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Development and Implementation of Sustainability Criteria and Indicators for Eco-Lodges and Resorts in Ecotourism Destinations: Case Studies from India

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Abstract

Ecotourism is the fastest advancing and developing market within the tourism enterprise and with faster progress; it's leaving an acute impact on the ecosystem. One of the significant stakeholders that can promote sustainability is ecotourism accommodation providers. In order to minimize their carbon footprint and negative environmental effects, many hotels and resorts around the world have launched innovative cost-saving measures. The sustainability of a destination for ecotourism is partly dependent on the success of local eco-lodges and resorts. Certification has emerged as a strong instrument for helping to conserve natural resources and cultural heritage. The study was planned to develop performance management standard criteria and indicators (C&I) for eco-lodges and resorts in order to track sustainability and current eco-tourism activities in India. The main objective is to ensure the fulfillment of the goals of ecotourism and to evaluate the working standard that is practiced in different destinations. After the stakeholder consultation, the draft standard of criteria and indicators was developed and accompanied by a comprehensive primary survey. To test the parameters of C & I, a case study review was performed across 10 prominent eco-lodges in India, which are located near ecotourism destinations. The findings of the study include the natural, social and economic aspects, along with a set of 3 principles, 5 criteria, and 86 indicators to determine the sustainable functioning of eco-lodges and resorts. Implementation of the C & I on the resorts showed that only two resorts were fully fulfilling all the C & I showing their activeness toward better sustainable management of their operations Best practice examples from different hotels of different sizes, ownership, and locations across India are also mentioned in the paper. Such examples reflect green management initiatives that support local communities, protect natural resources and cultural practices, etc.

Keywords: ecotourism, sustainability, certification, eco-lodges and resort, criteria and indicators, accommodation providers

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Introduction

Ecotourism, the sub-sector of tourism has continued to develop in India since its inception in the 1990s. It has become one of the tourism industry's fastest-rising sub-sectors, growing by 10-15% worldwide annually (Miller, 2007). Due to the appreciation of natural beauty, world heritage sites, national parks, nature reserves, fairs and festivals, etc., eco-tourist arrivals have increased globally (Page, Hall, 2006; Tsaur, Lin, 2006). This demand in the sub-sector of ecotourism, however, has been reflected in the creation of eco-lodges and resorts close to the sites of interest. Sustainable tourism, and the tourism industry, in particular, needs responsible action to represent the values of sustainable growth (Stabler, 1995; Farrell, Runyan, 2001; Bhattacharya, Chowdhury, Sarkar, 2011; Arni, Khairil, 2013). There is a current urgent need to establish criteria and standards for accreditation of ecotourism destination lodges and resorts to meet sustainability standards. Whereas in a country where such efforts are missing, the native ecosystem is destroyed.

Environmental certification has been recognized to provide the means to analyze and classify areas where enforcement and efficacy could be improved and sustainable practices assured (Honey, 2002). The incorporation of certification into ecotourism is an essential and necessary step that tourism operators need to take to achieve long-term survival for both internal and external powers (Cater, 1996; Constantineau, 2007; Kuchment, 2008; Goeldner, Ritchie, 2009). The first step before certification starts in an area is the development of relevant site-specific standards and indicators for standard development (Bhattacharya, Kumari, 2004). There is a step towards tourism accommodation facilities globally, to be accredited by awarding eligible candidates, based on their overall results (Munn, 1992; Ceballos-Lascurain, 1996; Gössling, 1999; Lopez-Espinosa de Los Monteros, 2002; Tisdell, Wilson, 2002; Lindsey et al., 2005; Fung, Wong, 2007; Hassan, 2016).

Sustainable tourism, and in particular the tourism industry, is considered to be a growth driver in many developing countries, including India, and action is needed to embody the principles of sustainable development in order to maintain this effort. Environmental auditing is a pragmatic method to be used in tourism activities to achieve sustainable growth (Stabler, 1995). The introduction of environmental auditing into ecotourism has recently been an essential and appropriate step taken by operators in response to both internal and external influences, mainly in well-known global destinations (Cater, 1996; Font, 2002; Toth, 2002; Sâmbotin et al., 2011; Bansal, Kumar, 2011; Drabkova, 2013; Blumer, 2014).

In order to ensure the sustainability of ecotourism, it is important to be mindful of the environmental, social, and economic impacts of ecotourism and to take these effects into account when planning growth (Briassoulis, 2001). While tourism businesses, and eco-tourism businesses, in particular, may consist of small to medium-sized enterprises, through their emissions, resource use, and waste generation, they collectively exert significant pressures on the environment, as the travel and tourism industry is one of the world's largest industries. Certification has been concluded to be one of the most critical and successful factors which can play a key role in the sustainable management of ecotourism. Certification may not be a panacea for all the ills of the industry in the search to make tourism sustainable, but it can be a tool for positive change, especially in ecotourism, but it can recognise the defective practises as "Greenwash" in the name of ecotourism. Certification can be expected to continue developing, evolving, and help shape the future of the rising ecotourism industry through criteria that continue to comply with the principles of sustainable development. As an appraisal instrument for the sustainable development of ecotourism, the certification framework should completely repre-

sent local economic, social, and environmental issues (Mowforth, Munt, 1998; Manning, 1999; Miller, 2001; Sirakaya et al., 2001, Hermann et al., 2011). The benefits of extending the certification process to ecotourism include the cost-effectiveness of environmental auditing and strategies for enhancing environmental management (Buckley, 1990a, 1990b, 2001). There are numerous current accreditation and ranking systems available on the market, based on different concepts of ecotourism (Table 1).

Parameters Accreditation Systems	Tourism products, services	No. of certified tourism services/ products	Geographical coverage	Туре
Green Globe 21	Tourism businesses, communities, constructors, developers	N/A	Global	Governmental & Administration Bodies
Australia-ECO Certification Program	Tours, skippered cruises, attractions, accommodation	Around 350	Australia, Worldwide	Social Partners, Civil Society, Partnerships
Sustainable Tourism Eco- Certification Program	Tour operators, accommodation services, destination tourist places, transportation service providers, community-based tourism	N/A	Global	Social Partners, Civil Society, Partnerships
The PAN PARKS Initiative	Protected areas in Europe	Around 10	Europe	Social Partners, Civil Society, Partnerships
ECEAT Quality Label	Rural accommodation services	Around 1300	Europe	Social Partners, Civil Society, Partnerships
Nature's Best	Certifies tour operators and their tour packages	Around 80 tour operators	Sweden	Social Partners, Civil Society, Partnerships
Green Tourism Business Scheme	Tourism-related businesses	Around 1400	U.K	Tourism Businesses and Intermediaries

Table 1. Comparative analysis of various Accreditation Systems in the Tourism sector

*Author Compilation

The literature review concludes that studies are required in India to understand the country's eco-destination standards. C&I is an offshoot of the principles of ecotourism, which provide a common context for the definition, tracking, and assessment of progress towards sustainable development over time (Ryan, 2002; WTO, 2004:8; McLaughlin, 2011).

The present study aims to establish a set of standards and indicators for accommodation provider certification in and around responsible ecotourism-protected areas. The criterion is designed to meet local requirements and is consistent with the Global Sustainable Tourism Criteria (GSTC) defined under the United Nations umbrella (UN). Total three principles, five Criteria, and eighty-six indicators (criteria modified according to the destination selected) were used to conceptualize, evaluate the eco-friendliness of lodges and resorts.

Methodology

For the creation of criteria and indicators, various stakeholders were identified as employees of resorts, local people linked with ecotourism, tour operators, officials from the tourism department, academicians, etc. Principles were chosen for designing C&I's. Initially, 8 parameters were pre-identified from the literature with many indicators each. For the stakeholder, a ques-

tionnaire was created in which they were asked to demonstrate how relevant 8 primary criteria are for eco-lodges and resorts using a five-point Likert scale (1 = least important, 5 = mostimportant). Furthermore, by numbering them from 1 to 8, they were also asked to show the relative value of the criteria (1 = the least important, 8 = the most important). The stakeholders were given the space to list the requirements they thought should be omitted from the list, as well as the criteria they felt should be changed or added to the list. Criteria and relevant indicators were re-designed in the second round, based on feedback from many stakeholders from the first-round survey, with the former consisting of eight criteria and the latter five. In the second round, both criteria and indicators were measured on a five-point Likert scale (1 =least important, 5=most important). Participants were also asked to rank the criteria and indicators. In the second section, participants were asked to indicate how important a number of indicators were to each criterion using a five-point Likert scale (1 = least important, 5 = most important). Further, they were asked to designate the relative importance of the indicators within each criterion, 1 being the least important, the number of total indicators for the criterion being the most important. The indicator section also provided space for the participants to write in the indicators they thought should be taken out, updated, or added to the lists, similar to the criterion section. The Spearman rank-order correlation coefficient was used for the data analysis and the rank sum method (Malczewski, 1999) was used to measure the weight or relative value for a criterion and its corresponding indicator.

The method of weighted linear combination (WLC) (Malczewski, 1999) was used to calculate the overall significance of each criterion and indicator, which was then used to calculate the overall relative significance of each indicator within the criterion. Finally, the three principles as a whole, five parameters, and 86 indicators were finalised. The methodology followed for the development of criteria and indicators is shown in Figure 1.



Figure 1. Methodology followed for the development of criteria and indicators

During 2018-19, ten accommodation providers, i.e. resorts and lodges located in different eco-destinations of India, were selected and the final performance quality criteria and indicators were administered. Primary (questionnaires, interviews, observation through visits) and Secondary data (newspapers, web information, government reports, and previous research) were collected and used in the study. The list was finalized by visiting the particular lodge and resorts, interviews with operators. A preliminary questionnaire survey was conducted via the internet after the preliminary screening of prospective lodges and resorts. For the discussion with lodges and resort operators, a list of environmental areas, topics and eco-friendly practices was planned. The key purpose of the conversation with accommodation units was to obtain and gain further insight into the knowledge of the status of accessible eco-friendly practices practiced by lodges and resorts. The various lodges and resorts selected and studied are listed in Table 2.

Nº	Name of the lodge/ resort	Year of Est.	Area (Acres)	No. of Rooms	Activities	Destination	State
1.	Resort A	2010	N.A.	12	Guided Nature walks, Birding trails, Village walks, Treks, Mountain biking, River crossing, Water surfing, Night walks, Wildlife safaris	Corbett National Park	Uttarakhand
2.	Resort B	N.A.	12	23	Guided Nature walks, Birding trails, wildlife movie shows	Keoladeo National Park	Rajasthan
3.	Resort C	1999	35	12 rooms	River, camel, and jeep safaris, birding, village visits	National Chambal Sanctuary	Uttar Pradesh
4.	Resort D	2006	40	12 cottages	Nature walks, Jungle safaris, and Village visits	Bandhavgarh National Park	Madhya Pradesh
5.	Resort E	2008	90	2 elegant camps of 9 suites each	Nature walks, Jungle safaris, and Village visits	Kanha National Park	Madhya Pradesh
6.	Resort F	2010	17	63 luxury suites	Plantation Walk, Nature Walk, Coracle Ride, Village Visit, and Worker's Trail.	KabiniNational Park	Karnataka
7.	Resort G	2008	5	5 living spaces (2 Habitats, 2 Garden Mansions, and 1 Mountain Paradise)	Wildlife Safari inside Bandipur National Park; Nature walks, Bird Safari, and Tribal Colony visit outside National Park limits.	Bandipur National Park	Karnataka
8.	Resort H	N.A.	10	20 cottages	Wildlife activities including jungle safaris, bird-watching, Fishing trips in coracles, and Cycling off-road through villages.	Nagarhole Tiger Reserve	Karnataka
9.	Resort I	N.A.	11	12 rooms	Jeep safaris, Walking Safaris, Elephant Safaris, Boat & Canoe trips, Bike tours, and Cookery classes.		Maharashtra
10.	Resort J	2001	20	25 rooms	Nature walk, village visit and safari	Ranthambore National Park	Rajasthan

Table 2. List of various Eco-lodges and resorts covered under the study



Figure 2. Map showing the location of various protected areas from where the various resorts and lodges were selected for the study

The location of various lodges and resorts located in different national parks are shown in Figure 2.

The basic concepts involved in eco-tourism have been defined based on the natural, economic, and social aspects of sustainable management. A checklist that was used during the property survey and the assessment of different practices followed by the resorts was also created. All findings have been reported and reviewed. Confidentiality concerns were taken into account and interviewees were told that the data would be kept confidential and that there would be no mention of the names of the interviewees, as well as of the hotel.

In order to know their corporate ethics and management, close observation of several different departments inside accommodation units was carried out. The main aim of the survey was to observe how within the whole company the different divisions function. It was also an opportunity to understand how an integrated green practice is part of everyday management decisions that helped recognize different best practices as eco-friendly strategies that are being pursued there. These properties offered insight into the activities inside the resort and the introduction of green practices through interviews and meetings with heads.

Findings

In keeping with the benchmark set by the Global Sustainable Tourism Council, the environmental, economic, and social aspects of sustainable management and best eco-friendly practices for natural resource management have been established as the fundamental guiding principles involved in eco-tourism. The criteria, indicators, and verifiers were developed to measure the trend of the ecological condition and sustainable management based on the below principles.

Principles

- **Principle 1:** Social empowerment to protect against tourism homogenization and community marginalization
- **Principle 2:** Economic viability to promote collective pride of ownership and as a tool for alleviating poverty.
- **Principle 3:** Environmental responsibility to preserve ecosystems for future generations.

Criteria 1: Demonstrate Effective Sustainable Management

This criterion comprises a total of 9 indicators that are generally concerned with the activities of ecotourism and planning, providing best practices in the field of tourism and planning from the point of view of conservation of nature and sustainable development. To mitigate the environmental effects, eco-tourism should be planned and controlled (WTO, 2007; Hart, 2010). The ecotourism operation, through the identification and implementation of sustainable tourism practices, is carried out and managed to preserve and improve the natural and cultural environment in which it operates. The indicators include the assessment of environmental effects, quality management measures, etc. The indicators under this criterion were 30% poorly fulfilled, 50% partially fulfilled and 20% fully fulfilled by the accommodation providers.

Criteria 2: Design and Construction of Buildings and Infrastructure

This criterion includes a total of 10 indicators generally focused on the activity of ecotourism, which entails minimal disruption and restoration of the disturbed areas to restore ecological processes. The topography of the site is followed and the process of ecotourism does not cause erosion, water, pollution of the air or soil, loss of vegetation. The construction works have maximized the use of recycled or renewable materials and practices have been applied to mitigate the environmental effects (Hammond, 1995). The indicators include land-use laws, construction design, use of recycled materials, etc. The indicators under this criterion were 10% poorly fulfilled, 70% partially fulfilled and 20% fully fulfilled by the accommodation providers.

Criteria 3: Maximize Social and Economic Benefits to the Local Community and Minimize Negative Impacts

This criterion involves a total of 14 indicators, broadly focused on the participation and empowerment of local communities, in consultation with other stakeholders, in planning and decision-making on the management and future growth of tourism in their region. It is assumed that ecotourism is a source of income and relies on natural attractions from the moment local people perceive it; they will start to appreciate and conserve it immediately (Weaver, 2000; Raufflet et al., 2008). From a growth perspective, ecotourism not only considers the overall economic benefits for the environment but also how these benefits are distributed and how the social and cultural impact of the development of ecotourism has on local people (Inbakaran, 2001). The indicators include a contribution to the local community, training and capacity building, code of conduct, equitable employment, social and community initiatives, etc. The indicators under this criterion were 40% poorly fulfilled, 40% partially fulfilled and 20% fully fulfilled by the accommodation providers.

Criteria 4: Maximize benefits to Cultural and Historical Heritage and Minimize Negative Impacts

This criterion involves a total of 5 indicators. It was noted under this criteria if the providers of accommodation actively contribute to the protection of the cultural and historical heritage of the region, involving local and indigenous communities in their planning, growth, and service, contribute to their well-being, and interpret the natural and cultural heritage of the destination for tourists (Brass, 1997; Merns, 2011). The indicators include the promotion of local art and culture, nature and cultural heritage protection, traditional awareness, etc. The indicators of this criterion were 70% partially fulfilled and 30% fully fulfilled by the accommodation providers.

Criteria 5: Maximize benefits to the Environment and Minimize Negative Impact

Most ecotourism sites are built in unique and ecologically vulnerable areas; there may be every possibility to alter the ecology and local landscape of the region. This criterion is divided into three sub-indicators i.e. Resource conservation, reducing pollution, and conserving biodiversity, Ecosystems, and Landscapes, and involves a total of 48 indicators. It also discusses the general institutional criteria required to make sustainable management of ecotourism possible (Miller, 2001; Baker, Eric, 2008). Indicators include policy buying, use of electricity, usage of energy-efficient facilities, segregation of waste, recycling, etc. The indicators under this criterion were 40% poorly fulfilled, 10% partially fulfilled and 50% fully fulfilled by the accommodation providers.

Figure 3 depicts the level of fulfilment of various criteria by the lodges and resorts. The level of fulfilment was categorised based on the different indicators met by the lodges and resorts,



Figure 3. Proportion of lodges and resorts by the level of fulfilment of criteria I-V *Source: Data collected from the field survey*

i.e. if less than 40% of the indicators were met in a given criterion, then the lodges and resorts met the criteria least/poorly, while 40-80% of the indicators were met, then the criteria were categorized as partially met and if the lodges were able to meet more than 80% of the indicators, then they were considered as fully fulfilled.

Thus, after evaluating it, it was found that two resorts, Resort F, Kabini and Resort J, Ranthambore were able to completely meet all the requirements, thus setting good examples among the other ecotourism industry accommodation providers. All the requirements were high in these resorts. They use renewable energy to meet their energy demand, 90% of people are locally employed, and efficient waste segregation is there. Matrix showing the level of fulfilment of criteria by the lodges and resorts sown in Table 3.

Nº	Criteria Name of the lodge or resort	Criteria I Demonstrate Effective Sustainable Management	Criteria II Design and Construction of Buildings and Infrastructure	Criteria III Maximise Social and Economic benefits to the Local Community and Minimize Negative Impacts	Criteria IV Maximize benefits to Cultural and Historical Heritage and Minimize Negative Impacts	Criteria V Maximize benefits to the Environment and Minimize Negative Impact
1.	Resort A	*	**	**	***	***
2.	Resort B	*	*	*	**	*
3.	Resort C	**	**	**	**	**
4.	Resort D	*	**	*	**	*
5.	Resort E	**	**	*	**	*
6.	Resort F	***	***	***	***	***
7.	Resort G	**	**	**	**	***
8.	Resort H	**	**	*	**	*
9.	Resort I	**	**	**	**	***
10.	Resort J	***	***	***	***	***

 Table 3. Matrix showing the level of fulfillment of criteria by the lodges and resorts.

NOTE: $\star \star \star -$ Fully fulfil, $\star \star -$ partially fulfil, $\star -$ least/ poorly fulfil

It was also pointed out that the above resorts keep complete records of their use of water and electricity, a record of waste generation and recycling, etc. They have the best employee award for encouraging their workers. To inspire tourists and preserve the regular records of animal sightings during the safaris, they arrange various eco-activities such as a nature trail, village visits, safaris, birding, etc.

It was noted that resorts that we're able to completely fulfil the requirements had good economic benefits when following all of the above good practices and also visited by more international tourists, thereby providing a benchmark.

In addition, it was also noted that, relative to the others, the lodges and resorts which were able to meet the first criterion were able to meet the other criteria efficiently. On average 15.78% of lodges and resorts were able to meet various criteria fully, 37.89% partially and 41.11% least/ poorly fulfil. The lodges that have least or poorly fulfilled the criteria were having an economic loss and even less visited by foreign tourists. We may therefore analyze that the resorts that follow effective and good ecological practices have been able to fulfil the requirements and have had a positive impact on ecotourism. Practices included increased usage of natural resources, techniques for water recycling, energy-efficient machinery, use of green goods, education and

knowledge of workers, local employees, support for villages, etc. The key reason for the accommodation to be accredited was to have an advantage over rivals, an internal green champion, and to keep up with rivals.

Discussion

The study highlighted environmental, economic, and socio-cultural parameters and indicators that are critical for the long-term viability of an ecological resort, which is consistent with prior research (Goffi et al., 2018; Poudel et al., 2016). Sustainability and commercial success must be balanced in ecological resorts (Mihalic et al., 2012). The indicators were created from the perspective of a nature-based resort business and are an essential reference for tourist enterprises to evaluate the sustainability of their operations. When these developed C & I were implemented, it was noted that the resorts that met the majority of the requirements concentrated more on the direct involvement of local people in decision-making on tourism and conservation, interpretation and show of cultural heritage, conservation and tourism education to enable informed participation, unequal distribution of tourism benefits to those with the most economic needs. As a result, in this study, human resources are recognized as a sustainability indicator. This metric is especially essential for long-term community-based tourism in ecotourism locations (Choi, Sirakya, 2006; Lee, Heish, 2016). The local architectural style and the use of recycled materials are often used on a limited basis. Because of the requirement to maintain high lodging quality, resorts are energy and water-intensive enterprises, causing resource constraints (Gossling, 2015). Energy and water management are the most significant environmental sustainability indicators in the resort or hotel industry (Gossling, 2015; Mihalic et al., 2012). Some of the lodges had a broad capacity and very few recycling activities. The activities produced are identical and the limited amount of information supplied to the visitor is of average quality. Managers must increase the efficiency of water and energy usage, decrease the amount of solid waste, conserve natural resources, give environmental education to workers and visitors, and engage in environmental protection measures when it comes to environmental management.Due to social taboos, community participation was limited mainly to women. Participation, not involving the entire society, is solely on an individual basis. This was attributed by lodge owners to cultural issues. Local communities are extremely thankful and loyal to the owners of lodges, who have a paternalistic mentality to a large degree, contributing food, wood, toys, and other products. Some obstacles would have to be faced for ecotourism to become a viable economic activity: this should include all aspects of eco-lodges, not just architectural features. Among the concerns that need to be addressed are the development of visitor and employee environmental awareness programs, behavioral standards, and a clear classification system for jungle lodges. Luxury lodges are largely built by business houses with the commercial motive; no approach to the core principle of ecotourism, i.e. sharing income with local citizens, is pursued directly to the local community except for few labor jobs. The resort is more oriented on the product aspect, treating ecotourism as equal to any form of naturebased tourism. It was noted that in all the resorts, owners are all outsiders and often go outside regardless of the profit accrued, which was also the same in many recorded destinations. The resort, adopting best practices, has expanded community commitments to locally operated ecotourism, generating viable economic opportunities, including high-level management positions and reducing environmental emissions. As the experience of ecotourism is marketed to a different lifestyle from large-scale ecotourism, the construction of facilities and infrastructure does not have to comply with the expectations of corporate Western tourism and can be much easier and less costly. Since local goods, supplies, and labor are used, there is a greater multiplier impact on the economy.

Over the past 10 years, few resorts that have already had the experience of some qualification have seen an overall increase in both their company and results. It was concluded that there was a decrease in the use of resources; a general improvement in the management of the property; a decrease in the production of solid waste; a decrease in running costs; an increase in staff training; environmental management, etc. International recognition, partnerships with government agencies, and increased visibility within the larger community were additional outcomes suggested by respondents.

Conclusion

This study suggests that sustainability indicators are effective instruments for attaining more sustainable resort development. Although there are a number of published indicators for measuring sustainable tourism, satisfactory sustainability metrics for resorts are destination-specific. This study selected sustainability indicators, computed weights for dimensions comprising 3 principles, 5 criteria, and 86 indicators, and implemented them on various ecological resorts situated in India. These were centered on environmental (ecological), social, economic, cultural, and institutional considerations. In conclusion, despite the fact that the majority of the selected resorts are concerned about the environment, implementation of environmental initiatives has been limited due to unattractive benefits compared to costs, a lack of government incentives or rebates to encourage the implementation of green practices, and a lack of knowledge about the various methods that can be used to protect the environment. According to the results of the field survey, Indian lodging providers are still more concerned with the economic aspect of the company; however more hotels need to be studied in order to make more better inferences. Future study may be undertaken to better understand the breadth of the actual challenges that resorts confront in order to get insights into how to improve and inspire the Indian hotel sector to strive for greater environmental performance. The study also offers some interesting insights into the nature of environmental performance management and ecotourism accommodation provider certification in the Indian tourist lodging business. As a result, if ecotourism certification becomes required, it will help to maintain a check on resorts in operation. However, the study has limitations in that it has yet to be validated in a field-wide longitudinal study. This study likewise focuses on the Indian hotel sector; nevertheless, we believe that the findings will be useful to hotels in other countries, particularly those with comparable levels of economic growth, similar accommodation facility and climate conditions as India.

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