

TOURISM AND CLIMATE CHANGE: MITIGATION AND ADAPTATION IN THE PATH OF TRANSFORMATION

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ABSTRACT

The present and future climate change will lead to impacts on tourism, which will change the human thermal comfort and tourist seasonality, decrease landscape aesthetic quality to be expressed by continuous reduction of beach area, changes in vegetation and animal biogeographical distribution and loss of biodiversity, among others.

Being Adaptation the intent of adjustment to the impacts of climate change in order to minimize damage and find opportunities, and Mitigation any intervention that aim to reduce greenhouse gas emissions, the dilemma arises, in a world of scarce resources, from which approach should be enhanced on the choice of adapting, defensively, to the consequences, or mitigating, offensively, the causes of climate change in tourism sector.

As such, it's paramount to discuss the duality between the challenges of adaptation and mitigation of climate change in tourism science, not in a contingent way, but, above all, by the need for transformative transition of tourist industry towards sustainable exploitation of landscape as means of increasing the resilience of tourist regions.

Keywords: Climate Change, Tourism, Adaptation, Mitigation.

1. INTRODUCTION

Tourism, especially since its spread from the 60s of last century, has a “push-pull” character, where it is assumed, on one hand, the existence of factors that trigger the tourist to travel (push) and, on other, factors that characterize a particular tourist destination and are responsible for its attractiveness (pull), being that climate affects these two motivational forces (Machete, 2011, p.142).

In the present and future context, climate change constitutes a dramatic disruption element of a such vulnerable sector as tourism (UNWTO, 2008, pp.61-68), where are expected impacts of direct order, as the reset periods of climate pleasantness and respective seasonality of tourism demand, as well as changes in operating costs of tourist establishments (Casimiro, Gomes & Almeida, 2010, pp.6-7), environmental indirect impacts, including increased temperature effects, the rise in the sea level rise and the occurrence of extreme events (heat waves, intense precipitation events, floods and droughts), which could enhance the scarcity of water resources, coastal erosion and reduction of beach area, increasing number of fires, decreased agricultural production, bleaching of coral reefs, reducing the snow surface, landscape aesthetic quality degradation and increased incidence of vector-borne diseases, like malaria and leishmaniosis, due to the disappearance of climate barriers, among others (Simpson, et al . 2008, p.13; Becken & Hay, 2007, pp.38-50).

Such deteriorations may imply changes in the geography of tourist attractiveness, corresponding to societal impacts of receiving destinations by decreasing their booking, such as political and social instability with danger to

public safety as a result the inherent break in development of these regions (UNWTO, 2008, pp. 67-68).

Other impacts could come from mitigation policies, i.e., the reduction measures of greenhouse gases (GHGs), enhancing the increase of tourist travel costs and consequent commercial-tourist aviation route changes, which could disrupt also the development of tourist receiving regions by the lack of its demand (UNWTO, 2008, pp.116-117).

2. ADAPTATION AND MITIGATION: WHAT IS THE PRIORITY?

The future seems, figuratively dantesque, to tourism sector due to their susceptibility and vulnerability. However, no matter how catastrophic the future looks there is no ground to a “victimization” of tourism in relation to the impacts of climate change, because it should not be forgotten its contribution to the worsening of global warming, since the impact of tourism on the causes of climate change is profound as well (Prista, 2015).

Note that in a sector that by the hierarchy of Maslow’s needs is not a basis of psychologic priority and fulfilment of human being, unlike, for example, agriculture, carbon dioxide emissions from the sector represents about 5% of the total issued worldwide by all sectors of economic activity. The main contributory factor for GHG emissions from the tourism sector is air transport, which accounts for 40% of global tourism emissions, and long-distance travel between the five continents are 16% of these emissions, representing only 2.2% of all tours that last more than one day (UNWTO, 2008, p.144). Followed by aviation, car transport is the second largest emitter factor, with a share of 32% of all total sector emissions.

So, being the Adaptation intent and adjustment to the impacts of climate change in order to minimize damage and find opportunities, and Mitigation any intervention to reduce GHG emissions, the dilemma arises from which approach should followed: the defensive strategy to the consequences induced by climate change through adapting or offensive to their causes by way of mitigation (Machete, 2011, p.148).

There is here the need to explain this issue in order to illuminate reason with greater ubiquity on this paradigm.

David Weaver (2011, p.10) elucidates to the fact that adaptation ensures a rational response to cope with the impacts of climate change consistent with the mainstream capitalist model. Examples are the investment in the snow production in tourist destinations in winter sports (Cit. By Weaver, 2011, p.10) due to the decrease of snow cover by the increasing of temperature or the construction of shoreline protection spurs in response of sea level rise, which are achievable and accepted at a more localized level (Thomalla et al, 2006, pp.46-47; Stern 2006, p.404), mirroring the unsustainable maintenance of *status quo* posture (Jackson, 2010, p.20-25). The paradigmatic question is the adaptation has a contingent character and can float, for example, the ski resorts in a weak short-term profit raft, achieved by the contamination of water and soil, derived from the use of freezing chemical solutions and extreme increase of energy consumption, thus contributing to greenhouse gas emissions and global warming (Weaver, 2011, p.10; UNWTO, 2008, pp.90-91), overshadowing, from the mitigation point of view, the concept of sustainability in this adaptation measure or other, based on similar assumptions. Another similar case is the tourist scuba diving for observation of coral reefs that are disappearing by rising ocean temperature and acidification. It should be noted that this tourist interest conduces to long distance travel from developed countries, often, to emerging countries, exacerbating their emissions contribution to a phenomenon that is inciting anthropogenic global destruction of the same resource that motivated the trip (UNWTO, 2008, p.140).

In contrast, only mitigation fights the root of the problem, either by carbon sequestration and reduction of the ecological footprint of tourism enterprises through the use of renewable energy and use of regional products of tourist regions, either through the prometheus technological innovation in efficiency fuel consumption or the encountering of renewable energy sources with lower potential emissions for aviation and other ways of transport, either up to modal shift to modes of transport such as rail train, more efficient and less emitter of greenhouse gases per passenger compared with a plane and automobile, which can only be achieved by changing the tourist behaviour and tutelary transport management institutions (UNWTO, 2008, pp.145-174).

Sir Nicholas Stern (2006 pp.2, 211, 404) at the Stern Report lectures that the annual cost GHG reduction in the order of three-quarters of current levels by 2050 would be on average 1% of Gross Domestic Product (GDP) per year, and the cost of mitigating inaction represent the loss of 5% of GDP per year and may go up to 20% or more, being adaptation more costly than mitigation.

But what else is in disfavour of Mitigation? The Adaptation wins by its demerit? Several have been the mitigation initiatives in the tourism sector (Scott & Becken, 2010, pp. 286-291). Although there is still much to achieve due to the difficulty of commitment on GHG’s reduction agreements, uncertainty fulfilling their desiderata and meagre individual and collective behavioural change by lackawareness for the challenge of climate change to reduce greenhouse gas emissions, addling, largely, the needed mitigation effort to ensure sustainability of human life on the planet. As such, by the inertia of the climate system on the basis of GHG high residence time on the atmosphere (Santos, 2012, pp.40-43), even in the most ambitious scenario in terms of mitigation (IPCC, 2013, p.701), global warming will not stop rapidly and the understanding of the inevitability of the impacts of climate change stimulates the investment in

adaptation over mitigation, not to mention the potential use of this problem by the nordic destinations, which could have an increase of climate pleasantness, while its decrease could happen in the south, such as the Mediterranean regions, in order to eliminate their competitors, or the promotion of “disaster tourism” or “last chance” (Weaver, 2011, pp.9-10; Prista, 2015), like it's occurring in Churchill, Canada, through the increase of travel motivations for observing polar bears, endangered due to global warming. Also the unpredictability of future and uncertainty of projections and impacts in the long run (Weaver, 2011, pp.5-6) and the denial of climate change occurrence (Stoll-Kleemann, O’Riordan & Jaeger, 2001, pp.112-115) continue to discouraging the sector in betting truly on a coherent mitigation policy. More, the economic mechanisms of command-control and taxes on emissions as recognition of their externalities are assumed as an added burden for aviation operators and tourist accommodation, which reflect them in price increase of services, raising resistance by tourists and inherently decrease in tourism demand (Weaver, 2011, p.9). This adds the resistance of local communities by the risk in economic and employment decline, most concerning phenomenon where tourism is the main way of poverty alleviation in emerging countries (UNWTO, 2008, p170) Furthermore, adaptation competes with mitigation also in this field. One example is the existence of regulation instruments on airlines activity (Air Passenger Adaptation Levy) in order not to reduce, but to contribute to the emergency adaptation, for example, to sea level rise in small and low-lying islands, like Maldives (Weaver, 2011, p.10).

3. CONCLUSION

To this extent, the adaptation may face present impacts not as an end in itself, but as the ultimate hope of reaching a worldwide mitigation commitment, which can only arise from a full transformation of Man and Tourist and inherent renunciation of the current anomie in their behavioural, cultural and systemic appropriation of Earth (O’Brien & Hochachka, 2010, pp.94-101).

Therefore, the search of new tourist types, beyond the conventional tourism, with less consumptive demand for resources, such as Ecotourism (Prista, 2015), and modal change of tourist trip way of transport with the recourse of rail train are proactive and substantial anticipation strategies to catastrophic challenges (Pelling, M., 2011, pp. 95-103) that the future can bring.

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