



TOFTigers
Sustaining the wild


The Value of Wildlife Tourism for Conservation & Communities

A study around four Tiger Reserves in Madhya Pradesh

Part I: Tourism infrastructure and revenue



Led by Dr. Raghunandan Singh Chundawat



DESPITE THE LOW OCCUPANCY, THE LODGING SECTOR IS STILL ABLE TO PLOUGH BACK INTO THE LOCAL ECONOMY AROUND ₹75 CRORES (US\$ 11.7 MILLION), OR ALMOST 45% OF THEIR TOTAL REVENUE.

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Researched and written by
Dr. Raghunandan S. Chundawat
BAAVAN - Bagh Aap Aur VAN

Field Team:

Jake Merten
Kishan Sharma
Upamanyu Raju
Saket Agasti

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SUMMARY

This survey finds the economic contribution to the local economy from wildlife tourism in and around Tiger Reserves is significant. However it is not so significant that it can affect the lives of villages that remain untouched by tourism development. The comparison between the communities that have benefitted from tourism and those that have not, even in the same locality, is very stark.

Since Tiger Reserves are already running at their legal maximum tourism capacity, the scope for further growth in the sector under present conditions and legal restrictions is minimal. In fact, data on visitor numbers suggests that since 2012, growth has already slowed down; the number of international travellers has dropped almost 50% in the last five years.

The survey highlights that the number of international tourists in the state visiting these four Tiger Reserves is in fact very small (5-6,000 visitors) and diminishing. This suggests that there is great potential for Madhya Pradesh to attract more of these higher yield visitors. Unfortunately the potential is very under-developed in the present circumstances.

The survey identifies a wide range of beneficiaries from wildlife tourism including the local communities situated around the tourism localities. These communities are one of the principle beneficiaries, from direct employment and non-salaried employment, including guides and safari vehicle owners; 80% of the lodge employees are from local communities. Other benefits include significant upliftment in educational attainment, health benefits and greater earning opportunities for small businesses and local markets. Most importantly the advent of wildlife tourism has created a 'tiger friendly' perception within the involved communities bordering the parks.

The total revenue generated from wildlife tourism in the four Tiger Reserves is calculated at ₹1,66,00,00,000 (or US\$ 25.94 million). The total budget for all four Tiger Reserves in 2016-17 was ₹40,00,53,700/ (or US\$ 6.25 million) of which central assistance was ₹21,24,31,200/ (US\$ 3.32 million) and state government contribution was ₹18,76,22,500/(US\$ 2.93 million). Revenue from entry fees alone was ₹19,41,94,000/ (US\$ 3 million) which is both higher than the MP state government contribution and very close to the central administration's budget allocation (NTCA).

85% of the visitors to these Reserves are budget travellers and this is reflected in the lodging infrastructure that is catering to this demand. However the number of bedrooms are greater than the allowed entry capacity and all levels of lodging operate at a very low average occupancy per annum, around only 31%. The lodging sector is thus struggling as this level of occupancy means it is not very viable or profitable.

Despite that, the tourism sector is still able to plough back into the local economy around ₹75 crores (US\$ 11.7 million), or almost 45% of their total revenue.

Wildlife tourism is still limited mainly to wildlife watching through vehicle safaris. Despite this lack of activity diversification, most tourists visiting these Tiger Reserve said they were satisfied with their wildlife experience. However the drop in foreign visitors may suggest this is not true for all. Viewing tigers was the overwhelmingly the primary interest. Most tourists were not willing to pay more for a better experience; they did complain about the poor infrastructure within parks including toilet facilities, poor roads and poor online ticketing system, as well as the poor connectivity and difficulty in reaching the TRs.

Lastly the survey finds that environmental practices within the lodging sector were often very poor. This includes the disposal of non-biodegradable and plastic waste and there was also inadequate awareness of water conservation, energy efficiency and lighting. There is definitely room for improvement here and a need for the industry to deal with these issues to reduce their negative environmental impact.

However, on the positive side, most lodge owners contributed in kind or through funds to local development, assisting their local schools, providing medicines and running or supporting environmental education awareness programmes and other projects that ensure significant social upliftment and attainment. Some conducted these activities on their own and others by supporting local NGOs already working in the field.

Wildlife tourism in Madhya Pradesh is already proving to be an important tool in funding parks, in nature awareness, in rural poverty reduction and rural upliftment, but some key actions are needed to realise its greater potential for sustainable development and wildlife protection.

The survey highlights that the number of international tourists in the state visiting these four Tiger Reserve is in fact very small (5-6000 visitors) and diminishing. This suggests that there is great potential for Madhya Pradesh to attract more of these higher yield visitors.



DUE TO THE COMPLETE LACK OF POLICY TO DRIVE AND GUIDE THE DEVELOPMENT OF TOURISM INFRASTRUCTURE, THIS DEVELOPMENT HAS GROWN UNORGANISED AND HAPHAZARDLY, WITHOUT A COMPREHENSIVE CONSERVATION AND SUSTAINABLE FOCUS.

UNLIKE OTHER INDUSTRIES, THE BENEFITS FROM TOURISM WHEN WELL DIRECTED CAN CREATE A LOCAL ECONOMY THAT IS NOT DEPENDENT ON THE UTILISATION OF NATURAL RESOURCES. THROUGH SUCH A CHANGE, LOCAL COMMUNITIES CAN BECOME ACTIVE PARTNERS IN NATURE CONSERVATION RATHER THAN BYSTANDERS WHO PAY THE PRICE.

THE CONSERVATION COMMUNITY IS THUS LOSING OUT ON ONE OF ITS POTENTIALLY STRONGEST SUPPORT BASES.



INTRODUCTION

Most of the Protected Areas in India are located in remote areas that tend to be of poor economic status. A study on the developing world identified difficult terrain and remoteness, weak infrastructure, poor connectivity, poor market access and low agricultural potential as some of the important factors responsible for this (Farrington & Gill, 2002). Communities in and around Protected Areas such as Tiger Reserves have seen very little economic uplift and the quality of life in these areas has not changed or improved much in spite of high GDP growth that has raised standards in more urban parts of the country over the last few decades. On the other hand, mainstream development with its much heavier carbon footprint is also an undesirable model for ecologically sensitive areas such as these. Madhya Pradesh used to be known as the tiger state as it supported good forest cover and a high tiger population. This and the concomitant good tiger sightings in several of the Tiger Reserves, has generated worldwide interest in wildlife tourism.

An important driver for sustainable development

In recent times, nature-based tourism and Eco-tourism have been recognised as an important driver for sustainable development (United Nations Conference on Sustainable Development - Rio+20). It's also recognised that 'Responsible Tourism' or 'Eco-tourism' is not only a nature friendly industry but also a driver for income generation reaching remote areas (Eagles et al., 2002).

Potential

Worldwide, tourism is a fast-growing industry and accounts for over 4.4% of global GDP, employing an estimated 200 million people (Eagles et al., 2002). Tourism also employs far more individuals per unit dollar generated than any other sector. Its role as a catalyst for economic development can be far reaching through these two factors alone. According to UNWTO estimates, the tourism industry worldwide provides employment to one person for every twelve employed. This accounts for approximate 8-9% of world employment.

India's share

India attracts only 0.5% of almost a billion internationally travelling tourists. Although India records around six million international arrivals (India Tourism Statistics at a Glance 2014), it is estimated that the actual number of those coming for tourism purposes is a small fraction of this (only approximately 2.6 million). Despite its immense cultural, historical and natural heritage diversity and richness, India's share of global travellers is unduly small. Its potential is much greater than is reflected by international arrivals; trends over the past years show a marginal increase but not enough to increase its share to over 1% of the global market and indeed latterly even this seems to be falling. India was struggling to create employment to meet its requirement even at 7%+ GDP growth and with the recent drastic

fall in GDP, unemployment is rising in many sectors. Tourism in India could add over 25 million jobs if its share could be raised to 1% of the global market or in other words if the tourist arrival numbers in India were doubled.

Nature and wildlife tourism

India is home to some of the world's most popular animal species such as tiger, elephant, leopard, snow leopard and rhino in addition to its unique assemblages of flora and fauna. Its diverse natural landscape offers wide-ranging opportunities for nature lovers to come to India to explore and enjoy its rich natural heritage.

Despite its richness and the unique success it has achieved in wildlife conservation, nature and wildlife tourism in India has remained one of the most neglected sectors. Nature and wildlife tourism is an important part of the overall tourism industry and has the potential to direct more benefit to the local communities where it operates (Ghate, 2003; Negi & Nautiyal, 2003; Rastogi et al., 2015). In the last few decades, international arrivals have grown slowly for India in comparison to domestic travel that has developed in leaps and bounds and now dominates every tourism sector, including outbound and nature based tourism.

The founders of Project Tiger in India, in formulating the goals for creating Tiger Reserves, recognised the importance of economic, educational and recreational criteria.

Two goals illustrating this in The Task Force Report, 1972 are:

1. Ensure maintenance of viable population of tigers for scientific, economic, aesthetic, cultural and ecological purposes.
2. Preserve for all times areas of such biological importance as a national heritage for the benefit, education and enjoyment of people.

Tiger-centric tourism development

Madhya Pradesh is endowed with a rich natural heritage with the potential to offer wide-ranging nature based experiences, but tourism in the state has been largely tiger-centric (Kumar, n.d.; Karanth & DeFries, 2011; Karanth & Karanth, 2012a). The tiger is one of the world's most popular animals and tiger fans from around the world travel in large numbers just to get a glimpse of a wild tiger. Places to view them in the wild are few and Madhya Pradesh benefits from several locations.

Tourism a threat to the tiger?

In recent times (tiger) tourism in Tiger Reserves is increasingly seen as a major threat to the tiger and many concerned individuals and studies have questioned whether the benefits generated from tiger tourism are reaching the local communities or not (Archabald & Naughton-Treves, 2001; Stem et al., 2003; Bajracharya et al., 2006; Sandbrock, 2010; Karanth & DeFries, 2011). Many other negative impacts of tourism on wildlife habitats and their denizens in and around the

Protected Areas have also been highlighted. These include excessive extraction of forest based resources, disturbances to wildlife population and physical damage to the environment.

In India, unregulated mushrooming of lodges, resorts and hotels in corridor areas blocking the movement of tigers, is one of the many issues that is widely raised and criticised (Bindra, n.d.; Kumar, n.d.; Karanth & DeFries, 2011; Rastogi et al., 2015). Other threats identified are a) a large number of visitors to the Protected Area, b) the environmental impact of tourism infrastructure and tourism activities. The National Wildlife Action Plan, 2002 mentions these as “serious management problems for protected area managers”. These concerns were raised and debated in the Supreme Court and through a guideline formulated by the NTCA to regulate tourism in Tiger Reserves that was endorsed by the Honourable Supreme Court (Karanth & Karanth, 2012a).

Wildlife tourism potential in Madhya Pradesh

The Central India Highlands has always been known for its rich wildlife and for decades wildlife enthusiasts have travelled from all over the world to enjoy the unique wildlife spectacle it offers. Threats such as climate change, diminishing natural resources and unemployment, however, intensify the need for tiger destinations to adopt sustainable practices over a much wider landscape rather than the present few areas. While promoting eco-tourism in new areas, sustainability must be made a reality and not seen as a distant phenomenon to achieve conservation goals.

In part I of this report, we document the status

of existing tourism infrastructure in the four Tiger Reserves in the state of Madhya Pradesh and assess the trends and patterns that we have observed during our survey of these Reserves. We also assess the revenue generated through the tourism infrastructure surveyed on the periphery of the Reserves, and briefly compare villages that have tourism with those that have seen no or very little tourism. In part II of the report, we will compare tourism and non-tourism villages in greater detail. In the final section, we will discuss attitudes towards wildlife conservation and the social impact of tourism on local communities.

Most of the lodges are small and 80 % of all the lodges operate with less than twenty rooms. Only 11 % operate with more than 25 rooms.

Study Area

For this study we selected four Tiger Reserves: Panna, Bandhavgarh, Kanha and Pench from one state - Madhya Pradesh, for logistical reasons only. We surveyed almost all the hotels located near these Reserves identified during our field visits. The survey team comprised three field staff. Mr. Kishan Sharma, a tourism professional with over six years' experience in the tourism industry, employed by the project, was assisted by two volunteers, Mr. Upamanu Raju from Delhi and Mr. Jake Marten from the USA in the field research and questionnaire surveys. An initial survey undertaken by a fourth member of the team, Mr. Saket Agasti in Pench, formed the basis for modifying the initial questionnaire design.

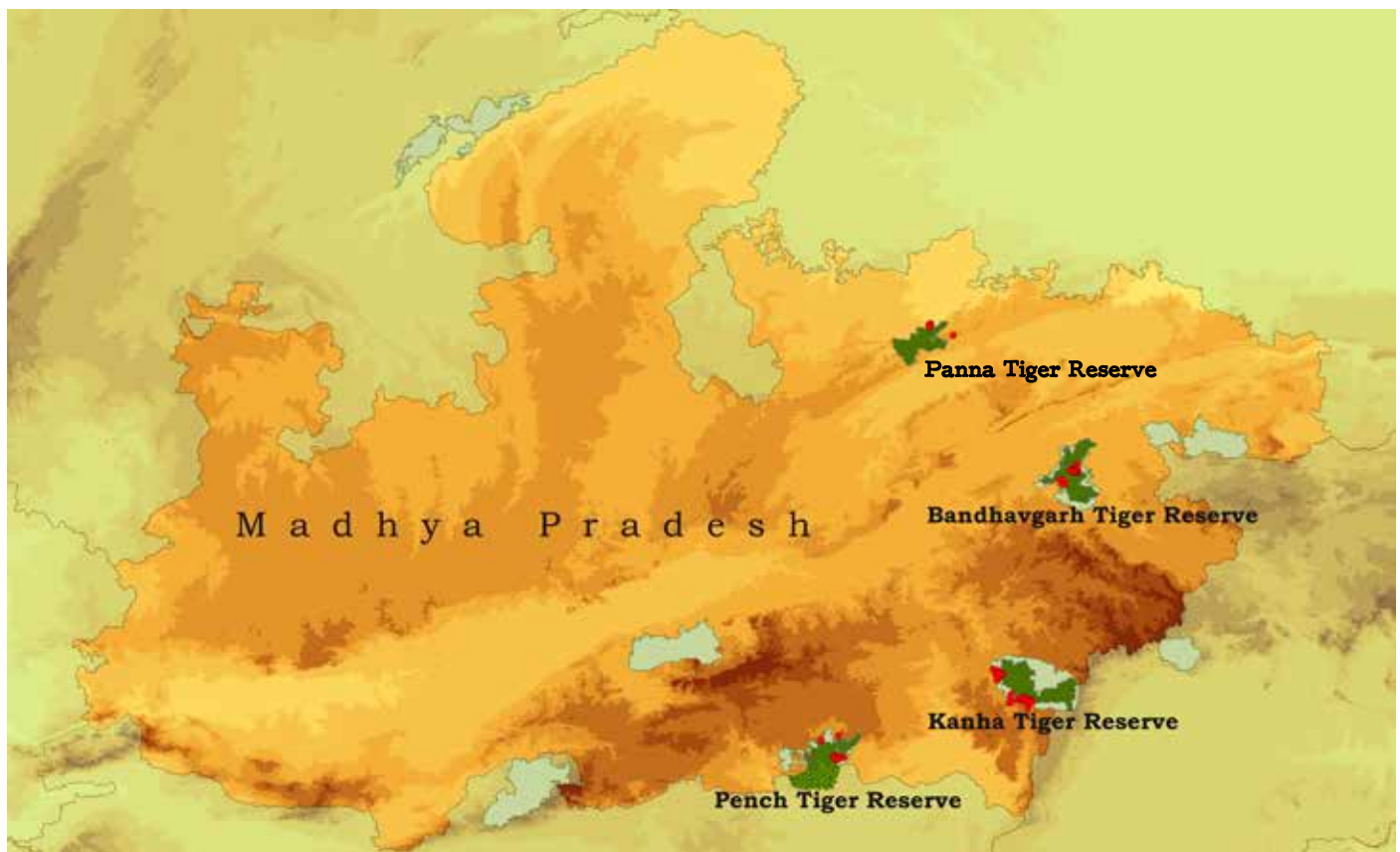


Figure 1. Map showing locations of the four Tiger Reserves that were surveyed. Red dots show wildlife lodge locations and clusters, dark green critical tiger habitat and light green buffer area.

Methodology

For each Tiger Reserve, the relevant authority was requested to provide the following information: size of the Protected Area, size of the core area or critical tiger habitat, 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 tourists from the 2013-14 season to the 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 information very kindly provided by the Tiger Reserve authorities formed the basis for generating the data on trends and patterns and also for estimating revenue generated directly from visits and associated activities.

During the survey, the field team visited the hotels in the catchment area and undertook three questionnaire surveys liaising with the property management. The first, gathered detailed information about the property. The second involved a short questionnaire survey for guests; the third conducted a similar survey with staff working in the property.

In addition to these surveys, the field team also visited the villages in the vicinity of the hotels and conducted a random survey of several households. At each house visited by the field team, the family was first requested



whether they were willing to participate and the purpose of the survey was explained. Most agreed (271 families) but a few refused to participate in the survey. The survey team also identified businesses in the villages.

Villages with little or no tourism activity catering for Tiger Reserve visitors were also identified. These villages were also visited and a similar questionnaire survey was conducted in these villages. In this Part I of the report we discuss mainly infrastructure, tourism beneficiaries and revenue.

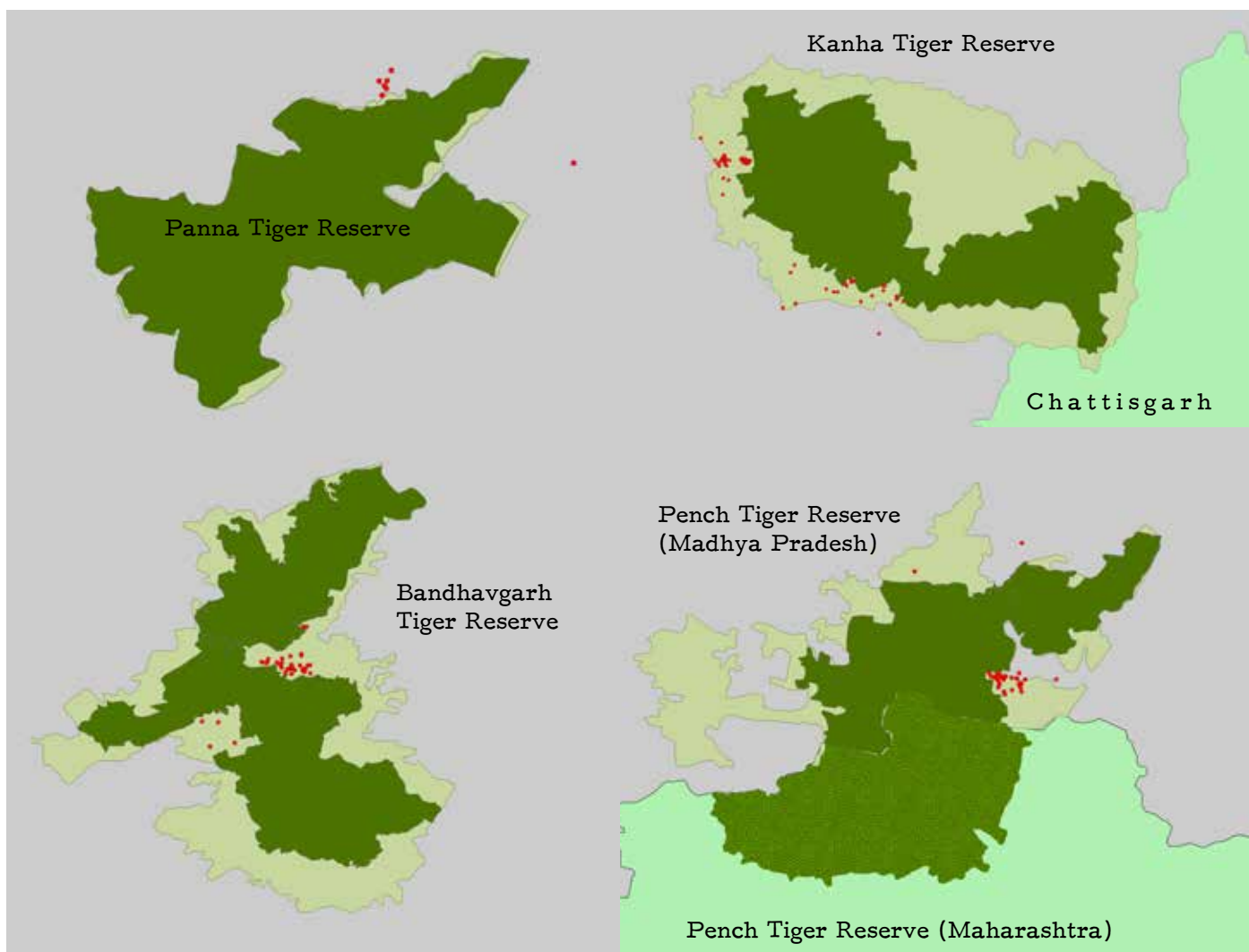
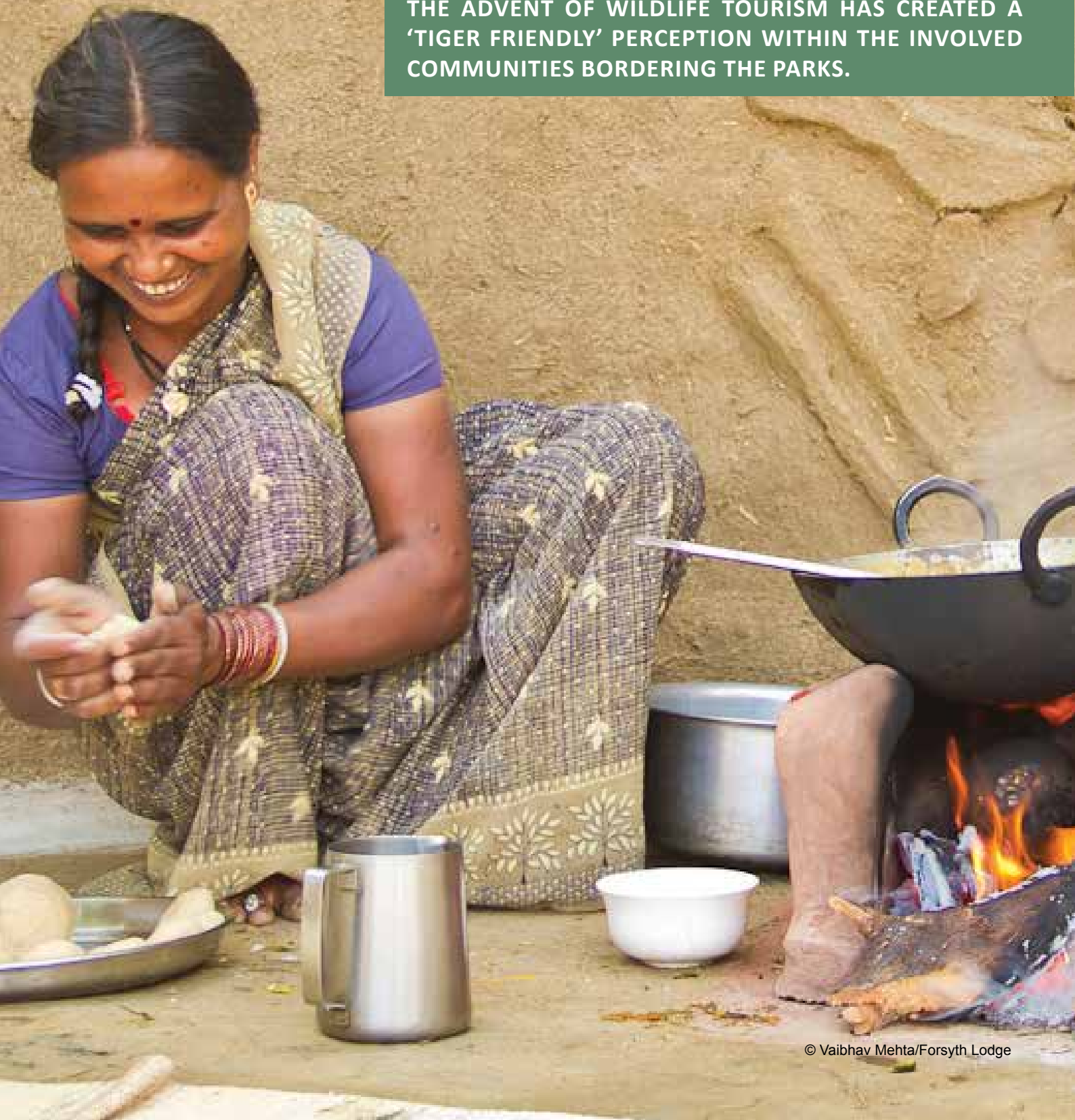


Figure 2. Location of wildlife lodges in each of the four Tiger Reserve surveyed. Red dots shows lodge locations and dark green Critical Tiger Habitat and light green buffer zone of the Tiger Reserves. The speckled dark green area shows Pench TR in Maharashtra, which was not part of the study.

BENEFITS INCLUDE SIGNIFICANT UPLIFTMENT IN EDUCATIONAL ATTAINMENT, HEALTH BENEFITS AND GREATER EARNING OPPORTUNITIES FOR SMALL BUSINESSES AND LOCAL MARKETS. MOST IMPORTANTLY THE ADVENT OF WILDLIFE TOURISM HAS CREATED A 'TIGER FRIENDLY' PERCEPTION WITHIN THE INVOLVED COMMUNITIES BORDERING THE PARKS.



Tiger Reserve	Size (in km ²)	Critical Tiger Habitat	Buffer	20% tourism area	Morning safari vehicle	Evening safari vehicle	Every 10 km ²	Every 10 km ²
Panna TR	1688.37	576.13	1021.98	91.92	42	28	4.5	3.0
Kanha TR	2051.3	917	1134.3	184	83	57	4.5	3.1
Bandhavgarh TR	1536.93	716.9	820.03	142.69	55	56	3.8	3.9
Pench TR	1179.6	411.3	768.3	48.7	44	44	9.0	9.0

Table 1: Size of Tiger Reserves and estimated safari vehicles.

OBSERVATIONS

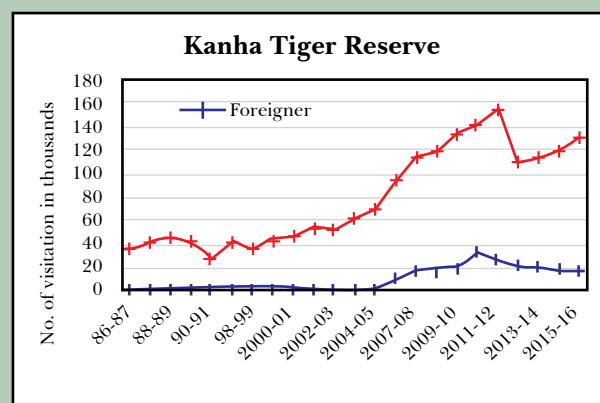
Tiger Reserve details

The total area of the four Tiger Reserves surveyed is 6,456 km² of which 2,621 km² is Critical Tiger Habitat (CTH). The guideline mandate is to open 20% of the CTH for tourism purposes and based on this guideline, the total area open for tourism in the surveyed Tiger Reserves is 467 km². The total number of safari vehicles allowed during morning safari is 224 and in the evening, 185; this gives an approximate density of one safari vehicle for every 2 km². For details on individual Tiger Reserves please refer to Table 1.

Growth of wildlife tourism in MP

In the early eighties and nineties wildlife tourism was almost non-existent and initially it grew very slowly. It picked up pace from 2003-04, reaching a peak in 2011-12. From the beginning, wildlife tourism in these Tiger Reserves was dominated by the domestic traveller (average 80.5% domestic and 19.5% international travellers). Most of the domestic travellers (91%) use budget lodges (<₹10000/US\$155), whereas international tourists utilised both segments in equal proportion - budget (49%) and high-end lodges (51%). But year on year growth in the last two years has been in the negative for international travellers to Kanha (-6%) and Bandhavgarh (-11%) and Panna has seen negative growth in two years out of the last three. Pench's growth has also slowed down (4%). Similarly, growth in domestic

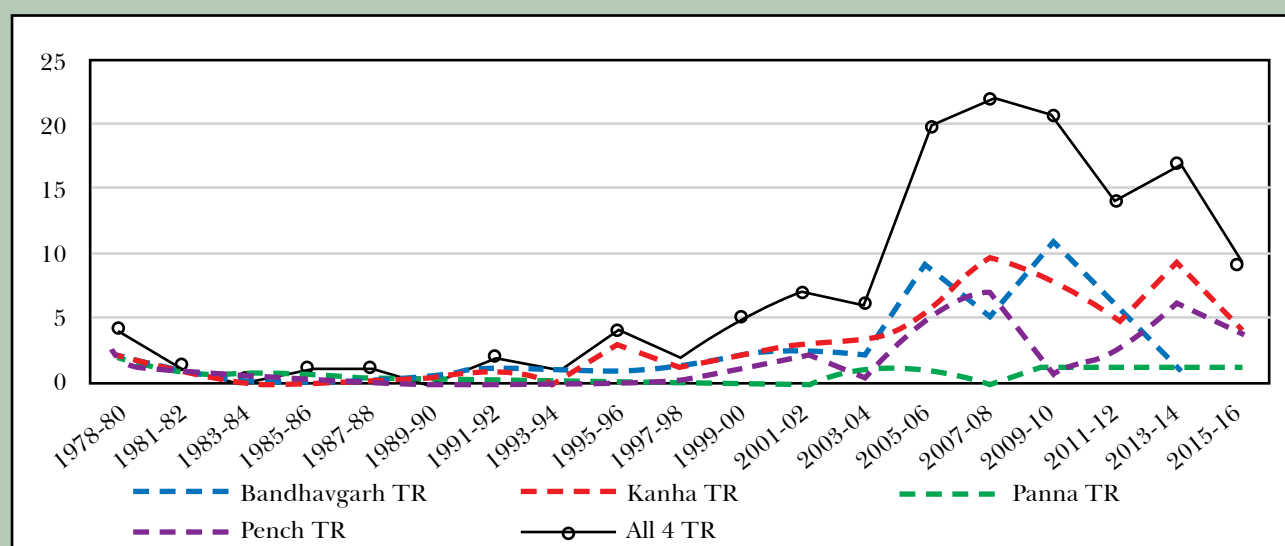
Figure 2. Number of tourists visiting Kanha Tiger Reserve from 1987 to 2016.



travellers has also slowed down (6%).

A total of 144 lodges were surveyed but five of them were closed permanently and six temporarily so most of the information is from 133 lodges. These included 45 in Bandhavgarh, 57 in Kanha, 7 in Panna and 30 in Pench (total 139 - 133+6). Total number of rooms available in each of the Tiger Reserves is 2040; Bandhavgarh 678, Kanha 918, Panna 78 and Pench 466. Only two lodges did not participate and declined to be interviewed. Most of the lodges (95%) are located close to the periphery of the Tiger Reserve (within four km). More than 80% of

Figure 3. Number of wildlife lodges added every two years, since 1978 in the surveys four Tiger Reserves of MP



the lodges are clustered around the entry gates (within five km radius), except around Mukki gate in Kanha Tiger Reserve, where lodges are located more widely. The growth in the number of new lodges followed the growing traveller numbers; between 1978 and 1999 the industry added less than one property every year in all four Tiger Reserves. But from 2004, this growth accelerated to an average of seven properties every year. This reached its peak in 2010, when more than twenty new properties were added. Since then growth has declined.

Revenues

We estimate that from the 133 wildlife lodges and associated services they provide or utilize, a total revenue of ₹1,66,00,00,000/(US\$ 25.9 million) is generated.

Revenue generated at the gate alone, which includes entry fee, vehicle hire, guide fee and tips to drivers and guides is close to ₹39,46,21,000/(US\$ 6.1 million). In 2016-17 alone, entry fees going directly to Tiger Reserve management were 19.42 crores (US\$ 3 million). This includes Bandhavgarh ₹8.51; Kanha ₹7.46; Pench ₹2.29 and Panna ₹1.16 crore.

On the day of the survey, the average occupancy across all categories of lodges was 31%; average occupancy for the season was estimated via the questionnaire at 36%. Bandhavgarh lodges reported the highest occupancy rate of 48%, Pench the lowest at 25%. Based on the average occupancy rates (at 35%), revenue generated from the wildlife lodges alone was close to ₹1,06,00,00,000 (US\$ 16.5 million) and associated services added ₹22,00,00,000 (US\$ 3.4 million).

Small businesses

In villages that have tourism infrastructure, the revenue estimated from small business enterprises is ₹79,00,000 (US\$122,166); this is eight times higher than in non-tourism villages at ₹10,00,000 (US\$15,464). The total money generated through small business in the survey villages is estimated to be close to ₹7,11,31,200 (US\$ 1.1 million).

The average daily turnover of these businesses in 'tourism villages' was almost three times more than in non-tourism villages. For example, the average daily turnover in 'tourism villages' per shop is estimated to be ₹1,764 whereas in non-tourism villages it is ₹613 per shop.

Tourism created four times more employment in tourism villages than in non-tourism villages. The 169 shops in nine tourism villages employed 368 people at an average of more than two people per shop and it included 1.7 family members and non-family members at an average of one person every two shops. Compared to this, fourteen non-tourism villages support only 68 shops and employed 94 people an average of 1.38 person per shop.

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

There was a vast array of different types of shop with an average daily turnover as follows:

Panna: ₹882 daily (seasonal) / ₹485 daily (non-seasonal)

Bandhavgarh: ₹1,748 daily (seasonal) / ₹518 daily (non-seasonal) **Kanha:** ₹2,019 daily (seasonal) / ₹823 daily (non-seasonal) **Pench:** ₹1,088 daily (seasonal) / ₹472 daily (non-seasonal)

In villages that have tourism infrastructure the revenue estimated from small business enterprises is ₹79,00,000 (US\$122,166); this is eight times higher than in non-tourism villages at ₹10,00,000 (US\$15,464).

Impact of infrastructure creation

Most of the lodges are small and 80% of all the lodges operate with less than twenty rooms. Only 11% operate with more than 25 rooms. The average amount of land owned by wildlife lodges is small (5.4 acres per lodge) but high tariff lodges occupied larger areas (average 20 acres per lodge with greater than ₹20,000 tariff). The total amount of land owned by all the lodges surveyed was 1,766 acres or 715 hectares which includes Kanha 703 acres; Bandhavgarh 464.5 acres; Pench 328.6 acres; Panna 266.8 acres.

A comparison of 2007 and 2017 Google images from some of the most densely populated wildlife tourism lodge areas show almost negligible change in the forest cover and little to no reduction of connecting forest cover in corridor areas.



Figure 3. Google images showing the landscape of two villages, Khatia and Mocha, near Kanha Tiger Reserve, where most of the lodges are located to show change in the land use pattern. First image is from 2007 and second image shows the status in 2016; the red dots refer to locations of lodges that the field team visited during the survey.



Figure 4. Wider Google images of the landscape south-west of Kanha that form a corridor between Kanha and Pench Tiger Reserve. First image is from 1987 and second 2017. Red dots show location of lodges in this corridor area.

Tiger Reserve	Safari Vehicles	Entry Fee ₹ in lakhs	Entry Fee US\$	Jeep + Guide + Tip (1800 + 350 + 400) ₹	Total ₹	Total US\$
Panna TR	8,768	116.27	1.80	2,23,58,400	3,39,85,400	525,551
Kanha TR	33,013	745.91	11.52	8,41,83,150	15,87,74,150	2,455,295
Bandhavgarh TR	24,046	850.9	13.16	6,13,17,300	14,64,07,300	2,264,053
Pench TR	12,772	228.86	3.54	3,25,68,600	5,54,54,600	857,544

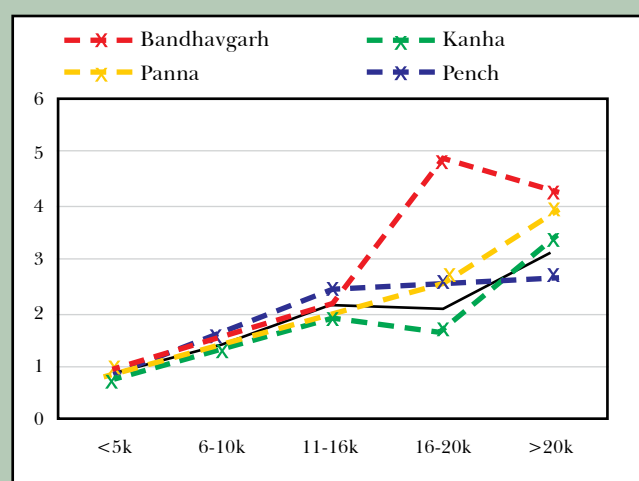
Table 2 : Estimated revenue generated at the gate from entry fee, hire of vehicle, guide fee and tip money.

Tariff category	Average tariff ₹	No. of rooms	Occupancy @ 35%	Revenue from 35% occupancy ₹	Annual @ 240 days in ₹	Annual @ 240 days in US\$
<₹5,000	3,707	1,107	387	14,36,236	34,46,96,597	5,330,414
₹6-10,000	7,267	669	234	17,01,484	40,83,56,159	6,314,851
₹11-16,000	12,750	68	24	3,03,450	7,28,28,000	1,126,217
₹16-20,000	17,200	58	20	3,49,160	8,37,98,400	1,295,864
>₹20,000	15,219	117	41	6,23,208	14,95,69,875	2,312,960
Total (Rs.)	6,358	2,019	707	44,13,538	1,05,92,49,031	16,380,308

Table 3 : Revenue generated from wildlife lodges in various tariff categories.

A total of 2,525 staff were employed full time in the wildlife lodges and 80% of the staff were local. On average two staff were employed for every room or eighteen staff per lodge and employment ranged from a minimum of two to 127 staff members, across all tariff categories. High tariff lodges employed up to four staff per room whereas low tariff categories employed less than one per room. The average salary across all categories is ₹6,500 per month and salaries ranging from ₹3,000 to ₹11,000 for junior staff. Junior staff were paid better in high end lodges (those with tariffs above ₹20,000/ (US\$310)) receiving ₹7,000 (US\$108) per month in comparison to lower tariff lodges at ₹5,500 (US\$85) per month. Similarly, 100% of the high tariff category lodges (more than ₹16,000 category) paid for staff medical and insurance benefits. Compared to this, only 72% of lodges in lower tariff categories paid these benefits. On average 82% were local employees and this

Figure 7 : Number of individuals employed per room by the lodges in various tariff categories.





ranged between 77-88% in different Tiger Reserves. Very few females were employed across all categories, one female member of staff was reported for every eighteen males. This ratio was marginally better in high tariff lodges (three females to eighteen males).

Visitor survey

The survey found that the tiger is by far the number one interest for visitors, followed by wildlife generally. This focus on seeing a tiger was strongest among weekend visitors from nearby cities (while international tourists typically wanted to have the whole experience, with the tiger perceived as a great bonus).

Most domestic tourist visitors had been to one or two other wildlife destinations in the country. Internationally, research suggests that most people only visited India once and only a small percentage of international tourists return.

Most tourists had a good to excellent wildlife experience (very few said it was bad - under a five out of ten rating). Asked whether they would be willing to pay higher rates for a better experience, did not receive a positive response from most visitors but most tourists are willing to pay 10-20% more to fix any issues related to infrastructure. Most visitors complained about poor toilet facilities inside the Tiger Reserve and about poor road conditions. For domestic visitors, the ticketing system was the biggest issue.

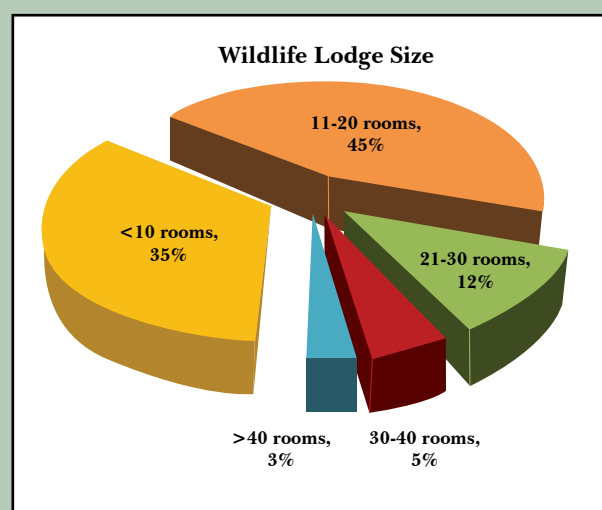
The experience at the gate was generally good; drivers were considered generally good but report cards on guides were poor and mainly reflected lack of natural history knowledge and communication in English.

Waste disposal

Only 38% of the lodges recycled plastic waste and many of them (40%) burnt it. Many others simply buried the plastic waste or disposed of it at the nearest village dump site.

Like plastic waste disposal, bio-waste disposal practices were also very poor. Only 28% of the lodges used their bio-waste for making compost or biogas. Another 10% fed part of this waste to livestock. The rest either burnt it, buried or dumped it at the nearest village dump.

Figure 8 : Size of wildlife lodges according to room inventory.



Eco-friendly actions

Most of the lodge owners (72%) were keen on organic cultivation and had some form of small organic vegetable garden or interest in this. But only 17% of the lodges have installed water conservation measures and 23% of lodges were using alternative energy sources in a small way to reduce their dependence on mains electricity. 67% of lodges told the team that they did not use pesticides on their premises. 46% of the lodges had sewage treatment plants.

Social responsibility and actions

The survey indicated that 66% of all lodges are donating money or contributing in kind support to local schools. In this respect, the contribution by even low-end lodges was very high. A few of the lodges (20%) ran or supported environment education awareness programmes for local schools or for the local community. Some of the lodges (23%) also help in supporting medical camps or aided such activities and a few supported NGOs and the Forest Department in various activities as and when needed.



ALMOST A QUARTER OF LODGES (23%) ALSO HELP IN SUPPORTING MEDICAL CAMPS OR AID SUCH ACTIVITIES, AND MANY SUPPORT NGOS AND THE FOREST DEPARTMENT IN VARIOUS ACTIVITIES AS AND WHEN NEEDED.

DISCUSSION

Wildlife tourism an important economic driver

The economic contribution from wildlife tourism in and around Tiger Reserves is significant but restricted to areas where the tourism infrastructure is developed. It has not affected the lives of people in the villages that have remained untouched by tourism development.

Wildlife tourism, like mainstream tourism sectors, is also closely related to several other sectors and has the potential to create jobs and generate trade opportunities for communities where it operates. A comparison between the communities that are benefitting from tourism and those that are not in the same locality, as revealed by this survey, is stark. Upliftment is visible in education, health, employment and business opportunities; the amount of revenue generated through the local market is also much higher in villages that have benefitted from the tourism industry. Most importantly, wildlife tourism created a tiger-friendly perception within the communities that is essential for sustaining a successful conservation programme. As a result, tourism should be seen as a catalyst that is able to create tiger friendly communities around Tiger Reserves; this could be one of its most significant contributions.

Since Tiger Reserves are already crowded and numbers of visitors are limited, the scope for further growth in the sector is minimal. In fact, data on visits suggest that since 2012, growth has been slow and its most profitable part, international travel, is in decline. Despite its significant economic contribution and conservation impact, the wildlife tourism sector has remained neglected by government developmental policies. To make its impact wider, the government of Madhya Pradesh needs to provide support and direction and allow the opening up of new areas. Wildlife managers should recognise the positive impact of tourism on local economies and its effective role in creating tiger-friendly neighbourhoods.

Vehicle safaris is the only option

Wildlife tourism in the catchment areas is limited mainly to wildlife watching through vehicle safaris. Options for other forms of nature-based activities such as nature walks, bird watching (other than vehicle safaris), trekking and camping are limited. Activities such as these would help provide a much greater wilderness experience to all kind of travellers.

Beneficiaries of wildlife watching tourism

There are a wide range of beneficiaries from wildlife tourism. Local communities are one of the biggest beneficiaries (direct employment salaried and non-salaried work such as guides, safari vehicle owners, small businesses etc.). Other beneficiaries include Tiger Reserve management or organisations involved in tiger conservation; lodge owners, local tour operators, destination management companies (DMCs),

A Typical International Tiger Watching Tour in Central India

India Tour : 12-15 days

Wildlife watching : 6-8 days

Tiger Reserve in central India : 2

Vehicle Safari : 8

Other activity : None

Average tour price person per day

US\$265 to US\$440

Average out of pocket expenses

US\$33 – US\$66

If 10,000 tourists

₹145 crore or US\$23.8 million

Reality close to 6000 tourists

₹87crore or US\$14,2 million

foreign tour operators (FTOs); and central and state government via taxes and associated services.

Tiger Reserve management

Total revenue generated from the wildlife tourism in the four Tiger Reserves, from entry fees alone, was ₹19.42 crores (US\$ 2.9 million). The best way to put these figures into perspective and significance is to compare them with central and state government contributions for managing these Tiger Reserves. The total budget for all four Tiger Reserves in 2016-17 was ₹40,00,53,700/(US\$ 6.25 million) of which central

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assistance was ₹21,24,31,200/ (US\$ 3.32 million) and state government contribution was ₹18,76,22,500/ (US\$ 2.9 million). Revenue from entry fees alone was ₹19,41,94,000/ (US\$ 3 million), higher than the state government's contribution and very close to central assistance. Unfortunately, despite such a significant financial contribution towards tiger and other wildlife conservation, the wildlife tourism sector is not considered an important stakeholder that has a vested interest in conservation of the tiger.

If wildlife tourism in the state is developed and promoted as a conservation tool, it has the potential

to pay for the state's wildlife conservation; state governments should look into this sector seriously and positively.

Benefits to local communities

The survey found that 80% of employees are from local communities and the revenue generated from direct employment is estimated at ₹38 crores (US\$5.8 million). This includes a local salaried component of ₹18 crores (US\$2.8 million); safari vehicle hire, guide fee and tips combined, ₹20 crores (US\$3 million).

In addition to these direct benefits, other indirect benefits identified during the surveys were: community development programmes e.g. eco-development, environmental education (mainly involving the NGO sector), health, small to medium size enterprise development, alternative livelihood options,

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improvement of basic infrastructure such as electricity supply, drinking water, better road and connectivity and telecommunication and skills development. Most importantly, the sector supports and encourages nature conservation.

A variety of employment options in the hospitality and catering industry, tourism-related business, transport, handicraft, art and culture, and skilled labour jobs such as electrician, plumber, mechanics etc. are also created.

Economic benefits from these associated sectors, which could be substantial, have not been calculated in the report. Based on a few lodges that agreed to share some details, indirect local employment could be approximately 10-15% of the turnover. This would amount to around ₹15 crores (US\$2.3 million) based on ₹106 crores (US\$16.4 million) as the combined turnover of all the lodges. The total funds shared by the local communities, therefore, would be around ₹75 crores (US\$11.6 million) Thus almost 45% of revenue is shared with local communities. If revenue generated from entry fees is also included, it would be close to 56% that goes to the local economy since Tiger Reserve managements plough back funds through conservation and eco-development programmes.

If the government were to protect and promote the industry in such a way that it spread to wider areas, it could bring much needed economic development to these remote areas. Several innovative ideas have been suggested by wildlife conservationists to achieve this goal (Karanth & Karanth, 2012a). This can happen only when wildlife tourism is recognised as a conservation tool rather than as a threat.

Away from the Tiger Reserves, if tourism is promoted

responsibly, Madhya Pradesh's diverse and beautiful wild landscape can generate huge economic benefits to local communities along the lines seen in many African Countries, New Zealand and Scotland. The best place to start is the connecting landscape. We estimate that the number of international tourists visiting the State's Tiger Reserves are very small (5-6,000 tourists), whereas the potential for Madhya Pradesh is much greater than this. Unlike in the rest of the world, the conservation sector in India view wildlife tourism more as a threat or a problem (Bindra, n.d.; Karanth & DeFries, 2011; Rastogi et al., 2015), rather than a conservation tool or as a sustainable and nature-friendly development option for local communities (Karanth & Karanth, 2012a). This survey very clearly shows how local communities have benefited from wildlife tourism, and highlights its potential as an effective tool.

The world has shown that the countries that have invested in wildlife tourism are able to transform and diversify their national economies. Wildlife tourism can bring remote areas within the reach of mainstream development; areas which so far have no other economic options (Farrington & Gill, 2002). Wildlife tourism is a labour intensive industry and can help mitigate unemployment issues in these remote regions. Wildlife tourism can strengthen the local economies by providing opportunities to wide-ranging micro, small and medium enterprises (MSME's).

Effect on land use from the creation of infrastructure

A glance at a series of time-related images on Google Earth indicates no drastic change in the forest or tiger habitat due to creation of this tourism infrastructure. But it does show change in land use from agriculture to commercial or loss of agricultural land. As visible in the images, the tourism infrastructure is built mostly within the limits of the agricultural/revenue land, which has its own social issues, but the images show very little change in neighbouring forest cover.

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

These images also show that most of the lodges in Kanha, Bandhavgarh, Panna and Pench are located in one or two clusters. In Kanha, most of the lodges form two clusters, one in Khatia village and the other in neighbouring Mocha villages. On the Mukki side, lodges are very widely distributed. Similarly, wildlife lodges in and around Pench Tiger Reserve are located in one large cluster extending within two neighbouring villages, Khoka and Toriya. In Bandhavgarh, most of the wildlife lodges are likewise located on one side of the Reserve, in a single large cluster around two villages - Tala and Sarmania. Panna has a very small number of lodges and most of them are located in one small cluster near Madla village. The concentration of these

DESPITE ITS RICHNESS AND THE UNIQUE SUCCESS IT HAS ACHIEVED IN WILDLIFE CONSERVATION, NATURE AND WILDLIFE TOURISM IN INDIA HAS REMAINED ONE OF THE MOST NEGLECTED SECTORS.



lodges is centred around entry gates and development of this infrastructure took place around these gates. Opening of new entry points has been followed by new lodges. Barring a few, most of the lodges are located within village boundaries and do not physically block forested pathways of wild animal movement. But many of the lodges use harsh lights extensively, though within their premises, but this can affect the habitat use and movement of the inhabitants of the neighbouring forest. These lights are visible from a long distance and can discourage wild animals from using these areas for various reasons; management and control of bright lights and excessive sound generated from lodges would allow animals to utilize these areas unhindered, especially in the night.

The survey finds that waste disposal of biodegradable and plastic waste was poor and surprisingly most of the waste was either dumped at the village dump site or burnt, as highlighted earlier. Surprisingly, awareness on the subject was very poor and most were not aware of environmental hazards by improper disposal of plastic waste. Similarly, very little awareness was noticed regarding water conservation and industry must deal with these issues effectively to reduce its negative environmental impact. For this reason, TOFTigers is an important organisation not only for educating and introducing lodge owners to the danger of improper disposal but providing training and certification for wildlife lodge owners.

The total budget for all four Tiger Reserves in 2016-17 was ₹40,00,53,700 (US\$ 6.25 million) of which central assistance was ₹21,24,31,200 (US\$ 3.32 million) and state government contribution was ₹18,76,22,500 (US\$ 2.9 million). Revenue from entry fees alone was ₹19,41,94,000 (US\$ 3 million), higher than the state government's contribution and very close to central assistance.

Most lodge owners indicated that they contributed in kind or through funds to local schools. Many ran or supported environmental education awareness programmes for local schools. Some conducted these activities on their own, some supported NGO's.

For most tourists visiting these Tiger Reserves, their primary interest is the tiger and most were satisfied with their wildlife experience. But most were not willing to pay more for a better experience. The issues that raised most complaints related to toilet facilities, poor road condition and ticketing. Tourists were happy with drivers but felt communication skills for most guides needed improvement.

Unfortunately, due to lack of tourism infrastructure elsewhere in the state, most nature based tourism is centred around a very few well known Tiger Reserves (Karanth & DeFries, 2011). The eco-tourism in and



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around Tiger Reserves has the potential to bring economic benefit and employment opportunities to local communities that have sacrificed their rights and paid a price for the conservation (Ghate 2003; Negi and Nautiyal 2003). Due to the complete lack of policy to drive and guide the development of tourism infrastructure, this development has grown unorganised and haphazardly, without a comprehensive conservation and sustainability focus. Unlike other industries, the benefits from tourism when well directed can create a local economy that is not dependent on the utilisation of natural resources. Through such a change, local communities can become an active partner in nature conservation rather than bystanders who pay the price and consequently harbour a grudge against conservation action (Jamal and Stronza 2009 and Karanth et al 2012). The conservation community is thus losing out on one of its potentially strongest support bases.

Unlike the general perception that has been created (Bindra, n.d.; Karanth & Karanth, 2012b), this survey identifies that wildlife tourism is dominated by properties that cater mainly to the budget traveller. Only a very small part (13%) of this tourism infrastructure caters to high end travellers (tariff greater than ₹10,000/room/day). The survey also finds that most of the budget travellers or weekend visitors are from neighbouring second and third tier metros.

Creating alternate and cheaper destinations for nature-based recreation that can appeal to weekend travellers, and is within easy access from these metros but away from important tiger habitat, could help reduce excessive pressure on Tiger Reserves. Currently, if a domestic tourist wants to plan for a nature holiday, s/he has little choice but to visit a Tiger Reserve, because the tourism infrastructure exists only in and around these important conservation areas. Since the tourism guidelines were introduced, the number of visitors is limited by enforcing a 'carrying capacity'; as a result the state is likely to miss out on the huge potential that alternative destinations for nature-based tourism can provide.



ABOUT THE AUTHOR

Dr. Raghunandan 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.

OTHER CONTRIBUTORS

- **Upamanyu Raju** began his conservation career as a volunteer with WWF-India in 2007. Since then, he has worked on several issues such as human-wildlife conflict and tiger conservation in corridors areas, sustainable tourism, alternative income development and nature education, primarily in Rajasthan and Central India.
- **Kishan Sharma** is a tourism professional from Khajuraho with more than eight years of experience in the tourism industry. He has worked in diverse areas of the hospitality realm, including luxury ecolodges, with an emphasis on sustainable ecotourism.
- **Jake Merten** is a trained ecologist, who began his career in 2012 with the USDA as a biological scientist. His focus is on developing emerging ecotourism markets in such a way as to have a minimum negative impact on natural, socio-cultural and economic environments. Much of his work has been in the US West, though his current focus is on the Indian subcontinent.
- **Saket Agasti** moved from IT to wildlife conservation on joining the Satpuda Foundation. He is currently pursuing a Masters in ecology and environment and just completed a post graduate diploma in international wildlife conservation practice at WildCRU, part of the University of Oxford, where he worked on, 'The value of wildlife tourism for community based wildlife conservation in Central India', which will form part II of this study.

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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. Its 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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