Analysis of carbon offsetting initiatives by airlines through online reservation portals.

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Abstract: International tourism brings foreign exchange earning to a country and thus is highly promoted and air travel forms backbone for it. Even in large countries like India, China or USA domestic airlines are highly needed and are in demand for time saving travel. But air transport is one of the biggest source of carbon emission and is fueling the greenhouse effect. As compared to other transport options air transport industry has the largest carbon footprint is harming the environment to greater extent. Due to demand of international tourism and faster travel though we cannot stop air travel but steps can be taken to reduce the carbon footprint of air transport industry by adopting steps and methods that counterbalance the carbon emission by a flight. This paper is an attempt to find out the initiatives of various airlines to offset their carbon emission.

Keywords: International tourism, carbon footprint, carbon offset, aviation industry

I. Introduction

Carbon footprint can be defined as the total number of green houses gas emission caused by an individual, event, product & organization. Green houses gases mostly constitute of carbon dioxide and methane which are responsible for change weather and increase in temperature. Greenhouse gases can be emitted through transport, land clearance, and the production and consumption of food, fuels, manufactured goods, materials, wood, roads, buildings, and services.

The higher concentration of carbon dioxide in the atmosphere is likely to increase the temperature of the atmosphere as carbon dioxide traps the infrared radiations reflected by the earth’s surface. This trapping of heat waves causes excessive heating of earth’s atmosphere. This heating effect on earth produced in this way is called GREEN HOUSE EFFECT. The excessive heating of earth and its atmosphere have adverse effect on our climate, which affects all the living beings. It leads to increase in temperature which is changing the overall scenario of temperature distribution of our earth. It is leading to melting of glaciers which is further leading to increase in sea level which is flooding many coastal areas. Excess water also leads to excess precipitation thus leading to heavy rain and floods in many parts of the world and on the other hand it is leading to draught in many parts of the world due to high temperatures.
Aviation sector and its carbon footprint

Tourism activities worldwide are engaged in carbon emissions in various forms and level. Most tourism-related activities require energy directly in the form of fossil fuels or indirectly in the form of electricity often generated from petroleum, coal or gas. This consumption leads to the emission of greenhouse gases, mainly carbon dioxide. Carbon dioxide (CO2) in the earth’s atmosphere has a life of 100 years or more. The impact of CO2 is global; there is no specific local impact of CO2 emissions from a particular location. All the component of tourism industry be it accommodation, transportation, attraction etc have green house gas emission and tourism is responsible for about 5 percent of global greenhouse gases. Based on the UN Intergovernmental Panel on Climate Change, Aviation is accountable for approximately 3% of global carbon dioxide (CO2) emissions, which is about 13% of CO2 emissions from total transportation. Between 1990 and 2005, annual CO2 emissions from global aviation grew 42%; and by 2025, emissions have been forecasted to grow by 50-70% to between 1.2 and 1.5 billion tons.

Aviation industry is the topmost contributor to greenhouse gases as it accounts to 12% of overall CO2 emissions from all transport sources. Worldwide, flights produced 689 million tonnes of CO2 in 2012 as compared to 34 billion tonnes of CO2 produced by humans globally.

What is the impact of global warming on tourism?

While there are some positive effects of global warming, such as longer beach seasons and the development of rural and seaside tourism, the negative effects outweigh these benefits:

- **Rise of sea levels** - will eventually submerge small islands and coastal regions. Regions depending on tourism are under threat.
- **Desertification and the scarcity of water** - making regions less hospitable for both local communities and tourists.
- **Deforestation and the harm to biodiversity** – affecting both the ecosystem and directly reducing the global carbon sink, while also discouraging demand for such destinations.
- **Melting of snow and glaciers** – one of the causes behind rising sea levels, and also affecting mountains and ski resorts, resulting in the shift of destination demands, depending on the most attractive climate conditions. In 2003 the World Tourism Organization (WTO) acknowledged the two-way relationship between tourism and climate change. Better climatic conditions is one of the motivation for travel and we find a large number of tourists in destinations which have favorable weather conditions. But with increase in average temperature of earth we are facing problems of flood and drought that are destroying many tourist destinations.

Changing climate and weather patterns at tourist destinations and tourist generating countries can significantly affect the tourists’ comfort and their travel decisions. Changing demand patterns and tourist flows will have impacts on tourism businesses and on host communities, as well as knock off effects on related sectors, such as agriculture, handicrafts or construction.

Carbon offset

With increase in awareness about global warming and its impact on human civilization, organizations and individuals are becoming more cautious about their carbon footprint and are taking initiatives to either reduce or offset their carbon emission. In the context of addressing climate change concerns, carbon offsetting is an action by companies or individuals to compensate for greenhouse gas emissions. The offset can be equivalent in part or in whole to the associated emissions, by financing a reduction in emissions elsewhere or preventing the emission. There are many different ways to achieve CO2 reductions that can be used as offsets, many of which bring other social, environmental or economic benefits relevant to sustainable development.

The basic principle behind carbon offsetting is that an individual or an organization balance out carbon emission by adopting activities that lead to carbon reduction from atmosphere or helps in non generation of carbon elsewhere. The theory is that one pays to have something done somewhere else to compensate for the carbon generated by the activity one is undertaking.

In tourism industry, where we are largely dependent on climate, offsetting one’s carbon footprint becomes very crucial and necessary. The impacts of climate change would not only change many destinations or bring natural calamities but would all together bring a stop to tourism.

II. Objectives

The research paper aims to find out the following

- Identify various carbon offsetting initiatives adopted by aviation industry.
- Finding the airlines that offer carbon offsetting to its customers
- Finding e-booking portals of India providing carbon offsetting initiatives
III. Research methodology

The data for the paper has been collected from secondary data analysis of websites of various international and national airlines, online booking portals of India, research papers and various reports. For the purpose of research all booking portals of India were used and dummy bookings were made.

Sample

The study sample involved the following:

(i) Scheduled passenger airlines of the world
(ii) Online portals of India that offer airline ticketing.

Findings

Objective 1: Various carbon offsetting initiatives adopted by aviation industry can be grouped under following five major steps:

- **Funding clean energy solution projects of various certified NGO’s**: Each time a customer voluntarily offsets his/her carbon emissions, the money is passed to projects managed by various Non for profit organization that work towards providing clean energy and energy efficient solutions to many societies worldwide which includes providing cooking equipments that reduce burning of wood etc

- **Funding conversation and afforestation projects**: making tax-deductible charitable contributions to a variety of independently reviewed and certified environmental projects focused on forest conservation, renewable energy and avoided deforestation.

- **Funding renewable energy development projects**: contributions from the customers are used to fund projects involved in generation of renewable energy – hydro, wind and solar

- **Funding methane capture and use in energy generation projects**: money from customers offset initiative is utilized in projects where waste is used to generate electricity leading to waste management and less use of non-renewable sources of energy.

- **Purchasing from carbon offset suppliers**: Suppliers of aviation related products from suppliers that have low carbon footprint.

These offset programs are voluntary in nature and customer’s interest towards climate protection solely is responsible for the success of these initiatives

Objective 2: Airlines that offer carbon offset options to the customers

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Airline</th>
<th>Country of origin</th>
<th>Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Qantas Airlines</td>
<td>Australia</td>
<td>NGO projects , National Carbon Offset Standard(Australian government), carbon offset suppliers</td>
</tr>
<tr>
<td>2</td>
<td>United Airlines</td>
<td>USA</td>
<td>reducing the fuel use and improving the fuel efficiency, forest conservation in California, Texas, Belize</td>
</tr>
<tr>
<td>3</td>
<td>Virgin Atlantic</td>
<td>UK</td>
<td>Collaboration with myclimate-charity funding clean energy solutions</td>
</tr>
<tr>
<td>4</td>
<td>Japan Airlines</td>
<td>Japan</td>
<td>Supports sustainable development projects for renewable energy</td>
</tr>
<tr>
<td>5</td>
<td>Air Canada</td>
<td>Canada</td>
<td>Collaboration with zerofootprint- forest restoration project, landfill gas recovery project &amp; tire recycling program</td>
</tr>
<tr>
<td>6</td>
<td>Austrian Airlines</td>
<td>Austria</td>
<td>Supports international climate protection projects</td>
</tr>
<tr>
<td>7</td>
<td>Cathay Pacific</td>
<td>Hong Kong</td>
<td>Supports sustainable development projects for renewable energy</td>
</tr>
<tr>
<td>8</td>
<td>Emirates</td>
<td>Dubai</td>
<td>Investments in conservation based tourism development projects, recycling and waste- energy projects</td>
</tr>
<tr>
<td>9</td>
<td>Thai</td>
<td>Thailand</td>
<td>Supports waste management and clean renewable electricity projects</td>
</tr>
<tr>
<td>10</td>
<td>TAP</td>
<td>Portugal</td>
<td>Supports hydro electricity project</td>
</tr>
</tbody>
</table>

None of the airlines from India offer any carbon offset options.

Objective 3: E-booking portals of India providing carbon offsetting initiatives

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Online Booking Portal</th>
<th>Carbon Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yatra</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Cleartrip</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Ezeego</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Make my trip</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Goibibo</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>Via</td>
<td>No</td>
</tr>
</tbody>
</table>

IV. Conclusion

Tourism industry is an industry which is highly influenced by change in climate. And adverse change climate can be disastrous both at tourism generating & tourism destination region. All the activities involved in tourism leads green house emission which if not controlled or neutralized would completely justify the statement that “tourism kills tourism”. Aviation is an important part of tourism and cannot be demoted but it is one of the major sources of tourism’s carbon footprint so in aviation sector it becomes necessary to adopt strategies to offset carbon emission. For this purpose there has been a general awareness among the aviation industry and
many of the airlines have come up with initiatives to carbon offset but the number is still very less. The carbon offset option is optional for the customers which further adds to the weakness of these initiatives as now the option of reducing the carbon footprint is completely on customer’s choice. So though the aviation industry is waking up to the importance of carbon offset, it is still far behind in reaching some sustainable goals. In the scenario of Indian aviation industry no initiative of indulging customers in carbon offsetting has been taken. So it is necessary for the aviation industry to rise up to the cause of carbon offset and contribute in making our environment better.

References