



GREEN PRACTICES IN THE HOSPITALITY INDUSTRY: ODISHA A CASE STUDY

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ABSTRACT

At the present time the most alarming global threat is environmental crisis . The natural environment is seriously affected by the negative impact produced from the process of rapid urbanisation with the advent of technology. Global warming increases and natural resources are being depleted, the need to go green is more important than ever. The natural environment is increasingly being viewed before initiating any types of business. The demand for Research in environmental sustainability linked with economic and social concerns is increasing day by day. All kinds of trends are shifted to eco-centric management. Organizations operating under this type of operation establish harmonious relationships between their natural and social environments. These organisations enable to renew natural resources and to minimize waste and pollution. Hotel industry is one among them. Odisha is situated in the coast of Bay of Bengal surrounded with approximately 360 km coast line for tourist attraction. The rapid mushrooming of hotels day by day near the beaches is increasing to meet the tourist demand. Here in this study an attempt has been made to access the scope of go green practices of hospitality sector of odisha.

KEYWORDS: *environmental crisis, urbanisation, Global warming and sustainability*

INTRODUCTION

The whole world is suffering from heavy environmental exploitation at the present time especially for the sec of tourism promotion. The advent of technology and rapid urbanisation drastically affect the natural environment. All the industries are responsible for this. But the hospitality and tourism industry is causing more damage to the natural environment. Because for that environmentally friendly practices has become an important aspect of hotels main goals in recent years (Mensah, 2004). The Green Assessment Survey by the American Hotel & Lodging Association (2008) revealed that 90% of the companies have participated in the assessment embraced green practices. Finally it has been concluded that green practices is not only needed but also it should be an important norm in the hotel industry. Research into this field has been gaining momentum in present time. Energy saving has been considered one of the most significant areas of environmental management in the hotel industry because hotels in general consume considerable amount of electricity and fuel energy in various operational areas according to the U.S Environmental Protection Agency (EPA). Again It is reported that the 15 percent energy can be saved through green practices such as replacing light bulbs with energy. Fossil fuels needs to be reduced because for the acute shortage. The use of alternative energy such as renewable is

more advisable and more sustainable. The Second International Conference on Climate Change and Tourism held in Davos in 2007 recognized the significance of using energy efficient and renewable energy technologies in the hotel industry to reduce its carbon footprint (Cabrini, 2009). Energy sustainability is gaining momentum from all industries day by day because of the significance of global climate issues and the creation of national emission reduction targets. The major means to reduce greenhouse gas (GHG) emissions include increasing energy-efficiency and substitution to less carbon intensive fuels. Sustainability decisions related to energy consumption in the hotel building are dependent on energy use and energy source. Management practices of accommodation facilities, energy management practices include , implementing renewable energy programmes such as the use of wind power, solar power and automated (computerized) energy control systems, installation of energy efficient laundry equipments, use of digital thermostats to control guestroom energy consumption, installation of occupancy sensors (which automatically turn the lights out when guests leave the room), reduction of air circulating equipment through implementation of smoke free policies, use of energy star qualified products, installation of triple glazed windows or reflective glass to save energy for heating and cooling, replacement of outdoor and exit signs with Light Emitting Diode (LED) signs and use of waste heat

from the power generators (Gise, 2009). There exists a range of sustainable initiatives from simple to complex and conventional to innovative (Dutta, 2008) for example, the adoption of simple low cost measures such as reusing linen and towels, recycling, shutting equipment when not in use are rarely considered as innovative practices. Building design techniques that maximize the available daylight include insulation and thermal mass to reduce indoor temperature variability, orienting new buildings to gain maximum sunlight and natural ventilation and wherever appropriate shading the building. Renewable energy technologies such as solar thermal and solar PV are relatively more popular than other technologies that use clean and renewable sources of energy including biogas, combined heat and power systems (CHP), geo thermal systems, green power, micro-hydropower, solar photovoltaic systems, solar water heating and wind energy systems (Daly, Glassmire, Langham, & Paddon, 2010).

Sustainability practices in tourism combat the environmental degradation that resulted from tourist transaction. Hotel activities have a great impact on natural resources through their water consumption, energy consumption, and waste generation. Thus the hotel industry, as a main contributor to tourism, must maintain environmentally responsible standards to ensure that hotels can reduce their negative impact on the environment while still providing high-quality service to hotel guests. As the level of ground water level is reduced the hotel industry has a responsibility to conserve water whenever possible. Furthermore, access to clean and safe water will become an important determinant. Kasim (2007) noted that luxury hotels in particular consume large amounts of water for leisure purposes such as swimming pools, spas and golf course irrigation. In addition, the need to deal with wastewater in a sustainable manner is now seen as essential for the ongoing potential of a tourism destination. Guestrooms, kitchens, restaurants, laundries and gardens generate large volumes of wastewater which can result in disease and negative ecological impacts. A study by Harju (2012) was done with the aim of findings out how the incentive system in an economy affected environmental management. There is an urgent need for hotels, guesthouses, restaurants and golf courses to better manage waste water protect the environment and meet a growing customer demand for environmentally-friendly facilities. In odisha, it became a serious issue for the hotel industry. Most of the hotels those are situated near the beach of Puri, Konark, Chandipur etc. are not taking good effort in this respect. Wastewater management and treatment activities which tend to be highly technical require professional expertise to determine the most appropriate technological solution based on efficacy, costs, and impacts. (Harju, 2012). Water usage in hotels includes use for sanitary purposes, recreation, cleaning, cooking, drinking and heating, ventilating, and air conditioning (HVAC) systems. The interior design of the hotel plays a large role in sustainability. Consumers have become more environmentally conscious causing hoteliers to become more interested in Low impact interiors to “create healthy and productive places to stay and work. The push towards “green” interiors also helps hoteliers get closer to their “green” building certification. Sustainable interiors should consist of products whose manufacturing have little to no impact on the environment and can be environmentally friendly to dispose of. Sustainable flooring includes products made from renewable or recyclable material. Bamboo has become a

popular sustainable flooring option because of its comparable durability and strength to hardwood floor and it is a highly renewable material. Bamboo is considered sustainable because it grows much faster than wood and can re-harvest itself through its root system (Winchip, 2007). Solid waste is a key concern in the hospitality industry. Typically, a hotel guest can produce one kilogram of waste a day that accumulates to thousands of tonnes of waste annually (IHEI, 2002). Many small hotel operators have very little interest in reducing and/or recycling waste, believing that such activities are too expensive and time-consuming (Chan & Lam, 2001).

There are a number of tourist places in Odisha which are mushrooming with varieties of hotels to meet the tourist demand. Among them few destinations are more developed like Puri which has annexed with large number of hotels and as a result of which a negative impact damaging the entire beach and sea water. Approximately nine hundred three hotels are operating illegally in the State without consent from the Odisha State Pollution Control Board inspite of the tribunal” direction According to information available. Considering the statutory embargo under the Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974 which mandates that no industry can operate without the consent of Odisha state pollution board to establish and operate.

Mostly the tourist spot like Puri, Konark, Bhubaneswar experience significantly the negative impact caused for the rise of numbers of hotel. The state Odisha is a now in the developing stage in the field of tourism and hospitality. There is a need of a study on the sustainable growth of tourism with the hotel industry of the state. This study aims at understanding the importance of implementing sustainable environmental friendly practices in the current hotel industry and the perception of the same from the point of view of the customers as well as the industry experts. Many hotels have benefited from management for sustainability such as enhanced reputation of the firm and more worth customers. For the business standing, it reduces business’s cost for posting advertisements and the clear hotel’s orientation shows hotels’ positive image which might increase employees’ recognition toward the business. Sustainability in business is the growth in lively processes which enable people to understand the potential to protect the Earth’s existent support systems. Considering to the future today’s green concerns will definitely become facet of more synchronized business environment, among all hotels may consider in near future to widen awareness and improve business. Green initiatives and programs undertaken by the hotels may be used as a very powerful marketing mechanism. Also co-operation among the different hotel chains and groups can make their task to be easily accomplished. Therefore reasonable price is one of the most influential factors affecting the choice of eco-friendly hotels. Although most of the hotels are concerned about the environment implementation of environmental initiatives are still minimal due to unattractive benefits compared to costs not enough incentives or rebates from the government to encourage implementation of environmental practices and lack of knowledge about the variety of methods that can be used to protect the environment and care for society in an effective way.

MOTIVATION FOR THE STUDY

At the present time the world is facing environmental challenges, which include global climate change, ozone

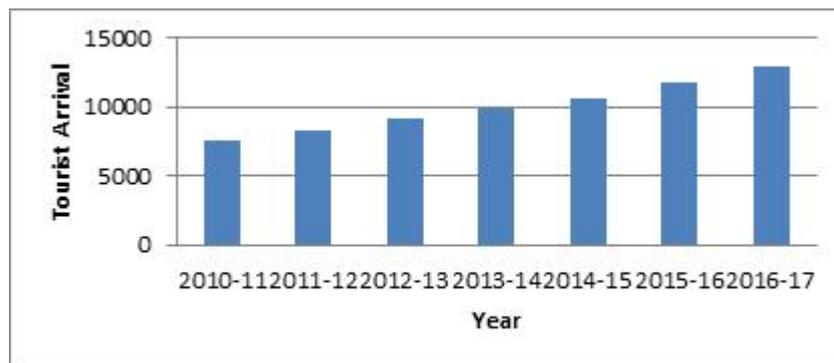
depletion, pollution, high consumption of resources and increasing amounts of solid waste. Hotels, as part of the hospitality industry, exert a significant impact on the environment. There is an urgent need to reduce the exerted pressure of this industry to control the hazards to the environment. Solid waste disposal and sewerage problem of Odisha is day by day increasing for the rapid mushrooming of hotels. There are near about 903 hotels are operating illegally in the State without consent from the Odisha State

Pollution according to the information available. Again the most interesting thing is the people and the all stake holders are very much aware about the protection of the environment but the reason for not adopting to go green practices is not clear. The total number of hotels of high spending group, medium spending group and lower spending group with total number of rooms and beds from 2007 to 2016 are shown in the table below.

Table: Hotel position in Odisha (2007 to 2016)

Year	Number of Hotels				Number of Rooms	Number of Beds
	HSG	MSG	LSG	Total		
2007	62	204	936	1202	23341	44948
2008	86	211	935	1232	24197	46809
2009	96	232	948	1276	24962	48408
2010	114	263	942	1319	26531	51233
2011	150	245	933	1328	27291	52867
2012	251	288	918	1457	30770	60077
2013	306	356	923	1585	33349	65967
2014	334	399	956	1689	35373	70600
2015	383	455	921	1758	36382	73086
2016	433	474	916	1823	37674	75152

The details of tourist arrival in Odisha from 2010-11 to 2016-17 has been shown below.



Source: SLBC (147th Issue)

Here in the table below the Odisha's share in national tourist arrival has shown from 2010 to 2016.

Odisha's share in National Tourist Arrival

Year	India	Odisha	Odisha's share (%)
2010	57.76	0.50	0.87
2011	63.09	0.61	0.96
2012	65.78	0.65	0.97
2013	69.78	0.67	0.96
2014	76.79	0.71	0.93
2015	80.27	0.67	0.83
2016	57.76	0.50	0.87

Source: Tourism Department, Government of Odisha

Here in this state the tourist arrival is significant and the various types of hotels are also existed but all these are very much reluctant for green practices in spite of knowing its benefits.

LITERATURE REVIEW

The research study is to determine the scope of adoption of green practices in the hotel sector of Odisha. The research looked at various factors responsible for green practices adoption by the hotels of Odisha. This include green energy consumption, water and liquid waste, air quality and green house gas emissions, green building and design and solid waste

management. The major tourist destinations like Puri, Konark and Bhubaneswar of Odisha have huge numbers of hotels of various categories. These are just mushrooming near the beach side to meet the need of tourists. But Hotels are flouting the control norms of, Odisha state pollution control board and are on the pollution panel's radar under the direction of NGT national green tribunal. It has been noticed that the hotels did not have sewerage treatment plant (STP) to treat waste water generated in hotel rooms, kitchen and restaurants. "The regional office of OSPCB had conducted an inspection before taking the decision to seal the hotels. Meanwhile, the green

panel has listed few hotels in Odisha for not paying the mandatory pollution charge, otherwise called as environmental compensation. Pollution charge of Rs 1 lakh would be collected from the hotels which did not take the yearly consent certificate to operate the establishment till the August 6, 2015 cut-off date as fixed by the NGT.

The Orissa State Prevention and Control of Pollution Board was constituted in pursuance to subsection (1) of Section- 4 of the Water (Prevention and Control of Pollution) Amendment Act, 1974, vide Notification No.1481-VII-HI-11/83 (Vol. II)-S.T.E., dated 15.07.1983 after the Orissa Legislative Assembly adopted the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. The Board was re-designated as State Pollution Control Board, Orissa vide Notification No. Env-E(F)/8/99/1882 F&E, dated 16.07.1999 of the Forest and Environment Department, Govt. of Orissa. From time to time, environmental activists have alleged that a large number of hotels in Puri were contributing significantly to the air and water pollution. "The hotels often release wastewater directly into the sea, polluting the beach," said Jagannath Bastia of Beach Protection Council.

Green practices is an environmental aspect that institutes and follows ecologically sound programs such as water and energy savings, reduction of solid waste and consumption of energy. Environmental management embraces both technical and organizational activities aimed at reducing the environmental negative impact caused by firms operations, (Salzman, 2000) hence the long term planning of environment management activities determines the environmental strategy of a firm, this strategy may differ depending on the industry, the characteristics of each organization and its implication on the environment, the importance of the natural environment has been addressed in the context of services in general and in the case of the hospitality industry in particular (Schendler, 2001). It is important to remember that instituting green practices is not necessarily something that can be visible to customers. Awareness of the world's environmental issues such as global warming, carbon emissions, toxic substance usage, and resource scarcity has escalated over the past decades. Policy makers and activists are advocating for going green, and many organizations throughout the world have responded to this by applying green principles (Xie and Breen, 2012). Tourism and hospitality industry in the coastal region is commonly recognized as an important role in economic growth and continues to expand at a rapid rate (KNBS, 2014). Tourism development has been a profitable economic tool, making it an alluring industry and form of development for many countries and regions around the world. The hospitality industry incurs huge operating costs due to its nature of consuming large amounts of energy and water resources. Hotels equally incur huge costs in the operational departments of housekeeping, kitchen and laundry. While there are a number of ways in which costs can be addressed, green operation practices have been found significant in managing the costs of operations in organizations and enhance operational performance (McCrea, 2010). These practices can be adopted by hotels and hospitality industry in the areas of energy and water conservation, waste reduction, indoor air quality and environmental education. Related studies have been on green practices (Sara, 2013) Report of lean management and supply management: their role in green practices and performance London examined that

Organizations are faced with increasing pressure to engage in sustainable development and to integrate environmental and social dimensions into their traditional performance metrics. Lean management and supply management are potentially important determinants of environmental performance and can be seen as capabilities that ease the adoption of environmental practices therefore supply management as well as lean activities provide means by which environmental actions can be encouraged leading then to improved environmental performance (Qinghua, 2004). On relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese Manufacturing enterprises examined that green supply chain management (GSCM) is emerging to be an important approach for Chinese enterprises to improve performance, possibly on both these dimensions. GSCM has emerged as an important new archetype for companies to achieve profit and market share objectives by lowering their environmental risks and impacts and while raising their ecological efficiency. Whilst the issue of green practices in the tourism industry is sparse, there is a need to explore the hotel and hospitality in Odisha.

RESEARCH OBJECTIVES

The research objectives for this study are

- To focus the range of adoption of green practices in the Hotel sector of Odisha.
- To highlight the factors influencing adoption of green practices in this industry.
- To identify the benefits of green practice for hotel business.
- Analyzing the Feasibility of adopting green practices in Odisha.

SCOPE OF THE STUDY

Sustainability practices in tourism combat the environmental degradation that resulted from tourist transaction. Hotel activities have a great impact on natural resources through their water consumption, energy consumption, and waste generation. Thus the hotel industry, as a main contributor to tourism, must maintain environmentally responsible standards to ensure that hotels can reduce their negative impact on the environment while still providing high-quality service to hotel guests. There are a number of tourist places in Odisha which are mushrooming with varieties of hotels to meet the tourist demand. Among them few destinations are more developed like Puri which has annexed with large number of hotels and as a result of which a negative impact damaging the entire beach and sea water. The other major tourist spot like Konark, Bhubaneswar also experience the same negative impact caused for the rise of numbers of hotel. The state Odisha is now in the developing stage in the field of tourism and hospitality. There is a need of a study on the sustainable growth of tourism with the hotel industry of the state.

METHODOLOGY

The methodology used in this research followed a case study approach. In this study, multiple case studies were used to collect data from hotels. In order to reach the goal of the study, a qualitative research approach was employed. All the participants in this study shared a common feature. The participants are hotel staff and guest. These hotels are spread exclusively near the beaches. Purposive sampling was employed to determine the sample. An interview schedule

was developed according to variables developed in previous case studies pertaining to green management in hotels.

HOTEL AND THE ENVIRONMENT

Climate Change is one of the most important global environment challenges facing humanity with implications for Food Production, Water Supply, Health and Energy, etc. Addressing climate change requires a good scientific understanding as well as coordinated action at Regional, National and Global Level. The adaptive capacity of community likely to be impacted by Climate Change is low in developing countries. Our state is endowed with rich natural resources which have made us more vulnerable, since three-fourth of our state's population depends on climate sensitive natural resources based livelihood such as Agriculture, Forestry and Fisheries. For more than a decade, the state has been experiencing contrasting extreme weather conditions; from heat waves to cyclones; from droughts to floods. In last four years, calamities have claimed few thousand lives. Climate change has the potential to derail the current growth strategies and deepen poverty. Considering the concern, our State has taken an early initiative to formulate Climate Change Action Plan in a holistic manner. But the society can not be free from different human activities or trend. Hospitality industry is one among them. Increased demand on energy supply, an increased burden on solid waste management and the pollution of water bodies, soil and air are among the high level of negative environmental effects in the hospitality sector of the tourism industry (Kasim 2006:4). Owing to these effects, substantial uncertainty exists regarding the long-term implications of such negative environmental impacts, in particular, those relating to global climate change (Rogerson & Sims 2012:291). This increasingly calls for 'greening' of the hospitality sector and the creation of carbon-neutral accommodation at various destinations. Accommodation (hotels and other lodging establishments) is one of the substantial areas of the hospitality sector (Ottenbacher, Harrington & Parsa 2009:66). As an important component of the accommodation sector, hotel operations are characterised by a massive number of activities that collectively exert a significant impact on global resources (Kirk 1995:3). The considerable environmental effects of hotels contribute to problems, many of which are international in scope, with the major one being climate change (Andrea 2007:1916; Bohdanowicz, Zientara & Novotna 2011:801). Hotel operations produce emissions of greenhouse gases, which are released into the air, in particular, CO₂ and chlorofluorocarbons (Kirk 1995:5; Verginis & Wood 1999:133). Moreover, it has been shown that of all commercial buildings, hotels exert the greatest negative influence on the environment. According to estimations, an average hotel releases between 160 kg and 200 kg of CO₂ per square metre of room floor area per year and the water consumption per guest per night is between 170 and 440 litres in the average five-star hotel. On average, hotels produce 1 kg of waste per guest per night (Han, Hsu & Sheu 2010:325). With the negative impacts that hotels exert on the environment, greater pressure is placed on governments and role players in tourism to reinforce eco-friendlier enterprises and green consumption in hotels (Moreo 2008:1). This compels hotels to demonstrate responsible behaviour to become 'eco-friendly hotels' or 'green hotels', which refers to accommodation establishments that have made a commitment to implementing or following various ecologically-sound practices, such as saving water and energy as well as reducing solid waste (Manaktola & Jauhari

2007:365). "The situation in Puri coast is reflective of the scale of problem that threatens our coasts and the state of coastal regulation in India," says Datta. In India, the Coastal Zone Regulation (CRZ) Notification, 2011 is the main law governing coastal management that aims to protect coastal ecology and livelihoods. The most sensitive area in the coastal zone is designated CRZ 1, that includes mangroves, corals and habitat of various marine species. An area which lies within 500 metre (m) of high tide line (HTL) on the landward side falls within this zone. According to the CRZ notification, no new construction activity is permitted in CRZ 1, except for activities that are indispensable, including projects relating to Department of Atomic Energy, laying pipelines, conveying systems including transmission lines of installation of weather radar monitoring systems by India Meteorological Department.

The petition raised serious concern over CRZ violations in Puri beach. According to official estimates of Odisha Tourism Department, there are more than 360 hotels in Puri. The high footfall of tourists can be estimated from the fact that the average occupancy of the hotels over the past five years has been between 60 to 70 per cent, with an average of 1.5 million tourists visiting annually. "There are several new constructions under way on the beach which are within 100m of the HTL," alleged Datta. The bench noted that many of the hotels being developed close to the sea not only put pressure on the fragile coastal zone, but also are a threat to human life and property. The bench cited the instance of the recent Phailin cyclone when high tidal waves reached the first floor of some of the hotels located within the CRZ zone and blocked the entire road with sand as high as 10 feet at some places. The bench noted this to be the "devastating effect of infringement of CRZ Regulations". Such violations also point towards disregard of the fact that given its vulnerability towards flooding from cyclones, the Ministry of Environment and Forests has already identified Puri as a "high damage risk zone" in the Ecocity Development Plan of Puri, 2004. Water pollution is also a major threat to the coastal areas of the town. Improper management and disposal of domestic solid waste and sewage is affecting the water quality on the sea coast. A site visit by Odisha state pollution control board (SPCB) in July this year indicated serious pollution of water resulting from untreated waste discharge. The waste water discharge from the food preparation facility of the Jagannath temple in Puri was identified to be a major problem. As noted by the temple authority, on a regular basis food offering is prepared in this premise to thousands of devotees. The untreated waste from here enters the municipal drain and is finally disposed off in the sea. The report submitted by SPCB showed water quality parameters of the waste discharge do not meet the prescribed standards. According to the report, the concentration of total suspended solid was found to be 4,830 mg/litre as against permissible limit of 200 mg/l, BOD is 10,200 mg/l as against permissible limit of 75 mg/l; COD was found to be 20,159 mg/l as against provided standard of 250 mg/l. The report also indicated the dismal state of sewage and solid waste collection, treatment and disposal in the city. "The only solid waste management facility that the city has is practically non-operational and the sewage treatment plant is still under construction," says Dilip Kumar Behera, senior environmental scientist with the SPCB. Acknowledging the urgency of the situation he said SPCB had warned the municipality about the situation, but that till date the response

has remained unsatisfactory. NGT had earlier given direction for setting up a committee chaired by the chief secretary of Odisha that was to visit Puri town to examine all the environmental problems, and submit a report on the pollution status, provisions for solid waste and sewage treatment and disposal and disposal of bio-medical waste in the city. The committee was also required to submit detailed information on unauthorized constructions existing in the CRZ and within 500m of high tide line. The response of the state government or the concerned authorities in such matters of violation is also required to be filed. In spite of all these the hotels are still waiting to adapt go green practices.

GREENING TRENDS IN HOTELS

Man made green house gas emissions have resulted in a dramatic increase in the earth's temperature over the past century. The projected future increase over the next 100 years due to growing emissions could possibly warm the planet by 50C relative to the pre-industrial period. Such a change in the climate can result in physical impacts which in turn could severely limit development. Climate change has special relevance for Orissa for two reasons; because of its location and the geophysical conditions, climate change could have a disproportionate effect on the state and secondly, because the state has an urgent development imperative because of the fact that a large percentage of its population is still deprived of a decent standard living. Under these circumstances the Climate Change Action Plan for the state of Orissa assumes greater significance. Within the hotel sector, the areas of concern for the environment include pollution through solid and liquid waste, high energy consumption and the increasing release of greenhouse gases that cause changes in the atmosphere. Consequently, practices such as recycling of

waste, waste management, supplying clean air, energy and water conservation, environmental health, adopting a purchasing policy and environmental education are being considered in various hotels in mitigation of the negative impacts on the environment (Mensah 2006 : 415). The coastal city of Puri in Odisha, which is a major pilgrim centre, is under the scanner of the National Green Tribunal (NGT). Subhas Datta, one of an environmentalist from West Bengal, raised concern over indiscriminate development on Puri beach and pollution of coastal waters and then the NGT bench chaired by Justice Swatanter Kumar has issued a restraint order on any construction activity on the beach. The bench also directed the state government and Puri municipality on the status of solid waste and sewage management and disposal in the city. A number of factors are posing a major threat for the coastal areas of Puri, says Datta. The area suffers from severe development pressure as well as serious pollution problems stemming from ineffective functioning of local authorities in managing municipal solid waste and sewage. The bench expressed disappointment on seeing the scale of indiscriminate construction that is being carried out on the beach, and the fact that the Puri municipality has laid a sewerage line right on the beach, which is a protected zone falling within the buffer zone of the coastline. The bench noted that such mindless activity sets the perfect stage for disaster to happen to happen.

Government of India estimation indicates total GHG emission in 2007 was 1727.71 million tonnes of CO₂ equivalent of which contribution of energy and industry sector is 58% and 22% respectively. Thus total estimation from these two sectors is 1382 million tonnes. Hence Odisha contributes about 6% to the national emission.

Sectoral Emission per annum	Unit	Amount	Remark
Industrial, Transport and Energy Sector	Million tonnes of CO ₂	82.68	Annualised adding the CO ₂ and CH ₄ emissions
Municipal solid waste and sewage	Million tonnes of CO ₂	0.56	Annualised CH ₄ emissions converted to CO ₂ equivalent for 2010-20 period
Mitigation Potential from Conservation	Million tonnes of CO ₂	45.6	Annualised CO ₂ sequestration for 2010-20 period
Net Emission	Million tonnes of CO ₂	37.64	
Pre Capita Emission		1.02	With 2001 population estimated at 36.8 million
National Emission per capita		1.40	Estimated for 2007

Quite a number of best practices are undertaken in the hotel sector in this regard. This will render the sector more sustainable and environmentally friendly. Given that 85% of leisure travellers consider themselves environmentally conscious, that is, 'green' consumers (Miller, Mayer & Baloglu 2012:395), some hotels have embraced the principles of sustainable development to mirror customer concerns and have thus attempted to minimise the energy consumed during the customers' stay through the introduction of minor measures such as re-using linen and towels (Page 2009:287). Major steps have also been taken by hotels, which have conducted environmental audits to assess the environmental costs of their activities in relation to energy consumption, transport, waste, purchasing, health and the local environment (Page 2009:288). Environmental sustainability is one of the major aspects to be considered regarding general sustainability (Jeter 2009:9; Page 2009:287). Demands from governments

or regulators require hotels to implement green practices (Kim & Choi 2013:159). Green practices are ways to use products and methods that would not negatively impact on the environment through pollution or by the depletion of natural resources (Smith & Perks 2010:3). These green practices include sustainable management of water, energy conservation, solid waste management, ensuring air quality, environmental purchasing, community awareness and maintenance of permits (see Table 1). These practices are not yet initiated by the all categories of hotels of Odisha. But the awareness has already been generated by all types of hotels. The big hotels like star category are adopted a very little extent in Odisha.

Barriers to deploying Environmental Sustainability practices in Hotels

Although environmental sustainability management practices are accepted a little in the hotel industry, there are still some barriers that block many hotels from implementing these practices.

- ❖ It may depend on the size of an organization, its culture and management style, or its pre existing environmental program. Lack of information and the necessary resources are also key barriers to environmental management.
- ❖ The conflict between the guests' comfort and environmental issues is one barrier that blocks hotels from implementing environmental sustainability.
- ❖ The consumer's low demand for environmental management.
- ❖ Scarcity of resources may affect the drive to implement environmental management in a hotel; these resources include knowledge, skill, management, staff time, money, purchases, equipment and guidance for the environment program.
- ❖ Business practices with lack of capital.
- ❖ Lack of emphasis on environmental protection, insufficient physical infrastructure, lack of information and target educational campaigns, incompatibility with existing corporate culture, lack of guidance from government agencies, lack of environmental awareness, lack of information and lack of relevant policies for sustainable tourism development

CONCLUSION

It is concluded from the study that the realisation about green practices in hotel operation has already been generated among the proprietors as well as the hotel managers. The process has also initiated. But the only problem is mostly the hotels of Odisha are built without proper long term planning with consideration towards environment. This sector is facing various types of increasing burden like solid waste as well as excessive use of energy and water because for lack of planning. But the most significant issue of hotel sector here is sewerage disposal. It has become imperative that hotels take action to mitigate their negative impact on the environment. Concerning the availability of green management policy, the study revealed that while the hotels that participated in the study generally have no green management policies, they have implemented some green initiatives. Green management initiatives implemented in hotels range from energy saving, use of solar energy, maintaining a paperless environment through a no-print policy, saving water by using towels more than once before laundering, reuse of soap bottles and waste management. The reasons for implementing green management initiatives

include saving resources and reducing costs as well as protecting the environment so that it becomes sustainable. The implementation of such initiatives has been still haphazard rather than systematic. The study has also revealed that green management is going to be adopted by some of standard hotels for marketing reasons in order to retain customers and to gain a competitive advantage. The hotels should develop green management policies to guide the implementation of environmentally friendly practices.

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