

Tourism and global warming, How green management can help

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Abstract

Global warming and climate change are affecting the tourism industry in the years ahead. Considering the fact that tourism industry is one of the main contributors to green house gas emissions, adapting green management principles and requirements, is among the most important responsibilities of this economic and social sector. In order to enable the tourism industry to respond effectively to the potential threat of global warming, it is essential that we apply the principles of green management in tourism sector very seriously. Green management is an attempt to change the human-centered and manipulative mode of living towards an earth-centered and nurturing mode. As a matter of fact, green management is a personal responsibility for each one of us to weighing our own needs against the needs of other people and our environment, both at present time and in the future. The historic pattern of using natural resources has not been sustainable. So far concerns on how to manage tourism development and environmental issues have resulted in some global gatherings and summits, but pace of progress towards attainment of the goals of sustainability has been very slow. The conflicts between sustainable development ideals and using the natural resources for economic gains have continued during last decades. Since 1950's, the rapid growth of tourism industry has resulted in the raising concerns over how natural and cultural resources of the environments of host communities should be protected. The author believes that climate change and global warming would pose a great risk to tourism sector and green management can help to mitigate this risk considerably.

Keywords: Tourism, global warming, green management, sustainable tourism, environmental impacts, green productivity, pricing measures, harmonization, ecological release, ecological protection, GHG emissions.

INTRODUCTION

Global warming and climate change is beginning to shift the patterns of tourism industry all over the world. According to Pulido, the foreseeable repercussions of climate change on tourism can be summarized in four areas:

1. Repercussions on the geographic travel space
2. Repercussions on demand
3. Repercussions on supply
4. Repercussions on transport

Tourism is not just a victim of climate change- it is also a vector (Pulido,2008,110).A study published by UNWTO, shows that in 2005, tourism generated 4.9 percent of total CO2 emissions, with transport being responsible for the greater part (75 percent), and air transport in particular accounting for approximately 40 percent. This leads to depletion of natural resources and the loss of biodiversity (Goldin, 2010). As an example, Mindova says, global warming will seriously hit tourism in Greece. He believes that by the end of the century, climate change and global warming would change the Greek climate such an extent that a significant drop in tourism is expected. The air temperature is expected to increase by between 3 to 4.5C, and summer fires would contribute significantly to the reduction of forest areas in the country and increase of carbon dioxide in the atmosphere. If the governments do not take measures to absorb the challenge of climate change, the country would have a sharp drop of the tourist flow, which is crucial for the Greek economy (Mindova, 2011). Considering these facts, tourism industry needs to increase its engagement with climate change mitigation through applying green management in this important economic and social sector.

What is green management?

Green management approach is an ecologically biased management that emphasizes on the value of natural resources and environmental assets. This approach focuses on the power of people to decrease the ravage of the planet and reduce overexploitation of natural resources. Sustainable development ideals must become more applicable through green management perspective.

Green management is an attempt to change the human-centered and manipulative mode of behavior towards an earth-centered and nurturing mode. Although concerns on how to manage environmental issues – which have raised by scholars and some of the governments and non-governmental organizations – resulted in some global summits and conferences, the pace of progress towards attainment of the goals has been very slow. As a matter of fact, the conflict between sustainable development ideals and overexploiting the natural resources for economic gains has continued during last decades. In this respect, tourism is one of the human activities that has significant effects on the environment. So far the negative environmental impacts of tourism industry, has threatened both cultural and natural resources in the destination

areas and this has led to the evolution of a new perspective of tourism which incorporates environmental protection into account.

Rapid and uncontrolled tourism development as a basis for economic development has exposed the fragile environment to an ever-increasing risk of degradation. Unfortunately, both public and private sectors have been working to the detriment of the environment. In fact, tourism development has interfaced with the original characteristics of the area upon which it relied for attracting tourists. This means tourism industry although mostly is ecologically based, it is not ecologically sound and nations have not been successful in maintaining ecological balance i.e., the equilibrium between using natural resources and protecting environment. Since tourism industry is encompassing an increasing range of physical environment, a growing ecological imbalance is expected in the future.

This article is emphasizing on global warming and the interactions of tourism industry and the environment. It continues with the tourism impacts on the environment and a framework for assessment of the impacts. The article ends with presenting a few recommendations in order to strengthen green management perspective in tourism industry.

A BRIEF HISTORY

During the 1970's, questions about the environmental impacts of tourism began to be raised more widely, as tourism expanded internationally and the negative effects of its development became more obvious. Recognition of the problems that could be caused by tourism led to the Organization of Economic Cooperation and Development (OECD) to establish in 1977, a group of experts to examine the interaction between tourism and the environment (Holden, 2008: 66). During the 1980's, the spread of mass tourism meant that there was increasing focus on tourism as a form of economic development in less developed countries.

In July 1992, delegates from more than 170 countries met in Rio de Janeiro for the United Nations Conference on Environment and Development (Giudice, 2006: 2). They recognized common orientations for sustainable world development, defining the most appropriate actions to ensure the necessary harmonization between environmental protection and economic development, and ratified the statement, "In order to achieve Sustainable Development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it" (UNCED, 1992).

During the 1990's, new environmental concern became prominent, reflecting both local and global concerns. Finally, environmental issues associated with tourism found their way into public press. In the first decade of 21 century, as societies became more conscious about the fragility of the nature, the relationship between tourism and the environment is incorporating more seriously in the agenda of tourism industry.

RESEARCH BACKGROUND

Tourism research on environmental impacts started during 1960s. Concerns over environmental issues in the realm of tourism studies, according to Fennell, gained a tremendous boost in the mid 1970s from the efforts of Budowski (1976), Krippendorf (1977) and Cohen (1978) in their work on tourism and the environment. Budowski identified three different 'states' in tourism's relationship with environmental conservation: conflict, coexistence and symbiosis. He felt that the relationship at the time was one of coexistence moving towards conflict. Krippendorf was one of the first to write on the importance of planning, and the dispersion of tourists and tourism developments, as a means by which to minimize impacts (Fennel, 1999, 63). Cohen discussed the distinct differences between development for purposes of improvement and aesthetic appeal versus the vulgar, undesirable, and irreparable damage created by modern tourism (Cohen, 1978). Tourism research on ecological impacts continued throughout 1980s and since then concern over environmental impacts of tourism has increased. Many researchers emphasized on evaluating the impacts of tourism on environment among which, Pearce (1985), offered a framework for the study of tourism and environmental stress. In his framework, he included stressor activities, the pressure resulting from the activity, the primary environmental response, and the secondary human response or reaction of the stress. Others such as Newsome et al (2002) identified a whole range of different tourism impacts on environment, their sources, and regions in which these take place. The authors note that sources of impacts cited in the literature include trampling (vegetation, microbes, soils) access roads and trails, built facilities and camp grounds (camp sites and firewood), water edges (river banks, lakes and reservoirs, coastal areas and coral reefs). Although up until now, a considerable amount of researches have been emphasized on the impacts of tourism on environment, the author believes that, gathering exact data on environmental impacts of tourism is rather difficult, because the actual impacts of tourism on environment will only become apparent over a longer period of time. Of course, this limitation should not be used as an excuse to avoid evaluation of tourism activities on the environment. In order to overcome this limitation, academics with cooperation of practitioners should conduct new researches on this issue by employing a multi-disciplinary approach to conceive environmental impacts from different angles, with a system perspective.

ENVIRONMENTAL IMPACTS

The impacts of tourism can be sorted into four general categories: economic, political, socio-cultural, and environmental impacts. Each category includes positive and negative impacts. In this article after describing briefly the positive and negative economic, political, and socio-cultural impact, the environmental impacts are more elaborated. The following are some of the tourism impacts which are most cited in the literature (Butler, 1980; Chawala, 2006; Edgel, 1990; Harsel, 1994; Hunter and Green, 1996; Jenkins, 1995).

The positive economic impacts of tourism are: Increasing employment opportunities, generating income, spending more on infrastructure and public utilities, raising the

standards of living and improving local economy. Among the negative impacts are: inflationary impacts of tourism expenditures, increase in the price of goods and services, lands and housing, and cost of living, increase in health-care, police and fire protection, increase potential for imported labor, increase cost for additional infrastructure (water, sewer, power, fuel,...).

Tourism development has some positive political impacts such as reducing political unrest due to unemployment, increasing the level of security in the community, raising mutual esteem and understanding among different nations. Some of the negative political impacts of tourism are: using tourism as a means towards political purposes, kidnapping tourists, increasing the possibility of political riots among oppositions to government.

Among social and cultural impacts of tourism, the positive impacts are: Tourism provides opportunities for meeting different people, exchanging ideas and promoting cultural values and beliefs. This might promote mutual recognition among nations and increase tolerance of cultural differences. Tourism can increase availability of recreation facilities, increase welfare and the quality of local people's life and promote a higher level of psychological satisfaction through interaction with other travelers (Chawala, 2006:9). Tourism might also have negative impacts: language and cultural effects, unwanted lifestyle changes, demonstration effects, introducing bad habits to the local population, health problems (AIDS and Hepatitis), increase in crime, traffic congestion and crowding which produces stress, annoyance, conflict and anger. It also may cause displacement of residents for expansion of tourism facilities. Tourism development may cause neglect of other sectors and non-tourist activities and it may increase pressure on infrastructure of the host community.

Environmental impact can be defined as "any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services (ISO 14001, 1996). According to the United Nations, tourism has two types of impacts on the environment. On the one hand, many tourism activities (especially those linked with the construction of general infrastructures and tourism facilities) may have a negative impact on the environmental resources on which they depend, damaging or destroying them.

As European Environmental Agency holds, environmental pollution and natural resource depletion come not only from increasing trends in energy and material flows, but also from incorrect pricing of goods and services (EEA, 2006). On the other hand, by raising financial resources and the tourists' awareness of environmental values, tourism can increase the preservation of the environment (UNEP)¹.

In view of the impacts above, in the positive side, tourism development generates income that often makes it possible to protect and preserve the natural resources like oceans, lakes, natural parks and other scenic areas of beauty of the host communities, improvement in waste management and appearance of the sites and community as a whole, increasing environmental awareness and prevention of further ecological decline. In the opposite side, some of the negative environmental impacts of tourism are as follows: increase in water and energy consumption; increase in pollution (air,

¹ <http://www.unep.org>.

water, noise, etc.); destruction of flora and fauna, deforestation; increase in solid and liquid waste; disruption of wildlife behavior and feeding and breeding patterns; crowding and congestion; impact on aesthetic appeal of destinations; and disturbing ecosystems.

One of the negative environmental impacts of tourism is seasonality of environmental load. For example, in summer time the population of coastal areas increases by three or four times and such a density of people in time and space constitutes an aggressive form of tourism, which endangers various elements of the natural environment (Logar, 2009, 5). One specific example in this respect is the Caspian Sea region in the North of Iran. This area enjoys a competitive advantage in its natural and environmental attractions, consisting of extensive coastline. During summer season, due to overload of tourists, far beyond the carrying capacity of the area, fragile ecosystems of the region expose to risk of degradation and the quality of coastal environment is severely threatened.

The effects of global environmental changes are already visible and more dramatic changes, particularly climate changes are predicted which are expected to have major impacts on the whole range of tourism destinations, such as mountain regions, coastal and lake areas, deserts, and polar region (Dolnicar, 2008: 672). The relationship between tourism and the environment, requires a balanced approach to tourism planning and development to maximize the associated benefit and minimize the negative impacts (Dredge & Jenkins, 2007).

IMPACT ASSESSMENT

One of the green management mechanisms for improving the quality of tourism in host communities is tourism impact assessment. Of course this is not an easy job, as Giudice believes: "one of the greatest difficulties in an attempt to reduce the negative impact that a generic activity has on the environment is that of evaluating this impact qualitatively or quantitatively, so as to be then able to undertake appropriate initiatives to contain it (Giudice et al, 2006: 83).

In this article the author presents a general framework for assessing tourism impacts on host communities. Since the environmental resources are the bottom line of many tourism attractions, the parameters are divided into two main categories: environmental parameters and other parameters: economic, social and cultural, political and etc., (Table 1). The basic concept of this technique is to provide community and tourism leaders with necessary information for decision-making about the tourism projects and changing the operation practices before negative impacts reach a critical level and degrade the fragile and vulnerable environment. Data in this assessment tool would provide a baseline with which to evaluate tourism planning and development and to investigate its impacts on the environment.

Table 1: Tourism impacts assessment in host communities

Category of impact	Construction phase			Operation phase		
	No impact	Few impacts	Serious impacts	No impact	Few impacts	Serious impacts
1.Environmental impacts						
Air quality						
Water quality						
Soil quality						
Noise pollution						
Sewage disposal						
Flora & fauna						
Biodiversity						
Waste (Solid & liquid)						
Land use						
Scenery						
Beach						
Mountains						
2. Other impacts						
Local culture						
Health						
Economy						
Infrastructure						
Energy consumption						
Workforce						
Education						
Population						
Traffic						
Crime						
Housing						
Security						

This framework contains basic tourism impacts and according to the nature of the particular tourism development project, list of impacts can be made simple or descriptive, presenting more elaboration on the magnitude of impacts in the destinations. The main contribution of this tool is providing tourism stakeholders with the necessary information for decision-making.

Recommendations

Sustainable tourism might become more applicable through green management perspective. Green management emphasizes on self-regulation, efficient, and cost effective solution for environmental improvements through ecologically biased management. A green perspective can change the way people work to create alternatives to our present way of life (Agarwal, 2005, vii). Green management can be applied either voluntarily through moral and ethical bases or by regulatory and mandatory instruments. The following are some recommendations to enhance green management perspective in tourism industry and to protect environment.

Ecological release requires ecological responsibility

Generally the individuals of a species are tightly constrained in the way they can behave by the environment. A species occupies a distinct 'niche' in the environment. Behavior outside tightly defined boundaries is not successful and is selected against. For example, if ants build their nests in a slightly different way it can quickly result in the extinction of the species. So they don't. This must have been the case for human kind for most of our evolution. But then, about ten thousand years ago, our technology gave us such a vast advantage over other animals that we were no longer constrained to a single way of doing things. We achieved what scientists call 'ecological release' (Johnson, 1995, 168).

The author believes that the advantage of using intelligence and technology, enjoying ecological release and freedom to do things in many ways, should be accompanied with ecological responsibility. Human kind is responsible to protect the ecological niche for other species all over the globe. According to Naess, the well-being and flourishing of human and non-human life on earth have value in themselves. These values are independent of the usefulness of the non-human world for human purposes (Naess, 1973, 95- after Adams). The problems of environmental degradation and the exploitation of natural resources is a great threat to survival of human kind and other species. Among the huge number of tourists who are willing to travel to different destinations, there are some groups of individuals who can be assumed to behave in an environmentally friendly manner. In order to reduce the ecological footprint of tourism at destinations and increase the preservation of the environment, the author's suggestion to tourism authorities is to attract tourists who are more aware of the importance of environment, appreciate its values, and are interested in protecting it. This might incorporate in green management strategies and mechanisms working towards more rational human use of the environment.

Regulating tourists demands

Marketing and de-marketing as some pricing measures, may be used to regulate demands, considering the carrying capacity of tourist destination areas. The effectiveness of this regulatory policy depends upon coordination among all relevant stakeholders, i.e. public, private, and social sectors. People in the local communities are expected to monitor whether the regulations are met or not. According to Black and Crabtree, for the tourism industry to be sustainable, it is cooperation that matters. If ill-planned or excessive development is permitted, tourism can damage the special qualities that are essential for sustainable development (Connell, et al., 2009, 868) Tourism operation must not jeopardize essential ecological processes; it should respect the socio-cultural authenticity of the host community, and provide fair economic returns to all stakeholders (Black & Crabtree, 2007: 2). These goals can only be attained if the numerous organizations in public, private, and social sectors, do not work on their different agendas with narrow interests. There should be a basic commitment to sustainability of environment in all three sectors. They must cooperate towards attainment of the common goal within a comprehensive tourism system. This system includes significant social, economic, geological and ecological components, along with the processes and functions that are essential for sustainability (Farrell & Twining-Ward, 2004). The author believes that through marketing and de-marketing devices, such as, spatial and temporal zoning of use, restrictions of use intensity of activities, increasing the fees, and etc., tourists' demands can be managed towards

integrating long term economic gains and environmental sustainability. Natural resources in different countries all over the world (including Caspian Sea coastal region in North of Iran) are facing excess tourist demand. This problem requires a de-marketing solution based on geographical area's carrying capacity on a parcel by parcel basis. As some place-based examples, in the United States, the National Park Service has determined that the extremely high demand to run the Colorado River over the last 20-30 years during the spring and summer months must be apportioned by permits, and Arches National Park in Utah focused on a de-marketing device aimed at reducing visitor levels in certain zones to preserve the quality of the visitor experience and the park's resources (Groff, 1998: 130).

Green productivity

Environmental resources must be valued in the same way that other assets are valued. In this case, people must learn to use the natural resources more efficiently and to conserve them for the next generations. Productivity is the relationship between what is produced and the resources used to produce it. Productivity can be improved by doing more with the same resources through effective and efficient transformation of resources into desired output. To enhance productivity, output may be increased by advanced production technology, and/or input may be decreased by the waste management. The central element of the green productivity is the examination and re-evaluation of production process to highlight ways to improve productivity, while reducing their environmental impact (Gandhi et al. , 2006:594). Green productivity should be the mainstream of tourism development strategy and its application may be assessed by green productivity index (GPI), which is defined as the ratio of productivity of the system to its environmental impact (Hur et al. ,2008:673). Using this index is very important in environmental resources accounting.

Public awareness and involvement

Raising awareness of local residents of tourist destinations about the severe impacts of uncontrolled tourism development on deteriorating the fragile environment is very important for conservation of natural resources. There should be a thorough program of public awareness – at all levels from formal primary education through to tertiary education and beyond – on the benefits of sustainable tourism planning and development (Yasarata et al., 2009, 11). An entirely new approach to conservation of resources is required to protect the environment, using the local inhabitants capable of managing the region through involvement in planning, decision-making and implementing all tourism development projects. A decentralized bottom-up approach to environment conservation must be adopted and local people should be actively involved in the process. The prerequisite of this participation is raising the local inhabitant's awareness about the threats to their environment.

Harmonization

Environmental issues should become a prominent element in world trade negotiations. A key element in making trade environmentally sustainable is ensuring that

production reflects its full environmental costs (Agarwal, 2005, 7). In the wide panorama of human activities having significant environmental costs, tourism is one of the most crucial ones. So far the environmental costs of tourism industry have not been taken into account. In order to curtail environmental abuses, a harmonization of the environmental regulations between countries is strongly recommended.

Reducing GHG emissions

Tourism industry, specifically transport and hotels, need to increase their engagement with GHG emissions. As a matter of fact, it generally makes sound business sense to reduce one's GHG emissions both from a cost as well as reputation perspective (Conrady & Buck, 2011,90). According to Rashid and Robinson, climate change poses a greater risk to travellers and the tourism industry than the threat of terrorisms (Rashid & Robinson, 2010). Considering the fact that tourism industry is one of the main contributors to green house gas emissions, adapting green management requirements, is among the most serious responsibilities of this important economic and social sector.

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