services, and the promotion of ecotourism. The "Tiger Economy" and other forms of environmentally responsible tourism take up the bulk of the discussion in this article. The tiger is revered as a significant cultural symbol in addition to being a well-known and important member of the animal kingdom. It holds the distinction of being one of the largest carnivores in Asia, the most powerful predator in the area, and the eminent position in the food chain known as the apex predator. The Royal Bengal Tiger inhabits the eastern regions of the South Asian countries of India, Bangladesh, Nepal, and Bhutan. It is also present in Bhutan. However, things are not going swimmingly with the large cats. The tiger is one of the great animals that is most endangered overall and also within its own species. The "Royal Bengal Tiger" is only found in a few isolated spots in South Asia. These pockets are exceptionally limited. India is home to more than seventy percent of the world's tiger population and possesses the greatest potential for preserving the natural population of this wonderful animal. Since 1973, the government has been actively working to protect its national animal through an innovative programme known as Project Tiger, which has resulted in the establishment of 47 tiger reserves. It encompasses more than 2% of the country's overall geographical area, almost 10% of the total area of documented forest cover, and more than 40% of the total protected land in the country. Sawai Madhopur District in Rajasthan is home to the Ranthambhore Tiger Reserve (RTR), which has the potential to make a healthy contribution to the region's economy. According to NTCA Report (2015), important ecosystem services originating from RTR include genepool protection (₹ 7.11 billion per year), provisioning of water to the neighboring regions (₹115 million per year), provisioning of habitat and refuge for wildlife (₹182182 million per year), generation of cycling of nutrients (₹ 34 million per year), and sequestration of carbon (₹ 69 million per year). Additionally, the Ganesh Temple is visited by close to 10 lakh pilgrims every year.

Ranthambore Tiger Reserve

The Ranthambore Tiger Reserve is located in the Karauli and Sawai Madhopur districts of Rajasthan state, in the eastern portion of the state, near the intersection of the Aravali and Vindhya hill ranges. Ranthambore National Park, Sawai Mansingh Sanctuaries, and Keladevi Sanctuaries are all a part of it, and each has a unique and important place in the history of conservation. In terms of geography, there is a connection between the two sanctuaries and the core of the reserve, which is the National Park. This secluded region in the country, which is home to tigers despite its remote location, marks the northernmost edge of the distribution range of the Bengal tiger and serves as an excellent example of the conservation work that Project Tiger does across the nation.

Flora and fauna:

Grasslands may be found on the plateaus, while thick trees can be found along the streams that only flow seasonally. The majority of the forest is classified as tropical dry deciduous, and the most prevalent tree species is the dhak, which is scientifically known as *Butea monosperma* and is able to resist extended periods

of dryness. This tree, which is one of the numerous blooming plants that lend colour to the otherwise dull summers in this region, is also known as the "Flame of the Forest." The three major lakes of Padam Talav, Mallik Talav, and Raj Bagh are surrounded by a dense forest of banyan trees. The landscape here is quite gorgeous because to its undulating topography and the presence of abandoned palaces that serve as the backdrop. The park is home to a diverse array of animals, with tigers being at the top of the food chain among mammals. Leopards make up a large portion of the park's resident population as well. Other creatures that may be found in this area include striped hyenas, common or Hanuman langurs, rhesus macaques, jackals, jungle cats, caracals, blackbuck, Blacknaped hares, and chinkaras, to mention just a few. The chital, the sambar, the nilgai, and the wild boar make up the basis of the food chain. There are also sloth bears in this area. There have been around 272 species of birds identified in this park up to this point.

History and current status:

The Maharajas of Jaipur used to have their own private hunting grounds in the forests that are located around the Ranthambore fort. Prior to the implementation of Project Tiger, the majority of the conservation efforts in these forests were driven by people's aspirations to keep the game there so that it could be enjoyed as a sport. This, along with eight other sanctuaries and national parks, was designated as a tiger reserve in 1973 when it was brought under the purview of the national project and given that designation. Ranthambhore National Park was established in 1980 and covers a total area of 274,500 square kilometres of the surrounding forest. In 1992, the Tiger Reserve was expanded to incorporate additional forests as well as the neighbouring sanctuaries of Keladevi to the north and Sawai Mansingh to the south. The current extent of its territory is 1,334.0 square kilometres. It is said that the Ranthambhore fort, from which the forests take their name, has a long and illustrious history dating back more than a thousand years. It is believed that a Chauhan ruler constructed it in 944 A.D. and that it enjoys a strategic location atop a hill that is approximately 210 metres tall within the park.

Conservation issues of Ranthambhore National Park

The majority of the people living in the areas around the Ranthambhore Tiger Reserve are subsistence farmers, pastoralists, and labourers who are dependent on the natural resources provided by the reserve. The population of the villages that are next to the tiger reserve is subject to several undesirable effects, such as the possibility of being attacked by wild animals or having their livestock killed. The widespread perception among the populace is that the very presence of the reserve is one of the primary factors preventing the expansion of the area's infrastructure and economy. The Zone of Influence (ZI) of the reserve is "tentatively" designated as a region within a 10 kilometre radius of the legal limits of the reserve. This identification is based on the elements that were discussed before.

There are four villages located within Ranthambore National Park, fifteen villages located within the Kela Devi sanctuary, four villages located within the Sawai Mansingh sanctuary, and three villages located within the Sawai Madhopur sanctuary. These communities are located inside the limits of the reserve and are a part of both the Core zone and the Buffer zone.

The ZI that is outside of the reserve may be subdivided even further into two halves. The initial section, which extends up to two kilometres from the reserve's edge and is the most significant in every respect, may be found. This region is extremely reliant on the surrounding forest, and it also feels the full force of the reserve's influence the most. This region is home to 112 different settlements. This region has been given

the designation of "eco-development zone." The people who live in this area view the reserve as a resource that belongs to them, and they become hostile when they are prevented from using it.

As we go further away from the reserve's borders, the degree to which its inhabitants are dependent on the reserve begins to lessen; yet, this reliance is still present throughout the reserve's winter months. People who live in places that are more than two kilometres away from the limits of the reserve do not experience the negative effects of the reserve to the same degree, and as a consequence, their hostility against the reserve is significantly reduced.

Because of the presence of a protected area nearby, the lives of the local people are negatively impacted in a number of different ways, which results in the reserve having an adverse effect on the local population. The primary concerns centre on the widespread perception, held by many locals, that the establishment of the reserve has halted development. This perception stems from the fact that some developments, such as the building of roads, dams, and electrical lines, are prohibited within the reserve. It is strictly forbidden for any significant business to set up shop in this region. The theft of livestock by carnivores and the destruction of crops by wild ungulates have both contributed to monetary losses. As a result of the limitation on admission into the reserve for grazing and for other requirements, they have seen a loss in profits from the natural resources, which has had an impact on their way of life. Park employees do not let local residents to attend their religious places of worship when they are on the premises of the reserve.

Study Area

The "Ranthambhore Fort," a significant historical landmark that is now recognised by UNESCO as a world heritage site, provided the inspiration for the naming of the Ranthambhore Tiger Reserve (RTR) (Hill Forts of Rajasthan). The magnificent Ranthambhore Fort can be found perched atop a hill in the middle of the Ranthambhore National Park, adding to the area's outstanding natural charm. The Ranthambhore Tiger Reserve may be found between the coordinates 24°41 North and 26°22 East, and between the longitudes 76°16 East and 77°14 East. The reserve may be found in the Sawai Madhopur and Karauli districts of Rajasthan, which are located in the state's extreme southeast corner. The reserve is split in half by the river Banas, with the Ranthambhore National Park located in the southeastern portion and the Kaila Devi Sanctuary located in the northwestern portion. The Ranthambhore Tiger Reserves encompass a total area of 1,394.5 square kilometres and include Ranthambhore National Park, the Kaila Devi Wildlife Sanctuary, the Sawai Man Singh Wildlife Sanctuary, and several other protected areas. This is the primary habitat for the region's tiger and wildlife herbivore population. The park may be found on the western side of the Chambal River, which is quite a large river. The vegetation of Ranthambhore is classified as a Tropical Dry Deciduous Forest, and it features both dry-deciduous "dhok" (*Anogeissus pendula*, Edgew) woodland as well as tropical dry deciduous forest. It is a one-of-a-kind illustration of the natural and historical wealth that can be found in the semi-arid region and deforested tract that make up the Karauli District in the eastern part of Rajasthan. (Fig. 1.1).

Research Methodology

The current study was constructed using primary and secondary database sources, and it relies on both qualitative and quantitative research approaches to arrive at its findings. Data has been gathered from a wide range of sources, including the Ranthambhore Tiger Reserve Authority, the National Tiger Conservation Authority (NTCA), the Ministry of Environment and Forests (MOEF), Van Vibhag, the Government of

Rajasthan, and a number of other NGOs. The two most important databases that were obtained from the authority for the purpose of this investigation were those pertaining to the total number of visitors and the total income over the course of the previous 16 fiscal years. Additionally, a process for evaluating ecosystems was developed from the analytical models, which were referred to as "GIS-based spatial simulation models." These simulation models have a greater capacity to comprehend the characteristics of the regional ecosystem, which contributes to an increase in the overall valuation. A mapping of ecosystem services like this can provide very useful controlling recommendations for tiger reserve management, which can help maximise the benefits that can be derived from the tiger reserve.

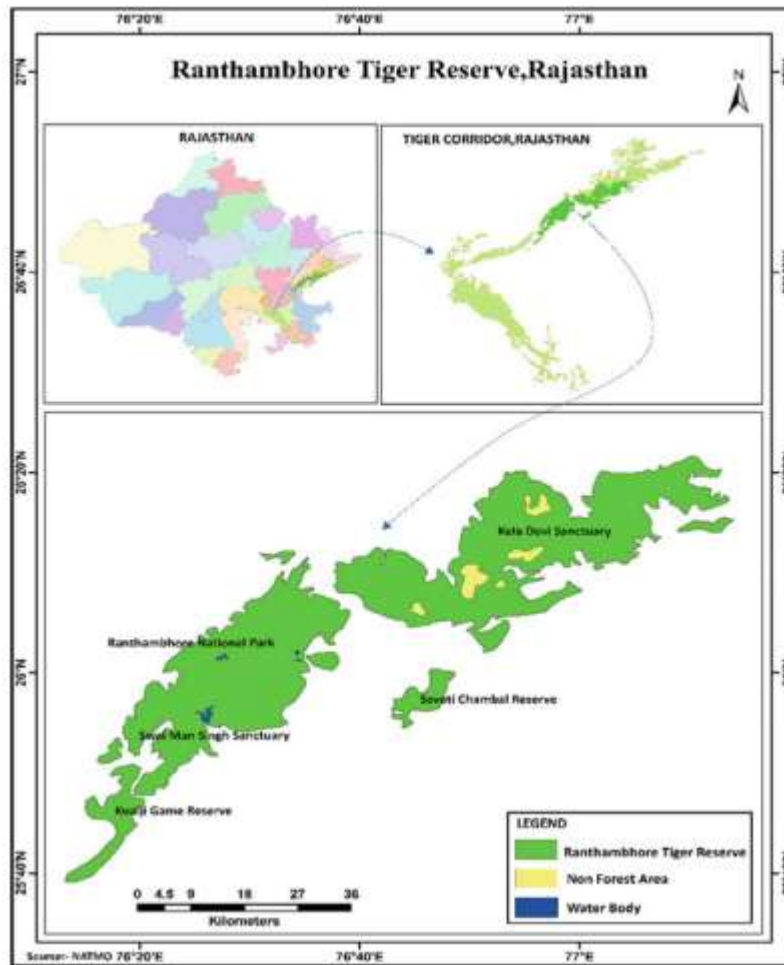


Fig. 1.1 Location map of Ranthambhore tiger reserve, India

Because it is generally accepted that there is a direct connection between the number of tourists who arrive and the amount of money brought in, the author has constructed a relationship between the number of visitors and the amount of revenue using the ArcGIS-10 software and Microsoft Excel. (Fig. 1.2).

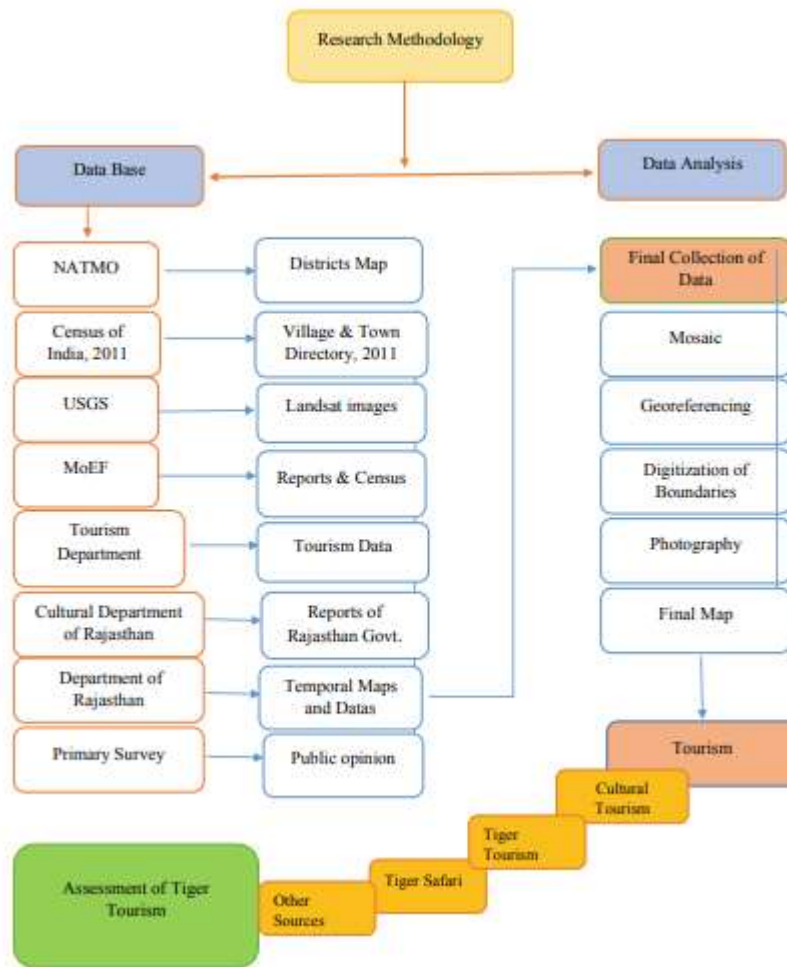


Fig. 1.2 Research methodology

Result and Discussion

Culture services in an ecosystem sometimes include ecotourism as an activity. Tourism related to tigers is growing at a particularly high rate in RTR as a result of the region's reputation as one of the greatest sites in the world to view tigers. RTR is home to over 65 tigers at the moment, and one of them, known as the "Machali Tigress," achieved a great deal of notoriety before passing away lately. Another tiger, known as "T-24 STAD," also rose to fame after being responsible for the death of a forest ranger whom it had assaulted and murdered. Because of this, the authority sent him to the Biological Park in Udaipur, which is located in Rajasthan. Ranthambhore Fort was just recently recognised by UNESCO as a world heritage site. This fort, along with the several large and minor temples located inside Ranthambhore Tiger Reserve, is a primary destination for visitors and pilgrims. The Ganesh Temple within the Ranthambhore Fort, the Keladevi Mata Temple, the Soleshwar Mahadev Temple, the Amareshwer Mahadev Temple, the Khatola Mahadev Temple, and the Kamaldhar Mahadev Temple are the most important temples in Ranthambhore Tiger Reserve. It is believed that between 7 and 8 lakh devotees pay the Ganesh Temple a visit each and every year (NTCA Report 2015). The Ranthambhore Tiger Reserve in India is widely regarded as one of the finest examples of a natural tiger habitat anywhere in the world. As a result of this, it attracts a significant number of visitors from all over the world, which is a significant source of money for the economy of the state. In addition to that, this supply is referred to as a "green economy," which is a dynamic example of sustainable development

that is comprised of both economic and environmental resources. It is simple to comprehend the magnitude of the contribution that tiger habitat makes for the maintenance and expansion of RTR's ecosystem services. Provisioning services consisting of food, freshwater, wood-timber, and fuel are among of the ecosystem services that RTR provides. There are also a number of other services. As a result of the state of the forest ecosystem being similar to that of a dry deciduous forest and the terrain being similar to that of a semi-arid environment, which is more suited for the production of food and wood for local stakeholders as well as Forest habitat is essential to the maintenance of regulating functions like as temperature control, the maintenance of food regulation, and the purifying of water. Last but not least, the most notable services are a Cultural service such as aesthetic, spiritual, educational, and recreational activities such as a Tiger safari, which is the most well-known and sustainable practises of RTR ecological services. The finest illustration of how to develop natural resources in a sustainable manner may be found in the flowchart shown in Figure 1.3, which demonstrates how ecosystem services are providing benefits to all relevant stakeholders. It has become a source of livelihood resource for both the local as well as the outside stakeholders, to satisfy the fundamental requirements of natural resources from the tiger economy, as a result of the large number of visitors who visit the tiger reserve as well as the world heritage fort. The number of tourists visiting the area has been steadily rising over the past fifteen years, as shown by Figure 1.4. In the years 2000–2001, relatively few visitors visited the country for a variety of reasons, including economic, social, and environmental factors, in addition to the limited availability of connectivities from other parts of the world. Since then, the Indian government has placed a greater emphasis on the protection of the country's diverse ecosystems, which has resulted in an increase in the number of tigers found in India. India is home to over 70 percent of the world's total tiger population, and this percentage is continuously growing. While the total number of students, which includes scholars and researchers, has more or less kept the same, the total number of international visitors has climbed from the academic year 2000–01 to the academic year 2010–11 but has remained relatively same since then. The worldwide slowdown in the number of trips taken by international tourists is to blame for this phenomenon. On the other hand, the number of people travelling within their own country has been on the rise, going from fewer than 50,000 in the year 2000–01 to approximately 3,000,000 in the year 2015–16, which is an increase of more than six times the previous number. The fact that this pattern of growth in the tiger economy is continuing is a very encouraging indicator for the administration of the tiger economy. The entire money obtained from tiger tourism is depicted in Figure 15.5. This sum was comprised of three separate components: an admission fee, eco-development levies, and additional costs.

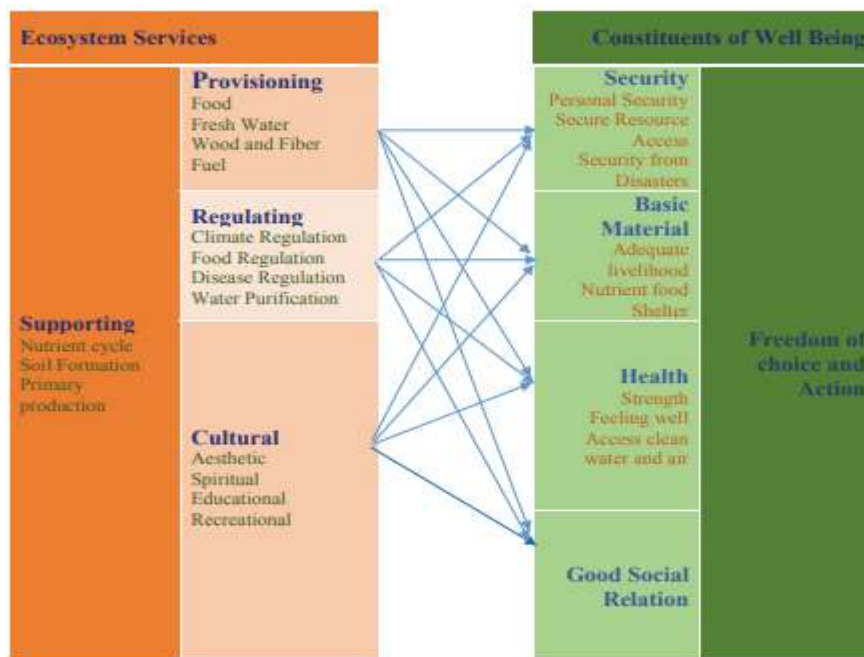


Fig. 1.3 Relationship between the services provided by ecosystems and human well-being in RTR. Source: (MEA, 2005)

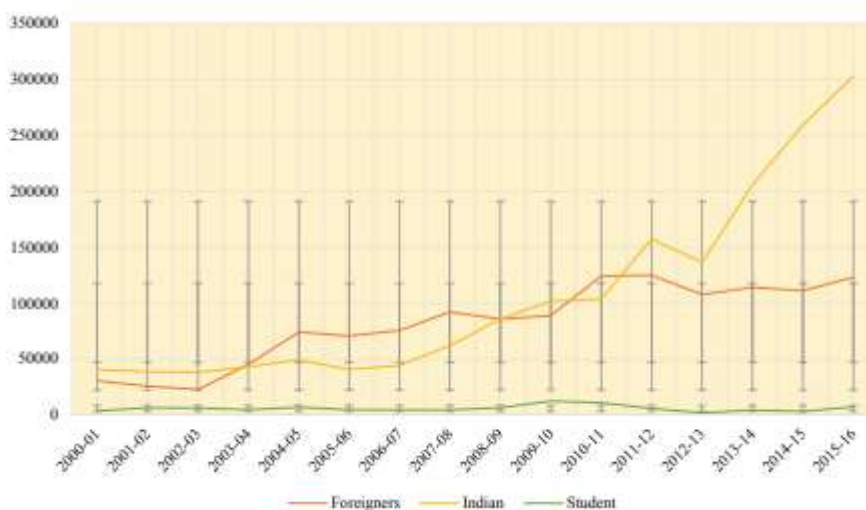


Fig. 1.4 Tourist arrivals in Ranthambhore tiger reserve, 2001–2016

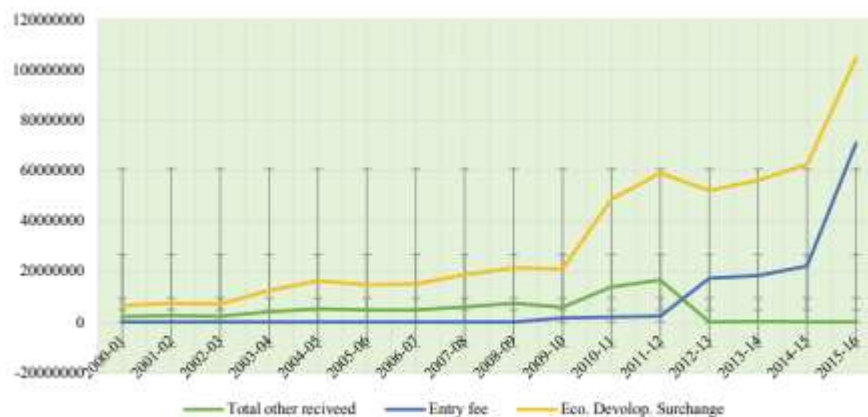


Fig. 1.5 Revenue from tiger tourism of Ranthambhore tiger reserve, 2001–2106

According to the graph, the amount collected as eco-development surcharges has consistently remained the largest component and has witnessed an acceleration in its growth since 2010–11, due to an overall increase in the number of tourists. This growth has been caused by an overall increase in the number of visitors. After just being implemented in the 2009–10 fiscal year, the admission charge initially lagged behind but then skyrocketed in the 2015–16 fiscal year, also due to an overall rise in the number of tourists. This translates into the fact that tiger tourist activities are expanding day by day due to better management of tiger reserve as well as thriving cultural places. This is a result of both of these factors. However, human activities and infrastructure are encroaching across tiger corridors, which threatens to isolate the species' essential population. The fast rise of tourism, both in terms of the number of tourists and the infrastructure required to support them, is not only unsustainable but also irreversible. It is possible, and probably fair, to draw the conclusion that tiger tourism, in its present form, poses a significant risk to the RTR environment. A wheel diagram is shown in (Fig. 1.6), which compares the number of tourists who visited and the amount of income that was earned each year as a percentage of the total over the preceding sixteen years (2000–16). For instance, during the fiscal year 2000–01, there were 2% of all visitors, but only 1% of total income was created. In contrast, during the fiscal year 2015–16, there were 14% of all tourists, but 24% of total revenue was made. Over the course of the years, the percentage of income earned has been more than the number of tourists who have visited. This is a promising indicator for the improved preservation of biodiversity, which bodes well for the growth of ecotourism. However, the majority of tourists come to go on tiger safaris since Ranthambhore Tiger Reserve is famous all over the world for being a home for tigers. Furthermore, the BBC states that the reserve is the ideal location to view tigers in their natural environment. RTR is positioned on a hill in the Vindhyan system and serves as an important node in the tiger movement because to its location at the intersection of several important routes. The adjacent town of Sawai Madhopur is famous all over the globe for being a tiger destination, and the most significant contributor to the district's economy is the tourist business associated with animals. Apart from the tourism business in Sawai Madhopur town, many individuals from local villages are participating in ecotourism activities in RTR regions. The present capacity of the town's lodging houses for tourists is roughly 3,000 beds. In addition to that, more than a hundred individuals from.

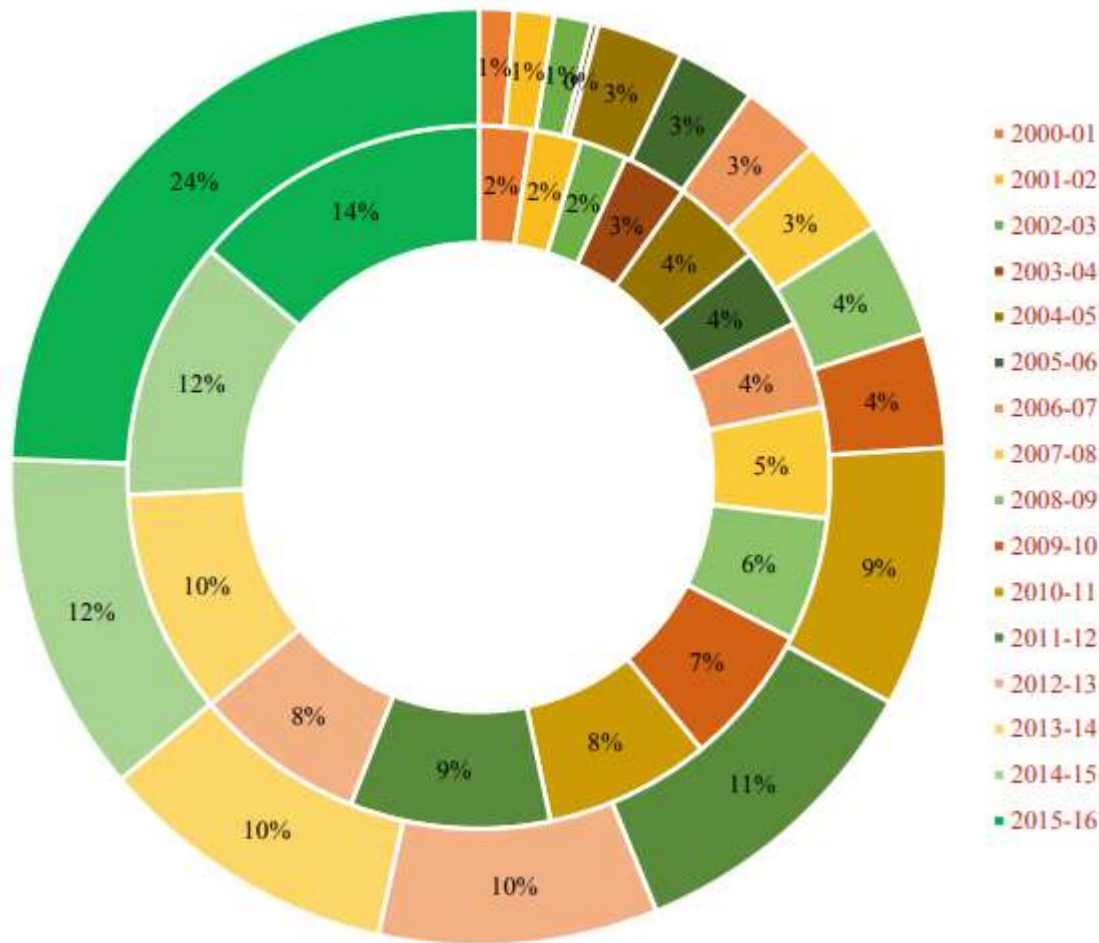


Fig. 1.6 Comparison of tourists and revenue strengths of RTR, 2001–2016 total tourists arrivals (inner circle) total revenue of in RTR (outer circle)

People from the community have been chosen and given training to become Nature Guides so that they can make a living off of tourism in RTR resources. Figure 1.7 demonstrates the many different types of taxes that are contributed to the economy of the state by tiger tourism, which is beneficial for both the state government and the people who live there. The socioeconomic standard of the native people is improving as a result of these benefits. As a result of India's transition to a new tax system known as "One Nation One Tax," all of these taxes will be consolidated into a single framework known as the Goods and Services Tax beginning on July 1, 2017. Next (Fig. 1.8), some of the glimpses below show tourism-related activities related to tigers in RTR, Among all of these activities, tiger tourism is the most prominent cultural service in terms of direct benefits; however, other services such as natural resources, agriculture, husbandry, and other activities are thriving as well.

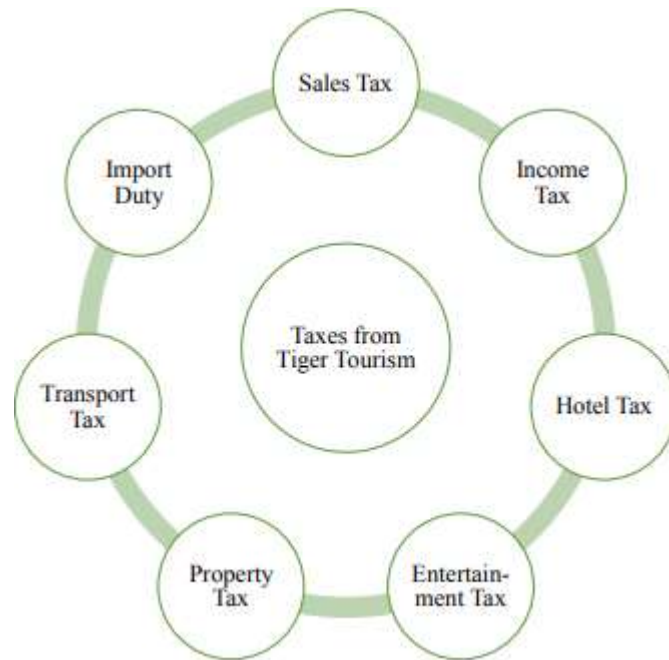


Fig. 1.7 Sources of revenue from tiger tourism, 2001–2016



Fig. 1.8 Glimpses of Ranthambhore tiger tourism. Source: (Compiled by Scholar, 2017)

Conclusion

In addition to preserving the wildlife and biodiversity of RTR, tiger reserves also provide a wide range of resources and are linked to a variety of benefits, which are collectively referred to as ecosystem services. These benefits can be broken down into economic, social, cultural, and spiritual categories. Tiger reserves contribute to the continuation of human life by acting as nurseries, thereby preserving agricultural genetic material; and by providing water that is both affordable and clean for drinking and irrigation purposes. Tiger

reserves not only help reduce the impact of natural disasters like floods and cyclones, but they also serve as a source for a wide variety of medicinal substances and pharmaceuticals. Tiger reserves are important tourism drivers for both local and non-local stakeholders because, in addition to their natural and cultural resources, they also attract a lot of visitors. Last but not least, everyone in the country, from rag pickers to hotel tycoons, is completely reliant on tiger tourism, which is a singular pattern and the best model for the sustainable development of biodiversity resources with in-situ conservation methods. It satisfies the fundamental requirements of the local communities and the outside stakeholders that are engaged in both direct and indirect activities related to tiger tourism.

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