

AN ANALYSIS OF LIVELIHOOD LINKAGES OF TOURISM IN KAZIRANGA NATIONAL PARK, A NATURAL WORLD HERITAGE SITE IN INDIA

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ABSTRACT

We evaluated the livelihood linkages of existing tourism practices in Kaziranga National Park, a World Heritage site located in Assam, India. The main objective of the study was to assess the contribution of tourism to local livelihoods and suggest ways to strengthen these linkages. Focus group discussions and interviews of tourism service providers were carried out to identify their share of tourism income. A survey of tourists was conducted to examine the amount spent by visitors while visiting the park. The primary data was supplemented by secondary information obtained from the park office, service providers and records of village self-help groups. In 2006-2007, the total amount of money that flowed through the tourism sector in Kaziranga National Park was estimated to be US\$ 5 million per annum, of which different stakeholders (excluding government) received US\$ 3.27 million per annum. The balance of income flowed as leakage for purchase of supplies and logistic support outside the tourism zone. The financial benefits to local stakeholders may increase if the leakages could be prevented through planned interventions. In addition to wildlife viewing, promotion of nature trails and package tours may be encouraged in the buffer zones and adjoining forests areas to enhance tourist visitation to un-tapped sites that could provide additional livelihood options to local communities.

INTRODUCTION

Since the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992, several attempts have been made to link protected area management with developing sustainable livelihood options for local communities (Naughton-Treves et al., 2005). The underlying notion has been that the cost of conservation borne by local communities could be offset by the monetary benefits derived from conservation activities, thereby minimizing the potential negative attitudes of the local community towards conservation (Spiteri & Nepal, 2008; Wells & Brandon, 1992). Creation of protected areas, especially National Parks, that completely ban extractive resource use, has left few options for forest dependent communities making them hostile to conservation (Badola 1999; Brockington et al., 2006). Various community-based conservation programmes such as the Integrated Conservation and Development Programme (ICDP) or the eco-development programme, have tried to involve communities into conservation initiatives to improve their well being primarily through livelihood generation, and building partnership in protected area conservation (Wells, 1992; Larson et al., 1998; Badola, 2000; Hughes & Flintan, 2001).

Since 1992, a global commitment to protect biodiversity through establishment of protected areas and sustainable resource use has been initiated through the Convention on Biodiversity (CBD). The Convention recognizes the





Top photo: Tourist trek. Bottom photo: Elephants with staff © Dr. Pranab Pal, Wildlife Institute of India

desirability of equitable benefit sharing from sustainable use of biological diversity (CBD, 1992). The primary objective of the Strategic Plan for Biodiversity 2011-2020 is to conserve biodiversity and enhance its benefits for people. The Strategic Plan is comprised of a shared vision, a mission, strategic goals and 20 targets, known as the Aichi Biodiversity Targets. The Aichi Targets reinforce CBD's goals via increasing the coverage of protected areas and devising innovative schemes for alternative sustainable and equitable livelihoods to forest dependent communities (CBD, 2011).

Tourism can be one of the important means for achieving the Aichi Biodiversity Targets as it has potential to augment equitable livelihood opportunities for forest dependent communities, thereby eliciting local participation in biodiversity conservation around protected areas (Wunder, 2000; Karanth & Nepal, 2011; Nepal & Spiteri 2011). The concept of tourism in and around protected areas is not new; indeed the first protected areas were established because of extensive support from visitors (Eagles et al., 2002). However, studies have highlighted the relationship between tourism visitation and degradation of habitats (Geneletti & Dawa, 2009) coinciding with a growing divide between the rich and the poor (Kideghesho et al., 2006). In most cases, the marginalized communities living adjacent to the wilderness areas and who depend most on biodiversity for survival have few linkages with tourism activities (MacLellan et al., 2000). It is the rich and the influential from within as well as outside the region who stand to gain most from protected area tourism. Moreover, revenues generated through poorly developed market chains for local goods and services, in most cases, are prone to leakages due to few linkages with the local economy (Walpole & Goodwin, 2000; Torres 2003; Lacher & Nepal, 2010; Sandbrook, 2010). This prevents local people from deriving substantial benefits from tourism activities, often marginalizing them due to minimal financial benefits (Spiteri & Nepal, 2008), miniscule employment (Karanth & DeFries, 2011), and/or increased cost of living (Karanth & Nepal, 2011). Encouraging local ownership in tourism activities through capacity building at the village or community level has been suggested as a means to minimize tourism revenue leakages and increase benefits from tourism-related conservation (Walpole & Goodwin, 2000; Eagles et al, 2002; Lacher & Nepal, 2010).

Given the global concerns for biodiversity conservation and equitable livelihoods, this paper explores the livelihood linkages associated with tourism in one of the most favoured tourist destinations in northeast India, the Kaziranga National Park. It looks at the distribution of tourism revenue among the stakeholders. It also explores the leakages of tourism revenue at and nearby the park and suggests ways and measures to minimize these for betterment of conservation and achievement of the Aichi Biodiversity Targets, especially Target 14: "By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of ... the poor and vulnerable" (CBD, 2011). Addressing the leakages would safeguard the livelihood of vulnerable sections of the society.

THE STUDY AREA

The Kaziranga National Park encompasses an area of 428.71 km², located in the state of Assam in the northeastern part of India. It lies between latitudes 26°33'N to 26°50'N and longitudes 93°05' E to 93°41' E (Fig. 1). The



Figure 1. Location map of Kaziranga National Park, India

area has received formal protection since 1905, when it was designated as a Reserve Forest. The area was upgraded to National Park status in 1974, under the Indian Wildlife (Protection) Act, 1972. In 1985, the area was inscribed as natural World Heritage site (Mathur et al., 2005) and in 2007, the Kaziranga National Park was given the status of 'Tiger Reserve' (Hoang, 2011) and a buffer zone of approximately 550 km² has been added to it (Government of Assam, n.d.). Tiger Reserve is a management category in India given to representative bio-geographical regions with an aim to maintain a viable tiger population, through a core-buffer strategy. The core areas of the tiger reserves are generally free from human population while the buffer zones are subjected to, *"conservation-oriented land use"* (Project Tiger, n.d., p.1).

The Kaziranga ecosystem consists of the remnant Brahmaputra floodplain landscape, surrounded by human habitation and development activities. This ecosystem, comprised of woodlands, grasslands and interspersed wetlands, harbours about 15 species of India's threatened mammals, including the world's largest population of onehorned rhinoceros (*Rhinoceros unicornis*), Asiatic wild water buffalo (*Bubalus arnee*), high ecological density of Bengal tigers (*Panthera tigris tigris*), Indian Elephant (*Elephas maximus*) and aquatic mammals such as Ganges river dolphin (*Platanista gangetica*) (UNEP, 2011) and smooth-coated otter (*Lutrogale perspicillata*) (Hussain et al., 2008). The National Park, due to its location at the junction of East Asia/Australia flyway and Indo-Asian flyway, represents a diverse avifaunal assemblage. It lies within an International-designated Conservation Hotspot and a WWF Global 200 Eco-region (UNEP, 2011). The Kaziranga National Park, along with the adjoining areas in Assam and Meghalaya has been identified as a priority tiger conservation habitat (Wikramanayake et al., 1998).

The uniqueness and representativeness of this ecosystem attracts about 400-500 visitors per day from November to mid-May (Government of Assam, n.d.). During last 12 years, the number of tourists visiting the National Park on an annual basis increased from 19,525 (1997/98) to 106,051 (2008/9) (Government of Assam, n.d.). Most of the people residing around the National Park practice agriculture and hence are constantly affected by the issues of crop predation, property damage and other forms of human wildlife conflict (Shrivastava & Heinen, 2007; Pal, 2009). The tourists' entry points are at the southern boundary of the Park, along the National Highway (NH) 37. The boarding and lodging facilities provided to tourists are Table 1. Service providers associated with tourism activities around Kaziranga National Park, India

Service providers

Direct	Indirect	
Boarding and lodging	Producers (farmers/livestock owners)	
Transport	Logistic suppliers	
	Labourers	
Interpretation	Waste management (recyclers)	
Craftwork (for sale to tourists)	Cottage industry (for construction)	

owned by non-locals (Bharali & Mazumder, 2012). Efforts have been made by the Assam Forest Department to involve the forest dependent people in conservation through engagement of local hoteliers and taxi owners association in tourism, and the formation of local level institutions such as eco-development committees (Government of Assam, n.d.).

METHODS

Both primary and secondary sources of information were used for the present study. Secondary sources, such as a Kaziranga management plan, records and documents of the Assam Tourism Department, a local taxi owner's association, nongovernmental organizations, self-help groups (SHGs) were examined following McCaston's (2005) methods for document analysis. These documents provided an overview of the existing livelihood linkages and helped us in identifying the respondents for the subsequent in-depth data collection as well as framing the questions for various stakeholders.

Through a primary reconnaissance survey conducted in 2006/7, the population of service providers (e.g., construction workers and lodging and boarding, transport and provision providers) catering to the tourism industry was identified. This population was stratified into those having direct and indirect contact with tourists. Within these two strata, random sampling was carried out and 138 respondents were chosen from the various tourist establishments for detailed survey. A questionnaire was also administered to 60 tourists selected on a random basis, representing 15 per cent of the daily visitors to the national park, to find out the expenditure incurred during their stay at Kaziranga . Group discussions with the key informants from the National Park management staff, villagers and infrastructure owners provided information on flow of resources and leakages in economic activities (Kinhill Economics, 1998).



Figure 2. Comparison of income of service providers (US\$/capita /annum) from tourism at the Kaziranga National Park, India.



Figure 3. Share of stakeholders' earnings from tourism and total human population around Kaziranga National Park, India.

Primary data on tourism linked livelihood strategies were collected using pre-designed questionnaires and group discussions with the key informants following methods recommended by Mbaiwa (2005), Badola et al., (2010) and Rastogi et al., (2010). This was aimed at capturing the direct and indirect contribution of tourism to the income of local residents. A direct contribution of tourism to income is made when a direct economic relationship exists between the visitor and the goods/service provider, whereas the industries, which are not in direct contact with the tourists, but instead have an economic relationship with the direct service provider, get an indirect contribution from tourism (Tourism Research Australia, 2012).

RESULTS

This section first presents the results of focus group interviews and the reconnaissance survey, through which tourismrelated service providers and their population were identified. The results of the questionnaire survey are presented next, along with the proportion of each category of service provider in the total population and the proportion of tourism income accruing to each category of service provider. The interviews of tourists indicate the monetary flow in the study area in terms of expenditure incurred. The tourism leakage was calculated as the difference between the tourist expenditure and the tourism revenue retained by the people involved in tourism at Kaziranga National Park (Sandbrook, 2010). The tourism industry around the National Park is supported by two sets of service providers. First, there are those who have direct contact with the tourists having direct links to income and expenditure with tourism activities such as lodging and boarding, transport, interpretation and craftwork. Some local people work as interpreters, taxi drivers and own small lodges. The second group of service providers is those who have indirect contact with the tourists but are equally necessary (Table 1). Construction workers, logistics/suppliers, farmers, cottage industry workers and scrape dealers provide indirect services to the tourism industry based around Kaziranga (Table 1). They are the original inhabitants of the region who have traditionally been dependent on its natural resources.

Interpreters received the highest per capita tourism income (US\$ 1,233 per annum). Taxi operators and hoteliers earned tourism income at a rate of US\$ 974 per capita per annum and US\$ 865 per capita per annum, respectively. The farmers and artisans earned the least from tourism, US\$ 29 per capita per annum and US\$ 57 per capita per annum, respectively (Figure 2). The tourism income was extrapolated for the entire population of the individuals working in each service category. Figure 3 shows the proportion of tourism-related income (per capita per annum) earned by each type of service provider s involved in tourism activity around Kaziranga.



Swamp deer © Dr Pranab Pal, Wildlife Institute of India

Interpreters formed the smallest proportion in total population yet their income share in total tourism income was the highest. Similarly, the proportion of the total population of taxi and boarding/ lodging facility owners was low but their share in total tourism income for the area was high (Figure 3). The lowest income to population ratio was recorded for artisans/weavers (0.4) and farmers (0.7), as they had the highest population but lowest share in total income. The segmentation of the total tourism income received by the people around the Park shows that inequity exists in the sharing of tourism revenue.

Tourist inflow to Kaziranga during the last ten years (2000-2009) rose from 37,696 Indian tourists to over 100,000 and from 1,623 to 6,000 foreign tourists (Government of Assam, n.d.). Revenue realized by the forest department from visits of these tourists also increased (though not proportionally) from US\$ 49,539 per annum in 1999/2000 to US\$ 249,348 per annum in 2008/9 (Table 2).

In 2006/7 the average Indian tourist spent US\$ 24.4 per person per day and overseas tourists spent US\$ 133.3 per person per day on various services (boarding, food, local transportation, interpretation) and additional expenses such as a park entry fee and handicraft items (Table 3). This value was extrapolated to the total number of tourists who visited the park in 2006/7 (Sandbrook, 2010). The total expenditure by tourists in Kaziranga National Park area was calculated to be US\$ 5,747,640 per annum of which US\$ 177,216.64 per annum was received by the Table 2. Tourist inflow and revenue realized by the forest department at Kaziranga National Park, India. Source: Government of Assam

				Bayanya
Year	Indian	Foreign	Total	(US\$)
1997-98	17117	2408	19525	48823.73
1998-99	18157	1091	19248	40063.46
1999-00	37696	1623	39319	49539.8
2000-01	50498	1838	52336	67516.84
2001-02	44162	2144	46306	77646.31
2002-03	59811	2055	61866	119120.55
2003-04	57864	3773	61637	136414.6
2004-05	67719	5154	72873	146944.62
2005-06	72362	4711	77073	169800.42
2006-07	67926	5748	73674	177216.64
2007-08	53640	6106	59746	194093
2008-09	100284	5767	106051	249348.64

Tourists (individuals)

Table 3. Expenditure incurred by the tourists at Kaziranga National Park, India during 2006-07.

Expense incurred

	(US\$/person/day)		
Service expenditures	Indian	Foreigner	
Boarding and lodging	17.8	35.6	
Food	2.2	4.4	
Local Transportation	2.2	4.4	
Miscellaneous	2.2	4.4	
Total	24.4	44.4	
Number of days of stay	3.0	3.0	
Total expense for three days	73.3	133.3	
Annual expenditure	4,981,240	766,400	

Assam Forest Department. The questionnaire survey revealed that about US\$ 3 million per annum accrued to people involved in tourism activities. The balance amount of about US\$ 2 million per annum was spent on non-local goods (food, handicrafts, restaurants) and services (public transport – national and international travel), which flowed as leakage to supplies and logistic support outside the protected area impact zone (Sandbrook, 2010). The leakage was derived from the money that was spent by tourists in reaching Kaziranga as well as money spent on goods and services that were not locally owned. Thus, the financial benefits to the stakeholders may increase by providing technical and financial support to local people to own, manage and operate direct and indirect services to tourists.

DISCUSSION

The monetary flow into individual households at the local level is derived mainly from sale of agricultural produce and fish and from tea estates wages (Shrivastava & Heinen, 2007). The local people depend on the Park resources to meet their day-to-day biomass requirements often leading to confrontation between people and the park authority (Shrivastava & Heinen, 2007). Instances of human-wildlife conflicts in the region (DiFonzo, 2007) are further compromising local livelihoods as well as biodiversity. Efforts are being made by the government to involve local communities in protected area conservation by providing them with alternate sources of livelihoods and by involving them in ecotourism activities (NTCA, 2012; Government of Assam, n.d.). Tourism income has been advocated to be the best possible alternate livelihood for forest dependent communities (Sekhar, 2003; Nyaupane & Poudel, 2011; Badola et al., 2012; Chandola, 2012). Kaziranga National Park, being a popular tourist destination, receives a high volume of national and international tourists every year. The average growth rate of tourist inflow for Kaziranga was 73.6 per cent in contrast to 31.8 per cent for Mudumalai National Park, 17.4 per cent for Kanha National Park and 17 per cent for Ranthambore National Park during 2002-2008 (Karanth & DeFries, 2011). Income of people from tourist establishments in Kaziranga was found to be about 40 per cent of the total tourist expenditure. The Assam Forest Department received 10 per cent of the total tourist expenditure and the remaining 50 per cent was found to be spent on services outside the Kaziranga. Thus, this 50 per cent of tourist expenditure is the leakage for the study site. This is higher than India's leakage rate (40 per cent) related to tourism (UNEP, n.d.). In the case of Kaziranga, the powerful and wealthy service providers are reaping the benefits of tourism because the ownership of infrastructure resides with them. The basic services needed to support tourism are provided by the people who have traditionally not been dependent on the resources of the Kaziranga and who bear no direct costs of conservation. On the other hand, the poor and the vulnerable stakeholders-namely the farmers, craftsmen and cottage industry workers who are dependent on

resources from the Kaziranga National Park and bear the direct costs of conservation such as crop loss to wildlife and loss of access to resources from the Park—are often involved only in indirect economic activities associated with tourism and receive few benefits. The leakages of tourism revenue occur due to imported leisure goods and services, and the costs paid for staff and capital from outside the area. The skilled staff employed in the resorts and luxury hotels are mostly outsourced. Some leakages also occur due to money spent by foreign tourists in reaching the destination.

The tourism industry around Kaziranga has not been able to adequately utilize the potential of local communities as supporters of conservation, leaving them with minimal and indirect benefits of tourism due to enclave tourism (Mbaiwa, 2005) resulting from negligible interactions between the local population and tourists. The products produced by the local people rarely enter the tourist markets, providing little scope for improved well-being of local populations from tourism. The high leakages of tourism revenue are reflected in the inability of the community to garner the benefits of tourism (Lindberg et al., 1996; Walpole & Goodwin, 2000; Mbaiwa, 2005; Lacher & Nepal, 2010) resulting from a lack of local involvement, and local communities' own lack of expertise, and infrastructure to support tourism (Lindberg, 1998; Lacher & Nepal, 2010).

Some of the measures that can be used to retain the monetary benefits within the local community and to encourage sustainable development include:

- encouraging local ownership, capital and value chain additions of local products such as 'locally grown tealeaves', 'bamboo shoots and chilly pickles' (Walpole & Goodwin, 2000; Meyer, 2007; Lacher & Nepal, 2010; Nyaupane & Poudel, 2011);
- developing markets for local goods by identifying and strengthening supply-demand linkages (Ollenburg & Buckley, 2007);
- developing inter-sectoral linkages such as those between agriculture and artisan production for livelihood diversification (Spenceley & Meyer, 2012); access to information, inclusive participation; and,
- capacity building (McCool et al., 2012).

In addition, improvements can be made with planned interventions in logistical support such as programmes that encourage involvement of local people in tourist travel and accommodation and the production of local consumable items. Additional initiatives could include adequate marketing of cottage industry products, capacity enhancement of local service providers, and strengthening of local level institutions. Promoting planned tourism activities like wildlife viewing, nature trails, and forest camps in the buffer zones and adjoining forests areas (Spiteri & Nepal, 2008) to attract more tourists to sites where the potential of tourism remains underutilized, could provide additional livelihood options to local communities.

CONCLUSIONS

The livelihood opportunities of the populations living in the fringes of the protected areas, pose an interesting challenge to the protected area managers. The managers need to look for alternative livelihood options, which conserve biodiversity and at the same time enhance the well-being of the people. The Convention on Biodiversity and its Aichi 2020 Targets emphasize biodiversity conservation through sustainable use and equitable benefit sharing. Tourism provides an opportunity for nonconsumptive, sustainable use of biodiversity resources, and is recognized among scholars, park managers and local communities for its capacity to improve the well-being of forest dependent communities.

This case study of KNP provides an insight into the tourism dynamics of a de facto arrangement for protected area tourism that generates revenue but for which the revenue is neither equitably distributed among the service providers nor does it serve its primary objective of contributing to biodiversity conservation. It is also prone to direct (monetary) and indirect (biodiversity loss and workforce exploitation) leakages. For tourism to be an effective tool for improving the livelihoods of local communities living on protected area fringes as well as support conservation efforts, it is important to develop and strengthen local level institutions and build the capacity of the local communities so as to enable them to compete with external service providers. The protected area management of Hemis and Greater Himalayan National Parks has played a proactive role to include communities in the management of tourism. For example, assistance has been given to communities to modify their existing infrastructure for homestays, cafes and camping sites, with minimal construction and capital requirements. This has provided the communities with alternative livelihoods, and developed their capacity to manage and sustain their livelihoods through training, educational tours, microcredit schemes and marketing and extension (Jackson &

Wangchuk, 2004; Chandola, 2012; Mishra et al., 2009). This approach has established tourism as a viable livelihood resource, and provided the communities with a central role in tourism. As a result, the community's stake in conservation has risen—an objective regarded as highly desirable for protected area management. Changes in approaches to management from exclusive to inclusive and participatory, involving fringe area communities leading to strengthening of the Eco-development Committees at Periyar Tiger Reserve and self initiated Community Based Ecotourism Centres, in Chilika Lake (Bhatt et al., 2012) are testimony to the critical role of local institutions in equitable and sustainable benefits from protected areas tourism.

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RESUMEN

Evaluamos los vínculos entre los medios de subsistencia y las actividades turísticas emprendidas en el Parque Nacional Kaziranga, un sitio del Patrimonio Mundial ubicado en Assam, India. La finalidad primordial de este estudio consistió en evaluar la contribución del turismo a los medios de subsistencia locales y sugerir formas para reforzar dichos vínculos. Se llevaron a cabo debates de grupos de reflexión y entrevistas a los proveedores de servicios turísticos para determinar su cuota de participación en los ingresos provenientes del turismo. Se realizó un sondeo de turistas para conocer la cantidad gastada por los visitantes durante su visita al parque. Los datos primarios se complementaron con información secundaria obtenida de la oficina del parque, de los proveedores de servicios y de los registros de los grupos comunitarios de autogestión. En el período 2006–2007, los ingresos totales generados a través del sector turismo en el Parque Nacional Kaziranga se estimaron en USD5,0 millones anuales, de los cuales los diferentes interesados directos (excluvendo el Gobierno) recibieron USD3,27 millones anuales. El saldo restante se destinó a la compra de suministros y apoyo logístico fuera de la zona turística. Los beneficios financieros para las comunidades locales podrían aumentar evitando estas desviaciones mediante intervenciones planificadas, tales como la comercialización adecuada de los productos de las industrias artesanales y el fortalecimiento de las instituciones locales. Además de la observación de fauna silvestre, se podría promover caminatas por senderos naturales y viajes combinados en las zonas de amortiguamiento y los bosques adyacentes para aumentar las visitas de turistas a sitios con potencial no aprovechado que podrían proporcionar opciones adicionales de sustento para las comunidades locales.

RÉSUMÉ

Nous avons évalué les liens entre les moyens de subsistance et les pratiques touristiques existantes dans le Parc national de Kaziranga, un site du Patrimoine mondial situé à Assam, en Inde. Le principal objectif de l'étude est d'évaluer la contribution du tourisme aux moyens de subsistance locaux, et de proposer des mesures pour renforcer ces liens. Des discussions de groupes ciblées et des entretiens avec les prestataires de services touristiques ont été menés afin d'évaluer leur part du revenu touristique. Une enquête a également été réalisée auprès des touristes afin d'évaluer les sommes dépensées lors de leur visite dans le parc. Ces données primaires ont été complétées d'informations secondaires fournies par le Bureau du parc, les prestataires de services et les données des groupes d'entraide de villages. En 2006–2007, la somme totale ayant circulé dans le secteur du tourisme dans le Parc national de Kaziranga est estimée à environ 5 millions de dollars US par an, dont les différents acteurs (à l'exclusion du gouvernement) ont perçu 3,27 millions de dollars US par an. Le solde du revenu s'explique par des fuites pour l'achat d'approvisionnement et le soutien logistique en dehors de la zone touristique. Ainsi, on peut supposer que les avantages financiers augmenteront pour les acteurs locaux si les fuites sont minimisées par le biais d'interventions planifiées comme la commercialisation efficace des produits issus des industries familiales et le renforcement des institutions locales. Outre l'observation de la faune sauvage, la promotion de sentiers de randonnée nature et de voyages tout-compris peut être encouragée dans les zones tampons. Enfin, il est possible d'ajouter les zones forestières pour accroître la fréquentation dans des sites inexploités, ce qui offrirait des moyens de subsistance supplémentaires aux communautés locales.