



Management of Carbon Footprint: A Key to Sustainable Tourism Development

Amit Sharma amitsharma_iim@yahoo.com

Global banking School London

Abstract

A carbon footprint is defined as the total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tonnes of carbon dioxide (CO2)". Global tourism has become a more than 1000 billion dollar industry with a very high growth rate that is even faster than international trade across the globe. No country, which is having an opportunity of having tourism can afford to ignore it. Tourism statistics exhibits that the international arrivals and departures have increased a lot in recent years.

Key words: Carbon footprint, greenhouse gases, Global tourism, recreation, adventure, philanthropy, religious, business, economy



INTRODUCTION

Tourism may be defined as an occurrence of traveling, however, the traveling may be done for the many purposes including vacations, adventure, philanthropy, pilgrims, official or even for medical purpose for some limited period of time. Today, tourism is one of the major source of income for many countries and contributes to the economy of host countries as well as guest. Tourism statistics exhibits that the international arrivals and departures have increased a lot in recent years. A carbon footprint is defined as the total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tonnes of carbon dioxide (CO2).

India is the country that is surrounded by the Himalayas, Arabian Sea, Bay of Bengal and the Indian Ocean, as wel as India is also known for its rich culture, ancient heritage, unique architecture of temples, wildlife, sanctuaries etc. there is a long list that attracts the large number of tourists across the globe. The best part with India is that India is not only confined to above mentioned areas but also it has got many tributaries including major ones like Ganga, Yamuna, Saraswati,Brahmaputra, Indus etc. So many incredible waterfalls also add to the tourism of India

India is a fascinating tourist destination of many foreigner and even Indian tourists. India is place which is full of diversity. India is a Multi-lingual country where you can find many people who speaks 140 different languages with more than 1500 dialects. Tourist may explore forest, Desert, water destinations like Goa, Andaman and Nicobar Islands, the famous carvings places including Badami, Ajanta, Ellora, and Hampi etc. Besides all earlier mentioned places, India is also known for its famous temples like Madurai temple in Tamilnadu, Tirupati temple in Andhra Pradesh and so on.

- 1. To highlight the importance of tourism industry in India.
- 2. To understand the concept of carbon footprints.
- 3. To identify the major contributors to carbon footprints.
- 4. To elaborate the strategies to manage tourism carbon footprints for sustainable development



LITERATURE REVIEW

Contextual Background

The rank of Indian tourism sector is seventh globally on the basis of its contribution in the GDP of the country. As per the latest report of the World Travel and Tourism Council (WTTC). The business generated by the travel and tourism sector was about Rs 14.1 trillion i.e approximately 208.9 billion US dollars in 2016, that makes India 7th largest in the world on the basis of its business size; the total revune of the tourism is equal to 9.6% of the GDP of India. In addition, the sector has also created 403 lac jobs in 2016 and India has been ranked 2nd in the world on the basis of total employment generated. The sector accounts for 9.3% of the country's total jobs.

India's Travel and Tourism sector was also the fastest growing amongst the G20 countries, growing by 8.5% in 2016. A further 6.7% growth is forecast for 2017. WTTC said India's figures are predominantly generated by domestic travel, which accounts for 88% of the sector's contribution. The report of Travel and Tourism Competitiveness of 2017 had ranked India on 40th place among total 136 participating countries. The report ranks the price competitiveness of India's tourism sector 10th out of 136 countries. The report praises the good air transport facilities available in India and India has been raked 32nd on this basis, it also further appreciated the development, and reasonable infrastructure of ground transport (ranked 29th). India also earns good rating for its natural and cultural heritage (ranked 9th).

In spite of all such good facts it has other bad side of the coin also and that is "Pollution" or the Carbon Emission by this industry. Some studies reveals that tourism releases four times more carbon into the atmosphere than previously. It also talks about India's impact on the carbon footprint in the fast-growing tourism industry. According to Arunima Malik the lead author of a study "Indian tourism emits carbon footprints just after the U.S. and China. Germany ranks third. This study will attempt to study the impact of tourism of carbon footprints and to find the ways to manage it for the purpose of sustainable tourism industry in India.

The large size of population and better income opportunities in India contributes as major factor of increased carbon footprints of tourism industry in India, the study of Ya-Yen Sun. clearly mentions that the Tourism is one of the most promising income generator and actually people demand for travel industry increases when the income of people increases. Improvement in the paying capacity of growing middle class population has pushed up total visitor numbers for both domestic and international trips. s.

METHODOLOGY





As this is a very contemporary issue we are first of all required to conduct the exploratory research so as to get the roots and causes of the increased carbon footprints of the travel and tourism industry and then after we adopt the descriptive research design so to describe the real causes of the problem statement. We will go through the various authentic and most reliable sources of the tourism industry so as to describe the motive of the study and how to prevent it.

DISCUSSION AND RESULTS

Tourism Industry in India

India one of the fastest growing tourism market globally. The growth rate of the tourism industry in India has been very high during the past few years and with various government initiatives, rising income level and organization of many international games events. The Indian travel and tourism industry is expected to grow at a very high rate in the coming years. However, the industry may have to cope up with several challenges which will limit its growth. The growth in India's tourism market is expected to serve as a boon, driving the growth of many industries that are directly or indirectly associated with the tourism that include hotel, medical tourism and aviation industry etc.¹

The Indian tourism industry has become prominent and acting as one of the key factor for growth of service sector in India. Tourism in India has important prospective considering the wealthy cultural and historical legacy, ecological variety, and spots of natural heritage extended through out the country. Tourism is a great employment provider by employing more than 42million people. Tourism is also a major resource of foreign exchange for India. According to a study during Jan-April 2018 foreign exchange stock from tourism raised 17.4% year-on-year to US\$ 10.62 billion in India.

According to a report given by World Travel & Tourism Council (WTTC) "India is estimated to become the 3rd largest Tourism and travel contributed economy by the year 2028 in terms of tourism industry's contribution to GDP".

¹ Indian Chamber of Commerce, web source: <u>https://www.indianchamber.org/sectors/tourism/#</u>, accessed in June 2018.





Globally released report of WTTC, too mentions that tourism industry will provide about 10 million jobs in the tourism sector merely by the year 2028 and further that the total number of jobs that are directly or indirectly depend on the tourism industry are expected to grow from 42.9 million in 2018 to 52.3 million in 2028 ².Impact of Tourism on Carbon Footprints in India

"India has the world's fourth-largest carbon footprint from tourism, after the major carbon emitters including U.S., China and Germany" said Arunima Malik, who was the main author of the research that quantified global carbon emission caused by the tourism. The study was conducted in 160 countries during 2009 till 2013. Researchers from the University of Sydney, University of Queensland and National Cheng Kung University including the authors worked together to evaluate the complete supply chain of tourism. The supply chain of the tourism included modes of transportation, hotels and place to stay, fooding and beverages, souvenir, garments, and other related products and services. If we club together, the worldwide tourism itself generates approximately 8 percent emission of total greenhouse gas, which quite higher than the earlier estimates³.

According to the study, carbon emissions generated by tourism industry in India (using destination-based accounting or DBA) was estimated as 268 tonnes carbon dioxide where as carbon emissions generated by Indian Citizens (described as residence-based accounting or RBA) amount to 240 tonnes CO_2 equivalent.⁴

India has seen a six times increase in number of passengers during last decade. According to the report of Centre for Aviation (CAPA), Indian airports handled 265 million home passengers in the year 2016 and are expected to exceed 300 million by the end of year 2018.

Some of the factors that has contributed to the growth of Indian tourism industry include low-cost airlines in India, that has stimulated the tourism industry too, because of more travel frequency with shorter length of stay has resulted in more carbon intensity per trip and therefore, overall higher tourism carbon emissions.

² Swati Mathur (2018), Times of India, Mar 23, 2018, accessed in June 2018.

³ Arunima Malik and Ya-Yen Sun (2018), "The Carbon Footprint of Tourism Revealed", The Conversation, Accessed in June 2018.

⁴ Sahana Gosh (2018), "Indian travellers' carbon footprint is fourth-largest in the world: study", Mongabay-India, accessed on May 20, 2018.



Sun has further suggested that if the modes of local public transportation like as railways should improve its service capacity and quality to reduce some demand of aviation industry and shift it to somewhat to land transport like China had done it by operating bullet trains⁵.

India has been evaluated as world's fourth-largest carbon emitter because of tourism industry it include business travel, study further mentions that tourism industry causes 8 % of greenhouse gas emissions globally. The study presents that the contribution of domestic travel is much higher in terms of carbon emission in comparison to foreign travel in each of the mentioned countries. India appears among the top 10, tourists from the USA to India makes the 11th highest contribute to the higher generation of carbon footprint from two-sided movements.



As per the report of Griffith Institute for Tourism in partnership with the University of Surrey informed that the Carbon emissions from aviation in India has been counted as 17. 97 million tonnes (MT) in 2017 which is more than 10% higher than from 16.06 MT pollution in 2016.

Increased population and higher income level are the major causes of increased tourism and thereby the carbon footprint. According to co-author of the study Ya-Yen Sun "Tourism is found to be income-elastic and it means that people demand

⁵ Ibid





lot more travels when their income increases. When combining with a growing middle class population, this will push up total visitor numbers for both domestic and international trips".

The study has also evaluated that the travel through airplanes causes carbon emissions that contribute approximately 12% of total carbon footprint being generated by travel and tourism industry world-wide. The United Nations World Tourism Organization has also proposed that travelers should be encouraged to choose short-distance tourist places with most possible use of public transport and minimum use of airways and the tourism operators should also be provided some significant incentives so as to further their energy efficiency⁶.

Action Plan to Manage the Carbon Footprints of Tourism Industry

Carbon emission of the tourism industry has become a major concern and because of the economic importance the tourism industry it is not desirable to curb its astonishing growth. However, with certain precautions and measures we can enjoy the benefits of tourism without sacrificing the health of environment. The world is trying many innovative initiatives so as to manage carbon footprint of tourism, India too may learn from them like in 2009, the World Travel and Tourism Council (WTTC) issued an advisory keeping in long-term planning in their mind, WTTC advised its members to cut down the carbon footprints by 50% by the end of year 2035. WTTC published a report titled "Travel & amp; Tourism 2015: Connecting Global Climate Action" just perior to COP21 climate change conference in Paris, the report states that WTTC member companies have reduced their carbon emission upto 20% since 2005. WTTC complied data of more than 32 companies that included major hotel chains Hilton Worldwide, The HongKong & Shanghai Hotels, Mandarin Oriental Hotel Group etc these hotels also estimated reduction in carbon emission by 20%. One of the ways for hotel guests to find out about the carbon emission from their stay is through the Hotel Carbon Measurement Initiative.

The survey was open to general people as well as it may be obtained through WTTC and International Tourism Partnership. Just to quote a few Hilton Worldwide hotels were able to curb 20.2% of their carbon emissions per sq.met. between 2009 to 2013. The hotel under study focused on some key areas including

⁶ G S Mudur (2018), "Your Giant Tourism Footprint", The Telegraph, June 13, 2018.





sustainable waste, water management, responsible resource sharing, living, energy, carbonin its attempt to attain the goals.

On its waste reducing initiative, the company provided US\$1.3 million in seed funding to fund its global initiative, as an initiative hotels recycled 2.6 million unused soaps left in hotel bathrooms of USA only. Under this global soap project the hotel has recycled more than 4 million soap bars and distributed them to people in need in more 31 countries.

On the other hand, a number of luxury hotels including the Waldorf Astoria in New York and the Mandarin Oriental in Paris have attracted the world due to urban beekeeping to fight colony collapse disorder, the hotel nurture more than 3,60,000 bees on its rooftop and produce about 136 kilograms honey annually from these beehives. This honey is used in hotel menus and various signature spa treatments offered by the hotel.

But the greenest hospitality players in the tourism industry in the world is the Soneva Group. This company owns luxury resorts in the Maldives and Koh Kood in Thailand. The resorts were declared carbon neutral in 2012 for its direct resort operation and in also 2014 for both its direct and indirect report operations that also included guest flights.

Another way is the third-party verification to be completed in accordance with recognized verification standards. These standards must meet certain criteria to be comparable. Some of the recognized standards for verification that are used in world include:

- Airport Carbon Accreditation (ACA) of the Airports Council International Europe
- Australia's National Greenhouse and Energy Reporting Regulations (NGER Act)
- CEMARS (Certified Emissions Measurement and Reduction Scheme)
- ISO14064-3
- EarthCheck sustainability standards for companies and for destinations
- Verification under the EU Emissions Trading Scheme (EU ETS) Directive and EU ETS-related national implementation laws.
- USA Sustainability Accounting Standards Board (SASB)





Besides above, some international standards have also come up so as to ensure reduced carbon footprints. These standards provide guidance on how to account and report:

2001: First Greenhouse Gas Protocol Corporate Standard
2006: ISO 14064-I based on GHG Protocol
2008: PAS 2050 Product Standard (revised in 2011)
2011: Corporate Value Chain (Scope 3) Accounting and Reporting Standard
2011: GHG Protocol Product Standard

Global Reporting Initiative7 is another important initiative, The GRI is a networkbased non-governmental organisation that aims to drive sustainability reporting and ESG disclosure. GRI constitutes the world's most widely used sustainability reporting framework, with approximately 93% of the world's largest 250 corporations reporting on their sustainability performance. The framework consists of: reporting guidelines, principles and indicators that organisations can use to measure and report their economic, environmental and social performance.

ICAO Carbon Emissions Calculator

To provide a global and universal way of estimating air travel emissions, ICAO has developed a methodology that considers, among others: travel distance, aircraft types, load factors, cargo carried and booking class. The calculator has been developed to provide credible information for carbon offset programmes. The calculator is available online and as a mobile phone app. The full explanation of the calculation methodology and sources of data are available for the public.

According to Mr. Dixit in an interview given to Mongabay-india he mentioned "A notable example of this can be seen Wayanad (Kerala) where the forest department, in association with tourism industry stakeholders, has drawn up a unique project to help tourists to compensate carbon emissions due to tourism by encouraging the tourist for planting trees at resort premises and other protected areas of the hill district,".

RECOMMENDATIONS

⁷ Prof. Susanne Becken and Lucas Bobes (2016), "*Proving the Case*: Carbon Reporting in Travel and Tourism", Amadeus.



This has attempted to raise the issue of increased carbon footprint of travel and tourism industry worldwide and in Indian. It has highlighted how tourist areas can become growth centers for an economy and its impact on carbon emission has also been discussed here. In this study, we have prominently highlighted how tourism contribute to climate change and provided a description of the carbon footprint of Indian tourism.

CONCLUSION

In this study have also analyzed the various initiative being taken by governments and non-governments organizations to manage and reduce the carbon footprints of the tourist and make the tourism a contributor and sustainable. In this study we have also suggested various ways so as to maintain the carbon footprints of the tourism industry as this industry is one of the most contributing sector. The effective management of carbon footprints of the tourism industry is the only way to keep the tourism industry growing and still sustainable.

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