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From the Desk of Editor-in-Chief

The family of Journal of Tourism is again pleased to place this issue with interesting research papers contributed by various researchers. The editorial board is glad to present this issue along with December 2014 issue to ensure the regularization of frequency in forthcoming issues. Also, the issue consists of 6 quality research papers highlighting the recent research happenings in travel and tourism field.

The first paper titled “The carrying capacity of trails in the Iztaccíhuatl-Popocatepetl National Park in Mexico” by Gandhi González-Guerrero, María Eugenia Valdez Pérez, Rafael Morales Ibarra & María de Jesús Osorno Corona is an affine piece of research analysing the carrying capacity of two trails out of existing eight trails in the Iztaccíhuatl-Popocatepetl National Park in Mexico. Authors discuss about the advantages and disadvantages of conducting trails in the protected areas.

The second paper titled “Natural Disasters and HIV/AIDS: Intensifying Threats to Sustainable Tourism Development in the Caribbean” by Mareba M. Scott examines the development challenges in the Caribbean in the context of tourism's competitiveness, and the relationship between natural hazards and HIV/AIDS with the tourism sector where most of the research is concentrated upon social and economic threats of Caribbean's. Author has suggested measures to invite policy maker's attention towards positive brand creation.

The third paper titled “An Econometric Analysis of Willingness-to-Pay for Evaluating the Economic Value of Bhitarakanika National Park” authored by Debi Prasad Bal and Pabitra Kumar Jena discuss on the identifying the determinants of willingness to pay towards learning the recreational value of Bhitarakanika National Park and its usage in determining the entrance fee of the park on the basis of cost benefit analysis. Authors have applied contingency evaluation model for the study besides suggesting developmental measures and future scope for research.

The Fourth paper titled “Integrated and participatory approach in Sustainable Tourism Development: A conceptual study” authored by Abinash Kumar Jha and Jitendra Mohan Mishra highlight about the involvement of participating stakeholders in achieving sustainable tourism development. They also discuss the integrated approach model as *modus operandi* for achieving sustainable tourism development. Also authors conclude the paper by notifying the existing difficulties and the necessary actions to achieve the aforesaid development.

The Fifth paper titled “Tourist perception towards environmental friendly accommodation units in Binsar Wildlife Sanctuary of Kumaon Himalayas, India” authored by Deepanshu and Mamta Bhatnagar discuss on the factors inducing the visitors in selecting accommodation types in and around wildlife sanctuaries of Kumaon region of Uttarakhand state. Hotels adopting green practices are mostly preferred by visitors and this emerges as the findings of the study.

The sixth paper titled “Sustainable coastal tourism promotion in West Bengal, India: An analytical study of coastal residents' Attitude of Digha & Shankarpur sea beaches by Pralay Gnaguly and S.C.Bagri discuss the resident attitude

towards coastal tourism and its impacts besides suggesting strategic solutions for addressing the present issues and future needs. Authors have also pointed out the existing scenario of the aforesaid places for arriving suitable suggestion. Residents have positively benefitted with the tourism activities happening in Digha and Shankarpur and expect DSDA to develop holistic relationship with residents and visitors for ensuring sustainable development.

Finally, the family of Journal of Tourism is glad to record its sincere appreciation and thanks for all contributors and subscribers for making JoT a most preferred journal in the field of Tourism. Also, we extend our sincere thanks to our editorial board members who have extended their assistance in refining the submitted manuscripts.

S. C. Bagri, Editor-in-Chief

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The Carrying Capacity of Trails in the Iztaccíhuatl-Popocatepetl National Park in Mexico

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Abstract : *As conservation sites, Protected Natural Areas (PAs) arguably have a greater need for the estimation of their carrying capacity than other destinations. The Iztaccíhuatl - Popocatepetl National Park in Mexico has eight trails, which are offered as attractions. These paths have different purposes, emphasizing different aspects within the Park. Some of the paths are also used as educational tools within the subject of conservation. This research paper focuses on two of such trails and uses the methodology of carrying capacity to estimate the ideal number of visitors to each trail. The document concludes arguing the advantages and disadvantages of trails in National Parks. It also discusses the advantages and disadvantages of the methodology of carrying capacity as a tool for the management of visitor flow.*

Key words : Carrying capacity, trails, national parks

Introduction

Protected Areas (PAs) contribute to conservation objectives at the national and international level. Apart from conservation objectives some categories of PAs, such as National Parks, have also meant to be used for recreation. However, recreation and conservation objectives are not always compatible, for which it has been sought to lower the impacts caused the tourism activity in general. Carrying capacity is one of the tools that have been proposed to manage visitor flow and thus monitor and control impacts. Since PAs including National Parks have conservation objectives by definition, they have arguably greater need for managing impacts than other types of destinations.

Protected Natural Areas

A Protected Area is a place that for its environmental value and singularity

is especially set apart for conservation purposes. It is 'an instrument of environmental policy legally defined for the conservation of biodiversity' (CONANP 2008). The total area of PAs in a region or country can be used as an indicator for measuring biodiversity conservation efforts (Marcer et al. 2010). The World Commission on Protected Areas (2010) states three benefits that can be obtained from PAs: preservation of biodiversity, protection from extinction and climate change, and support for the livelihood of human communities.

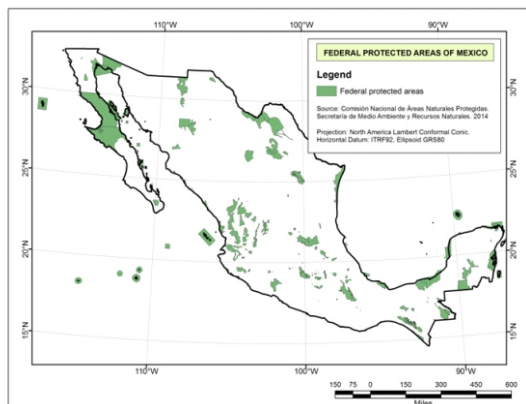
According to Bartlett et al. (2010), the closure of areas for their protection followed two different patterns. The first one called direct- with the purpose of having an impact on the use and conservation of resources; and the second one indirect- founded on the spiritual and cultural needs of the communities. The later pattern specially linked to indigenous communities and the places that hold significance for them (Lockwood 2009).

The protection of areas can be traced back two thousand years to India for the purpose of conservation; and in Europe a thousand years ago, for the purpose of hunting (Eagles, et al. 2002). In more recent times Yellowstone National Park is considered the first PA, decreed in 1872 (West Sellars 1997), although in 1864 a policy movement by the US Congress meant the establishment of Mariposa Grove in the Yosemite Valley as a reserve, to become part of the Yosemite National Park in 1890 (Eagles & McCool 2002).

The first PA in Mexico was a National Park, which was decreed in 1917. Up to October 2013 there have been a further 175 proclamations of Protected Natural Areas, of which 6 are National Parks. To date there are six categories of PAs in Mexico and it includes Biosphere Reserves, National Parks, Natural Monuments, Natural Resource Protection Areas, Flora and Fauna Protection Areas and Sanctuaries.

Figure 1. Protected Areas of Mexico

Source: Comisión Nacional de Áreas Naturales Protegidas,



Secretaría de Medio Ambiente y Recursos Naturales, 2014.

Tourism in Protected Natural Areas

Due to its economic importance, the tourism activity is a priority for many countries (UNWTO 2013); and its diversification is linked to its success in attracting different types of tourists. Even though today it is a common understanding that PAs are set to fulfil conservation objectives, an important factor in the creation of the Yellowstone National Park was profit-seeking (West Sellars 1997). It is thought that the economic interest of the railroad companies in the tourism potential of the National Parks started what might be referred to as a movement to be repeated the world over (West Sellars 1977). Yellowstone was decreed as “a public park or pleasuring ground for the benefit and enjoyment of the people” (Eagles, et al. 2002).

As National Parks began to be established also in Australia, Canada, South Africa and New Zealand towards the end of the 19th century, park visitation and tourism became a fundamental element of the park phenomenon' (Eagles & McCool 2002). Thus, historically, National Parks and Protected Areas have had both conservation and recreational purposes (Cessford & Muhar 2003; Bartlett 2010). In practice this has meant the generation of impacts to National Parks, as the concentration of tourists and the intensive use of resources damage not only the environment but also the experience of the tourism activity (Puente Santos, et al. 2011).

In the last decades there has been a movement in tourism towards lowering the impacts caused by the activity. In the case of National Parks and other Protected Areas this movement takes greater relevance as these areas are especially reserved for the conservation of natural resources. As mentioned by Wall (1997), visitors to natural areas can be potentially more damaging to the environment than the mass tourist as the latter's “needs and wastes can be more readily planned for and managed”. This points to the need for 'planned extension and organised demand' of tourism in protected areas (Dinca & Irina 2011), for which tools such as the carrying capacity can be used.

About the Iztaccíhuatl-Popocatepetl National Park

The research site is the Iztaccíhuatl-Popocatepetl National Park (IPNP), which is located in the Centre of Mexico, approximately 120 km from Mexico City (figure 2). The IPNP can be reached from Mexico City

through the México-Cuautla road. This park was decreed in 1935. The initial decree stated that the area above 3000 MSL would constitute the National Park. An amendment in 1948 increased the MSL to 3600 establishing an area of 90,284 hectares for the IPNP (DOF 1935; 1948; CONANP 2014).

Figure 2. **Parque Nacional Iztaccíhuatl Popocatepetl**



Source: Authors 2013.

The IPNP falls within the boundaries of three states Mexico, Morelos and Puebla, comprising 13 municipalities among them. The Park is managed by the CONANP (National Commission for Protected Natural Areas) a government department created in 2000 to manage all PAs with federal decree in the country. In contrast to many PAs in Mexico and around the world, this National Park does not seem to have ownership claims by private owners or communities.

The IPNP hosts a number of biological species, some of which are endemic and/or hold a risk category according to the Mexican Norms. In terms of vegetation, the main species are *Digitalis*, *Lupinus* and *Verbascum thapsus*. There are 70 species and sub-species of pine trees such as *Pinus hartwegii*, *Ribesciliatum*, *Lupinus montanus*, *Acaena elongata* and *Abies religiosa*. The park counts on 74 species of fungus, such as *Morcella esculenta*, *Agaricus augustus*, *Amanita muscaria* and *Cantharellus cibarius*. There are also a number of medicinal and edible plants such as *amaranthus hybridus*, *chenopodium album*, *arracacia atropurpurea* and *arnica montana*. Regarding fauna, there are 48 species of mammals such as the *Romerolagus diazi*, which is endemic specie at risk. There are 161 species of birds, 10 of them at risk and five are endemic, such as *Buteo jamaicensis formosus*, *Dendortyx macroura* and *Streptoprocne semicollaris*. The species of reptiles are 10 (such as the *Barisia imbricata*, *Sceloporus grammicus* and *Crotalus ravus*) and six of amphibian, such as the *Pseudoeurycea aleprosa*, *Pseudoeurycea cephalica* and *Ambistoma altamirani* (CONANP 2013; 2014).

The management programme for the IPNP was first published in 2013. One of its stated objectives is to promote the development of tourism and leisure activities. At the same time, the document acknowledges that there is a lack of control in the tourism activity, which is reflected in damage to the areas and litter in the park (CONANP 2013). The number of visitors visited the park since 2009 are recorded in Table 1.

Table 1. Visitors to the IPNP

Year	Number of Visitors
2009	32000
2010	27000
2011	34811
2012	23493
2013	31566
2014	30630 ¹

Source: Parque Nacional Iztaccíhuatl-Popocatepetl, CONANP

Tourism trends in the IPNP correspond to Nature and Ecotourism with activities that include hiking, mountain biking, bird watching, camping and rappelling. Visitors can enjoy facilities such as the reception area of the Park in Paso de Cortés. This area includes the reception building, public toilets, parking, a playground, a picnic area and a cabin that is used for conferences, workshops and other small events. Within the IPNP seven hostels can be found, three of which are not in use (CONANP 2013). In the reception area of the park there are also informal stands where local people sell food items to visitors. They are found usually on weekends and holidays.

The IPNP offers visitors eight trails that vary from 270 mts to 6 km in length. All trails have educational purposes covering a range of topics. For the purpose of this document two trails were chosen: Yolotxochitl (see Figure 3) and Alpine Trail (see Figure 4). Yolotxochitl is approximately half km. from the main building. Its length is 270 mts. and the time calculated for its visit is from 15 to 30 minutes. Its purpose is to show and explain the importance of water catchment through trenches. The Alpine trail is 6 km long and its visit is calculated to last from 1.5 to 2.5 hours one way. Its purpose is to highlight the role of the mountains as water producers. It includes some history while considering pre-hispanic cultures and their sustainable use of forest and water resources.

Figure 3. Yolotxochitl Trail



Source: Authors 2013.

Figure 4. Alpine Trail



Source: Authors 2013.

Carrying capacity

Due to the importance of controlling and managing visitor flow in

National Park, different monitoring processes have been used. Cessford and Muhar (2003) make a review of different techniques used in visitor monitoring and divide them into four categories named direct observation, on-site counters, visit registration and inferred counts. The techniques listed include: camera recording, field observers, active optical, magnetic sensing, visit registers, fee, interviews and indicative counts, among others. The purpose of these monitoring options is to inform planning and management.

Another tool that has been used is carrying capacity is to estimate maximum number of visitors that a site can receive per day without causing considerable damage to the ecosystems or to visitors' satisfaction (Prato 2009). This tool aids tourism planning. It has a behavioural component that has to do with the “quality of the recreational experience” and a biophysical component; although it is ultimately considered an ecological concept that reflects the results of the people-nature interaction (Simón et al. 2004).

Carrying capacity studies have been conducted by a number of countries including Costa Rica (Cifuentes 1999), Great Britain (Simón et al. 2004), Spain (Roigi Munar 2003; Tudela Serrano & Giménez Alarte 2008), Mexico (Segrado et al. 2008; Puente Santos 2011), Colombia (Botero et al. 2008) and Argentina (Rosell 2007; Martín Varisto et al. 2009). These studies have the purpose of providing a baseline to regulate the tourism activity (Puente Santos et al. 2011).

Carrying capacity studies encounter several problems. Simon et al. (2004) list a number of challenges that are faced. These include the subjectivity of the concept, as it can be based on perception. Linked to this is also the dynamism and fluidity of the concept, which mean that the concept need to adapt not only to context and circumstances but also to changes in them. Puente Santos et al. (2011) mention the lack of sociocultural indicators in the currently used methodologies. Despite these and other challenges, it can be argued that carrying capacity is a starting or orientation point that needs to be complemented with other tools to better inform tourism monitoring and planning.

Methodology

The methodology followed for the study is that proposed by Cifuentes (1992, 1999). This methodology entails the calculation of four carrying capacities that altogether make up the Tourist Carrying Capacity (CCT).

The first carrying capacity is the Physical Carrying Capacity (CCF). The CCF refers to the maximum amount of people that could be accommodated in a given space in a day without considering comfort,

quality of experience or environmental impact (Puente Santos et al., 2011; Tudela Serrano & Giménez Alarte 2008).

The second carrying capacity is the Real Carrying Capacity (RCC). Within this carrying capacity four factors are considered: the social factor (FSoc), erodability (FCero), accessibility (FCacc) and seasonality (FCct). The FSoc refers to the minimum space required per visitor and distance between groups. The FCero entails calculating the impacts generated by considering type of soil and gradient. The FCacc determines the degree of difficulty that visitors experience during their visit due to the gradient. The FCct refers to the season in which the place remains opened.

The third carrying capacity is the Management Capacity. This carrying capacity considers the administrative part of the space focusing on three variables: personnel, infrastructure and equipment. These variables are rated according to four criteria: a) existent and optimum amount, b) use and conservation status, c) location, distribution and accessibility to the equipment, and d) functionality.

The fourth carrying capacity is the Effective Carrying Capacity (CCE). This carrying capacity brings together the calculations of the previous carrying capacities to determine the maximum amount of visitors that a given space can receive. In view of this the methodology proposed by Cifuentes (1992, 1999) was followed to estimate the CCT of two trails of the Iztaccíhuatl-Popocatepetl National Park. Thus the results are presented in the following sections.

1. The Physical Carrying Capacity (CCF) is calculated as follows:

$$CCF = (S/SP)(NV)$$

Where:

S= Trail length

SP= Space required by visitors (1 mts and 4 mts)

NV= Times that the area can be visited by the same person in one day. NV is calculated as follows:

$$NV = H_v / T_v$$

Where:

Hv= Opening times

Tv= Time needed for the visit

Given these equations, the results for the chosen trails are thus calculated as follows

The space required by visitors is given by Cifuentes (1992) in 1 linear m. considering the trail is one-way. Such is the case of the Yolotxochitl trail

Trail	Equations	CCF
Yolotxochitl	$NV = (540 \text{ min.}) / (30 \text{ min.}) = 18 \text{ tim}$ $CCF = ((270 \text{ m.}) / (1 \text{ m.})) (18) = 4860 \text{ visitors}$	4860 visitors
Alpine	$NV = (540 \text{ min.}) / (180 \text{ min.}) = 3 \text{ times}$ $CCF = ((6000 \text{ m.}) / (4 \text{ m.})) (3) = 4500 \text{ visitors}$	4500 visitors

there is one entrance and one exit. Segrado et al. (2008) consider that the ideal distance between people should fall between 3.5 and 7.25 linear mts and that the minimum space should be of 2 linear m. Puente Santos et al. (2011) suggest a 4 linear mts distance to allow for the consideration of a two-way visitor influx. This is the case of the Alpine trail, a two-way influx. For this reason a different measure was used for each trail. Thus, for Yolotxochitl the CCF is 4860 visitors per day considering one person can visit the trail 18 times in a day and for the Alpine trail 4500 considering the possibility of visiting the trail three times in a day.

1. Real Carrying Capacity (RCC)

The Real Carrying Capacity is made up by the Social (Fsoc), Erodability (FCero), Accessibility (FCacc) and Seasonality (FCct) factor. Each factor is calculated in the following sections.

2.1) Social Factor (Fsoc)

The Fsoc is estimated using the following criteria:

Trail	Persons per group (PG)	Distance between groups (DG)	Space required per person (SP)
Yolotxochitl	20	50 mts	1 m.
Alpine	4	50 mts	4 m.

For PG an average was estimated. As it can be observed, the Yolotxochitl trail receives larger groups. This can be explained by the location and length of the trail. School groups visit this trail while the other one is more visited by small groups of friends. For both trails a distance of 50 mts between groups is considered.

For the Fsoc, it is necessary to first calculate the distance required per group (DRG):

$$DRG = (DG) + [(SP)(PG)]$$

Trail	Equations	DRG
Yolotxochitl	$DRG=(50)+[(1)(20)]=70$ mts	70
Alpine	$DRG=(50)+[(4)(4)]=66$ mts	66

With this information it can then be estimated the groups that can be simultaneously found in a trail.

$$\text{Groups} = (S/DRG)$$

Trail	Equations	Groups
Yolotxochitl	$\text{Groups} = (270/70)=3.86$	3.86
Alpine	$\text{Groups} = (6000/66)= 90.91$	90.91

After the groups, it is calculated the people (P) that can be found simultaneously in each trail:

$$P = (\text{Groups})(PG)$$

Trail	Equations	People
Yolotxochitl	$P = (3.86)(20)=77.2$	7.72
Alpine	$P = (90.91)(4)=363.6$	363.6

The Fsoc also requires the calculation of the limiting magnitude (Ml) the part of the trail that is kept free given by the distance between groups and the space between persons.

$$Ml = (Mt) - [(P)(SP)]$$

Trail	Equations	Limiting Magnitude
Yolotxochitl	$Ml = (270) - [(77.2)(1)]=192.8$	192.8
Alpine	$Ml = (6000) - [(363.6)(4)]=1454.4$	1454.4

Finally, the Fsoc is estimated by dividing the limiting magnitude (Ml) by the trail length (S):

$$FSoc = 1 - Ml/S$$

Trail	Equations	FSoc
Yolotxochitl	$FSoc = 1 - 192.8/270=0.29$	0.29
Alpine	$FSoc = 1 - 1454.4/6000=0.75$	0.75

The Fsoc thus considers factors relating to group size and space needed per group to estimate a reducing factor that for the Yoloxochitl trail is and Alpine trail, it is 0.29 and 0.75 respectively.

2.2) Erodability(Fcero)

As mentioned earlier, erodability is estimated by considering the relation between the soil type and the gradient. There are six types of soil in the Park. According to their characteristics they were classified as low, medium, high and very high susceptibility to erosion.

Soil	Susceptibility to erosion	Weighing
Phaeozem (PH)	Medium	0.5
Cambisol (CM)	Medium	0.5
Regosol (RG)	High	1
Andosol (AN)	High	1
Arenosol (AR)	High	1
Leptosol (LP)	Very high	1.5

In the case of gradient, the following three ranks are considered by Cifuentes (1999):

Gradient	Erodability	Weighing
Less than 10%	Low	Non -significant
Between 10% to 20%	Medium	1
More than 20%	High	1.5

Within these ranks, only the last two are considered as having erodability risks. This calculation helps to limit the number of visitors according to impacts related to erodability.

Trail	Equations	Erodability
Yolotxochitl	$FCeroS = (270)(1)/270 = 1$ FCero=Non-significant	7.72
Alpine	$FCeroS = \frac{[(1900)(1) + (2600)(1) + (1500)(1.5)]}{6000} = 1.13$ FCero= $1 - \frac{[(2100)(1) + (500)(1.5)]}{6000} = 0.53$	$1.13 + 0.53 = 1.66/2 = 0.83$

The type of soil in the Yolotxochitl trail is arenosol, thus presenting a high susceptibility to erosion having a weight of one in pondering. The gradient of the Yolotxochilt trail falls below 10%, for which it is non-significant for this estimation.

The Alpine trail has three types of soil: andosol, arenosol and leptosol. Thus presenting from high to very high susceptibility to erosion having a weight of

1.0 and 1.5 in pondering. Regarding the gradient falls between the three ranks is proposed by Cifuentes (1999).

2.3) Accessibility (Fcacc)

Accessibility relates to the difficulty with which visitors can move along the trail. This is considering the gradient in the following ranks

Gradient	Difficulty	Weighing
Less than 10%	None	Non -significant
Between 10% to 20%	Medium	1
More than 20%	High	1.5

The Fcacc is thus calculated as follows:

$$FCacc = 1 - ((Ma)(1.5) + Mm) / Mt$$

Where:

Ma= metres with high difficulty

Mm= metres with medium difficulty

Mt= total metres of the trail

Trail	Equations	FCacc
Yolotxochitl	Non-significant	-
Alpine	$FCacc = 1 - ((500)(1.5) + 2100) / 6000 = 0.53$	0.53

The gradient of the Yolotxochitl trail falls below 10%, for which the difficulty is non-significant for this estimation. According to the data, the gradient of the Alpine trail presents none medium and high difficulty giving an Fcacc of 0.53.

2.4) Seasonality (FCct)

This factor considers the months in which the site remains closed to the public. It is calculated as follows:

$$FCct = 1 - Ml / Mt$$

The park does not close except for warning of volcanic activity and excessive snow during the winter months. This is difficult to calculate as it varies per year. However an approximate period of a month will be considered for both trails

$$FCct = 1 - 1 / 12 = 0.92$$

Once the four factors have been calculated, the CCR is estimated as follows:

Trail	Equations	CCR
Yolotxochitl	$CCR=(4860)[(0.29)(1)(0.92)]=1296.65$	1296.65
Alpine	$CCR=(4500)[(0.75)(0.83)(0.53)(0.92)]=1365.89$	1365.89

$$CCR=(CCF)[(FSoc)(FCero)(FCacc)(FCct)]$$

As it can be observed the FCacc for the Yolotxochitl trail was not considered, as it was not significant. According to the results, the Real Carrying Capacity of the Yolotxochitl trail is 1297 visitors where for the Alpine trail it was 1366 visitors.

1. Management Capacity (CM)

Once the CCR has been estimated, it is necessary to calculate the CM. The CM considers the variables: infrastructure personnel and equipment, using four criteria to evaluate them: quantity condition, location and functionality. This information will reflect the capacity of the space to receive visitors based on the basic elements needed for visitor service. The information was obtained through observation and personal interviews with management. The variables were evaluated according to the following information:

Mark	Value
Unsatisfied	0
Little satisfaction	1
Medium satisfaction	2
Satisfied	3
Very satisfied	4

For estimating CM, the following formula was used. The result was converted into percentage to explain the Management Capacity

$$CM=((\text{Infrastructure}+\text{Personnel}+\text{Equipment})/3)(100)$$

Trail	Equations	CM
Yolotxochitl	$CM=((0.75+0.74+0.63)/3)=0.71$	0.71
Alpine	$CM=((0.75+0.74+0.63)/3)=0.71$	0.71

According to these results, the trails have a Management Capacity of 71%. It means that there is a lacking capacity of 29% in quantity condition location and/or functionality. Both trails have the same capacity since both belong to the same management.

4. Effective Carrying Capacity (CCE)

The CCE is estimated as follows:

$$CCE = (CCR)(CM)$$

Where:

CCE= Effective Carrying Capacity

CCR= Real Carrying Capacity

CM= Management Capacity

Trail	Equations	CCE
Yolotxochitl	$CCE = (1296.65)(0.71) = 920.62$	921 Visits/day
Alpine	$CCE = (1365.89)(0.71) = 969.78$	970 Visits/day

Thus, according to the above estimation the Effective Carrying Capacity or Tourist Carrying Capacity is of 921 visits per day for the Yolotxochitl trail and of 970 visits per day for the Alpine trail. This is the estimated number of visitors that, by definition, would not cause considerable damage to the ecosystems or to visitors' satisfaction (Prato 2009).

Discussion and conclusions

The Tourist Carrying Capacity (CCT) is a tool that facilitates the estimation of the number of visitors per day to a place. According to this tool, the Yolotxochitl trail and Alpine trails can receive 921 and 970 visits per days respectively. These numbers are calculated based on the characteristics of each trail such as length, soil type and erodability. But there are also elements that they have in common such as those needed to estimate Management Capacity.

Also related to Management Capacity, it is noteworthy that it is only evaluated through the managers' perspective. It is proposed that interviews with visitors could also be conducted to obtain a mean from both perspectives in aspects that can be known by both groups.

The CCT as a concept is linked not only to the preservation of ecosystems but also to visitors' satisfaction (Prato 2009). The rationale is that a better control in the number of visitors will increase their enjoyment. In this sense, their experience of crowds can be related to their perception of the tourist site (López Bonilla & López Bonilla 2008). For the IPNP this can be particularly relevant in the winter months when crowds tend to gather to enjoy the snow. The advantage of the IPNP is that having eight trails with different purpose length and activities visitors can disperse. Even then the application of the CCT

would help control crowds contributing to an improved experience and safety.

This particular methodology to calculate CCT, although useful to estimate an approximate number of visitors, does not consider certain aspects. For example, Holden (2008) states that important for the estimation of carrying capacity are also economic, social and psychological aspects. As the methodology was developed for its application on PAs, it could be argued that particularly economic and social aspects are not relevant. However, as mention by Eagles and McCool (2002) and Eagles et al.(2002) PAs have evolved to incorporate local communities that have traditionally been part of them in the planning and decision making processes. It also has been sought that local communities benefit from the tourism activity (Ashley et al. 2001). Further, there are costs related to the management of these areas. Thus, economic and social aspects become relevant in the carrying capacity of PAs for which the available methodologies could be further developed to incorporate these aspects.

Being the IPNP managed by the Federal Government its revenues do not directly benefit the local economy. However, some visitors do stop by the community. In the reception area of the park the informal stands to sell food items are catered by the local community. In addition, on the way up to the Park there are several spots with a few food stands. For this reason the CCT does have an impact on the local community though being a Federal Park.

Carrying capacity studies have limitations. Simon et al. (2004) mention the issue of unrealistic implementation. As carrying capacity depends on the possibility of establishing limits of visitation, this may not be straight forward in public areas such as PAs. Furthermore, in the particular case of PAs there is a history of the exclusion and the eviction of native people (Nepal and Weber 1995; Anderson and James 1998; De Merode 2005; Hayes 2006). In this sense, carrying capacity studies have the risk of repeating exclusion processes by setting a limited number of visitors and in the long term become accessible only to the better off (West Sellars 1997). Under these circumstances the preservation of resources would be far from a 'democratic movement'.

Nevertheless, there is a need for impact measurement in PAs because of their vulnerability. As leisure and tourism have been regular features since the beginning of their creation, the purpose of conservation of

resources may have at times been threatened by intensive use due to a lack of control and monitoring. In this regard carrying capacity can be seen as tool, which complemented with other monitoring tools such as those reviewed by Cessford and Muhar (2003) . Thus, despite their limitations, carrying capacity studies are not only helpful but necessary to provide a basis on which further research on limiting visitors' impact to natural areas can be undertaken.

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Natural Disasters and HIV/AIDS: Intensifying Threats to Sustainable Tourism Development in the Caribbean

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Abstract : *This paper examines two intensifying threats to the sustainable development of tourism in the Caribbean. It argues that while much attention is placed on socio-economic and environmental threats, the Caribbean's vulnerability to natural hazards and the spread of the Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) in the tourism context is seldom jointly explored. These two threats though not new, have not been traditionally explored in academia in relation to sustainable tourism development in the Caribbean. Caribbean nations' tourism vulnerability is compounded by issues of geography, size and economic policies. The paper examines the development challenges in the Caribbean in the context of tourism's competitiveness, and the relationship between natural hazards and HIV/AIDS with the tourism sector. The paper suggests that Caribbean tourism planners and policy makers will have to be innovative in their strategies and change its marketing image as they seek to mitigate risks and stay competitive in light of their reducing share of the global tourism pie.*

Keywords: sustainable tourism development, HIV/AIDS, natural hazards

Background

The Caribbean region has been referred to as one of the most tourism dependent regions in the world (Roe and Urquhart, 2001). Evidence of this dependence is reflected in the comparison of the Caribbean's 2012 travel and tourism performance relative to global performance. The Caribbean derived 14% of its Gross Domestic Product (GDP) and 12 % employment from travel and tourism in 2012 (Caribbean Tourism Organization [CTO], 2013). Despite travel and tourism being the world's fastest growing industry, global GDP contributions from travel and tourism for 2012 was 2.9 % GDP and 8.7% employment, much lower than that of the Caribbean (World Travel and Tourism Council [WTTC], 2013). However, travel and tourism's total GDP contribution varies significantly across the Caribbean region with a much as 47.2% in the Bahamas compared to 3.8 % in Trinidad and Tobago (based on 2012 estimates), the latter relying more on oil and natural gas than tourism, as

its economic mainstay (WTTC, 2013). Map 1 illustrates the tourism destinations of the Caribbean spanning from Belize in Central America to Guyana and Suriname in South America.

Map 1
Caribbean Tourism Destinations Spanning Central America to South America



Source: www.open.uwi.edu

The Caribbean has also been described as one of the world's destination hotspots as it relates to the impact of climate change (UNWTO-UNEP-WMO, 2008). The region is particularly vulnerable to hydro-metrological hazards like hurricanes, flooding, landslides, coastal storm surges, and droughts. Geophysical hazards such as earthquakes and volcanic activity also occur, though with less frequency but, with some Caribbean nations more at risk than others (Cross, 1992). Vulnerability can stem from demographic growth and urbanization, which is exacerbated in small islands states, inadequate infrastructure (physical and institutional) and poverty: “because one is poor, one is vulnerable” (Economic Commission for Latin America and the Caribbean [ECLAC], 2007). Poverty and the resulting vulnerability in the Caribbean context apply to natural hazards and HIV/AIDS. It is instructive at this juncture to distinguish between risk and vulnerability. This paper uses the definitions provided by the United Nations Office for Disaster Risk Reduction (UNISDR). Risk is defined as the combination of the probability of an event and its negative consequences. Disaster risk refers to the potential disaster losses in lives, livelihoods, health status, assets

and services, which could occur to a community or society over some specified future time period. Vulnerability is defined as the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. A hazard is a dangerous phenomenon, substance, human activity or condition that may cause injury, loss of lives and livelihoods, property damage, social and economic disruption and environmental damage (UNISDR, 2009).

The region's geography and climate is both a blessing and a curse. On one hand it is the region's environmental capital- its natural assets that makes countries in the Caribbean attractive tourism destinations. On the other hand, the tourism product can be significantly compromised with the passage of heavy rainfall, flooding and mudslides or worse, a hurricane significantly damaging the natural beauty, agriculture, infrastructure, lives and livelihoods. Much has been written about natural disasters in the Caribbean in recent times, as the impact on the economy and the environment has been self-evident. However, Cavallo and Noy (2010) argue that the understanding of natural disasters to economic development and growth is still in its infancy. An ECLAC (2007) report noted that the human and economic losses due to natural disasters in Latin America and the Caribbean in the last three decades produced some 12 million direct victims and US\$ 50 billion in damages. Hurricane Ivan in 2004 is a good example of how a single event can wreak havoc on the lives and livelihoods of millions of people across the Caribbean, with Grenada, Cayman Islands, Jamaica and Haiti hardest hit (Kambon, 2009). Table 1 highlights the impact of natural disasters in the aforementioned countries from 1980-2004. While there is some level of predictability for hurricane activity, earthquakes cannot be predicted. The most recent damaging earthquake in the Caribbean occurred in Haiti in 2010. Some may say it was more than a disaster, a catastrophe, where the country loss an estimated 100% of its GDP (Cavallo and Noy 2010), which came at a time when works were afoot to revitalize the tourism sector.

Table 1
Impact Of Natural Disasters On Four Selected Countries 1980-2004

Country	Dead	Affected	Impact in US\$
Cayman Islands	2	35,389	3,432,000,000.00
Grenada	39	142,000	899,000,000.00
Jamaica	582	1,844,138	192,286,000.00
Haiti	7410	3,761,508	1,112,114,300.00
TOTAL	8033	5,783,035	5,635,400,300.00

Source: Kambon, 2009

At the same time, there is also the other threat of HIV/AIDS, where the Caribbean is the second most affected area after Sub-Saharan Africa. HIV/AIDS in the Caribbean is an epidemic. The number of people living with HIV/AIDS in the Caribbean is estimated at 250,000. This appears to be a small percentage compared to the global estimate of 35.3 million, however, the Caribbean's adult prevalence rate (15- 49 age group) is 1%, second only to Sub-Saharan Africa with a 4.7 % adult prevalence rate (World Health Organization and UNAIDS, 2013). HIV prevalence is the percentage of the population living with HIV. Table 2 highlights the HIV prevalence rate in selected Caribbean countries 2009-2013, based on modelled estimates for the most affected age group.

Table 2
Estimated Modelled HIV Prevalence Rate in 15-49 Age Group in Seven
(7) Selected Caribbean Countries 2009-2013

	2009	2010	2011	2012	2013
Bahamas	3.44	3.42	3.38	3.31	3.21
Barbados					
Cuba	0.15	0.17	0.19	0.21	0.23
Dominican Republic	0.85	0.8	0.77	0.73	0.7
Haiti	2.16	2.12	2.08	2.02	1.97
Jamaica	1.91	1.88	1.84	1.79	1.75
Trinidad & Tobago	1.66	1.67	1.67	1.66	1.65

Source: www.aidsinfoonline.org

It is generally accepted that the traditional Caribbean tourism product comprise the 4Ss- sun, sea, sand and sex. The suggestion in this paper is not that sex as a tourism product is being threatened, but the issue is that the Caribbean people, as part of the tourism product, are under threat. Tourism has long been projected as an important economic tool for poverty reduction, and sex tourism may be seen as easy money, requiring limited investment in time or other resources. However, with poverty comes limited access to social and health services, lack of education, gender inequality and the creation of marginalized groups who make poor choices that affect their health including their risks to HIV/AIDS. The problem with HIV/AIDS is that it has a long latency period where persons may not know they have the disease and spend years infecting others. Prolonged HIV/AIDS related illness can become very burdensome to financially strained health systems in the Caribbean.

It is recognized that these two intensifying threats- natural hazards and

HIV/AIDS do not operate in isolation. Caribbean tourism is also affected by global economic shocks and the concomitant spikes in fuel prices and transportation costs (e.g. airfares), geopolitical instability, safety and security and quadruple bottom-line sustainability issues. Given the Caribbean's dependence on tourism, its high adult prevalence rate of HIV/AIDS, and its acute risks and vulnerability to natural hazards, this paper seeks to bring together these issues and examine them in the context of sustainable tourism development for the future.

Tourism Competitiveness

Dwyer and Kim (2003) note that at the macro-level, competitiveness encompasses social, cultural and economic variables affecting the performance of a nation in international markets. They argue that competitiveness is both a relative concept and is multi-dimensional. The goal of competitiveness is to maintain and increase the standard of living of citizens of a country. The ability to maintain and increase competitiveness will differ for economies with different development challenges (Dwyer and Kim, 2003). Gomes (2014) identified six (6) core development challenges faced by Small Island Developing States (SIDS): small size and narrow resource base, geographic position and insularity, vulnerability to natural disasters, environmental factors, governance factors, and social factors. Notably not all countries in the Caribbean are islands, for example, Belize, Guyana, and Suriname, but they face similar challenges. The development challenges identified by Gomes (2014) are all relevant to the competitiveness of tourism and the need for countries to have a diversified tourism product that caters to the need of today's tourists who are seeking unique and authentic experiences. Tourists are far more sophisticated travelers, pre-sampling through virtual tours, travel videos/shows (e.g. YouTube) and checking reviews via social media (e.g. TripAdvisor) before they purchase a vacation package. So while the sun, sea and sand and other natural attractions may be expected, tourists want to experience more of the culture "edutainment" (education and entertainment combined) in the destinations they visit. The Caribbean region, with its many cultural influences- Spanish, Dutch, French, English, African, Indian, Portuguese, Chinese among others, has much to offer through music, food, dance and oral traditions.

Small developing states in the Caribbean are vulnerable socially, economically and environmentally. However, this is not only a question of size but in terms of geography and insularity. Most Caribbean nations

are quite distant from the main tourist generating regions of North America and Europe, and even more so from emerging markets such as China. Some Caribbean nations are also quite distant from each other and small size and lack of economies of scale make transportation challenging and costly-impeding the much touted intra-regional tourism market development. Narrow resource bases also means that these tourism states must rely on goods including agricultural products from distant markets, thus reducing the economic contribution of tourism and compounding the leakage factor through high imports from international markets. If primary agricultural commodities are destroyed during a particularly active wet season in the region, there is little choice but to depend on the international market for goods. This active wet season which may bring with it hurricanes, landslides and flooding can do physical damage to built and natural attractions, and key infrastructure such as roads, electricity, airports and hotels. Tourists' accommodation in the Caribbean are often close to coastal regions and governance issues (e.g. lack of political will, laws, regulation and enforcement) and social factors often find residences and businesses alike, reconstructing in a manner that does not seek to reduce vulnerability. These are a few examples of how increasing operating costs in the tourism sector and how the development challenges are intertwined, consequently reducing the competitiveness of tourism businesses in the Caribbean.

At the global level, country comparisons of the travel and tourism industry's competitiveness are provided by the World Travel and Tourism Council (WTTC), which uses fourteen pillars/indicators, namely: policy rules and regulations, environmental sustainability, safety and security, health and hygiene, prioritization of travel and tourism, air transport infrastructure, ground transport infrastructure, tourism infrastructure, Information and Communications Technology (ICT) infrastructure, price competitiveness in travel and tourism, human resources, affinity for travel and tourism, natural resources and cultural resources (see WTTC 2013 Travel & Tourism Competitiveness report for details of the individual indices for each of the fourteen pillars). Countries are ranked out of 140 countries and scored from a scale of 1-7. Table 3 *Relationship between Key Development Challenges in the Caribbean and Global Travel and Tourism Competitiveness Pillars* illustrates how the fourteen pillars may be constrained by the development challenges that are typical of SIDS in the Caribbean. Some of the pillars are repeated in Table 3 to demonstrate that a particular pillar can be affected by more than one of the

developmental challenges. For example policy rules and regulations; and environmental sustainability issues (which includes stringency of environmental regulation and enforcement of environmental regulation) reflects the Caribbean's developmental challenges in the areas of governance and vulnerability to natural disasters.

Table 3
Relationship Between Key Development Challenges in the Caribbean and Global Travel and Tourism Competitiveness Pillars

Development Challenges in the Caribbean	Global Travel and Tourism Competitiveness Pillars
Small size and narrow resource base	Prioritization of travel and tourism Tourism infrastructure ICT infrastructure Air transport infrastructure Ground transportation infrastructure Price competitiveness
Geographic position and insularity	Price competitiveness
vulnerability to natural disasters	Policy rules and regulations Environmental sustainability Natural resources
Environmental factors	Natural resources
Governance factors	Policy rules and regulations Environmental sustainability Health and hygiene
Social factors	Safety and security Human resources Cultural resources Affinity for travel and tourism

Source: Development Challenges, Gomes (2014); Travel and Tourism Competitiveness Pillars/Indices, WTTC (2013).

Who are the destination's competitors? It includes those offering a similar product and those competing for the same customer. It does not mean that everyone who travels constitute the target market, as product offerings, traveller's interests and disposable incomes are diverse. The limited carry capacities of Caribbean destinations mean that they can ill-afford a mass market strategy for long-term sustainability. Caribbean nations are competing among themselves, as well as, with more distant warm weather destinations in the Pacific and the Mediterranean, which may be closer to some of the main tourist generating regions. The challenge is to cultivate resilience while creatively exploiting the facts that cannot be changed- small size and geography. Arguably, it is a strong travel and tourism regulatory framework (policy rules and regulations, environmental sustainability, safety and security, health and hygiene and prioritization of travel and tourism pillars) that will build the business environment and infrastructure; and travel and tourism human, cultural

and natural resources. As many destinations within the Caribbean can be considered mature, rejuvenation strategies will require not only a strong travel and tourism regulatory framework to support a sustainable tourism development agenda but tourism products must be well packaged and promoted, and the traits of different market segments must be researched.

National Disasters, Climate Change and Tourism

The Intergovernmental Panel on Climate Change (IPCC, 2013) Report: Summary for Policy Makers which highlights increase warming, CO₂ emissions and sea level rise not only signals the possible intensification and frequency of natural hazards events, but warmer ocean temperatures will impact the coral reef system and by the extension the marine ecosystem. The livelihoods of Caribbean people, and fisheries as a source of food will increasingly be under threat. More broadly for tourism, warming of the climate system will likely impact climate-dependent tourism seasons like those in the Caribbean. Increased precipitation levels on one end of the spectrum and droughts in the other, can impact negatively on the warm-weather vacation experience. Climate change may also result in the loss of bio-diversity, reduced agricultural production, increase coastal erosion and loss of market share due to changes in travel patterns, with tourists selecting destinations closer to home (UNWTO-UNEP-WMO, 2008). Climate change sensitivity, carbon trading and the imposition of taxes such as the Air Passenger Duty put in place by the British government based on distance travelled (short and long haul travel) could signal changes in travel patterns from Europe to the Caribbean. On the positive side, climate change could mean new marketing opportunities, and for some countries like Guyana and Suriname, economic diversification through carbon trading. On the negative side, climate change and changing travel patterns threaten the viability of tourism dependent states in the Caribbean. A more disconcerting possibility, as highlighted by Cavallo and Noy (2010), is that very large disasters or successive natural hazard events can have the potential of overwhelming the reconstruction capacity of countries, leaving them stuck in a poverty trap. The international donor community can quite possibly become apathetic to the region's plight for disaster relief.

HIV/AIDS and Caribbean Tourism

Prostitution, drugs and alcohol are the ugly side of tourism. The relationship between sex and travel is long and well-established.

Kempadoo (2004 p.1) sums up the Caribbean's relationship with sex and travel in the following excerpt:

The Caribbean has long been portrayed in the global imagination as an exotic, resource-filled region of the world. A hyper sexual image has been constructed as “fact” by social chroniclers, travelers, historians, sociologists, and anthropologists to represent its “backward” and “undeveloped” condition, and the region has been variously lusted after for its natural wealth, sun-drenched sand beaches, sparkling blue seas, and tropical sensuousness.

Ward and Plourde (2006) highlight that because of the anonymity that travel offers, its sense of isolation and the desire for unique experiences encourages travellers to abandon their social and sexual inhibitions. While some may shy away from the terms, sex tourism or prostitution (e.g. Prideaux et al., 2004), and prefer to use “romance tourism” (Pruitt and LaFont, 1995), the exchange of sex for money, as well as, those men who have sex with other men without a monetary transaction are illegal activities in most of the Caribbean. Prostitution remains part of the informal sector. Gender inequality, sexuality, stigmatization and discrimination are important issues, but are beyond the scope of this paper. However, these very issues may be preventing the collection of data that reflects HIV prevalence and infection in tourism destinations.

Sex workers may prefer to draw their clientele from the tourist trade, due to the possible higher earning power, but the risk of unprotected sex is likely to be higher in tourism areas. Sexual relationships between the tourist and the local host can be complex, with different patterns of behavior between younger women with men, and older women and men, as well as, men who have sex with men. Some sexual encounters could lead to more permanent relationships, as individuals may assist sex partners to emigrate (Ward and Plourde, 2006). The relationship dynamics are important in the Caribbean context, particularly since women account for approximately half of all infections in the Caribbean with HIV prevalence rates significantly higher in adolescent females and young women than their male counterparts of the same age (Caribbean HIV/Aids Alliance, 2010). This is a worrying trend for social cohesion, as the Caribbean society is matri-focal and many women are employed in the services sector.

There are a number of other factor factors driving HIV risks in the Caribbean such as demographic changes, including migration to tourism

areas for employment; and drugs and alcohol, which can also promote sexual encounters. Some behavioural studies show that individuals who work in tourism areas or engage in transactional sex with foreigners, report higher rates of HIV risk behaviour (Ward and Plourde, 2006; Padilla et al., 2010). Some suggest that the marketing strategies and imagery used by some Caribbean destinations sell sex by appealing to the sexual fantasies of potential tourists (George and Richards, 2012; Prideaux et al., 2004). This exacerbates colonial stereo-types about sexual prowess and perpetuates class boundaries among some ethnic groups.

There has been successes across the Caribbean with declines in prevalence rates, for example in the Dominican Republic, due to changes in sexual behavior including condom use, reduction in the number of sexual partners, increased number of persons accessing treatment and a reduction of HIV transmission from mother to child (Caribbean HIV/AIDS Alliance, 2010). The Caribbean HIV/AIDS Alliance (CHAA) with support from the International HIV/AIDS Alliance and The Department for International Development (DFID) developed a Toolkit for HIV&AIDS and Responsible Tourism Model under the “Accelerating The Private Sector Response to HIV and AIDS in the Caribbean Project”. The project's target audience included regional and national tourism authorities, Ministries of Health, Industry and Commerce. The toolkit was intended to serve as a guide to leaders and policy makers within the tourism sector about the types of models and tools than can be used for developing and implementing responsible tourism interventions that encompass HIV and AIDS ((Caribbean HIV/AIDS Alliance, 2010). However, stigma and discrimination continue to hamper efforts at reducing infections in the local population.

While national and local interventions take place, one may ask, “What about the tourists and their risqué behaviours?” Ward and Plourde (2006) highlight several obstacles to promoting sexual health in travellers. These include the ambivalence of both the travel industry and destination governments of the risks of sexual encounters while abroad, preventative services in countries, traveller diversity and a lack of support for travel counselling. Is legalization of prostitution the answer? The global debate about the decriminalizing marijuana is already taking place and the success with legalizing marijuana in Colorado, USA is increasingly being cited. Jamaica has had a long debate about decriminalizing marijuana in their country, and Trinidad and Tobago has recently started their own

debate. Some will argue that sex tourism and “ganja” will boost Caribbean tourism! However, if prostitution is legalized then there has to be the supporting infrastructure education and a good health care system incorporating protection and prevention, treatment and counselling; regulation and enforcement. Can Caribbean governments who depend so much on international donor support for their HIV/AIDS programmes, afford this? Can the social conscience of a largely Christian region support it? These are decisions that will have to be taken by each sovereign state after dialogue with its citizenry.

Implications for Sustainable Tourism

Some Caribbean countries frequently hit by hurricanes over the years have developed very good national preparedness and disaster risk management strategies for the country at large, as well as, specifically for the tourism sector. Jamaica, Bahamas and Cuba are good examples. The Mexican Caribbean also has a good hurricane preparedness programmes with excellent signage in public spaces (personal experience). At the regional level, with funding from the Inter-American Development Bank (IDB), the Caribbean Disaster Management Agency (CDEMA) developed in 2008 a Regional Disaster Risk Management Strategy and Plan of Action for the Tourism Sector in the Caribbean and a Guide for the Development of National Disaster Risk Management Strategies for the Tourism Sector in the Caribbean. The author formed part of the IDB-CDERA project team for the strategy, guide and plan of action. An evaluation of this project is due to take place but evidence suggests that awareness levels are increasing. Empirical evidence is needed to ascertain if awareness has translated into action or change in behavior or practices at the individual and governmental level. The impacts of natural hazards are increasingly coming closer to home for those living in the Caribbean. Trinidad and Tobago, which markets itself as outside the hurricane belt, has to increasingly contend with flooding, landslide and coastal erosion, even though it hasn't experienced a major hurricane in decades. Some concede climate change is the culprit. Grenada's experience with Hurricane Ivan was a major lesson for islands in the southern Caribbean. Despite the many plans and policy documents that exist in the Caribbean, the regulation and enforcement has to be tackled at the political level to bring about change. Construction and reconstruction cannot continue in the same vulnerable areas.

While much of the impacts of climate change felt in the region are due to the activities of developed countries, there must be a comprehensive and

integrated programme in all economic sectors for climate change adaptation (more than climate change mitigation) in the Caribbean. This will be important to the sustainability of the tourism sector. Insurance and heritage type funds for extreme events, reinvestment and risk mitigation must be established to service the needs of key economic sectors, given the multi-disciplinary nature of tourism.

The Caribbean must seek to develop a sustainable source of financing to cope with the two intensifying threats identified in this paper. As global and regional gains in combating HIV/AIDS are made, country level support from international donor agencies for HIV/AIDS will gradually diminish. A sustained programme to prevent HIV/AIDS and treat those infected with the disease will be needed.

Behavioural change strategies are needed for natural hazard risk management and reducing HIV/AIDS in the Caribbean. Information and communications technology can be a key component to ensuring the social, cultural, economic and environmental sustainability and competitiveness of tourism destinations. ICT can also be used as a tool to influence behavior. Social media is one such application for highlighting social issues and promoting behavioral change (Scott, 2013). Reduce life expectancy because of HIV/AIDS has a negative effect on savings, productivity and education. As HIV/AIDS spreads in a community, it challenges value systems, raises deeply rooted and sensitive gender inequalities and can breakdown social cohesion (World Bank, 2001). There is already the potential for resentment between the local host population and tourists, and harsh economic circumstances in a destination may compound this. Resentment can be intensified if the local population see tourists as the reason why a loved one may have contracted the disease. Travel advisories issued by developed countries is not the way in which Caribbean destinations would want to highlight sex tourism and the prevalence of HIV/AIDS so, some destinations more than others will need to change their marketing and by extension the destination's sexual images and slogans. Education, health services and programmes for social inclusion for at-risk communities and marginalized groups will have to be an on-going exercise. A new script has to emerge that promotes the 4Cs- care, community, culture and creativity through a multi-pronged approach targeting visitors and locals alike.

Conclusion

Some countries (see Table 2) in the region demonstrate a downward trend in prevalence rates but there is a real concern that economic decline can result in monies allocated for awareness campaigns and other care services for HIV/AIDS redirected to other areas. Government must utilize low cost ICT solutions to transform behaviours not only for managing HIV risks but for reducing vulnerability and building resilience for natural disasters. Theodore (2001) identified four channels through which HIV/AIDS potentially affect the economy: the production channel (labour and capital), the allocation channel (competing resource use), the distribution channel (widen income gap between rich and poor) and the regeneration channel (reduced capital investment retards economic development). There is no consensus on the best approach or model to estimate the cost of HIV/AIDS but many agree that the net effect on per capital GDP will be negative and significant (Dixon et al., 2001; Cornia & Zagonari, 2002). Work by CARICOM (2008) notes that estimates of AIDs impact on the economies of the Caribbean do not take into account the loss of social capital and the long-term damage to human capital." The effects of lowered investment in the human capital of the younger generation will affect economic performance for decades to come, well beyond the timeframe of most economic analyses" (CARICOM, 2008).

Caribbean nations understand that it is not business as usual- competition is fierce and only the most prepared and innovative will survive. Over the decades, international tourism has proven to be resilient despite terrorism, diseases, disasters and financial crises. However, the Caribbean's own development challenges mean that apart from the typical exogenous variables, internal realities mean that there has to be a healthy balance between risk acceptance and appropriate risk avoidance. This applies to dealing with the two intensifying threats of natural hazards and HIV/AIDS in the Caribbean. As Padilla et al. (2010) suggest further interdisciplinary collaboration and empirical research is needed to examine the linkage between HIV transmission and tourism. More economic accounting of natural disasters and its impact on long-term economic development (Cavall & Noy, 2010) is needed, but environmental accounting is also important for the Caribbean's tourism product, which relies heavily on its natural capital. Governments must seek to creatively incentivize, through its tax regime and legislative agenda to encourage the use of building materials and designs that can withstand the intensifying threats of natural hazards. Such incentive

regimes should be for residential and commercial properties, including those in the hotel sector to reduce vulnerabilities and are adaptive to the vagaries of climate change while promoting sustainable tourism development.

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An Econometric Analysis of Willingness-to-Pay for Evaluating the Economic Value of Bhitarkanika National Park

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Abstract: *This study aims at identifying the important determinants of Willingness to pay (WTP) to measure the recreational values of Bhitarkanika National Park and to use this recreational value to determine the entrance fees on the basis of cost-benefit analysis for viewing Bhitarkanika National Park. For this study Survey was conducted from November, 2010 to February, 2011 in Bhitarkanika National Park, Odisha on a sample of 400 respondents. Contingent Evaluation Method was used to determine the WTP. The paper goes on to discuss some of the policy suggestions for better management and development of BNP.*

Keywords: BNP, contingent evaluation method, willingness to pay

Introduction

The concept of valuation on National Park is one of the most influential and widely adopted ideas. It is an intriguing amalgamation of national pride, preservation of extraordinary natural beauty, and use and enjoyment by a wide range of people. National park benefits society in many ways (William, et al. 2002). Besides their ecological functions, national parks also provide recreational benefits to park visitors and help to earn foreign exchange from international travelers.

Economic value is one of many possible ways to define and measure value. Although other types of value are often important, economic values are useful to consider when making economic choices that involve trade off in allocating resources (Proctor, 1998). Measures of economic value are based on what people want in their preferences. Economists generally assume that individuals, not the government, are the best judges of what they want. Thus, the theory of economic valuation is based on individual preferences and choices. People express their preferences through the choices and trade off. In a market economy, US \$ is a

universally accepted measure of economic value, because the number of US \$ that a person is willing to pay for something often referred to as “willingness to pay.”

The economic valuation plays a key role in the measurement of damages from ecosystem degradation. The need of such estimate can inform and improve environmental policy and management decisions. Hence, the economic valuation is the process of quantifying the economic value of a particular change in the level of goods or services. Many methods have been employed by researchers to measure the value of recreation based on willingness to pay approaches (Frome, 1992). Among the useful techniques, contingent valuation method is used for valuation of the study. The valuation of public goods must cover the whole benefits derived by users because there might be individuals who are willing to pay more for the commodity than the offered price (Proctor 1998).

About Bhitarkanika National Park

Bhitarkanika is one of rich, lush green vibrant eco-system lying in the estuarine region of Brahmani- Baitarani in the North-Eastern corner of Kendrapara district of Odisha. The park encompasses an area of 672 km² of the Bhitarkanika Mangroves, a mangrove swamp which lies in the river delta of the Brahmani, Baitarani, and Dhamra rivers. The national park is surrounded by the Bhitarkanika Wildlife Sanctuary. Gahirmatha Beach lies to the east, and separates the mangroves from the Bay of Bengal. The park is home to the endangered Saltwater Crocodile, White Crocodile, Indian python, King Cobra, black ibis, and many other species of flora and fauna. The national park was created in September 1998 from the core area of the Bhitarkanika Wildlife Sanctuary, which was created in 1975. The sanctuary is the second largest mangrove ecosystem in India.

Mangroves are salt tolerant, complex and dynamic eco-systems that occur in tropical and subtropical inter-tidal regions. The area is intersected by a network of creeks with Bay of Bengal on the East. The alley between the meandering creeks and rivers, houses the second largest viable mangrove eco-system of India. Its 672 km² of mangrove forest and wetland, provides home to well over 215 species of birds including winter migrants from Central-Asia and Europe. Giant salt water crocodiles and a variety of other wildlife inhabit this eco-system which is one of Asia's most spectacular wildlife sanctuaries (Mohanty, 1992).

An area of 145 km² has been notified as Bhitarkanika National Park vide Notification No.19686/F & E of September 16, 1998 of Forests &

Environment Department, Government of Odisha. It has much significance with regard to ecological, geomorphological and biological background which includes mangrove forests, rivers, creeks, estuaries, back water, accreted land and mud flats. Bhitarkanika National Park is the core area of Bhitarkanika Sanctuary (Hejmadi, 1993).

It is a very good place to sight the giant Salt Water Crocodile, some growing to 2.3 mts in length, along with other reptiles like the Water Monitor Lizard and the King Cobra. Spotted deers and Wild boars are abundant in the park and can be spotted at all the major locations. Eight varieties of Kingfishers are found here and can be spotted along the many creeks and river sides within the park. The best time to travel through this creek is early morning or before sunset. Bhitarkanika can be approached from several entry points like Rajnagar, Chandbali, Gupti or Dhamara. Rajnagar is the headquarters of the divisional commissioner administering the sanctuary and is approximately 130 Km. from the State Capital, Bhubaneswar (Kar, & Patnaik, 1998). The road passes via Cuttack, Kendrapara and Pattamundai. Chandbali is 174 km. from Bhubaneswar, and 55 km from Bhadrak on the Kolkata-Chennai Railway line. Gupti, 25 Km. by road from Rajnagar is also a convenient base for visiting the sanctuary. Dhamara (a fishing harbour) is approximately 50 Km. from Basudevapur which is 60 km from Balesore and 35 km from Bhadrak, both districts headquarters. Bhubaneswar is well connected through air and train from Delhi and other metros of India.

Although, there are many more attractions but the revenue earned by the forest department of Odisha is very less. Hence, the study is aimed to recommend timely suggestions in order to propose better facilities as well as to suggest an action plan for conservation of Mangrove forests. The following figure- I and II shows site map of Bhitarkanika National Park and Wildlife reserves at BNP.

Literature Review

A number of studies have been undertaken on valuation of the ecosystem services of national parks across the world and it is imperative to offer an account of the studies so far undertaken. Incidentally there is as such no study so far carried out on the willingness to pay for the Bhitarkanika National park of Odisha. Amongst some of the notable studies carried out include, *Hadker et al. (1997). The study was based upon the survey of the residents of Mumbai and evaluate their willingness to pay for the maintenance and preservation of Borivli National Park.* The findings

Figure-I: Site Map of Bhitarkanika National Park



Figure-II: Animals at BNP



revealed that people are willing to pay for preserving environmental amenities. Isangkura (1998) empirically measures the value of environmental benefits of three recreational areas in Northern Thailand: Doi Inthanon National Park, Doi Suthep and Mae Sa Waterfall. The study recommends that the entrance fee for Doi Inthanon National Park should

be increased from 5 baht per person to 40 baht per person and also entrance fee for Mae Sa Waterfall should be increased from 5 baht per person to 20 baht per person. Belkayali et al. (2010), undertaken another study with the aims of determining the recreational and tourism use value of Göreme Historical National Park. The survey result shows that the willingness to pay value for the entry fee is calculated as \$ 15.00 as compared to \$6.66 determined by the Ministry. In a similar type of study by Herath and Kennedy (2004), estimated the economic value of the oldest Mount Buffalo National Park of Victoria Australia. This study compares both the travel cost and contingent valuation method and concluded that the travel cost method shows the higher consumer surplus than the contingent valuation method. Chutarat (2008), studied for evaluating the economic value of Phu Radueng National Park. As on date Thai visitors to Phu Kradueng National Park were further willing to pay an average of 646.84 baths per head per year.

Determinants of Willingness to Pay

The key determinants of willingness to pay for visitors to national park have been identified in the previous literature. Tourists' WTP is influenced by certain economic characteristics like income, age, perception towards natural beauty, visit characteristics, and travel cost of the visitors. It is important to take into consideration of these determinants before implementing the new entrance fee structure. Income is the important factor which determines the willingness to pay of the visitors. The effect of income on WTP for entry fee into national park has been a debatable issue. Some studies point out that charging an entry fee for natural attractions has small distributional impact on different income groups (Williams, Vogt & Vitterso, 1999).

Among the demographic variables, age plays a vital role to visit a national park (Cottrell, 2003; Weaver, et.al. 1994). Normally, the younger tourists prefer to visit the Natural Park as well as wild life sanctuary. Education creates awareness and allows an individual to know more about the environment (Mok & Armstrong, 1995). Length of stay is one of another crucial variables which affect visitor willingness to pay (Doggart & Doggart, 1996).

Objectives of the Study

- (a) To measure the recreational values of Bhitarkanika National Park and to determine the entrance fees on the basis of cost- benefit analysis.

- (b) To suggest amenities and facilities on the basis of surveyed visitors feedback.

Data Sources and Methodology

This study is based on primary survey, which were collected from the personal interviews conducted the respondents. Field Survey was conducted from November 2010 to February 2011. The primary data consists of visitors' socioeconomic characteristics; visitor's perception and attitude about ecotourism resources, and their WTP to enjoy the ecotourism resources at BNP. In this study a total 550 respondents were interviewed for collection of data. Simple random sample was used for data collection. The interview method used in the survey was face-to face interview. Finally, 400 samples were surveyed due to some unavailability of data. The questionnaire were designed to gather primary information such as socio demographic profile, attitude visitors' willingness to pay and travel cost to BNP. The questionnaires consist of multiple categories questions. This study used contingent valuation method for evaluating the value of Bhitarakanika National Park.

The Contingent Valuation Method

Contingent valuation is a survey-based economic technique for the valuation of non-market resources. While these resources do give people utility, certain aspects of them do not have a market price as they are not directly sold. For example, people receive benefit from a beautiful view of a mountain, but it would be tough to value using price-based models. Contingent valuation surveys used to measure these aspects. Contingent valuation is often referred to as a stated preference model, in contrast to a price-based revealed preference model. Typically the survey asks how much money people would be willing to pay (or willing to accept) to enjoy certain non market price activities. Thus Contingent Valuation Method (CVM) is an economic, non-market based valuation method especially used to infer individual's preferences for public goods. In this study CVM attempts to discover nonmarket values of eco-system services of Bhitarakaniak National Park by asking people directly for their willingness. CVM was first suggested as a method to study the non-marketed public goods by Ciriacy-Wantrup (1947) in order to account the 'extra market benefits' of preventing soil erosion through eliciting ones willingness to pay for these benefits through a survey method. The goal of CVM is to measure the compensating variation or the equivalent variation for the goods in consideration .The measure generally reflects

the consumer surplus. The description and framing of what is to be valued is critical to the reliability of the method. The information a survey provides as well as the order in which questions are asked substantially influences WTP (Pearce and Moran, 1994). CVM involves interviewing a sample of consumers in order to obtain their willingness to pay to have the good, or a minimum compensation sum to go without it, i.e. their willingness to accept or in some cases involving willingness to sell. WTP and WTA may also be estimated for any welfare reduction actions or their loss. Therefore it could be hypothesized that WTP by individuals 'i' (visitors) of the National park (Bhitarkanika) as the site j are affected by a variety of factors, including social and economic specified as follows:

$$WTP_{ij} = f(Y, S, C, L, T) \quad (1)$$

Where, Y = income; S = socio-economic variables (age, sex, marriage); C = cost of visit; L = length of stay; T = times of visit to the BNP

Linear regression will be used to establish the model for the CVM. Costs of visit will depend on the distance traveled and /or the time taken to travel, entry fee and other expenses. This demand functions are applied to simulate a demand curve for recreational use of the park. Visitors are assumed to react to opportunities that have been offered to them by expressing their yield an estimate of consumer surplus.

Bhitarkanika National Park Demand Function

The demand function is to estimated to analysis the relationship between the willingness to pay with the socio-economic variables and then finally to estimate the consumer surplus of the park. The demand function specified as follows:

$$WTP = f(Y_t, A_t, S_t, M_t, T, D, TC_t) \quad (2)$$

Where as, Y = Income of the respondents at time t; A = Age of the respondents at time t; S = Sex of the respondents at time t; M = Marital of the respondents at time t; T = times of the visit to the park; D = Day spent in the park; TC = Travel cost of the respondents at time t.

Results and Interpretations

The preliminary findings and statistics of 400 respondents are presented below:

Table- I: Descriptive Statistics of the Respondents

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.142276	0.344148	-3.319139	0.0010
LNI	0.365834	0.035277	10.37027	0.0000
LNAGE	0.107280	0.051544	2.081311	0.0381
DS	0.082678	0.025842	3.199394	0.0015
GEN	0.062159	0.027952	2.223797	0.0267
MAR	0.074862	0.041110	1.821017	0.0694
LNTC	0.071981	0.029748	2.419723	0.0160
TV	-0.039963	0.021029	-1.900409	0.0581
R-squared	0.406981	Mean dependent var		3.615452
Adjusted R-squared	0.396391	S.D. dependent var		0.347990
S.E. of regression	0.270361	Akaike info criterion		0.241681
Sum squared resid	28.65331	Schwarz criterion		0.321511
Log likelihood	-40.33629	F-statistic		38.43201
Durbin-Watson stat	1.345421	Prob(F-statistic)		0.000000

In the above table mean WTP is Rs.39.65 (40) with respondents ranging from Rs 20 to Rs. 95. The sample had a mean age of 34.21(35) years, with respondents ranging from 16 to 72 years of age. Out of 400 respondents 57% (228) respondents consist of male and 43% (172) respondents are of female. With respect to income, the average income of the respondents is Rs. 22,900 and the income is varying from Rs.7,000 to Rs. 9,0000. In the case of marital status, 82.5% (330) respondents had married; and 17.5% (70) were unmarried. With respect to travel cost (which is including both food and other expenses in the surrounding place) the maximum amount spent by respondents were of Rs 10,000 for visiting BNP, and the lowest amount spent by the respondents was Rs 1000 only. Finally With respect to days spent mean length of stay 1.45 and it ranges from 1 to 4.

This study further records that total willingness to pay was Rs. 15,860 for 400 respondents out of which existing entry fees for 400 respondents was Rs. 8000, so the balance amount Rs. 7, 860 shall be treated consumer surplus for viewing BNP. As a researcher we also argued that for better management and development of BNP we should use consumer surplus money of Rs 7, 860. That is the reason why we suggested that we can fix entry fee Rs. 40 instead of Rs. 20.

Measuring of Open Ended WTP Demand Function

The WTP demand functions were estimated with Ordinary Least square and its results are reported in Table II. Ordinary Least Square (OLS)

method was employed for measuring the recreational value and to determine the entrance fee of the national park. The econometric model used for empirical study for measuring the recreational value of Bhitarkanika National park as:

$$WTP = \beta_0 + \beta_1 INCM_t + \beta_2 AGE + \beta_3 DS + \beta_4 GEN_t + \beta_5 MAR_t + \beta_6 TC_t + \beta_7 TV + \epsilon_t \quad (3)$$

Where, $INCM_t$ = Income of the respondent at time t ; AG_t = Age of the respondent at time t ; DS = Day spent of the respondent; GEN_t = Gender of the respondent at time t ; MAR_t = Marital status of the respondent at time t ; TC_t = Travel cost of the respondent at time t ; TV = Times of visit of the respondent.

The coefficients $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and β_7 show the elasticity coefficient of income, age, day spent, gender, marital status, travel cost and times visit respectively. This study used E-views econometric packages for calculating OLS results. The second part of this paper used E-Views (statistical packages) for calculating logit function. The result of ordinary least square (OLS) is given below in table-II

Table II: Parameter Estimates of the WTP Functions

Dependent Variable: LNWTP

Method: Least square

Date: 02/11/13 Time: 07:20

Sample(adjusted): 1 400

Included observations: 400 after adjusting endpoints

Variables	Number of Respondents	Mean	Std. dev	Minimum	Maximum
Age	400	34.21	10.290	16	72
Income	400	22636	11236.525	7000	90000
Times of Visit	400	1.397	0.652	1	4
WTP	400	39.650	15.543	20	95
Travel Cost	400	4324.210	2329.252	1000	10000
Days Spent	400	1.45	0.031	1	4

In the above Table-II, adjusted R^2 shows 0.396(0.40). This means all above seven factors affects 40% to WTP of BNP. The income variable (INCM) as expected is positively affecting WTP which is highly statistically significant (P Value= 0.000 and t value=10.370). This means WTP is depending upon income of the visitor in other ward when income

will increase WTP will also increase. Travel cost was included for determine the willingness to pay demand function. The travel cost here was included in the entire money spent by the respondents for visiting the BNP Travel Cost (TC) was positively affecting the willingness to pay (WTP) and it is also statistically significant (P Value=0.016 and t value=2.419). This signifies that when visitors are coming with more budget to visit BNP their WTP was recorded more. The age variable that we got as expected was positive and statistically significant (P Value= 0.0381 and t value=2.081). This implies that more aged people WTP was more. The length of stay of the respondents is also another important determinant of willingness to pay. Here we got Days Spent (DS) is positively affecting the WTP and it is also statistically significant (P Value= 0.0015 and t value=3.199). This depicts that who is staying more days at BNP their WTP was more compared to that who were staying less days. Marital status was positively affecting the willingness to pay (WTP) and it is not statistically significant (P Value= 0.06 and t value=1.821). It shows even if married people WTP is more but it is not significant because some unmarried people WTP was also recorded more. Gender is positively affecting the WTP and it is statistically significant (P Value=0.026 and t value=2.223). This means that male WTP was more compared to female. Times visit is negatively affecting the WTP and it is statistically significant (P Value= 0.0581 and t value= -1.900). This signifies that tourist who had visited more times to BNP, their WTP was found low. It was further investigated that visitor having marital status had a positive factor for WTP.

Theoretical Description of Logit Model

Logistic regression (sometimes called the logistic model or logit model) is used for prediction of the probability of occurrence of an event by fitting data to a logit function logistic curve. An explanation of logistic regression begins with an explanation of the logistic function, which, like probabilities, always takes on values between zero and one.

$$f(z) = \frac{e^z}{e^z + 1} = \frac{1}{1 + e^{-z}}$$

The model has an equivalent formulation

$$p_i = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x_{1,i} + \dots + \beta_k x_{k,i})}}.$$

Table-III: Logit Model

Dependent Variable: MAR

Method: ML - Binary Logit

Date: November 2, 2013 Time: 04:46

Sample(adjusted): 1 400

Included observations: 400 after adjusting endpoints
 Convergence achieved after 6 iterations
 Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-11.84724	4.215621	-2.810319	0.0049
LNI	-0.961678	0.461014	-2.086009	0.0370
LNWTP	1.189258	0.632699	1.879658	0.0602
LNAGE	5.260522	0.716670	7.340228	0.0000
LNTC	-0.017819	0.355265	-0.050158	0.9600
DS	0.700431	0.327440	2.139113	0.0324
GEN	0.816396	0.332501	2.455322	0.0141
TV	-0.177198	0.250554	-0.707227	0.4794
Mean dependent var	0.825000	S.D. dependent var		0.380443
S.E. of regression	0.305171	Akaike info criterion		0.681305
Sum squared resid	36.50666	Schwarz criterion		0.761134
Log likelihood	-128.2610	Hannan-Quinn criter.		0.712918
Restr. log likelihood	-185.4906	Avg. log likelihood		-0.320652
LR statistic (7 df)	114.4592	McFadden R-squared		0.308531
Probability(LR stat)	0.000000			
Obs with Dep=0	70	Total obs		400
Obs with Dep=1	330			

In the above Table-III WTP, age, gender and days spent have positive impact on marital status. Further, travel cost, times visit and income have negative impacts on marital status. This means in main regression, marital status has positive impact on WTP because people who are married and spending more days at BNP were willing to pay more compared to unmarried tourists.

In this paper, the nature and scope of tourists' willingness to pay for goods and services at Bhitarkanika National Park were examined as the primary survey was conducted from November 2010 to February 2011. Both the simple regression and logistic regression models were used for analyzing our estimation. The analysis clearly revealed that a majority of the visitors were willing to pay an extra amount for the betterment of the national park. This study recommends that the entrance fee for Bhitarkanika National park be increased from Rs 20 to Rs 40 per person. This would increase park revenue from two lakhs to four lakhs per year. Additional charges can apply by improving the present infrastructure facilities. In addition to establishing new entrance fees, special consideration should be given to low-income visitors. There are some of the policy suggestions in order to develop the National park and the ecosystem services of Bhitarkanika. So that it will attract more tourists from the country and abroad. In view of infrastructural facilities creation BNP authority should stop the speed boat for the conservation of crocodile species. They should stop the diesel boat and use the CNG type

of boat. Instead of using motor cycle, the cycle/Rickshaw should be provided inside the park. Uses of the solar light inside the park should be initiated.

This study recommends that children below 16 years of age and senior citizens be charged half price. School children or University students who visit the park as part of school activities should be exempted from entrance fees. Entrance fee exemption may also be granted during special holidays at half of the charges. Furthermore, certain parts (such as the lower section) might charge a lower entrance fee to facilitate access to low-income families. These provisions may increase the park's revenue, but also will help to develop the ecosystem services as well as provide better management than previously at Bhitarkanika National park.

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Integrated and Participatory Approach to Sustainable Tourism Development: A Conceptual Study

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Abstract: Sustainability and successful stakeholders' participations at a tourist destination have well established concepts in tourism planning and sustainable development debates. Based on the activities performed and host-guest interaction at a given destination to address sustainable tourism development issue, four distinct groups are identified; the tourist, community, market link, and destination's external environment. Forth more, this study was conducted to explore interaction and transitions among its stakeholders at a given destination with a special emphasis on both 'destination resource; as well as 'demand aspects' of tourism for sustainable development of destination area and, to propose a conceptual approach for sustainable tourism development to address the sustainability issues at various tourist destinations. In addition, this study proposes an integrated and participatory framework to address lack of integrated and participatory approach for sustainable development at destination areas. Considered both resource views (supply) as well as demand aspects (tourist), efforts have been made to initiate measures for improving value chain linkages through tourist and community participation and suggest strategies for sustainable tourism development at destination area. A major conclusion is that sustainable tourism development is an extremely difficult task to achieve at a destination without considering and collaboration of its demand issue-tourist factors and destination environment, such as: resources, market links, local community, government organizations and agencies together.

Keywords: Sustainability, sustainable tourism development, stakeholder's participation, community- tourist participation, demand and supply

Introduction

“Sustainability has been widely viewed as holding considerable promise as a vehicle for addressing the problems of negative tourism impacts and maintaining its long-term viability” (Liu, 2003). Bramwell and Lane (1993), argued for Sustainable tourism development; “as a positive approach intended to reduce the tensions and friction created by the complex interactions between the tourism industry, tourists, the

environment and the host communities so that the long-term capacity and quality of both natural and human resources can be maintained". The concept of sustainable development or sustainable tourism development grew out of dissatisfaction and due to failed materialized benefits of development with well-established policies of continuous economic growth, long-run sustainability and unequal distribution of benefits and costs of development (Murphy, 2013; Telfer & Sharpley, 2008; Hardy, Beeton & Pearson, 2002; Bramwell and Lane, 1993). According to Wu (2009), "tourism industry makes up a critical component of local, regional and national economies, contributing significantly to employment creation, GDP growth and foreign exchange earnings". Therefore, in recent past, tourism emerged as potential development option, not only for developing but also for developed countries. Moreover, As one of the largest single sectors of world trade, it is important to understand the demands exerted by the tourism industry on natural resources (Hunter, 2002). On the other hand, Because of the size and nature of the industry, tourism is seen as one of the largest contributors to the negative effects on the environment today at the destination (Simpson, 2008; Puuri et al. 2001).

The United Nation Manila Conference on World Tourism noted that the potential goes beyond just economic consideration. The absolute idea of sustainable development was first underlined by the International Union for the Conservation of Nature and Natural Resources (IUCNNR, 1980). The first declaration Says; "Tourism is considered an activity essential to the life of nations because of its direct effect on social, cultural, educational and economic sectors of national societies and their international relations" (UN, 1981). Later in 1987; In its 'World Conservation Strategy', the Brundtland Report provides its widely cited and accepted definition of sustainable development and the report says that, "Sustainable development is development that meets the needs of present without compromising the ability of future generations to meet their own needs", (World Commission on Environment and Development, 1987).

Cocklin (1995) says that "A common criticism of sustainable tourism development is that there is no consistently agreed upon theoretical framework from which a scientific understanding can be built". Writers and academicians put their efforts to come up with universal principles of sustainable tourism development has come under criticism as understanding. Meyer and Helfman (1993) argued; "Sustainable systems

are not generalized at the global scale, but are adaptable to local conditions". Wu (2009) says that without guidance from theory that is verified through testing, the theoretical framework or model would be inappropriate and would lead to poor planning. Any tourism destination without an adequate plan for development that addresses the economic as well as social and environmental functions of the industry is under-prepared for the impacts of visitors, catastrophic events, and enforcing market forces". Undoubtedly, it is a glance at the other side of the sustainable tourism development discussion or framework, the dimensions that has largely been overlooked are like- Community (Simpson, 2008; Murphy, 2013 & 1985), Market links, and Sustainability (Mowforth & Munt, 2009). Dimensions viz. tourist and external environment; these are assumed as insignificant or irrelevant by many scholars and writers. Furthermore, Butler (1999) argues for the need to ensure that the concept includes and applied to the human environment as well as the physical environment, for sustainable tourism development.

A persistent ignorance of demand side issue, tourist factors: prospects, participation and involvement are core to issues of sustainability. The inseparability aspects of these elements for sustainable and long run planning need involvement of both local community as well as tourists. Most of approaches, however, tend to focus on only one or few aspects of tourism system for overall sustainability. Many studies conducted and several sustainable development modules have been proposed on this issue of tourism industry in order to make it more sustainable. However, without considering demand and supply issues, developing an understanding for interaction within different stakeholders and their possible impacts on the economic-environment-social fabric at destination, the sustainability aspect of the area is questionable. Therefore, an urgent call is the need of hour to understand the complex interactions or exchange between the different dimensions of tourism at destination and propose conceptual framework / approach for sustainable tourism development.

The present study is an attempt to identify stakeholder involvement at tourism destination; develop an understanding for scope and level of interaction among different dimensions in tourism activities and evaluate how they have been included in the tourism literature in relation to sustainable tourism development. The primary objective of this article is to examine and evaluate demand and supply side interaction (Stakeholders) and, to propose an integrated and participatory framework

for sustainable tourism development. Therefore, this work reflects as part of a polemic based reckon on the authors observation and continues research work. Subsequently, a review of the underpinnings of community participation, tourist factors, involvement & active participation of different dimensions for sustainable tourism development, the study considers challenges for sustainable tourism development through participatory approach.

Conceptual Foundation

In literatures, many authors identified tourism industry as one of the largest (2nd) and among fastest growing industries (Telfer & Sharpley, 2008; McMinn, 1997; Hunter, 1995; Miller, 1990), but in recent past the notion of sustainable development has raised common concern for policy makers, academic researchers and industry practitioners” (Hunter, 1995). Extended to that, Liu (2003), argued that Sustainable development is process oriented and associated with managed changes that bring about improvement in conditions for those involved in such development” and he also suggested to consider tourism demand issue for sustainable use of resources and proper resource management at destination level. In this view, tourist initiatives and involvement are critical for any sustainable development approach, particularly in the region that hosts several fragile ecosystems and faces the constant challenge of irresponsible tourist behavior at destination, low participation in tourism planning, development and preserving the economy, ecology and society.

The concept and significance of sustainability aspect of development first comes to public consideration in March 1980, with the publication of the 'World Conservation Strategy' (WCS) (IUCN, 1980). The World Tourism Organization (WTO) in 1998, defines Sustainable tourism development as; “Meeting the needs of present tourists and host regions while protecting and enhancing opportunities for the future” and conceptualize an idea leading to “the management of resources in such a way that stakeholders' economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems” (WTO, 1998) (Cited in UNEP Report, 2010).

Butler (1998), clearly recognized that if sustainability in the sense suggested by the Brundtland commission (WCED, 1987), is to be achieved, “it can be achieved only if all environment and elements are dealt with simultaneously and from an integrated and holistic standpoint

and not on a sectorial basis". "Sustainable tourism tends to be defined as a single rather than a multi sectorial approach, emphasizing growth in order to maintain its viability" (Wall, 1997). "Sustainable tourism in broader terms, transferring the principles of sustainable development into the context of tourism needs" (Hardy & Beeton, 2002). The concept of sustainable tourism debate has expanded to encompass not only environmental aspects but also economic, social, cultural and human issues, such as stakeholder's participation, political power and social equality.

Lu & Nepal (2009), remarked; "An important point about the concept of sustainability is that it is defined, interpreted and implemented differently by individuals, stakeholders and social groups"; it is frequently referred to as in the case of most national parks where the resources are wisely used with minimal wastage. It asks for the resources put into use in a planned manner leading to least wastage. Sustainability in this context means the involvement of the various parts of the community along with the tourists and various market links to be a part of the responsible usage of resources leading to betterment of all the stakeholders in the long run.

Whereas Hunter (2002), restricts the concepts of sustainability within tourist destination as, "there has been no substantive recognition of the wider ecological footprint of tourism activities". Kontogeorgopoulos (2005), looks beyond the destination or resource aspects and states that "due to the cultural, social and political circumstances of southern Thailand sustainable tourism would not have flourished without ownership and control being in the hands of foreign expatriates", known as 'Farangs', *a Thai word for foreigners of European descent*.

Simpson (2008), identified four dimensions as; government, private sector, non-governmental organization and community as critical components of sustainable development, and his work focused on community participation. Murphy (1985, 2013) was concerned about the economic and social benefits of local people and developed in such a manner consistent with society's goals. In view of this, a number of scholars support tourism planning in a sustainable manner (Southgate & Sharpley, 2002; Yuksel, et al., 1999; McCool, 1995; Inskeep, 1991).

Development; "generally viewed as a process that improves people's living conditions" (Bartelmus, 1986). Pearce, Barbier & Markandya, (1990) viewed as; "It involves broader concerns about the quality of life, such as life expectancy, educational attainment, access to basic freedoms,

nutritional status and common welfare”. Accordingly, the definition of development; “it has been broadened to encompass a continuous and global process of human development guided by the principle of self-reliance, which embrace economic, socio-cultural, environment as well as ethical considerations” (Sharply, 2002; Wall, 1997). Farrel (1992), also consider sustainable development as the need to asses' equilibrium in the development system (tourism system) among economy, environment, culture and society. Woodley (1992) observed “sustainable development means long term economic sustainability within a framework of long term ecological sustainability plus the issue of equity”. Coccossis (1996), suggested that sustainable development for tourism is being understood variously based on different perspectives. It can be regarded as “economic sustainability of tourism” in which basic goal is the viability of tourist activity. Here, “the emphasis placed on the need to achieve a balance between commercial and environmental interests for the sake of ensuring the perpetuation of tourism itself” (Butler, 1993). “Butler definition of sustainable tourism development appears to be a substantial contribution to unify the concept of sustainable tourism development with its parental terms. (Peljan, 2011).

Sustainable Tourism Development: An Integrated and Participatory Approach

Sustainability or Sustainable tourism is a uppermost focus in the discussion on environmentally, integrated and long-run tourism development, but on the basis of available research findings sustainability or sustainable tourism development is a complex concept and crucial to achieve, and one that requires more critical, integrated, inclusive and comprehensive analysis (Mowforth & Munt, 2009; Hunter, 2002; Johnson, 2002; Sharpley, 2000; Butler, 1999). A on date tourism is considered as means of development as well as destroyer simultaneously with. It is not only known for providing growth opportunity and economic benefits but also having some cost of development; it destroys culture, undermine social norms and economics, degrading social structures, stripping communities, contaminating local environment and many more (Murphy, 2013; Simpson, 2008; Telfer & Sharpley, 2008). One common goal of sustainable tourism is having stakeholder support for tourism development (Wilson, et al., 2001). Integrated and Sustainable development approach is of utmost significance for the future existence of tourism destinations area. Most of the studies are based on Destination interpretation (Murphy, 2013; Mowforth & Munt, 2009; Simpson, 2008; Harris & Leiper, 1995) and less contribution is made on integrated

development or 'demand aspect of tourist' with a participatory approach for sustainable tourism development. Butler (1999), says sustainable development is a core concept and ideal situation for any sustainable development approach; which is recognized as goal for all kinds of tourism developments that make a notable contribution to or at least, do not contradict the maintenance of the principles of development in an indefinite time without compromising the ability of future generations to satisfy their own needs and desires (Tosus, 2001).

There are fundamental differences between Integrated and Participatory approach for sustainable tourism development and other initiatives for tourism development. Integrated and participatory development could be understood through community participation and involvement in tourism activities to increase their stakes and benefits from tourism development. This approach may or may not find a foundations and characteristics of other types of tourism initiatives, such as Community tourism development (CTD) (Murphy, 2013), Pro-Poor Tourism (PPT) (Boyd, & Goodwin, 2000), Community Based Tourism Initiative (CBTI) (Simpson, 2008), Ecotourism (Page & Dowling, 2002; Goodwin, 1996) and Competitive Advantage (Porter, 1985) but as discussed, the approach; aims and objectives lie in to provide the end result for all inclusive participation approach and integrated development towards the common goal of sustainable development at the given destination. The approach focuses on inclusive participation, involvement, delivering livelihood and other benefits as a result of a tourism enterprise for community by active participation and creating value for the tourist through resource sustainability and adding value for tourist prospective. For example, this approach is significantly different from CBTI in many ways. This framework is not exclusive and does not have a limited scope (i.e. community participation or economic sustainability, etc.); rather than this approach is concerned with all stakeholders participation, such as: tourist, community, market links and destination's external environments (including, Government policy, Business environment, NGO's and other agencies participating in tourism at destination) for the common goal of sustainable development of identified destination area.

STD Framework and Role of Stackholders

Sustainable Tourism Development (STD) approach has four key dimensions; viz. tourist, community participation, market links and external environment. Tourist by enhanced value chain system is the one



Fig. 1: Sustainable Tourism Development: An Integrated and Participatory Approach.

of the most important and crucial aspects of framework that create synergy among different partners. Second, Community or community participation in tourism activities is defining principle of tourism development in order to attained sustainability. Third, Market links, which includes all intermediaries and marketing channels existing in tourism system, and it includes external environment and support system such as, Government, Government agencies and research organizations. Sustainable tourism development, directly linked with multi-stakeholders of tourism development process; viz. community, tourist, market links, external support environment.

Tourists' Satisfaction

'Tourist' is the one of the key aspects of STD framework; tourists' inflow is considered as demand for the tourist destination. Tourism or demand created by tourist is the one of the most important, critical and dynamic aspects of tourism system, which drives tourism business and determine nature, scope and range of tourism facilities at destination. The absence of research and discussion on the demand aspect of tourism and without considering tourist as a crucial factor for sustainable development process, any framework or approach for sustainable development in destination area is meaningless. For example, a tourist's preferences, needs, desires, motivation etc. are based on his personal trait, income, social status, awareness, tradition and many other factors (motivational

theory). It decides types and nature of tourist activities at the destination and, decides nature, scope and range of activities performed and services offered by market links, which connect a destination to their prospective consumer (tourist). Being a core component, tourists has direct relationship with other factors of tourism phenomenon, such as development process and determine scope of relationship with other components, like- local community, destination resources, market links, support environment- Government and policy etc.

Tourists not only interact and link with every aspect of tourism system but also directly consume goods or services produced by tourism system. Tourists do decide the nature of tourism development at destination, scope of local community participation and activity, way of interaction with other major components and decide level and nature of sustainability. Tourists not only create demand, actively participate in tourism activities and generate benefits for destination; but also control nature and supply of resources through cost and benefit matrix. They are the drivers of tourism system at destination and they also play a vital role in community and sustainable tourism development.

Community Participation

Community-based tourism is acquiring reputation around the world as one of the best option for sustainable tourism development approach is to introduce an alternative to mass tourism. It not only helps to maximize opportunities for local community, develops plans for the participation of new actors, strategies for the involvement of civil corporations in the development process but also support sustainability argument. The Rio Summit (1992) recognized that, the tourism industry could contribute towards development of the community (United Nations, 1992). Identification and expansion of sustainability issue was taken up by a number of organizations including, UNDP, UNWTO, The Eco-Tourism Society, Fair Trade in Tourism South Africa, and by researchers and commentators (Murphy, 2013; Simpson, 2008; Singh, Timothy, & Dowling, 2003; Scheyvens, 2002; Sharpley & Telfer, 2002; Ashley & Jones, 2001; Ashley, 2000; Shah & Gupta, 2000; Mowforth & Munt, 1998). Nevertheless, surprisingly half of the total international arrivals are still received by just ten principally developed' nations (Telfer & Sharpley, 2008). on the other hand, tourism linked to community's inherent cultural and natural resources is one of the recurrent factors in fostering the development of such communities. Local participation in a

tourism initiative is a precondition for benefits reaching communities, local employment and other benefits are at times secured at the expense of local initiation and control (Li, 2006; Ahmad, 2001; Dwyer & Edwards, 2000; Nelson, 2000) (Cited: in Simpson, 2008). For example, at the destination; on one hand community participation in tourism activity not only insures 'communities' welfare through creating employment, socio-economic benefits and helps in poverty reduction, but also capture environmental, cultural and ethical sustainability issues at the destination. Because of this, it provides opportunity for both local community and tourist to interact through market links or tourist supply chain with information flow thus; they develop synergy between them to produce additional values for tourist by community initiatives & participation.

It is important to highlight the impact of community participation in tourism decision process and its role for community, especially for women and young people as crucial actors in the planning and development of tourism activities, and in the management of prospective businesses. Development of tourism would mean the creation of resources (such as health services, education and infrastructure) for the community itself, as tourism requires a slow process of community building, particularly when conventional stakeholders do not view tourism as a productive activity. Tourism phenomenon is not just an economic way of life, but also a social force. Such a social force requires a social participation of the whole community without remaining ignorant to the nature of community planning.

Market Links

Market links includes all inward and outward intermediaries and marketing channels existing in tourism system, such as; travel agents, tour operators, airlines, hotels and marketing organizations and connect destination resources (supply) to tourist generating regions (demand) and work as strong network from suppliers to consumers. This way tourism market-links play a very sophisticated and critical role in tourism phenomena. Market-links create 'value chain' (Porter, 1985) between tourist and destination area, which can simply be understood in tourism prospective as tourist value chain is a connected string of steps taken by groups of participants (tour operators / travel agents / marketers etc.), and other players or participants of tourism market working together to satisfy market demands (tourist) with a particular product / services or group of

products.

The private sector is more reactive to the market than any other stakeholder to recognize the issues of sustainability, and to recognize the importance of the community as a stakeholder in the paradigm of successful tourism (UNWTO, 2005; Scheyvens, 2002; Swarbrooke, 1999). However, the support and cooperation of the local community is frequently integral to those objectives and the path to achieve commercial and economic goals may often involve the preservation of essential natural assets, fundamental to the tourism product, and the maintenance of good relations with communities adjacent to or affected by the tourism initiative (Hawkins & Mann, 2007; Beeton, 2006; Roe, Goodwin & Ashley, 2002; Wearing & MacDonald, 2002) (Cited: in Simpson, 2008).

Tourism supply chains or market links involve many components, not just accommodation, transport, tour excursions, and travel services, but also bars and restaurants, handicrafts, food production, waste disposal, and the infrastructure that support tourism in destinations (Swain & Mishra, 2012). Successful implementation and management of proposed STD approach will deliver sustainability performance and financial performance together, by working to improve the business efficiency and operation of each supplier in the tourism supply chain. In Tourism business; tour operators have enormous influence over activities throughout the business and supply chain, because they directly influence the volume of tourism. Tour operators can use this approach to promote general improvements in sustainability performance as part of good commercial practice. Operator thus, should note that examples of good practices can be replicated at varied degrees by others across geographies. Destination sustainability efforts will need for wider stakeholder partnerships, time and vision to be implemented.

External Environment

Destination's external environment at destination area generally not involves market transitions due to its very specific nature, scope and roles for the tourism system. Local Government and policymaking bodies at destination are not only part of tourism system but also involved in the development of tourism market and provide necessary policy support, services and operational guidelines. Through specific policy implementations, it could provide an opportunity for local community to participate in the tourism system.

Government, through policy measures not only enhance tourist value

chain and participation of local community in tourism activities but provides an opportunity for tourist to be involved in activities at destination and work for sustainable tourism development; which is one of the core objectives of STD framework. It integrates and involves all participants; tourist, community, tourist' market-links or supply mechanism towards common goal of sustainable tourism development. STD Framework has multi-aspects and relationship within their stakeholders and has direct association with 'tourist', one of the most dynamic and vital components of tourism system, through active community participation and responsible tourism approach. Tourism system can't sustain in isolation or without its 'external environment' support and participation.

Conclusion

The sustainable tourism development approaches initiate stakeholders for the better livelihood and economic, social and environmental benefits. Both, resource based views and demand issues are to be considered and explored as a foundation for examining the sustainability issue in tourism industry in a holistic manner. Based on existing literatures on the subject this study proposed an integrated and participatory approach for tourism planning and development and to guide sustainable tourism development at destination area. For this study, relationships among key dimensions of STD approach; tourists, community, market links and destinations external environments were investigated based on different level of cooperation, coordination and participation for tourism and noticed that; participation in tourism industry by different stakeholders varies with differing groups' power, objectives, and expectations from tourism activities and development at the given destination and without addressing and considering each stakeholder interest with tourism development in the given area. This study extends the scope of sustainable tourism development approach with addressing tourist aspects in tourism research by focusing on the tourism industry from the systematic perspective of integrated participatory and sustainability approach. The proposed STD framework may support destination's planners to increase business benefits by adopting good practices for sustainable tourism development.

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Tourists' Perception Towards Environmental Friendly Accommodation Units in Binsar Wildlife Sanctuary of Kumaon Himalaya, India

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Abstract: Uttarakhand, a destination known for pilgrimages since centuries, has bestowed with some of the best wildlife tourism destinations like Binsar Wildlife Sanctuary located in Almora district. The destination rich in flora and fauna are now turned into protected areas so as to preserve the natural habitats and surroundings. The objectives of this study were to have an idea on the level of environmental sensitization amongst the tourists visiting these protected areas along with the level of awareness about green accommodation units and their expectations from such units. The results of the study conducted over sixty tourists visited the study area showed that a wildlife tourist expects some or other forms of 'Green' initiatives or practices in accommodation unit. The green traits preferred by tourists include placing of garbage bins, using energy saving lighting systems, placing refillable soap dispensers, linen reuse programmes, waste management techniques, etc. along with an effective green purchasing policy. It was also observed that the future lies with the hotel properties opting for implementation of 'Green Practices' as the environmentally aware guests visiting a wildlife sanctuary are more inclined towards the units playing an effective role in handling environmental issues.

Keywords: Accommodation, wildlife sanctuary, green practices.

Introduction

Binsar wildlife sanctuary is located amidst virgin wilderness and is surrounded by oak (*Quercus leucotriochophora*) and rhododendron (*Rhododendron arboretum*) forests. The sanctuary, established in the year 1988 and spread across 45.5 sq. kms, lies at varying altitudes ranging from 900mts to 2500mts. The sanctuary is located at a distance of 157 km from the nearest airport at Pantnagar, 120 km from Kathgodam and 304 km from National Capital of India, New Delhi. The highest point of the sanctuary offers a magnificent view of 300 km stretch of snow clad Himalayas covering Kedarnath, Shivling, Trishul and Nandadevi

mountain peaks. This is the only wildlife sanctuary in the hills of Kumaon Himalayas which is accessible round the year as other sanctuaries remain close during winter season due to heavy snowfall.



Figure 1: A view of Binsar Wildlife Sanctuary

On an average, Binsar receives around 27000 visitors every year including a good percentage of foreign tourists. Binsar was the summer capital of Chand Kings who ruled Kumaon Himalayas from 11th century to 18th century AD. This wildlife sanctuary was established to conserve and protect the shrinking broad leaf oak (*Quercus leucotriochophora*) forests of the central Himalayas. During summer time, it receives around 200 bird species including great tits (*Parus cinereus*), fork tail (*Enicurus maculatus*), black birds (*Turdus merula*), parakeets (*Psittacula alexandri*), laughing thrush (*Garrulax albogularis*), magpies (*Urocissa flavirostris*), monal (*Lophophorus impejanus*), eagles (*Ictinaetus malaiensis*), wood peckers (*Dendrocopos himalayensis*) and Kalij pheasant (*Lophura leucomelana*) besides known for wildlife species including. Leopard (*Panthera pardus*), goral (*Nemorhaedus goral*), chital (*Axis axis*), musk deer (*Moschus chrysogaster*), jungle cat (*Felis chaus*), black bear (*Ursus thibetanus*), pine marten (*Martes flavigula*), fox (*Vulpes vulpes*), langur (*Presbytis entellus*), monkey (*Macaca mulatta*), porcupine (*Hystrix brachyuran*), flying squirrel (*Petaurista petaurista*) and barking deer (*Muntiacus muntjak*).

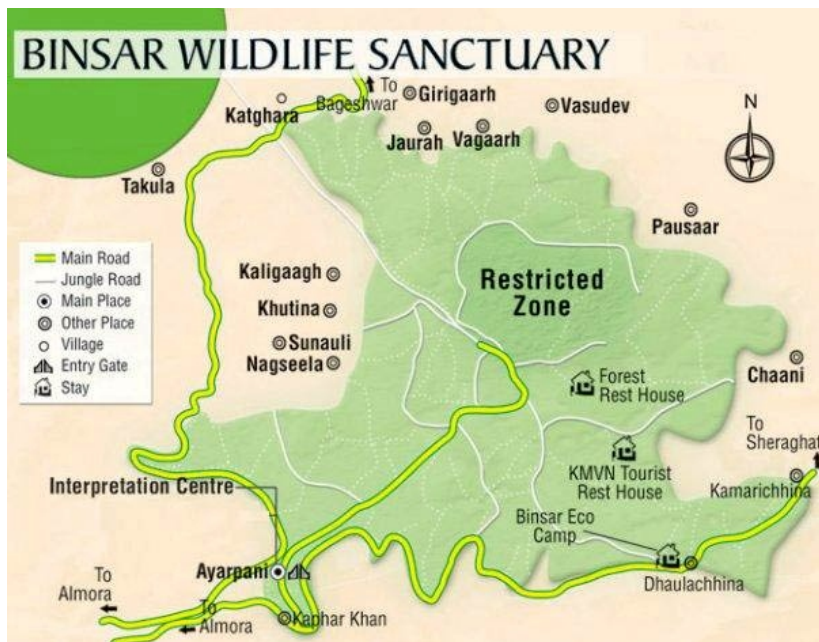


Figure 2: Physical set-up of Binsar Wildlife Sanctuary

The onset of 21st century A.D. saw the advent of a new hilly state which got separated from the state of Uttar Pradesh and was named as Uttaranchal before being renamed as Uttarakhand. This small hilly state was mainly known for its pilgrimage places spread all across the State apart from some of the most beautiful recreational tourist destinations. In the recent past, the countries all around the world focused on the rapid growth and focused on infrastructural development for paving the way for industries and expansion of their markets. But soon realizing what development have done to the earth, the United Nations came to the front and during the UN Conference on Environment and Development, also known as Earth Summit in Rio de Janeiro of Brazil, a program (Agenda 21) was adopted relating to sustainable development (UN, 1993; UNEP 2010). This thought of sustainable development lead the tourism and hospitality industry to opt for 'green practices', 'green washing', 'green purchasing', 'green behaviour', 'green consumer', and so on. As 'green' becomes the present day trend, many hotels across the world have started becoming 'green'. A perceptible section of the society has started feeling itself to be more responsible towards the environment than many of their counterparts and hence, they try to do the best they can do for the environment directly or indirectly. It is a well known fact that cost benefits can be achieved by operating a more “environmentally friendly”

hotel (Butler, 2008; DOE 1994) but most of the consumers using hotel services in India are not willing to pay extra for “environmentally friendly” services but are conscious about environmental practices and would prefer to use lodging that follows “green practices” without paying extra (Manaktola & Jauhri, 2007). Traditionally, India has sought to protect its biodiversity through a Protected Area Network (PAN) consisting of many protected areas, including more than 90 National Parks and over 400 Wildlife Sanctuaries spread over 4.7% India's of the geographical area. This accounts for the immense opportunities for wildlife tourism in India. Ecotourism development has entered an exciting phase in North India. The declaration of several wildlife areas and national parks have encouraged the growth of the wildlife resources. Further, to promote tourism in these controlled areas, tourists are allowed to access these areas with certain guidelines so that the tourism can be developed in a sustainable manner. This precautionary step has lead to the development of environment friendly accommodation in and around such designated areas. With the increasing number of more eco-sensitive guests, it becomes imperative for the local accommodation unit operators to share the common goal and work in a participatory mode. The hotel industry, which plays a significant role in tourism business may not be the primary one that creates substantial environmental pollution and consumes significant amount of global resources; however because of its primary purposes of providing comfortable services/supplies (hot water, food, drinks, linens, towels, lighting, air conditioning, limousines, water, swimming pools), hotels clearly consume gross amounts of water, energy, non-recyclable, goods, and natural resources, thus directly or indirectly harming the environment (Han et al., 2010). As been noted by researchers in recent past, tourist expects that the hotel industry may pay attention on environmental issues operate it sustainably (Millar and Baloglu, 2008). Mindful of these concerns, hoteliers are recognizing the green shifts in consumer behaviours and the importance of promoting environmentally responsible products/services, proactive management and are implementing environmentally conscious practices to improve their competitiveness. As environmental concerns about tourism impacts have increased, the tourist accommodation sector has recognized the need to improve its sustainable management and operation (Lee & Moscardo, 2005). Nowadays, as more environmental rules/regulation appear and environmental awareness increases, tourists are increasingly searching eco-friendly hotels over conventional hotels. Consequently, many hotels

are beginning to implement various innovative practices to increase the “greenness” of their operations (Dief & Font, 2010; Manaktola & Jauhari, 2007). The term “green” refers to actions that reduce the impact on the environment, such as eco-purchasing or recycling (Han et al., 2010). Uttarakhand, being a mountainous state and located in the young and fragile Himalayas, needs to be more concerned towards the environment and hence the phased and sustainable development of tourism in the state is the only key to its success. There are about six hotels located inside the sanctuary and another five are located in its surroundings. The data analyzed in the present research work reveals that accommodation should adopt the 'Green Practices' runners and it includes use of renewable energy resources, rainwater harvesting, use of energy efficient lighting and purchase of environment friendly products. The numerous factors present in the mind of a pro-environment traveler were also studied which might influence the decision of a prospective customer while choosing an accommodation unit.



Figure 3: A view of an accommodation unit bordering Binsar Wildlife Sanctuary

Literature Review

A number of references indicate the benefits of staying in green hotels (Miller & Bolagu 2008). Hotels prefer to position itself as a “green hotel” as it can facilitate a hotel to get through trade barriers (Post & Altma, 1994). A good number of tourists were found to be demanding for

environment friendly services and expressing a preference for environmental products and services (Schubert et al., 2010). Kasim (2004) and Robinot & Giannelloni (2010) observed that environment associated traits of a hotel are fundamental part of hotel services. There have been a good number of other studies conducted on tourist's preferences towards green products (Gustin & Weaver, 1996; Roberts, 1996; Mainieri et al., 1997; Straughan & Roberts, 1999; Clark, Kotchen, & Moore, 2003; Manaktola & Jauhari, 2007; Dalton, Lockington, & Baldock, 2008; Goldstein, Cialdini, & Griskevicius, 2008; Han et al., 2010; Millar & Baloglu, 2011; Gao & Mattlia, 2014).

Many studies conducted in the past reveal that key green management practices exist in the hotel industry (Kotler, Bowen & Makens, 1999; Middleton & Hawkins, 1998).

to examine guest's intent to stay in "green" hotels found that 73 percent of respondents considered themselves environmentally minded consumers, while 71 percent desired to stay in a hotel that implemented environmental strategies (Gustin & Weaver, 1994). The major reason for a hotel to "go green" was to save money by reducing waste and energy usage. However, since a growing number of guests are now willing to opt for green hotels, green management has become directly associated with product quality (Enz & Siguaw, 1999), customer satisfaction, increased demand (Manaktola & Jauhari, 2007), and the willingness to pay a premium for green products (Laroche, Bergeron & Barbaro Forleo, 2001). According to Foster et al. (2000), the hospitality and tourism industry is under pressure to become more environmentally friendly because of consumer demand; increasing environmental regulations; managerial concern with ethics; customer satisfaction; maintenance issues related to the physical facilities. Environmental Marketing made by the hotels also plays a major role in the mindset of the tourists while selecting an accommodation unit. Environmental marketing, more popularly known as green marketing or sustainable marketing can be defined as the effort by a company to design, promote, price and distribute products in a manner which promotes environmental protection (Polonsky, 2011). Environmentally friendly products need to attain consumer acceptance on key attributes such as functional performance, quality, convenience and price (Ottman, 1995; Schlegelmilch, Bohlen & Diamantopoulos, 1996; Wong, Turner, & Stoneman, 1996; Roy, 1999).

Hotel selection and attributes have been extensively researched through variety of methods (Dolnicar, 2002, Callan & Bowman, 2000;

Cobanoglu, Corbaci, Moreo, & Ekinci, 2003; Lockyer, 2005), determining attributes (Shanahan & Hyman, 2006) and how attributes affect customer satisfaction (Gunderson, Heide & Olsson, 1996). Research in the last decade (Lee, 2009; Rahbar & Wahid, 2011; Lee, 2008; D Souza, 2004) has further pointed out that purchasers of goods and services are aware and are willing to pay more to “go green”. Eco-friendly practices also bring various operational benefits, such as reducing energy consumption and operational costs, gaining a competitive edge, and enhancing the hotel's reputation (Enz & Siguaw, 1999; Penny, 2007). Hence, green initiatives are growing forces in the highly competitive hotel industry (Manaktola & Jauhari, 2007; Han et al., 2010). The challenge for green hoteliers is ensuring that these green initiatives meet consumers' expectations (Chong and Verma, 2013; Lita et al., 2014). Nevertheless not much research on these lines has been undertaken in developing countries like India (Bhattacharya, 2011).

3. Aims and Objectives

- (a) To study the level of environmental sensitization among tourists visiting the study area.
- (b) To study the level of awareness and perceived benefits of environmental friendly/green accommodation units among tourists visiting wildlife sanctuaries.
- (c) To identify the expectations of tourists towards the green practices adopted by the accommodation units.

4. Research Methodology

The present study is aimed at potential tourists identifying accommodation during their stay on the basis of their environmental attributes. The sample population for this study was composed of tourists who visited the study area from October to November, 2012. The sampling method used was random sampling and the sample size taken into account was of 60 respondents. The instrument of this study was a self-administered survey questionnaire comprised of 27 questions and were distributed under three heads including elements of Environmental Sensitization, Hotel's Contribution towards Environment and Benefits, Prospects and Potential of Green Accommodation Units. Respondents were asked to rate the importance of these identified variables on a 5 point Likert scale ('5' strongly agree to '1' strongly disagree). Apart from this, eight questions were asked in the last section in order to know the respondent's demographical characteristics. Variables of the study were

finalized on the basis of the number of similar research studies conducted across several tourist destinations (Ottman, 1994; Gustin & Weaver, 1996; Laroche et al., 2001; Manaktola & Jauhri, 2007; Lee et al., 2010). Pilot study was further carried out to ensure reliability and validity of the instruments and the data to be collected. In order to ensure the validity, the initial questionnaire was given to hospitality experts and fellow faculty members to judge its content validity. The common measure of reliability was the Cronbach's alpha and the usual criterion was a Cronbach's alpha coefficient of 0.70. A Cronbach's alpha of 0.72 was found for the study, indicating that the instrument was reliable with a high degree of internal consistency.

Data thus received was systematically arranged, tabulated and analyzed. Analysis of data was performed using SPSS version 21. The data for each of the sub-group were factor analyzed using Principal Component Analysis, with the objective of identifying the major factors in the sub-group which turns out to be significant. The related variables were factor analyzed for their importance using the weighted mean value and standard deviation. It is generally considered that a factorable matrix should be inclusive of various sizable correlations. Hence, to examine partial correlations between various variables, Kaiser-Meyer-Olkin Measure of Sampling (KMO) was used which is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. A score of around 0.60 in sampling adequacy is considered mediocre (Yamaguchi, 2008). Bartlett's Test of Sphericity is likely to be significant with samples of substantial size even if correlations were very low and hence it was also tested on the recorded data. The data was further analyzed for adequacy and for extraction and number of factors. First, the number of factors were estimated and obtained from the sizes of the Eigen values that was reported while running principal factor extraction. Once the factors were determined by these criteria, the rotated loading matrix was looked upon to determine the number of variables that load on each factor by the means of Varimax.

Results and Interpretations

Demographic Details

The demographic characteristics of respondents shown in the table 1 reveals that 33% of the respondents were comparatively young falling under the age group of 21 to 30 years followed by 25% belonging to the age group of 31 to 40 years. Male outnumbered the Female with 57%

compared to 43%. Out of the entire sample, 58% of the respondents were married and 42% were unmarried. The area was frequented by Hindu tourists having a major chunk of 68%. Most of the tourists visiting the area were from Uttar Pradesh, Delhi NCR, Uttarakhand, Punjab and Haryana with a share of 28.3%, 26.7%, 21.7%, 16.7% and 6.7% respectively. 60% of the total respondents were having a qualification of Bachelors and above and 43% of the respondents belonged to the salaried class. Again, 43% tourists were reported to be having an annual income between INR 0.5 million to 0.75 million.

Table I: Demographic Profile of the respondents

Age	Frequency	Percent	Qualifications	Frequency	Percent
21-30	20	33%	Non Metric	3	5%
31-40	15	25%	High School	4	7%
41-50	10	17%	Intermediate	17	28%
51-60	8	13%	Graduate	19	32%
60 and above	7	12%	Post Graduate & above	17	28%
Gender	Frequency	Percent	Marital Status	Frequency	Percent
Male	34	57%	Married	116	58 %
Female	26	43%	Unmarried	84	42 %
			Others	2	3%
Religion	Frequency	Percent	Occupation	Frequency	Percent
Hindu	41	68%	Student	16	27%
Muslim	8	13%	Salaried	26	43%
Sikh	3	5%	Housewife	11	18%
Christian	8	13%	Businessman	7	12%
Income	Frequency	Percent	Location	Frequency	Percent
< 2.5 lacs	8	13%	Delhi NCR	16	26.7%
2.5 - 5.0 lacs	15	25%	Uttarakhand	13	21.7%
5.0 - 7.5 lacs	26	43%	Uttar Pradesh	17	28.3%
7.5 - 10.0 lacs	6	10%	Punjab	10	16.7%
> 10.0 lacs	5	8%	Haryana	4	6.7%
			Numbers of Respondents	60	100 %

Elements of Environmental Sensitization

The six awareness and sensitization related variables were analyzed for their importance. The analysis reveals that all the six variables are important and plays an important role in development of better and environment friendly infrastructure. The weighted mean value (WMV) and scale of importance is given below

Table II: Awareness and environmental sensitization related variables

Sl. No.	Variable	WMV	Std. Dev.	Scale of Importance
A1.	The general public around is very much conscious towards the environment.	3.63	0.758	Important
A2.	Voluntary initiatives are the best way to encourage Green Practices in tourism and hospitality industry.	3.98	0.833	Important
A3.	Every accommodation business has a responsibility to contribute towards the Green Accommodation development.	3.95	0.746	Important
A4.	More government regulation is required to introduce and control standards for sustainable business practices.	4.12	0.825	Important
A5.	Accommodation businesses would be more likely to take action on sustainability if they contributed directly to policy making in this area.	4.33	0.729	Important
A6.	The public participation will be responsible for sustainable tourism development.	4.00	0.781	Important

In order to identify the Environment Sensitization to understand the awareness regarding environment, Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were used to examine the appropriateness of factor. KMO value was calculated with the help of SPSS 21 and found to be 0.597 which indicates that data is adequate to carry out factor analysis.

Table III: Rotated Component Matrix for Environmental Sensitization

Variable	Component	
	1	2
VAR00001		
VAR00002	.797	
VAR00003		.720
VAR00004		.605
VAR00005	.677	
VAR00006	.845	

A scrutiny of factor matrix revealed that factor loadings were very high in case of factor 1 (four out of six variables have a factor loading of >0.5). It reveals that majority of the variables are clubbed into one factor. But, on the basis of theory (Courtney, 2013), it can be inferred that there must be more than one factor. Therefore, Varimax Rotation was done to obtain factors that can be named and interpreted. On the basis of Varimax Rotation with Kaiser Normalisation, 2 factors have emerged. Each factor is constituted of all those variables that have factor loadings greater than or equal to 0.5.

Identification of Factors related to environmental sensitization

A2, A5, and A6 constituted the first factor and researchers conceptualized this factor as “Participation” which accounted for 36.855% of the variance. A3 and A4 constituted the second factor and this was conceptualized as “Awareness” which accounted for 28.130% of variance and together they explained for 64.985% of variance. The identified factors with the associated variable and factor loadings are given below:

Table - IV: Identified factors with their associated variables related to Environmental Sensitization

<i>Factor Name</i>		<i>Variables</i>	<i>Factor Loadings</i>		
Participation	A2	Promoter's responsibility	0.797		
	A5	Promoters Participation in Policy Making	0.677		
	A6	Public participation	0.845		
Awareness	A3	Voluntary Initiatives	0.720		
	A4	Government Regulations	0.605		
<i>Sl. No.</i>	<i>Variable</i>	<i>WMV</i>	<i>Std. Dev</i>	<i>Scale of Importance</i>	
B1.	Use of renewable energy resources (solar / wind) should be optimized in available accommodation units.	4.28	0.783	Important	
B2.	Waste Management (waste water / Solid Waste) plays an integral role in the Eco friendly Accommodation Management.	4.17	0.526	Important	
B3.	Adequate measures should be taken by hotels to keep a check on polluted air emissions.	3.32	0.676	Important	
B4.	Use of Rain Water and energy efficient appliances will play a vital role in establishing itself as a contributor in Sustainable development.	3.27	1.023	Important	
B5.	Eco-friendly units should also use home / locally grown fruits and vegetables in their menu.	3.95	0.852	Important	
B6.	Environment friendly products should be purchased by the accommodation units (e.g. ecological detergents, unbleached fabrics, etc.).	3.62	1.106	Important	
B7.	Accommodation Units should encourage eco-friendly behaviour of tourists through awareness raising and information	4.38	0.555	Important	
B8.	Hotels should have energy efficient light bulbs in Public Areas and Bedrooms	4.28	0.640	Important	
B9.	Hotels should have Low Flow / Bacteria friendly toilets.	4.28	0.783	Important	
B10.	Hotels should have low flow sinks in guest rooms and other public washrooms.	4.27	0.841	Important	
B11.	Hotels should have low flow shower heads.	3.95	0.746	Important	
B12.	Hotels should have refillable soap / shampoo dispensers.	4.17	0.526	Important	
B13.	Hotels should place Recycling Bins for easy segregation of waste	3.98	0.813	Important	

Elements related to Hotel's Contribution towards Environment

In order to identify the Environment Sensitization to understand the awareness regarding environment, Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were used to examine the appropriateness of factor. KMO value was calculated with the help of SPSS 21 and found to be 0.646 which indicates that data is adequate to carry out factor analysis.

All thirteen variables related to the contribution of the hotel industry towards the environment were analyzed for their importance. The weighted mean value and scale of importance are given below:

Table V: Variables related to Hotel's contribution towards environment

Variable	Component			
	1	2	3	4
VAR00001	.776			
VAR00002				
VAR00003	.649			
VAR00004	.813			
VAR00005	.738			
VAR00006				.823
VAR00007		.703		
VAR00008		.701		
VAR00009		.911		
VAR00010		.686		
VAR00011				.765
VAR00012			.794	
VAR00013			.619	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

A scrutiny of factor matrix revealed that Factor loadings were very high in case of factor 1 (ten out of thirteen variables have factor loading of >0.5). But, on the basis of theory (Courtney, 2013), one can infer that there must be more than one factor. Therefore, Varimax Rotation was done to obtain factors that can be named and interpreted. On the basis of Varimax Rotation with Kaiser Normalisation, four factors have emerged. Each factor was constituted of all those variables that have factor loadings greater than or equal to 0.5.

Identification of factors related to Hotel's Contribution towards Environment

B1, B3, B4 and B5 constituted the first factor and the researcher conceptualized this factor as “Green Practices” which accounted for 21.606% of variance; B7, B8, B9 and B10 constituted the second factor and this was conceptualized as “Control Measures” which accounted for 20.894% of variance; B12 and B13 constituted the third factor and this was conceptualized as “Reuse & Recycle” factor which accounted for 11.485% of variance and B6 and B11 constituted the fourth factor, conceptualized as “Waste Management” which accounted for 10.752% of variance and all four factors clubbed together explained 64.737% of variance. The identified factors with the associated variable and factor loadings are presented in table VI.

Table VI: Identified factors with their associated variables related to Hotel's contribution towards Environment

<i>Factor Name</i>	<i>Variables</i>	<i>Factor Loadings</i>
Green Practices	B1 Use of Renewable Energy Resources	0.776
	B4 Use of Rain water harvesting and energy efficient appliances	0.649
	B3 Air emissions	0.813
	B5 Use of locally grown fruits & vegetables	0.738
Control Measures	B7 Encouraging green practices by making others aware.	0.703
	B8 Use of Energy efficient lighting systems.	0.701
	B9 Low Flow / Bacteria friendly toilets	0.911
	B10 Low flow sinks	0.686
Reuse & Recycle	B12 Refillable soap / Shampoo dispensers	0.794
	B13 Waste Segregation	0.619
Prevention	B6 Purchasing of environment friendly products	0.823
	B11 Low flow shower heads	0.765

Elements related to Benefits, Prospects & Potential of Green Accommodation Units

The eight variables related to Prospects and Potential of Green accommodation units were analyzed for their importance. The analysis reveals that the all the eight variables are important and plays an important role in determining the Prospects and Potential of Green accommodation units. The weighted mean value and scale of importance are shown in table VII.

Table VII: Variables related to benefits, prospects & potential of green accommodation units

<i>Sl. No.</i>	<i>Variable</i>	<i>WMV</i>	<i>Std. Dev</i>	<i>Scale Importance</i>
C1.	It reduces the negative impacts on social, cultural and ecological environment.	4.23	0.821	Important
C2.	It enhances the reputation and image of the hotel.	4.12	0.839	Important
C3.	It increases Customer satisfaction, awareness and demand.	4.37	0.653	Important
C4.	It helps in improved relationship and participation of the local community.	4.12	0.916	Important
C5.	Developing green accommodation units will help in an increased tourists' footfall in the units.	4.21	0.546	Important
C6.	Contribution towards the conservation of environment, influences the decision of a prospective guests.	3.19	0.921	Important
C7.	Environmental awareness is on a rise amongst all tourists.	4.26	0.721	Important
C8.	Developing green hotels should be seen as a long term investment for a cause and not for benefits.	4.30	0.852	Important

Hence, to identify the elements of benefits, potential and prospects, so as to group them into specific elements to develop the green accommodation units, factor analysis was done using principal component analysis. In order to identify the environment sensitization to understand the awareness regarding environment, Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were used to examine the appropriateness of factor. KMO value was calculated with the help of SPSS 21 and found to be 0.592 which indicates that data is adequate to carry out factor analysis. Principal Component Analysis for elements of benefits, potential and prospects of green accommodation units were applied and two factors were identified.

Table VIII: Rotated Component Matrix for benefits, prospects & potential of green accommodation units.

Variable	Component	
	1	2
VAR0000 1	.826	
VAR0000 2		.828
VAR0000 3	.830	
VAR0000 4	.912	
VAR0000 5	.715	
VAR0000 6		.632
VAR0000 7		.842
VAR0000 8		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

A scrutiny of factor matrix revealed that Factor loadings were very high in case of factor 1 (four out of eight variables have factor loading of >0.5). It reveals that 50% of the variables are clubbed into one factor. Each factor consists of all those variables that have factor loadings greater than or equal to 0.5.

Identification of Elements related to Benefits, Prospects and Potentials of Green Accommodation Units

C1, C3, C4 and C5 constituted the first factor which was named as “Sustainable Impact” by the researchers and it accounted for 36.592% of the variance. C2, C6 and C7 were included in the second factor which was named as “Image Enhancer” and it accounted for 24.462% of variance. Both factors together explained 61.340% of variance. The identified factors with the associated variable and factor loadings are given below

Table IX: Identified factors with their associated variables related to benefits, prospects and potential of green accommodation units

<i>Factor Name</i>		<i>Variables</i>	<i>Factor Loadings</i>
Sustainable Impact	C1	Reduces negative impact on Society, Culture and Ecology	0.826
	C3	Increase in Customer Satisfaction, Demand & Awareness	0.830
	C4	Participation of Local Community	0.912
	C5	Increased Tourists' Footfall.	0.715
Image Enhancer	C2	Improves reputation & image of hotel.	0.828
	C6	Going Green influences decision positively	0.632
	C7	Rise in Environmental Awareness.	0.842

Discussion

With the present level of awareness among customers towards the need and usage of green products, it is becoming imperative for hotel properties to implement green practices in their units or else preferred by environmentally sensitive guests (Schubert et al., 2010). The study has emphasized that the level of awareness among tourists can either be spread out mainly through the voluntary initiatives of hotel properties or through the stringent government regulations. During the analysis of data, it was also observed that many of hotel properties located in the study area have started implementing one or other forms of 'Green Practices' in their operational activities. The practices are being implemented by hotel units either the willingness of management to

contribute their share towards environment or due to business pressures generated on them. Tourists visiting wildlife sanctuary expect some voluntary initiatives to be taken by hotels towards environment rather than just waiting for the government regulatory authorities to take required actions. Although green practices are not centric to the function of a hotel, the last few years have seen hotel industry made significant investments in an attempt to address the increasing environmental concerns of guests (Kang *et al.*, 2012). The study also emphasized that accommodation units situated in or around a wildlife sanctuary are expected to implement practices like use of renewable energy resources, use of rain water harvesting and energy efficient appliances, use of locally grown fruits and vegetables and to keep a check on air emissions. This is in line with the past studies which show that hotels tend to have heavy ecological footprints, and as soon as its awareness grows, there are ample evidences that consumers are seeking out hotels with an eco-friendly approach (e.g., those using solar panels, implementing waste reduction, and maintaining recycling bins) (Han *et al.*, 2010; Laroche *et al.*, 2001; Kang *et al.*, 2012). At the same time, hotel properties are expected to be involved in framing policies for overall development and upliftment of the given area as accommodation businesses are more likely to take action on sustainable development if they find themselves contributing directly in policies.

Hotel properties should have environment friendly purchasing policies so that the impact on environment could be minimized. Such acts of the promoters not only enhance their image in the society but also improve their business avenues due to increased footfall as all these practices are supposedly for the betterment of the society. Implementing these 'Green Practices' also support the hoteliers to curb their energy bills and leads the units to become self sustainable. All these statements are well supported by the past studies conducted stating that Green certification offer hotels an opportunity to showcase their environmental efforts, bringing benefits such as an increase in revenue, reduction in costs, image enhancement, and competitive advantage (Black and Crabtree, 2007; Bernardo *et al.*, 2009; Geerts, 2014). Despite of so many advantages of practicing "green" ways and methods, many of the hotel properties are still reluctant in implementing these practices as previous researches have shown that the visitors will not be always willing to pay extra for them because they view green practice as an existing social responsibility of the hotels (Lita *et al.*, 2014).

Conclusion

The present study has very strongly supported the perceptions in an empirical manner that the present day wildlife tourists are not only environmentally sensitive, but they also expect the hotel properties in or around any protected area to be environmentally sensitive and should have an active level of participation in conserving the natural habitat and its surroundings. The tourists visiting the protected area expect the accommodation units to be implementing certain 'Green Practices' like use of renewable energy resources, use of rain water harvesting and energy efficient appliances, controlled air emissions and use of locally grown fruits and vegetables. They are also expected to use low flow showers, sinks and bacteria friendly toilets apart from making the tourist aware about the benefits of green practices. The green practices can also be in the form of proper waste segregation methods and by running various recycle and reuse programs related to hotel linen in addition to the green purchasing policies in place. By maintaining all these small issues, the hotel properties become an environment savior and a responsible organization for a tourist who indirectly helps the property in attaining its business goals. It is expected that existing hotel properties shall inadvertently become a key factor in maintaining this highly eco-sensitive zone a preferred destination with minimum impacts on the ecology of the park and also that adoption of 'Green Practices' is the only way out by which the sanctuary can sustain its present environment and natural habitats available for our future generations. The present inflow of tourists to this wildlife sanctuary is not very satisfactory but the inflow is bound to accelerate in years to come as the destination has potential to emerge as one of the front runners among emerging wildlife tourist destinations. This is evident by the statistics of Government of Uttarakhand that tourists visiting the wildlife sanctuaries of the Uttarakhand state have increased the share of total tourist from 0.96% in 2009 to 1.25% in 2014.

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Sustainable Coastal Tourism Promotion in West Bengal, India : An Analytical Study of Coastal Residents' Attitude of Digha & Shankarpur Sea Beaches

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Abstract: *The impacts of coastal tourism development on local community involve social, cultural, political and economic issues. Keeping in view the importance and relevance of the stakeholder involvement in sustainable coastal tourism development, and the local community/residents being the key stakeholders, the objective of the pertinent research is to study the local Residents' attitude in Coastal areas of Digha & Shankarpur sea of West Bengal, India- towards the impacts of coastal tourism as also to suggest the strategic interventions for current problems and future needs. In this process the researchers collected primary data from 255 respondents in the study area and further analysis has been undertaken through Mini Tab and SPSS using different statistical tools like- t test, co-relation, regression to come to the conclusion. The study findings suggest that the residents' participation and co-operation is necessary to make the development work more sustainable as it is important for responding to the current problems which is caused due to tourism development.*

Keywords- Sustainable tourism, coastal tourism, residents' attitude.

Introduction

Tourism over the years cropped up to be a revolutionizing phenomenon and it is emerging as a catalyst of the development process due to economic benefits and earning opportunities as well as creates a number of social, economic and cultural benefits, particularly in under developed area at the local, state, national as well as international levels. The objective of sustainable tourism is to ensure that development brings a positive experience for different stakeholder's like-host community, tourism operators and the tourists themselves (Yazdi, 2012). The impacts of coastal tourism on local community involve social, cultural, political and economic issues. The growth of tourism and especially coastal

tourism is related to three main factors: improved economic condition and availability of leisure time, inter-connected transportation network, and greater public awareness of world destinations due to improved communications (EEA, 2001). It has been noticed that the exert pressures on the environmental and cultural resources of coastal areas, negatively affects the social, economic and cultural patterns and environmental degradation of tourist destinations due to remarkable growth of coastal tourism in recent decades (Marina & Alessio, 2009). Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability. Sustainable tourism should make optimal use of environment and natural resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural resources and biodiversity (UNWTO, 2004).

Problem Statement

There is a major issue regarding awareness of sustainable tourism in the coastal zone of West Bengal. One should understand about the need for a sustainable growth of tourism. Environmental issues are big concern to maintain for the future sustainability as the area is facing erosion, congestion (Old Digha sea beach), sewage and garbage disposal problems etc. A proper balance between the product and supply is necessary for long term sustainability. The shortage of some facilities like quality accommodations, recreational opportunities, hospitality skills from local people are the major hindrances of coastal tourism development. The major problem is to understand resident attitudes on the impacts of tourism development and it is complicated because opinions towards tourism are formed from residents' perceptions of many factors. Proper co-ordination is required amongst stakeholders involved in this tourism development process to maintain long term sustainability on environmental, economic and socio-cultural fields. Efforts are to be made for undertaking more effective planning for environment friendly infrastructure development in the region to eliminate the negative impacts of tourism and, need to ensure community participation (which may not be up to the satisfactory level) by increasing benefits of local people and local needs for sustainable coastal tourism.

Background

West Bengal, now proposed to be renamed as *Paschim-Banga* (in Hindi

language) is located in the Eastern part of India and is the nation's fourth most populous state. The State lies between 27°13'15" and 21°25'24" North latitudes and 85°48'20" and 89°53'04" East longitudes. The geographic boundary of the state starting from the Himalayas in the north, to the Bay of Bengal in the south, the state of West Bengal abounds in an incredible variety of tourist destinations including alpine mountains and tropical forests, wildlife sanctuaries and national parks, historical and pilgrimage spots, open beaches and mangrove forests. A tourist statistics from the state tourism department shows that there had been 4.93 million domestic tourists in the year of 2000 while as per Ministry of Tourism (Govt. of India), in 2013 the figure has shot up to 26.79 million total tourist flow including domestic and foreign tourist (Domestic 25.54 million & foreign tourists 1.24 million).

The coastal areas of the West Bengal fall within three districts viz. North 24 Parganas, South 24 Parganas and Purba Medinipur districts. The entire coast line of West Bengal is subdivided into three principal zones i.e., eastern sector, central sector and western sector.

Coastal Zone Digha is situated in district Medinipur (East) and has got a historical background. Warren Hasting, who was made Governor of Bengal in 1772, written to his wife about the appreciation of Digha Sea Beach (Chakraborty, Chatterjee, & Das, 2012). During the British colonial period this small village on the shore of the Bay of Bengal was rarely known to the outsiders and a little number of people visited this place. This coastal belt of West Bengal is the second highest revenue earning tourist spot- only next to Darjeeling hill station (Chakraborty, 2010). After independence the state government has taken several steps to make it a well-fashioned sea beach tourist center. Since then, the place has got the attention of the government as well as the other stakeholders' who established many lodging establishments, refreshment joints and other amenities whose numbers are still increasing not only in the same area but with extension to other adjoining places along the sea beach. The New Digha and Talsari are the two important extensions in the southern side, while Sankarpur and Mandarmani in the northern side. On way to New Digha, one can stop to view marine life at one of Asia's largest aquariums, or visit the Science centre for some scientific facts. Digha is now identified as 'Old Digha' by the tourists and the hosts. Digha Township was primarily used by fishermen as a fish landing centre. Shankarpur has to its credit all the advantages of Digha, like beautiful beach but fewer crowds than Digha. Important features of Shankarpur are- Casuarinas'

groves by the side of a gentle sea, good climate round the year and important fish landing harbor. The coastal zone of West Bengal has golden opportunities for the establishment of nature based tourism due to characterized by the wide and hard beaches where the tourists play and enjoy with sun, sand and sea in the sea beaches and different types of aquatic life and attractions, flora-fauna, rolling seas, sand dunes, casuarinas equisetifolia forest, gecarcinus ruricolos, scenic view of clear sea, which has kept her doors wide open to established the coastal tourism destination. During the last four decades, the development in transportation system like road connections have improved and a fleet of transport operations with the incorporation of railway connectivity led to significant influx of tourists. To accommodate the high demand in turn necessitated development of hotels, holiday houses, private lodges, etc. The temperature of coastal belt in winter is about 10-13 degree Celsius and in summer it reaches about 36 degree Celsius. Population of Digha & Shankarpur (In Digha-Shankarpur project area for tourism development as indicated by Digha Shankarpur tourism development authority) is 29,171 where the male population is 14,977 and female population is 14,194 and total number of household in the area are 5926 (Census of India, 2011).

Table I: Annual tourist inflow in the study area (in million)

Year	Sea beach	Domestic	Foreign	Total
2008	Digha	1.38	0.003	1.393
2008	Shankarpur	0.64	0.001	0.64
2009	Digha	1.52	0.005	1.525
2009	Shankarpur	0.63	0.001	0.631
2010	Digha	2.54	0.004	2.544
2010	Shankarpur	0.30	0.002	0.302

Source- Digha-Shankarpur Integrated Beach Front Area Development Plan, by I WIN, Nodal agency-DSDA, Govt. of West Bengal- 2013-14.

The total number of tourists in the study area were 2.85 million in 2010 and as per Digha-Shankarpur Development Authority the figure exceeds 5 million including Mandermoni area in the year 2014.

The Geological Survey of India in its report on the Digha coastal belt pointed out that the erosion and accretion have been accelerated by several man-made interventions due to human activities including removal of sand dunes, leading to mushrooming of construction near the coastline. The exact impact of tourism development on the coastal belt of

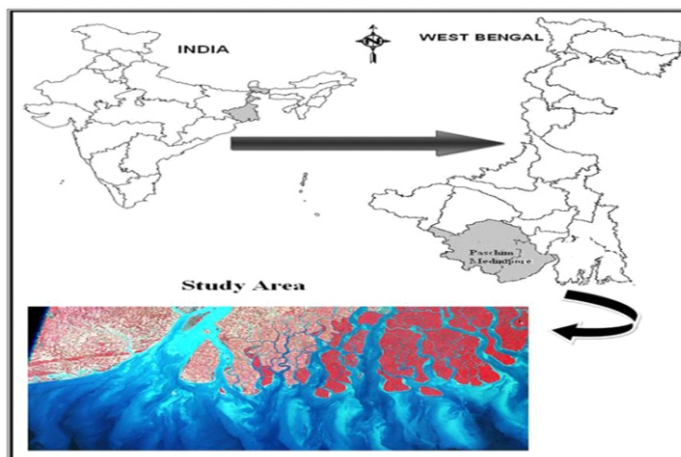


Figure 1: Map - India & West Bengal (location of the study area)

Digha cannot be measured by quantity but, the continuing dumping of solid waste and raw sewage in the coastal water causes an alarming situation which continuously increasing with every tourist season. It is also to be noted that most of the biota once recorded as common in Digha coast have disappeared along with intensification of tourism and resultant increased dumping of untreated waste water and garbage (Mandal, Dandapath & Shukla, 2013). As such, even without quantitative data the impact of unplanned tourism and interventions on the natural process could be seen in both biological and physical changes of this coastal zone. Fragile coastal ecosystems are simultaneously attacked by organic and chemical pollution and the degradation of natural resources is sometimes irreversible. In fact, coastal zones are susceptible areas in different parts of the world, but in developing countries the impacts of pollution & degradation can be worse than in other developed countries. Sustainable development demands an integrated and interactive approach that allows for the understanding of the complex relationship between society and environment, simultaneously respecting the need for the local community and assuming that environment is a vital dimension of the future of the human kind. Moreover, the complex and conflicting interactions of social justice, human protection and environmental sustainability within the natural and social process of shaping and building development for present as well as for future generations are important issues to address for long term sustainability. Scientific planning and knowledge of advanced technology can make a significant contribution to alleviate and eventually prevent the unsustainable use of natural resources, like coastal zone of West Bengal. There is a need for

research on how societal driving forces (social and demographic, political and institutional, economic and commercial, cultural and technological) affect the nature and distribution of human activities by different stakeholders like tourists, local community and tourism companies on coastal zones of West Bengal and its impacts on coastal environment and tourism sustainability associated with the prevailing and possible alternative patterns of human activity. Tourist places in West Bengal coastal area get completely inundated during high tide and cause problems for the tourists. Much of the western part of the coast is now populated and cultivated. The impacts of human activities come through (a) diesel driven fishing boats and public transport vehicle (through release of hydrocarbon due to lack of maintenance), (b) fishing harbor activities, (c) aquaculture farms and (d) agriculture, none of which has been properly assessed and maintained. Tourism is a major contribution to the economy of the coastal zone. Tourism activity invariably leads to accelerated road transport (diesel driven), hotel industry, illegal encroachment and mushrooming of construction by different stakeholders. Each of these activities has a direct impact on natural environment and human life.

Aims & Objectives

The main objectives of the study are:

1. To study the existing status of tourism and resources potential in the study area.
2. To describe the feasibility and effectiveness of environmental contingences for sustainable development of tourism.
3. To examine the community attitude towards tourism development viz-a-viz the impacts caused by tourism in reference to study area.
4. To suggest strategic interventions for sustainable tourism development.

Hypothesis

1. Tourism development has a positive impact on local community.
2. Significant difference exists for community attitude towards tourism development in terms of demographics of the local community.
3. Sustainable development can resolve the current tourism related problems addressing the futuristic community needs.

Review of Literature

There are many studies on coastal tourism highlight on the tourism system rather than on the interaction of the tourism and related environmental systems (Wong, 1993). Basically, the natural environment which considered as the important coastal resources are the major tourist attraction are in pressure due to tourism development (Beekhuis, 1981; Salm, 1983; Lal, 1984). Low-lying delta, low-elevation reef islands and coral atolls are especially sensitive to sea level rise, as well as to changes in rainfall, storm frequency and intensity (Ehleret al.1997). All such changes in the coastal zone can have negative impacts on fisheries, agriculture, human settlements, financial services and human health as well as largely affect tourists' decisions on destination selection, and eventually tourist flow in the region as it has been recognized that tourism is environmentally dependent (Wong, 1993). Indeed, the beauty & unique feature of coastal environment gives opportunity to different types of tourism development with coastal and marine management (Mason, 2003).

One of the impacts of coastal tourism are damage to coastal ecosystems such as beaches and wet lands, deforestation and erosion, excess use and increased pressure on limited energy and freshwater resources, ecological disruption and degradation of biological diversity, pollution and waste generation, resource use conflict and threats to local people for their culture and traditions (UNWTO, 1994). The large number of persons travelling to tourism destinations often exceeds the carrying capacity and can impact the environment in various ways (McLaren, 2003). Over consumption of natural resources such as fresh water, energy, land and marine resources can lead to resource depletion and degradation and the same cause conflicts between locals and the industry (Gossling, 2003; McLaren, 2003; Neto, 2003). Concentrated tourism development can also affect natural landscapes through process such as deforestation, loss of wetland and soil erosion (Neto, 2003). This is a major issue in coastal areas where large scale development occurs in clusters (Gossling, 2003; McLaren, 2003). One of the reasons for the changes in coastal environment due to tourism development is an unsustainable coastal development and considered as negative impacts of tourism in coastal zones. (Jury, et al., 2011b; Devenport & Davenport, 2006; Van Rijn, 2009).

For sustainable tourism and development and a growing need for success, the integrated coastal planning and management (ICPM) and integrated coastal zone planning (ICZP) frameworks are necessary as ways of planning and managing coastal environments (Sorensen 1993; Capobianco and Otter, 2000). Careful planning and decision-making in tourism development is therefore extremely important for preventing and mitigating the possible negative influence that global climate change may pose to the local community (UNEP, 2009). Many scholars have designed, accepted & adapted various versions of CZM to resolve the growing problems & also to minimize the negative impact in the coastal zone (Wong, 1998; Kohn & Gowdy, 1999; Shi & Hutchinson, 2001). It is very difficult to manage and use natural resources in a sustainable manner as Small Island Developing States (SIDS) contends with a limited availability of human, institutional and financial resources (Ashe, 2005). Another obstacle of SIDS tourism development is the lack of inadequate tourism infrastructure, such as transportation like road networks or water supply systems (Ashe, 2005). Resulting negative impact or damage of the entire tourist sector, which can be irreversible (Kanji, 2006). Concern over the economic, environmental and socio-cultural effects of unsustainable tourism has led to increasing international agreement and action promoting sustainable tourism development (Neto, 2003).

Residents of a community must maintain control of tourism development by being involved in setting a community tourism vision, identifying the resources to be maintained and enhanced, and developing goals and strategies for tourism development and management. Local community must organize themselves at all levels for positive role in development and interact with Govt. and tourism role players at all levels (McIntyre et al., 1993). Locals should identify tourism resources and attractions within their communities and support responsible tourism which will in turn help community development.

Tourism development transforms destination, usually with many negative outcomes (Cohen, 1978). Residents in mass tourism destinations face congestion, noise, neighborhood and environmental dereliction, and higher prices resulting from competition with tourists for scarce resources consequently resulting in decreased community satisfaction (Cavus & Tanrisevdi, 2003). Resident attitude surveys have found that residents who value economic impacts will have favorable attitudes towards tourism but their attitudes towards environmental and cultural change are negative (Lindberg & Johnson, 1997; Walpole &

Goodwin, 2001). However, local people who participated in tourism business got the economic benefit from the tourism business for life long (Kotuwegoda, 2010). Even beside the economic gains, residents who feel that they have a voice in tourism planning are more positive towards tourism (Cavus & Tanrisevdi, 2003). On the other hand residents perceive that the cost of tourism outweigh the benefits, feelings of resentment and irritation towards tourists and develop lower community satisfaction (Doxey, 1975; Faulkner & Tideswell, 1997; Ko & Stewart, 2002).

Smith and Krannich, (1998) have found that increasing levels of tourism dependence in a community are associated with increasingly negative attitudes about its development, as well as lower levels of local satisfaction and higher levels of crime concern. Allen et al. (1988) have found that the negative attitudes about tourism appear to be confined to certain dimensions of community life related to public service satisfaction and opportunities for public, civic, and social involvement. Liu, Sheldon and Var (1987) show that the growing pressure from tourism, in turn generates stronger criticism of tourism, with a growing public awareness among the population of environmental and cultural problems that it creates and consequent increase in opposition to tourism development. Pearce (1980) argues that areas with a high level of tourism development generate resident dissatisfaction due to traffic and parking problems, crime, inflation, etc.

A comparison of residents' attitudes towards tourism in 10 New Zealand destinations' carried out by Lawson et al. (1998) have identified differences in the residents' perceptions of every type of social impacts, however there were many similarities in the context of economy and employment. Gursoy, Jurovski and Uysal (2002) have suggested that tourism development can be modeled by using six factors namely the level of community concern of local residents; the utilization of the tourism resource by local residents; the level of ecocentric values of local residents; the state of local economy; the perceived cost and the perceived benefits of tourism development. Allen, Long, Perdue & Kieselbach (1988) observed that, the degree of impacts depends upon the frequency of interaction between residents and tourists, their willingness to serve as gracious hosts. Sheldon and Abenoja (2001), stressed that sustainable tourism cannot be successfully implemented without the involvement of those affected by tourism.

In Indian context, studies of Rao et al. (2003), Bagri and Mishra (2005) in

Nanda Devi Biosphere Reserve, Chakraborty, Chatterjee & Das (2012) in Digha coastal town, Bagri et al. (2013) in Chakarata, Diniz, R.S. et al., (2014) in Goa, Gokhale, K. et al., (2014) in South Goa attempted to examine the attitude of local residents towards tourism. Researchers have got the idea about the existence of significant difference on community attitude towards tourism development from the above studies on community attitude.

Research Methodology

Research Design

The scope of the study is adequate to analyze the resident attitude towards Coastal Tourism development in coastal zone of West Bengal (Digha & Shankarpur in East Midnapur District) as both the sea beaches are the important coastal tourism destinations of the State. The type of data were collected directly from the population and sample group in the area of investigation. Data on opinions and attitudes of community on different impacts like environmental, economic and socio-cultural were derived from questionnaire and collected through enquiries, interviews and meetings. The target population was rural and sub-urban local residents of selected villages of Digha and shankarpur, coastal zone of West Bengal were considered for the study. Study area consists with 28 villages and the same area marked by DSDA for coastal tourism development in Digha and Shankarpur. Though, due to a large universe size it was difficult to follow proportionate sampling, however for a survey, a total of 300 residents which could provide reasonable representations to all the major villages in accordance of their proportionate populations. Twelve villages of three coastal tourist destinations namely, New Digha, Old Digha and Shankarpur were selected for collection of data. After area selection (Selection of villages as per investigators judgment based on location from beaches, tourist facilities and geographical condition) random sampling done based on a systematic manner. After applying filters and adopting other appropriate techniques to reduce response error researchers managed 255 (85%) usable completed questionnaires. The field survey and observation of the study area was focused on capacity, involvement/ participation and reaction of local community on tourism development. An in-depth interview was conducted with community members on three main topics of sustainability like- environmental, economic and cultural to know the impact of sustainable tourism on community. The survey instrument was self-administered, and in order to

get correct information Questionnaire was divided into three parts. The questions in the first part include respondent's socio-demographics. In second part, 15 item attitudinal index for tourism impacts were considered which were grouped into 4 major categories viz. environmental (En), Economic (Ec), Socio-cultural (SC) and overall attitude for tourism impacts. A couple of studies (Ap. J, 1992; Ap & Crompton, 1998; Easterling, 2004; Turker & Ozturk, 2013) had demonstrated the same category/ factors - sub factors also positive & negative aspects of categories. Anderck & Mcgehee (2008), considered same category (En, Ec & SC) for residents attitude but taken eight attitudinal index for economic, twelve attitudinal index for socio-cultural and six for environmental. Here, in this study research investigators considered five attitudinal index for each three category considering demographic character and local environment and tourism pattern in the destination. The third part of the questionnaire includes 4 variables to examine the role and contribution of sustainable development for the resolution of the current problems to address future needs of the community. For each item, respondent used five point Likert scale to rate their opinion and attitude, where '1' indicates strongly disagree to '5' indicates strongly agree.

The pilot survey was conducted with an initial fifty residents, to find out the scope needed for improvement in the research instrument. However, as no major improvement was required and data collection done as per the set questionnaire. For each item, respondent used 5 point Likert scale to rate their opinion related to their attitude, where 1-Strongly Disagree, 2-Disagree, 3- Undecided, 4- Agree, 5- Strongly Agree. Test of research instrument (questionnaire) is also important for reliability test. Further efforts were made to conduct the reliability test (Cronbach's Alpha) on the same set of questionnaire for pilot survey for the responses of local residents (questionnaire) on tourism impacts by 'SPSS software'. The values for three factors (environmental, economic & socio-cultural) ranked within 0.78 to 0.82 and as per Andy Field (2005), any value "between" 0.7 to 0.9 considered as highly reliable and satisfactory. Data thus received was systematically arranged, tabulated and analyzed. Analysis of data was performed using SPSS software version 16.0.

The 't' test has been used as a test of significance for significantly different scores of Overall attitude toward tourism impacts. Multiple regression techniques have been used to study the joint influence of selected group variable of residents' attitude on overall attitude.

The data collected by the researchers include various types of residents' response and was divided into several of phases as follows-

Table II: Research stages and Data Collection Methods

Round	Timing	Respondents & Numbers	Method
Preliminary study	October 2011	Local Community members and documentation centers	Literature Review & Discussion
First Round	November 2012	47	Interviews & Meeting
Second Round	February 2013	85	Interviews & Meeting
Third Round	May 2013	91	Interviews & Meeting
Fourth Round	March & April 2014	120	Interviews & Meeting

Research Findings & Analysis

The study is confined to the rural residents' attitude towards coastal Tourism Development in and around coastal zone of Digha and Shankarpur. A profile of respondents (rural residents) is depicted in table III.

Of the total 255, approximately half of the survey residents were from the age group of 25-40 years, followed by above 40 years which comprised 24.70% and the rest of the age groups i.e. below 25 represents about 23% of the respondents. Surveyed residents represents more married (67.45%) than unmarried (32.54%). In terms of gender, male (75.29%) outnumber female (24.70%) as it was difficult to interact with female residents due to conservative nature of society. Although, the study area represents rural villages having less scope for income and education, still the Matric passed (61.17%) respondents were more in comparison to non-matric (38.82%) and above. it is surprising that the majority of the respondents (48.62%) had monthly household income less than Rs. 10,000 while only

Table III: Profile of Respondents (Rural Residents)

Description		No of Respondents	Percentage of respondent
Age	Below 25 Years	61	23.92
	25-40 Years	131	51.37
	Above 40 Years	63	24.70
Marital Status	Married	172	67.45
	Unmarried	83	32.54
Gender	Male	192	75.29
	Female	63	24.70
Qualification	Under Matric	99	38.82
	Matric & above	156	61.17

Household Monthly Income (Rs)	Below Rs. 10,000	124	48.62
	Rs. 10,000-25,000	84	32.94
	Above Rs. 25,000	47	18.43
Involvement in Tourism	Direct	65	25.49
	Indirect	120	47.05
	No Involvement	70	27.45

about 18% had salary more than Rs.25,000. The survey included a question about the resident's involvement in tourism (taking part in tourism & getting economic and socio-cultural benefit like local staffs in hotel industry, people involved in transport business and small entrepreneurs), wherein the largest number of residents (approx. 47%) reported to have indirect involvement (Locals are getting benefit through multiplier effect from tourism business like- laundry service in hotel industry, farmers, fishermen etc.) as against 25% directly and 27% not involved in tourism.

Further efforts were made to conduct the reliability test for the responses of local residents (questionnaire) on tourism impacts (Table IV) by SPSS version 16.0. Value of Cronbach's Alpha for environmental factor is 0.789, economic factor is 0.817 and socio-cultural factor is 0.824 which is highly satisfactory. The details are as follow:

Table IV: Reliability of the Questionnaire

Tourism Impacts	Number of items	Cronbach's Alpha
Environmental	5	0.789
Economic	5	0.817
Socio-cultural	5	0.824

Table V presents the attitudinal measurement of rural residents towards tourism impacts in terms of 16 items broadly grouped under three categories of environment, economic and socio-cultural impacts with five statements within each subhead. The last statement measures the overall attitude towards impact of tourism development on local community. Of the total 15 variables, 14 statements have recorded mean value more than mid value (3) on five point scale, along with the overall attitude having mean value above 4, results to the acceptance of the first hypothesis that tourism development has positive impacts on local community. The one impact statements, which reported mean value less than 3 but more than 2 was incorporated to know whether tourism development improves the image of the local community.

Table V: Attitude towards Tourism Impacts

A. Environmental		Mean	SD
En1	Tourism development leads to increase waste and noise in the area.	3.47	1.27
En2	Because of tourism roads and surroundings are well maintained.	3.36	1.35
En3	Tourism results in urbanization and congestion/over crowdedness.	3.74	1.24
En4	Tourism leads to pollution of water resources.	3.18	1.38
En5	The creation of tourism infrastructure leads to problems like deforestation, land sliding, etc.	3.50	1.34
B. Economic			
Ec1	Tourism generates more business for local entrepreneurs.	3.72	1.23
Ec2	Tourism results in increased purchasing power of locals.	3.67	1.16
Ec3	The most of the jobs in the tourism in my area pay low wages.	3.40	1.37
Ec4	Creation of tourism facilities is a costly affair.	3.47	1.36
Ec5	Tourism leads to increased cost of living for hosts.	3.81	1.17
Socio-Cultural			
SC1	Tourism improves image of the community.	2.99	1.31
SC2	Meeting tourists from different cultures and areas is a valuable experience.	3.33	1.34
SC3	Tourism results in conflicts between residents and tourists.	3.32	1.34
SC4	The access to various facilities by the host is limited due to presence of visitors.	3.21	1.44
SC5	Tourism creates more pressure on local services like Police, fire protection and public utilities.	3.54	1.27
Overall Attitude			
OA	Overall impact: Tourism development has positive impacts on local community.	4.13	0.92

Table VI: Significantly different scores of Overall Attitude on the bases of profile of residents

Table VI depicts the statistically significant difference of Overall Attitude (OA) on the bases of profile of respondent rural residents using 't' test.

The demographics for which overall attitude for tourism impacts was found positive were married (4.22), non-matric (4.01), indirect tourism involvement (4.31) in comparison to unmarried (3.93), matric (4.01), direct tourism involvement (3.90) with the t value for all significant at 0.01 & 0.001, i.e. $p \leq 0.01$ and $p \leq 0.001$. In terms of the gender as demography related with tourism impact, mean value of male residents (4.18) is higher than, female residents (3.96) with $t = 1.84$. From the above table it was clearly understood that demographics for which overall attitude for tourism impacts was found positive t value reaches to significant level in most of the cases which proves the second hypothesis-

Description		N	Mean	SD	t	P Value
Marital Status	Married	172	4.22	0.93	2.36*	0.02
	Unmarried	83	3.93	0.90		
Gender	Male	192	4.18	0.93	1.84	0.1
	Female	63	3.96	0.91		
Qualification	Under Matric	99	4.31	0.84	-2.56**	0.01
	Matric& above	156	4.01	0.96		
Involvement in Tourism	Direct	65	3.90	1.01	-2.78***	0.00
	Indirect	120	4.31	0.84		

* - $p \leq 0.05$, ** - $p \leq 0.01$ *** - $p \leq 0.001$

“Significant difference exists for community attitude towards tourism development in terms of demographics of the local community”.

Further, multiple regression techniques have been applied to study the joint influence of selected group variable on overall attitude. All the identified variables were grouped into five major categories on the basis of similarities i.e. Environment(En1-5), Economic (Ec1-5), and Socio-cultural(SC1-5), Infrastructural (Inf-5)and Overall Attitude(OA). Regression coefficients have been tested with the help of most powerful “t” test.

Table VII shows the strength of relationship between the dependent variable OA and all the independent variables taken together. When environment impacts are increased by one unit, OA increases by 0.435. For one unit increase in economic impacts, OA attitude increases by 0.286 which is significant at 1 percent level. Socio-cultural impacts are increased by one unit, OA decreases by 0.116. Multiple correlation coefficient between dependent variable OA and independent variables ($R=0.60$) indicate that OA is influenced by independent variables. It is also evident from the value of $R^2=0.36$ of variation in OA accounted by joint variables of environment, economic, and socio-cultural. The lower values of R^2 indicates that although there exists a positive relationship between tourism impacts and OA but overall attitude toward tourism impacts is a function of a number of variables other than the selected group variables taken in the study.

Table VII: Regression Equation of Overall Attitude (OA) on environment, Economic and Socio-cultural factors

Variable constant	Regression Coefficients	T value	Multiple correlation
Environmental	.435	4.417 ***	R= 0.603
Economic	.286	4.505 ***	(R ²) =0.364
Socio -Cultural	-.116	-1.169	Adjusted R ² =0.357

*** - $p \leq 0.001$, 1= Strongly Disagree, 2= Disagree, 3=Undecided, 4= Agree, 5= Strongly Agree

Below are the mean values for five variables of sustainable tourism development (STD) as response mechanism variables to respond to the challenge of the impacts caused by tourism development. In view of the resulted research findings the following conclusion is drawn on the basis of the responses of surveyed sample.

Table VIII: Residents' Perception towards Sustainable Tourism Development

S.N.	Variables of Sustainable Tourism Development (STD)	Mean
1.	STD ensures benefits to residents.	4.12
2.	Residents participation and cooperation is necessary to ensure a positive sustainable tourism development	4.33
3.	STD helps socio, economic and cultural advancement and overall development of the region	3.92
4.	All stakeholders participation and cooperation required for STD.	4.15
5.	STD can prove to minimize negative impacts, maximizing positives that resolves the current problems addressing futuristic needs	4.05

It is clear that STD1 and STD 2 statements have accorded mean value above 4 on 5 point scale, which implies that residents' participation and cooperation is necessary to make development more sustainable that finally cultivates harmonized guest-host relationships which could be strengthened by equitable distribution of benefits and costs to residents, leading a favorable attitude towards tourism. STD 3 and STD 4 variables recorded the mean value above 3.5 (more than mid value) acclaiming the contribution of the STD towards integrated development of the region having strategic partnership among all the stakeholders. STD 5 indicates that sustainable development is important for responding to the current problems as caused due to tourism development as well as to address the future needs, which proved the third hypothesis "Sustainable development can resolve the current tourism related problems addressing the futuristic community needs".

Conclusion

Subsequent research findings reveal that tourism development in coastal zone of West Bengal has a positive impact on local community to some extent. Significant differences have been observed in terms of demographics of surveyed community. Impact analysis recommends that economic issues should be given top priority followed by environmental and socio-cultural issues in proposed tourism development model. Residents' participation and co-operation was felt necessary to ensure sustainable tourism development. To ensure active involvement of local community it is necessary to eliminate all major negative impacts caused due to tourism development like environmental degradation, economic uncertainty and low wages due to seasonality and lack of hospitality skills and socio-cultural problems arises due to insufficient infrastructural development and proper planning. There was persistent confusion among local residents about the role of local *panchayat* and Digha-Shankarpur Development Authority (DSDA) in local community development. DSDA was established initially to look after tourism development but at the same time the authority is liable to create suitable infrastructures and to maintain conducive environment for all the entrepreneurs including locals. Locals have been economically benefitted from tourism development as it is revealed that local people who have been involved with tourism industry are nicely rewarded. In the socio-cultural field, with the creation of more job opportunities, local community standard of living has almost improved but at the same time essential services like power and drinking water supplies have been severely affected during peak tourist season. The major area of concern is sewage and garbage in the Old Digha area which causes pollution and mosquito born diseases. Proper land use plan should be developed for local entrepreneurs' in order to ensure their long involvement. Systematic training schedules be arranged to train the local people as per the need of local tourism industry. West Bengal suffers some problematic issues like, land use and acquisition policy, political interferences etc. which have created conflicts between different stakeholders. Coastal zone has unique ecological features that provide significant but under-utilized tourism potential, including coastal areas (except old Digha), recreational parks, fish landing harbor, temples, marine aquarium, science centre, water sports and scenic beauty. The natural features of coastal zone have the potential to attract tourists seeking ecological, cultural and scenic experiences. A sustainable development plan of such resources is

required which could enhance community livelihoods throughout this area. Other issues including the changing pattern of tourism demand, nature of tourism amenities coming up around tourist attractions, intra-generational equity, socio-cultural progress, co-ordination between different stakeholders and finally the long term sustainability must be addressed professionally. Local residents' participation and cooperation is essential that strengthen equitable distribution of benefits and costs to residents, leading a favorable attitude towards tourism promotion.

Limitation

Considering the different administrative and geographical set-up , the study area was restricted to Digha & Shankarpur area sea beaches. The researchers were not able to incorporate few responses of respondents due to political reasons. However there is wide scope for further research as some of topics that could be undertaken include tourism impact analysis on local community as well a comparative study of impact analysis of major coastal tourism destinations of West Bengal.

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Upcoming Researcher



Research team headed by Prof. Parikshat Singh Manhas bags a Major Project under UGC-UKIERI THEMATIC PARTNERSHIPS

Prof. Parikshat Singh Manhas presently working as Director - School of Hospitality & Tourism Management, Professor, The Business School, University of Jammu and also the Coordinator, Global Understanding Course has been able to bag a major Project under the University Grants Commission (UGC) - UK India Education and Research Initiative (UKIERI) Thematic Partnerships Scheme.

The project proposal was submitted by Prof. Parikshat Singh Manhas and Dr. Maharaj Vijay Reddy, Professor, Bournemouth University, School of Tourism, UK. on "Comprehensive tourism revival framework for socio-economic development in post-conflict Kashmir: Lessons from Northern Ireland". Prof Parikshat and Dr Reddy are the Project leaders of this project and Lead applicants.

The UK India Education and Research Initiative (UKIERI) started in April 2006 with the aim of enhancing educational links between India and the UK. In the last five years, UKIERI has played a pivotal role in establishing a step change in the education relations between the two countries. The projects were announced by the prime ministers of two countries. UGC-UKIERI Thematic Partnerships are intended to be between institution-based research teams in the UK and India of proven research ability.

This project of Prof Manhas and Dr. Reddy will strengthen engagement and encourage future potential collaborations between the Indian and UK higher education institutions by facilitating collaborations along with promoting and assisting registered PhD students and post-docs in India and the UK to undertake short-term visits to work on the proposed theme.

The Project leaders have been able to ward off stiff competition from top UK and Indian Universities like University of Cambridge, Oxford, IIM's, IIT's etc. This is one of the most coveted and sought after projects amongst the Universities/Higher Education Institutions in India and UK.

The project will try build a Kashmir Tourism Revival Manual which will have a set of strategies on the thematic areas, resources, tasks and strategies for tourism revival by local and state government authorities. Based on the lessons that emerge from Northern Ireland, this project aims to explore the factors affecting the tourism sector in Kashmir by investigating the multi-stakeholder perspectives on the opportunities and challenges to propose a revival framework to adapt during future crisis. It will also analyze international and domestic tourist perceptions. A strong research strategy, dissemination and community engagement plans are also proposed by the research team.

Prof Parikshat and Dr Reddy as the Project leaders of this project have built a team of researchers for this project which possibly will include **Prof Stephen Boyd**, Ulster Business School, University of Ulster. **Dr Yeganeh Morakabati**, Senior Lecturer in Tourism at the Bournemouth University, **Richard Gordon MBE**, Director, Disaster Management Research Centre, Bournemouth University, **Dr Philip Long**, Associate Dean and Head of the Tourism Academic Group, Bournemouth University.

Prof. Parikshat Singh Manhas was a **Commonwealth Fellow for the year 2014**, Hungarian Faculty Research Fellow in 2013 under the Indo Hungarian Educational Exchange Program for the year 2012-13, Shastri Indo-Canadian fellow in 2009 and won Career Award for Best Young Teacher (CAYT) awarded by All India Council for Technical Education (AICTE) Government of India, 2009. He has been awarded Major Research Projects by University Grants Commission (UGC) and Indian Council of Social Science Research (ICSSR), Ministry of Human Resource Development, Government of India.

Dr. Parikshat is Editorial Board Member of the Journal of Management and Sustainability as well as Journal of Hospitality and Tourism Education (JHTE), Journal of Hospitality and Tourism Research (JHTR) and Journal of Hospitality and Tourism Cases (JHTC) of International Council on Hotel, Restaurant and Institutional Education (ICHRIE). He is also Editorial Board Member of the Journal Regional Statistics of the Hungarian Central Statistical Office, Hungary, *Asia-Pacific Journal of*

Innovation in Hospitality and Tourism, Taylor's University, Malaysia and TEAM (Tourism Educators Association of Malaysia) Journal of Hospitality and Tourism. He is member of Board of Studies of the Department of Business Administration, Aligarh Muslim University, Tourism Research and Recognition Committee, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad and most recently appointed as **Member, All India Board of Hospitality and Tourism Management (AIB HTM) of AICTE**. Dr. Parikshat is board member of the Asia Pacific Council on Hotel, Restaurant, and Institutional Education (APacCHRIE) as **Director of Memberships and also member** - Research Committee and Education Committee of International Council on Hotel, Restaurant, and Institutional Education (ICHRIE). He has authored 7 books and more than 70 research papers which have been published in Journals, Edited Books, and in the Conference Proceedings.

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Presenters may also choose to submit written papers for publication in the fully refereed *The Journal of Tourism and Leisure Studies*. If you are unable to attend the conference, you may still become a member of the community and submit your article for peer review and possible publication, upload an online presentation, and enjoy subscriber access to the journal.

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For more information on submitting your proposal and registering for the conference visit:

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4 days International Conference on Tourism Dynamics and Trends are organized by the collaboration of four universities, which are Akdeniz University (Turkey), Kempten University of Applied Sciences (Germany), University of Seville (Spain) and University of Sannio (Italy), at Akdeniz University, Tourism Faculty in Antalya, Turkey between 04th and 07th May, 2016.

Aims & Scopes:

The Conference is designed to offer a platform for sharing the scientific knowledge and development in the tourism, travel and hospitality area. Target participants are the academics, master and doctoral students who are studying tourism, travel and hospitality or related disciplines; and professionals of the tourism and hospitality companies who are keen to know the latest developments in academics literature and would like to share their expertise with the participants of the conference.

Conference Topics:

Participants of the conference may submit the papers which are related to tourism, travel and hospitality area. Main themes are as follows:

- ♦ Marketing
- ♦ Human Resources
- ♦ Food & Beverages
- ♦ Finance
- ♦ Environment Planning
- ♦ Management & Organization
- ♦ E-Commerce
- ♦ Information System & Technology
- ♦ Global Changes
- ♦ Innovation
- ♦ Future Trends
- ♦ National & International Legislation
- ♦ Leisure Studies
- ♦ Higher Education in Tourism

Dates & Fees:

- | | |
|-----------------------------------|-------------------|
| ♦ Full Paper Submissions Deadline | February 19, 2016 |
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| ♦ Late Registration Deadline | April 11, 2016 |
| ♦ Early Registration Fee | 200€ |
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Submission & Registration:

Best Paper Award:

- ♦ A “Best Conference Paper Award” will be given to the author(s) of the paper with outstanding quality which is selected by the recommendation of the majority of Conference Scientific Committee members.
- ♦ “One Best Paper Award” is going to be given also to a full paper presented at the conference from International Journal of Contemporary Hospitality Management.
- ♦ Award ceremony is going to be held at the Gala Dinner.

Supporting Journals

- ♦ The main supporting Journal of the Conference is *Advances in Hospitality and Tourism Research: An International Journal of Akdeniz University, Tourism Faculty (AHTR)*. Selected papers, by the recommendation of Conference Scientific Board members, are going to obtain publication opportunities at a regular issue of *AHTR Journal* after peer-review process.
- ♦ Journal of Tourism and Gastronomy Studies is going to publish the selected conference papers in a Special Issue after the event.
- ♦ Journal of Hospitality Marketing & Management is supporting “I. International Conference on Tourism Dynamics and Trends”.
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06 May, 2016	Scientific Session & Gala Dinner	10:00 – 24:00
07 May, 2016	Kekova, Santa Claus Church, Myra Tour	10:00 – 18:00

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