

# INTERCONNECTIONS BETWEEN TOURISM AND ENVIRONMENT. SPECIFIC RESPONSES

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## Abstract

*This paper proposes a discussion on the interactions between tourism and environment, emphasizing both favourable and negative impacts. They are addressed from the perspective of natural and built environment, followed by a review of the indicators employed in order to highlight these impacts. Further on, various responses and possible actions are identified, accompanied by a look forward, in the 2020 perspective.*

**Keywords:** tourism, environment, impact, indicators, solutions

**JEL Classification:** Q54, Q56

## Introduction

Many research papers and practical works address tourism and environment as complementary and interdependent areas. According to Murphy (1985), Papapavlou-Ioakeimidou and Tarani (2008) and Simao and Partidario (2012), tourism is recognized as an industry that relies and depends on natural resources, both physical and cultural ones, as well as on local heritage. The environment is the most valuable element underlying the development of tourist activities (Nijkamp, 1999). An unpolluted environment having a particular landscape, fauna and flora is a conducive factor to the development of tourism activities. On its turn, tourism activity helps turning to good account specific components of the environment. However, even if the favorable impact of tourism on the environment can support the sustainable development, tourism show a negative impact on the environment as well (Pascariu, 2006). In addition, various studies point to the fact that tourism is a driver of environmental changes (WTO, 2008; Papapavlou-Ioakeimidou and Tarani, 2008), with highly pronounced consequences on environmental sustainability (UNEP, 2001; Scott et al., 2005; Cracolici, Cuffaro and Nijkamp, 2008; Skavanis and Sakellari, 2011; Olivar, 2016).

This paper aims to investigate the impact of tourism on the environment and to identify indicators that can be used to highlight this impact. It also studies the possible courses of action to reduce the negative effects and amplify the positive ones. Finally, positive and negative determinants are highlighted within the 2020 time frame.

## Categories of tourism impact on the environment

The literature highlights various impacts of tourism on the environment - both natural environment and built environment. In the first case, it refers to the exploitation of natural resources, changes in the structure of biodiversity, soil erosion, pollution, etc. In the latter, it refers to aesthetic and visual impact, infrastructure, changes in urban structure, forms of conservation and restoration, competition. Table 1 shows a breakdown of these categories of impact in the two cases.

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**Table 1. Categories of tourism impact on the environment**

<i>Categories of tourism impact on natural environment</i>	
Exploitation of natural resources	Water resources scarcity, due to overloading and overexploitation
	Depreciation of underground water, due to excessive exploitation
	Drainage and underground aquifer structure changes due to excessive drillings
	Reducing classic fuel resources used to obtain energy to support tourism activities
	Increased risks caused by natural disasters such as fires, landslides, floods, earthquakes, avalanches, etc.
Changes in the structure of biodiversity	Destruction of natural habitat
	Killing animals for hunting purposes, for gastronomic curiosity, for souvenirs etc.
	Influencing intern and extern animal migration
	Destruction of valuable plant species for souvenirs or for timber exploitation
	Rare plants destruction by tourists
	Reduction of natural flora for setting up tourism facilities
	Natural reserves expansion
Vegetal cover destruction	
Soil erosion	Soil compaction increases the rainwater runoff and erosion of surface soil
	Increased soil exposure to landslides
	Increased risk of avalanches
	Caves and potholes damages
	River banks and sea shores damages
Pollution	Water pollution caused by waste dumpings
	Crude oil accidental situations
	Air pollution caused by exhaust gases and fuel burning for energy production
	Noise pollution caused by transport and travel activities
	Chemical pollution of soil and waste pollution caused by the full range of travel services
Aesthetic changes	Constructions and tourism facilities that are not respecting local tradition
	Garbage and waste unauthorized sites
<i>Categories of tourism impact on built environment</i>	
Aesthetic and visual changes	Increasing the density of new construction and concrete surfaces
	Acceptance of new architectural styles discordant with the old ones
	Increasing population density and real estates
Infrastructure	Overload with elements and infrastructure equipment
	Building new infrastructure investments
	Poor environmental management when using and marketing of cultural resources in historical settlements
Urban structure changes	Expanding urban areas, such as industrial residential, commercial, etc.
	Changes in volume, concentration and quality of facilities and urban furniture
	Contrasts between the tourist and residential landscaped areas
Conservation and restauration	Reusing old buildings for tourism and trade
	Preservation of old historic centers at urban or rural level
	Using old buildings for cultural purposes and as a second residence
Competition	Replacement of attractions in human settlements with new ones, less known but more attractive
	A new orientation of cultural attractions in the light of changing travel motivations.

**Source:** compilation based on Căndea et al., 2003; Sava, 2007.

It is noted that, for example, in tourism activities natural resource exploitation leads to reducing water resources and impairment of groundwater by overexploitation, changes in the underground structure as a result of drilling activity, reducing classic fuel resources, increasing natural disasters risks, etc. Tourism can also cause changes in the structure of biodiversity and destruction of habitats, changes in internal and external

migration of animals, destruction of plant species and rare plants, reducing natural vegetation, and expanding nature reserves. In terms of the built environment, investment in tourism infrastructure, for example, can lead to improved transport infrastructure in certain areas where it was deficient, but also to an overloading with specific elements in other areas.

#### **Indicators of tourism impact on environment**

To assess the impact of tourism on the environment, in particular to highlight the degree of sustainable development of tourism in the destination region, authors such as Denman et al. (2007a and 2007b) propose the use of a wide range of indicators, among which are: total number of tourist arrivals and overnight stays per month; number of beds (type of accommodation); average expenditure per tourist; local spending generated by tourism; percentage of beds available throughout the year; percentage of annual use of beds and rooms; average occupancy rate among the busiest three months and three months the least occupied; number of beds per 1,000 inhabitants; ratio between the number of tourists and the local population; average length of stay; percentage of active tourism enterprises accessible by public transport; percentage of visitors who arrive by other means of transport besides car and airplane; percentage of use by means of transport within the destination region; percentage of seasonal employees in tourism; percentage of employees with professional qualifications in tourism; percentage of residents who consider themselves satisfied with local impact of tourism; percentage of residents who say that they directly benefit from local tourism; percentage of enterprises with recognized environmental certificates; percentage of firms stating that take measures to protect the environment; percentage of waste recycled by active companies in tourism; amount and proportion of waste sent to discharge; rejection of treatment plants; total water consumption; percentage of recycled water by active companies in tourism; water quality; total energy consumption by tourism equipment; air quality; environmental condition in selected areas; name and size of protected areas; percentage of active tourism enterprises participating in quality certification systems; percentage of visitors who claim to be completely satisfied with their experience; visitor satisfaction level with physical or sensory disabilities; percentage of active tourism businesses that are part of the local tourism associations; number and percentage of businesses promoted by various media vectors; number of tour operators which serve the tourist destination; existence of a sustainable tourism development strategy and action plan, etc. Such indicators are able to offer a relevant image on tourism sustainability in terms of economic viability, local prosperity, employment quality, social quality, visitors' satisfaction, physical integrity, resource efficiency, environmental quality, etc.

In a different register, Tanguay et al. (2013) reveals the difficulties created by the possible interpretations of the sustainable tourism and sustainable development concepts, proposing various sets of selection criteria, able to generate indicators recognised by both scientific and political environments. In principle, they start from indicators recognized by experts and filter them in accordance with real experiences and possibilities to be employed at various destinations.

#### **Elements of response to the impact**

To limit, reduce or even eliminate the various negative effects of tourism on the environment, Denman et al. (2007b), Sava (2007) and other authors bring into discussion a number of solutions and actions, such as: development and implementation of a strategy for tourism exploitation since the social side of tourism must prevail in relation to the economic one; development of legislative measures to protect tourism

resources and landscape; sustainable modern setting up of the objectives or tourism areas, toward an organized and controlled development; tourism education of the tourism actors and potential tourists.

In addition, taking into account the impact of tourism on the environment, Căndea et al. (2003) argue that tourism activities should be developed based on impact studies previously conducted. Thus, these studies should describe the activities proposed in the implementation, to present the current situation of the environment, to analyze the impacts of both general and particular perspective, to describe alternatives to the proposed activities, to make proposals solving concrete problems arising from the impact of the environment and to develop a plan for monitoring the performance of tourism activities and their impact on the environment.

Also, in physical tourism planning related programmes of a region, Pascariu (2006), in line with Coccossis and Constantinoglou (2006), suggests a number of elements to be taken into account as follows: "acceptable level of agglomeration for each component of the tourism product in part: cities, parks, museums, etc .; maximum acceptable loss of natural resources without degradation of ecosystem functions and biodiversity; acceptable level of air pollution, sound, water and soil, based on the assimilation capacity of ecosystems;• intensity of use of transport infrastructure and services; use of public services, such as water networks, electricity, telecommunications, waste management and sewage; availability of other infrastructure and public services related to health, public security, etc. " (Pascariu, 2006, p. 186, translated from Romanian).

### **A look forward**

As mentioned before, tourism has impacts on a region from various perspectives such as economic, social, environmental, etc. A question directly related to this issue refers to the determinants that have positive or negative impact on tourism activity itself. Thus, according to Kester (1999), Surugiu (2009), Shepherd and Slusarciuc (2014) a series of determinants of tourism activity are expected to occur by 2020, such as:

- economic determinants: maintaining an overall moderate growth rates or even better; economic performance above average recorded in the strong Asian economies; increasing the importance of new strong economies such as China, India, Brazil, Russia, etc .; emphasis the gap between rich and poor countries;
- technological determinants: development of information technology; development of advanced technologies in transport;
- political determinants: reduction or even elimination of barriers related to the international travel; transport and other forms of deregulation;
- demographic determinants: aging population and labor contracting in industrialized countries which will lead to a deeper migration from south to north; degradation of traditional western households;
- determinants associated with globalization: increasing the power of the international economic and market forces and, consequently, reduced control of individual states and non-global corporations;
- determinants associated with location: conflict in developing countries in relation with identity and modernity; request from the various groups made on the basis of ethnic, religious or social recognition of their rights;

- determinants associated with awareness of environmental and social issues: an increase public awareness on of social, cultural and environmental issues; an increased involvement of the media in carryover major global problems (e.g, reductions in water);
- determinants associated with living and working environment: an increasing urban congestion in industrialized countries and especially in the developing ones;
- determinants associated with the transition from a service to an experiences economy: a particularly focusing on providing unique experiences involving the consumer personally;
- determinants associated with marketing: using electronic technology to identify and communicate with segments and niche markets;
- determinants associated to the safety of travel: tourism will not be developed in war areas, civil unrest or where the health and safety of tourists are threatened.

Moreover, in line with United Nations World Tourism Organisation predictions for 2020 (UNWTO, 1999), Dwyer et al. (2008) highlight five trends that characterize the evolution of tourism: globalization trends and economic developments related to long-term trends of social change, trends related to political changes, trends related to developments on the environment, energy and natural resources, trends related to changes in technology. In determining changes with relevant implications for the evolution of tourism in 2020, the authors also stress the following key ideas: none of these trends will exercise absolute domination in the world; every trend will have a variable impact according to regions and countries will occur; trends to support each other and act for multiple purposes. They will provide a systemic context in which tourism development will take place in the coming years, if addressed correlated and interdependent.

### Conclusions

Tourism development depends on the potential of natural and built environment, which is in close interdependence with maximized positive influences and minimized negative influences. In this respect, it is necessary to devise strategies that take into account environmental and social considerations to an extent at least as great as the economic ones. It also requires an integrative vision of the determinants of tourism development, taking into account that they will act in combination at different intensities depending on the geographical area in which occur.

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