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The value of Wildlife Tourism around Ranthambhore Tiger Reserve in Rajasthan for Wildlife Conservation and Local Communities

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Led by Dr. Raghu Chundawat, with V. Upamanyu Raju and Hemant Rajora

Visitors enjoying the majestic scenery and wildlife of Ranthambhore Tiger reserve.

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Report Title
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Published Sept 2018
Commissioned by TOFTigers
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Acknowledgement
We are thankful to the Field Director and his office of Ranthambhore Tiger Reserve, for providing information on visitor number and revenue earned at the entry gate. The entire survey team is highly grateful to Mr. Goverdhan Singh and Khem Vilas for hosting us during our survey, especially thankful to Mr. Dharmendra Khandal and his team of Village Wildlife Volunteers for their sincere help. We greatly appreciate the help of all the wildlife lodge owners who not only participated in the questionnaire survey but helped us interview some of their guests. We are also thankful to Joanna Van Gruisen for help and TOFTigers and Sarai At Toria for funding the project. With thanks also to Rajasthan Tourism for their support. Thanks to Aditya Singh and Tigerwatch for use of photographs in report.

SUMMARY

This report sought to ascertain the economic value of tourism to a specific protected area in Rajasthan - Ranthambhore Tiger Reserve, providing an indication of the distribution of its benefits and possible impacts. It is aimed at helping to develop steps in a better understanding of the industry and to help make its nature based tourism a major player as a sustainable, non-invasive, job rich economic stimulus to the surrounding area, its communities and the Rajasthan state.

Growing International Reputation

Ranthambhore Tiger reserve has gained an enviable international reputation as a wilderness destination in which to see wild tigers, and therefore attracts considerable attention from both the domestic and International travel market, with credit going to the park management, the Forest department's approach and the tourism board's efforts. The park is assisted in its popularity in that it lies within one of the most visited states in India, within reach 80% of the country's designated heritage properties, alongside other parks and attractions, within easy reach of hubs like Delhi and Jaipur and with good well developed infrastructure for tourism.

Huge Visitor numbers

In 2016/17 it attracted an extraordinary total of 469,850 visitors with a ratio of 68% domestic travellers and 32% international travellers.

Record Park fee income for protection and conservation

In 2016/17 park fee revenues alone raised ₹19.57 crore (US$2.85m). This revenue is entirely for management of the park and tiger conservation, ensuring it is now one of Asia's only self-sufficient parks. Ranthambhore is unique in that its nature based tourism generates considerably more revenue than the Central and State Governments allocate to its conservation and protection each year, making it effectively self-sufficient.

Large Revenues generated by nature tourism

The report reveals that tourism and associated services in and around Sawai Madhopur generated per annum a total of ₹217 crores (US$33.36m), a larger sum than that generated by the four most visited parks in Madhya Pradesh, which generated a total of ₹166 crores between them.

Tourism has no adverse impact on tiger numbers

As the report's graphically highlights both tiger numbers and tourism have grown significantly with tiger numbers rising from 45 individuals in 2013 to 65 in 2017, whilst visitors rose from circa 320,000 to 460,000 in 2016/17 season, suggesting that the tiger population is not being adversely affected by visitor numbers.

Majority of the economic benefits stay locally

The report highlights the fact that local communities benefit considerably, with direct full time employment of 2211 staff, of which 70% are locals from the Sawai Madhopur district and 21% are from the state. Furthermore the large majority of tourist accommodation (86%) are in the budget category, with just under 70% of all lodgings owned by locals.

Ranthambhore has gained an enviable reputation in which to see a hugely increased wild tiger and wildlife population. Its attracting 469,850 visitors across an increasing large wild landscape, and raised an extraordinary ₹19.57 crore (US$2.85 m) in park fees alone in 2016/17 and generated ₹217.2crore (US$33.36m) per year to the local economy.

Great for small businesses

Revenue estimated from small business enterprises in the villages that have tourism infrastructure is ₹1.14 crore (US$161,000) - four times higher than non-tourism villages at ₹25.89 laks (US$35,522). Revenue generated from shops and businesses on the Ranthambhore road is a staggering ₹8.74 crore (US$1.28m).

Luxury hotels employ more staff with better wages/benefits than budget lodges

The report highlights the importance of luxury category of lodges in rural areas for greater employment opportunities and better wage levels/additional benefits. High tariff lodges employed up to 6 staff per room compared to low tariff category at less than one staff per room. Furthermore, high-end lodges paid better salaries to junior staff in comparison to lower tariff lodge and paid for staff medical and insurance benefits, raising the standards of living for all those employed.

Management's pragmatic approach ensured greater benefit to local economy

Ranthambhore management has greatly facilitated wildlife tourism with its pragmatic approach to opening of new zones for tourism. As a consequence it was less affected by the restriction on numbers that the NTCA's 2012 guidelines required. The management also introduced half and full day safaris and other innovative interventions that benefit visitor wildlife experiences whilst enhancing revenue gains. This has helped the reserve to become self-sufficient, providing greater benefit to the local economy and state government.

Present tourism footprint not affecting park

The research identify a 'hotspot' of tourism enterprises in and around Sawai Madhopur. Though it presently has little impact on the park itself (i.e not cutting off viable corridors) its footprint is growing and will be a problem in the future if steps are not taken in terms of better tourism zoning and planning, improved water economy measures, elevated reliance on renewable energy use and much improved measures for waste management .

Poor ecological awareness and unsustainable footprint of most accommodation

The report confirms that there is limited awareness and understanding of environmental issues (water, waste, energy etc.) in relation to lodge operations, with much work needed to change this mentality amongst owners and management of hotels and visitors. Previous research in Madhya Pradesh's lodge community indicates a far greater understanding of the issues there, suggesting their approach provides a suitable template for nature based tourism in Rajasthan.

Need for tourism benefits to be spread further

The report highlights that the considerable economic benefits and attendant improvement in quality of life achieved are largely restricted to communities and villagers living within the periphery of Sawai Madhopur (within 4 kms radius of the entry gate). Future planning and management should seek to ensure a more equitable distribution of the revenues from nature based tourism over the whole of the parks tourism "catchment" ensuring the long term health and welfare of both wildlife and people.

Contrary to general perception, our study calculated that over 55% of the total turnover from the industry goes back to the local economy (direct inputs such as salaries, guide fee, hiring of safari vehicles and entry fees) and it establishes that local communities are the primary beneficiary of this travel trade in areas where it is operating.

INTRODUCTION

In India, nature-based tourism is mainly focused around protected areas and specifically around those few Tiger Reserves that provide the best opportunity to sight a tiger. In the last decade, the increase in visitation by domestic travellers has been exceptional. Since tourism guidelines endorsed by the Supreme Court and directed by the NTCA have placed a cap on the number of visitors, these protected areas are limited from taking more tourists. Many of the popular wildlife destinations are running at the designated full capacity. With a growing economy, the demand on nature-based tourism from domestic travellers is likely to continue to increase in India (Puri et al. 2018). Future development of new tourism infrastructure around these important natural areas can be a concern, since, it may be created in ecologically sensitive areas. But if developed and guided properly, it has the potential to bring desired benefits to local communities and aid tiger conservation too.

Rajasthan is one of the most popular tourist destinations in India for domestic and international travellers. The fascinating and diverse culture, good tourism infrastructure, rich historical and cultural heritage and good connectivity to major cities have played a crucial role in Rajasthan's linear growth in the tourism sector.

One of the major criticisms against wildlife tourism in India is that most of the economic benefits, instead of going to local communities, is pocketed by outsiders and locals are employed mainly for menial jobs. There are not many quantitative studies to establish whether this is a fair criticism. To assess whether such criticism is just, we conducted a study in 2017 to evaluate the value of wildlife tourism in and around four tiger reserves in Madhya Pradesh. The study conducted in Madhya Pradesh found that most of these criticisms are unfounded. Wildlife lodges, in these tiger reserves, were operating on average at less than 35% occupancy and therefore wildlife tourism industry here is not a very profitable business. Despite this limitation, and contrary to general perception, our study calculated that over 55% of the total turnover from the industry goes back to the local economy (direct inputs such as salaries, guide fee, hiring of safari vehicles and entry fees) and it establishes that local communities are the primary beneficiary of this travel trade in areas where it is operating.

Since most of the protected areas that harbour tiger populations in India are small and do not protect a viable population within their boundaries, the survival of such populations is dependent on the how well we will be able to protect the tiger outside our PAs. Tigers share this large landscape with humans and therefore its survival here is entirely dependent on the goodwill of the local communities. The results of our previous study generated a debate on the conservation potential of tourism in bringing economic benefits to local communities and generating goodwill that can help protect the tiger outside our PA boundaries. These results were received positively in the Indian sub-continent, even though wildlife tourism forms a small part of the overall tourism sector in India and in Rajasthan. We extended the scope of the previous study by conducting a similar survey in Ranthambhore Tiger Reserve to assess the status of tourism and quantify its benefits to the local economy there.

Ranthambhore Tiger Reserve is one of the most popular parks for wildlife tourism in India. Its proximity to Delhi, Jaipur and Agra has put it on a major tourist route and it has attracted tourists in large number from all over the world. Good train and road connectivity has also made it a very popular destination for domestic travellers. Tourism is a major industry in the area, making it all the more important for the people of Sawai Madhopur and adjoining villages who are benefited through this development.

Rajasthan's Tourism Share

In Rajasthan, tourism accounts for 2.7% (5.2% after adding indirect effects) in Gross State Domestic Product and 1.9% (7.2% after adding indirect effects) in state employment[1]. Currently, the sector accounts for approximately 9% of GSDP and directly supports an estimated 890,000 formal and informal jobs, or about 3% of total employment. Rajasthan consistently ranks in the top 10 states in India for both foreign and domestic tourist arrivals. In 2015, the state saw nearly 1.5 million foreign visitors and about 35 million domestic visitors, ranking 6th for domestic and 10th for foreign visitation among Indian states[2]. Tourism has been one of the biggest revenue generators for the state for a long time. According to the Ministry of Tourism, Rajasthan accounted for 2.7% of the tourists in the year 2013. Rajasthan accounted for 7.2% of the total international tourist arrivals in India in the same year[3].

In 2017, the number of Indians visiting Rajasthan was 459.17 lakhs and the number of foreigners visiting was 16.10 lakhs[4]. Around 80% of designated Indian heritage properties are located in the state, as well as over a dozen natural sanctuaries, two reserves and two national parks, one of which (Keoladeo National Park) is one of only four Indian parks listed as UNESCO World Heritage Site[5]. Since tiger is one of the most popular animals of the world and there is no better place to see a wild tiger than Ranthambhore, tiger fans from around the world travel in large numbers just to get a glimpse of a wild tiger.

The Ranthambhore study has also allowed us to assess the tourism status and compare the results of tourism visitation, revenue and tourism growth trends with, Kanha and Bandhavgarh of the neighbouring state Madhya Pradesh. This we did to understand the quantitative differences and to find the scope for improvement in all these Reserves. The scope is immense and this report can be the first step in developing a better understanding to make tourism a major player as a sustainable, non-invasive employer and economic contributor.

1 **Trends In Working Capital Management And Its Impact On Rajasthan Tourism Development Corporation (Rtdc): A Review Kishan Lal Gahlot, Dr. L. N. Arya**

2 **World Bank, Rajasthan Playing to its Strengths, A Strategy for Sustained and Inclusive Growth**

3 **FICCI, Tourism Infrastructure: The role states play**

4 **Rajasthan Tourism Department Annual Progress Report 2017-18**

5 **World Bank, Rajasthan Playing to its Strengths, A Strategy for Sustained and Inclusive Growth**

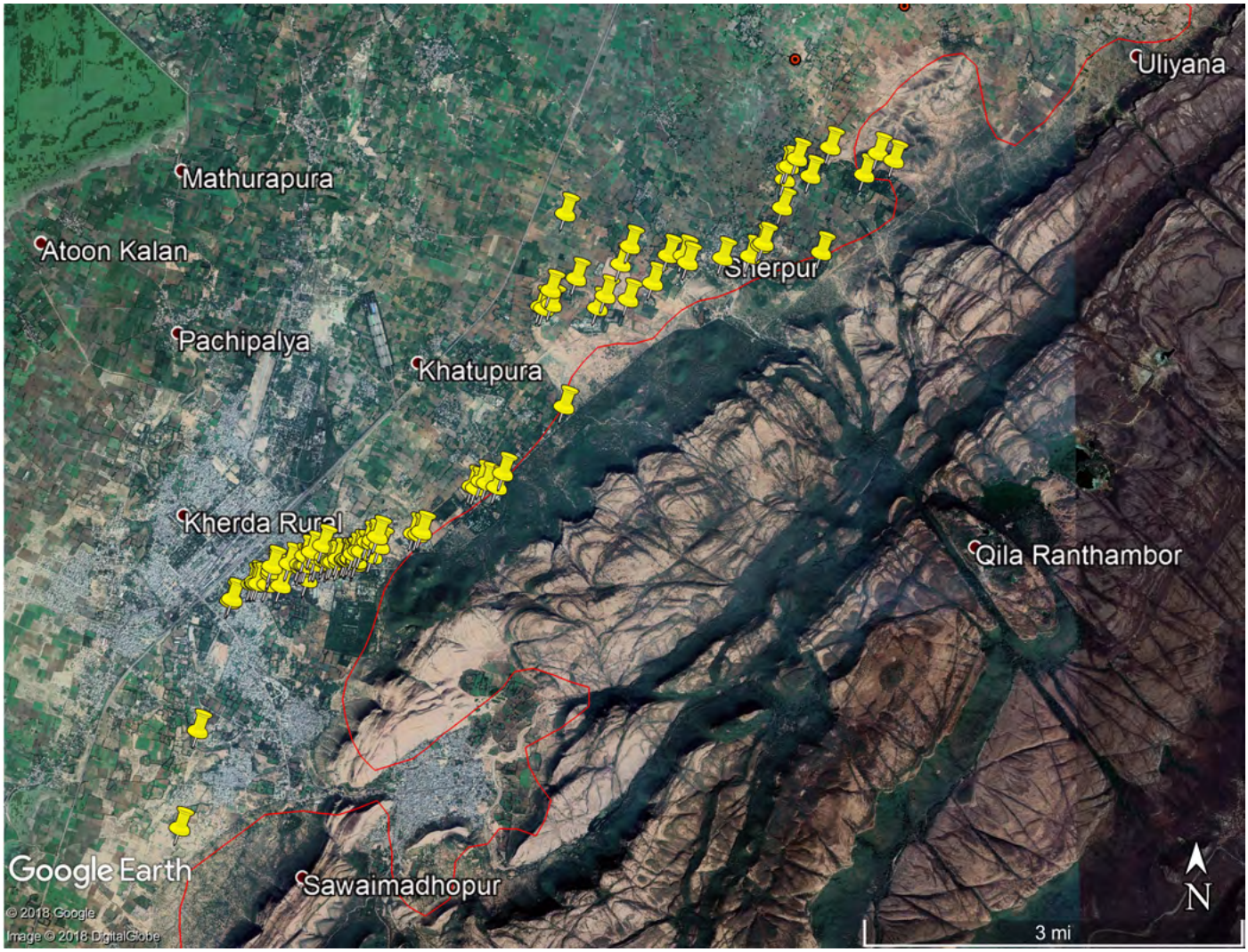


Figure 1. Map of lodges that exist in Ranthambhore

We surveyed almost all lodges located near Ranthambhore that we could identify over 60 days, with both field and questionnaire based surveys.

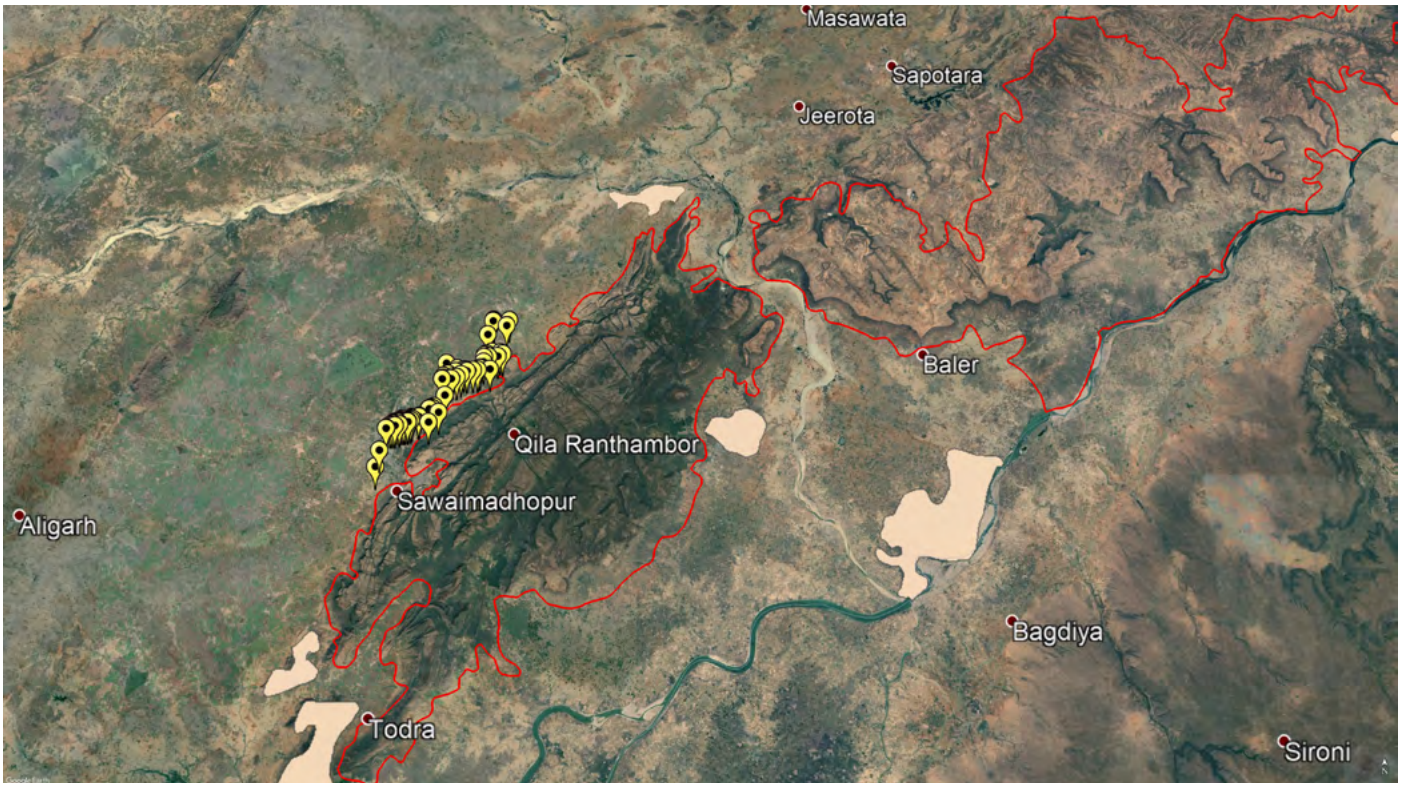


Figure 2. Lodge locations in relation to whole of Tiger Reserve

Study site and Methodology

Ranthambhore Tiger Reserve lies at the junction of the Aravali and Vindhya hill ranges in eastern Rajasthan. Rich wildlife combined with a strong cultural and historical heritage make Ranthambhore Tiger Reserve a hotspot for wildlife viewing. Close proximity and easy connectivity to Delhi, Mumbai and Jaipur makes it a preferred choice for Indian and International tourists and one of the most visited tiger reserves in India.

We surveyed almost all lodges located near Ranthambhore that we could identify during our field visits. The survey team composed of one research staff Mr. V. Upamanyu Raju and one assistant Mr. Hemant Rajora. The team was stationed in Ranthambhore for 60 days to conduct these field and questionnaire-based surveys.

We requested the Rajasthan Forest Department for the following information: size of the protected area, size of the core area or CTH, size of the buffer area; size of the 20% area open to tourism; number and name of the tourism zones, number of Indian and foreign tourist from 2012-13 season to 2016-17 season; number of tourist vehicles allowed in the Tiger Reserve; number of vehicle entry permits issued and revenue generated from selling the entry permits. The Tiger Reserve authorities very kindly provided this information and this information is used to generate trends and to estimate the revenue generated directly from visitation and associated activities.

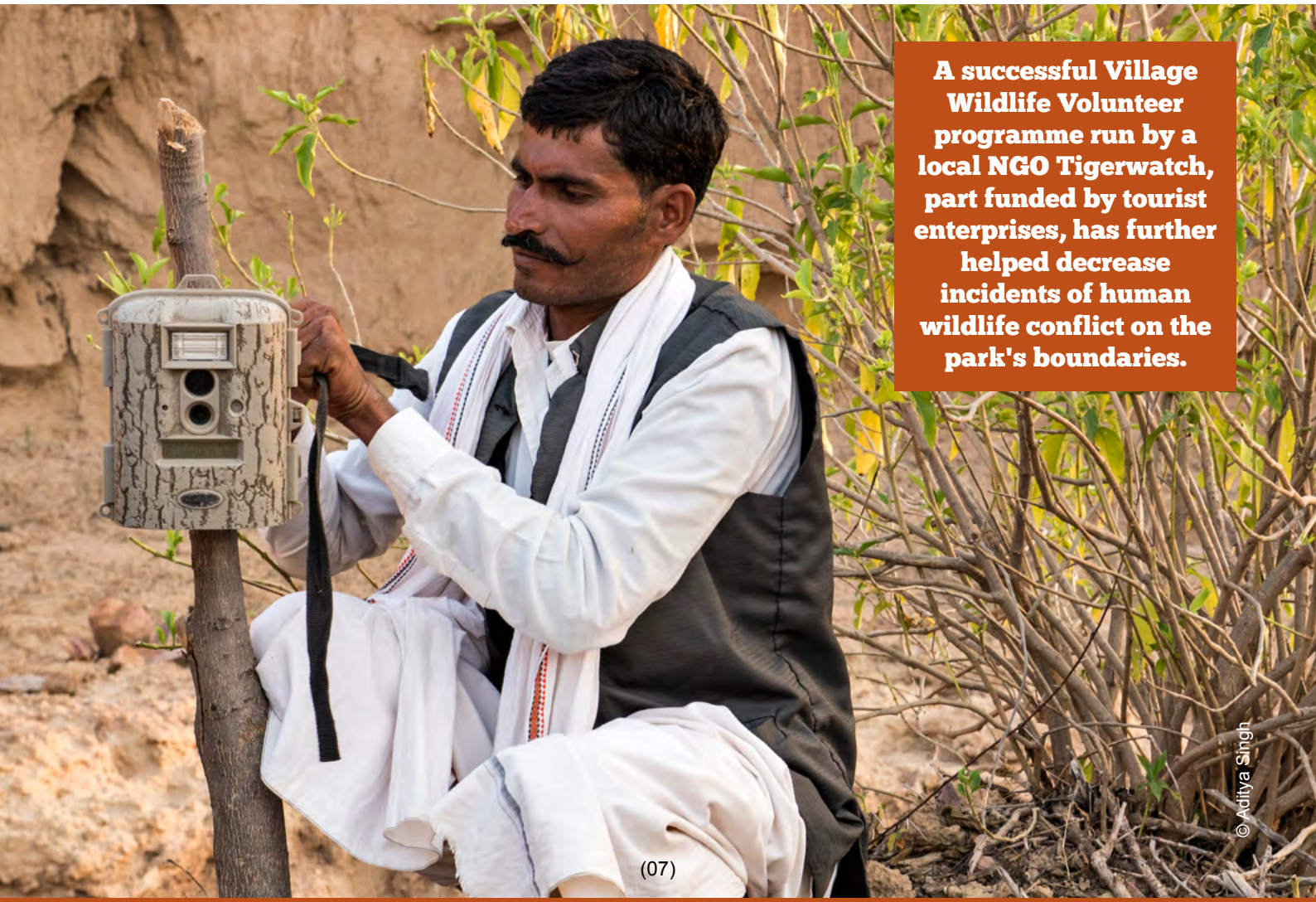
During the survey, the field team visited the lodges and requested the property management for a questionnaire survey. The questionnaire included a set of questions to gather detailed information about the property. After the property survey questionnaire, the field team also requested the hotel management to conduct a short questionnaire survey for the guests staying at the property. Thus, at the property, two questionnaire surveys were conducted.

In addition to these surveys, the field team also visited the villages in which these lodges were located and conducted a random survey of several households. At every house the field team visited, the family was first requested for willingness for a questionnaire survey and also explained the purpose of the survey. Most agreed but a few families refused to participate in the survey. The survey team also identified businesses in the villages.

We also identified villages that have not seen tourism activity or had none or very little activity that catered to Tiger Reserve visitors. These villages were also visited and a similar questionnaire survey was conducted in these villages.

Observations - Tiger Reserve details

The total area of Ranthambhore Tiger Reserve is 1411.28 km2, the CTH (Critical Tiger Habitat), which includes Ranthambhore National Park, Keladevi and Sawai Mansingh Wildlife Sanctuary(WLS) is 1113.36 km2 and buffer is 297.92 km2. NTCA Guideline allow only 20% (222.6 km2) of the CTH for tourism purposes but currently tourism is allowed within 146.33 km2 (13.14%) This area, which is open for tourism is divided into 10 tourism Zones. Zones 1-5 are within the Ranthambhore National Park and are widely known as the 'premium zones'. Zones 6-8 and 10 are in the Sawai Mansingh WLS and zone 9 is located in the Qualji WLS. Zone 6-10 were opened more recently owing to the growing tourism demand. Based on the information provided to us, on average 180 vehicles are allowed for safari in all the zones every day, but it varies depending on the demand. Based on our calculations this gives an average density of 1.23 safari vehicle for every km2.



A successful Village Wildlife Volunteer programme run by a local NGO Tigerwatch, part funded by tourist enterprises, has further helped decrease incidents of human wildlife conflict on the park's boundaries.

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Year	Indian Visitors	% of total	% growth	Foreign Visitors	% of total	% growth	Total Visitors	Income from Park fees	Income in US$
2012-13	1,38,834	56		1,07,932	44		2,46,766	₹6.93 crore	(US$0.95m)
2013-14	2,10,226	65	51.42	1,14,099	35	5.71	3,24,325	₹7.48 crore	(US$1.03m)
2014-15	2,62,713	70	24.97	1,11,421	30	-2.35	3,74,134	₹8.47 crore	(US$1.17m)
2015-16	3,09,916	72	17.97	1,23,231	28	10.6	4,33,147	₹17.54 crore	(US$2.42m)
2016-17	3,56,118	76	14.91	1,13,732	24	-7.71	4,69,850	₹19.57 crore	(US$2.85m)
								₹60.00 crore	**(US$8.42m)**

Table 1. Year on year tourist visitation, growth and revenue.

Growth of Wildlife Tourism

Through most of the eighties and early nineties, wildlife tourism was relatively low in Ranthambhore, it grew slowly and picked up the pace in the early 2000s. But since 2012, after the NTCA tourism guidelines, overall visitation in Ranthambhore has steadily grew at an average of 19%. From the beginning, domestic travellers dominated wildlife tourism in Ranthambhore but international travellers do take a significant share (average 68% domestic and 32% international traveller). The survey results, suggest that 80% of the travellers (including both domestic and international travellers) to Ranthambhore use budget lodges (<₹10000/). Further, the domestic and international traveller occupancy in <₹5000/ category was at 6% and 18% respectively and in the ₹6000 - ₹1000 category, 47% and 61% respectively. Whereas, only 3% Indians use the high-end tariff segment (>₹16000). Year on Year growth of domestic travellers was very high (27%; Table 1), and in complete contrast to this, international travellers visitation was slow 2% during the same period. It declined in 2014-15 and 2016-17 but in 2015-16 it grew at 10%.

Rajasthan is one of the most popular tourist destinations in India for domestic and international travellers. The fascinating and diverse culture, good tourism infrastructure, rich historical and cultural heritage and good connectivity to major cities have played a crucial role in Rajasthan's linear growth in the tourism sector.

We surveyed a total of 102 lodges (almost all the lodges), and the total number of rooms available is 2200. Most of these lodges are located along the Ranthambhore Road towards the main gate, which starts from the Sawai Madhopur city and runs along the park boundary for almost 7-8km. The maximum number of rooms (86%) were in the budget category <₹10000 category. We also find that 95% of lodges are located within 4 km of the periphery of Tiger Reserve. The growth in the number of new lodges followed the growing traveller numbers. In the early period between 1981-1995 one new property was established every year

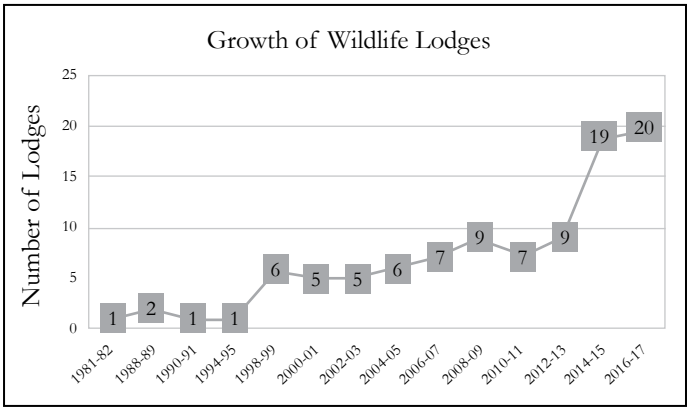


Figure 1. Growth of lodges over the years.

but this gradually increased to an average of 6 properties in the period between 1998-2011 (Figure 02). It further accelerated in the period between 2012-2017, and reached 20 properties a year in 2016-2017.

Revenues

We estimate that the 102 wildlife lodges and associated services generated a turnover of revenue of ₹217 crores (US$33.36m) (include direct cost i.e. salaries, safari vehicle hire, entry fee, guide fee and associated services i.e. local purchases and expenses that directly related to tourism). In 2016-17, revenue generated at the gate alone was ₹19.57 crore (US$2.8m), this includes only the entry fee and surcharges amounts, which directly goes to the Tiger Reserve management. The overall revenue from park entry fees in five years (2012-17) stands at ₹60.0 crore (US$8.85m). Revenue of the park saw a drastic year-on-year increase of 107% in 2015-16 over 2014-15. The average income since 2012 has been ₹20.0 crore (US$2.94m).

Occupancy varies significantly between weekend/other holidays and weekdays, showing a trend away from sustained and traditional tourism towards weekend visitations. However, the overall average occupancy for the season estimated during the survey was 35%. Based on this occupancy revenue generated from the wildlife lodges alone was close to ₹162.2 Crore (US$23.86m).

Year on year Revenue Growth

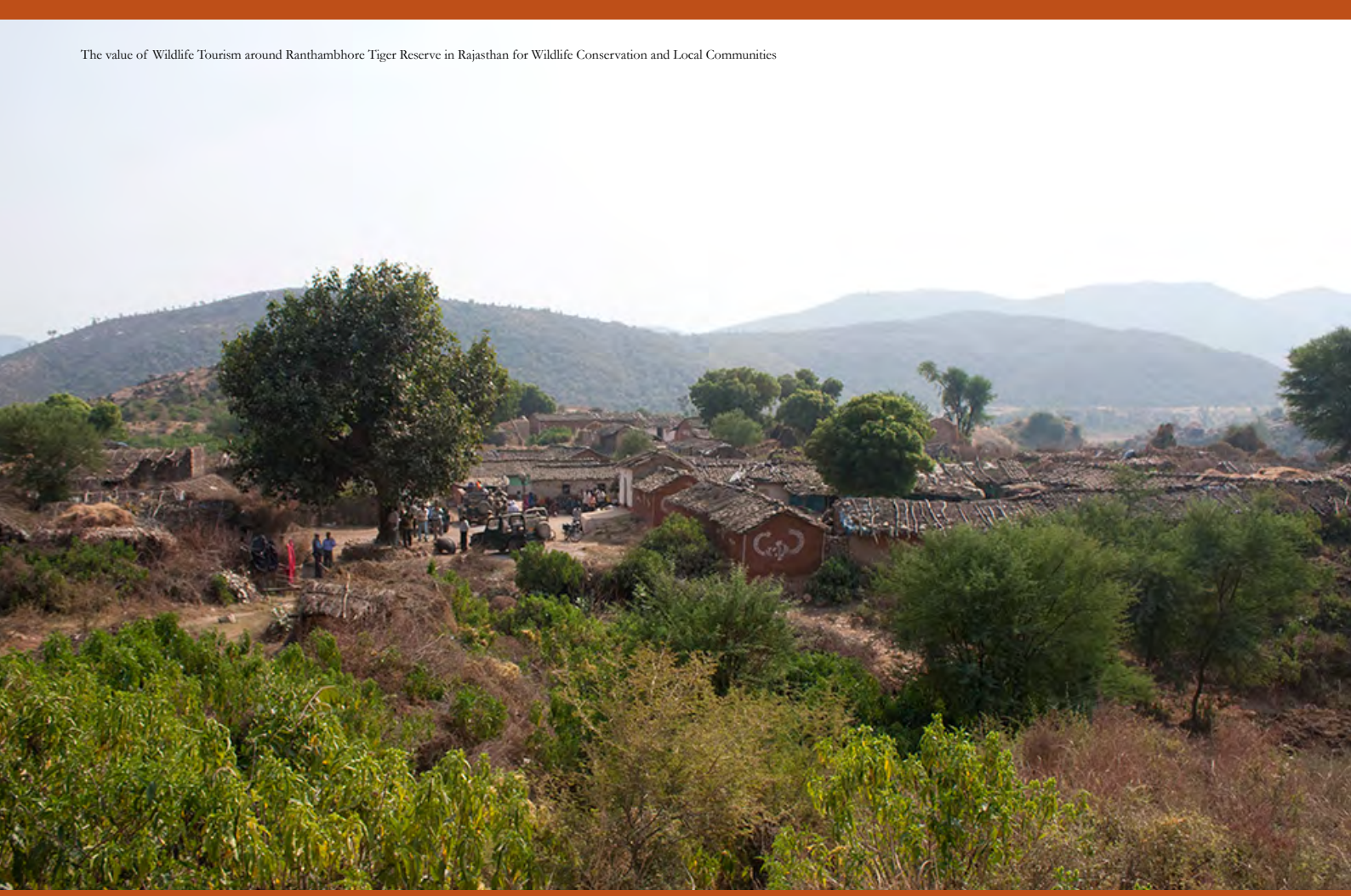
Year	Park Fees	YoY growth	in%
2012-13	₹6.93 crore		
2013-14	₹7.48 crore	₹54,51,720	7.86
2014-15	₹8.47 crore	₹98,99,109	13.23
2015-16	₹17.54 crore	₹9,07,04,826	107.07
2016-17	₹19.57 crore	₹2,03,16,790	11.58
Grand Total	**60.00 crore**		

Table 2. Year on year revenue growth of park fees.

Small businesses:

Revenue estimated from small business enterprises in the villages that have tourism infrastructure in the villages is ₹1,14,10,801; this is four times higher than non-tourism villages (₹25,89,675) and revenue generated through shops and businesses on the Ranthambhore road is a staggering ₹8,74,69,200 (US$1.28m).

Average daily turnover of these businesses in tourism villages was almost three times more than non-tourism villages. The average daily turnover in tourism villages per enterprise was estimated to be ₹707/day and in non-tourism villages, it is ₹645 per shop/day.



The management has pursued a policy of voluntary village relocations within the reserve, like that shown above, together with new employment opportunities for grazers and shepherds that has ensured greater landscapes has become available for wildlife within the reserve, and created new visitor zones to cope with the increased visitor demand.

Tariff Per Night	Number of Hotels	Number of Rooms	Average Tariff	Annual Income @ 273 days
<₹5k	64	1087	₹2,143.21	₹22.25 crore
<₹6k-₹10k	27	807	₹8,845.66	₹68.2 crore
<₹11k-₹16k	7	223	₹16,492.85	₹35.14 crore
<₹16k-₹20k	1	36	₹30,750.00	₹10.57 crore
>₹20k	3	47	₹58,083.33	₹26.08 crore
				₹162.27 crore

The overall average occupancy for the season estimated during the survey was 35%. Based on this occupancy revenue generated from the wildlife lodges alone was close to ₹162.27 crore or US $23.86 million.

Table 3. Revenue of the lodges.

Tourism created four times more employment in tourism villages than in non-tourism villages. The 47 shops surveyed in five tourism villages employed 58 people at an average of more than 1.2 persons per every shop and it included one family member. Compared to this in the 4 non-tourism villages only 11 shops were found and these employed only 12 people at an average of one person per shop.

Most small business owners recognised the benefits of tourism and most listed employment and business opportunities as the major benefits of tiger tourism.

Many shops and businesses are lined along the main Ranthambhore Road, 63 shops were surveyed. Average seasonal turnover per day was ₹4,468 and non-seasonal ₹1,833. These include a wide range of shops from handicrafts to salon services. These shops employed a much larger number of locals (536).

Impact of infrastructure creation

In Ranthambhore, due to the high concentration of lodges in a single line along the Ranthambhore road, most properties are on small plots. The total land owned by all the lodges surveyed was 216 acres, which gives an average of 1.9 acres per property. Average land owned by low budget lodges is small (0.5 acres/ lodge) and high tariff lodges occupied larger areas (average 14.6 acres/> ₹20,000 tariff lodge).

Room inventory and employment

Most of the wildlife lodges are small and 62% of them operate under twenty rooms and 80% operate under thirty rooms. Only 20% of the properties operate with more than 30 rooms.

A total of 2211 staff were employed full time in the wildlife lodges and 70% of the staff were locals from the Sawai Madhopur district and 21% were from within the state, only 9% were from outside the state. On average, one person is employed for every room or 22 people per lodge and it ranged from a minimum of 1 to 160 staff members, across all tariff categories. High tariff lodges employed up to 6 staff per room compared to low tariff category (less than one/room). Average salary across all tariff category is ₹6308/month and it ranged from ₹3000 to ₹13500 for junior staff. High-end lodges paid better salaries to junior staff (>₹20,000) categories it averaged ₹10000/ month in comparison to lower tariff lodge (₹5700/month). Similarly, 100% of high tariff category lodges (>₹16,000 category) paid for staff medical and insurance benefits; 72% of lodges in lower tariff categories paid these benefits. Very few females were employed across all categories: one female staff was reported for every 24 male staff. This ratio was marginally better in high tariff lodges (1♀:10♂).

Our survey indicates that 34% of all lodges are donating money or contributing in kind to local schools. A few of the lodges (15%) ran or supported environmental education awareness programmes for local schools or for the local community. Some of the lodges (24%) also help in supporting medical camps or aided such activities and a few supported NGO and Forest Department in various activities as and when needed.

Waste Disposal

Waste disposal practices were very basic, 89% hotels either dump their waste in the nearby village or the dump run by the municipal corporation of Sawai Madhopur. Survey found that 11% of the lodges burnt or buried their plastic waste and we did not find a plastic recycling plan in any of the hotels that we surveyed. Only 7% of the lodges used their bio-waste for composting but no lodge had a biogas plant. Another 20% fed part of this waste to livestock. The rest either burn, bury or dispose it at the nearest village or municipal dump.

Tariff Per Night	Number of Hotels	Average	Total
<₹5k	64	0.506	32.391
<₹6k-₹10k	27	3.83	103.43
<₹11k-₹16k	7	3.457	24.2
<₹16k-₹20k	1	12	12
>₹20k	3	14.66	44
Grand Total	102		216.021

Table 4. Property Size (in acres) Average as per tariff category

Tariff Per Night	Number of staff	% per hotel	Hotels	Employees per hotel
<₹5k	613	27.7	64	9.6
<₹6k-₹10k	872	39.4	27	32.3
<₹11k-₹16k	359	16.2	7	51.3
<₹16k-₹20k	72	3.3	1	72.0
>₹20k	295	13.3	3	98.3
Total	2211		102	

Table 5. Number of Employees as tariff category.

Eco-friendly and Social Responsibility Actions

Only 4% of the hotels use solar energy as an alternative to electricity, 27% lodges used solar water heaters. 70% of the lodges had septic tanks and 20% had sewage treatment plants.

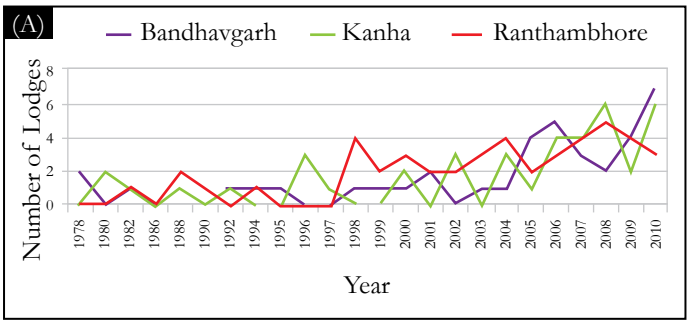
Our survey indicates that 34% of all lodges are donating money or contributing in kind to local schools. A few of the lodges (15%) ran or supported environmental education awareness programmes for local schools or for the local community. Some of the lodges (24%) also help in supporting medical camps or aided such activities and a few supported NGO and Forest Department in various activities as and when needed.

Comparison between of Ranthambhore, Kanha & Bandhavgarh

A comparative analysis shows that Ranthambhore is starkly different in terms of growth since NTCA tourism guidelines, revenue generated and number visitation to Kanha and Bandhavgarh.

Growth of Wildlife Tourism

In the period since the implementation of the tourism guidelines (2012-2017), tourism in Ranthambhore grew at a much faster rate at 27% than we reported from Kanha (6%) and Bandhavgarh (0.2%) in Madhya Pradesh. Growth in international travellers was slow in Ranthambhore but did continue to grow at 2%. In Kanha international traveller numbers were in negative decline at -6% and Bandhavgarh at -11%. Also, the average international tourist share of the total number of visitors is much larger in Ranthambhore and growing, whereas, in Kanha, the share has declined in recent years to only 11%; a similar trend is visible for Bandhavgarh which shows a decline from 36% to 23% during the same period. The total number of visitors to Ranthambhore has been staggering at 13,78,372 in 2012-16 which is more than the total 9,71,045 combined visitation number of Kanha (5,49,914) and Bandhavgarh (4,21,131).



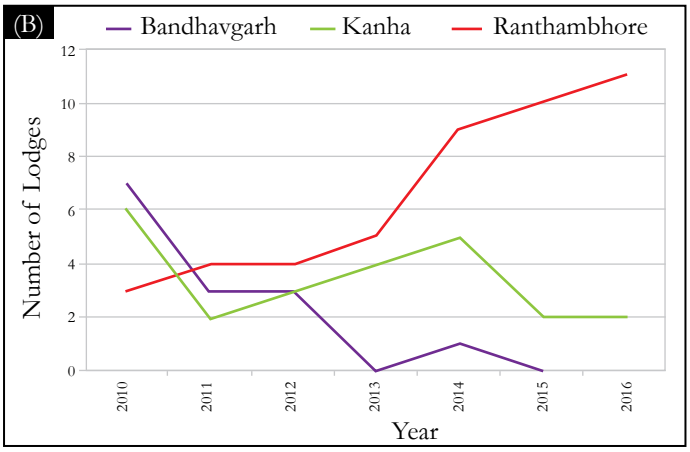


Figure 2. Growth of lodge in the three Tiger Reserves.

In the period since the implementation of the tourism guidelines (2012-2017), tourism in Ranthambhore grew at a much faster rate at 27% than we reported from Kanha (6%) and Bandhavgarh (0.2%) in Madhya Pradesh. Growth in international travellers was slow in Ranthambhore but did continue to grow at 2%.

Wildlife Lodges

The total number of lodges surveyed in Ranthambhore is 102. The total number of hotels in Kanha (63) and Bandhavgarh (45) together is 108. The growth of lodges followed an increase in the number of tourist visitation and shows a similar trend in all the reserves. The number of rooms is much higher in Ranthambhore (2200) in comparison with Kanha (856) and Bandhavgarh (613) but the hotel and room distribution as per tariff categories are similar in all reserves.

In Ranthambhore, between 1981-2013 growth was at an average of 5 new properties every year. From 2014 onward, it accelerated, adding 19 properties in 2014-15 and 20 properties in 2016-17. In Kanha and Bandhavgarh, from 2004 onward, it also accelerated and on average 6-7 properties were added every year and reached its peak in 2010 when around 13 properties were added. Since then the growth has declined (Figure 03).

High tariff lodging employ up to 6 staff per room, compared with less than one for low tariff lodgings.

Revenue - Generated from Wildlife Tourism

In Ranthambhore, the total revenue estimated from WL industries from direct sources, was ₹217 crores (US$33.36m) a year in 2017, whereas, it was ₹55 crores (US$8m) in Kanha and ₹45.8 crores (US$6.7m) in Bandhavgarh. In Ranthambhore, for 2016-17, the income from park fees was ₹19.57 crores (US$2.85m). The entry fees in Kanha was ₹7.45 crores and Bandhavgarh was ₹8.5 crores in the same period. Even the combined figure of ₹15.96 crores is less than Ranthambhore.

Tariff Per Night	Percent Hotel		
	Ranthambhore	Kanha	Bandhavgarh
<₹5k (<US$ 70)	62.7	61.8	60.5
<₹5K - ₹10K (US$70 - US$140)	26.5	27.3	27.9
<₹10k - ₹16K (US$140 - US$225)	6.9	3.6	7.0
<₹16K - ₹20K (US$225 – US$280)	1.0	3.6	2.3
>₹20K (>US$280)	2.9	3.6	2.3

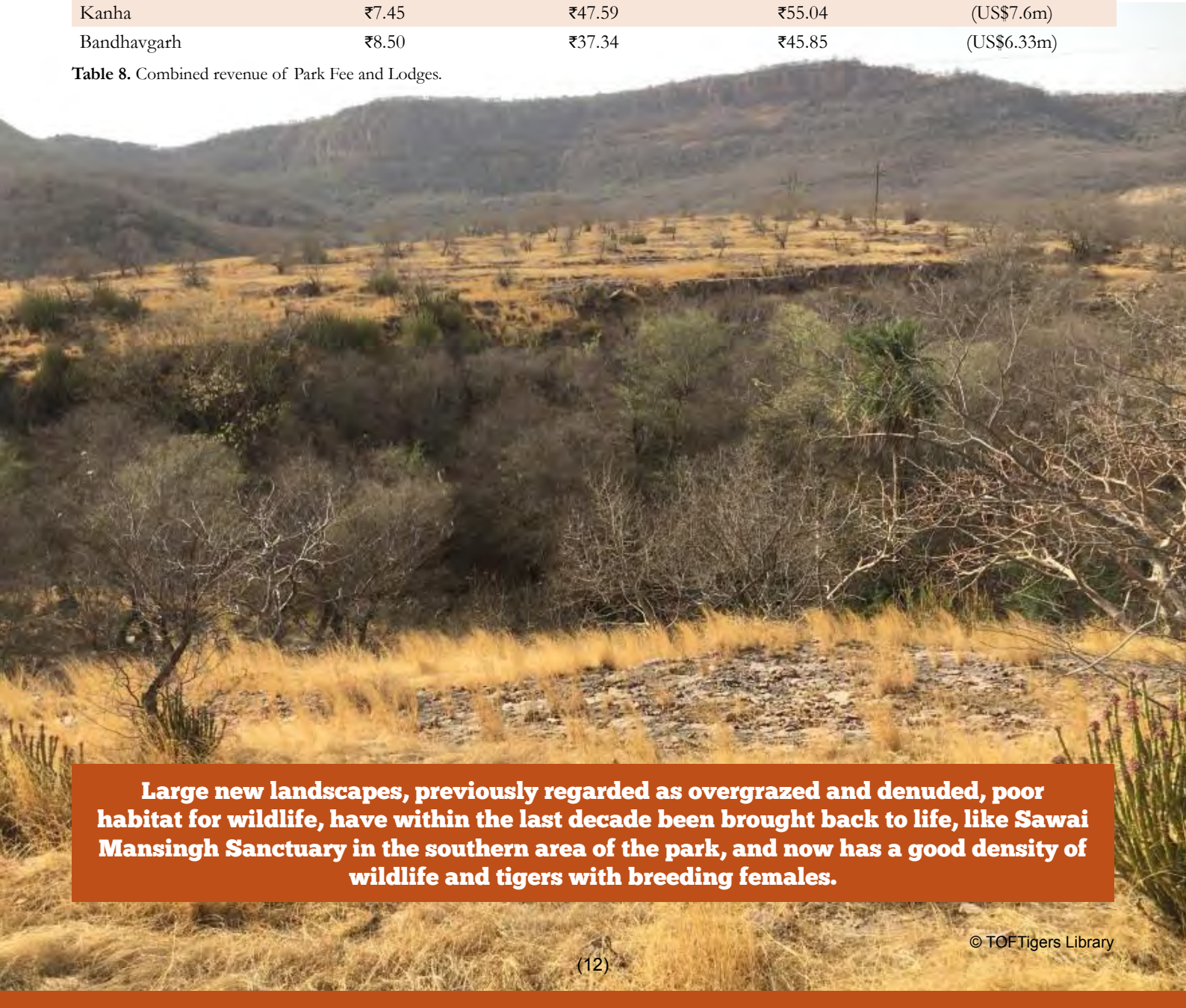
Table 6. Lodges as per tariff category in %

Tariff Per Night	Percent Rooms		
	Ranthambhore	Kanha	Bandhavgarh
<₹5k (<US$ 70)	49.4	59.9	58.1
<₹5K - ₹10K (US$70 - US$140)	36.7	29.7	32.3
<₹10k - ₹16K (US$140 - US$225)	10.1	1.6	6.9
<₹16K - ₹20K (US$225 – US$280)	1.6	5.3	0.8
>₹20k (>US$280)	2.1	3.5	2.0

Table 7. Rooms as per tariff category in %

	Park Fee (Crore)	Lodges (Crore)	Total	Total in US$
Ranthambhore	₹19.57	₹162.27	₹181.84	(US$25.0m)
Kanha	₹7.45	₹47.59	₹55.04	(US$7.6m)
Bandhavgarh	₹8.50	₹37.34	₹45.85	(US$6.33m)

Table 8. Combined revenue of Park Fee and Lodges.



Large new landscapes, previously regarded as overgrazed and denuded, poor habitat for wildlife, have within the last decade been brought back to life, like Sawai Mansingh Sanctuary in the southern area of the park, and now has a good density of wildlife and tigers with breeding females.

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DISCUSSION

Impact of wildlife tourism

Several positive financial and other social development contributions from wildlife tourism to local communities and wildlife species are globally recognised (Walpole & Leader-Williams 2002; Pennisi et al. 2004). Many negative impacts are identified: outside the Reserve tourism infrastructure blocking corridors and encroachment in tiger habitats are identified as a major threat to protected tiger populations. Inside the reserve high visitation, vehicles driving fast, tourists behaving badly and ecological degradation due to tourism activity are some of the other negative impacts noted (Prerna Bindra, Buckley 2013, Suhas Kumar). Unfortunately the negative roles generally dominate the literature (Curtin 2011). For example, an article with the damning title, "Tiger tourism hotels 'are taking lion's share of the cash'" published in a leading daily newspaper, The Telegraph (12th August, 2005), highlight the sentiments that prevail against the wildlife tourism. Citing the 'Joining the Dot' report, it reports that the revenue generated by expensive and high end tourism is all pocketed by the hotel owner and no revenue is channelled back to local communities and reserve management. The reality could not be further than this.

It is also argued that tourism activity in the reserve can negatively affect the tiger population. We find only one study that had compared the tiger densities between tourism and non-tourism zones, in Pench Tiger Reserve. The result of this comparison does not find a difference in tiger densities, negating the argument that tiger tourism causes serious impact of tiger population (Majumder, et al., 2012). Moreover, the All India monitoring of tigers in the last decade suggest an increase by 57% in tiger numbers in India since 2006 estimation and most of this increase is in the reserves that are some of the most visited tiger reserves in India. Figures from Ranthambhore show similar trend. This relationship does not prove that tourism growth is responsible for the increase in tiger numbers, but it does point to the fact that tourism has not affected the tiger population negatively.

In the previous report we have documented that most of hotels or lodges are located close to an entry gate and form a tight clump. Moreover these lodges are located within village revenue land and not on forest land and do not block the corridor habitat in the surveyed tiger reserves in central India. The situation in a few reserves may be different and it needs immediate intervention but in central Indian tiger reserves our surveys find that lodges do not block tiger movement. Most of the hotels and lodges in and around Ranthambhore are located on one side of the reserve and do not pose a threat to connectivity. But for future development and to keep the connectivity intact, not only the development of tourism infrastructure but other development must be intensively monitored, especially the linear projects.

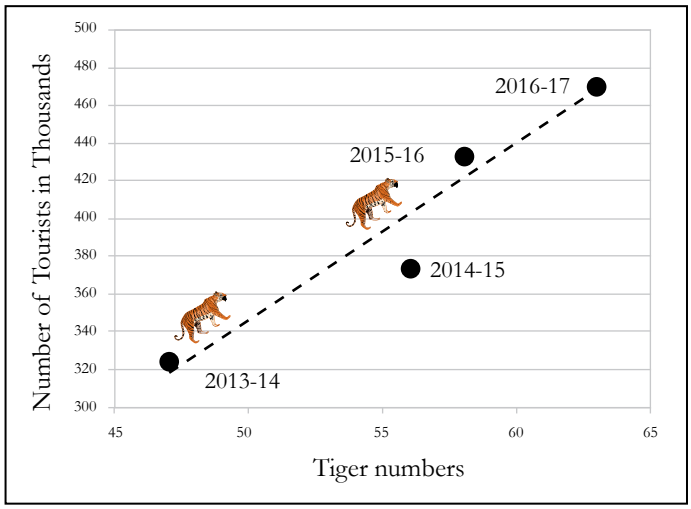

Figure 3: Relationship between increase in tiger number and growth in visitation.

It is also argued that tourism activity in the reserve can negatively affect the tiger population. We find only one study that had compared the tiger densities between tourism and non-tourism zones, in Pench Tiger Reserve. The result of this comparison does not find a difference in tiger densities, negating the argument that tiger tourism causes serious impact of tiger population (Majumder, et al., 2012)

Wildlife tourism and associated services in Ranthambhore were found to have generated approximately ₹217 crores (US$33.36m) million in the financial year 2016-17. Of this, around ₹19.57 was generated from entry fees alone, and this entirely goes back to the Tiger Reserve management for tiger conservation. When we compare this income from entry fees with the total financial assistance provided to the management of the Tiger Reserve, we find that Ranthambhore Tiger Reserve is not only self-sufficient financially, but it is generating surplus funds. The total government assistance in 2016-17 financial year was ₹13.89 crores (US$1.92m), of which the state contribution was ₹11.59 crores (US$1.6m) and central assistance was only ₹2.3 crores (US$0.31m). In other words, Ranthambhore was able to generate surplus funds two and half time more than the funds provided by the central government or NTCA.

Relocated villagers enjoy a good harvest outside of the reserve.

It is also interesting to note that revenue from tourist entry in Ranthambhore was 141% of its budget, which is much higher than other Tiger Reserves that we surveyed in MP. Bandhavgarh generated the most in terms of percentage (92%), followed by Kanha (55 %), Pench (23%) and Panna (16%). Also, it is worth noting that Ranthambhore received only 16% from central assistance, whereas dependence for this assistance was much higher in Madhya Pradesh reserves and on an average, these Tiger

Reserves received 53% from the centre. The amount generated by Ranthambhore at the entry gate ₹19.57 crore is equal to the amount generated by the four MP Tiger Reserves together (Total ₹19.42; Bandhavgarh TR= ₹8.51; Kanha TR= ₹7.46; Pench TR= ₹2.29 and Panna TR= ₹1.16 crore).

This survey finds that Ranthambhore alone is able to generate more revenue from wildlife tourism than the four tiger Reserve combined. Unfortunately, despite such significant financial contribution and its potential to support tiger conservation especially, and wildlife conservation in general, the tourism sector is not considered an important stakeholder that has a vested interest in conservation of the tiger. We find that economic contributions from the tourism sector around the Tiger Reserve are substantial, but unfortunately, the way it is spread and organized limits it to a very small area. It has not been able to touch the lives of the communities where it is not operating (Agasti 2017). Preliminary analysis of data from the survey in Madhya Pradesh also indicates that families whose life is touched by tourism directly or indirectly in still a positive attitude towards wildlife and conservation in the communities. This is a very important contribution of this sector and can go a long way in creating tiger and wildlife friendly neighbourhoods outside the park boundaries. For future development and growth, the reserve management needs to work with the industry to find ways to spread the benefits so more and more village lives are influenced directly or indirectly by tourism. In areas where it is not possible to take tourism, the surplus can be used to bring in the benefits in a way that changes the antagonistic sentiment that prevails in non-tourism villages.

Growth since NTCA tourism guidelines

The growth in tourism for Ranthambhore (both in terms of the number of visitors and new infrastructure) is steep since 2012, the year after the new tourism guidelines were introduced. Before 2012, growth trends were very similar to that we have seen in Kanha and Bandhavgarh Tiger Reserve. After the new NTCA tourism guidelines were implemented, Madhya Pradesh's reserves have seen a decline in the number of tourists and in the growth of new properties. The Ranthambhore management took a more pragmatic approach and opened up new zones in neighbouring tiger habitats. These new zones, 6-10, are now as busy as the older 1-5 zones. During the survey, we were told that all the new zones are occupied by breeding females and that has been one of the successful aspects of this intervention. In addition to creating a larger breeding population, by opening new zones the Reserve has been able to generate more revenue than the four tiger reserves in Madhya Pradesh. Rajasthan facilitated wildlife tourism with its pragmatic approach of opening new zones so it was less affected by the restriction on numbers that the guidelines required. The management also introduced half and full day safaris and other such small interventions that resulted in benefiting wildlife tourism, allowing the Reserve potentially to become self-sufficient and provide better benefit to the local economy. The Madhya Pradesh government, on the other hand, looked at tourism negatively and used these guidelines to strangulate the growth resulting in a decline, except for an increase in weekend visitation by domestic travellers. These en masse movements from neighbouring cities bring with them indifferent and undesirable behaviour: the large numbers in a short period has brought unruly crowd behaviour inside the reserve during the safaris. The share of international visitors is declining and in some reserves, it has declined close to 10%. This is not a positive sign for Madhya Pradesh nor for the local economy, as the contribution from international visitation to the local economy is much higher than domestic. In these circumstances, the biggest losers are its primary beneficiaries which are the local communities in the areas in which the tourism is operating.

The Rajasthan government can take lessons from the journey so far and facilitate and guide future development in a manner where larger populations become primary beneficiaries. The state government and private sector can work together with local communities to ensure a green sustainable future for all. Rajasthan government has recognized the economic potential of tourism and has led from the front so far.

International versus domestic visitation

Data from Ranthambhore and other parks suggest that visitation is dominated by domestic travellers and it is growing at the cost of international visitation. The recent trend that we are noticing is that these Tiger Reserves are becoming weekend destinations. Our occupancy surveys during the study show a many-fold increase in weekend occupancy as compared to weekdays. This weekend surge affects the international travellers due to the limitation of bookings. In Madhya Pradesh, international tourist numbers have declined at a much faster rate since 2012, after the implementation of the tourism guideline. Since most of the domestic travellers arriving at the weekends are from neighbouring metros, they drive, take the train and use low-end accommodation. Money generated from such visitation is much lower than that from the international travellers who, when visiting these Reserves, spend on associated services by using transport, generating employment and using high-end accommodation. As we see from our data from Ranthambhore and from the previous survey in Madhya Pradesh, high-end lodges employ more locals and generate more revenue through accommodation, associated services and taxes. These high-end lodges are relatively more committed to social responsibility. We estimate the roughly 20% international travellers generate a turnover equivalent to 80% domestic travellers. Since wildlife tourism operates in an ecologically sensitive area, mass tourism can leave a very heavy footprint. From the very beginning, data shows that domestic travellers have dominated the wildlife tourism but in the recent past its growth has been at the cost of international tourists, which is not a healthy sign as it will reduce the turnover and benefit to local communities. Tourism development cooperation and ministry need to look at this trend

Despite such significant financial contributions and its potential to support conservation around the world, the nature tourism sector in India is not considered an important stakeholder that has a vested interest in conservation up till now.

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carefully and find ways to redress the balance. Ranthambhore has maintained a much better ratio (30%) as compared to the Tiger Reserves in Madhya Pradesh (<15%). This is despite the fact that Madhya Pradesh is more known for its wildlife tourism. MP needs to find ways to halt the decline in international arrival and manage a healthy balance between domestic and internal travellers. We have documented in our previous report that local communities are the primary beneficiaries through direct employment - salaried and non-salaried (safari taxi owner, driver and safari guide but there are many more beneficiaries and these include small support businesses, skilled labours, local tour operators (transport), destination management companies, the handicraft industry and central and state taxes. With declining international visitation, the loss is not only restricted to the local community but affects a much greater economy.

Location of Wildlife Lodges and its effect on tiger movement and environment

The situation in Ranthambhore is different from the Reserves in MP as the Tiger Reserve is not surrounded by tiger habitat all around. When we plotted the location of the wildlife lodges we find they are all located on the western side of the reserve and, since there is no connectivity on that side, this infrastructure does not affect the movement of the tiger.

We estimate that roughly 20% of International travellers generate a turnover equivalent to 80%of domestic travellers. Since wildlife tourism operates in an ecologically sensitive area, mass tourism can leave a very heavy footprint. From the very beginning, data shows that domestic travellers have dominated wildlife tourism, but in the recent past its growth has been at the cost of international tourism, which is not a healthy sign, as it will add heavy footprint yet reduce revenues and benefits to local communities.

But we find that disposal of biodegradable and plastic waste is poor because most lodges were dumping this waste at a villages site; some burnt – this was a trend that we noticed in lodges in all the tiger reserves where we conducted the survey. What surprises us most is the lack of awareness about the environmental impact of the plastic and especially the burning of the plastic waste. Similarly, we did not come across water conservation measures and saw the excessive use of underground water, no water harvesting nor recharging except in a few cases although most showed empathy towards such concerns. With some very basic steps most of these issues can be addressed at the individual level and we feel awareness and education on these issues can go a long way in reducing the environmental costs that these infrastructures impose on the local environment.

Wildlife tourism in wildlife areas has great potential in bringing plenty of benefits that range from better income, infrastructure (road, railways and air connectivity), employment and business opportunities, education and health benefits but the industry must also be aware of its ecological impact and must reduce its impact on the local environment and not add to already stressed ecology. In fact, in order to be recognized as responsible tourism, the wildlife tourism industry must not only be responsible for its own impact but work with local communities to alleviate some of these ecological issues collectively. To facilitate such responsible actions, the district administration, especially town and country planning departments, can take a lead in developing a policy and guidelines for new development and also for existing infrastructure. In the absence of such vision and regulation, tourism, as developed here, is unorganized.

The data from the Ranthambhore survey reinforce our observations from our previous survey that wildlife tourism is dominated by budget travellers and not by the elite rich tourist which has been a common perception and led to anti-wildlife tourism sentiments.

Nature-based tourism as eco-tourism is not only recognised as an important driver for sustainable development (United Nations Conference on Sustainable Development- Rio+20) but eco-tourism is also recognised as a nature-friendly industry and important as an income generating driver for underdeveloped area (Eagles et al., 2002).

Since most of the protected areas are small and most of the decline in dry forests is in small protected areas (Chundawat et al,. 2016) the future survival of tiger in most cases depends on how successfully we restore tiger population its habitat areas outside protected area boundaries. Survival of tiger here will depend on the goodwill of the local communities. When primary beneficiaries of wildlife tourism are members of the local communities, it has the potential to create a tiger-friendly neighbourhood. The key for Ranthambhore and the Rajasthan government will be to explore the possibilities of using tourism not only as a development tool but also as a facilitator to expand the impact of tourism and the benefits from tiger conservation over a much wider landscape and beyond the protected area boundaries. Currently, the impacts are localised and have mainly only touched the lives of family members who are residents of tourism villages or directly associated with the tourism industry.

The need for a more inclusive conservation model

India has created a network of protected areas across the country to protect wildlife and its habitat. Conservation of wildlife and habitats is primarily dependent on this one conservation model. This is an exclusionary conservation model, where the objective is to remove all threats from within the boundary of the protected area and limit the concessions and rights of the local communities for the benefit the wildlife. Welfare of wildlife is the primary objective of this conservation model. It has been very successful and continues to work in many areas allowing tigers to disperse and reoccupy areas beyond the protected area boundaries.

However the scope of this model is limited to within the PA boundaries. Currently there is no conservation model within the system that supports conservation of tiger outside protected boundaries. This can only be achieved with the goodwill of local communities. This goodwill can be generated in the communities when they are beneficiaries of the conservation initiatives. The Protected Area model does not provide such possibilities. Conservation of wildlife over a larger landscape, beyond the protected area boundaries, therefore requires an alternate, inclusionary, conservation model where local communities become major beneficiaries. This model needs to run parallel and in addition to the existing PA based model. Lessons may be taken from several examples that exist across the globe. These inclusionary models should not be confused with the Conservation and Communities Reserves as prescribed under the WL (P) Act. These categories are also protected areas where wildlife is the primary beneficiary. Within them there is no provision to create financial benefit for the communities that can ensure tiger friendly, or general wildlife-friendly, goodwill. The classical Protected Area model is entirely dependent on volunteer support from the communities without creating a system to generate a financial benefit to sustain the conservation and goodwill of the people towards conservation.

The Rajasthan government can take lessons from the journey so far and facilitate and guide future development in a manner where larger populations become primary beneficiaries. The state government and private sector can work together with local communities to ensure a green sustainable future for all.

Therefore one way forward would be for the respective State governments, and in this case Rajasthan Government, to identify several sites beyond the PA boundaries where they can use the tourism potential to bring a new change. A radical way would be for the state government to create its own special wildlife Tourism Reserve, where land is leased to a tourism development cooperation, who would in return, through private and public partnership, launch exciting new conservation models to provide financial securities for the communities in areas outside protected area boundaries. When strategically located, these sites can turn into stepping stone habitats for dispersing tigers and will be able to connect two larger tiger populations.

The Rajasthan government can take lessons from the journey so far and facilitate and guide future development in a manner where larger populations become primary beneficiaries. The state government and private sector can work together with local communities to ensure a green sustainable future for all. Rajasthan government has recognized the economic potential of tourism and has led from the front so far. We do hope that it will continue to take the lead in developing an appropriate vision and actions in a direction where the primary beneficiaries of future wildlife conservation development are the local communities and tiger and where the environment is also safeguarded.

Acknowledgement

We are thankful to the Field Director and his office of Ranthambhore Tiger Reserve, for providing information on visitor number and revenue earned at the entry gate. The entire survey team is highly grateful to Mr. Goverdhan Singh and Khem Vilas for hosting us during our survey, especially thankful to Mr. Dharmendra Khandal and his team of Village Wildlife Volunteers for their sincere help. We greatly appreciate the help of all the wildlife lodge owners who not only participated in the questionnaire survey but helped us interview some of their guests. We are also thankful to Joanna Van Gruisen for help and TOFTigers and Sarai At Toria for funding the project.

SUGGESTIONS FOR A SUSTAINABLE FUTURE

Based on the discussion during the survey with various stakeholders we have selected a few important points that all stakeholders think can help the wildlife tourism grow responsibly and sustainably and support the conservation mission and the bordering communities' interests.

Need for long term land use planning to redistribute visitors

As visitor number are now fixed, based on a fixed carrying capacity within the park, the prospect for further growth is increasingly limited. If it continues to focus on the core area of Ranthambhore, and the accessible park gates from Sawai Madhopur, this growth will not be sustainable over the long run.

It will inevitably result in unhealthy and unviable competition amongst operators and lodgings, and its ecological and business impact on the local environment will be detrimental. Therefore to manage the growth appropriately, it will be obligatory for the State Government to work towards a long range plan to promote future growth with control of the ecological impacts, by shifting some of the focus away from Ranthambhore, to adjoining tiger habitats and thereby creating several smaller neighbouring tiger population (satellite) around Ranthambhore. These satellite tiger populations can create a larger but localised meta-population structure which will enhance the viability of Ranthambhore's tiger population, whilst distributing visitors further and more thinly across larger landscapes.

For this the Government can look for completely new inclusionary conservation models that are radically different from current exclusionary national park and tiger reserve conservation models. For example, establishing independent state reserves or 'conservancies' where tourism (or revenue generation) is the engine that helps drive tiger conservation and the primary beneficiaries of this vehicle are the local communities. These conservation areas are not part of the protected area network but these can be promoted as special nature based tourism development areas for community development on the lines of rural development initiatives. By creating several such sites around Ranthambhore one can bring a much larger tiger landscape within its conservation ambit and allow tigers to survive in habitat where more communities can benefits from its presence.

Spreading the benefits of visitation to new areas

Currently there are very few entry gates and most of the lodge communities congregate around these gates. As a result only villages that are close to these entry gates benefits from tourism and its associated land appreciation, development and infrastructure whereas, others have remained untouched by this massive tourism led growth. If these entry gates are strategically located, many more neighbouring villages can receive benefits from future planning and development opportunities.

Need for better environmental awareness and monitoring of lodgings.

Encourage and incentivise monitoring, including certification and environmental training to ensure operational best practice amongst hoteliers, with specific benefits that ensure compliance - and vica versa. There is a need for a better building regulations framework – important factor to be considered for this are carry capacity issues, local workforce, fencing, ratio of built up area to ground cover, reforestation, water harvesting, water use and water conservation as well as energy efficiency and lighting, and ensuring EIA's are undertaken before new buildings are agreed.

Incentives with tax benefits and capital for local enterprises and partnerships

Identify and plan new tourism development areas and incentivise the new development in these areas away from Ranthambhore present access points. .

Improvement in visitor facilities and visitor briefings

To achieve world class status, investment in visitor facilities is urgently required including better washrooms facilities on all safari routes and better guidance and cleanliness within visitor sites like Ranthambhore Fort. The availability of quality naturalists and guides, a range of suitable guidebooks, maps and reference material should be a prerequisite for any safari goer. A high quality audio visual briefing distributed to all lodges to ensure visitors gained most from their visit and ensured maximum visitor satisfaction would be advisable.

Better timekeeping and vehicle set up and maintenance

The present safari vehicle system ensures a poor beginning and end to all travellers with a 'hotel safari' required, often of reasonable distance and time, to pick up and drop off visitors. This often means entering parks late and missing large parts of safari in the park, and poor timekeeping and delays exacerbated this problem. A system of drop of and collection by lodgings at gates and/or appropriate allocation of vehicles to gates and lodge locations would ensure this is not necessary and rectify the pointless and wasteful exercise that so often spoils safari going. Enhanced monitoring of vehicle's quality, maintenance regime and driving provision should also be instigated.

Good ecolodging can have valuable benefits on biodiversity, water harvesting and tree cover as these before and after photographs highlight.

ABOUT THE AUTHORS

Dr. Raghu S. Chundawat

One of India's leading wildlife academics, Dr. R. S. Chundawat started his career as a conservation biologist twenty years ago with pioneering research on the ecology of snow leopard and its prey species in the Ladakh mountains for his PhD degree. Since then he has been involved intimately in the conservation of the wildlife of high altitudes in the Himalayan and the central Asian mountains. He last held the post of Regional Science and Conservation Director for the International Snow Leopard Trust and provided supervision to their five country programme in Mongolia, China, Kyrgyzstan, Pakistan and India. He has travelled extensively in the subcontinent and developed expertise on large carnivores and on high altitude wildlife. For ten years he was a member of the teaching faculty of India's premier research and training institute, the Wildlife Institute of India. He is very closely involved with tiger conservation and completed a ten-year study to determine the ecological requirement for tigers in a dry tropical forest in Panna National Park in India. The significant contribution of his research and conservation work has been widely recognised by the international conservation community: he is the recipient of several awards including Esso's 'Honour for Tiger Conservation' in 2001; the 'Carl Zeiss Wildlife Conservation Award' 2002 for excellence and the 'Tiger Gold' award in 2003 for outstanding scientific work with wild tigers. In 2003 Mike Birkhead Associates produced an award-winning wildlife documentary film for BBC/Animal Planet on his work with the tigers in Panna – 'Tigers of the Emerald Forest'. Today Dr Chundawat resides on the borders of Panna Tiger reserve.

Upamanyu Raju

It was a brief introduction to wildlife during his school days, **Upamanyu Raju** which inspired to begin his conservation career, starting as a volunteer at WWF-India in 2007, before branched out to further streamline his areas of interests, precisely, human-wildlife conflict and corridors, sustainable tourism, alternative income development and nature education. He has been closely working in the protected areas of Central Indian Landscape, which offered him huge insights into the human-animal interactions, their core issues and more importantly, a direction to channelize his efforts. Having led Nature Guide Training Programmes across Ranthambhore and Panna, Upamanyu strongly advocates the role of school students in Nature Conservation, both urban and rural, and has extensively worked with various educational institutions. Apart from wildlife, he has also been a part of environmental watch groups to protect the Chambal river, a lifeline in Central India. He assisted in developing mitigation measures for Linear Infrastructure Intrusions in seven critical corridors identified in Uttarakhand. Now, more than a decade into it, his current interests are focussed on research, sustainable wildlife tourism and nature education. This is his second research project on the role of nature tourism in wildlife and communities.

Hemant Rajora

Hemant is a mechanical engineer by qualification and is a resident of Ranthambhore who takes a keen interest in wildlife and conservation. He completed his degree in Bengaluru but returned to Ranthambhore to pursue his passion for nature and assisted on this project.

FUNDED BY

Bagh AAP Aur Van (BAAVAN)

The BAAVAN (Bagh Aap Aur Van) trust was set up, as its name suggests, to further the interests of wildlife, forests and people. The emphasis is on scientific research that can enhance understanding of India's flora and fauna and on promoting wildlife conservation in association with the communities living in and around Protected Areas. The trust was named after a key tigress that lived in Panna National Park in the 1990s and early 2000's, so called for the distinguishing markings above her eyes that could be read as a '5' and a '2'.

TOFTigers

TOFTigers is a pioneering campaign and leader in advocating sustainable, well planned wildlife tourism in South Asia as a critical wildlife conservation tool with a twelve-year track record and global membership of more than 200 companies. It's mission is to make nature visits a force for good – protecting biodiversity, restoring habitats, supporting rural livelihoods and raising awareness of the vital role played by natural services from clean air to water security, carbon sequestration to flood prevention, food to medicines not forgetting our own wellbeing. www.toftigers.org.

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THE VALUE OF WILDLIFE TOURISM AROUND RANTHAMBHORE TIGER RESERVE IN RAJASTHAN ON WILDLIFE CONSERVATION AND LOCAL COMMUNITIES

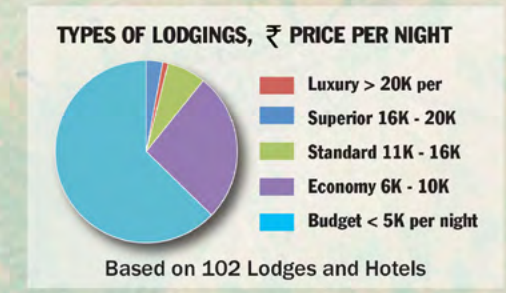
Based on a study led by Dr Raghunandan S. Chundawat

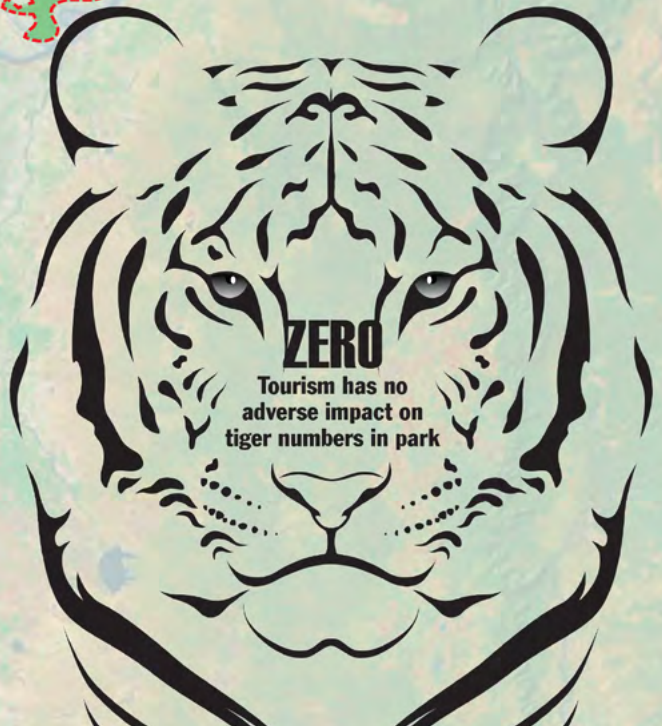
Total revenue generated per year to local economy
₹217.2 crore
(US $33.36m)

Total fees from park entry
₹19.57 crore
(US $2.85m)

Total employed by lodgings
2,211

Average lodge occupancy
35%





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Published in September 2018