

TRAFFIC

the wildlife trade monitoring network

‘The role the tiger plays in local economies:

Sariska – a case study’

Melissa Wheeler

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NOTE ON AUTHORSHIP

The author of this report was part of a 3-month WWF-international volunteer programme, during which she was working within the WWF-India TRAFFIC team. All research components were carried out by Melissa Wheeler with the assistance of TRAFFIC STAFF and a range of other contributors. The study was co-ordinated and supervised by Samir Sinha of TRAFFIC India.

The field study and questionnaires were both designed and conducted by Melissa Wheeler in order to obtain relevant information and views for the study into the impact of the tiger upon local livelihoods close to Sariska Tiger Reserve. The Field Study was facilitated and co-ordinated by WWF-India, TRAFFIC India and Sariska Tiger Reserve and took place at Sariska Tiger Reserve, Rajasthan, in December 2009.

The report emerges from a study conducted as part of this volunteer programme and benefits from the valuable contribution of many individuals, but the authorship is credited to Melissa Wheeler working on behalf of TRAFFIC India.

TABLE OF ACRONYMS

TIES	The International Eco-tourism Society
UN-IPCC	UN-Intergovernmental Panel on Climate Change
UN	United Nations
UNEP	United Nations Environment Programme
WTO	World Trade Organisation
FTA	Foreign Tourist Arrivals
FTV	Foreign Tourist Visits
ICICI	Industrial Credit and Investment Corporation of India
TOFT	Travel Operators for Tigers
GDP	Gross Domestic Product
INR	Indian Rupee
USD	US Dollar
TTT	Tiger Task Force
PA	Protected Area
NP	National Park
WWF	Worldwide Fund for Nature
TRAFFIC	The Wildlife Trade Monitoring Network
STR	Sariska Tiger Reserve
TR	Tiger Reserve
RTR	Ranthambore Tiger Reserve
RTDC	Rajasthan Tourism Development Association
RFD	Rajasthan Forest Department
NCTA	National Tiger Conservation Project (formerly Project Tiger)
WII	Wildlife Institute of India
CPR	Common Property Resources
IUCN	International Union of conservation of Nature
TCM	Traditional Chinese Medicine
UC	Union Clearance

WWF-TCP	Tiger Conservation Programme (Of WWF-India)
NSTR	Nagarjunasagar Srisaillam Tiger Reserve
UNDP	United Nations Development Programme
EDC	Eco-Development Committees
GEF	Global Environment Facility
NREGA	National Rural Employment Guarantee Act
LAKH	One hundred thousand Indian Rupees
CRORE	One million Indian Rupees/One hundred LAKHS

EXECUTIVE SUMMARY

The aims of the research study “The role the tiger plays in local economies: Sariska – a case study” were to analyse the linkages between tiger conservation in India and the local communities, primarily from an economic perspective, while paying attention to relevant social and livelihood factors. These linkages were studied through the case of Sariska Tiger Reserve (STR) in Rajasthan. This site was chosen specifically for the fact that the ‘Sariska Shock’ period of tiger extinction (2005-2008) provided an opportunity to consider the impact that wildlife tourism generated by tiger conservation has upon the local communities, since data could be analysed from the pre-extinction period, during the extinction and since the reintroduction of tigers in 2008. As such, Sariska provided valuable examples of a healthy Tiger Reserve and ecosystem as well as that of a tiger-less Tiger Reserve within a ten year time-frame. In 2005 it was confirmed that there were no tigers left at Sariska Tiger Reserve and that a poaching pandemic had afflicted the region unnoticed for the previous few years. This ‘Sariska Shock’ shook the wildlife community and saw the Tiger Task Force investigate the debacle and present its conclusions in a report, ‘Joining the Dots’. This study sought to investigate the relationship between tiger conservation and local economies by observing any patterns or trends in the local economy at Sariska during a period of time during which the health of the tiger population at the reserve changed dramatically. The aim here was to determine the impact which wildlife tourism at tiger reserves has upon the surrounding area and its economy.

The principal methods of research used were internet and literary searches, during which the researcher highlighted specific areas of interest and generated questionnaires based on these topics in order to gain additional, first hand information. The field work study comprised mainly of interview-based discussions and general observation.

The key findings from the study can be summarised below:

- The levels of engagement between locals and tourism at Sariska Tiger Reserve are relatively low and undeveloped. Very few locals are directly involved in the conservation of the tiger and/or the reserve and there remains a need to recruit from outside the area for higher positions.
- There is a great deal of scope for eco-tourism among the surrounding communities of Sariska but there also exists a significant challenge presented by those villages located within the Protected Area (PA). Local communities remain largely forest-dependent and their livelihoods reflect many generations of tradition. The majority of respondents lack an awareness of alternative livelihood options although there does exist a strong core of villagers who show an urge to seek better education as a window to improved opportunities.
- Sariska Tiger Reserve is not run as a money-making machine. The priority is first and foremost conservation of the tiger and of the forest. To this end, tourism is not considered as a means of development or as a vehicle for supporting the conservation. Rather it is viewed as an extra. Only a fraction of the profits made from existing hotels reaches the local economy.
- There is a direct correlation between those locals employed in the Sariska Tiger Reserve (STR) and their understanding of the value of conservation and of the eco-system which the tiger supports. Among those directly involved in Sariska Tiger Reserve, tourism is understood as a positive force for conservation. The primary motivation for locals seeking employment within STR is financial and this draw has facilitated their education and conversion into wildlife supporters who appreciate the need for tourism to help fund the conservation of the tiger while also supporting the local community. Among the local villagers who are indirectly

involved in the reserve, through loaning tractors or jeeps, there is an expressed interest in establishing eco-tourism in the form of home stays. However, there is limited awareness among the majority of locals about the connection between tigers, the ecosystem at large and their personal livelihoods.

- Sariska Tiger Reserve continues to suffer the effects of the 'Sariska Shock'. Having been famous for its tiger population for over one hundred years, Sariska had now become notorious as the site of the most dramatic case of extinction India has known in history. Despite the tremendous achievement of the Government and Sariska Tiger Reserve to carry out the first ever translocation of three tigers, from Ranthambore to Sariska in June/July 2008, there is poor recognition of this fact in the general public and so the tourism levels at Sariska currently remain below the 2003-4 levels (before the extinction). This fact might be viewed as underscoring the determining effect which the tiger population has upon the local economy.
- The relocation of more tigers to Sariska would help the eco-system and the general health of the reserve enormously while also generating more tourism for the surrounding area. Related to this observation, gathered through interviews with Sariska staff, is the widespread feeling that the employment of more forest guards from a younger age to regenerate and invigorate the department would be very helpful. Currently, the average age of forest guards is over fifty years old and there is insufficient staff to monitor the vast expanse, especially if the tiger population were to increase.

It is with regard to these key events at Sariska Tiger Reserve in the last decade and with concern for the next decade that this report is presented. It is hoped that these findings will be of value and shed some light upon the common challenges which Tiger reserves across India are facing. It is also the hope of the researcher that the work carried out may reveal opportunities for enhancing existing linkages between local communities and tiger conservation and encourage the formation of new linkages and eco-tourism development.

2010 being the 'Year of the Tiger', what better time could there be than make this the decade for a revolution in the socio-economy of India's Tiger Reserves? Sariska Tiger Reserve could just come to be a model proving that saving the tiger is as much about saving the forest and ensuring the local communities are involved and benefitting from wildlife tourism as it is about the critical issues of poaching and wildlife trade.

INTRODUCTION: BACKGROUND TO TOURIST ECONOMY IN INDIA

1.1 TOURISM IN INDIA & NATURE BASED TOURISM

“The one land that all men desire to see and having seen once, by even a glimpse, would not give the glimpse for all the shows of all the rest of the globe combined.” Mark Twain, on India.

You only need to look at the homepage for the Indian tourist board to get a glimpse of what ‘Incredible India’ has to offer the tourist and how proud the nation is of its heritage. Mountains, deserts, retreats, luxury trains, beaches, spirituality and pilgrimages, royal retreats, health and holistic healing, heritage sites, eco-tourism and wildlife. The range and diversity of options on offer in the country is truly awesome and certainly merits the slogan ‘Incredible India’. As a country with mind-boggling diversity, India has a great deal to offer the visitor and with many different cultures and religions practised from north to south, the nation shapes up as a quintessentially exotic destination. India’s awards in the field of tourism are testament to its rising status in tourism:

Condé Nast Traveller, UK in its Readers Travel Awards 2008 has ranked India among the top 2 most favoured countries in the world, consecutively for the second year.

India received the award for the leading destination at the Asia World Travel Awards 2008-“Asia and Indian Ocean” Ceremony, in Shanghai, China.

Bronze Lion Award was won at the 55th International Advertising Festival held at Cannes, France for the creative on the ‘Taj Mahal’ which was used for Ministry of Tourism’s Incredible India Campaign in the international market.

PC World adjudged the website of the Ministry of Tourism (www.incredibleindia.org) a winner of the PC World Web Award 2008.

The prestigious “World Travel Award 2008” for its role in developing and promotion of “Responsible Tourism” at 14th World Travel Market (WTM) 2008 held at Excel, London from 10th-13th November 2008.

The Incredible India International Television Commercial for 2008 has recently won the Grand prix Award – The main prize of the International Tourism Film Festival organized by Comité International des Festivals du Film Touristique” (CIFFT)

As featured on the Ministry of Tourism website, 04.11.09

So, what kind of tourism potential exists in India? While this report will be primarily interested in nature-based tourism and its derivative ecotourism, it is helpful to have an overview of India's tourism potential as a whole before exploring the nature based element in greater depth.

- **Adventure Travel:** Heavily used by marketing departments, Adventure tourism is a growing sector and involves the exploration of remote areas in exotic locales often with the intention of pursuing a range of activities. Popular destinations for trekking are Ladakh, Sikkim and the Himalayas. Himachal Pradesh, Jammu and Kashmir are popular by those keen to enjoy the possibility of skiing in India. Uttranchal, Assam and Arunachal Pradesh tempt those seeking the adrenalin rush of whitewater-rafting or any 'experience including some level of risk and uncertainty'¹.
- **Cultural Tourism:** India has always been famous for its rich cultural heritage and element of mysticism. The various fairs and festivals that tourists like to visit are the Pushkar fair, Taj Mahotsav and Saraj Kund Mela. Of course, festivals generate a great deal of domestic tourism too as people visit their families. Cultural tourism sees tourists observing and interacting with the many unique different cultures in India. The core value here is to learn from other cultures and thereby broaden one's perspectives.
- **Spiritual & Pilgrimage Tourism:** India has always been attractive for those seeking a journey of self-discovery and many people visit for spiritual reasons. India is famous for its temples and pilgrimage tourism is increasing rapidly. While there are temples all across each region of India, popular destinations for visiting temples are Vaishno Devi, Golden Temple, Char Dham and Mathura Vrindavan.
- **Nature Based Tourism:** Typically this will involved activity-based experiences which focus on nature. Safari trips; jungle lodges; cruises to visit or sight penguins or whales for instance,;visits to a tiger reserve. Any one of these variations may, or may not, be sustainable or responsible.
- **Sustainable Tourism:** This can involve any form of tourism that does not impact on the resources of the local environment and does not inhibit future visitors from enjoying the same experience. A rowdy, ill-managed horde of tourists disturbing a tigress with cubs or a mating couple is not sustainable tourism. Kayaking secotourism and ecotravel are.
- **Responsible Tourism:** This operates in such a way as to minimise negative impacts on the environment. A wildnerness camping trip respecting a 'Leave no Footprint' ethic would be considered responsible, while dune buggy tours would not.
- **Eco-Tourism:** By far the most interesting form of tourism potential in India – by virtue of its long-term sustainability -, is eco-tourism. It is a term we hear bandied about

¹ Dictionary definition of Adventure Tourism as quoted in Eco-Tourism Handbook for Tourism Planners and Managers, Subir Gosh & M.K.S Pasha, 2005.

freely today, but one with almost as many sub-sets and interpretations as there are destinations to visit. TIES - the world's oldest and largest international ecotourism association - seeks to unite communities, conservation and sustainable travel by promoting *'responsible travel to natural areas that conserves the environment and improves the well-being of local people'*². This is the definition of ecotourism as it is generally recognised and understood today. A trek through the foothills of the Himalayas is not eco-tourism unless the environment and the local people benefit in some way from the tourism. Likewise, a stay at a reserve lodge in a tiger reserve is not eco-tourism unless a percentage of the tourist's fee finds its way to the local community and the tiger conservation.

One of the reasons ecotourism, as a segment of Nature Based Tourism, has not grown by the same scale as other tourism categories, is because its implementation has neglected to satisfy the necessary criteria: namely, that local communities in the areas have not reaped the economic benefits from tourist revenue. This factor is the magic key to keeping the cogs of the ecotourism machine well-oiled and turning and understanding this could save both the livelihoods of communities and the lives of wildlife species. TIES summarises the principles of Ecotourism as follows:

- Minimise impact.
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Provide financial benefits and empowerment for local people.
- Raise sensitivity to host countries' political, environmental and social climate.

² TIES, The International Ecotourism Society, 'Our Mission', 1990.

For one of the most corrupted and mis-used terms in the tourism industry today, a few articles and references merit inclusion as examples and evidence of eco-tourism and the debate it has engendered³. A lot has been said about this subject and approaching this study while being mindful of different perspectives will add valuable insight.

“Ecotourism is an idea, a concept, that is challenging tourism as we know it. Defined most succinctly as ‘responsible travel to natural areas that conserves the environment and sustains the well being of local people.’ Ecotourism fundamentally reshapes the basic precepts behind tourism, which is quite simply travel undertaken for pleasure. Nature tourism, which is frequently used but erroneously considered the same as ecotourism, is defined as travel to unspoiled places to experience and enjoy nature. Its close cousin, adventure tourism, is described as nature tourism with a kick – nature tourism with a degree of risk taking and physical-endurance. Nature and adventure tourism focus on what the tourist is seeking. In contrast, ecotourism is qualitatively different. It focuses on what the traveller does, plus the impact of this travel on both the environment and the people in the host country. Ecotourism posits that this impact should be positive. Ecotourism is not, therefore, simply another niche market within the tourism industry. Rather, ecotourism is a philosophy, a set of practises and principles that, if properly understood and implemented, will transform the way we travel.”

Honey, M. 2002. Ecotourism and Certification: Setting Standards in Practice. Washington, DC: Island Press. UN Intergovernmental Panel on Climate Change (IPCC).

SOURCE: Eco-Tourism Handbook for Tourism Planners and Managers, Subir Gosh & M.K.S Pasha, 2005.

³ Tables 1, 2 & 3 – Courtesy of the ‘Untamed Path’. 29.10.09

TABLE 1.

ECOTOURISM:WTO AND UNEP

Much has been written about ecotourism, but there is little consensus about its meaning, due to the many forms in which ecotourism activities are offered by a large and wide variety of operators, and practised by an even larger array of tourists.

While there is not a universal definition for ecotourism, its general characteristics can be summarised as follows:

1. All nature-based forms of tourism in which the main motivation of the tourists is the observation and appreciation of nature as well as the traditional cultures prevailing in natural areas.
2. It contains educational and interpretation features.
3. It is generally, but not exclusively organised for small groups by specialised and small, locally owned businesses. Foreign operators of varying sizes also organise, operate and/or market ecotourism tours, generally for small groups.
4. It minimises negative impacts upon the natural and socio-cultural environment.
5. It supports the protection of natural areas by:
 - Generating economic benefits for host communities, organisations and authorities managing natural areas with conservation purposes.
 - Providing alternative employment and income opportunities for local communities,

- Increasing awareness towards the conservation of natural and cultural assets, both among locals and tourists.

Over the years, it has also become clear that some concerns still need to be wholly addressed in ecotourism, such as:

- Land tenure and control of the ecotourism development process by host communities.
- Efficiency and fairness of the current concept of protected areas for protection of biological and cultural diversity.
- The need for additional precautions and monitoring when operating in especially sensitive areas
- Indigenous and traditional rights in areas suitable for ecotourism development.

Is sustainable tourism the same thing as ecotourism?

The principles of sustainable tourism were defined by WTO as early as 1988; sustainable tourism is 'envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems.'

A clear distinction should be made between the concepts of ecotourism and sustainable tourism: the term ecotourism itself refers to a segment within the tourism sector, while the sustainability principles should apply to all types of tourism activities, operations, establishments and projects, including conventional and alternative forms.

WTO-UNEP concept paper on the International Year of Ecotourism 2002

TABLE 2 COMPONENTS OF ECOTOURISM

- Contributes to conservation of biodiversity
- Sustains the well-being of local people
- Includes an interpretation/learning experience
- Involves responsible action on the part of tourists and the tourism industry
- Is delivered primarily to small groups by small-scale businesses
- Requires lowest possible consumption of non-renewable resources
- Stresses local participation, ownership and business opportunities, particularly for rural people.

TABLE 3 REQUIREMENTS FOR ECOTOURISM

- Specialised marketing to attract travellers who are primarily interested in visiting rural areas.
- Management skills which are particular to handling visitors in protected natural areas.
- Guiding and interpretation services, preferably managed by local inhabitants, that are focussed on natural history and sustainable development issues.
- Government policies that earmark fees from tourism to generate funds for both conservation of wild lands and sustainable development of local communities and indigenous people.
- Focussed attention on local peoples, who must be given the right of prior informed consent, full participation and, if they so decide, given the means and training to take advantage of this sustainable development option.

All types of tourism have registered incredible growth in the last decade, ever since the Indian government acted to boost revenues from the tourist sector by promoting India as the ultimate tourist destination. Awareness and visits have bloomed. Tourism, however, is not such a recent phenomenon to India. India has always been known for its *pucca* hospitality, uniqueness and charm – features which have been attracting foreign travellers to India in droves. The creation of the '*Incredible India!*' campaign by the Ministry of Tourism and Culture was a direct call to boost tourism in all its forms in India. It has had notable success.

India ranks second, after China, in terms of the number of persons employed in travel and tourism and creates more jobs per million rupees of investment than any other sector of the economy. According to the Ministry of Tourism, for every Rs 10 lakh invested in any tourist related activity, it creates 47 jobs directly and 89 indirect jobs⁴. In 2006, 4 million tourists visited India and spent US \$8.9 billion⁵. The following year, 5.08 million Foreign Tourist Arrivals (FTAs) were recorded in India. Indicative of the scale of India's population, the domestic tourism market is huge by any standard – anything from five to ten times higher than the foreign tourist levels. Earnings harvested from foreign exchange in 2003 alone amounted to \$3, 600 million and in 2004 foreign tourists spent around \$ 15.4 billion during their trips to India⁶. In 2007, that figure stood at US\$ 10,729 million. To give some idea of what tourism means to the nation's economy as a whole, Indian tourism contributes to about 8.6 % of the GDP⁷ and it provides employment to around 20 million inhabitants⁸. Both directly and indirectly, increased tourism in India has created jobs in a variety of related sectors – including agriculture, horticulture, handicrafts, construction and poultry. The numbers tell the story: almost 20 million people were working in the Indian tourism industry by 2007. One of the driving forces behind the growth of domestic tourism in India has been the economic growth of the nation, which has added millions annually to the ranks of India's middle class. The disposable income of this group has grown by 10.11% annually from 2001-2006, and much of that has been spent on travel. However, this pattern has not been mirrored in the fortunes of the rural communities, who have seen little, if any, of the economic benefits that Indian tourism has yielded.

Most interestingly, almost one tenth of all tourists visit India for its wildlife attractions⁹. This is indicative of the importance of the Tiger – the national animal - as a tourist attraction in India. In India, the tiger is the national animal and perhaps,

⁴ Tourism in India: Issues and Prospects, Current economic statistics for week ending January 28th 2006, ICICI research centre.

⁵ Ministry of Tourism, Statistics, Government of India. 07.10.09

⁶ Ecotourism Handbook for Tourism Planners & Managers, Subir Gosh & MKS Pasha, 2005

⁷ 'Can Eco-Tourism Save Tigers in India?', Julian Matthews, TOFT, Save the Tiger Fund, Jan/Feb. 2008.

⁸ Ministry of Tourism, Statistics, Government of India. 07.10.09

⁹ Ecotourism Handbook for Tourism Planners & Managers, Subir Gosh & MKS Pasha, 2005

more than any other animal, symbolises the power and majesty of the natural world. For centuries, the tiger has been revered, feared and admired in equal measure and its image is synonymous with India internationally. And yet, since the beginning of this decade, campaigners believe that poachers have been killing them at a rate of one per day. The size of the continuing trade in illegal tiger parts has been revealed by activists working undercover in places such as Tibet where there is flourishing business. At present the fragility of tiger numbers in India is an attraction to tourists wishing to set eyes on the large mammals before extinction becomes a reality, but this will sadly not be the case if the poaching is not stopped and the species is not conserved. In such a scenario, everyone will suffer.

Tiger reserves are an important tourist destination in India. The more prominent ones attract substantial numbers of visitors. Visitations to reserves are also as varied as tourism in general across the country – from backpackers to high-end tourists, serious bird-enthusiasts to neighbourhood weekend visitors. The Tiger Task Force (TTF), through Project Tiger, produced information from 22 of the 28 tiger reserves which shows that a total of 1.29 million people visited reserves in 2004-5. This is not including pilgrim visitors: many tiger reserves including Sariska and Ranthambore have important shrines located within their boundaries.

While a dead tiger would fetch at least \$50,000 in the black market in 2005; if India plays its cards right – if it conserves this flagship species -, it stands to gain \$30 million from tourists who come solely to see the magnificent beast in its habitat¹⁰. And they will keep returning. The economic spin-offs from the Nature Based Tourism in India are vast. First, tourist spending would boost the local economies of areas in which sanctuaries are situated. It would also mean a boost in employment for those associated with the tiger trade. After the Taj Mahal, the Indian tiger is arguably the biggest draw for tourists both from India and abroad¹¹.

For Nature Based Tourism to be successful it needs to be sustainable; it needs to enhance the local economies. This has led to the introduction of 'ecotourism' as a nature-based tourism eco-label. It would be tempting at this point to digress into a discussion of the semantics relating to 'Eco-Tourism', 'Nature-Based Tourism' and 'Sustainable Tourism'. Eco-tourism is, after all, a term very much in vogue and used very liberally in the tourism and wildlife field. I believe such a digression would neither be relevant nor helpful to the study in hand. For the sake of this discussion, we will start from the following premise: Eco-Tourism basically deals with Nature Based Tourism and is aimed *"to conserve the environment and improve the well-being of local people."* On the other hand, Sustainable Tourism includes all segments of tourism and shares the same remit as eco-tourism: to conserve the resources and increase the local cultural, traditional and economic value. Bridging the narrow gap between the two is Nature-Based Tourism. So, for the sake of argument we shall

¹⁰ The Times of India, Editorial 'Tiger Economy', 24th March 2005

¹¹ The Times of India, Editorial: Tiger Economy. 24th March 2005

assume the objective of Nature-Based Tourism to be *sustainable* nature-based tourism and we start from here!

The reality of Nature Based Tourism in India is that, unlike in the West, wilderness areas are where millions of communities actually live. So, when policy designed to protect a species uses the principle of exclusion, people inhabiting these Protected Areas (PAs) are discounted and displaced. Exclusionist policies of forest conservation, of which preservation via dislocation is an extreme example, need to be situated within the broad canvas of the conservation-poverty-rural livelihood interface. Of the vast majority of Indians who depend on land-based livelihoods, nearly one-third are located in the arid and semi-arid tropics, which extend over more than 150 districts and account for around 43% of the country's total geographic area. The semi-arid tropics, abundant with wildlife, are home to a large section of India's rural poor who eke out increasingly precarious livelihoods from their land and other natural resources in hilly, upland and forested areas. In India, the overlap in demand for the PAs from conservationists and communities is significant. It is estimated that between 14 and 23% of these communities' income is derived from Common Property Resources (CPRs)¹². It is not surprising that exclusionist policies of protecting the tigers and their habitats have caused tensions between conservationists and communities.

All tourism impacts on the environment, society and the economy, regardless of whether it's nature-based or otherwise. The impacts are complex. As the nature-based tourism demand is mainly for the pristine areas, the pressures on such ecosystems can be quite high. This pressure is also manifested as pressure upon the local communities' livelihoods, especially if the carrying capacity of the region is not established and respected. The carrying capacity can be physical, social and economic. The carrying capacity of a biological species in an environment is the population size of the species that the environment can sustain indefinitely, given the food, habitat, water and other necessities available in the environment. Project Tiger recommends a minimum core of 300 km² with a sizeable buffer for each project area. Another major issue arising out of tourism is the distribution of benefits from tourism. As any conservation of PAs for the purpose of tourism entails huge opportunity costs, if the benefits are not distributed fairly and equally, this will result in huge welfare losses to the local community.

In the 1990s, tourism received increasing attention, especially in developing countries like India, as it was widely recognised that tourism has the potential to generate income while creating incentives for conservation. It is frequently argued, that tourism allows for the use of areas, which are otherwise of low-value - such as remote beaches, jungle, mountains - but which perfectly meet the demands of the travel industry¹³. In India, for instance, there has been a large increase in international tourism in the last 10 years. In 2002, there was a 14.6% increase in international tourist arrivals along with a 22.4% growth in foreign exchange and most of this

¹² Preservation Via Dislocation, Asmita Kabra, 2007.

¹³ Eco-tourism: conservation tool or threat? Conservation Issues. WWF, 1995.

increase is due to India's system of National Parks (NPs) and the variety of biodiversity present in them. As a sub-sector of tourism, nature-based tourism can be an important channel for redistributing resources from countries who demand nature-based vacations to developing countries, which comprise mega-biodiversity regions and Protected Areas (PAs)¹⁴. This is because an overwhelming majority of species, especially endangered species, are located in developing countries. These countries, including India, face more serious problems like rapid population growth, debts, over-exploitation of wild resources, agricultural expansion, deforestation etc., which if uncontrolled can result in the loss of valuable biodiversity and the degradation of National Parks. Industrialised countries, on the other hand, are characterised by high and increasing demands for nature-based vacations, with PAs representing first-rate attractions. Tourism can therefore be a means of redistributing economic resources, mitigating the socio-economic situation both at a local and national scale and contributing to biodiversity conservation¹⁵.

Wildlife tourism could also be seen as Nature Based Tourism. The concept of 'Wildlife Tourism' emerged in the 1980s as a logical corollary to the paradigm of sustainable development. Having a rich forest cover which is home to some of the world's rarest and most exotic species – some of which are endangered, such as the tiger – has only boosted wildlife tourism in India as people flock for their 'last chance to see'. A positive sign has been the emerging new initiatives being taken in the private tourism sector, which could be helpful as far as tourism trends are concerned. As campaigned for by Travel Operators for Tigers (TOFT) – a private eco-centred tour operator -, tourism has the potential to be proactive in saving specific species and habitats. In the form of eco-Tourism, indirect and direct revenues from tourism can change local livelihoods and save the wild habitats of tigers. Tourism places a value on a wilderness resource like no other non-extractive industry. As a comparison, in South Africa wildlife tourism is generating US\$12 per acre, while agricultural land receives only US\$3 per acre per year. Approximately US\$1.21 is spent per year in India, while US\$2.40 is spent per year to conserve each acre of tiger habitat in all of Asia. Furthermore, in a developing country like South Africa, the National Parks are almost paid for by tourism, to the tune of 76% of the annual budget. In comparison, India's tourism charges and reserve fees make only a single digit dent on the annual reserve budget¹⁶.

Tourism in India contributes 8.6% of the GDP and provides over 5 million jobs. This permeates through to Nature Based Tourism as well, with local, and often well-heeled, Indian tourists willing to spend their money to see a tiger. Already 95% of visitors to reserves are Indian visitors and the market is growing at 10 – 15% per year. Just 11

¹⁴ Ecotourism: a means to safeguard biodiversity and eco-system functions. Ecological Economics. S. Gossling, 1999.

¹⁵ A Note on Ecotourism, Dr G.S Haripriya, Associate Professor, MSE, PDF.

¹⁶ 'Can Eco-Tourism Save Tigers in India?', Julian Matthews, TOFT, Save the Tiger Fund, Jan/Feb. 2008

years ago, 90% of the visitors to these same reserves were foreign tourists¹⁷. The most popular reserves – which are protected – are the Sariska Wildlife Sanctuary, Keoladeo Ghana National Park and Corbett National Park

2.BACKGROUND TO WILDLIFE BASED TOURISM IN RAJASTHAN

2.1 NATURE BASED TOURISM

It hardly needs to be said that the Indian Tiger is a tourist attraction. But tourism is both an opportunity and a threat for the tiger. Tourism is an important economic activity. It is also an important educational activity. It can link tigers to a wider constituency and build conservation support for it. It can also bring monetary and employment benefits to local people and secure their interest in the tiger's future.

It should be said that Wildlife, or Nature Based, Tourism in South Asia is a relatively recent phenomenon, especially when compared to many African countries where wildlife based tourism is more active, promoted by the state. The concept of 'wildlife' or 'Nature Based Tourism' emerged in the 1980s as the logical evolution of sustainable development. At this time, it also became apparent that Nature Based Tourism needed to be regulated to ensure the quality of the wildlife experience and conservation on the one hand, while adding to the local economy on the other. The concept is based on the assumption that Nature Based Tourism can substantially benefit local communities – with the economic benefits it brings and the jobs it creates. It was because of the perceived threat of conflict, between the protectors of the reserves and the local communities, that the Government of India initiated the Eco-Development Programme in the early 1990s, to provide alternative livelihood options and sources of firewood to people in the vicinity of wildlife reserves. The programme peaked in the late 1990s when assistance from The World Bank was made available as well.

A welcome initiative to tourism in rural areas is the United Nations Development Programme (UNDP) project, begun three years ago, which seeks to promote rural tourism. It is a brilliant move since it encourages tourists to live and experience life in Indian villages, while it seeks to protect the livelihood of the villages in the form of preservation of their traditional arts and crafts. The key concept behind this idea being that the produce would be purchased by tourists and thus would encourage locals to produce more, while also serving as a deterrent to members of families to move to the big cities in search of employment. An interesting difference in approach to tourism can be seen by the attitudes of business versus NGOs. Businesses tend to view Nature Based Tourism as the objective; whereas NGOs will find that their goals are facilitated by using Nature Based Tourism as the means.

Most developing countries have had difficulty coming up with appropriate policies in support of the concept of Nature Based Tourism, despite tourist numbers at wildlife reserves showing steady growth. Tourism has not been viewed as a potential income

¹⁷ 'Can Eco-Tourism Save Tigers in India?', Julian Matthews, TOFT, Save the Tiger Fund, Jan/Feb. 2008

generating activity by the governments in the South Asian region until recent years. Nepal has been at the forefront of Nature Based Tourism in South Asia, supporting wildlife tourism as a source of revenue that can be shared with local communities. In India, the institutional framework to promote tourism in PAs (Protected Areas) has been, relatively speaking, weak.

Nature and wildlife tourism accounted for 7% of all tourism in India in 1997. The attraction of the tigers for tourists is potentially important for the livelihoods of the surrounding community. Tourists will explore the area near a tiger reserve and this would then feed the local economy. The local economy could thrive on the activity generated by travellers who make the trip to the reserve, not just to see the wildlife, but also to experience whatever else the area has to offer.

However, there are various obstacles and challenges to conservation in India, one of the most urgent and sensitive being the security of the local communities' livelihoods as this is a barometer of the local economy. This hurdle needs to be overcome before Nature Based Tourism can develop further. Assisting the efforts of Government initiatives like Project Tiger (now NTCA) are various NGOs, such as WWF-India, who have complemented the actions taken.

2.2 TOURISM IN RAJASTHAN

Any consideration of Sariska Tiger Reserve (STR) and the local economy must be done in the context of the state of Rajasthan and its tourism. Rajasthan is the largest state in the Republic of India in terms of area. It encompasses most of the area of the large, inhospitable Thar Desert, which has an edge paralleling the Sutlej-Indus river valley along its border with Pakistan. The state borders Pakistan to the west, Gujarat to the southwest, Madhya Pradesh to the southeast, Uttar Pradesh and Haryana to the northeast and Punjab to the north. Rajasthan is 1,700m above sea level and covers an area of 342,269 km². The state capital is Jaipur. Geographical features include the Thar Desert along north-western Rajasthan and the termination of the Ghaggar River near the archaeological ruins at Kalibanga, which are the oldest in the subcontinent discovered so far. One of the world's oldest mountain ranges, the Aravalli Range, cradles the only hill station of Rajasthan, Mount Abu, and its world-famous Dilwara Temples, a sacred pilgrimage for Jains. Situated in the north-western part of India, Rajasthan is globally famous for its heritage beauty and royal attractions which draw tourists from worldwide. The state was formed on 30 March 1949, when all erstwhile princely states ruled by Rajputs, known as Rajputana, merged into the Dominion of India. The only difference between erstwhile Rajputana and Rajasthan is that certain portions of what had been British India, in the former province of Ajmer-Merwara, were included. Portions lying geographically outside of Rajputana such as the Sumel-Tappa area were given to Madhya Pradesh. Once plundered by the Rajput warrior clans, Rajasthan is now famed for its abundant wildlife (albeit endangered) and warm people, glitz and camels, soulful music, glittering saris, tottering turbans and a rich cuisine.

Endowed with natural beauty and a great history, tourism is a flourishing industry in Rajasthan. Rajasthan is India's eighth biggest economy and its tourism sector, Indian and Foreign, accounts for 15% of the state's economy¹⁸. Every third tourist visiting India also visits Rajasthan, which is glorified as 'The Land of the Maharajas', usually as part of the Golden Triangle tour of Delhi-Agra-Jaipur¹⁹. Heritage tourism, cultural tourism, wildlife tourism, fairs and festival tourism are just some of the prominent tourist options in Rajasthan and make the state a microcosm of 'Mother India'. Last year, the Pushkar fair attracted about 35,000 foreign tourists and over 5 lakh domestic tourists during the season (at the end of October)²⁰.

Rajasthan is often called a shopper's paradise. Famous for textiles, semi-precious stones and handicrafts, the attractive designs of jewellery and clothes are eye-catching and many shoppers throng to the region to avail them. Rajasthani furniture has intricate carvings and bright colours and the handicrafts are notable for the intricate craftsmanship that goes into them. Above all, Rajasthan's shopping appeals to both tourists and people from other parts of India due to its cheap prices for quality goods. All these features are of huge advantage to revenue generation since the state is easily accessible from Delhi and so can easily be afforded a few days from an itinerary. On account of all these factors and more, Rajasthan was judged to be the 5th most popular state for Foreign Tourist Visits (FTVs) in 2008. The provisional number of FTVs to Rajasthan in 2008 stood at 1,477,646, amounting to 10.5 % of the share of FTVs in India²¹. Consequently, tourism has dramatically increased employment in the hospitality sector in Rajasthan.

Especially important in the role of conservation, Rajasthan has 21,292 km² of forest cover comprising 6% of the geographical area of the state. Rajasthan's wildlife reserves and sanctuaries have a unique status worldwide. Historically, the state of Rajasthan had a significant population of tigers. In 1955 tigers were reported in 23 districts of Rajasthan while tigers have never been reported from the desert districts. By 1999 the tiger had become extinct in a majority of districts and the only remaining population was mostly confined to Sariska (STR) and Ranthambore Tiger Reserves (RTR)²². Until the reintroduction of tigers to STR in 2008, Ranthambore remained the only tiger population in Rajasthan. Though isolated, Ranthambore has a very high density prey base, making it an especially suitable site for high densities of tigers.

Today, Sariska (TR) and Ranthambore (TR) remain the most high profile and renowned tiger reserves in Rajasthan, and Keoladeo, near Bharatpur, is often referred to as an

¹⁸ India Business Directory.

¹⁹ *In Rajasthan*, by Royina Grewal. Lonely Planet Publications, 1997.

²⁰ The Times of India, Saturday 24th October, 2009

²¹ Ministry of Tourism: Share of Top 10 States of India in Number of Foreign Tourist Visits, 2008.

²² Tiger returns to Rajasthan. WWF-India, New Delhi. Soni R.G. 1999.

ornithologist's paradise. Sariska and Ranthambore are both known worldwide for their tiger conservation and are considered by both nature lovers and photographers as the best places in India to spot tigers. Sadly, the poachers who work for the illegal tiger trade are only too aware of this 'product' source and the population has been savagely targeted by poachers. The total number of visitors (both domestic and foreign) for both of the reserves, estimated between April 2005 and May 2006, stands at over 90,000²³.

2.3 TOURISM IN SARISKA TIGER RESERVE (STR) & COMPARISON WITH RANTHAMBORE TIGER RESERVE (RTR)

Sariska Tiger Reserve (STR) lies in the Alwar district of Rajasthan and although larger than Ranthambore, it is less commercialised and has fewer tigers while sharing a similar topography. Between 2004 and 2005, STR received 49,451 tourists and generated 28 Rs lakh in revenue which was deposited with the state government and did not reach the local economy²⁴. The close proximity to Delhi, which is 163km away, and Jaipur, which is 107km away, is a tremendous advantage for tourism here. Alwar town, which is a district headquarters, and increasingly hosts many agro-industrial businesses, is only 37 km away.

The two main predators in STR are the tiger (*Panthera Tigris*) and the leopard (*Panthera Pardus*). The erstwhile hunting grounds of the royalty in Alwar state pre-independence, it was declared a Wildlife Reserve in 1955, a Sanctuary in 1958 and in 1978 was given the status of a Tiger Reserve (TR) making it the eleventh TR under India's Project Tiger scheme. In 1979, the reserve was applauded as 'National Park of the Year'. Despite this, by 2005, STR had still not completed what is a prerequisite for declaring an area a Sanctuary or National Park – the recording and settlement of the rights of people who live there. Having begun 1983, this process remains incomplete.

The core area terrain - 866 km² with 497.8 km² as its core area - consists of undulating plateaus and the wide valleys of the Aravalli. Sariska's core area is divided into three Core Zones. For administration purposes, the entire reserve is divided into four ranges, which are then divided into 75 beats: Sariska – 205 km²; Tehla – 341 km²; Akbarpur – 219 km²; Talvriksh – 101 km². The largest of the core areas identified within STR was proposed as a National Park in 1982, where resource exploitation is banned. The forest is typical dry deciduous and changes dramatically with the seasons all of which serves to make it prime tiger country. The core is also home to 11 villages, earmarked for relocation for many years.

While Sariska is a critical habitat for Tiger conservation and most visitors will be coming primarily to set eyes on the *Panthera Tigris*, the reserve is an important preserve of other rare and endangered species, including; leopard, jungle cat, caracal,

²³ Ministry of Tourism, Surveys and Studies, 2009.

²⁴ The Tourism Agenda, TTF: 132-140, 2005

striped hyena, golden jackal, chital, sambhar, nilgai, chinkara, four-horned antelope 'chousingha', wild boar, hare, hanuman langur and a rich variety of birds and reptiles also live in the reserve.

Besides its wildlife wealth, the Sariska Tiger Reserve (STR) also holds many ruins of archaeological structures that belong to the 8th and 10th century AD. It is one of the few tiger reserves that remain open to tourists throughout the year and does not close down during the monsoon period. Within the boundaries of the reserve there are forts, palaces and temples, which increase the attraction of tourists visiting the area. The reserve is also a favourite pilgrimage route on account of Hanuman temple in Pandupol. The temple of Bhartrihari at the south-eastern edge of the reserve is famous all over Rajasthan for its fairs and is also a centre for pilgrimage. Oozing with royal majesty, the area has buildings associated with the kings of Alwar such as the Sariska Palace, once used as a royal hunting lodge by Maharaja Jai Singh, which exert a strong pull on tourists. Typically Rajasthani in style, Sariska Tiger Reserve is also rich in culture and folklore and is the location of several sites of historical importance such as the 17th century Kankwadi fort, built by Jai Singh II, which is situated near the reserve's centre. The setting offers impressive views of the hilltop plateaus.

Tourist accommodation is principally at Tiger's Den (RTDC) and the Sariska Palace. More recently, another property has come up near the forest of Thana Ghazi, called Tiger Heaven. Siliserh Palace Hotel is located at the northern edge of the reserve – an exquisite property now under state-owned management.

Tourism has been recording a steady growth since 1978 in the state of Rajasthan in general and in STR in particular. In 1996 alone, STR had 27,000 tourists, of whom 40% were of foreign origin, including the day visitors. The number of tourists (April 2005 – May 2006) visiting the reserve, at the time the 'Sariska Shock' extinction was being broadcast, is reported to have been 72,518²⁵. In 2001, Sariska earned tourism revenue of Rs 40 lakh. The government's allocation for the reserve was Rs 2 crore annually, which included salaries for 275 field staff²⁶. Tourism in STR involves mostly day tourists taking wildlife safaris organised by private operators. And yet, despite proper infrastructure, the number of visitors is increasing every year. The present trend is likely to continue, since STR is located close to Delhi and is rich in biodiversity, thereby attracting large numbers of wildlife tourists.

Ranthambore Park is situated in Sawai Madhopur district of south eastern Rajasthan and is one of the most famous tiger reserves (TR). It is situated about 130km from Jaipur, which is also the nearest airport. Ranthambore was established as the *Sawai Madhopur Game Sanctuary* in 1955 by the Government of India, and was declared one of the Project Tiger reserves in 1973. It became a National Park in 1980. In 1984, the adjacent forests were declared the *Sawai Man Singh Sanctuary and Keladevi Sanctuary*, and in 1991 the TR was enlarged to include *Sawai Man Singh and Keladevi*

²⁵ Ministry of Tourism, Surveys and Studies, 2009.

²⁶ Sariska – Balancing on an Edge. Nonika Sehgal. 31st May 2001.

sanctuaries. The reserve lies at the edge of a plateau, and is bounded to the north by the Banas River and to the south by the Chambal River. There are several lakes in the reserve. Covering an area of 392 km² the National Park is named after the historic Ranthambore fortress, which lies within it. Highly photogenic, the reserve is one of the most filmed tiger reserves in the world. For this reason, the reserve is more commercially developed than Sariska and yet the potential for tourism at Sariska is equally as strong. Ranthambore Tiger Reserve received 111,375 tourists in 2003-2004. Annual tourist figures exceed 100,000 and the average annual revenue is USD\$ 200,000²⁷. The reserve generated 167 Rs lakh in 2003-2004.

In 2007, it was estimated that Ranthambore had 32 tigers within the reserve, including a new litter of cubs (with an error range of 30-35)²⁸. In April 2009, two individual tigers at Ranthambore picked up a 'Lifetime Achievement Award' for their hundred million dollar contribution to the Indian economy. *"They are multi-million dollar earners [...] Machali herself earns as much as a top cricketer or Bollywood actress"* said Julian Matthews of Travel Operators for Tigers (TOFT), *"and it's critical to recognise these extraordinary economic benefits that come from saving her species in the wild. She literally provides livelihoods for thousands of people from forest guards to wildlife guides, drivers to hoteliers!"*

It is a reserve that visitors throng to and it receives a great deal of revenue from filming as well as tourism. The total number of tourists, domestic and foreign, visiting the reserve between April 2005- March 2006 was 17,483²⁹. The majority of tourism at Ranthambore is also privately run and most of the 33 hotels are high-end premium hotels. The annual turnover from the top 21 elite hotels is an estimated Rs 21.81 crore³⁰. This is a substantial figure.

Besides the tigers at Ranthambore, other major wild animals include the leopard, nilgai, dhole, wild boar, sambar, hyena, sloth bear and chital. It is also home to a wide variety of trees, plants, birds and reptiles. Ranthambore is also the site of one of the largest Banyan Trees in India.

²⁷ Anon, personnel communication. Rajasthan Forest Department (RFD), 2003. Joining the Dots, The Way Ahead , TTF: 27-143, 2005.

²⁸ Status of Tigers, co-predators and prey in India, NCTA & WII, 2008.

²⁹ Ministry of Tourism, Surveys and Studies, 2009.

³⁰ 'Joining the Dots', the Tiger Task Force, Government of India, April 2005

TIGER CONSERVATION

3.1 TIGER CONSERVATION AND ITS LINKAGE WITH LOCAL LIVELIHOOD

Tiger Conservation has become a huge priority in India in recent years and the Government has implemented many policies and poured in crores of money to a number of initiatives. But the people must also play their part; this has been the hardest task. It is increasingly being realised that NGOs have a pivotal role play in strengthening weaknesses in government initiatives, notably by motivating and activating people to create linkages between tiger conservation and local livelihoods. Capacity building and compensation schemes, among other initiatives taken by NGOs, have been crucial in this area.

While each tiger reserve in India will differ in landscape, biotic pressures, carrying capacity and natural resources, they all have one thing in common: the habitat which is home to the tiger and its prey base is also home to many village communities who are almost entirely forest-dependent and lacking awareness about the sustainability of their use of resources. It is this human-tiger conflict which has, and which will continue, to create a stumbling block to tiger conservation in India and which has the potential to undermine any progress which initiatives such as Project Tiger and WWF's TCP achieve. The future of tiger conservation in India will undoubtedly lie in harmonising human-tiger relationships; in facilitating co-existence. The security of the local communities (and their livelihoods) and the security of the tiger and its habitat are intrinsically linked; they are inseparable. In the stimulus of action that took place following the 'Sariska Shock' of 2005, the Government implemented the Tiger Task Force (TTF). In the report '*Joining the Dots*', which the TTF published, it was stated:

*'The protection of the tiger is inseparable from the protection of the forests it roams in. But the protection of these forests is itself inseparable from the fortunes of the people who, in India, inhabit forested areas/PAs.' Thus, any regulatory or enforcement regime that wishes to throw a protective ring around the tiger must also take into cognisance that, apart from the tiger, the protection equation contains two other variables: the forests and the people that live in and around it.*³¹

This is the unique situation conservation in India has always faced and tried to grapple with. The prosperity of the tiger and the people who share its habitat are not mutually exclusive and no matter how advanced we become technologically, scientifically or otherwise, we will never be able to change this law of nature. India's vast tiger habitat – extending from Central India to the far reaches of the Eastern and Western Ghats - is rich in natural resources and is home to some of the poorest people in the country. These forests are essential for India's survival: for ecological security and for economic security. An estimated four million live within India's PAs. The people living in these forests need it for their survival. But what is to be done with them?

³¹ A Paradigm Change, TTF: 21-26, 2005.

As the TTF underlined in the report, *'we don't have the option of choosing one over the other: the poverty of one will destroy the other.'*³² Literally, it is all about coexistence: Protecting the tigers immediately and securing inviolate spaces for their existence; safeguarding its future by involving local communities to share the benefits of conservation; involving local communities in rebuilding broken forest economies of the tiger's habitat so that all can grow. This is the paradigm of inclusive growth.

Thus the tiger crisis is, first and foremost, a forest crisis. India's conservation programme is located not in the homes of the bureaucrats and the very rich, but in the settlements of the very poorest. It is their land that is set aside for protection. It is they who share their resources with the tiger, without receiving any benefits in return. The tiger districts are, in most cases classified as the 150 poorest districts in the country. Successful tiger conservation asks that such facts are taken into account. It has to bring benefits to the region and to its poor people. The question is how?

It is here that we must understand and revisit the nature of India's economy in the wildlife sector. People, who co-inhabit the tiger's home, are forest-dependent. They live in a biomass subsistence economy which can only survive if there is livestock to minimise the risk of crop failure and to provide manure for the lands. The livestock insurance policy needs grazing lands, as agriculture is poor and unirrigated; fodder therefore is only available in the open lands. The lack of assured fodder also means that people cannot keep quality livestock as they need to minimise their risks. In most cases, the land is not fit for agriculture and crop yields are meagre. People can only survive if they have access to forest resources from where they can collect firewood for sale or live off the collection of various forest produce – from honey to *mahua*. People live within the forest not because it brings them huge benefits, but because they have no alternative. Their economy – like the tiger – depends on the forests.

The challenge, therefore, is to rebuild the forests economies so that the habitats of tigers, as well as the livelihoods of the poor, can be protected. As Sunita Narain, director of the Centre for Science and Environment (CSE), has said: the issue is not about tigers *per se*, but about recreating economic and livelihood basis for forests to be regenerated³³.

It is widely felt that exclusionist protection policies do not work as a means of tiger conservation. It is becoming increasingly apparent that eco-development and tiger conservation can enjoy a reciprocal relationship offering mutual benefits to one another; that they can bridge the gulf that has emerged between tiger conservation and local livelihoods. The concept of eco-development can be well-illustrated in the case of Nagarjunasagar Srisaillam Tiger Reserve (NSTR) in Andhra Pradesh, but its relevance can be applied to tiger conservation across the whole of India. One of the biggest protected areas in India covering 3,568 km², NSTR has historically been home to a healthy tiger population. However, several anthropogenic factors led to the

³² A Paradigm Change, TTF: 21-26, 2005

³³ Sunita Narain, as Chairperson for the Tiger Task Force (TTF) report, 2005

depletion of tigers from the early nineties. These included conflicts made over livestock kills made by the tiger, habitat loss and a corresponding loss in prey base. To mitigate this problem, the State Government decided to provide compensation for the loss sustained by the villagers through a comprehensive compensation package. To gather instant information on cattle kills, incentives have been paid to informers with funding from WWF-TCP. In 1998-99, Rs112,815 was paid as compensation for tiger kills in this one reserve, and Rs107,000 as incentive.

The gamut of problems confronting the Nagarjunasagar Srisailem Tiger Reserve were primarily the result of increased dependency of local people on forest resources, and a lack of awareness about their sustainable use. The NSTR was identified as one of the eco-development implementation sites and a State Government officer was given special training to lead the project. With the support of the UNDP, the Union Government and the Wildlife Institute of India (WII), an eco-development plan was drawn up for NSTR in which the livelihood needs of the local people were directly reflected. The entire ethos of eco-development, in the context of tiger conservation in India, is very much a case of one of the simplest concepts being the most effective and the most powerful. The objective: balancing the socio-economic development of the people and the ecological sustenance of the region. Ergo, to reduce the pressure on the Protected Area as well as improving the degraded ecosystem. The first step was to improve the economic conditions of the rural poor by encouraging them to adopt more efficient agricultural and animal husbandry practices.

The linkage between tiger conservation and local livelihoods in India epitomises the holistic essence that conservation has as its core. It is very much a case of security breeding security; of wealth breeding wealth; of poverty breeding poverty....of Yin balancing Yang. The process of eco-development was institutionalised in India by involving NGOs in the formation of Eco-Development Committees (EDCs) and establishing linkages with other developmental agencies. Over the years, hundreds of EDCs have been formed and the results have been exemplary. Essentially, locals' needs are identified through income-generating schemes. At NSTR, under the animal husbandry scheme goats were replaced with sheep to reduce the grazing pressures on the habitat. To reduce fuel-wood collection, biogas and smokeless chullahs were provided to 534 and 10,330 households respectively. Almost 170 families benefitted from the vegetable vending scheme; 44 were given provision shops, and 53 benefitted from a basket weaving scheme. Special strategies were also implemented to realise the importance of women in conservation activities and to insure their involvement.

The record of eco-development in tiger conservation in India illustrates the intimate linkage between tiger conservation and local livelihoods and testifies to the immense value of human-tiger coexistence. In the instances where EDCs have been implemented, the indicators that the tiger population is on the path to recovery support the theory that tiger conservation must benefit local livelihoods if it is to succeed. .

3.2 TIGER CONSERVATION IN RAJASTHAN AND LOCAL LIVELIHOOD

Indian society has been according great importance to conservation of flora and fauna since time immemorial and Rajasthan holds a special place in the history of conservation. The 1730 sacrifice of 363 women, men and children in Khejarli village of Jodhpur district to save trees is an unparalleled example. Even now, 1 to 2 lives are lost every year in an effort to save wild animals.

Formerly, the state of Rajasthan was famous for tiger hunts. Places like Darrah (Kota), Boraband (Jhalawar), Sariska and Sawai Madhopur were especially well known. There was unchecked hunting in the Fifties and Sixties. However, the perception of people started changing on the Seventies. Though Queen Elizabeth hunted a tiger in 1961 at Sawai Madhopur, raising some controversy, the Duke felt happy in attempting to see it through a camera in the Sariska jungles in 1981.

Due to rapid increase in population in India, various pressures on forests and wildlife kept increasing. As a result, tiger habitats became degraded, were diverted to accommodate agriculture and industry, became largely fragmented and also became devoid of prey, forcing tigers to stray out in search of food. In the process, they got killed. Gradually, one after another the districts became tigerless. By 1999, Rajasthan only had tigers in the two Project Tiger areas – Ranthambore and Sariska, with only a few in the adjoining Ramgarh Vishdhari and Jamua Ramgarh sanctuaries.

Though in the beginning of the twentieth century India had more than 50,000 tigers, Rajasthan is estimated to have had more than 500. Due to immense biotic pressures, by 1972 the number reduced to only about 1800 for India and 100 for Rajasthan. It was at this time that Project Tiger was launched by the Government of India with the assistance of WWF-India in 1973. Ranthambore National Park Sawai Madhopur was taken up as a Project Tiger area in 1973 and Sariska (866km²) in 1978. Keladevi sanctuary of Karauli district was also included in Ranthambore TR making the area 1,334km². Despite the assistance from the Central Funds of Rs 100 lakhs per year per reserve, threats to the sustained survival of the tiger remained. These threats included:

- Loss and fragmentation of habitats;
- Poaching of tiger and its prey base;
- Retaliatory destruction by cattle owners;
- Illegal cutting for fuelwood and
- Illegal grazing.

Rajasthan suffers frequent droughts, causing severe water shortage in PAs, therefore, new water-holes are created every year by constructing anicuts, Johras and Nadis at suitable places. This prevents animals straying out of the PAs in search of water and also improves the water regime.

NGOs like WWF-India, Global Tiger Patrol and Tiger Watch have provided some equipment to Rajasthan's TRs to ensure better protection of flora and fauna. Illegal grazing is a serious menace to tiger conservation in Rajasthan, especially in Ranthambore NP. Each monsoon, there are frequent clashes between illegal graziers and forest staff as more than 25,000 cattle are driven into the reserve. In an effort to counter this problem, the Forest Department has placed more staff on the ground to provide better protection for the tiger's habitat. Such protection is necessary for the conservation of the tiger and the safeguarding of its breeding areas.

Realising that force is not the answer to such conservation challenges, the emphasis in Rajasthan has recently been on eco-development strategies. Essentially, such strategies seek to reduce the pressure of the neighbouring populations on PAs and also to reduce the negative impact of the PA on the people. The India Eco-Development Project has been instrumental in this initiative and has been supported by GEF and the World Bank. One of the major threats to the tiger in Rajasthan is retaliatory killings by cattle-owners whose cattle are killed by tiger. To reduce this threat the state of Rajasthan has provided compensation to livestock owners since 1993. The compensation varies from Rs2,5000 for a buffalo to Rs 100 for a goat or sheep³⁴.

The economic benefits for villagers of reserves such as Sariska and Ranthambore are critical for the support of these communities for tiger conservation. The recycling of revenue generated at TRs into the local economy is a work in progress, with the exception of Periyar TR (Kerala) which has become a paradigm of change. Eco-tourism is of great help to conservation, as it not only generates revenue but also elicits considerable support among people for the cause of conservation. Large numbers of tourists in Rajasthan enjoy the tranquillity and feel of nature at STR and RNP each year. In 1989-99, the two reserves generated Rs 8,051,960 from eco-tourism. The introduction of entry fees was made to generate the goodwill and active support of villagers in protecting the tiger and its habitat at PAs. Sariska and Ranthambore both charge Rs25 for Indians and Rs for Foreigners. The entry fee for a vehicle is Rs125 and the fee for a video camera is Rs200³⁵.

Tiger conservation in Rajasthan has recently been strengthened by news that the state is set to get its third tiger reserve and India's 39th. The National Tiger Conservation Association (NCTA), formerly Project Tiger, has given its approval to the project at Darrah National Park, 50km from Kota. According to the state forest and environment minister, Ramlal Jat, *"The state government had submitted a proposal to the centre for a Tiger Reserve at Darrah. The surplus tigers of Ranthambore will be translocated to Darrah after the area is declared a Tiger Reserve under section V of the Wildlife Protection Act, 2006."*³⁶ The Darrah National Park, also called Rajiv Gandhi National

³⁴ R.G.Soni, Three Years and Beyond, Tiger Conservation Programme, WWF, 1999

³⁵ R.G.Soni, Three Years and Beyond, Tiger Conservation Programme, WWF, 1999

³⁶ My India News, as posted by Deepa Agrawal, on 7th November 2009.

Park, consists of three wildlife sanctuaries – Darrah, Chamal and Jaswant Sagar. It was declared a National Park in 2004 and covers an area of 250km². The Durrah TR will form a large corridor connecting Sariska, Kota, Bundi and Ranthambore to Madhya Pradesh. *“This will not only take away the excess visitors from Ranthambore but also help Kota attract a large number of tourists.”* Given that tourism contributes 15% to Rajasthan’s economy – India’s eighth largest economy – such developments should be crucial to local development.

3.3 LIVELIHOOD OPPORTUNITIES AT SARISKA TIGER RESERVE (STR)

The matter of livelihood opportunities is an area of central importance to this study of the tiger’s role in the local economy. It is also a critical factor to tiger conservation in India, which will influence the future of human-tiger relationships in India’s Protected Areas. The number of poor people in India, according to the country’s Eleventh National Development Plan, amounts to more than 300 million. But almost one third of the country’s population of more than 1.1 billion continues to live below the poverty line, and a large proportion of poor people live in rural areas. Poverty remains a chronic condition for almost 30 per cent of India’s rural population³⁷.

Of the 56.47 million people living in Rajasthan, 43.3 million live in rural areas. According to the Government of Rajasthan, 14% of the population live below the poverty line, although it is disputed and realistically 15 million are thought to be below the UN poverty line³⁸. Poverty affects tribal people in forest areas, where loss of entitlement to resources has made them even poorer. As a general rule, the local communities who share the tiger’s habitat have been forest-dependent: they either graze cattle on the land or work the land agriculturally. This is true of STR as in the vast majority of India’s reserves.

Based on what we know, the potential role that the tiger could play in the local economy is huge and could offer enormous benefits to the development of India’s rural communities. Set in September 2007, the National Minimum Floor level Wage was increased to Rs 80 per day (from Rs66) for all scheduled employments. In Rajasthan, the Minimum Wage is fixed, guaranteeing Rs 100 per day for unskilled work; Rs 107 for semi-skilled and Rs115 for skilled work³⁹. If the National Rural Employment Guarantee Act, 2005 (NREGA) were to be effectively implemented in the rural communities of PAs such as Sariska, then tiger conservation could provide significant strengthening of livelihood security to these households and their local economies.

Access at: [file:///I:/Rajasthan Third Tiger Reserve soon in Darrah N29444%20NEWS.html](file:///I:/Rajasthan%20Third%20Tiger%20Reserve%20soon%20in%20Darrah%20N29444%20NEWS.html) 18.11.09

³⁷ Eleventh Development Plan (2007-2012), Government of India

³⁸ Facts and Figures. Source: 2001 Census.

³⁹ Minimum Wages in India – Current Minimum Wage Rate.

There are a total of 26 villages located within the Sariska Tiger Reserve (STR) and another 310 within a 5km belt all around the reserve. These villages together hold a population of about 4,70,000 cattle which are partially or wholly dependent on the reserve for grazing. This exerts a tremendous pressure on the reserve's natural resources. The villages around the reserve report an annual human population growth of 1.5%. The livestock density is twice that of the average for Rajasthan. Nearly 55% of the livestock are dependent on the reserve for grazing, competing daily with wildlife for grass and water, besides spreading disease to the wild ungulates. The conflict between village communities within the reserve and the Forest department (FD) is not a recent phenomenon. In 1998, 74% of the villages surveyed around Sariska reported crop damage by wild animals as a problem⁴⁰.

The other side of this situation is that the presence of people and livestock makes the reserve susceptible to poaching, forest fires, and pressure of excess of tourists. The difference between undisturbed vegetation and vegetation degraded because of overgrazing, is stark and pervasive at STR. Most of the settlement rights and concessions were granted over a hundred years ago. In the meantime, India's forest cover has shrunk dramatically – that of the northern Aravallis almost to nothing. Deforestation is in part aggravated by urban demand for fuelwood and milk. Local people who live in the forest and cut trees become law breakers. In poverty, their population continues to increase (as does that of their livestock). Consequently grazing, once very profitable, is now wrought with misery and poverty. Many of these forest-dependent communities are denied all the changes brought by the development of the surrounding areas because they are trapped in a cycle of poverty and ecological degradation. Tourism and tiger conservation at STR could create vast livelihood opportunities for these communities, but before that is to be done, this cycle of dependence and exclusionist policies needs to be managed.

Previous resettlement programmes have been unsuccessful and in the absence of better livelihoods for displaced villagers they are likely to remain hesitant. Villagers at Sariska are not intentional culprits in overgrazing and collection of firewood from the reserve. They are caught in an increasingly unsustainable life-style and cannot break out of it on their own. They welcome Government inputs but are wary of resettlement. But it is not to say that resettlement is the only answer for securing the livelihoods of the local communities. The enhancement of conservation at Sariska would also support the long-term development of Alwar district. These long-term benefits include enhanced water flow in summer, job opportunities provided by the reserve and wildlife tourism, provision of fodder from the buffer in lean periods, participatory and voluntary resettlement of neglected, insular villages, and, finally, eco-development projects focusing on fuel and livestock.

⁴⁰ Sekhar, 1998

FOREST COVER ASSESSMENT

In the year 1985 Forest Survey India (FSI) was directed to prepare the country's forest cover map at regular two year intervals. This was felt necessary as a means of monitoring the forest and tree cover and planning the forest resources and environmental security of the country. Habitat loss and forest destruction are two of the most potent threats to the tiger in India. With the publication of State Forest Report 2009, the FSI has completed twenty-two years of biennial forest cover assessment using remote sensing techniques.

The term 'Forest' is defined differently in different contexts. Generally, 'forest' means an area having trees and other vegetation, while ecologically the areas without tree cover not put to human use, like grassy banks in a wildlife sanctuary or the rocky areas in the forests constitute an integral part of the forested eco-system. The protection of the tiger in India is as much about conserving such forests as it is about stopping poaching and illegal wildlife trade.

Rajasthan, the largest state of the country, has 5 National Parks and 25 Wildlife Sanctuaries covering an area of 9,326km², which constitutes 2.7% of the state's geographical area. Rajasthan has 2 Tiger Reserves, namely Ranthambore and Sariska. The forest cover of the State, based on an interpretation of satellite data from October – December 2006, is 16,036km² which constitutes 4.69% of the State's geographical area. Comparison of current forest cover data with the previous assessment (satellite data of October – December 2004) shows a gain of 24km² of forest cover.

The district in which Sariska Tiger Reserve is located is Sawai Madhophur, which has a geographical area of 10,528km². Of this, the breakdown is as follows:

Very Dense Forest Cover	0
Mod. Dense Forest Cover	260
Open Forest	1,039
Total	1,299
% of G.A	12.34
Change compared to 2005 assessment	-1
Scrub	465

Source: Table 7.23.3: District-wise forest cover in 2007, India State of Forest Report 2009. Forest Survey of India, Ministry of Environment & Forests, Government of India

PREVIOUS STUDIES ON LIVELIHOOD OPPORTUNITIES IN AND AROUND SARISKA

There have been previous studies carried out investigating STR and the local communities. However, these have largely been focussed on the attitudes of the villagers and have not specifically looked at the impact of the tiger on the local economy. One such study was made on the attitudes towards conservation and wildlife tourism around Sariska Tiger Reserve, and was carried out in 2003. The main conclusion was that the attitudes of the villagers indicated where the problem lay. Simply put, the majority of the 11 villages within the core of Sariska were not benefitting financially from the tourism there. It is an interesting study. At the time, the social composition of the local population at STR was a mix of 18 social classes (castes in India). The dominant castes are the *Meenas* who are agriculturalists, and *Gujjars* mainly dependant on livestock keeping. A majority (92%) of the farmers are small or marginal farmers⁴¹. Traditionally, people were dependent upon land and other natural resources for livelihood, but the PA of STR has changed this trend. In recent years people have begun to seek other sources of income. Direct or indirect benefits from tourism were restricted to only 24% of the household surveyed in 2003, as shown in Table 4.

TABLE 4: Tourism benefits received by respondents in STR, 2003		
Sale No. benefitted	Type of benefits	No of Households
1	Revenue from sale of milk and vegetables	21
2	Informal employment	12
3	Sale of handicrafts	8
4	Guide services	2
Average annual household income was 36,000 Indian Rupees (One USD = 45 INRs).		

This included income from sale of dairy and agricultural products to the restaurants catering to the tourists, employment as tourist guides and safari operators, etc⁴². However, a majority of respondents (76%) expressed that they neither had any direct

⁴¹ Journal of Environmental Management 69, 2003, *Local People's attitudes towards conservation and wildlife tourism around Sariska Tiger Reserve, India*.

⁴² It should be noted that at this time, just before the 'Sariska Shock', the numbers of Tigers – although with hindsight we now know were being depleted by poachers – would have 'officially' been at a healthy level, between 24 and 25, a fact which would have contributed to the number of tourist visits.

experience with tourism, nor received any benefits. Households who benefitted from sale of dairy and agricultural products reported that it contributed 47% of their annual household income. Providing the tiger population is protected effectively, the prospect for local livelihoods benefitting from the related sustainable tourism should be positive, especially given that nature forms a part of the religion and culture of a majority of local communities. Despite the relative lack of participatory governance, the locals are likely to support conservation in STR, even more so if their families benefit from the tourism revenue. Generally, it is the local communities situated within the 2km radius of the tourism zone at STR who benefit most from tourism; whereas those located outside of this radius benefit far less so.

More recently, a study carried out in 2005 revealed the total population of the 11 villages within Sariska's Core Area 1 to be approximately 3000. 87.4% of these people belong to the *Gujjar* caste and are occupationally buffalo-herders. *Meenas, Bairwas, Brahmins, Meos and Rajputs* make up the remaining population. The people in the villages were reported to be living in a state of severe impoverishment and deprivation. Literacy rate among the villagers was estimated at 31.6% and only 1% of people (above 6 years) had studied to Class 10. Sex ratio was found to be 735 females to 1000 males. The villagers needed to travel 10km by foot to the nearest market and 2-25km to the nearest health services. The only educational facilities they had access to were primary educational and of very poor quality. The people of STR are traditionally a grazing community, deriving most of their income (72.33%) from the sale of milk and milk derivatives such as *ghee* and *mawa*. 100% of respondents reported livestock-rearing as their primary occupation. On average, each household owned 9 buffaloes, 1 cow and 12 goats. The livestock holdings had recently been reduced by approximately 50% during two successive years of drought from 2002-2003. The *Gujjar* people have an intimate knowledge of buffalo-rearing and rarely require veterinary help. Livestock are grazed extensively in the reserve, stall-fed with fresh leaves and dry hay in the summer, as well as commercially available nutritional supplements and agricultural crop residue. A large diversity of forest trees, shrubs and grasses were being harvested intensively for fodder. After grazing, secondary occupations were reported to be agriculture, daily wage labour, sale of livestock and pensions.

In the same study, the average gross annual household income in the 11 villages was estimated as Rs 48,175, while average disposable household income (after accounting for fodder costs) was Rs 30,190. About 32% of household expenditure was on farm fodder and commercial fodder while 50% of income was being used for food items. At this time, most families were highly indebted with an average debt of Rs 20,000 recorded in the year 2003-2004. 19% of households reported having agricultural land outside the STR Core Zone, of which 85.7% reported less than 5 *bighas* each⁴³. 13.7% of households reported livestock loss to tigers and leopards during 2003-2004, but

⁴³ A *bigha* being roughly equivalent to ¼ of a hectare.

none of these households had been compensated⁴⁴. Their livelihoods were also affected by natural disasters and local conditions. The majority of the respondents felt that economic opportunities available to them had declined with the deterioration in forest productivity, closure of forest department-related daily wage activities and heavy mortality of livestock during the drought of 2002-2003. From the above, we can see that there are a variety of potential livelihood opportunities available at STR: produce provision to institutions, drivers, handicrafts, catering, cleaning, serving and guides. As such, the tiger could play a very lucrative role in the local economy, especially if a percentage of the revenue went to developing the community.

In June 2008, the online Indian Express.com reported on a village at STR called Haripura, located within Sariska's core. At this time, women signed up for 'gasht', the daily tiger patrol. More than 20 women in the predominantly *Gujjar* village came forward to join the patrol, saying they hadn't done so before *"simply because they were not asked. After the tigers were exterminated, we started looking for fresh solutions [...] We are also looking at more local co-operation and thus we went from village to village asking villagers to be a part of patrolling"*, R. K. Kherwa, Assistant Conservator of Forests, was reported as saying. It was the first time the village women had earned in the reserve and they were receiving a wage of Rs 100 a day. What is more, a forest guard, Satyanarayan Prajapati, explained that the help was welcome: *"In some ways the Gujjars are better at guarding the forests than we are. They know animal sounds, tracks and, best of all, they can anticipate where the animal will go and his behaviour. I came here when there were no tigers. Now I hope we can keep our tigers"*⁴⁵.

4. ASSESSMENT

4.1 OBJECTIVE OF FIELD WORK

We have looked at a number of issues during the background research section of this report: Tourism in India and the value of wildlife tourism; Tourism in Rajasthan and STR; Nature Based Tourism; the question of Livelihood Opportunities for the locals of STR. From this foundation, we can see that tourism has great potential for India and that sustainability in tourism is a pressing concern for the long-term prosperity of this economy and for the conservation of the wildlife and forest communities in India. We can see that the local economies and India's wildlife are inextricably linked. We can also observe that the tiger is a prized tourist attraction in India and that India – as the home to 80% of the remaining wild tiger population - has a responsibility to conserve this endangered species. In this report, I would like to consider the impact that the tiger has on the local economy and upon the people who share the tiger's habitat.

⁴⁴ *Forgotten Villages: A People's Perspective on Village Displacement from Sariska Tiger Reserve*. Technical Report. National Foundation for India & Council for Social Development, Dr Gazala Sahabuddin, New Delhi, 2005.

⁴⁵ Indian Express.com, Neha Sinha, June 28th, 2008.

Nature based tourism is one by-product of tiger conservation and we shall investigate what the impacts of this conservation of the tiger are for the local economy of STR. In the case that conservationists decide to expand this economy, so we must ask what this would mean for the local economy of a Tiger Reserve PA and the livelihood of that community? We shall also consider other impacts that the tiger's conservation, simply its existence, has upon the local community and their livelihoods. Through this lens we shall look specifically at Sariska Tiger Reserve and the impact the tiger has on the local economy there.

While we have figures for the rural economy of Rajasthan (an estimated 15 million are thought to live below the UN Poverty Line in rural Rajasthan)⁴⁶, we do not have data specifically on the local economy at STR. It might be deduced from the figures for Rajasthan, that the rural economy at STR is impoverished, but it is the purpose of this report to find out the reality of the tiger's role on the local economy at STR, on the ground. For that reason, it was necessary and helpful to conduct a survey in the field.

4.2 METHODOLOGY OF FIELD WORK

Prior to the field work, it was necessary to gain a national perspective of the following issues in the context of India and to then consider them locally in relation to Sariska Tiger Reserve. This work made up a major part of the background research:

- Tourism.
- Tiger conservation.
- Government policies and Acts.
- Rural society and rural economy.
- Local livelihoods near and around Protected Areas.

The material consulted dated from 1989 to 2009.

The initial background research consisted of various components including:

- Internet research.
- News articles.
- Government papers and policies.
- Government Acts and statistics.
- National reports on Tiger Reserves and Protected Areas.
- Reports published by NGOs and government bodies.
- A wide range of published literature.

Following this, a field research project was carried out at the site in question, Sariska Tiger Reserve (STR). This study trip was conducted between 6th and 10th of December 2009. It was facilitated by the Forest Department; Sariska Tiger Reserve; the Government of Rajasthan, WWF-India and TRAFFIC. This part of the study involved

⁴⁶ Facts and Figures. Source: 2001 Census.

general observations and local interaction together with the focus of two questionnaire surveys.

The questionnaire was designed with the aim of investigating the economic health of the local community at STR as a direct and indirect result of the tiger's conservation in that region. The individuals approached in this study can be divided into two broad categories: Locals and Businesses/Hotels. Accordingly, a separate questionnaire was designed for each group taking account of the particular areas of interest which the group's views could offer the study.

The locals were asked details relating to:

- Income.
- Locality.
- Livelihood source.
- Training opportunities.
- Relationship with Sariska Tiger Reserve and attitudes.
- Employment opportunities.
- Household composition.
- Economic outlook.

The institutions and their employees (managers and employees) were asked questions relating to:

- Income.
- Staff composition.
- Locality.
- Business profits.
- Relationship with Sariska Tiger Reserve and attitudes.
- Policies and product sourcing.
- Economic outlook.
- Training practices.

On these issues, both groups were asked to comment on changes they had noticed over the time-frame 2004-2009. Particular attention was paid to noting trends within their responses.

The primary motive of the questionnaires was to gather valuable information from a wide cross-section of respondents so as to gain insight into the health of the local economy in relation to Sariska Tiger Reserve, the primary interest here being the linkage between the local economy and the presence of the tiger at the reserve. The questions were designed to elicit valuable and unbiased views from a wide range of local people concerning their economic linkages with Sariska Tiger Reserve. Accordingly, the field work also involved interaction with local village communities together with general observation, which complemented the findings of the questionnaires. It was hoped that the implementation of this work and its subsequent analysis would result in:

- An honest reflection representative of the current relationship between Sariska Tiger Reserve and the local economy.

- Raised awareness of the relevance of these linkages.

Participants in the field work component of this research were interviewed during a site visit to Sariska Tiger Reserve (STR) and the surrounding area. The following range of participants included:

- Deputy Director, STR
- Range Officer, STR
- Nature Guides, STR
- 'Gypsy' drivers, STR⁴⁷
- Hotel managers
- Hotel employees
- Hotel providers
- Local villagers

In and around Sariska Tiger Reserve

Sariska Tiger Reserve is a vast expanse and so it was important to select an area to submit the questionnaire which would be representative of the general situation on the ground and which would also yield a cross-section of results and a wide range of opinion. It was also necessary that respondents from all the relevant parties – businesses, employers, field officers, villagers, shop keepers, drivers – could be involved. In composing the questions and the structure, care was taken that the questions did not favour any one point of view which may influence respondents. The locations chosen for study were based on information obtained from the Forest Department and advice taken regarding the field of research which was to be carried out. In addition to general observation and interaction in and around the Park, two villages – Induk and Kundalka - located on the periphery of the Protected Area were visited and the members of four families (two from each village) were interviewed. The structure of the dialogue was based upon the structure of the questionnaire of a mixture of close-ended and open-ended questions, which had been formulated for the field study, but was carried out less formally. The questions were administered to twenty villagers living within Induk or Kundalka or other villages within 20km of the Core Zone 1 (within 5km of STR). A separate questionnaire involving a mixture of close-ended and open-ended questions targeted employers and employees of hotels and was administered to three representatives from different hotels. In the event, in the village scenario the questionnaire format proved far less suitable than the informal approach of chatting over 'chai' did. Consequently, drinking tea proved a very conducive tool in carrying out this field work and resulted in the respondents chatting freely and expressing personal views and opinions of great value.

⁴⁷ 'Gypsy' jeeps are a tough and hardy four-wheel drive manufactured by Maruti and have long been the vehicle of choice for many government departments and the armed forces. Due to their sturdiness in off-road conditions, and their relatively low-maintenance costs, the Maruti Gypsy has long been favoured for use within National parks and Wildlife Reserves.

It was important to get a full range of the demographic of the population so that the views of the whole community were accurately represented. The demographic of the population at STR includes a mixture of villagers, hotel owners, hotel employees, Forest Department employees and shop keepers. The breakdown of the respondents to the research questionnaires was 32 villagers, three Hotel Managers and 25 Hotel employees. The age range of respondents extended from 20-60 years of age, although individuals as young as twelve, and older than seventy years were present and involved in the conversations and the collection of data.

Nevertheless, the study revealed some very strong trends and shed light on some new possibilities for both the hotel industry and the local villagers, including the adaptation of local livelihoods and the improvement of forest-community relations. The relationship between the tiger and the local economy was considered from two angles during the study. Firstly, from the perspective of employees of the tourism sector, their background and their income; secondly, from the perspective of the local villagers and their livelihoods. Among those interviewed from the perspective of villagers are the Nature Guides, 'Gypsy' Drivers and Forest Guards and those who are self-employed. The findings from both these groups showed strong trends and demonstrate not only how the tiger indirectly and directly fuels the local economy but also highlighted areas in which this benefit is being hindered. The case of the villagers was undoubtedly the most complex, the most sensitive, the least clear-cut and will require committed outside help to improve.

4.3 ANALYSIS OF FIELD STUDY & QUESTIONNAIRES

HOTELS & TOURISM SECTOR AT SARISKA TIGER RESERVE

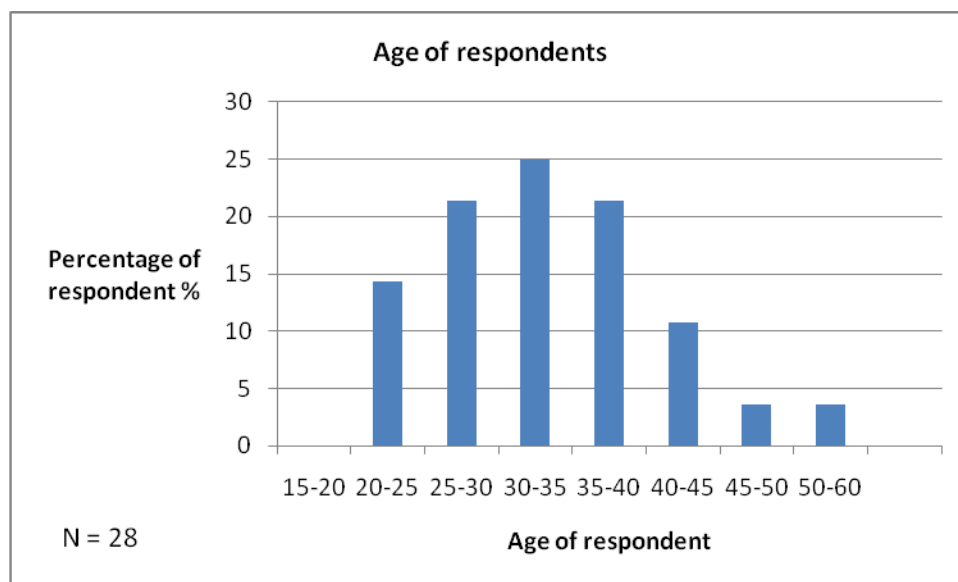
The findings from the responses to the questionnaires from those employed within hotels can be studied in five categories:

1. Demographic of respondents
2. Employment details
3. Livelihood and economics
4. Tourism and the local economy
5. Relationship with Sariska Tiger Reserve (STR) and wildlife tourism

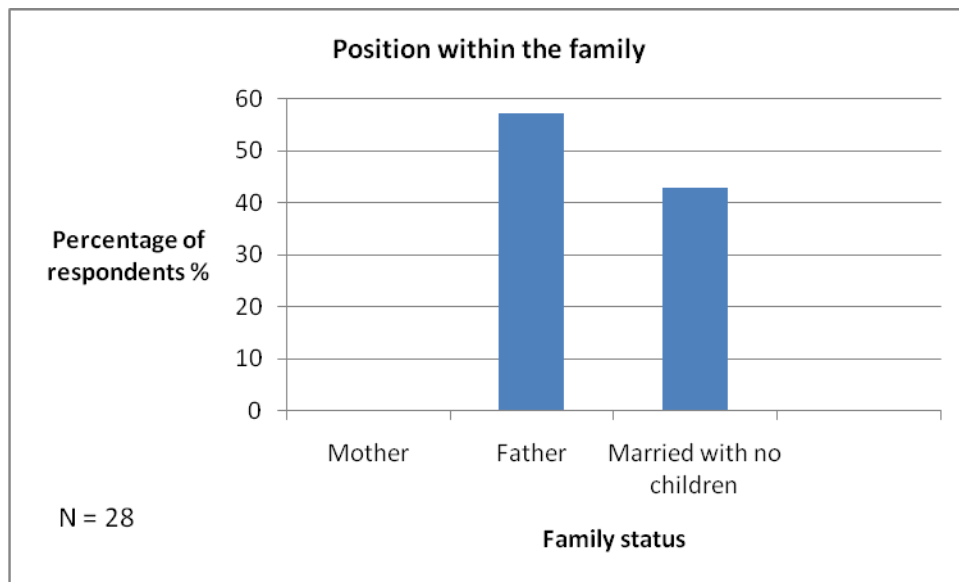
For some of the questions, no responses were available as these individuals found the questions either too personal or sensitive. For this reason, some questions have been marked as 'No Response Available'. It was decided that the rest of the questionnaire would be included nonetheless given the nature of the study relied upon less personal data such as employment and economic findings.

1. *Demographic of respondents*

Respondents to the questionnaires were initially asked about their background. This included questions relating to age, gender, family, status, locality and proximity to Sariska Tiger Reserve (STR). The age profile of respondents revealed no dramatic trends other than that the majority of those employed within the hospitality sector near STR are within the age range 30-35 (30%), with the next strongest category being 35-40 years (23%). The fact that the age profile is relatively balanced between the ages of 25 and 45 years shows a healthy regeneration of the workforce linked to STR, which is still taking in young blood while providing a stable and secure job for the older generations. As such, it is positive to note that hospitality linked to STR continues to provide livelihood and income across the age spectrum.



Given that all respondents to the questionnaire were male, the high number of fathers (57%), followed by those married with no children (43%) is simply revealing of the social norms of the area. The Indian population tends to marry at a much younger age than populations in western countries while arranged marriages are still common, especially in most rural communities. Seen as such, the high number of fathers and married men among a predominately 'young' respondent group could be interesting with regards to issues of child marriage in Rajasthan.



A note on Gender

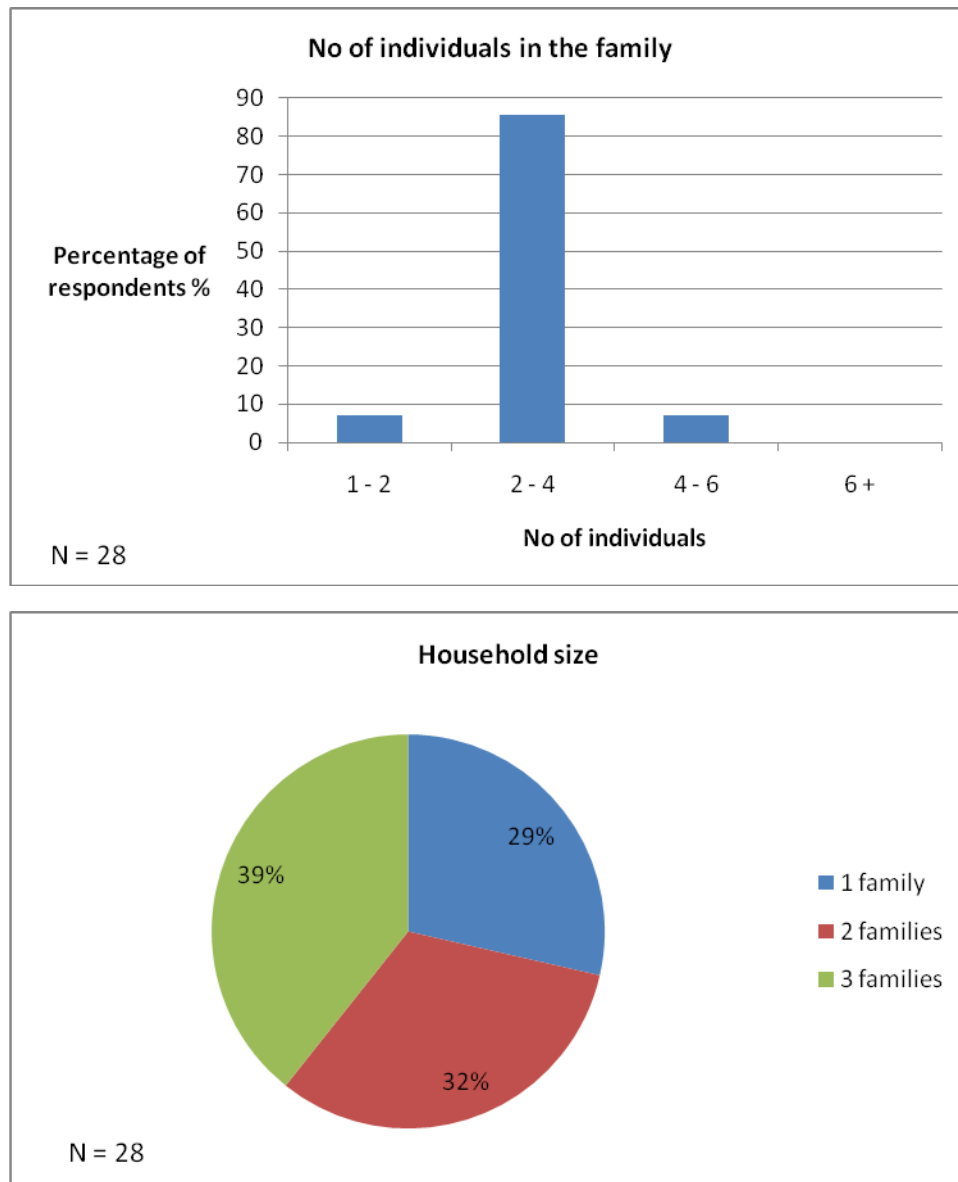
The gender of respondents to the two questionnaires: hotel/businesses and locals/villagers proved to be very revealing of the gender inequality still pervasive in the rural economy of the district of Sariska. All respondents were male. The reason for this imbalance differed between the two sets of respondents, but nonetheless revealed some common themes.

1. The tourist economy in and around Sariska remains in its very early stages and can be said to still be in a nascent state. The system and provisions for staff are such that they would not be appropriate for women even if they were sought after.
2. Meena and Gujjar communities – the predominant communities in the area of study are Meena or Gujjar, whose livelihoods are agriculture and livestock based. As per local culture and norms, women do not freely interact with men outside their own immediate family. As such, this is an inhibitor to their serving in the public field, especially in a sector like hospitality and tourism,
3. As an English-speaking researcher, it was necessary to be accompanied someone who could translate and introduce me to key groups. I was assisted throughout by a male range officer, which, while enabling me to hold in depth chats with a diverse mix of people, also made interacting with local women in villages very restricted. What this obstacle did, however, reveal was that women in Sariska are yet to approach the same level of freedom, equality or economic opportunity that is enjoyed by a growing number of the urban female population in India. This will naturally impede the development of tourism at Sariska and, linked as it is with local livelihoods, will need to be addressed gradually as a pre-requisite to social and economic development in the local communities.

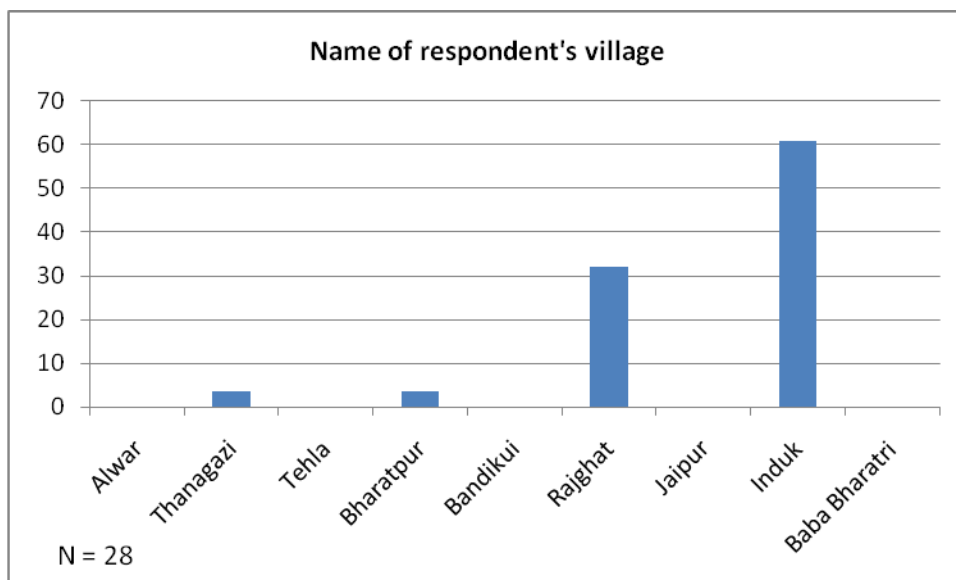
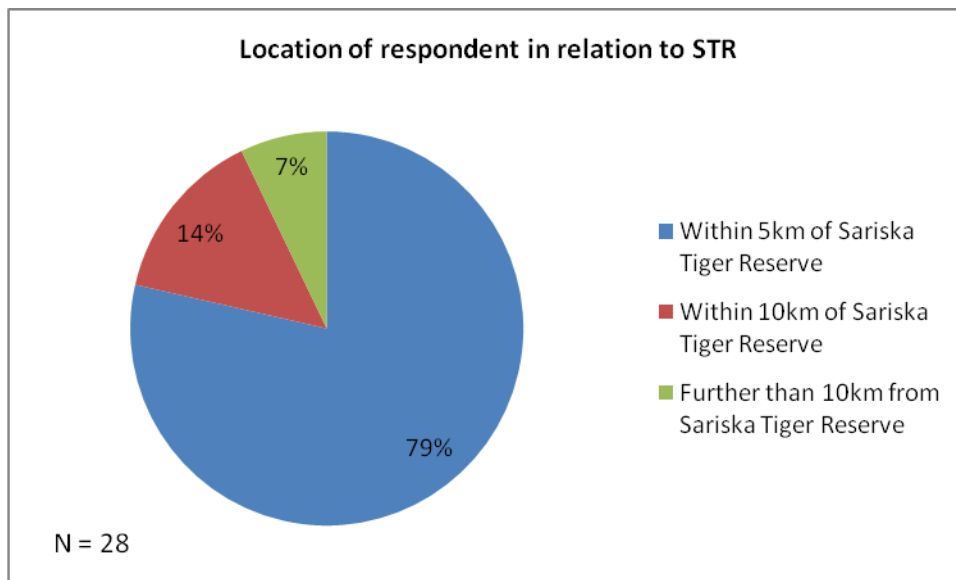
Attention was intended to be given to gender to involve a fair representation of women in the survey. It was hoped that this would provide as accurate a portrayal of the demographic balance of the community as possible. However, there were some logistical obstacles encountered in doing this, see 'A note on gender'.

It is generally accepted that family sizes in India tend to be larger than those in developed countries and this trend is generally more pronounced the less-developed the community. The families sizes of those employed within the hospitality sector near Sariska were not markedly large. The majority of households – 86% - comprise of 2-4 individuals. This can perhaps be interpreted as a sign that employment linked to the reserve is having a positive effect upon social development, birth control and the local economy. In looking at household size it was understood that many Indian families co-habit with extended families. This custom tends to be more apparent in rural communities. A 39% majority of those interviewed lived in households including three families (a family being judged as comprising of one set of parents); with 29% occupying the household with one family alone. The

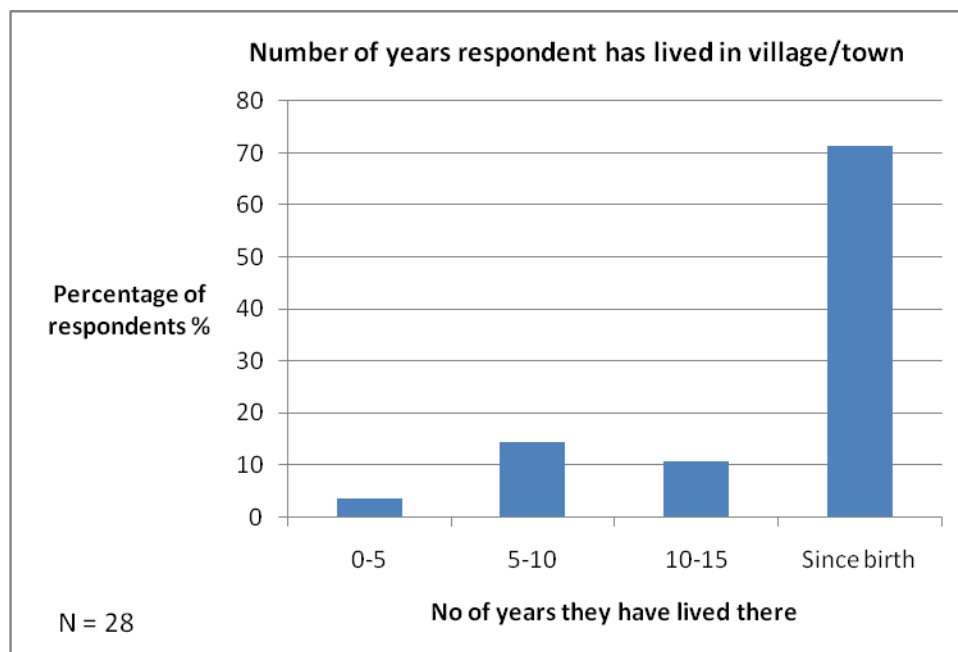
main significance of this data is that it gives an idea of the social framework of living in joint families among the employed in the the local communities, as compared with those villagers who are not employed in any connection with STR.



The results from the question of where hotel employees lived, or came from, was particularly significant in this study. While only a fraction of the profits harvested from the hotels does find its way to the local economy, it is of great significance that much of this 'recycled' money derives from the wages paid to local staff. The results show that 79% of hotel employees interviewed live within 5km of STR. This fact speaks volumes of the direct connection between tourism linked to tiger conservation and the livelihoods of locals. Additionally, the 61% majority of respondents lived in the village of Induk, thus indicating a that the village identifies tourism as a livelihood opportunity. The fact that so many locals are employed within the hospitality sector near STR suggests also casts a positive light upon the hotel industry in this field.

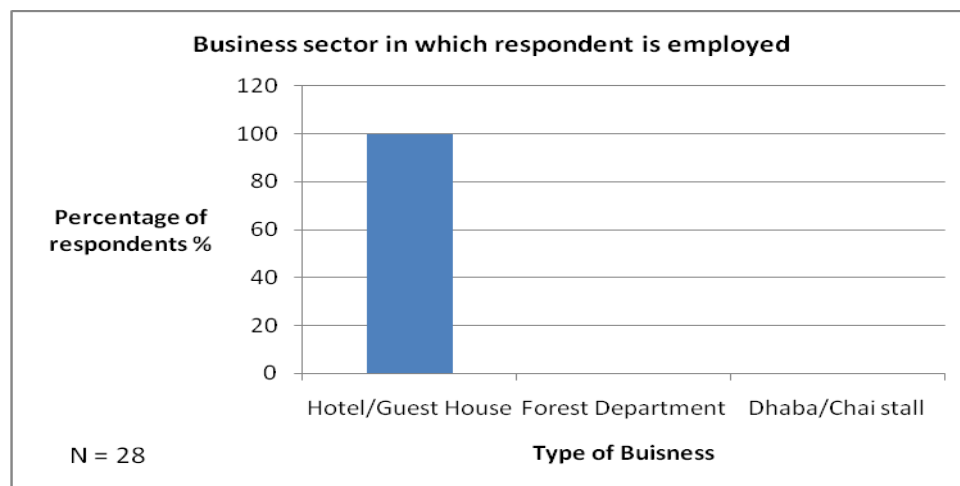


Further confirming the direct relationship which wildlife tourism shares with the local economy, as seen through the hotel industry, the fact that such a high number of those local employees have lived in their village/town from birth illustrates the potential which wildlife tourism at STR has to enhance the local economy while conserving the tiger at the same time. Asked for how many years they had lived in their village, 71% reported having lived there since birth, thus highlighting a strong community-tourism relationship.



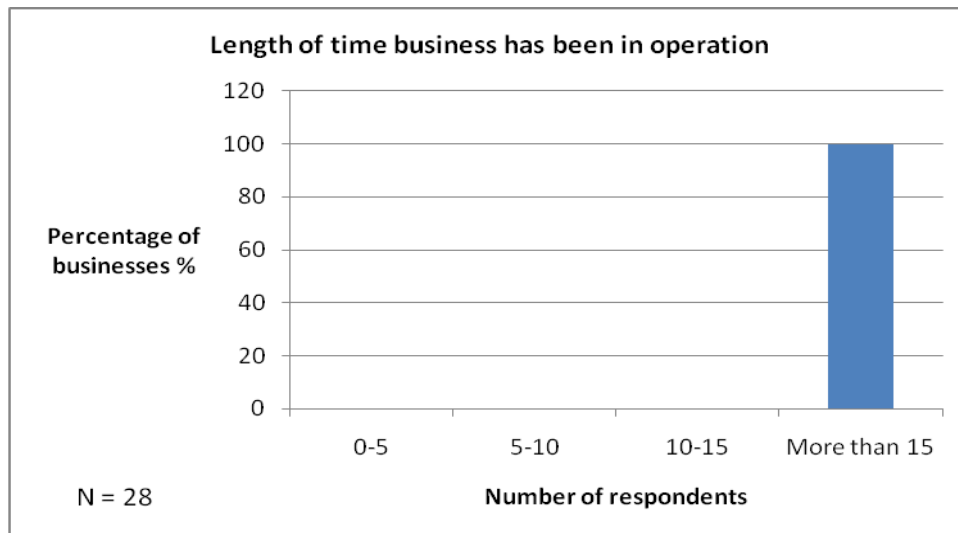
2. Employment details

The fact that all those interviewed in relation to the hotels and businesses questionnaire were connected with the hotel sector alone is significant for two main reasons: firstly, that Sariska Tiger Reserve is largely undeveloped as a tourist destination. As such, there are few commercial tourist businesses in operation near the reserve, other than hotels and guest houses. Secondly, it was decided that those who earn a living from running 'dhabas'⁴⁸ or selling 'chai'⁴⁹ on the roadside should be interviewed as part of the villagers group and considered from the perspective of local livelihoods rather than local economy. The reason for this being that the revenue they make is far less significant than the fact that they are earning some livelihood from the trade, traffic and tourism generated by Sariska Tiger Reserve. The hotels interviewed are all well-established (established for more than 15 years). The Sariska Palace, designed by a French architect in 1892, was built under the patronage of Maharaja Jai Singh of Alwar to commemorate the visit of Queen Victoria's son, the Duke of Edinburgh. It was completed in 1896 and, now serves as a luxury hotel with enormous prestige.



⁴⁸ A 'dhaba' is a roadside restaurant serving local cuisine, usually Punjabi food. They serve as truck stops and are a popular feature throughout India.

⁴⁹ 'Chai' is the generic word for tea in Hindi, Punjabi and other languages spoken in India. For many visitors 'chai' automatically implies 'masala chai' since it is a beverage made by brewing tea with a mixture of aromatic Indian spices and herbs. Drinking 'chai' is an ubiquitous feature of India, more particularly in the north.



Those interviewed for this questionnaire were asked in which capacity they worked and for how long they had held this position. 89% of those interviewed worked as household staff and the average period of time for having worked there was 4-5 years 25%. This indicates that tourism, as a source of local employment, has only been emerging in the last 4-5 years. The findings also show that the limited tourism that exists in the area is deeply embedded in the local economy: 100% of the tourist establishments involved in the study have been in business for over 15 years.



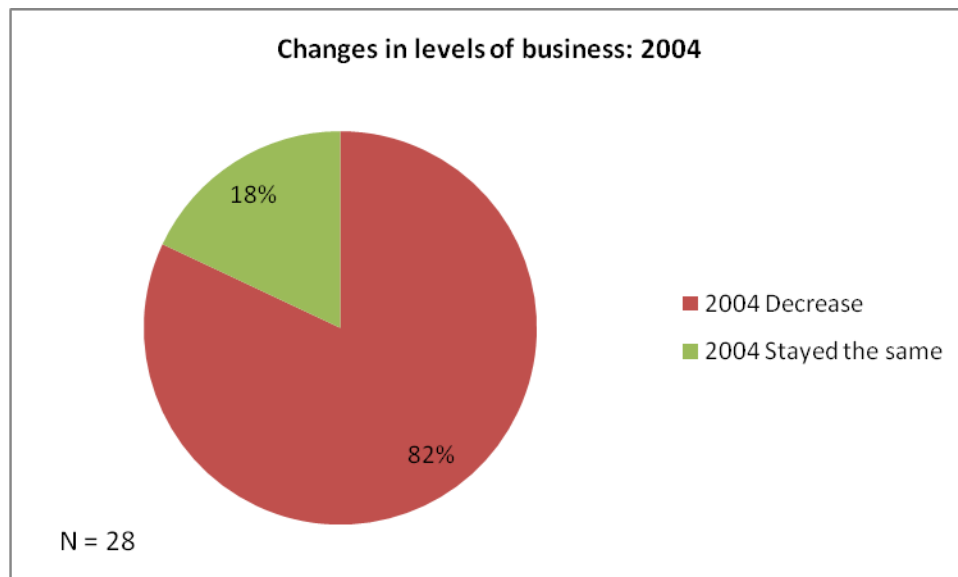
3. Livelihood and economics

Respondents (28) were then asked how their income had changed during the past five years (2004-2009), as compared to the previous year. It is relevant to note that 21% recorded a growth in their income in 2008, followed by a 79% increase in 2009. In the same period, 86% stated an increase in the salary of staff in 2008 and 93% said the same for 2009. Between 2004 and 2008, an average of 82-89% of respondents recorded a decrease in their income. Additionally, 86-89% of respondents said the salary of staff had decreased during 2004 and 2005. The decrease of the salary of staff in 2004 and 2005 almost mirrors the increase in 2008 and 2009. This pattern falls into the time frame of the tiger extinction at Sariska Tiger Reserve which was reported in 2005. While the translocation of three tigers from Ranthambore only took place midway through the year - on June 28th 2008 – the impact upon the business at hotels was nonetheless felt in the months July-December and was expressed through an increase in business. Since the extinction of the tiger from STR in 2004/5, the levels wildlife tourists at STR fell and this affected the hotels serving the area. Speaking to the staff, I learned that the impact of the Sariska Shock was felt very dramatically in the local economy and that the reintroduction of tigers in 2008 showed a marked improvement in visitor numbers. There were two significant changes economically:

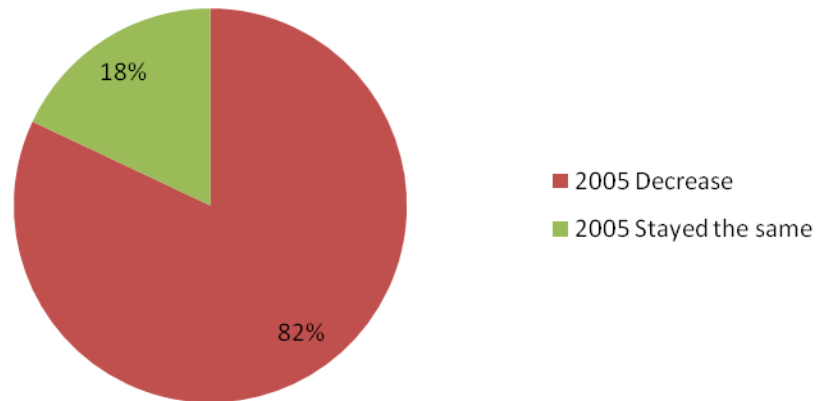
- Changes to the levels of business
- Changes to income

The findings representing these changes can be seen in charts below.

CHANGES IN BUSINESS LEVELS

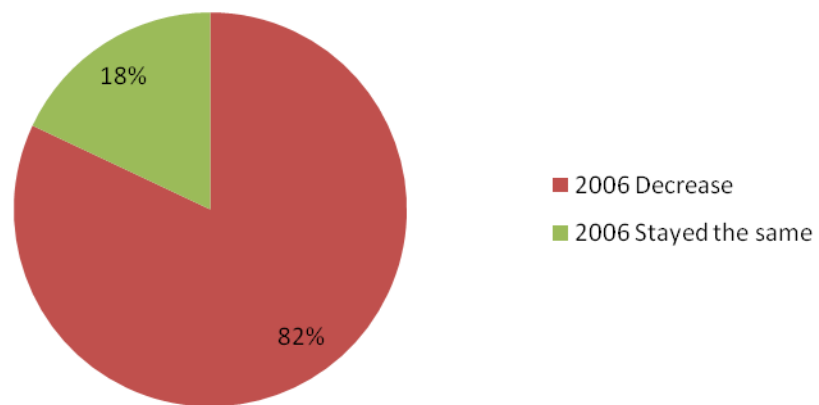


Changes in levels of business: 2005



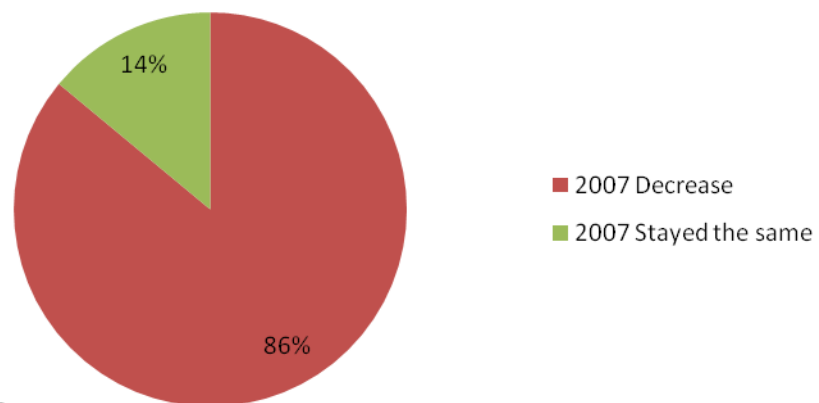
N = 28

Changes in levels of business: 2006



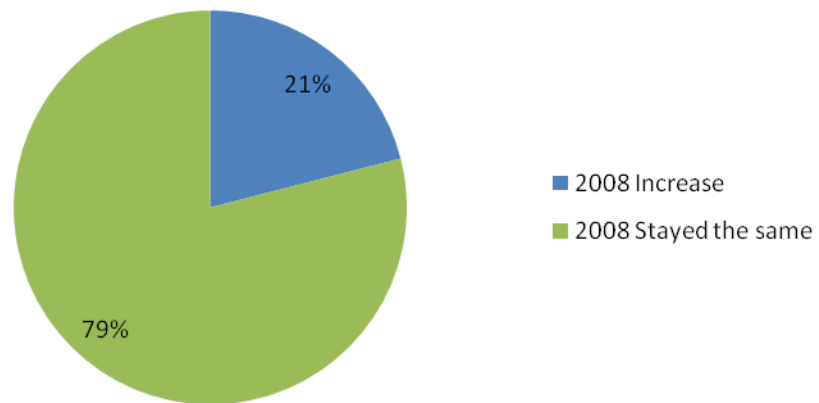
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Changes in levels of business: 2007



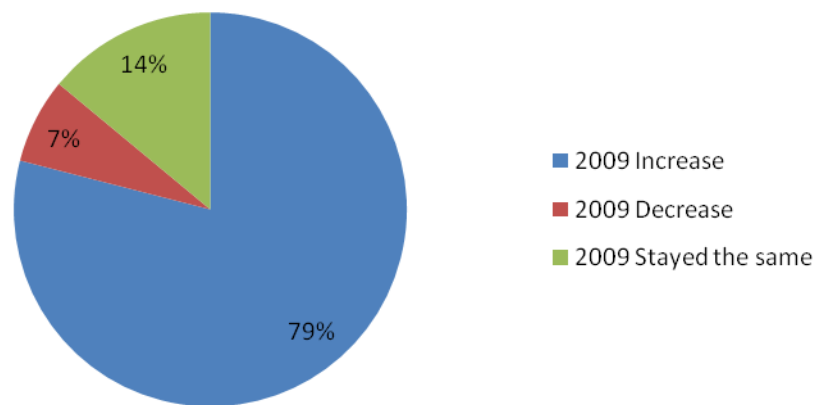
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Changes in levels of business: 2008



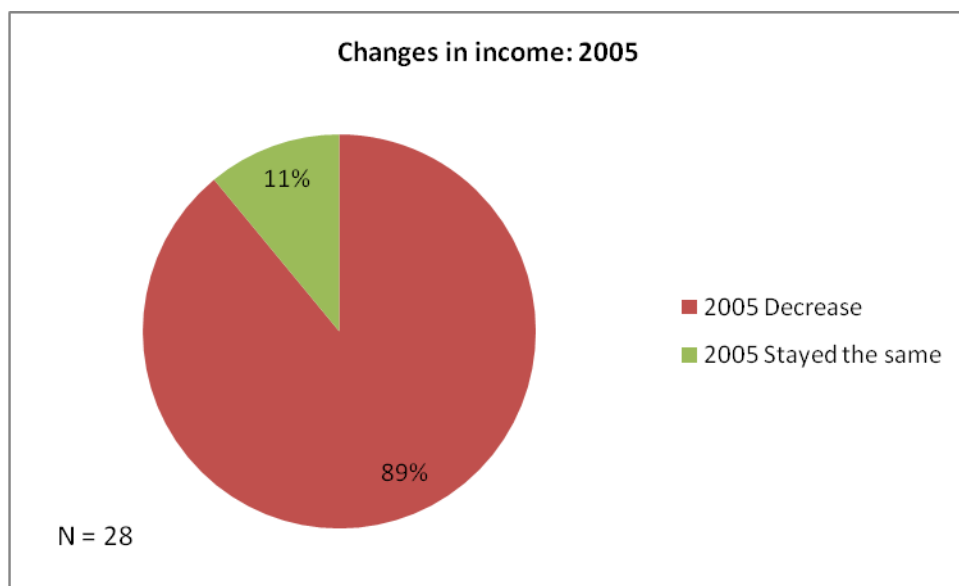
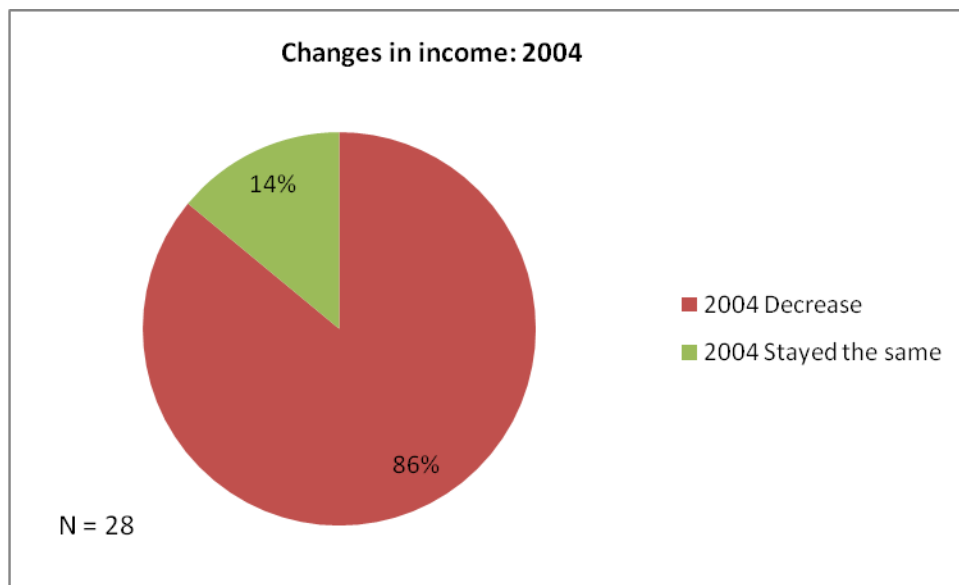
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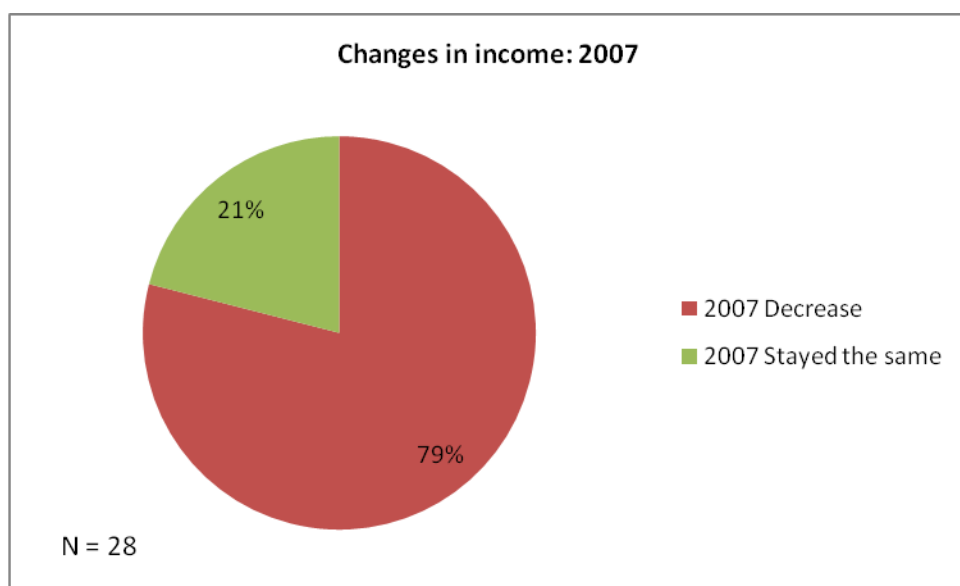
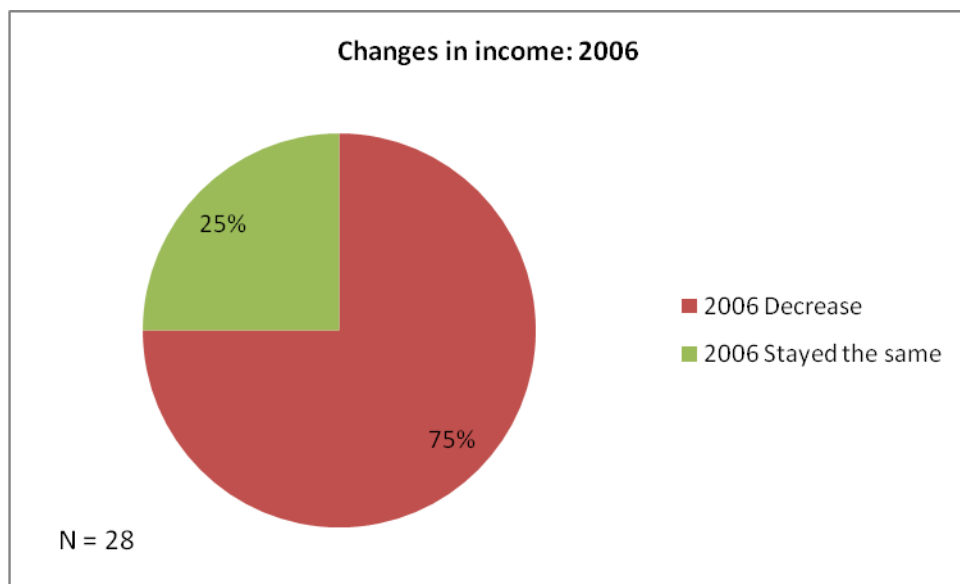
Changes in levels of business: 2009

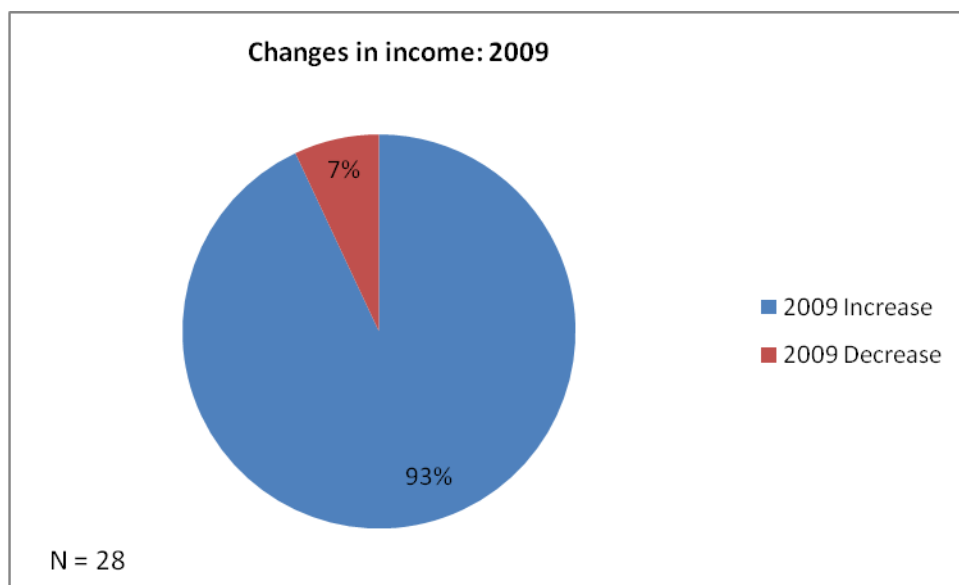
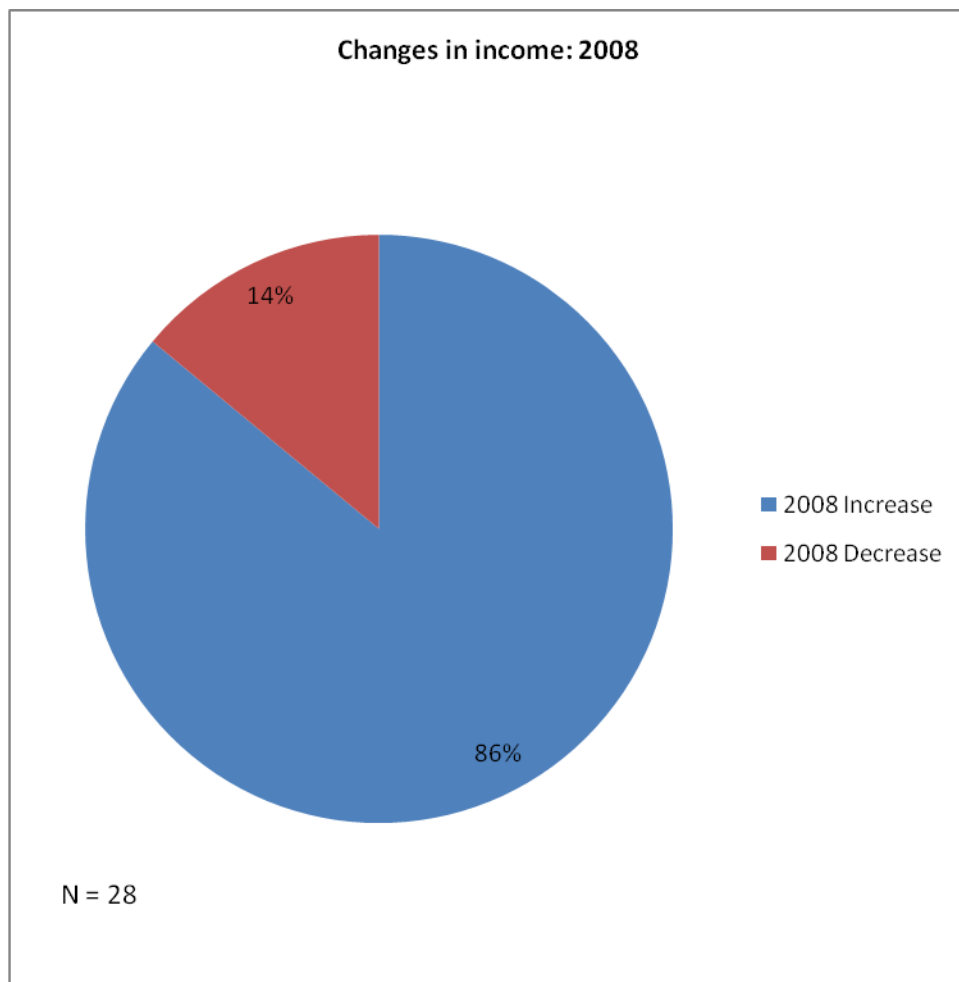


N = 28

CHANGES IN INCOME







Asked what overall trends in business they noticed in the hotel business during the years 2004 and 2009, it was widely felt that business had slowed down dramatically as compared to the years previous to 2004. These findings support the hypothesis that the tiger's presence at STR supports the local economy. Participants were asked to choose between 'more business' or 'less business' and between 'more tourist' and 'less tourists' to describe overall business trends during the previous five

years (2004-2009). In both cases, the responses were unanimous: 100% answered that there had been 'less business' and 'fewer tourists' at Sariska between 2004 and 2009.

4. Tourism & the local economy

A study into the state of the local economy, from the perspective of the hotels interviewed near STR, identified some key findings, including the following:

- 100% of produce/supplies are bought locally (which includes Alwar).
- The reason for buying locally is none other than convenience and the reduced cost of transport.
- Sariska Tiger Reserve is still widely associated with the 'Sariska Shock'; for being a tigerless TR and the numbers of tourists visiting STR has still not reached its pre-2004/5 levels.

Tourism in STR involves mostly day tourists taking wildlife safaris organised either by private operators or by 'Gypsy' drivers and nature guides employed by the Forest Department⁵⁰. Due to lack of proper infrastructure and services, tourists tend to make short day visits or overnight visits, although the reserve has the potential to offer more, which would generate more revenue for the locals. It has been said that the Indian Wildlife (Protection) Act, 1972, restricts infrastructure development for tourism within PAs. Indeed, while speaking to those employed at the Sariska Tiger Reserve Office, including the drivers and guides, it was clear where the priorities lay at Sariska. I was told that "the forest people do not regard the reserve as a 'money machine'" and that, while the Government does need the revenue from tourism, it does not actively seek publicity. While discussing village-forest relations with one authority at Sariska Tiger Reserve Office, I was reminded that the job of the forest office "is to protect the forest and the tiger". It is not so much that tourism, or rather wildlife tourism, is not desired or welcomed at STR, it is more the case that the resources and the ethos of the forestry are wholly committed towards at conservation at the exclusion of pretty much anything else which is not absolutely necessary. The mentality is conservation not commerce. The prioritising of tiger conservation above tourism at Sariska is commendable and understandable, especially given the 'Sariska Shock' and the urgent need to prevent history repeating itself. However, two issues struck me on this level.

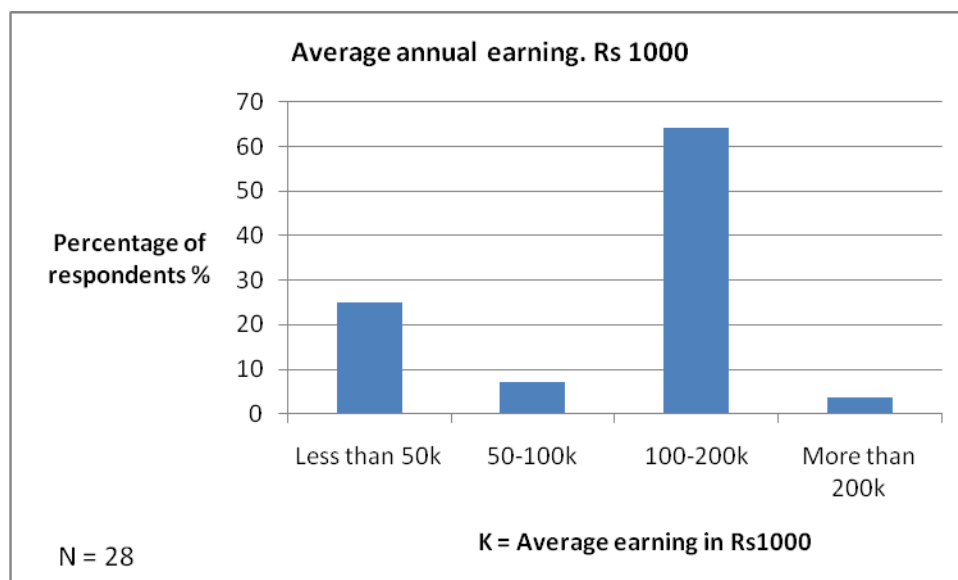
Firstly, that the intrinsic link between the local economy and the protection of the tiger at STR needs to be strengthened and adapted. Secondly, that the translocation of three tigers from Ranthambore to Sariska on June 28th 2008 – a world first and a milestone in conservation history – is a feat which, by virtue of being a Government rather than a private initiative, went off with far less fanfare and international recognition than it deserved. On both these accounts, Sariska Tiger Reserve appears to still be suffering the effects of the 'Sariska Shock' of 2005 in the realm of publicity. All my interactions with the hospitality sector at STR reinforced this fact. It is no exaggeration to say that Sariska's reputation was brutally destroyed in that short window of time between late 2004 and 2005. Between 2000 and 2004 the entire population of tigers at STR was wiped out and the entire Indian wildlife community felt the impact of this shock. For hundreds of years Sariska had been synonymous with tigers and had earned a valuable reputation in tiger conservation and yet the news reports, in February 2005, that there were no tigers at Sariska, marked the beginning of the end of this legacy. Today there are two tigresses and one tiger residing in the reserve – admittedly a limited number as far as the gene pool and breeding is concerned - but a tremendously positive

⁵⁰ 'Gypsy' jeeps are a tough and hardy four-wheel drive manufactured by Maruti and have long been the vehicle of choice for many government departments and the armed forces. Due to their sturdiness in off-road conditions, and their relatively low-maintenance costs, the Maruti Gypsy has long been favoured for use within National parks and Wildlife Reserves.

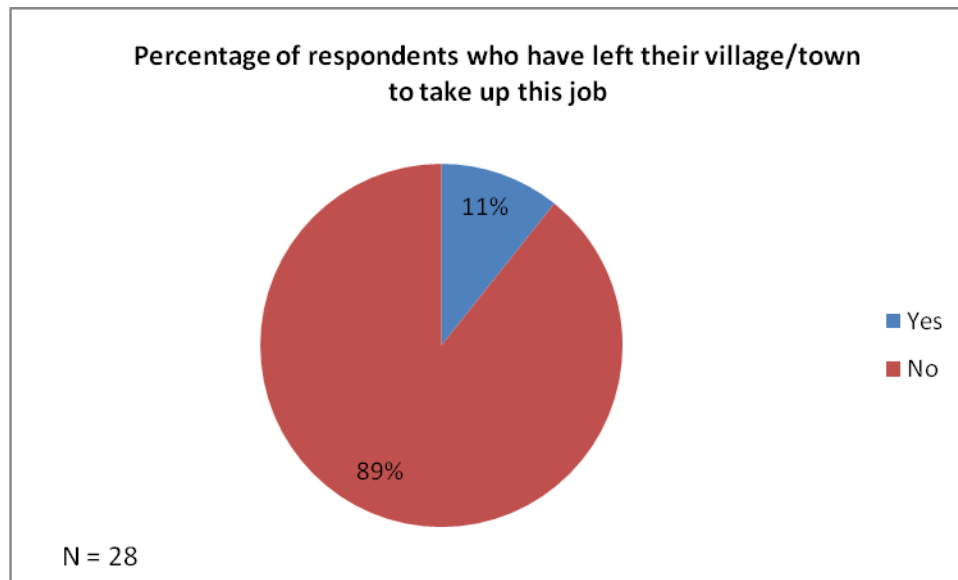
achievement which lays the groundwork for the repopulation of the flagship species here. And yet, despite this, the damage done to Sariska's reputation was perfectly illustrated to me en route to the reserve. My driver asked me if I had visited Sariska before. I replied that I had not. He then informed me that it was beautiful and full of abundant wildlife, including Sambhar, Nilgai, Blue Bull, Spotted Deer, Jackal, many birds.....but sadly no tigers. No tigers! I listened and then related that there were infact, since 2008, three tigers at Sariska, which had been translocated from Ranthambore in a project organised by Project Tiger, Wildlife Institute of India and WWF-India. He took some convincing but eventually accepted this truth. What this incident revealed to me was the severity of the damage done to Sariska and to the local economy and the level of repair work that would be required aside from the tiger conservation itself. The whole area has virtually been written off. One saving grace has been Sariska's close proximity to Delhi. At Sariska Tiger Haven I learned that their bookings have recently largely relied on people from Delhi coming on weekend trips to wind-down from the city. They visit for the peace, fresh air and nature but the tiger plays little role in this attraction. Not because it isn't a powerful tourist magnet, but because Sariska is still generally associated with the absence of tigers rather the presence of them.

The questionnaire addressing hotel employees also paid attention to the sourcing of produce, since this represents an important link between the local economy and the tourism sector at STR. Speaking to the manager of one hotel, the smallest of the three, I learned that at least Rs2000/week is spent on produce and supplies in the local villages. This gives some indication of the scale of the contribution larger establishments such as Sariska Palace, for whom I was not able to obtain this information, may make to the local economies indirectly. The survey revealed that 100% of the produce supplying the hotels is sourced locally (including Alwar) and that in all cases this choice was made primarily out of convenience.

The average annual earning of the staff interviewed showed a majority of 64% earning between Rs100-200K. This is vastly more than the average worker in agriculture in Rajasthan would be earning. The staff at one hotel earn Rs10,000/month, which amounts to Rs2,500/week. The minimum wage in Rajasthan ranges between Rs100-115 although the vast majority of the rural communities work their own land/livestock and are dependent upon what they sell for their income. By any standard however, these findings indicate that the livelihood security of those working for the hotels near STR clearly benefits from the association with activity near STR.

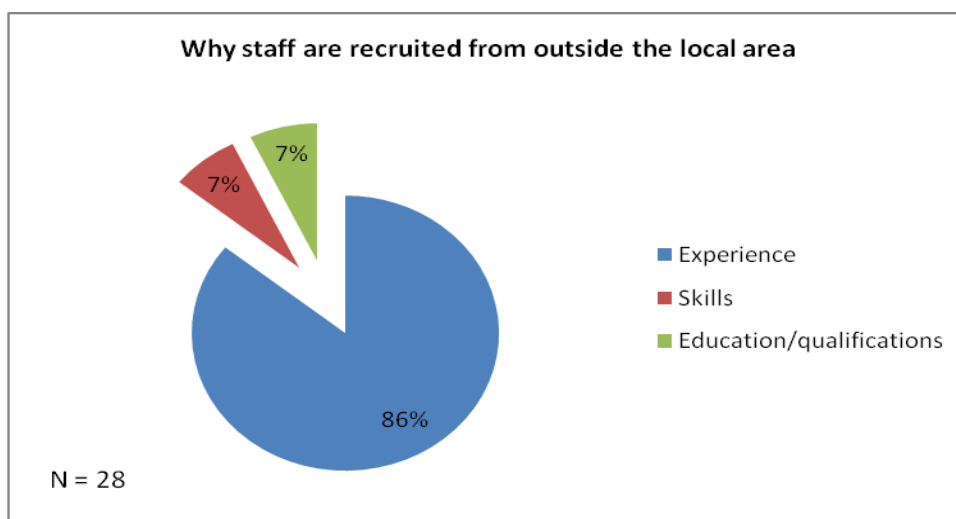


Significantly for the local area of STR, very few (11%) hotel staff interviewed during this field work had left their home village/town to take up the job. That 11% can be accounted for by the three managers who were interviewed and who hailed from Harayana, Delhi and Redana (near the Pakistan border). While these findings indicate the positive effect that wildlife tourism in STR, in the form of hotels, is having upon the local economy through lower-level employment, it also shows that beyond a certain level outside recruitment is still necessary. The fact that all those locals involved with the hotels are involved as employees rather than as produce suppliers suggests that there is still much scope for developing direct supply chain linkage.



The interviews with the hotels surrounding Sariska also revealed that all employ locals and that the only exception to this trend is the managers who are recruited from further a field. This reveals a positive trend already firmly established in the tourism industry at Sariska.

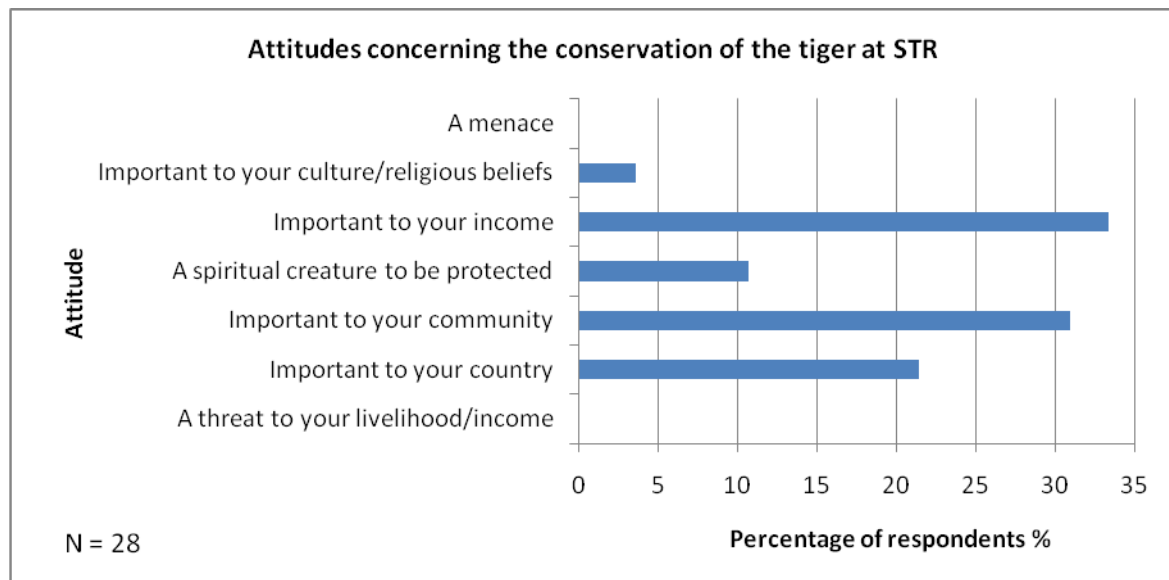
As we have noted, the higher positions within the hotels are generally held by staff recruited from outside the local area. The findings to the question of why staff are recruited from outside confirmed that experience (86%), skills (7%) and education (7%) are the reasons that all the hotels interviewed recruit certain members of staff from beyond the local area. The main conclusion is that the education provided in the big cities is superior to those available rurally and that very few locals who do travel to the cities for education and training return afterwards to work in their local area. It would be nice to think that development of the local economy, specifically the tourist economy, near STR might change this trend with time.



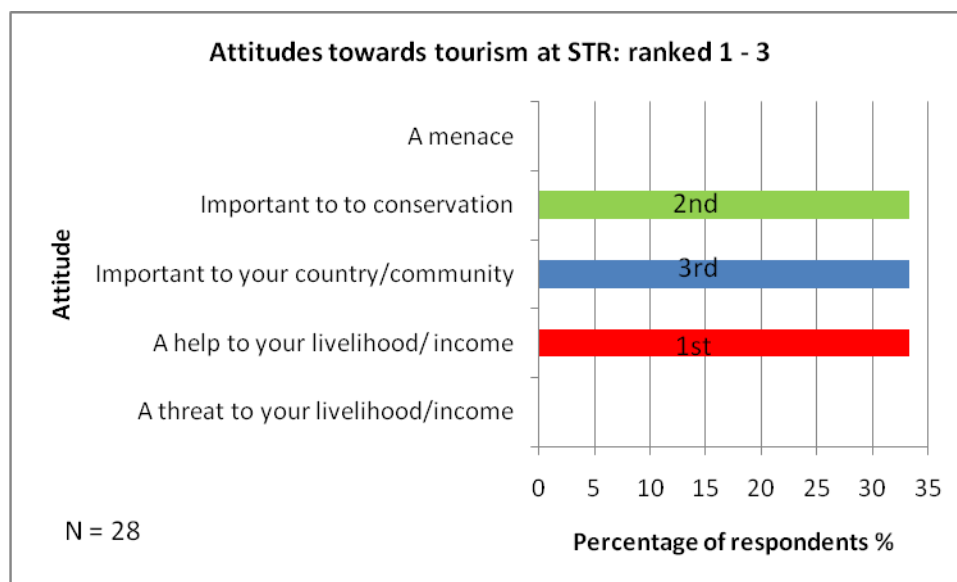
While the level of education to secure the higher-paid jobs in the hotels near STR may not be available locally, the training provided within the job itself has to be considered as a valuable contribution to the local livelihoods and development of communities. Asked in which circumstances staff are offered training within their jobs, 71% answered ‘Yes – in specific cases’ and 29% answered ‘Yes – regularly’.

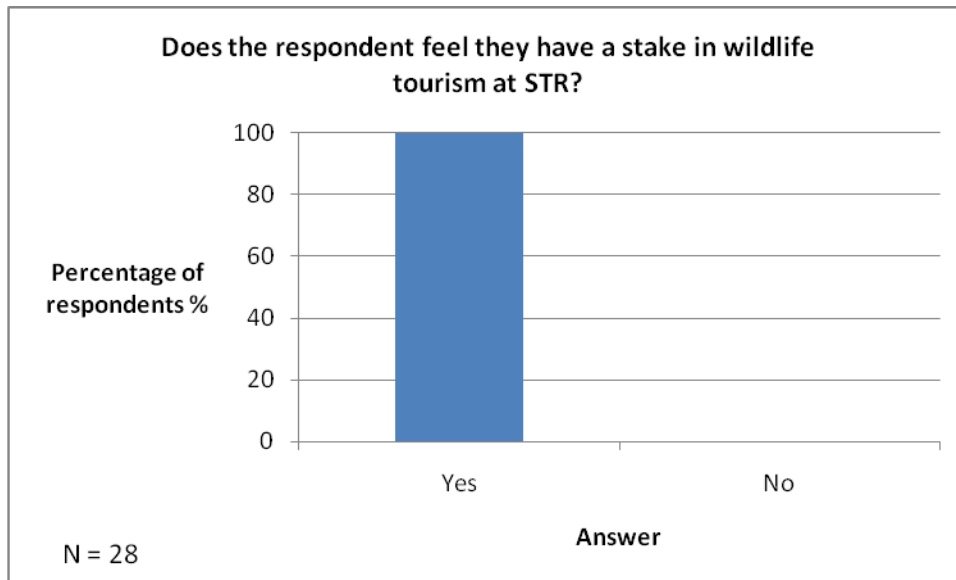


Attitudes held towards tiger conservation at STR by those working in the hotels was very revealing of the positive effect which local businesses linked with PAs can have upon local attitudes. Asked how they felt about tiger conservation at STR, respondents were asked to rank three options. The following findings indicated that the tiger’s impact upon their income (33%), their community (32%) and their country (21%) were considered the most important effects among respondents. The tiger’s value as a ‘spiritual creature to be protected’ was less highly rated (11%) but is still noteworthy for its expression within a business environment.

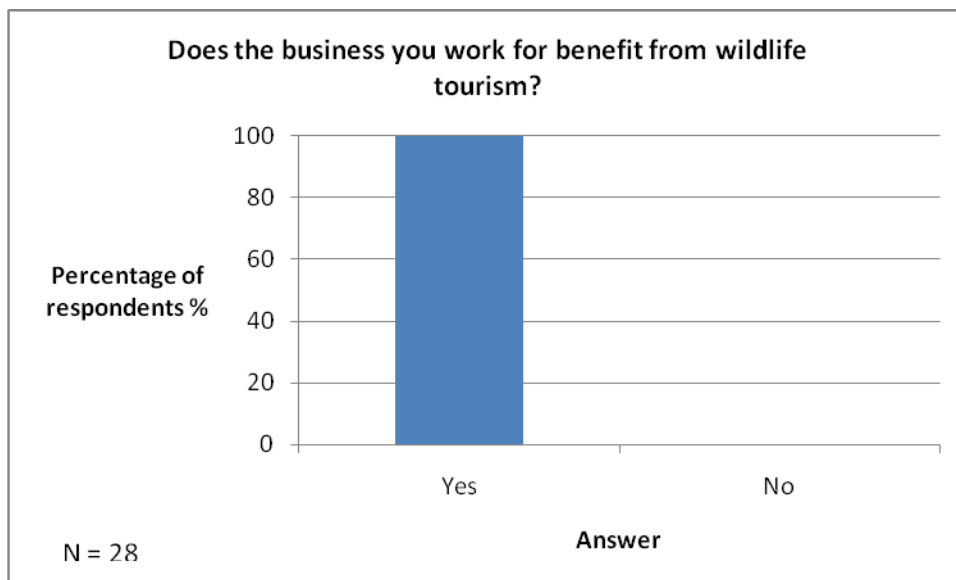


Similarly, attitudes held towards tourism at STR is regarded in a positive light sympathetic to nature and wildlife. The findings show that the tourist establishments near STR, while being commercial, have intrinsically holistic attitudes towards their role within the greater context of wildlife tourism and conservation linked with local livelihoods. Tourism's importance at STR was valued equally for its relationship with conservation, community and local livelihoods/income. Given that the study was conducted around STR, an area as yet relatively undeveloped by wildlife tourism, this attitudinal foundation is very advanced and an encouraging sign as far as the direction driving the development of the local economy is concerned. Not surprisingly, all those employed within the hotels stated that they felt they had a personal stake in wildlife tourism at STR.



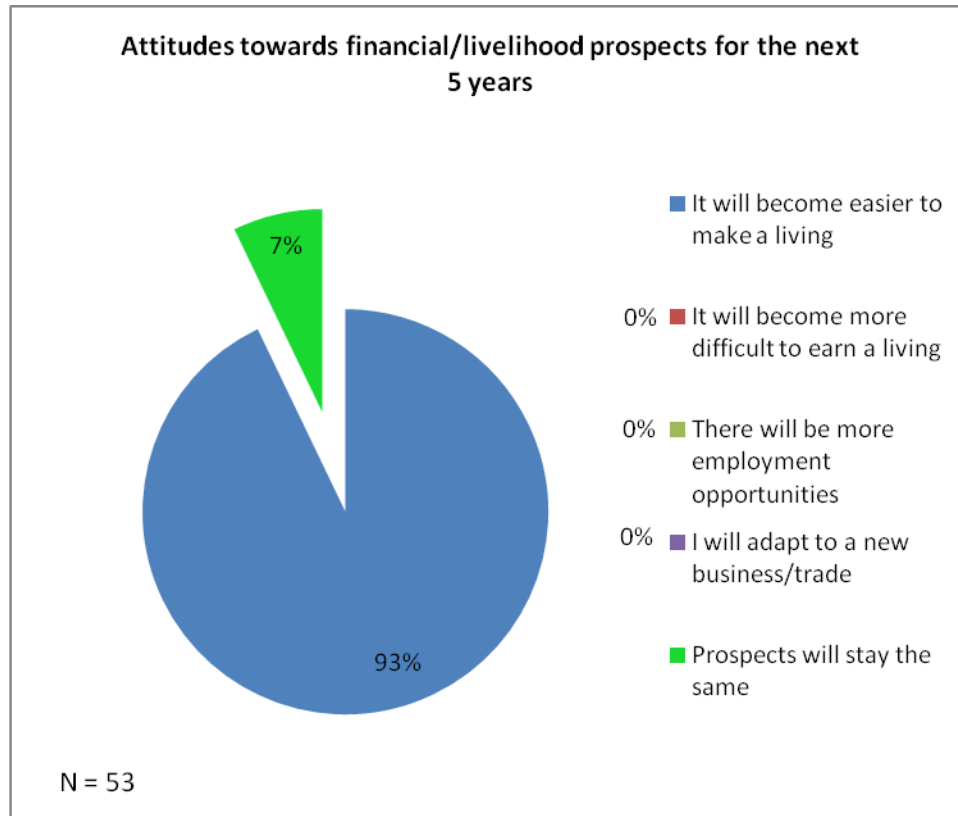


There is a clear and strong identification with STR among employees represented in the these findings. Given that all those interviewed for this category were from hotels, all responses to whether the business they worked for benefitted from wildlife tourism was all but a foregone conclusion, but is supportive evidence all the same as it reinforces the benefits conservation brings to the local attitudes. Asked to rank which three attitudes most accurately represented their view towards tourism at STR, respondents valued income, conservation and community with 'a help to your income' being considered the most fitting description of their attitude and 'important to your local community' being ranked third. 'A menace' and 'a threat to your livelihood/income' were not ranked by any respondents.



Relationships between local hotels and STR were also investigated with regard to how employees felt business levels had changed in the past five years (2004-2009). The results were revealing of the close economic links which local businesses have with the local livelihoods. The negative economic impact which the absence of tigers at STR has had on local hotels (cf. 3. Livelihood & economics, pp.50-56) is still being felt in 2009, despite the relative gains being made since July 2008. 100% said that since 2004, it had become harder to earn a living and tourism had become less busy. [71% stated that their hotel has become less busy during this time and 29% said that it has become

harder to earn a living.] While other outside factors might be considered as contributing factors to these results, the predominant trend clearly follows the hypothesis that the tiger conservation at STR has a positive effect upon the local economy.



Furthermore, respondents were asked how they saw their financial/livelihood prospects for the next five years. The vast majority (93%) felt that it would become easier to earn a living, while 7% felt prospects would remain much the same. It would seem that the noticeable recovery of the local economy, as seen through the hotels near STR, following the reintroduction of tigers in 2008 has instilled a degree of optimism among those employed in the hotels and thus it can be assumed that the link between their business and the conservation of the tiger is understood to be a reciprocally positive one. There is a strong faith in wildlife based tourism in the area of study.

Villagers

The findings from the questionnaire submitted to local villagers near Sariska Tiger Reserve (STR) can be studied in five categories:

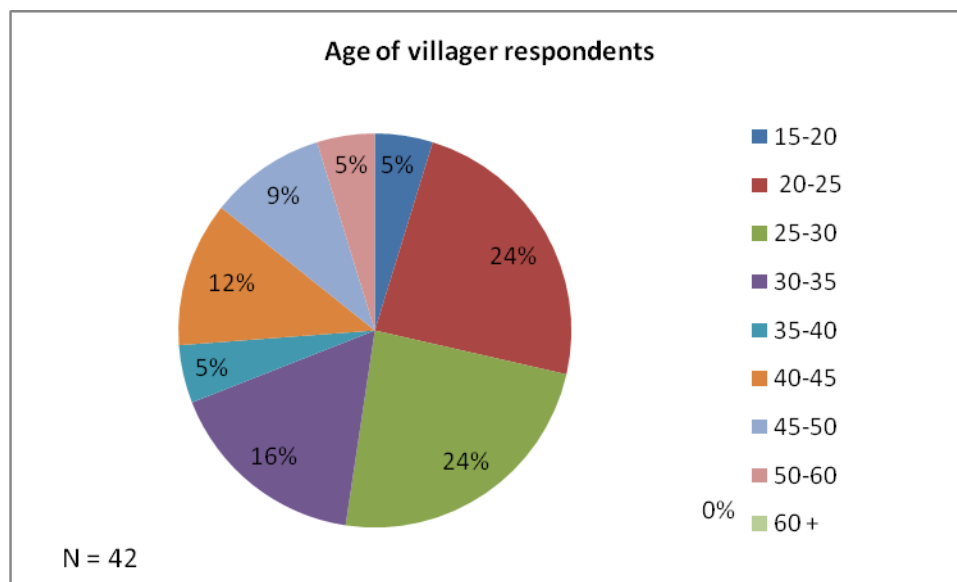
1. The demographic of respondents
2. The locality of villagers to STR
3. Livelihood and local economy
4. Relationship with the Forest Department and the tiger reserve
5. Future livelihood prospects

It is important to note that the majority of villagers involved in the questionnaire and whose views informed this report came from two villages: Induk and Kundalka. Both these villages are located on

the periphery of the PA of Sariska Tiger Reserve. As such, the villagers are within easy access of the PA but also are sufficiently distanced so as to not be a direct influence on the land in terms of cattle grazing. The findings should be considered with this in mind.

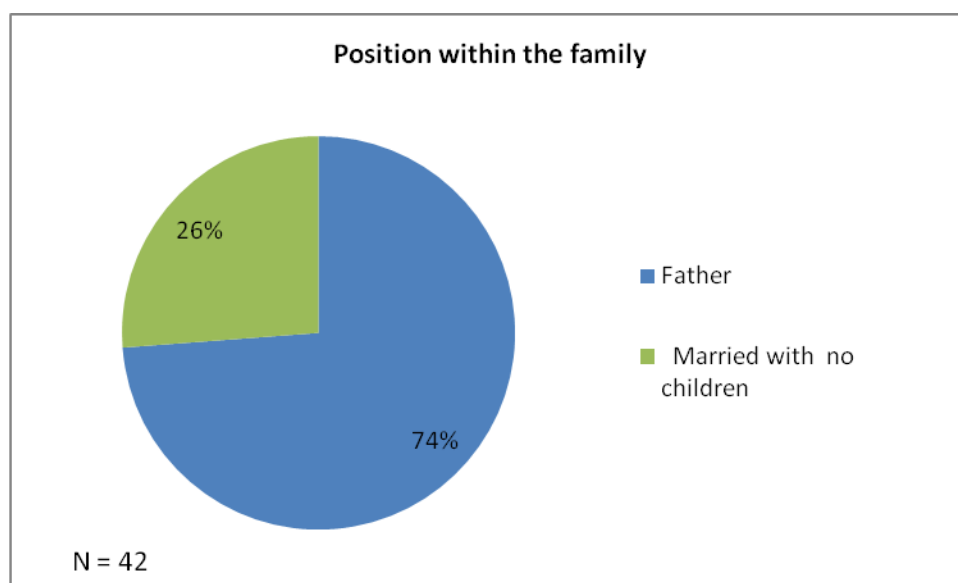
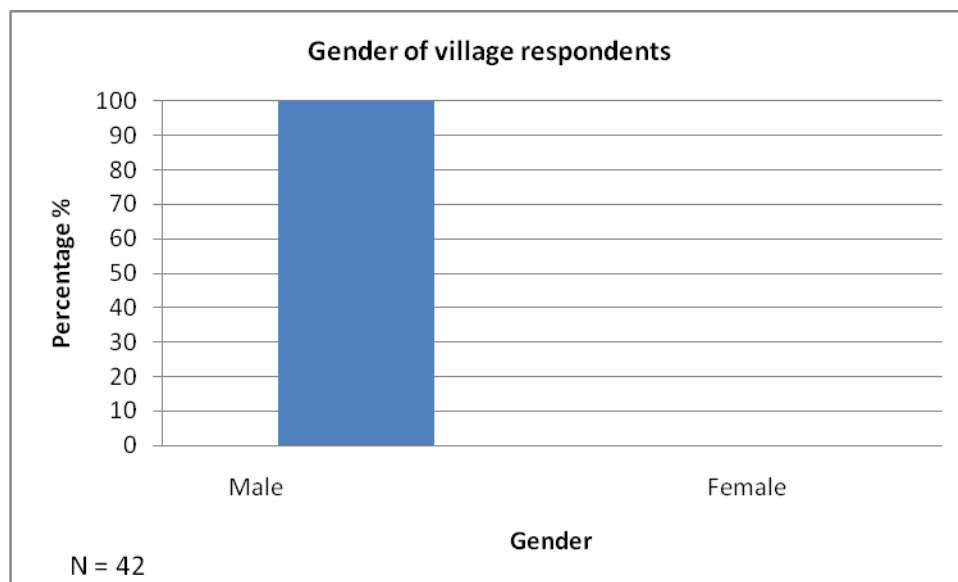
1. *The demographic of villagers*

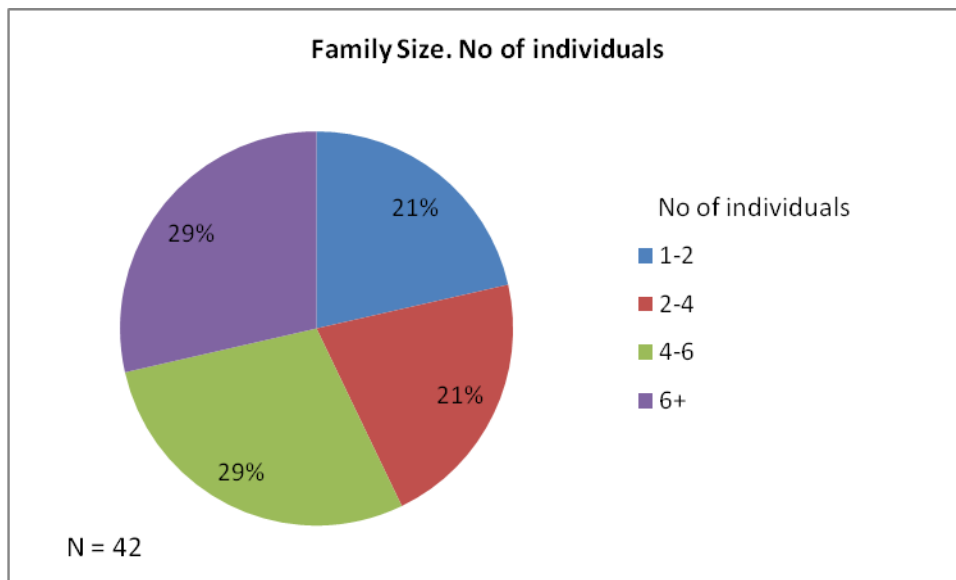
The results show that 81% of the villagers who participated in the study were aged between 20-35 years old. This is not representative of the village communities as a whole, but rather reflects the average age among the groups of villagers I was able to study. The groups included 10 'Gypsy' drivers, 6 Nature Guides, 11 Forest Guards and 16 locals from a mixture of villages. The Nature Guides and 'Gypsy' drivers came from a variety of different villages. What the findings do show is that the majority of those employed directly by the forestry, as drivers and guides, are aged between 20-35 years old, although the Forest Guards tended to average 55 years old.



The gender of those interviewed formally in the villages was entirely male (see 'A Note on Gender'). It was possible to interact on a superficial level with the women and girls, although the language barrier was an impediment, since without a translator I was unable to ask the specific questions relevant to the study. What I was able to observe was that the girls tend to leave school at Class IX at which point they spend their time helping to collect fuelwood and work in the fields. The older women tend to stay at home – in the female home – and take care of the cooking and any infant children. Asked if they would like to stay at home and take care of more domestic concerns, rather than working in the fields, the women said that they would happily sell the cows/stop working the field and adapt to tourism if given the opportunity. They collect wood and go the fields because they have no choice, but would embrace a change in livelihood. The girls said that they would like the opportunity to attend Class X and study further, but appeared to have little ambition or inspiration to better themselves.

The position within the family reflected the age-range of those interviewed, with the majority being fathers (74%). Very few – 24% - young people (below 25 years old) were interviewed.

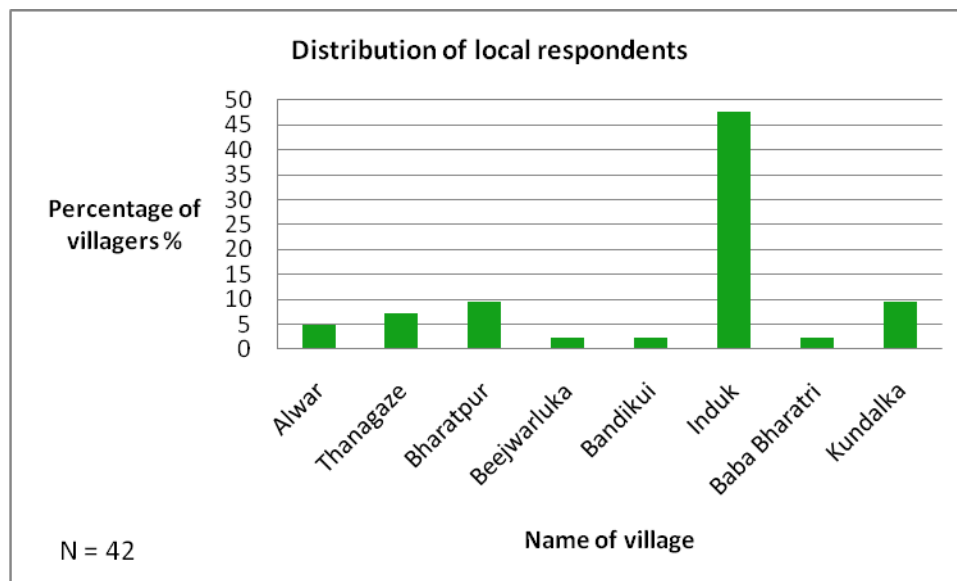
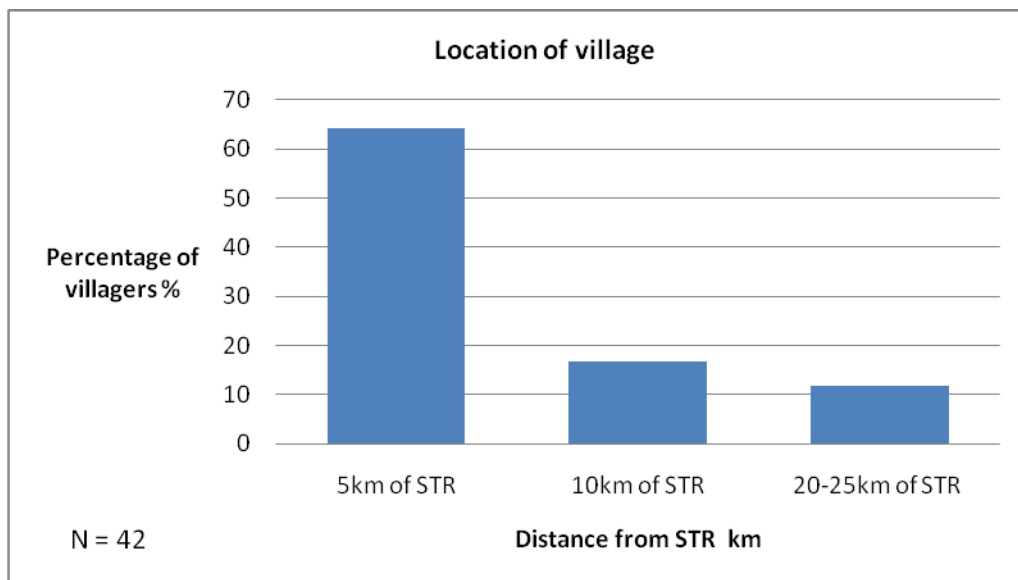




The average family size among the villages (4 - 6 members), as compared to those interviewed as part of the hotel questionnaire (2-4 members), was noticeably higher. 29% of participating villagers lived in families comprising of at least 6 people. The family size is significant as an indicator of the level of development and birth control practice active within these communities. Most of these families are struggling to provide enough money and food to keep themselves and joint families could be economically more effective.

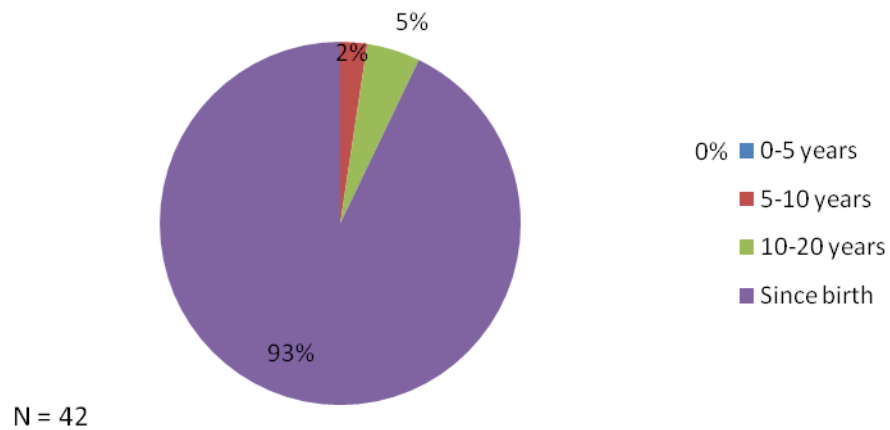
2. The locality of villagers to Sariska Tiger Reserve (STR)

A 64% majority of those interviewed lived within 5km of Sariska, with 48% living in the village of Induk. Speaking to the villagers, it was clear that the seeds of a progressive attitude towards the reserve, the forestry and towards adapting to new means of livelihood had been sown in the community of Induk. This was reflected in the number from this village who are employed directly within STR or who earn a livelihood from interacting with the reserve. One family spoken to earns a third of their livelihood from hiring out their tractor to the forestry, while others included a 'Gypsy Driver' and a Nature Guide. 9 guides and drivers I spoke to – 12% of respondents – stated that they drove between 10-25km by motorbike/scooter, or came by bus; while 7% drove over. What this shows is that the provision of employment at STR exerts a significant draw on youth from further a field. Asked if they were attracted to the job specifically because of an interest in wildlife, it was established that they did not and that the security of a job was the main factor. However, by being introduced to the arena of wildlife conservation all guides and drivers spoke as passionate ambassadors of the programme. What can be seen here is that having a stake in wildlife conservation is an influential education tool and produces new generations of people harbouring the mentality of conservation and advocating its role in the local community.

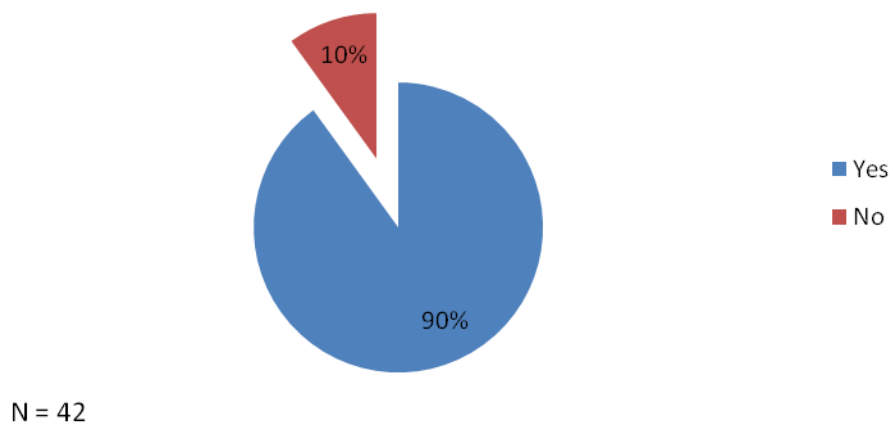


It can also be seen from the results that the overwhelming majority of villagers have lived in their village since birth (93%) and that their family has lived there for several generations (86%). This indicates the deep-rooted influence of traditional values among the rural communities near STR and also sheds light on the challenge that adopting alternative livelihoods would mean to these families culturally-speaking. Traditionally, local communities around Sariska earn their livelihood in the same way as their families have done for generations. Meenas generally work in agriculture, farming wheat, mustard and vegetables; whereas the Gujjars rear and graze livestock. Both groups sell surplus produce for income. 53% of respondents reported that their family had lived in the village for over 4 generations.

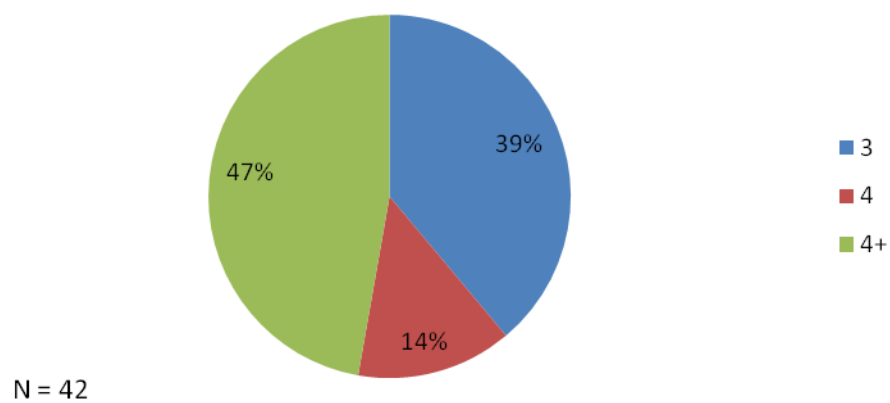
How many years the respondents have lived in their current location



Has the respondents's family lived in that village for a number of generations?



No of generations respondents have been living in current location . Shown as percentage



3. Livelihood and local economy

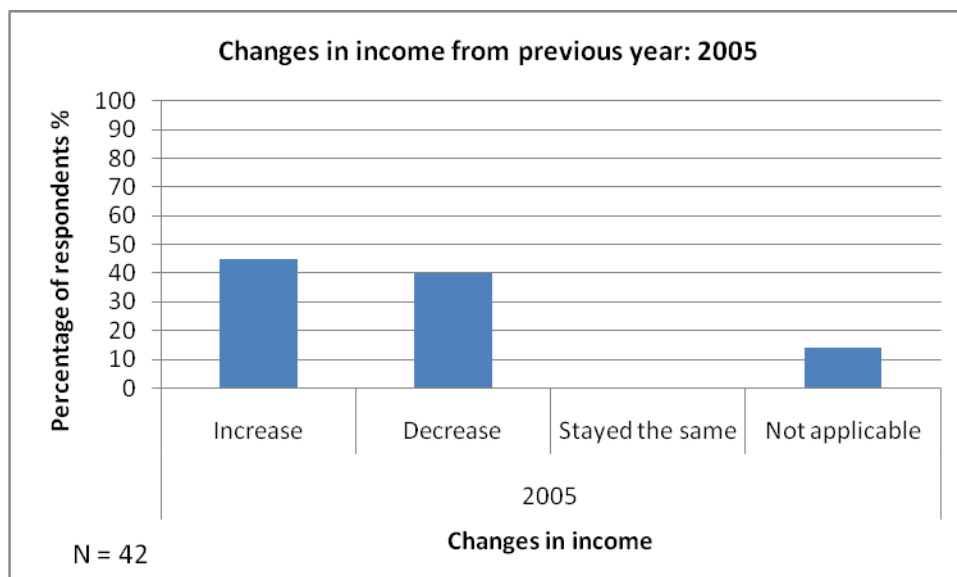
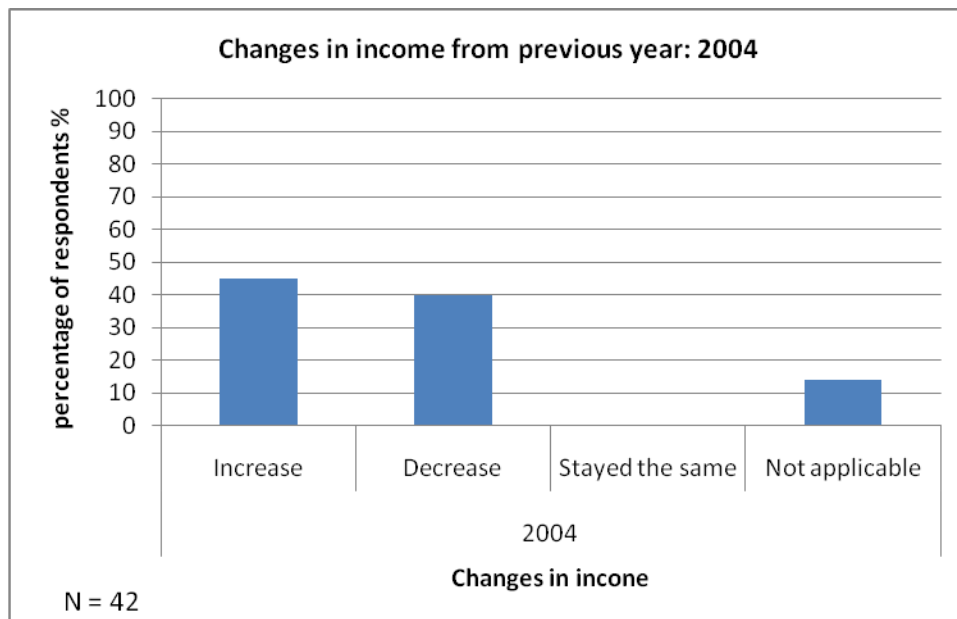
One of the most profound observations made from interacting with the locals was their dependence on forest resources and their very vulnerable livelihoods. As such, they struggle to survive on the little they earn and their options are very limited. The deep-rooted traditional values of their community make ambitious diversions from the family livelihood very hard. All of these factors exacerbate the dependence on forest resources, which basically represents 'free supplies'. Equally, there is a poor understanding of financial costs and benefits and of input/output ratios. For example, one villager, with whom I spoke at his home, owns and drives a 'Gypsy' jeep. He earns an income as a 'Gypsy' driver, approximately Rs1.5 lakh⁵¹ per year. He bought the vehicle last year for Rs7 lakh in an effort to increase his income from a driver to an owner/driver. Although he can earn Rs1.5lakh/year, this is dependent upon tourism levels and, since tourism has only recently begun to pick up following the reintroduction of tigers to STR, the income of drivers and guides continues to feel the effects of the 2004-2008 extinction and the subsequent drop in tourist numbers. At present, a driver may earn up to Rs3000/month, whereas he was earning Rs10-12,000/month during 1997-2004. What the 'Gypsy' driver in question had not accounted for in buying the jeep was the high maintenance costs: tax, fuel, maintenance. I was told that he now running at a loss and it was clear that his family was very poor.

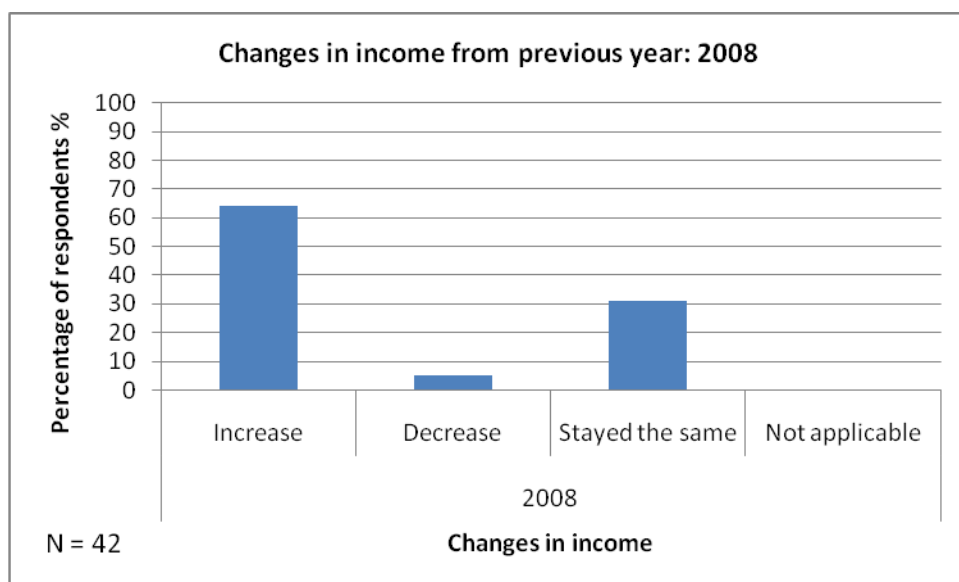
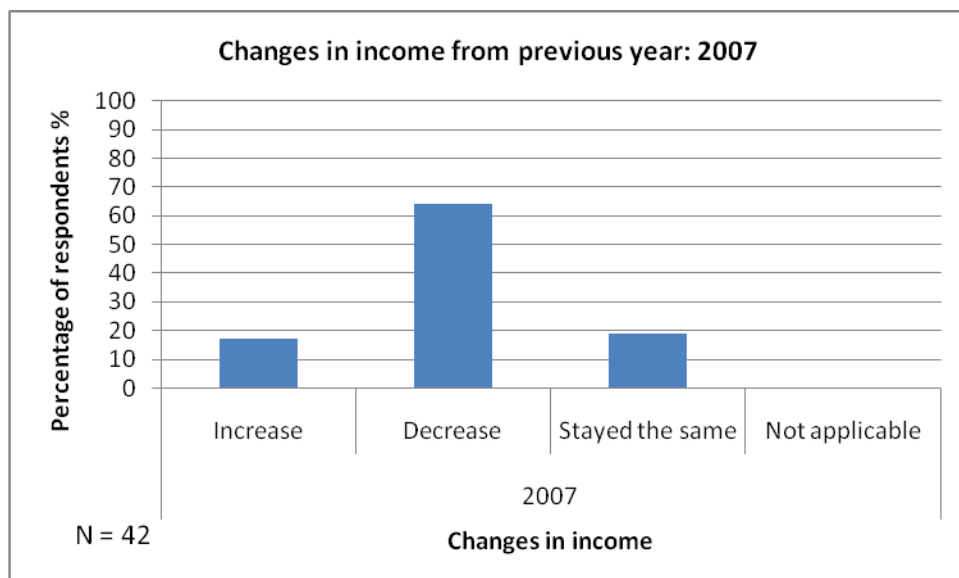
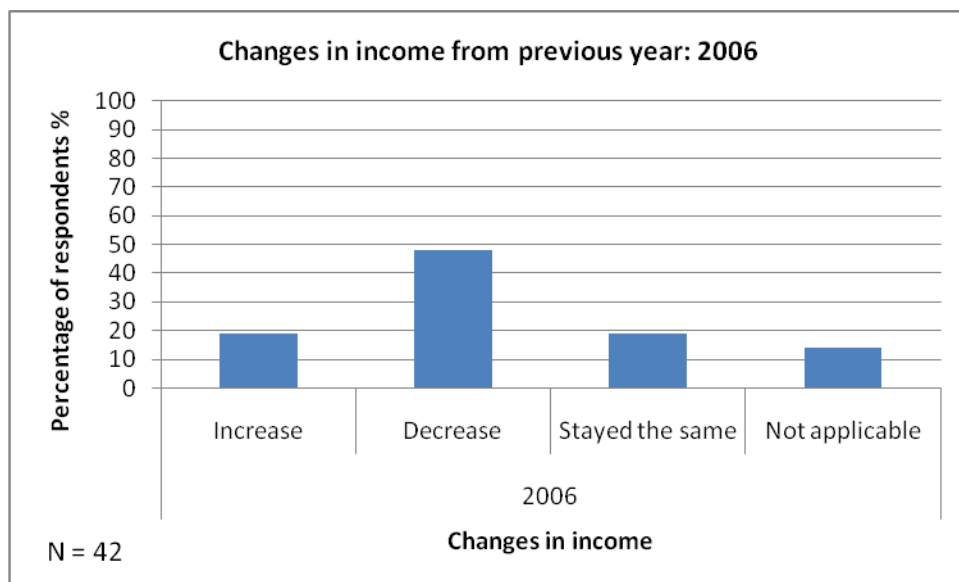
The results from the graph below demonstrate the changes in the villagers' income during the period 2004-2009. The respondents (42) included local villagers with agriculture/livestock livelihoods and drivers, guides and guards working for the Forest Department. Those entries marked as 'not applicable' referred to guides who were only employed in 2007 and so could not offer responses for the years prior to that. The results show that the gap between increased and decreased income among respondents between 2004 and 2005 was not significant despite the extinction of tigers and the decline in tourism. This may be explained by the fact that the Forest Guards (11) are employed irrespective of tiger numbers. However, from 2005 onwards to 2008 the decline in income is visible. This reflects those who jobs are dependent upon tourism – the drivers and guides. Accordingly, income increased in 2008 (64%) and 2009 (93%), the time at which tigers were reintroduced to STR. Additionally, we can see that the increase in 2008 was still accompanied by a small decrease (5%), while 32% reported that their income did not change. By 2009, the increase in income is 93% and no decrease is reported. The moderate increase in income noted between 2004 and 2008 reflects how few villagers have established link between their livelihoods and tiger conservation at STR. Being dependent upon their agriculture/livestock for income, they are entirely disconnected from the vagaries of wildlife tourism and tiger conservation so, while they fare badly in droughts and unseasonal rainfall, they are not affected by a drop in tourism levels.

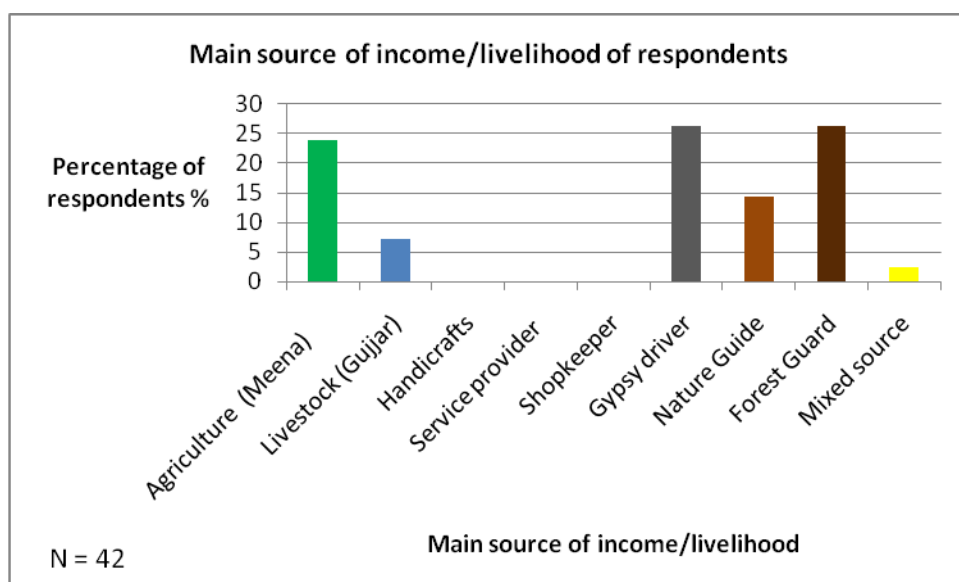
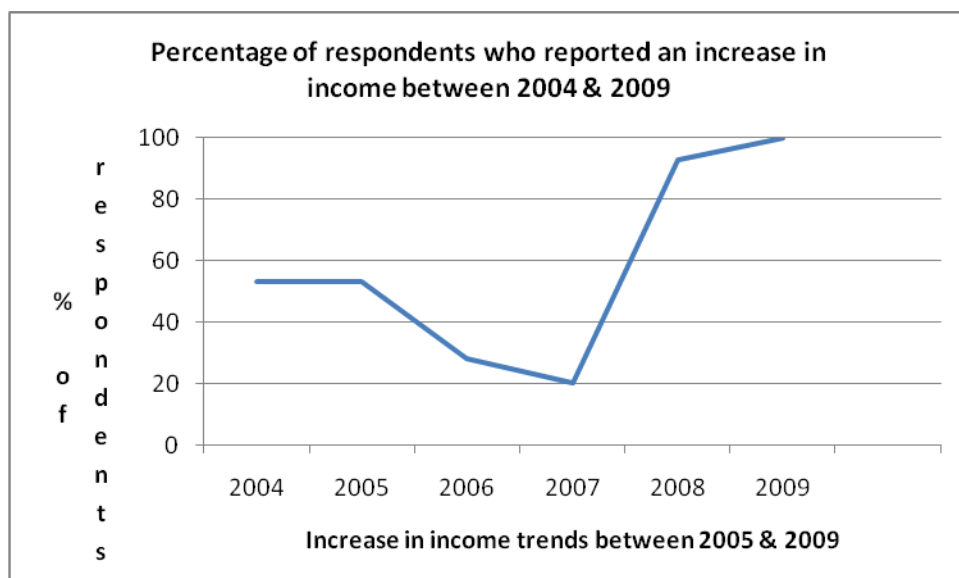
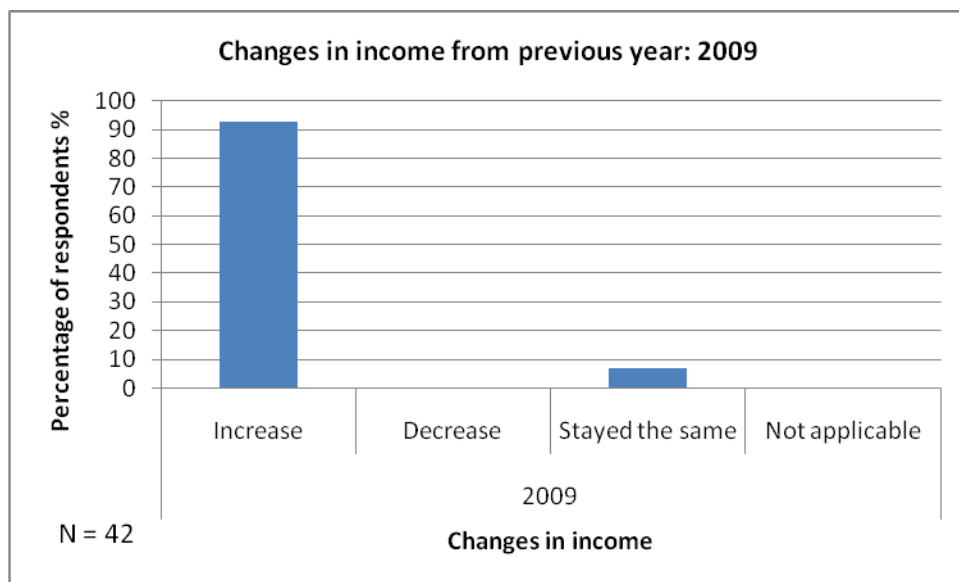
The main source of income/livelihood was also established in the contact with villagers as a means of analysing the impact of tiger conservation upon the local economy. The results from these findings reveal a strong correlation between tiger conservation at STR and the local economy. This correlation was made using the dates of 2008 and 2009 as key references which mark the period in which tigers were reintroduced to STR and during to which the activity of the local economy can be compared. It can be noted (see page 75) that 67% of the respondents' main source of income is directly related to tiger conservation at STR (as Nature Guides, Forest Guards or 'Gypsy' Drivers) ; correspondingly, 2008 saw an increase in the number of respondents who reported an increase in their income. This confirms the hypothesis that a significant number of the local population are affected economically by the activities at STR, such that their livelihood is to a significant extent a reflection of the health of wildlife tourism at the tiger reserve. As a comparison, those whose

⁵¹ 1 lakh = 100,000 (one hundred thousand)

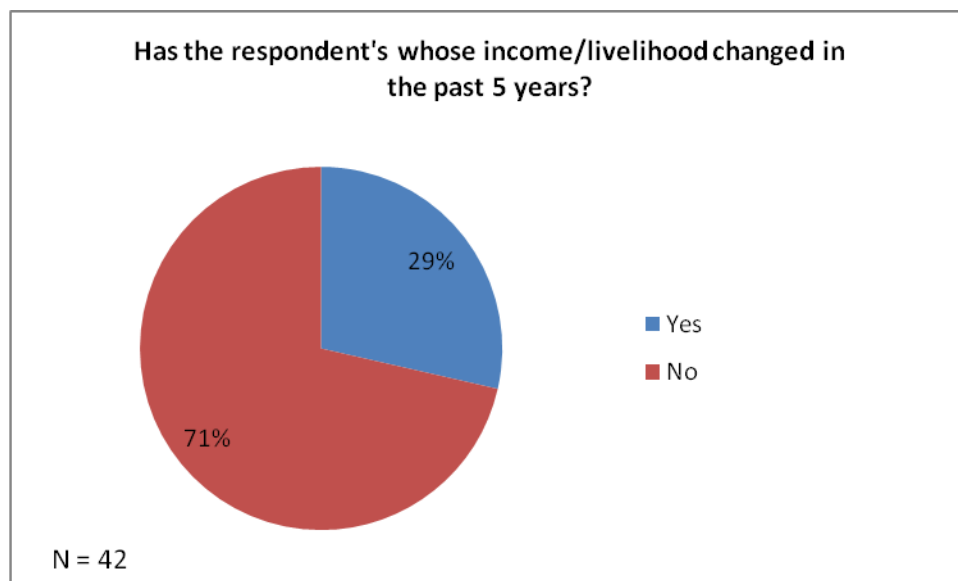
livelihoods are not linked in any way with STR– the villagers who depend upon livestock/agriculture for their living – account for approximately 33% of respondents. This figure correlates with the number of respondents – 31% in 2008 and 7% in 2009 - reporting no change, or a decrease, in their income at the time of the reintroduction of the tiger to STR. As such, it would appear that for this section of the local population, tiger conservation does not benefit them economically as their livelihood is in no way linked to the activities at STR.

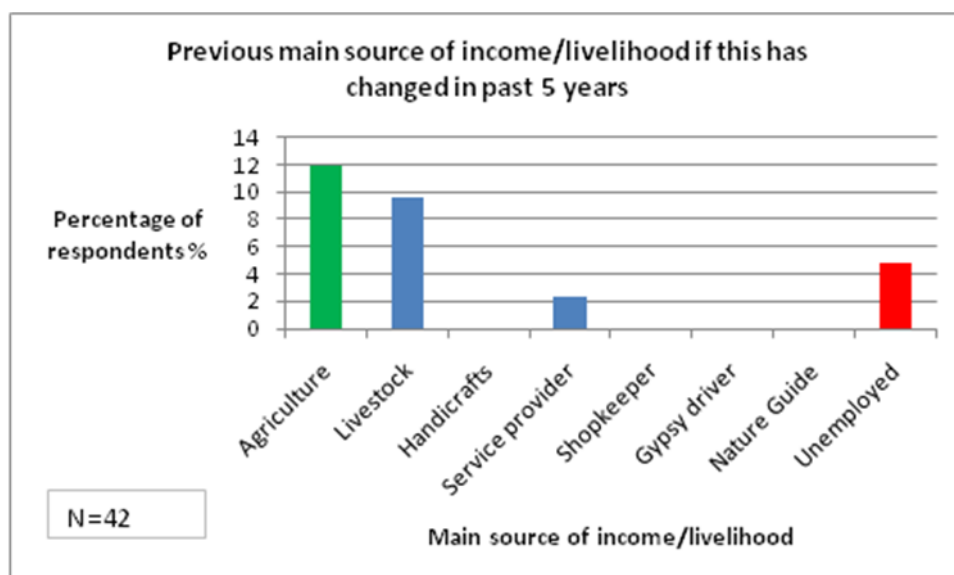




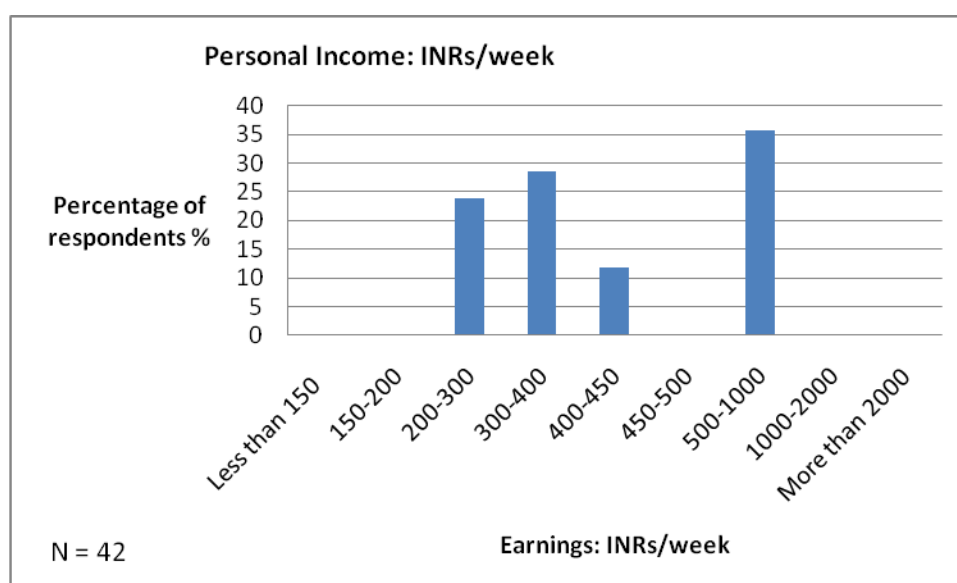


Further to this, participants were whether their main source of income/livelihood had changed during the past five years as a means of establishing the rate of livelihood adaptation within the local economy and then assessing its correlation with tiger conservation. 29% answered this question positively and within than group 100% stated that they had previously worked in agriculture (71%), livestock (71%) or had been unemployed (29%). It was clear that the luxury of choosing their source of livelihood is not one which they can afford. As such, any change in the main source of livelihood is because the new prospect offered more income. During my conversations with the guides, I was told that none of them had any significant interest in wildlife conservation before they began their work at Sariska Tiger Reserve. They were attracted to the opportunity first and foremost as a job, as an income, but have subsequently become advocates of the cause. Exemplary of this attitude among the guides and drivers was this statement which was made in response to a question asking them how they felt about the tiger and STR: “Tiger is the protector of nature; tiger is providing us with livelihoods”. Such statements from the field serve as strong testimony to the case for local communities adapting to alternative livelihoods as a means of improving and securing the local economy. They are also evidence of the value of connecting STR with the local communities in which it cohabits.

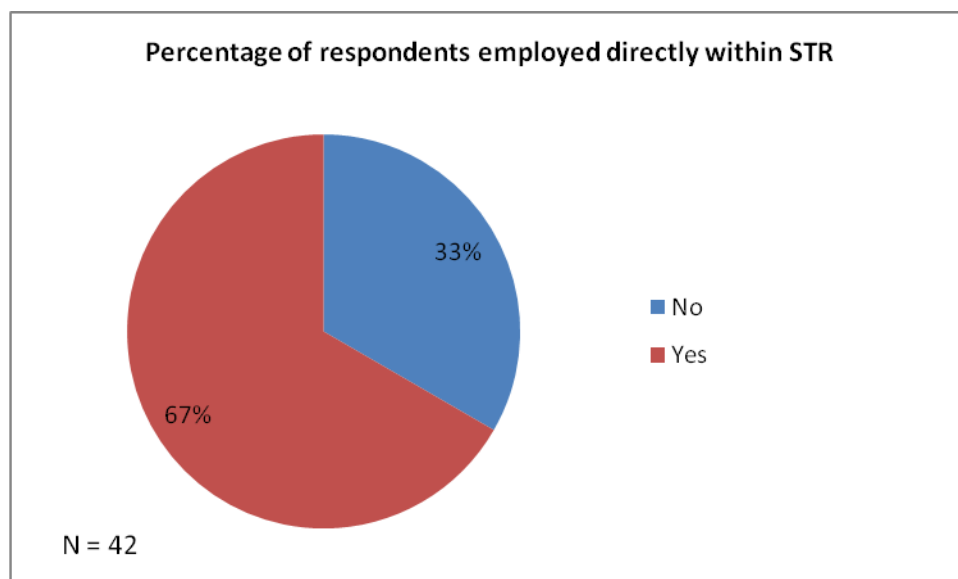
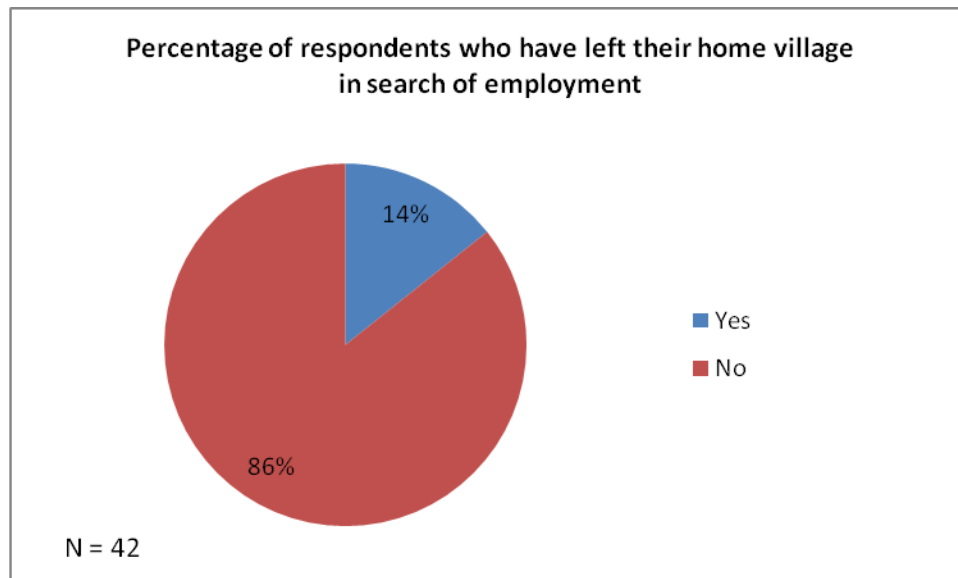




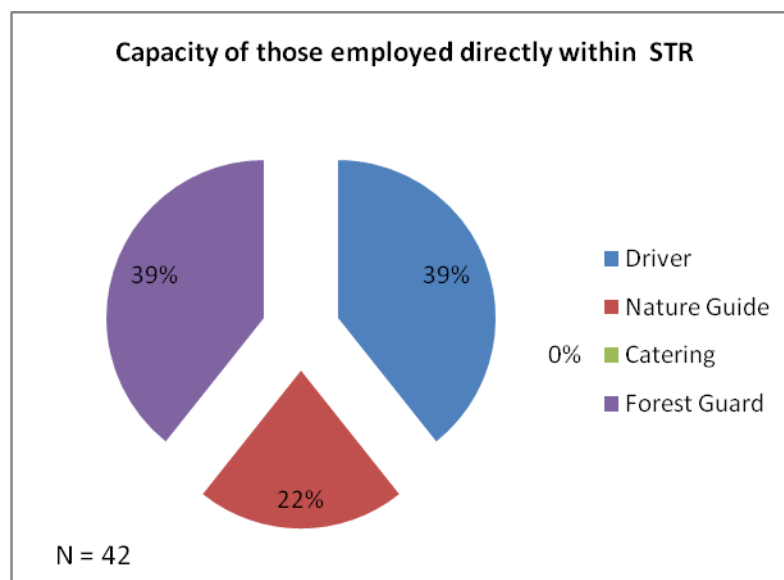
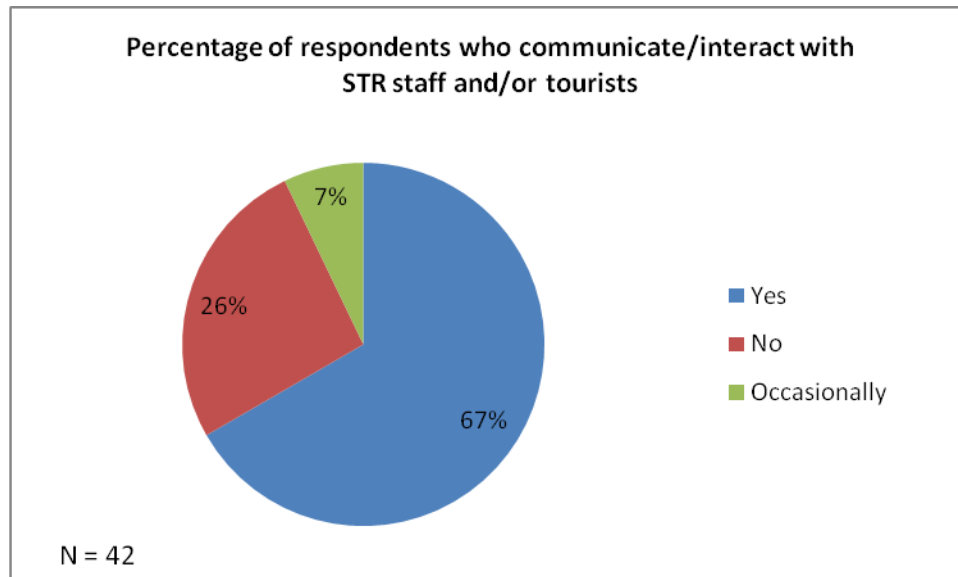
The personal income of local villagers was assessed through the questionnaire and through discussing the villager's livelihood with them informally and gauging from the information gathered in such circumstances. The findings revealed that, with the exception of a few villagers who hold higher positions within the community – one villager from Induk manages the local Post Office, hires his tractor to the FD and grows vegetables on his field and so has three sources of income – it is only the villagers who are employed within STR, or connected to STR, who earn a reasonable income. And even then, those working as Nature Guides and Gypsy Drivers are susceptible to the vagaries of tourism levels, earning more in busy seasons and less when there are few tourists. The Gypsy Drivers earn Rs100 per day (Rs700/week), but the Nature Guides' earnings depend heavily upon the level of tourists. In 2005, when there were no tigers at Sariska the Nature Guides left as they had no work and even since being reintroduced in 2007 they have found that tourist levels are still quite low and thus their earnings are not as high as they could be. The guides told me that they earn between Rs300-400 per week and average Rs1-1,500 per month. Crucially, a significant number of villagers (31%) who have no economic link with STR earn between Rs200-300 per week. This highlights their economic hardships and marks a key reason why linkages between the local communities and STR would benefit the local economy. Additionally, it is such economic hardships which compound the dependence of many villagers upon the 'free' forest resources for fuel and cattle grazing.



It is also significant to note that only 16% of respondents stated that they had left their home village in search of employment. As such, the remaining 84% are local villagers who earn a living locally. Crucially to this report, only 56% of respondents are employed directly within STR and are thus benefitting economically from the activities of Sariska Tiger Reserve. While the findings drawn from the hotel staff group – an economy born out of tourism – reveals the potential local benefits of conservation at STR, the findings from the villagers show that there remains still a great deal of work to be done in adapting local livelihoods and involving locals in the work of the reserve so that they have a stake in it. This indicates that only a small percentage of local villagers benefit economically from the conservation of the tiger at STR, but equally that those who do benefit are both very positive about their role and serve as powerful advocates of the conservation.



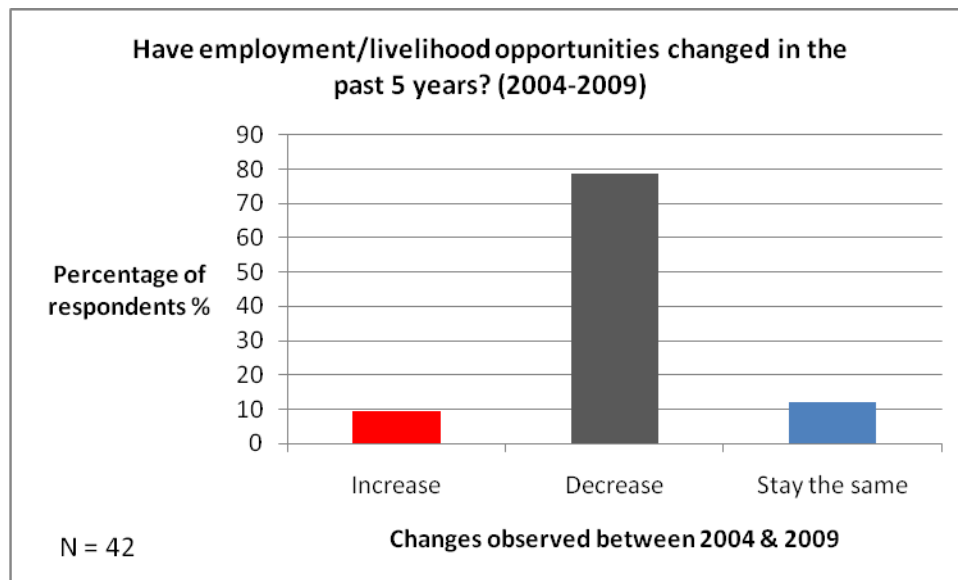
Of the 67% (28) of respondents directly employed within STR, 39% are drivers of Gypsies, 22% are nature guides and 39% are forest guards. Interestingly, while only 67% of respondents are directly employed within STR, 74% stated that they are in regular or occasional contact with STR staff and/or tourists. The capacity in which they interact with the PA can be seen in the graph below and broadly reflects the distribution of guides, drivers and guards within the group of respondents directly employed within STR. These results suggest that there is already a communication line between some villagers (not already employed within the PA) and the PA and that this could be used to enhance relations and establish links.



Currently there are 15 nature guides and 27 Gypsy drivers employed at Sariska Tiger Reserve who are dependent upon tourism levels for their employment/income. The guides were recruited in March 2007. At this time there were no tigers at STR, but the guides derived income from pilgrimages and other wildlife tourism. The regular nature guides had left the reserve in 2005 when the extinction of the tigers made their jobs redundant. The recent policy of Project Tiger management to make it compulsory to include a nature guide in each vehicle within the PA has been a success in supporting the locals and the local economy. Equally, the roster system that is used to ensure fair distribution of work among the individuals has succeeded in sharing out these benefits.

So, while the proportion of local villagers benefitting in this way is relatively low, the success within the group is positive.

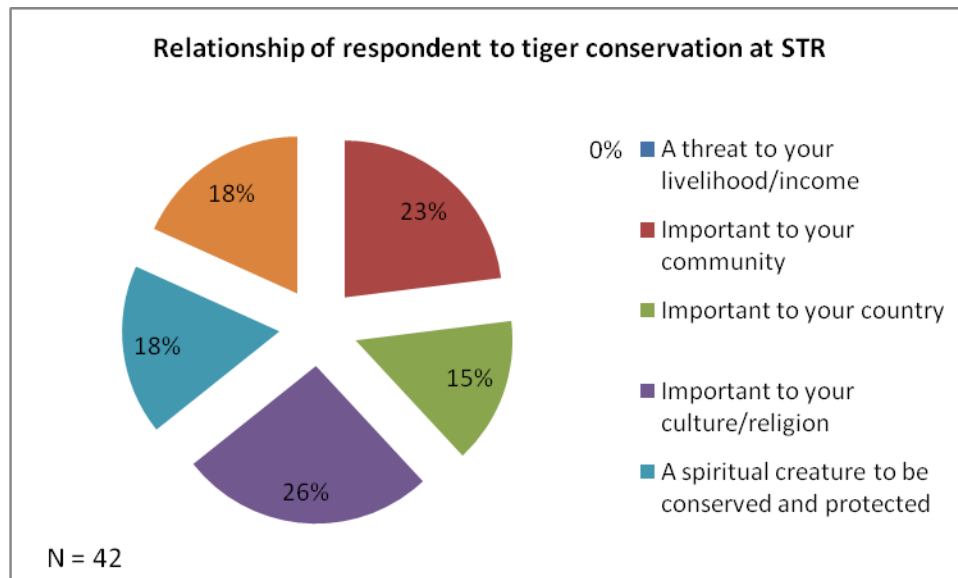
The respondents to the villagers questionnaire were also asked about recent changes to their livelihood opportunities. 79% reported that livelihood opportunities had decreased in between 2004 and 2009. Given that this pattern follows the period of the tiger extinction at STR, this strongly suggests that 12% of villagers (the difference between 67 and 79) interviewed who are not directly employed within STR still benefit economically in some way from the PA.



4. Relationship with the Forest Department (FD) and the Tiger Reserve

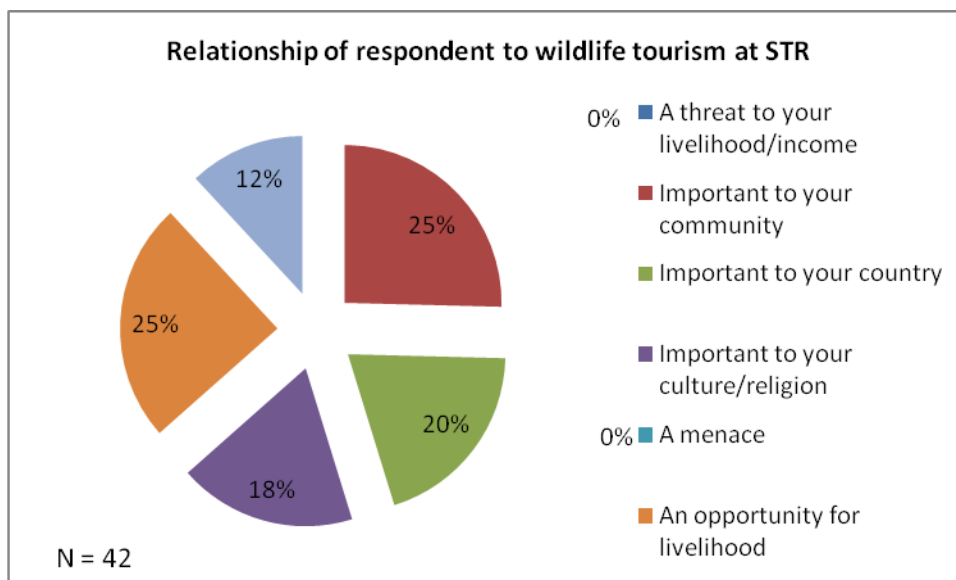
The general feeling towards STR, and tiger conservation more broadly, is positive among the local communities. This is more apparent in the cases of those employed directly within Sariska Tiger Reserve, for example as guides, drivers or guards, than it is among those who do not have a direct link with the reserve. While I was told by local villagers who are not involved with STR that they “have a good relationship with the Forest Department”, it was strongly felt that there are unspoken tensions involving their illegal collecting of fuel wood which, given their economic hardships and their dependence upon forest resources, creates a barrier to their establishing links with the reserve and benefitting from it in a productive way. In contrast, those families who either own a Gypsy jeep which is used inside the PA or a tractor which is hired by the FD, expressed an obvious connection with the work of STR and an understanding of the value of conservation. One family in Induk even corroborated the view expressed by the guides in the Forest Department that the tiger brings good fortune to the villages in the form of bountiful harvests and that its absence brings bad seasons. I was told:

“We feel very proud of it and connected. We feel there is connection between our fortune and the climate for our crops and the presence of the tiger. Climate change and bad season came at the same time as the tiger became extinct at STR and we feel this is related. Drought meant we were not able to grow enough crops to sell.”

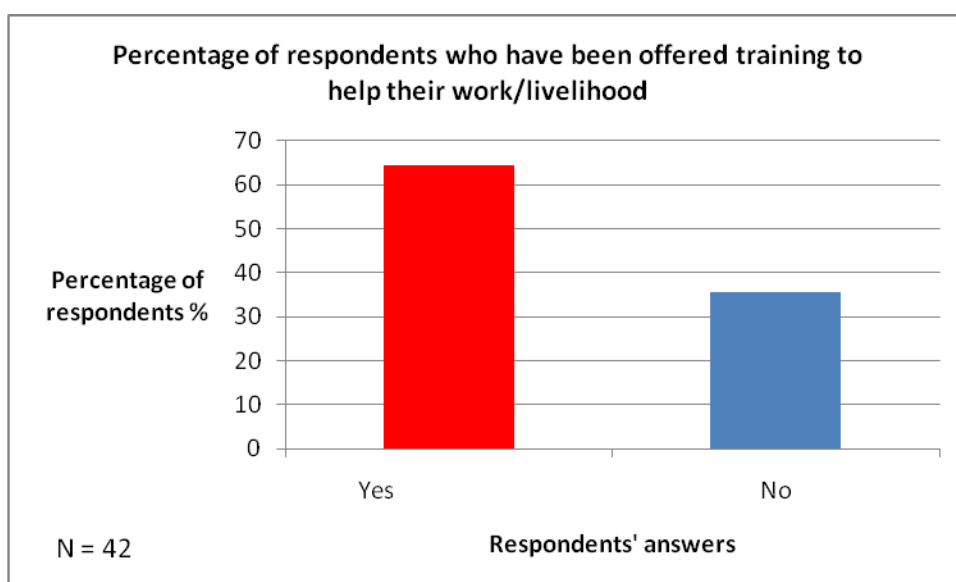


As such, the data revealed in the graphs supports the findings that any formal link between villagers and STR brings economic benefits to those involved thus engendering positive relations between tiger conservation and the local community. Villagers were asked to rank the top three options describing their relationship to tiger conservation at STR. The replies illustrate that the vast majority consider tiger conservation at STR to be important to their community; to their culture/religion and a good opportunity for livelihood. This is despite the fact that 33% of villagers are not directly involved with the reserve at present. The majority of respondents (26%) considered the tiger's importance to their culture/religion to be most significant. Interaction with the respondents showed that, of the villagers not involved with STR in any way, the majority showed they had limited awareness of the direct ecological importance of conserving the tiger and its habitat. This is not to say that the communities are not environmentally conscious - indeed they are very environmentally resourceful – but their awareness concerning conservation issues is limited. Their knowledge is restricted to their day to day survival needs and since they are not aware that they depend upon and threaten the tiger and its habitat (through wood collecting and cattle grazing)) they have no conscious connection with it or need to learn about it. Discussing their lifestyle and livelihood needs with them it was clear that their awareness revolves around, and is limited to, their most basic of survival needs. None of the respondents expressed any grievance that tiger conservation or wildlife tourism present a threat to their livelihood or income.

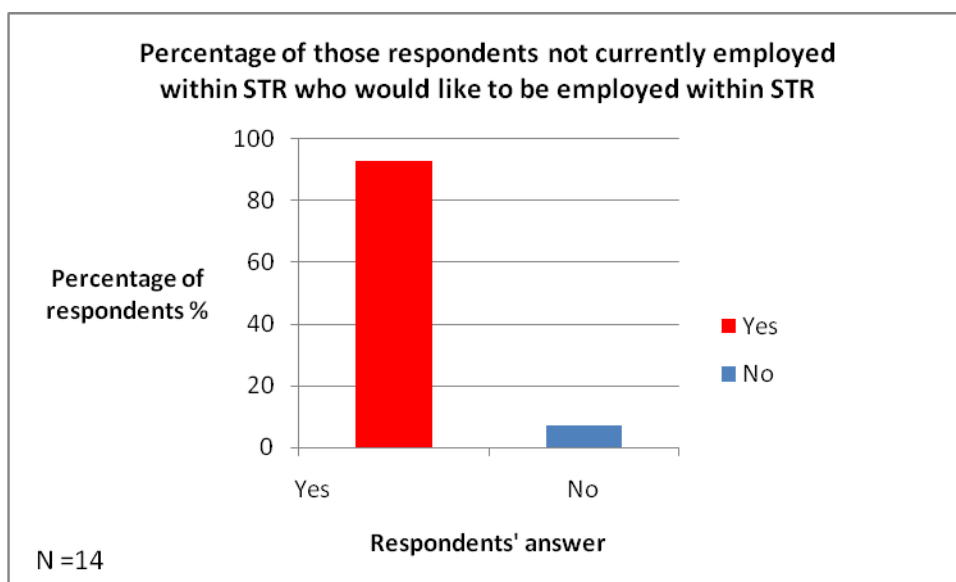
As far as the community's relationship to wildlife tourism at STR is concerned, it is significant to note that 28% consider the value of wildlife tourism at STR to be most important for the community and the same number say the same for tourism/s value as an opportunity for livelihood. This echoes the results from the previous question regarding their relationship with tiger conservation and so demonstrates that, in spite of villager-PA links being relatively undeveloped at present, there is a favourable view towards the tiger among those villages based on the periphery of the reserve. This highlights an area of great potential, which those seeking to advance the economic benefits the local communities near STR should be mindful of.



Respondents who are employed within STR (67%) were asked whether they had been offered training to help their work/livelihood. 64% confirmed that they have been offered training to help their work and this indicates that the economy generated within STR – including guides, drivers and guards – is strengthened and supported by investing in the manpower and training of staff. Such benefits to the local communities and the workforce of Sariska Tiger Reserve present a positive case for supporting tiger conservation at STR, beyond the obvious environmental and wildlife interests.

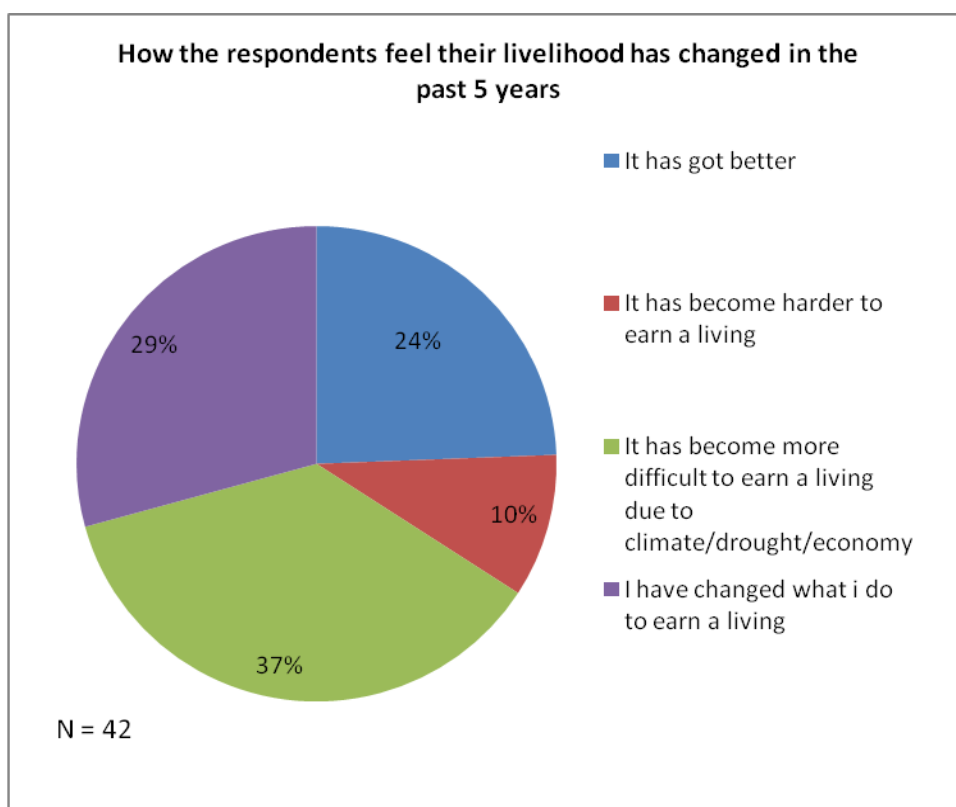


Further to this, it is relevant to the future development of links between the local communities and the FD at Sariska to note that 93% of those respondents not directly employed within STR would like to be employed within STR. It shows that there is great willingness among those in the local community to become involved in the work of Sariska Tiger Reserve and establish a connection between their livelihood and the conservation of the tiger.



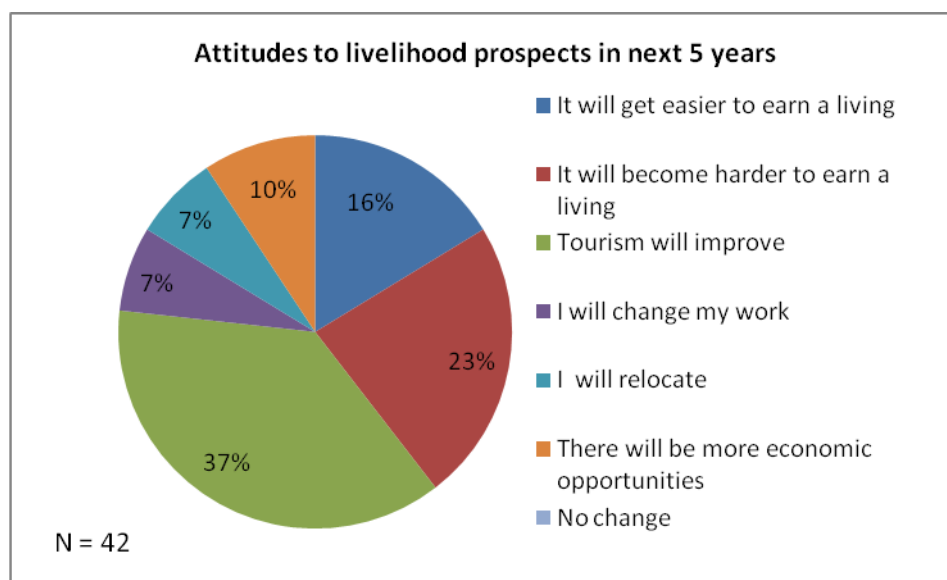
5. Future livelihood prospects

Respondents were asked about changes to their livelihood over the past five years and were then asked how they saw the next five years in this respect. 47% conveyed that their livelihood/income had been negatively affected by climate/drought/economy, thus demonstrating how many villagers remain predominantly dependent upon agriculture and traditional livelihoods for their income and how few yet have established links with STR. Establishing links between STR and the local villagers would not only assist them in adapting to less forest dependent and less precarious forms of livelihood (such as farming and cattle rearing), but would introduce a whole new sector of society to the value of conservation.



It should also be noted that 39% stated that they had changed what they do for a living. Opportunity to adapt to alternative livelihoods is one of the greatest and most discussed policies which Government and NGOs have been encourage within rural communities near PAs. The fact that a significant number of villagers near STR say they have changed what they do to earn a living suggests that small changes are already beginning to take place on this front. Interviews across the board in the 'villagers' category reported that the vast majority still have more than one source of income, including those who work as guides and 'Gypsy' drivers. Since wildlife tourism generates a major part of the employment needs at STR and the fact that tourism is still relatively undeveloped at STR explains why so many still depend upon a second income to support themselves. In the case of the guides and drivers, some reported that they often depend upon pilgrimage tourism for business; whereas others still work their land and grow vegetables after they have finished their hours at the reserve.

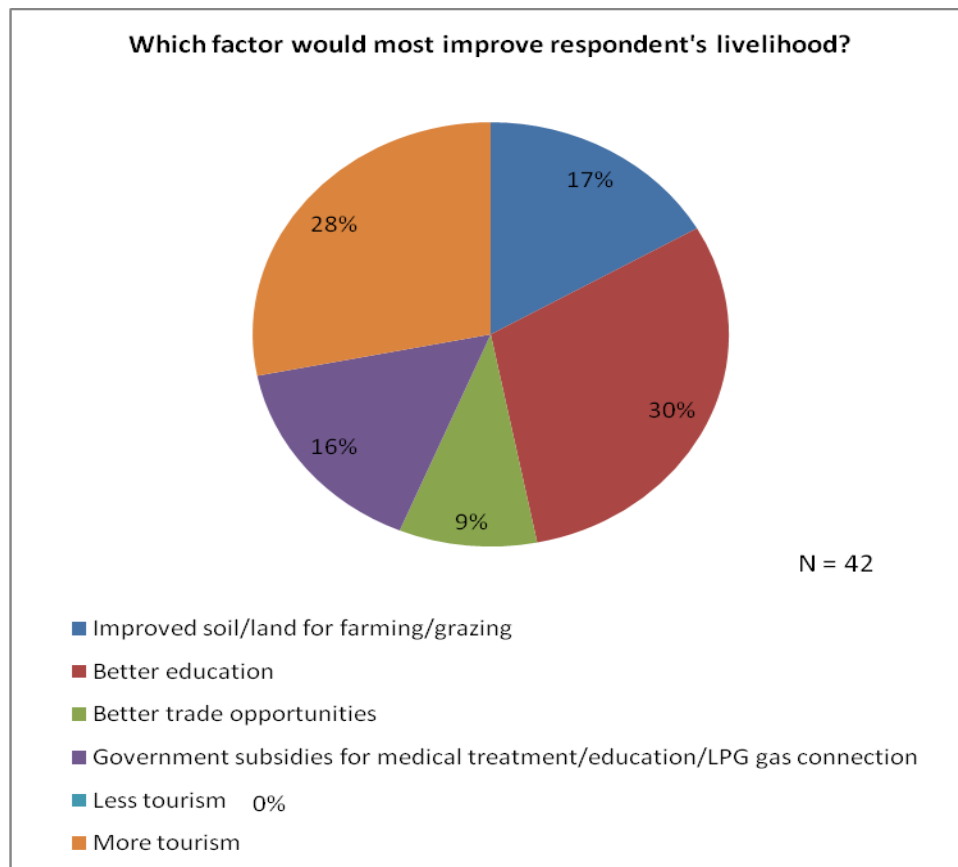
Asked about how they felt about their livelihood prospects for the next five years, 37% of respondents said tourism would improve. This shows a remarkably positive attitude not only towards wildlife tourism at STR but also, indirectly, towards the conservation of the tiger and the health of the economy. Those who answered that tourism would improve were predominantly those villagers who work within STR, showing a strong faith in Nature Based Tourism. In contrast, 23% stated that it would become harder to earn a living and they constituted the individuals interviewed within Induk and Kundalka who either work within STR as guides (but still depend on farming for some income), or those Meenas and Gujjar families who are wholly dependent on their traditional livelihoods of cattle grazing and farming and are heavily forest dependent. The findings illustrate the divide between the villagers who benefit from the wildlife tourism at STR and escape some of the vagaries of weather, climate and seasonal changes and those who are largely forest dependent and land-based and who have no formal links with the reserve.



Respondents were subsequently asked which factors would most improve their livelihood. This was a question aimed at identifying current obstacles to progress and highlighting some recommendations for the way forward. An improvement in education (30%) and increased tourism (28%) were cited by the highest percentage of respondents as areas which would significantly improve their livelihoods. While speaking to two teenage girls in Kundalka, it was obvious that there is an urge to seek better education and this is seen as a window to better economic opportunities in

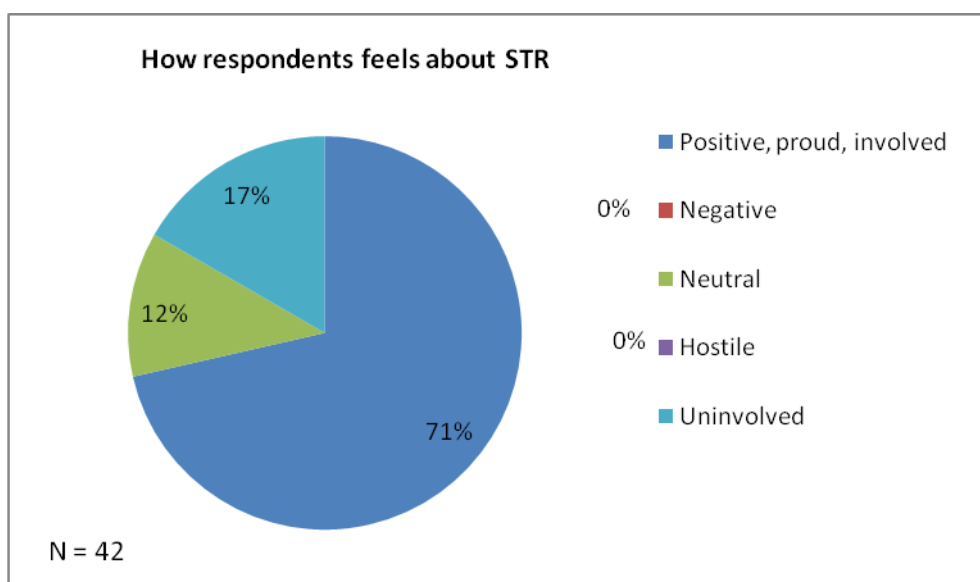
life. Additionally, the fact that two young boys from a family I met in Induk are now employed as Forest Guards is an encouraging sign that the opportunities and training available within the reserve are being accessed and taken up by locals.

The second most significant factors for improving livelihoods among respondents were improved soil/land for farming/grazing (17%) and Government subsidies for medical treatment/education/LPG connection (16%). The majority of rural population in this area are *Meena* and *Gujjar* and so are traditionally depend on the land for their livelihood, either by grazing cattle or growing crops or vegetables. Better trade opportunities were only cited by 9%, some of whom may have chosen 'tourism' as the means through which their trade would improve. The fact that so few villagers have established links with wildlife tourism at STR, which would enable them to share in the economic benefits, is illustrated by the number who cited 'improved soil/land' and the factor which most improve their livelihood. The number of those who mentioned 'Government subsidies' as the most important factor can also be partially explained in relation to the traditional dependence of many villagers upon the forest and the land. Since their livelihoods are so vulnerable and insecure they struggle financially. However, general observation indicated that lack of financial understanding, lack of education and lack of technical and business vision remain some of the main attitudinal obstacles inherent in the villages. Such obstacles mean that in the majority of cases money or subsidies would be far less important than would practical assistance in livelihood adaptation.



Throughout the survey, general observation was carried out with concern to the linkages between local livelihoods and the conservation of the tiger at STR. This involved gaining an insight into the day-to-day needs, challenges and incentives of the villagers as well as their values and priorities. The questionnaire was supported by informal interaction amongst the villagers and casual observation within their communities. The information collected in such circumstances has supported and complemented the data gathered in the questionnaires. As illustrated in the following chart, all

villagers were asked to describe how they felt about Sariska Tiger Reserve (STR) in a broad sense. The results from the questionnaire illustrate that 71% voiced strong support for tiger conservation at STR, describing themselves as 'positive, proud and involved'. 17% stated that they felt 'uninvolved' with STR which, while showing the distance yet to be covered as far as positive community-forest linkages are concerned. 12% said they felt 'neutral' towards STR and the mission of Project Tiger, which could be easily resolved by involvement and mutual economic benefits. These findings take on added significance when compared with the findings in *Livelihood & local economy* (Pt.3, pg.67, Percentage of respondents employed directly within STR). It is also significant to the study to note that the casual interaction and observation carried out alongside the questionnaire fully supported these findings. Despite a lack of notable progress as far as community-forest linkages and related economic benefits are concerned, there is a visible open-mindedness and cultural and spiritual connection to the forest and the tiger in the vast majority of villages and this is fertile ground for sowing the seeds of a harmonious and prosperous link between STR and the local communities.



CONCLUSION

The forthcoming decade will be a test of survival for many threatened species, including the Royal Bengal Tiger. Recent estimates for India's national animal stood at 1,400 making the tiger's extinction a very real possibility. And yet, no other species receives such a high protection status in India, which is home to 80% of the world's wild tiger population. At the same time, the role of tourism in India GDP, especially wildlife tourism, has been quite alarming in the past decade. There are many reasons why these two trends could provide solutions for the way forward in tiger conservation in India.

This study into the role the tiger plays in the local economies has revealed compelling evidence to suggest that tiger conservation and local economies are inextricably linked and that these links can bring mutual benefits to both parties.

During the course of the study, the case of Sariska Tiger Reserve, revealed several key findings which can be interpreted to determine ways in which tiger conservation and local economies can work together for the greater good:

- Tourism at Sariska Tiger Reserve (STR) has suffered enormously as a result of the 'Sariska Shock' tiger extinction of 2005. All hotels reported who participated in this survey reported that economic losses at the time of the extinction were so severe that business has still not picked up to previous levels. Not only did this debacle highlight the positive impact which tiger conservation and wildlife tourism has upon the local economy of reserves, but it underlined the low levels of engagement locals have with tourism.
- A fraction of the revenue generated by hotels reaches the local economy and, although the majority of produce for hotels is bought locally, the high earning positions within hotels continue to be filled by those from outside the area since education remains limited around Sariska.
- There is a limited awareness among locals of the connection between tigers and the ecosystem at large. Although some locals are employed within STR as guards, drivers and nature guides, the majority remain deeply rooted in their traditional livelihoods and uninvolved with tiger conservation. Despite this, speaking to some locals it is clear that there is an urge to seek education as a window to better opportunities in life. Specifically, it was observed that there is a great deal of potential for adaptation of livelihoods in the villages of Induk and Kundalka where there are already examples of direct chain linkages and a willingness to embrace tourism in the form of home stays.
- What is needed to implement a small scale tourism project in these local villages is outside help. Interviews with various members of Induk and Kundalka highlighted key requirements which, if addressed, could lead the way to a situation where the local economy surrounding Sariska thrives directly and indirectly as a result of tiger conservation; a situation where there exists a synchronised relationship between the local economy and the health of the tiger reserve; a situation whereby wildlife tourism at Sariska and the local villages' livelihoods develop simultaneously. For such a scenario to emerge, the villages and their communities have some fundamental needs, evinced by the researcher's interaction with the villagers. These included:
 - Guidance and vision from outside
 - Financial education: understanding concepts such as cost vs. benefit & input vs. output.

- Technical support & planning
- Investment
- Appropriate subsidies
- Training in hygienic cooking practices

The development of eco-tourism in the form of home stays would make Induk and Kundalka 'model' villages; they would serve as an inspiration to other villages around STR and as proof that the tiger is a benefit and an economic opportunity as well as a flagship species central to the ecosystem. There is a profound faith among locals employed within the tourist sector in the Nature Based Economy and strong evidence that those who sought work at STR for purely financial reasons are now advocates of tiger conservation and ambassadors of STR. Equally, there is a sincere belief held among local villagers that the tiger's presence in the reserve brings them good fortune. This is important, organic support which must not be neglected.

- Regarding the continued deficit in tourism at STR, I feel that a stronger and wider recognition of Project Tiger's recent translocation achievement is essential. The translocation of three tigers from Ranthambore Tiger Reserve in June/July 2008 was a landmark achievement in tiger conservation by worldwide standards and it is a shame to see how STR still remains associated so often with its lack of tigers rather than its pioneering efforts to conserve them.
- Of course, an increase in tourist revenue at STR would only be conducive to tiger conservation if a significant amount of it was reinvested in the local economy. As I learned from the representatives at Sariska Palace Hotel, Tiger Den and Sariska Tiger Haven, only a fraction of the money spent at these hotels finds its way back into the local economy. This is another area which should be addressed to support tiger conservation and the local economy at STR.

Sariska Tiger Reserve has made history on two counts in the past decade and there is every good reason why it should be supported to enable it to grab the headlines again at the start of this decade, 2010: *'A roaring success: Sariska Tiger Reserve's flourishing local economy provides a model for tiger reserves and their communities across India'*? Why not?

APPENDICES

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Please tick the appropriate boxes below and fill in the details as necessary. Thank you.

1. Name:.....

...

Consent to acknowledge name:

☐ Yes

☐ No

2. Age:

☐ 15-20

☐ 20-25

☐ 25-30

☐ 30-35

☐ 35-40

☐ 40-45

☐ 45-50

☐ 50-60

☐ 60 +

3. Gender:

☐ Male

☐ Female

4. Position within the Family:

☐ Father

☐ Mother

☐ Child

☐ Other. Please state

.....

5. Family Size, individuals:

☐ 1-2

☐ 4-6

☐ 2-4

☐ 6 +

6. Household Size, families:

☐ 1 family

☐ 2 families

☐ 3 families

☐ More than 3. Please state number

7. Do you live:

☐ Within 5km of STR

☐ Within 10km of STR

☐ Name of Village.....

8. How long have you lived in your current location?

☐ 0-5 years
birth

☐ 5-10 years

☐ 10-15 years

☐ Since

9. Has your family lived here for a number of generations?

☐ No

☐ Yes

If Yes, please give details of how many

generations.....

10.

Have you moved home/village in the past five years?

☐ Yes

☐ No

11. If Yes, was your move due to:

☐ Relocation ☐ In search of employment ☐ In search of Resources ☐ Related to livelihood
☐ Other. Please

state.....

.....

.....

12. How did your household income change in relation to the previous year?

2004 ☐ Increase ☐ Decrease ☐ Stayed the same

2005 ☐ Increase ☐ Decrease ☐ Stayed the same

2006 ☐ Increase ☐ Decrease ☐ Stayed the same

2007 ☐ Increase ☐ Decrease ☐ Stayed the same

2008 ☐ Increase ☐ Decrease ☐ Stayed the same

2009* ☐ Increase ☐ Decrease ☐ Stayed the same

* Until now

13. What is your main source of income/livelihood?

☐ Agriculture ☐ Livestock ☐ Handicrafts ☐ Service Provider (contract worker)
☐ Shopkeeper ☐ Driver ☐ Guide

☐ Other. Please

state.....

14. Has your main source of income/livelihood changed in the past 5 years?

☐ Yes ☐ No

15. If Yes, What did you do before?

☐ Agriculture ☐ Livestock ☐ Handicrafts ☐ Service Provider (contract worker)
☐ Shopkeeper ☐ Driver ☐ Guide

☐ Other. Please

state.....

16. What is your personal income. (Rs/year)?

☐ Less than 20k ☐ 20-40k ☐ 40-50k ☐ 50-60k

☐ 60-70k ☐ 70-100k ☐ More than 100k ☐ Don't know

17. Have any of your family left the village in search of employment?

☐ Yes ☐ No

18. Are you employed by services directly connected to Sariska Tiger Reserve?

☐ No ☐ Yes

19. If Yes, in what capacity?

☐ Service Provider (contract worker) ☐ Driver ☐ Guide

☐ Cleaner ☐ Catering

☐ Other. Please

state.....

.....
.....
20. Do you communicate/interact with STR staff and/or tourists?

☐ Yes ☐ No ☐ Occasionally

21. If Yes, in what capacity? (eg. In relation to which issues/activities?)

☐ Rights and boundaries availability/use ☐ Access ☐ Resource

☐ Trade ☐ Livestock compensation

☐ Other. Please

explain.....

.....
.....
22. Have employment/livelihood opportunities changed in the past 5 years?

☐ No ☐ Increase ☐ Decrease ☐ Stayed the Same

23. Do you feel the tiger is.... Please rank top three:

☐ A threat to your livelihood/income ☐ Important to your country

☐ Important to your community ☐ Important to your culture/religion

☐ A threat to your life protected ☐ A spiritual creature to be conserved and

☐ Other. Please

state.....

24. Do you feel tourism at Sariska Tiger Reserve is. Please rank top three:

☐ A threat to your livelihood/income ☐ Important to your country

☐ Important to your community culture/religion ☐ Important to your

☐ A Disturbance ☐ A Good opportunity

☐ A Bad development

☐ Other. Please

explain.....

25. Have you been offered training/education to help your work?

☐ Yes ☐ No

26. Would you like to work within STR?

☐ Yes ☐ No

27. How do you feel your livelihood has changed in the past 5 years. Please tick as appropriate?

☐ It has got better

☐ It has got worse

☐ It has become more difficult to earn a living
living

☐ It has become more risky to earn a

☐ Other. Please

explain.....

28. How do you feel about your future in the next 5 years?

☐ It will get easier to earn a living

☐ It will get harder to earn a living

☐ I will

move/relocate

☐ There will be more economic opportunities

☐ I will change my work

☐ Other. Please

explain.....

.....

.

29. Which factors would most improve your life & livelihood? (Please rank top three)

☐ Better employment opportunities

☐ Improved sanitation

☐ Improved soil/land for

farming

☐ Cleaner water supply

☐ Better education

☐ Improved irrigation

☐ Better trade opportunities

☐ Better medical/healthcare

☐ Less tiger conservation

☐ Fewer protection areas/restrictions
tourism

☐ Fewer tourists/less

☐ Other. Please

describe.....

.....

.....

30. Which of these best describes how you feel about STR?

☐ Positive

☐ Involved

☐ Proud

☐ Negative

☐ Excluded

☐ Harassed

☐ Other. Please

describe.....

31. Further suggestions or comments on the role of the tiger and/or STR in your life?

.....

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.....
.....
.....
.....

Thank you for taking the time to fill in this questionnaire.

Please tick the appropriate boxes below and fill in the details as necessary. Thank you.

32. Name:.....

Consent to Acknowledge:

☐ Yes ☐ No

33. Age:

☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30-35 ☐ 35-40
☐ 40-45 ☐ 45-50 ☐ 50-60 ☐ 60 +

34. Gender:

☐ Male ☐ Female

35. Position within the Family:

☐ Father ☐ Mother ☐ Child
☐ Other. Please state

36. Family Size, individuals:

☐ 1-2 ☐ 4-6
☐ 2-4 ☐ 6 +

37. Household Size, families:

☐ 1 family.
☐ 2 families
☐ 3 families
☐ More than 3. Please state how many.....

38. Do you live:

☐ Within 5km of STR ☐ Within 10km of STR
☐ Name of Village.....

39. How long have you lived in your current location?

☐ 0-5 years ☐ 5-10 years ☐ 10-15 years ☐ Since birth

40. What is the business/employment site that you work for/run?

☐ Name

.....

☐ Nature of

Business.....

41. How long has this business been in operation?

☐ 0-5 years

☐ 5-10 years

☐ 10-15 years

☐ More than 15

years

☐ Other. Please state.....

42.

In what capacity do you work?

☐ Employer

☐ Manager

☐ Owner

☐ Cleaner

☐ Shopkeeper

☐ Service provider (contract worker)

☐ Service

Staff

☐ Other.

Please specify.....

43. For how long has this been your job?

☐ Less than 1 year

☐ 1-2 years

☐ 2-3 years

☐ 3-4 years

☐ 4-5 years

☐ More than 5 years. Please specify.....

44. Please select an option which best describes your income each year as compared to the previous year:

2004 ☐ Increase

☐ Decrease

☐ Stayed the same

2005 ☐ Increase

☐ Decrease

☐ Stayed the same

2006 ☐ Increase

☐ Decrease

☐ Stayed the same

2007 ☐ Increase

☐ Decrease

☐ Stayed the same

2008 ☐ Increase

☐ Decrease

☐ Stayed the same

2009* ☐ Increase

☐ Decrease

☐ Stayed the same

* Until now

45. Please select an option which best describes the salary of your staff in these years:

2004 ☐ Increase

☐ Decrease

☐ Stayed the same

2005 ☐ Increase

☐ Decrease

☐ Stayed the same

2006 ☐ Increase

☐ Decrease

☐ Stayed the same

2007 ☐ Increase

☐ Decrease

☐ Stayed the same

2008 ☐ Increase

☐ Decrease

☐ Stayed the same

2009* ☐ Increase

☐ Decrease

☐ Stayed the same

*Until now

46. How has the business that you work for changed in the past 5 years?

☐ More business

☐ Less business

☐ More foreign tourists

☐ Fewer foreign tourists

☐ More domestic tourists

☐ Fewer domestic

tourists

☐ More eco-sensitive. Please describe.....

47. Where do you source the majority of your produce?

☐ Local (inc Alwar) ☐ Outside (beyond Alwar)

48. Why do you buy your products from these suppliers?

☐ Price/Value ☐ Service ☐ Quality
☐ Choice ☐ Reliability

☐ Other. Please specify.....

.....
.....

49. What are the average annual earnings of you/your business. (Rs/year)?

☐ Less than 50k ☐ 50-100k ☐ 100-200k ☐ More than 200k

☐ Don't Know

50. Have any of your family left the village in search of employment?

☐ Yes ☐ No

51. Where do staff working for this business come from?

☐ Local (inc. Alwar) ☐ Outside (beyond Alwar)

52. Does your business involve local villagers in any way?

☐ Yes ☐ No

53. If Yes; How?

.....
.....
.....

54. If you employ from beyond Alwar; Why do you employ staff from outside the locality?

☐ Experience ☐ Skills ☐

Education

☐ Other. Please

specify.....

55. Do staff working for this business receive the minimum wage?

☐ Yes ☐ No

56. Are staff or potential staff of this business offered training?

☐ Never ☐ Rarely ☐ In specific cases ☐ Occasionally ☐ Regularly

57. Do you feel the tiger is..... Please rank top three:

- | | |
|---|---|
| <input type="checkbox"/> A threat to your livelihood/income | <input type="checkbox"/> Important to your country |
| <input type="checkbox"/> Important to your community | <input type="checkbox"/> Important to your culture/religion |
| <input type="checkbox"/> A threat to your life
protected | <input type="checkbox"/> A spiritual creature to be conserved and |

58. Do you feel tourism at STR is..... Please rank top three:

- | | |
|---|---|
| <input type="checkbox"/> A threat to your business/income | <input type="checkbox"/> Important to your country |
| <input type="checkbox"/> Important to your community | <input type="checkbox"/> Important to your culture/religion |
| <input type="checkbox"/> Destructive | <input type="checkbox"/> Good business/trade opportunity |
| <input type="checkbox"/> Bad development | |

59. Do you/your family feel you have a stake in wildlife tourism at STR?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

60. If No; why and how could this be changed (ie. Made to feel you have a stake in STR)?

.....

.....

.....

.....

61. Do you run/manage a business which benefits from wildlife tourism at STR?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

62. If Yes; how do you feel your business/trade has changed in the past than 5 years. Please tick as appropriate?

- | | |
|--|--|
| <input type="checkbox"/> It has got better | <input type="checkbox"/> It has got worse |
| <input type="checkbox"/> It has become harder to earn a living | <input type="checkbox"/> It become got riskier |

63. How do you feel about your future in the next 5 years?

- | | |
|--|--|
| <input type="checkbox"/> It will get easier to earn a living | <input type="checkbox"/> It will get harder to earn a living |
| <input type="checkbox"/> I will change my business | <input type="checkbox"/> There will be more economic opportunities |

64. What single issue would most improve your business/livelihood in the next 5 years?

- | | | |
|---|--|--|
| <input type="checkbox"/> Better training of staff | <input type="checkbox"/> Better Management | <input type="checkbox"/> Improve habitat preservation |
| <input type="checkbox"/> More tourists | <input type="checkbox"/> Security of resources | <input type="checkbox"/> More effective management of forest resources |
| <input type="checkbox"/> Other. Please specify..... | | |

65. Further suggestions or comments on the role of the tiger and/or STR in your life?

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Thank you for taking the time to fill in this questionnaire.

III. TIGER CONSERVATION IN INDIA

“A tiger is a large-hearted gentleman with boundless courage, and when he is exterminated – as exterminated he will be unless public opinion rallies to his support – India will be the poorer by having lost the finest of her fauna.”

Jim Corbett

We hear a lot about the tiger today. Sadly, it is because this magnificent mammal is gravely close to extinction. A century ago, it is estimated that there were over 100,000 tigers in the world, but the population has now dwindled to between 7,000 and 5,000 tigers.

As the national animal with a special status in Hindu mythology, the tiger will always have enormous status in India. However, the tiger is disappearing in India too. It was estimated that there were between 1165 and 1167 tigers remaining in India in 2007⁵². The 2007 tiger census confirmed the harsh reality of the crisis facing the tiger population in India, home to perhaps 80% of the world’s tiger population – 1,411 tigers. It is believed that there were 5,000 at the start of the 21st century and about 3,642 in the 2001 and 2002 census. In 1989, the All-India Tiger Census enumerated 4,334 tigers. In 1993, the census reported a drop in tiger numbers to about 3,750.

Broadly speaking, tiger habitats range from cold temperate forests in Russia to evergreen forests in south-east Asia to deciduous forests and semi-arid areas in India. The 1960s saw the extinction of the tiger in many of its natural habitats. At the turn of the 20th Century, there were about 40,000 tigers in India⁵³. By the 1970s it was necessary to begin real efforts at tiger conservation in earnest. In her speech at the IUCN (International Union of Conservation of Nature) the then Prime Minister of India, Indira Gandhi, said, *“We need foreign exchange, but not at the cost of the life and liberty of some of the most beautiful inhabitants of this continent.”* Subsequently, in 1970, tiger shooting was banned and Parliament passed the Wildlife Protection Act in 1972. Project Tiger was launched in 1973, wherein nine protected areas were declared as Tiger Reserves. On the verge of extinction, the tiger has now become top priority for conservation, with the Government, NGOs and other voluntary organisations doing their level best to protect it.

⁵²India’s Tigers at Risk – Estimation Confirms, WWF-India, 2008.

⁵³ Tiger: The Secret Life, Thapar, 1989

It is well known that India continues to lose tigers as a result of poaching and habitat destruction. In July 2009, Mr Ramesh, Environment Minister, said 37 reserves accounted for 1,400 tigers in the country which was almost 70% of the global population of the *Panthera Tigris*⁵⁴. Habitat fragmentation and poaching are the two main causes of the decline in population. Experts have been adamant that not enough was being done to halt the continued poaching of tigers, which are highly prized in China and other parts of East Asia for their body parts that are used in Traditional Chinese Medicine (TCM). A tiger skin can fetch up to £5,300 while tiger penises – traditionally believed to have powerful healing properties – can fetch £14,000 per kilo. Over the past many years, India has obsessed itself with protecting the tiger.

From being an endangered species, the tiger has become a national emblem and is symbolic of Nature Based Tourism in India. It is the national animal and has become the informal mascot of everything from 'Incredible India' to the Commonwealth Games. The tiger is also the national animal of Bangladesh, Nepal, Malaysia, North Korea and South Korea. Of eight subspecies of the *Panthera Tigris*, three are now extinct and one teeters on the edge. Such a grave crisis has called for drastic action, and in this both the Government and NGOs, such as WWF-India, have been at the forefront of action. A key player in this movement is TRAFFIC (the Wildlife Trade Monitoring Network). TRAFFIC is the world's largest wildlife trade monitoring network and is a joint programme of WWF-India, the conservation organisation, and IUCN, the International Union for Conservation of Nature. Established in 1976, TRAFFIC'S goal is to ensure that the trade in wild plants and animals is not a threat to the conservation nature. In 1991, TRAFFIC established its office in India, hosted by WWF-India. The illegal trade in Tiger parts has been a major focus of the programme's work.

With the momentum of the Wildlife Protect Act (1972) came the launch of Project Tiger, thought to be one the most successful conservation ventures of recent times. Launched in 1973, the initiative involved the creation of 9 tiger reserves throughout the states, covering an area of about 13,017km². The core areas were freed of all human activities and the 'core buffer' strategy was implemented. These reserves were founded under the aegis of Project Tiger, a joint effort of the Government of India and World Wide Fund for Nature (WWF). The buffer areas were subjected to 'conservation orientation land use'. Management plans were drawn up as follows:

1. Elimination of all forms of human exploitation and biotic disturbance from the core and rationalisation of such activities in the buffer.
2. Limitation of the habitat management to repair damage done by man.
3. Researching facts about habitat and wild animals and carefully monitoring changes in flora and fauna.

The project started as 'Central Sector Scheme' with the full assistance of Central Government until 1979-80. In 1980-81 it became a 'centrally Sponsored Scheme', with

⁵⁴ The Hindu, Sunday 26th July 2009.

equal sharing of expenditure between the centre and the states. The main achievements have been recovery of habitat and consequent increase in tiger population. By 2005, the original 9 tiger reserves had grown to 28, spread over the country. Today there are 35 tiger reserves spread over 16 states in India. The total land protected under the reserves is roughly 6% of the forest area.

The tiger has received priority attention from the Government since the Project Tiger initiative was begun. It is estimated that the status of a tiger reserve receives funding from Central Funds in Delhi of approximately Rs 20-26 crore each year⁵⁵. The WWF has given assistance of US\$1 million in the form of equipments, expertise and literature. It has been instrumental in capacity building in the affected areas by carrying-out vital training to staff in the field through workshops, besides implementing widespread awareness campaigns. Monitored by a 'Steering Committee', the execution of the project is done by the respective State Governments. Each State has a Chief Wildlife Warden and each reserve has a Field Director. At the Centre, is a fully-fledged Director who coordinates the work for the country and the regional cooperation which this involves.

A combination of technological advancement (wireless communication systems), fire protection, village relocation and the increasing of the carrying capacity for the habitat all resulted in the decline of poaching considerably. The 'restorative management' and 'intense protection' under Project Tiger has created buffer zones which are of multiple-use, bringing compatibility between the reserves and the neighbouring communities, thus saving such eco-typical areas from destruction.

As far as budget outlay, the scheme has not had any difficulty although the delay of the release of funds from the State Governments to the field units hampered the utilisation of these funds. This matter was discussed at the Steering Committee, held on the 8th May 2000, where it was decided to release the first instalment of Central Assistance without waiting for the submission of UCs (Union Clearance) and to release the second instalment only after obtaining UCs.

The success of conservation measures in India in the two decades following the Wildlife Protection Act (1972) led to wide-spread complacency. Project Tiger helped increase the population of tigers from 1,200 in the 1970s to 3,500 in the 1990s. The tiger appeared to be safe. The discovery in the early 1990s that poaching and illegal trade were quietly eroding the tiger population in India led to alarm and a renewed effort to save the tiger. The collapse of the USSR unleashed unprecedented poaching of the Amur (Siberian) Tiger, which had been recovering well from near extinction in the 1940s. Simultaneously, the twentieth century saw an explosion of the human population globally and especially in India, where the partition with Pakistan in 1947 compounded the problem by displacing millions of people who needed homes. In the 20 years since Project Tiger was launched in 1973, the population of India increased by half. Vast tracts of prime forest made way for agricultural fields as

⁵⁵India Environmental Portal: Knowledge for Change. *'Time to tell the truth again'*, Sunita Narin. 14th March 2005.

reservoirs and dams brought large areas of forest under submergence. The home of the tiger gave way to demand for natural resources. The Tiger's habitat was fragmented and invaded. Alongside the expanding human population, the cattle population exploded in villages on the periphery of forests, putting greater biotic pressure on wildlife habitats. Cattle competing with livestock led to a decline in ungulate numbers, which in turn forced tigers to prey upon livestock. This gave rise to human-animal conflict.

For the first half of the twentieth century, communities local to the tiger habitat accepted with equanimity the loss of a few livestock to tigers. However, changing times have meant that people are no longer prepared to accept losses accrued directly as a result of wild animals, and cases of poisoning and mysterious deaths of tigers have become more frequent. A severe wave of poisoning incidents struck the reserves of Dudhwa and Corbett during the 1980s and 1990s. Investigations seem to confirm that such poisoning attacks were carried out by villagers in retaliation for the killing of their livestock and the failure of government to compensate them adequately for such losses.

Unfortunately for the tiger, the Traditional Chinese Medicines (TCM) and other schools of traditional medicines in the Far East, use tiger and other animal parts extensively. This has always been the case, but as the wild populations of tigers in the Far East dwindled due to poaching for this trade, so the market looked to India for its product source. As a result, by the mid 1980s, the tiger population in India was subjected to tremendous poaching pressure which has continued until very recently. Most parts of the tiger's body are traded. By the time this could be checked and some control re-established, a lot of damage had been done. More recently, the poaching of prey base animals on the periphery of reserves has drawn the tigers to the domestic livestock, which has lead to human-animal conflict.

Yet another growing threat has been the encroachment of industry, especially mining, on natural areas. Many of India's finest wildlife areas lie on top of valuable mineral resources for which there is growing demand. In Hazaribagh, Bihar, over 400 mines, and their connecting roads and railways, have devastated an area defined by WWF as a Level One Tiger Conservation Unit, one of the largest in India. This is also the homeland of indigenous tribal peoples.

There have been various impediments to tiger conservation in India. It is being realised that non-governmental organisations, like the WWF, can and must increasingly play a part in tiger conservation in India by filling the gaps in the Government programme. With this in mind, the contribution of WWF-India to tiger conservation has been instrumental and its actions are worth taking note of. The tiger has always been at the centre of WWF's wildlife conservation in India. The Tiger Conservation Programme (TCP) of WWF-India was born in January 1997, at a time when Project Tiger was in poor health. The tiger numbers were declining rapidly and PA managers and field staff were despondent. After much deliberation, criteria was formulated, to identify and focus on certain protected areas for immediate infrastructure support to thereby strengthen their enforcement capabilities. The

programme is governed by a Steering Committee comprising a member each from WWF-International, WWF-UK, WWF-US, WWF-Netherlands and three members from WWF-India. The TCP was launched with a committed grant of 1.8 million Swiss Francs with the mandate to urgently utilise the funds to bring the tiger back from the brink. Seven Protected Areas (PAs) were initially identified for support - the most visible and better managed reserves of Corbett Reserve (TR); Dudhwa TR; Palamau TR; Manas TR; Kaziranga NP; Bandhavgarh TR and Periyar TR. This number has steadily increased over the years and at present there are 21 PAs being supported across the country. The programme components of the initiative include:

- Infrastructure support to Government for managing capacity.
- Assessment and monitoring of tiger habitat.
- Strengthening of political will and public awareness.
- Sustained generation of conservation finance to support tiger conservation.
- Facilitating international cooperation.

In doing this, the TCP has provided vehicles, communications equipment, night vision devices, clothing and field gear, and *chowkies* (anti-poaching camps) to the reserves. Intelligence networks have also been established around several PAs through partner NGOs to help fight poaching and illegal trade. A veterinary care scheme for cattle was initiated in some areas, which earned the goodwill of villagers. Apart from direct field support, the wider multi-pronged action plan in the initial years involved:

- A Cattle Compensation Scheme.
- A Campaign to curb “Akhand Shikar”.
- Regional Cooperation Workshops.
- Legal Redressed Workshops.
- Monitoring and Control of Wildlife Trade.
- Awards for Exceptional Contributions to Tiger Conservation.
- Tiger Emergency Fund.

While the TCP achieved significant results in curbing tiger poisoning incidents and in generating the support of local communities between 1996-1999, it was clear that efforts would need to continue to complement the initiatives of the Government. Key areas of concern were strategic and mainly involved the issues of the indigenous people living on the fringes of PAs and vital corridors, specifically their livelihoods and security. While WWF-India infrastructure support to PAs did not show results immediately in quantifiable terms, it allowed the official machinery to function better by filling in crucial gaps and enhancing the morale and efficiency of the enforcement staff. Direct support definitely contributed to curbing poaching in most of the PAs which have been beneficiaries.

A critical milestone in the WWF-India Tiger Conservation Programme came at the WWF global tiger conservation strategy workshop held in Indonesia in September 2000. At the meeting a whole new vision and approach to tiger conservation was formalised for the long term. The document *‘Conserving Tigers in the Wild: WWF Framework and Strategy for Action 2002-2010’* defines a tiger conservation landscape as “an area of land, regional in scale, that can support and maintain, over the long-

term, a viable meta-population of tigers, linked by safe and suitable habitat, together with an adequate natural prey base.” This automatically implies the conservation of other meg-species under threat and introduces the issue of human-tiger co-existence. One of the most encouraging field assessments of the Tiger Conservation Programme was received in February 2003 from the Director of Project Tiger. In a letter to the programme director, he said:

“Recently I visited some of the Tiger Reserves in Central India and Maharashtra [(Kanha, Pench (MP) and Maharashtra)], and was really impressed by the support provided in these field formations by WWF-TCP. In Kanha and Pench the frontline staff have benefitted from the bicycles provided to them, since they live in remote patrolling camps away from connecting roads. Likewise, the support given to Pench is also praiseworthy. It goes without saying that such a support would go a long way in complementing the initiatives under Project Tiger and I wish to place on record my deep appreciation of your endeavour in this regard.”

WWF-India and the Wildlife Protection Society of India have led the fight against poaching and illegal trade, enabling the authorities to seize contraband tiger and other wildlife products and to make arrests. Behind the superficial progress of arrests made, as with narcotics, a vast trade still exists. Few of those arrested are ever convicted or punished. WWF, through its Tiger Conservation Programme, has been able to reduce the killing of tigers by the livestock owners by providing rapid compensation. However, the greatest challenge has been to reconcile conservation of the tiger with human existence. As the population increases, so this challenge will become more acute. Responsibility for this reconciliation lies with central and state governments, who make decisions on land use, legislation, economic development and other issues involved with the mechanics of an entire nation.

We can see from this that conservation of the tiger is not the saving of some relic of the past irrelevant to modern life. By saving the tiger we protect the here-and-now; and we protect the future. By saving the tiger we protect the catchment areas of our rivers and recharge groundwater sources. The 35 tiger reserves in India are a source of more than 20 major rivers like Tapti, Narmada, Mahanadi and Ramganga. There are also several hundred streams and rivulets. This network of water channels support several million livelihoods providing access to drinking water, irrigation and other linked activities. Thus, by saving the tiger, we are also saving our forests, our water supplies, and India’s ecological foundations. The resources upon which the tiger is dependent – a natural world full of great services such as soil, air and water, - are resources upon which the whole world depends. Caring about tigers means caring about humans and all life forms on this planet.

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