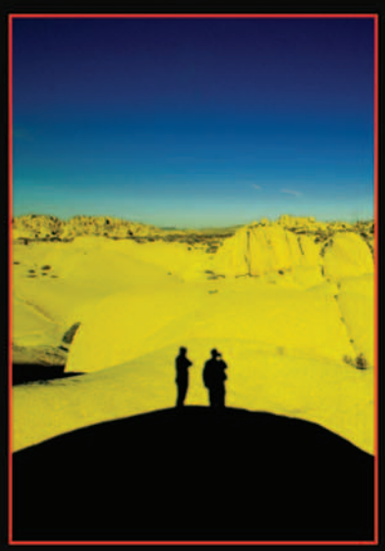
Tourism Development

Economics, Management and Strategy



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TOURISM DEVELOPMENT: ECONOMICS, MANAGEMENT AND STRATEGY

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TOURISM DEVELOPMENT: ECONOMICS, MANAGEMENT AND STRATEGY

ALEJANDRO D. RAMOS
AND
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EDITORS

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PREFACE

Over the last decades, tourism has become a key sector in the world economy: its contribution to balance of payments, incomes and employment has significantly increased over time. While in 1950 international tourism receipts totaled about 2 billion dollars, by 2006 this value had reached 735 billion dollars —about 2 billion dollars a day (World Tourism Barometer, 2007). Nowadays, the sector originates more than one third of world exports of services and over 70% of those in the poorest countries (European Commission, 2007). Tourism is therefore an important driver of growth and prosperity and, particularly within developing countries, the sector is also important for poverty reduction (World Economic Forum, 2007). Mainly dominated by small-medium enterprises, tourism accounts for 4% of the Euro Area's GDP, with about two million enterprises employing about 4% of the total labor force(approximately eight million jobs). When linkages to other sectors are considered, the contribution of tourism to GDP increases to about 11%, and the employment rate reaches about 12%, creating about 24 million jobs. Besides incomes and jobs, tourism has fostered development in the vast majority of European regions; infrastructures built for tourism reasons contribute to local development, and jobs are created or preserved even in areas suffering industrial or rural decline or experiencing urban regeneration (European Commission, 2007). This book provides new research on tourism development from around the globe.

Chapter 1 - The paper aims to show the possibilities that can reduce negative impacts from the activities in protected areas and advocates that sustainable use of protected areas can avoid future hazards and sustain the natural resource base and support the livelihood of people and communities. The paper reviews literature related to the protected area management, values, benefits and financial possibilities following with the review of the empirical evidence of using innovative approach towards the management of the protected areas. Development and support of appropriate tourism activities is one of the ways that protected areas can use to generate revenues and to contribute to their development. The conclusion underlines change from protectionism strategy towards the development strategy through innovative entrepreneurial activities that can reduce negative impacts from activities by means of sustainable innovations. The study illustrates outcomes of the Mopark project (Mobility and National Parks project financed by EU Interreg IIIB North Sea Region program), which is concerned with the nature conservation, sustainable development of tourism and the financing sustainability of eight national parks in North-West Europe.

Chapter 2 - Pristine nature, spectacular landscapes, rare species, or the opportunity to watch wild animals are certainly quality features of tourism destinations such as National Parks, Biosphere Reserves and other Protected Areas (PAs). Accordingly, the United States National Parks have become a magnet for tourists, attracting more than 270 million visitors in 2006 (www.nps.gov; accessed Feb/08). However, effective nature conservation requires funding as well as the support of local communities and other actors involved. In this context, fostering tourism-driven regional economic development has come to be a major concern of management authorities, both in industrialized and less-developed countries.

Chapter 3 - This article focuses on climate change and its impact on tourism in Europe. It summarises studies on climate change and draws conclusions with respect to the impact on tourism. It considers the economic impact on tourism as a result of actual public and political discussions concerning the limitation of emissions based on air travel as an example. Finally some questions for research are stated in the conclusions section.

Chapter 4 - This chapter builds on previous work by one of the authors (Johns 2007). The central argument is that tourism and anti-terror policy are part of a holistic agenda which in the short term is about creating 'status privileges' for white westerners at the expense of people in less developed countries and black and minority ethnic (BME) citizens. However, the ultimate strategy appears to be a modern form of colonialism driven by the desire for global hegemony (Chomsky 2003) by the United States, with the collusion of allies such as the United Kingdom. While in many ways the agenda of global domination is much more explicit than previously, its magnitude is concealed by the process labelled as misidentification by Edelman (2001). The time has come, the authors suggest, for those in the 'developed' world to make a choice, to accept hegemony or to challenge it in the name of survival.

Chapter 5 - This chapter investigates the causal relations among tourism development, exchange rate, exports and economic growth within four Asian tourist destinations- China, Singapore, South Korea and Taiwan. These markets are examined through a multivariate framework of Granger causality tests, and, while some results support previous studies of tourism-led economic growth, the findings primarily lend support to the conclusion of Kim et al. (2006) that mixed results regarding the existence of tourism-led economic growth may be due to the level of openness of an economy, travel restrictions, and the size of the national economy, as measured by population and gross domestic product. This chapter also reveals that the ability of tourism expansion to energize economic growth is dependent upon the degree to which a country's economic development is dependent upon tourism. Moreover, unlike the previous studies, the present research incorporates and examines the impact of various tourism-related mega events, such as the 1997–98 Asian financial crisis, the September 11 terrorist attacks in the US and the outbreak of severe acute respiratory syndrome (SARS) in 2003, on tourism development, economic activity, exchange rates and exports in the various tourist destinations. Along the way, the paper documents the crucial role of exchange rates in contributing to the national economy, tourism, and exports. Finally, export growth is found to significantly promote tourism expansion in all four Asian tourist destinations. This finding suggests that a promising direction for future research in tourism development will be to focus on the causality between "tourism and exports" rather than between "economic and tourism growth."

Chapter 6 - The link between heritage and tourism is a strategic field of study to examine and analyse the development of mining heritage tourism. Traditionally, research into heritage tourism chiefly focuses on analysing aspects such as management and consumption, and little concern is shown for the emergence and development of heritage until it becomes a resource for tourism. Studies about heritage do not emphasise its importance for tourism or its value as a communication tool between people and heritage. The process of heritagisation and tourism development must be tackled simultaneously. Heritage and tourism are not two links in a causal chronological chain; in the majority of cases, they are two facets of the same strategies. Therefore, integrating considerations of heritage and tourism will help to clarify the nature of certain elements and factors that contribute to the development of mining heritage tourism.

Ethnographic methods and graph theory have been used in this paper as a research strategy to study (and subsequently compare) the cases of five declining mining areas in Andalusia, Spain. Analysis revealed the clearly inextricable nature of heritage and tourism. Both dimensions appear in each case study without a clear definition of where one ends and the other begins. The results highlight the recursive relationship between heritage and tourism: not only does heritage favour tourism, but tourism can also favour heritage. Hence consumption, business, local politics and social identities appear as highly complex and profoundly interwoven aspects that affect the development of mining heritage tourism. This study allows for a conceptualisation of the viability and sustainability of mining heritage tourism beyond the traditional economic viewpoint.

Chapter 7 - This chapter investigates the Italian tourism market in a long run perspective. After a statistical analysis of international tourism flows to Italy, the main tourist destinations and the accommodation structures are highlighted. A special attention is devoted to an important form of niche tourism: the cultural tourism with a specific focus on museums, their characteristics and price policies. With reference to the main competitors of the Italian tourism destinations, a comparative analysis is presented of the extent to which Italian higher prices resulted in tourists preferring other EU and Mediterranean destinations, such as Spain, France, Croatia or Slovenia. Some policy implications of the main results of the analysis are illustrated.

Chapter 8 - As an economic activity, tourism has grown and diversified constantly over the last fifty years, with increasingly specialised activities. This transformation process has seen the emergence of rural tourism, which may be defined as ‘tourist activity undertaken in a rural environment, comprising an integrated leisure offer aimed at a demand motivated by contact with the surroundings and which interacts with the local community’ (Cánovas and Villarion, 2006).

Rural tourism as we know it today is a relatively recent phenomenon in Spain. The first action by the authorities to encourage such tourism in the country dates back to the end of the 1960s and was taken by the then Ministry of Information and Tourism to promote tourist stays in the homes of farm labourers by restoring the houses to cater for the growing demand. Later, in the mid-1980s, the Ministry of Transport, Tourism and Communications offered incentives in the form of grants to associations, cooperatives, companies and business groups to promote and market rural tourism as a way of generating employment and diversifying the tourism offer.

During the 1980s the crisis in agriculture, the population drain, and the limited opportunities to tackle unemployment and embed young people in the rural environment in Spain led to a number of experiences aimed at establishing tourism accommodation in rural

parts. Legislative initiatives by a number of regions in Spain to plan and regulate the activity eventually spread to the entire country. The early development of rural tourism was boosted by the emergence of a specific demand, driven by a desire for contact with nature and for the peace and tranquility of rural areas, as well as by a willingness to discover other destinations and the attractions of rural environments (Fuentes García, 1995, pp. 565-566).

The aim of the present work is two-fold. Firstly, it aims to define the factors that have encouraged entrepreneurship among rural accommodation proprietors and, secondly, to define the factors contributing to innovation in this sector of tourism. In the following section we will review some of the literature on entrepreneurship, with particular reference to tourism. Section 3 sets out hypotheses arising out of a study conducted on the island of La Palma. Section 4 examines the need for a reappraisal of rural tourism policy and, finally, some recommendations will be formulated.

Chapter 9 - This research outlines cultural influences on perceptions towards the university bar on an Australian university campus. Through the use of interviews, focus groups, observations and surveys, Asian students were researched as to how cultural background attributed to adapting to university life amidst the complexities of cultural space in a global/local diaspora.

In analyzing the data, a high percentage of respondents showed little motivation in repeat patronage of the university bar. The main cause of such a trend is the apparent lack of interaction between the international student with local students and the bar staff.

Chapter 10 - The main positive impact of tourism activities is, without doubt, their economic contribution, above all if we pay attention to the development of some macroeconomic variables. In the main tourism destinations, the increase in the number of tourists has been parallel to the increase in the Gross Domestic Product (GDP), giving place to a greater growth in employment and wealth than in a lot of economies that do not specialise in tourism. Moreover, tourism is one of the main sources of income in the balance of payments of numerous countries, surpassing, in the economies with an intense specialization in tourism, the income from the exports of goods, and compensating, on some occasions, the deficit between imports and exports of goods. Therefore, the aim of this study is to explain the relevance of tourism from the point of view of macroeconomics, analysing its contribution to the aggregate production, total employment, generation of income and the balance of payments.

The great difficulty in measuring the economic effects of tourism is that it is a cross sector which means there are multiple businesses in different branches of activity offering services to the tourists, at the same time as producing other goods and services not related to the tourism activity. For this reason, instead of studying tourism from the point of view of supply the normal option is to study it from the point of view of demand. Nevertheless, it would be erroneous to only consider the beneficial effects of direct tourism expenditure, given the existence of indirect and induced effects which should also be considered in order to have a complete evaluation. The direct effects are those generated in businesses that supply goods and services directly to the tourists. The indirect effects are those produced because of the intermediate demand of the tourism sectors made on the rest of the economy in order to produce the tourism service. And, finally the induced effects, income generated in the process of satisfying non-residents demand induce residents' expenditures that in turn have direct and indirect effects on all branches of the economy.

Economic literature offers different alternatives to measure the economic impact of tourism in terms of income, production and employment. Thus, this study is structured as follows. Firstly, different methodologies to measure the economic impact of tourism are shown. Secondly, an input-output model and tourism satellite account is described and finally these methodologies are applied to the Spanish economy, a highly specialised tourism economy, to quantify the impact of tourism on production, employment, exports and imports. In the last section the conclusions will be made.

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Chapter 1

INNOVATIONS FOR TOURISM IN NATIONAL PARKS

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ABSTRACT

The paper aims to show the possibilities that can reduce negative impacts from the activities in protected areas and advocates that sustainable use of protected areas can avoid future hazards and sustain the natural resource base and support the livelihood of people and communities. The paper reviews literature related to the protected area management, values, benefits and financial possibilities following with the review of the empirical evidence of using innovative approach towards the management of the protected areas. Development and support of appropriate tourism activities is one of the ways that protected areas can use to generate revenues and to contribute to their development. The conclusion underlines change from protectionism strategy towards the development strategy through innovative entrepreneurial activities that can reduce negative impacts from activities by means of sustainable innovations. The study illustrates outcomes of the Mopark project (Mobility and National Parks project financed by EU Interreg IIIB North Sea Region program), which is concerned with the nature conservation, sustainable development of tourism and the financing sustainability of eight national parks in North-West Europe.

1. INTRODUCTION

How to prevent degradation of biosphere and contribute to the economy of the protected areas through development of appropriate tourism activities represents the central issue in the paper.

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The natural features of protected areas offer attractions which in many countries have become the basis for tourism and recreation. However promoting tourism for the economy is not the primary role of most protected areas. Their primary role is the conservation of biodiversity, and provision of a rich natural resource which allows scientists, educators and the community at large to meet their various needs. The debate over environmental protection is often about the balance between leaving areas in their natural state, and developing and exploiting them. Development and support of appropriate tourism activities is one of the ways that protected areas may be able to use to generate revenues and to demonstrate their wider economic contribution (Vories, 1998)

The *main aim* of the paper is to look for the possibilities that can reduce negative impacts from activities in protected areas by more sustainable innovations and suggest that sustainable use of the protected areas can avoid future hazards and sustain the natural resource base such as vital ecosystem services and support the livelihood of people and communities.

The main focus in the paper is on changing management of the National Parks from protectionism towards development. The paper advocates the possibility to manage the National Parks by innovative entrepreneurial activities that do not collide with the biosphere, which are called sustainable innovations. The focus is on tourism because it is potentially a major source of income for the National Parks and tourism can benefit from proper management of the biosphere. The study illustrates outcomes of the Mopark project (Mobility and National Parks) (Mopak, 2006) which is concerned with the nature conservation, sustainable development of tourism and the financing sustainability of eight national parks in North-West Europe.

The article reviews literature about the management of protected areas, their values, benefits and financial possibilities. Further the possibilities that can reduce negative impacts from activities in protected areas are reviewed followed by a case study (Mopark) of using innovative approach towards the protected area management. Assessment of impacts from activities in the protected areas and cost-benefit analyses of Alde Feanen National Park is reviewed.

2. REVIEW OF PROTECTED AREAS, THEIR MANAGEMENT, VALUES AND BENEFITS AND FINANCING POSSIBILITIES

2.1. Evolution of Protected Areas

The concept of nature preservation has been recognized by George Catlin in 1832, the famed artist of the American Indian, who suggested that wildlife and wilderness might be preserved “by some great protecting policy of government in a magnificent park, a nation’s park containing man and beast, in all the wildness and freshness of their nature’s beauty” (Prato, 2005). Catlin's vision found partial expression in 1864, when Congress donated Yosemite Valley and the Mariposa Big Tree Grove to California for preservation as a state park. In 1872, Congress reserved the spectacular Yellowstone country in the Wyoming and Montana territories "as a public park or pleasuring-ground for the benefit and enjoyment of the people (Mackintosh, 2000)." With the creation of Yellowstone National Park, the world’s first protected area, the concept of protecting wild lands for their natural beauty, cultural and

biological significance was realized. Since then, people have visited parks around the world to experience wilderness and nature sites. As populations have grown and pressures on the environment and wildlife have increased, the importance of conserving biodiversity has been increasingly recognized. At international level, this has led to the development and implementation of the Convention on Biological Diversity, and to an increase in the number of nationally-designated protected areas (WWF, 2004). Today there are over 108,000 parks/protected areas on Earth, covering 13.5 million square kilometers – an area the size of China and India combined (IUCN, 2006).

The protection of nature areas for conservation of biodiversity and enhancement of the ecological functions and benefits of ecosystems became central only since the mid of the 20th century. Initially, the protected areas were established in developed countries, but since the 1970s developing countries folowed, most of the newly declared protected areas being located there. Next to the increase in numbers, there has also been an increase in the types of aims of nature protection. In the 1960s the IUCN established a typology of protected areas differentiating among eight categories (and two international designations), depending on the level of nature and biodiversity protection, and the types of economic activities permitted. Later the typology was reduced to only six categories (Barber, 2004). IUCN (1994) defined a protected area as "*an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, managed through legal or other effective means*".

IUCN has established six protected area management categories, based on primary objective of management. Classification of protected areas into IUCN Management Categories enables to make a distinction, ranging from sites that are strictly protected to those under sustainable use. These categories are presented in the next table:

Table 1. Protected area management categories (IUCN, 1994)

Category	Description
Ia	Strict nature reserve: protected area managed mainly for science
Ib	Wilderness area: protected area managed mainly for wilderness protection
II	National Parks: protected area managed mainly for ecosystem protection and recreation
III	Natural Monument: protected area managed mainly for conservation of specific natural features
IV	Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
V	Protected landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
VI	Managed resource Protected Area: protected area managed mainly for sustainable use of natural ecosystem

Importance of Protected Areas

The importance of protected areas is emphasized by international conventions and programs such as the Convention on Biological Diversity (CBD), the World Heritage Convention (WHC), Ramsar Convention on Wetlands, the UN Law of the Sea Convention, UNESCO's Man and the Biosphere (MAB) Program of the United Nations Educational,

Scientific and Cultural Organization (UNESCO) and the global program of WCPA. Together these agreements and program are the backbone of international policy on the establishment and management of protected areas for biodiversity conservation and the sustainable use of natural and cultural resources (IUCN, 1998).

As well as biodiversity conservation, protected areas serve a variety of purposes:

- They ensure the continued flow of ecosystem services, such as the provision of clean water and the protection of soil resources.
- They provide significant economic benefits to surrounding communities and contribute to spiritual, mental and physical well being.
- Protected areas help fulfill an ethical responsibility to respect nature and provide opportunities to learn about nature and the environment.
- They offer the world a model of how people can live in harmony with nature.
- There are treasured landscapes reflecting the inherited cultures of many generations, and they hold spiritual values for many societies.

Protected areas are an expression of community goals to maintain the value of biodiversity and to ensure these values can be passed on to future generations. Each of these values of protected areas is important and should be taken into account in developing a financial and management plan (WCPA, 2005).

Effects of Global Changes

In the light of the global changes protected areas have extra responsibility to protect biodiversity and balance human impacts on the environment. Aspects of global change, like biophysical, socio-economic and political, have serious implications for protected areas. Climate change and its synergies with other global changes is a new challenge confronting protected areas. Ecosystems and species will change as climate changes, requiring new protected areas and new management strategies in existing protected areas. Climate change is exacerbating the problems of invasive alien species and diseases, displacing native species, fragmentation of the natural landscape, increasing urbanization and growing demands upon natural resources placing direct threats on protected areas. These changes will require new resources for protected areas to meet their goal of conserving biodiversity and ecosystem services (Hester, 2002). Elements of global change are presented in the Box 1 below (WCPA, 2005).

Box 1. Global change elements

- *Biophysical Changes* – climate change, air/water pollution, sea-level rise, fragmentation, invasive alien species, and natural disasters;
- *Socio-economic Changes* – urbanisation, growing human populations and demographic factors, global trade, democratisation, increased recognition of non-material values of protected areas, conflicts linked to land tenure or the growing demand for access and use of natural resources, financial mechanisms and economic incentives;
- *Institutional Changes* – opportunities and threats related to decentralization of authority and responsibility to other levels of government, NGOs and communities; new models for protected areas agencies, the role of the private sector, and changes in the international development policy agenda; and
- *Technological Changes* – impact of biotechnology-generated crops, new information technology tools, increasing use of low impacting technologies by extractive industries.

Protected areas provide a response to the global environmental, social and economic challenges of modern society. The full range of objectives and benefits of protected areas must be recognized in their establishment, including their roles in conserving biodiversity, geological diversity and their social, economic and spiritual values. However, in many parts of the world protected areas are viewed as a barrier to the activities and aspirations of local communities. In many cases local communities have been excluded, or removed, from decision making regarding protected areas. As a result such areas are rarely designed with an objective of contributing to sustainable development or to the livelihoods of local communities and economic development. These issues need to be addressed in relation to the future of the world's protected areas (IUCN, 2007).

The continued perception that protected areas are only a conservation tool needs to be broken. There is a full range of economic values of protected areas including ecosystem services and other human needs which need to be lightened up systematically as well as the importance of protected areas to local and national economies, such as through tourism, has to be better profiled (WCPA, 2005).

2.2. Values and Benefits of Protected Areas

Conservation of biodiversity through the creation of protected areas comes with several benefits, such as maintenance of gene pool, environmental services, scientific research and education, eco-tourism and recreation, and people's cultural and spiritual traditions. Directly or indirectly, these benefits have many values, which are important for the survival of human life and nature (Rustagi, 2005).

The ecological value of a protected area is seen in ecosystem goods and services it provides to the society. These may range from the conservation of biodiversity to the maintenance of life supporting systems, such as watershed protection, carbon sequestration and evolution. The ecological value of protected areas is measured and monitored through indicators, such as species richness, ecosystem integrity, and ecosystem resiliency (Prato, 2005). Ecological goods contained in protected areas include fish and wildlife, timber,

minerals and water. Ecological services of protected areas include recreation, tourism, water supply, habitat for fish and wildlife, conservation of biodiversity, purification of air and water, and so on (IUCN, 1998).

The economic values of a protected area are a combination of *use* and *non-use values*. The *use value* of a protected area comprises of *direct* and *indirect use values*. While the former are derived from protected area goods, such as timber and non-timber forest products, the latter are derived from protected area services, such as watershed protection and nutrient recycling. They play an important role in maintaining the productivity of economic systems. On the other hand, the *non-use values* of a protected area comprise of *existence* and *bequest values*, and they encompass ethical and moral reasons for the conservation of biodiversity. Both *use* and *non-use values* can be measured through a variety of economic valuation techniques, such as hedonic pricing, travel cost, and contingent valuation. However, the measurement of *indirect use values* and *non-use* economic values still remains a challenge for the economists. These values represent the concept of Total Economic Values (TEV) of protected areas, presented in Table 2 (Eagles, 2002).

Table 2. Total Economic Value of PAs (Eagles, et al. 2002)

		Use value		Non-use value
Economic Value of Parks	=	*1. Direct:* Recreation, education, research, wildlife harvesting. Associated with direct use of the areas. (market values) *2. Indirect:* Ecological functions of an area, watershed protection, wildlife habitat, climate influence, carbon sequestration. Associated with indirect uses of the protected area. (non-market values)	+	*1. Option value:* Insurance to retain option of potential future site use. Protected areas act as a resource bank. *2. Existence value:* Benefit of knowing a PA exists. Often measured by willingness to donate money or time. *3. Bequest value:* Provides benefit of knowing the areas will be around for future generation. (all non-market values)

In case of National Parks, park tourism is most often considered as a direct use value of a protected area. However, park visitation influences the other values. After people visit a park, they are more aware of its existence and therefore may be more willing to donate money, to argue for its existence, and to request that it be protected for future generations. In effect, they are expressing their recognition of both use and non-use values. Table 3 provides examples of each of the types of values attributed to protected areas.

The socio-cultural value of a protected area accumulates from religious, ethical, and cultural practices of human beings. These values are expressed through designation of species and forest patches as sacred, and development of social rules concerning their use. For many people, socio-cultural identity is also constituted by the ecosystems in which they live and on which they depend. Though socio-cultural values go beyond practical preferences and are often difficult to measure, they are however important (Rustagi, 2005).

An understanding of the values and benefits of protected areas is very important to their management. Values give meaning to protected areas – they provide the motivation for their creation, give direction to their management and allow evaluation of their effectiveness. More effective communication of protected areas benefits is essential to secure their support for

their establishment as well as the necessary investment to ensure sound management. One of the principles of sustainability is that the present generation has a responsibility to pass on the natural and cultural heritage to future generations so that they can enjoy their many benefits. Protected area managers also have a responsibility to current generations to ensure that protected areas continue to provide benefits to humans as well as conserving nature for its own sake (Lockwood, 2006).

Table 3. Types of values

Use values			Non-use values	
Direct use value	**Indirect use value**	**Option value**	**Bequest values**	**Existence values**
Recreation	*Ecosystem services*	Future information	Use and non-use values for legacy	*Biodiversity*
Sustainable harvesting	*Climate stabilisation*	Future uses (indirect and direct)		Ritual or spiritual values
Wildlife harvesting	*Flood control*			Culture, heritage
Fuel-wood	Ground-water recharge			Community values
Grazing	*Carbon sequestration*			Landscape
Agriculture	Habitat			
Gene harvesting	Nutrient retention			
Education	Natural disaster prevention			
Research	*Watershed protection* Natural services			

Source: Adapted from Barbier *et al.*, (1997)

2.3. Protected Areas and Tourism

Protected areas are becoming very attractive places for the development of tourism due to their natural diversity, valuable assets and special potential for outdoor activities. Challenges for protected area managers are to ensure that while visitors have opportunities to participate in desired activities, they are aware of and maintain the values. Restricting all activities in the National Parks makes its difficult to maintain and does not generate social activities (Eagles, 2002).

Tourism activities in protected areas can serve as a self financing mechanism and so as a tool for conservation and can generate positive impacts for protected areas. This will only be possible, however, if the level, type and management of tourism are appropriate and in particular the “carrying capacity” of the area is respected. National parks are generally situated in peripheral regions; hence tourism activities can be also a chance for economic development of these regions. One the one hand it is a development opportunity for local communities to raise their income and create more jobs, on the other hand tourism can be an

important source for generating funds for conservation programs as well as for improving the quality of life of local communities. Nature-based tourism is often claimed to be the "solution" for sustainable development in rural areas. The greatest challenge is that nature tourism is balanced to ensure continued benefits to local people and managed to work in harmony with nature. Successful tourism in protected areas requires the ability to develop and market tourism products based on protected areas, and the ability to maintain the quality of these areas for the future (Getzner).

While protected areas provide opportunities for tourism, it is the commercial tourism sector that provides the opportunities and services – through accommodation, catering and transport, as well as marketing – for tourists to visit protected areas. It is therefore vital to bring together the entrepreneurial skills and link to tourism markets that tourism businesses possess, with the conservation skills of protected area managers, in order to provide a better experience for tourists, and to gain a better contribution from tourism for protected area conservation.

The opportunities for generating revenues directly or indirectly from tourism are primarily via allocation of government revenues (from general taxation or from tourism-related taxes); fee charging to businesses based outside of protected areas for their use of protected areas (via entrance fees, user fees, and permits); and allowing businesses to purchase concessions or leases to operate inside protected areas (These issues will be discussed later).

Development of tourism as a source of funding for protected areas is consistent with both the Convention on Biological Diversity's Program of Work for Protected Areas and its Guidelines on Biological Diversity and Tourism. To be successful at managing tourism and raising revenues from this, protected areas must develop and implement effective tourism management plans that integrate tourism alongside conservation management priorities and establish limits on the scale and types of tourism permitted (Font, 2004).

Benefits of Tourism in Protected Areas

There is complex array of potential economic, socio cultural and environmental benefits and costs associated wit tourism in protected areas. It is the responsibility of the protected area planner to maximize benefits while minimizing costs. In the following table potential benefits of tourism in protected areas are presented (Eagles, 2002).

Table 4. Potential benefits of tourism in protected areas (Eagles, 2002)

Benefits	
Enhancing economic opportunity	• Increases jobs for local residents • increases income • Stimulates new tourism enterprises, stimulates and diversifies local economy • Encourages local manufacture of goods • Obtains new markets and foreign exchange • Improves living standards
Benefits	

Protecting natural and cultural heritage	• Generates local tax revenues • Enables employees to learn new skills • Increases funding for protected areas and local communities • Protects ecological processes and watersheds • Conserves biodiversity (incl. genes, species and ecosystems) • Protects, conserves and values cultural and built heritage resources • Creates economic value and protects resources which otherwise have no perceived value to residents, or represents a cost rather than a benefit • Transmits conservation values, through educations and interpretation • Helps to communicate and interpret the values of natural and built heritage and of cultural inheritance to visitors and residents of visited areas, thus building a new generation of responsible consumers • Supports research and development of good environmental practices management systems to influence the operation of travel and tourism businesses as well as visitor behavior at destinations • Improves local facilities, transportation and communication • Helps develop self-financing mechanisms for protected area operations
Enhancing quality of life	• Promotes aesthetic, spiritual and other values related to well-being • Supports environmental education for visitors and locals • Establishes attractive environments for destinations, for residents as much as visitors, which may support other compatible new activities, from fishing to service or product-based industries • Improves intercultural understanding • Encourages development of culture, crafts and arts • Increases the education level of local people • Encourages people to learn languages and cultures of foreign tourists • Encourages locals to value their local culture and environment

The general literature on environmental benefits distinguishes sometimes among two sorts of benefits: private benefits and social benefits. For private benefits – such as tourism and recreation, market instruments can be designed to make use of them. But for the social benefits, governmental/public funding is expected, as they are non-excludable benefits which markets do not value. National parks are typically socially beneficial (Dixon, 1990). The identification and valuation of all national parks benefits is therefore crucial in order to trace a picture of what could be the financial contribution of tourism-recreation for the expenses related to the management and conservation of biodiversity. At this stage, an important clarification is necessary: the economic valuation of benefits is different from the financial analysis of nature areas. “Economic valuation, based on economic value, measures market and non-market values that people hold for a protected area. Financial analysis is a subset of economic valuation and measures the flow only of money through a protected area (IUCN, 2000).”

Income Generation in Protected Areas

Development and support of appropriate tourism activities is one of the ways that protected areas can use to generate revenues and to contribute to their economic development. The economic effects of tourism to protected areas can provide a rationale for continued investment in their protection, and stimulate general support for conservation (CBD, 2004). In this article the focus is on sustainable innovations with regard to tourism services and whether it is possible to generate income in National Parks based on natural assets by introducing modern, innovative tourism mobility services without compromising those assets. The Mopark project described later in the paper is shown as an example of the possibility to manage the National Parks by innovative entrepreneurial activities that do not collide with the biosphere, which are called sustainable innovations.

According to IUCN funding of protected areas is currently inadequate and must be increased. Funding sources must be diversified and linked to the many values of protected areas. There are significant challenges in generating additional finance without compromising the core values of protected areas. For example, income generation through environmentally sensitive tourism and, in some cases, the sustainable use of natural resources, offers opportunities, but there are dangers too. Tourism can provide additional funding to some but not all protected areas, including some with high and vulnerable biodiversity values. The aim is to increase financial support for protected areas, without compromising their key conservation objectives.

So while it is important to realize fully the potential benefits of protected areas with innovative financing strategies, protected area planners and managers must consider the pros and cons of different funding options (IUCN).

Financing Possibilities of Protected Areas

The challenge of sustainable financing is different for the different categories of protected areas. The higher the restriction on economic activities, the higher the reliance will be on public/governmental funding and donations for conservation financing. Looking at the categories differentiated in Table 1 this implies that moving from category I to category VI of protection, the extent to which the economic benefits of nature areas can be legally harnessed increases. While strict nature reserves and wilderness reserves are unlikely to be legally permitted to generate revenues commercially, national parks (Category II) may be allowed to engage in some types of income-generating activities, including tourism and recreation, while ‘managed resource protected areas’ are more likely to rely exclusively on income from the sustainable use of its natural resources and other benefits with quantifiable monetary value (Dinika, 2006).

Tourism and recreation can be important sources of income for national parks, but should not be treated as the only source of income. Protected areas can be funded from a variety of sources, including government funding, multilateral and bilateral donor funding, donations from philanthropic foundations, corporations and individuals, as well as by raising revenues from people visiting or operating businesses associated with these sites. In addition there are sometimes opportunities to generate revenues through less traditional mechanisms, including through cause-related marketing, biodiversity prospecting, commercial and bilateral debt-for-nature swaps, trust funds and carbon offset projects (Font, 2004).

Figure 1 shows existing funding sources for protected areas and how they differ between developed and developing countries. It is seen that funds provided to the park agency from government are the most prevalent revenue source. Such tax-based income is vulnerable to budget cuts by central government. The second most prevalent source is from entrance fees, a tourism-based income source (Font, 2004).

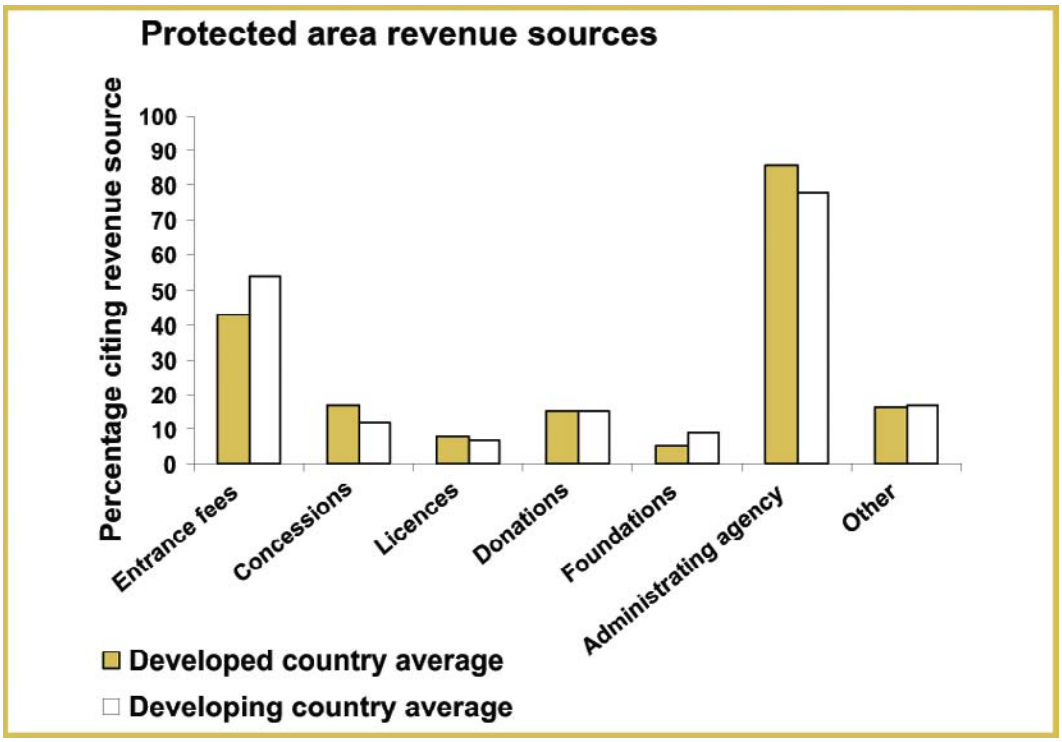

Figure 1. Protected area revenue sources (Lindberg, 1994).

Box 2 below lists a number of income sources potentially available to protected areas. Many of the income sources shown in Box 2 do not appear in the figure 3, suggesting that there is considerable potential for park agencies to increase income by utilizing a broader range of revenue sources. Tourism has the potential to provide agencies with many of these income sources (Eagles, 2002).

Box 2. Potential sources of revenue in protected areas (Font, et al. 2004)

- Government funding (mandatory or discretionary)
- Public investments
- Multilateral and bilateral donor funding,
- Donations from philanthropic foundations, corporations and individuals
- Revenue-raising methods:
    - Protected area entrance fees
    - Recreation service fees, special events and special services
    - Accommodation, transportation and guiding
    - Parking
    - Equipment rental
    - Food sales (restaurant and store)
    - Merchandise sales (equipment, clothing, souvenirs)
    - Licenses, permits, and taxes
    - Licensing of intellectual property
    - Sale or rental of image rights (e.g. for taking photographs)

1. Cross-product marketing
2. Private sector initiatives
3. Cause-related marketing
4. Biodiversity prospecting
5. Commercial and bilateral debt-for-nature swaps
6. Trust funds
7. Carbon offset projects

All the above mentioned various ways of financing protected areas described can be grouped under three basic categories:

- Budget allocations from a government's general revenues.
- Grants and donations from individuals, corporations, foundations, and international donor agencies. (This category includes debt for- nature swaps and conservation trust funds).
- User fees, conservation taxes, fines, and other revenues that are earmarked for funding protected areas.

Since the establishment of protected areas, public funding has been the main source of financing for the costs related to management and conservation, followed by donations. But, in time, the income from tourism-recreation has increased. Entrance fees have become the second dominating financing mechanisms but a wide rage of potential income sources remain poorly explored, especially in the field of taxation, but also in terms of types of fees for various activities and area resources.

A wide variety of classifications of fees is used in the literature. Sometimes the term 'fee' is confusingly used also for various tourism products and services which are actually offered on a commercial basis by park agencies, when it operates as a typical economic agent. The following typology of fees that may be used by park managers:

- entrance fees: these are fees for access to parks area, including, fees for (cruise) ship visitors when the park borders large bodies of water;
- user fees - for specific activities and sites within the protected area: recreation fees for special events (e.g. music festivals) and recreation programs; camping fee (per unit – vehicle, tent, caravan); shelter fee; beach fee; fees for terrestrial activities such as hiking and biking; fees for marine/water activities such as diving fee and for other water sports such as cannoning, boating;
- fees for 'intellectual property'; these are also known as fees for image rights and can be based on the licensing of companies for using images or the logo of the national park, or fees on visitors for video and/or camera use for private purposes;
- fees for concession licenses: "charges or revenue shares paid by concessionaires that provide services to protected area visitors" (Brown, 2001).

Entrance fees and user fees can be used alternatively or simultaneously. From the standpoint of environmental impacts and equity among visitors, it is advisable to charge user fees in addition to entrance park fees, in order to account for the additional environmental impacts of the various types of activities, and for using some more sensitive sites of the protected area. (It is worth mentioning car parking charges, which are commonly used at specific locations. Such charges are often publicly acceptable, as people pay often high rates for parking in towns. Also they may act as an incentive to public transport use [Miller, 2006]). Since various visitors have various levels of impacts on the protected area depending on the activities they engage in, this should be reflected in the overall payment they make towards the park in the form of fees. But from the standpoint of the visitors, having to reach for the wallet too frequently during his/her stay in the park for every new area and activity he/she is engaging in, could be quite irritating, lowering the quality of experience. When establishing the pricing mechanisms park managers need to carefully balance these two standpoints (Dinika, 2006). In terms of pricing strategies five pricing strategies that could be used for entrance fees and user fees are presented in the table below.

Table 5. Types of Tourism User Fees in Protected Areas

Fee type	Description	Examples
Entrance fees	Charge for entering a PA.	Fees collected at entry gates.
Concession fees	Charges or shares of revenue paid by businesses operating within PAs, providing services to visitors.	Fees to operate restaurants, hotels, eco-lodge facilities and souvenir shops.
General user fees	Fees paid by visitors to use facilities within the PA.	Fees to use parking lots, campsites, visitor centers, boats, shelters.
Royalties and sales revenue	Monies from sales of consumer goods.	Fees on recreational equipment, souvenirs.
Licenses and permits	Instruments required for private firms (or individuals) to conduct activities on PA property.	Permits for tour operators and guides for scuba/snorkel, kayaking, sport fishing; mountain climbing/hiking permits; licenses for cruise ship visits.
Taxes	Targeted taxes on relevant points on the market chain related to the tourism industry, earmarked for conservation.	Taxes on hotel rooms, airport use (entry or departure tax).

Source: Conservation Finance Alliance 2004.

The potential contribution of tourism to the funding of protected areas needs to be set in the context of other funding sources available to protected areas (Drumm, 2003). Each funding source brings with it a degree of risk, and as with any financial package it is important to balance the risks and opportunities presented by each one. The key is to group revenue streams that are suited to the specifics of each particular protected area, and which together offer greater stability of funding flows than any one mechanism could provide on its own (Font, 2004).

The focus of any revenue streams will inevitably depend to some degree on the features of different protected areas. For example, generation of revenues through fees, concessions and sales is most likely to be appropriate in protected areas where visitation levels are high. Newly established protected areas may find that they can obtain bilateral or multilateral funding for their start-up phases, perhaps leading through to establishment of a trust fund, particularly if their biodiversity is of global significance. Protected areas with strong links to national heritage and culture may be better placed than others to generate funding from government taxes or levies, trust funds, and campaigns for corporate support, while areas harboring flora and fauna are well suited to raising support from the corporate sector through cause-related marketing (Norris, 1999).

Tourism is one of the few permitted uses of protected areas which generate financial benefits, and sustainable nature-based tourism has emerged as a potential solution to the problems facing managers of protected areas. In theory, nature tourism provides a means of generating tangible economic benefits from protected areas to compensate the often substantial costs of protection, without the environmental costs associated with extractive industries such as mining, forestry, and agriculture. In addition, nature tourism forms a link between protected areas and the livelihood of local people, “providing revenue to the local community sufficient for local people to value, and therefore protect their wildlife heritage as a source of income” (Walpole, 2001).

2.4. Managing Tourism in Protected Areas

Although tourism can be a source of benefits for protected areas, often, protected areas may not have the resources that are needed to turn these potential benefits into a reality, and may not be sufficiently equipped to control and manage tourism so that it remains in balance with conservation goals. The first priority for protected areas is therefore to find ways of working with the tourism sector to reduce the impacts of tourism and costs to a site of managing tourism, before exploring the potential of using tourism to raise revenues that can contribute to protected area management (Font, 2004). To help protected areas and national authorities address such concerns, the Convention on Biological Diversity has adopted a set of Guidelines on Biodiversity and Tourism. These are designed to provide a framework for the management of tourism within protected areas, consistent with the conservation and sustainable use of biodiversity. The CBD Guidelines on Biodiversity and Tourism address market issues and tourism trends at all levels, as well as key factors for management of tourism in protected areas, such as establishing limits of acceptable change, zoning and control of tourism, impact management measures, and promotion of responsible behaviors by tourists visiting protected areas (CBD, 2004).

3. REDUCING NEGATIVE IMPACTS OF TOURISM ACTIVITIES IN PROTECTED AREAS

3.1. Need of Innovative Approach

In order to secure the long term viability of protected areas innovative approach towards their management is required. In terms of innovative approach can be understood new way of using the natural resources, or new way of funding possibilities. Traditional funding sources for protected areas are not enough; innovative alternatives to these traditional sources are needed. This paper advocates the possibility to manage the National Parks by innovative entrepreneurial activities and reduce impacts from activities by means of new products and services which are called sustainable innovations. Innovative approach used in this paper is referred to the use of income generating sustainable activities in national parks employing new information and communication technologies and sustainable forms of transport.

Encompassing the whole tourism sector, innovation does not only mean adapting the tourism industry to the changing tourism patterns with new marketing strategies, but also fostering new and innovative products, services and processes. A main area of innovation in tourism concerns the use of information and communication technologies enabling consumers to interact directly with tourism providers. Recent advances in telecommunications, networking, databases, data processing and electronic marketing provide many new opportunities for tourism business and are significantly impacting on traditional tourism business models. The use of information and communications technology (ICT) adds value to tourism services and products and supports the development of industry networks and clusters. ICT covers the whole tourism value chain (*e.g.* information on destinations, accommodation, transportation, package tours and services) and displays the actual process and availability of such services. Also major basic innovations in transportation have largely influenced tourism (OECD, 2003). The Mopark project discussed in the following part is used as an example of employing innovative tourism products and services in information and communication as well as in transportation for generating revenues in National Parks.

3.2. The Case of Mopark Project

Here the case study of the project Mobility in National Parks- Mopark- is presented. The project is a transnational partnership among eight partners in Northern Europe and is funded by the Interreg IIIB North Sea Region Program (Mopark, 2006).

The main problem addressed in the project is related to the negative effects of mobility in the National Parks. The primary purpose of the National Parks is to safeguard natural and cultural diversity. However private mobility endangers these natural and cultural qualities. Especially in National Parks the negative effects of mobility are evident. Restricting the activities makes National Parks difficult to maintain and does not generate social activities. An emerging view is that appropriate management of mobility in national parks can provide a basis for natural qualities, social activities and economic progress.

The aim of Mopark project is the reduction of the use of polluting forms of mobility in the national parks and the promotion of environmentally friendly vehicles. Another important aspect of the project is to show how information and communication technology can be used to improve the attractiveness of an area, to improve the visitors' behavior and to raise income. Other important link is also on development and implementation of new urban-rural and inter rural relationships. The project is aimed at attracting tourism from town to rural areas in a sustainable manner.

The main objectives of the project are: to increase tourist quality, to generate more income based on Park's assets without compromising them, to create awareness of natural qualities among tourists, to lengthen tourist season by developing products for the off-season and improve quality as well as to realize innovations by means of better communication technologies, better transport systems and innovative vehicles.

The content of the case study presents the review of the participating National Parks in Mopark, monitoring results of the project, as well as environmental, economic and social impacts from the activities introduced in the project. Moreover, an outcome from cost-benefit analysis of the Alde Feanen National Park is introduced as an example for other participating national parks. The monitoring and impact assessment was done by the Cartesius Institute, Institute for Sustainable Innovations of the Netherlands Technical Universities- Delft, Twente and Eindhoven.

The participating parks are: Alde Feanen National Park in the Netherlands; Weerribben and Weiden National Park, the Netherlands; Hardangervidda National Park in Norway; Lille Vildmose National Park in Denmark; Söderåsen National Park in Sweden; Loch Lomond and Trossachs National Park in UK/Scotland; British Waterways in UK/England; and Region Uthlande in Germany.

3.1.1. Review of National Parks

Almost all National Parks (except British Waterways, which is not a National Park, will be explained later) presented in the project fall under the categories II (National Parks: protected area managed mainly for ecosystem protection and recreation) and V (Protected landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation) of the IUCN established protected area management categories (see table 1).

Alde Feanen National Park covers 25 km² of area. The park has been established recently, in 2006, with a wide variety of landscapes like lakes, bogs and marshy woodlands. Its rich biodiversity attracts lots of visitors and makes it popular among water sport lovers. There is no community within the Park but few thousands of people live in villages at the border of the National Park. Tourism in and around the area of the Park is intensive. About 100.000 tourists visit the Park and stay on average about a week. About 20.000 people stay in and around the park during the peak of summer season. Despite the intensive tourist use, the area considered to be rich in biodiversity.

Weerribben and Wieden National Park covers 35 km². It is an old peat district and a biggest marshland of Western Europe. The main characteristic of the Park is the presence of reeds, turf ponds and moor lands. A wide variety of biodiversity with plant and bird species is connected to an interesting landscape with good opportunities for cycling and canoeing. There is a small community (around 500) within the Park and few thousand people live around and at the border of the National Park. Tourism in the Park is very intensive with about 1 mln tourist coming annually.

Hardangervidda National Park is the largest plateau in the Northern Europe. The Park is 3422 km² with its unique nature and cultural qualities. Hardangervidda has the largest population of wild reindeer and also many arctic plants and animals. There are ten thousands of people living around and at the borders of the National Park. The number of tourists coming annually is 50.000.

Lille Vildmose National Park covers approximately 80 km² and consists mainly of grazed forests and raised bogs. It is one of the biggest coherent nature areas in Denmark known for its outstanding biodiversity for which the area has been designated as Natura 2000 site (Natura, 2000). About ten thousand people live within and in the surrounding of the National Park. Nature and landscape are the main reasons why people come to visit the area. Around 115.000 tourists come annually in and around the park, which indicates that tourism is quite intensive in the area.

Söderåsen National Park is located in the south part of Sweden and covers 16 km² of area. It has rich biodiversity, outstanding geological features, accessible nature and interesting cultural aspects close to large urban areas. It is one of the few parts in Sweden where large deciduous forests exist and the biodiversity is of great value. Regarding the community, there are 2000 people living around the park. Tourism is intensive in and around the Park with 50.000 tourists coming in and 700.000 tourists coming around the Park.

Loch Lomond and The Trossachs National Park covers around 1865 km² of some of the finest area in Scotland. It is an area of contrasts from lowland landscapes in the south to high mountains in the north. 15.600 people live in the National Park and more than 70% of Scotlanad's population lives less than an hour's travel time from Loch Lomond and Trossachs. Among tourists it is a very popular place to visit, as about 2.2 mln tourists visit park annually.

British Waterways[2] manages and cares for over 3200 km (2000 miles) of Britain's canals and rivers. Although not actually a National Park, the waterway provides link between the city of Manchester and the surrounding countryside. It terminates at the small towns of Whaley Bridge and Bugsworth in Derbyshire, close to the boundary of the Peak District National Park. The actions carried out within Mopark take place on the Peak Forest Canal in Derbyshire. There are about 90.000 people living around the area. Number of tourists coming annually is about 62.000.

Region *Uthlande* is located in Germany and covers 5 islands and 3 halligens (muddy flats), surrounded by the National Park Schleswig-Holsteinisches Wattenmeer, the Wadden sea and the deep sea island of Helgoland. The surrounding Wadden Sea is a nature area which is unique world-wide and is therefore protected in the National Park. Almost 36.000 people live and work in Uthlande. The tourism is very intensive in the area, there are up to 21 million visits annually in and around the National Park.

3.1.2. Characteristics of the Parks

Different characteristics of the parks and monitoring results of Mopark project are presented in table 4. As viewed from the table, most participating National Parks focus on protection of nature and education. Two parks out of eight have focus on local development in Loch Lomond National Park in Scotland and protection of Wadden Sea in Region Uthlande

[2] British Waterways is a public authority responsible to the Department of the Environment, Farming & Rural affairs, responsible for much of the inland waterway network in England

in Germany. Most National Parks have biodiversity as a key feature, except of British Waterways that distinguishes environmental and industrial natural landscape.

There are various tourist attractions with potential for the development of innovative activities, like hiking, fishing, swimming, bird watching, cultural sightseeing, castles, etc. In the long term the Parks plan to maintain present characteristics that is to protect vulnerable areas and to focus on tourism as a way to generate income in "near park" areas, which entails attraction of more visitors, improvement of accessibility, knowledge and promotion of sustainable development of the park communities.

As it is seen from the table many organizations and people have been involved in the project. The organizations around the parks indicated that there are many possibilities to use parks and neighboring areas for farming, sustainable outdoor life and nature experiences. Another result relates to income generation. In most cases, people income in and around parks is much lower compared to the region. The development of tourism increases income of communities. It is also stated that there are more creative people in and around parks compared to the region, which stimulates economic development.

National Parks differ extremely in the size of the area. It does not mean that large parks have many visitors, but it is often quite the opposite. For example Weerribben has 35 km² with 1 mln visitors coming, compared to Hardangervidda National Park of 3.422 km² with 50.000 visitors, or Söderåsen with 16 km² has 750.000 visitors during the season which is 2.343 p/km². The spending per tourist for the use of the parks also varies. Based on the obtained data main income in most parks comes from tourism. In Alde Feanen the annual income from tourism is € 79.3 mln with € 200.000 state support and € 175.300 costs of the park, which is € 793 per visitor. In Weerribben annual income from tourism is € 25 mln with € 2 mln of costs of the park. This is € 25 per visitor. In Söderåsen National Park income from tourism is rather low that is € 50.000, whereas € 605.000 is provided by state and various projects. However, during the season it has lots of visitors, and application of new kind of activities makes possibilities to generate more income. Income from tourism in Loch Lomond is € 76.34 mln with around € 10 mln income from the state. In British Waterways income from tourism is € 455.013 and with € 57.949 from the state. Income from tourism is much important than from other sources.

Responsible organizations are mostly public organizations, tourist offices, nature management organizations, water sport association and some private enterprises as well. Organizations involved in the Mopark project are mostly small enterprises as well as public organizations.

3.1.3. Review of activities in the National Parks

In Mopark activities have been organized in three categories: information and communication, transport systems and sustainable vehicles. The category of information and communication aims to make area more attractive for people by better promotion of the areas' qualities, making people aware of natural assets, letting people experience and enjoy nature in different ways and developing new tourist services. The category of transport systems aims at organizing innovative and sustainable mobility as well as attractive tourist packages, which enable sustainable tourist mobility in different countries, in various periods of the year and provide income to park authorities.

Table 6. Monitoring results of the Mopark

	Alde Feanen	Weerribben	Hardangervidda	Lille Vildmose	Söderåsen	Loch Lomond	British Waterways	Region Uthlande
Country	Netherlands	Netherlands	Norway	Denmark	Sweden	Scotland	England	Germany
Area (km2)	25	35	3.422	80	16	1.865	3.200	4.410
Functions	Nature, education	Nature, education	Nature, recreation	Nature, recreation	Nature, recreation	Local development	Nature, recreation	Wadden Sea protection
Qualities	Biodiversity	Biodiversity	Arctic species, culture	Largest bog, rare species, culture	Biodiversity, geology, culture	Diversity of landscape	Environmental and industrial landscape	Unique nature
Attractions	Water sports, culture	Water sport, nature	various	Coastal area, various	Nature, castles	Forest parks	Historic port, canal	various
Responsible organisations	16	10	15	4	1	1	2	1
Org. involved in Mopark	58	41	11	15		12	15	
People involved	152	150	22	50		150	41	
Community in/ around		3.500	10.176	10.000	2.000	3.515.600	90.020	36.000
Visits/year in/around	100.000	1.000.000	50.000	115.000	750.000	2.200.000	62.000	21.000.000
Income from state	200.000		2.870.911		605.000	9.995.189	57.949	
Income from tourism	79.300.000	25.000.000			50.000	76.340.000	455.013	
Costs of parks	175.300	2.000.000	687.882	468.834				

Table 7. Activities introduced in Mopark

	Alde Feanen	Weerribben	Hardangervidda	Lille Vildmose	Soderasen	Loch Lomond	British Waterways	Region Uthlande
Information and communication	Solar info panels; Solar webcams; SMS system; GPS trail; Cyber guide(GPS) GPS for kids; Database; Veenquest	Route books on sloops; GPS guiding; Navigating routes and short holiday packages; Online booking system; Marketing and promotion	Web pages; Downloadable GPS/PDA routes; Info boards with GPS; Courses about parks (incl. 3D tech)	3D maps; GPS guiding; Digital information board; Video promotion	Network for entrepreneurs; GPS/hand held computers; PodCasting technique	PDA and Audio guided tours; 3D maps; Digital asset management system	Improved access (transport systems); Improved interpretation plan; Courses for schools	Improve of attractiveness of NP; Packages "Islandhopping "
Transport systems	Internet route planner; Hydrogen taxi; Wetterbus; Ottersurvival-game for kids; Longditch-game; Holiday packages	Network of charging points	Adventure/discovery trips; Canalising tourism; Public transport to mountain plateau	Natura 2000-packages for disabled; Paths and toilets for disabled; Viewpoint for disabled; Bird watch tower; Car park and path to tower for disabled; Primitive campsite for disabled	Rental system for bikes; Access for disabled			
Sustainable vehicles	Solar boat –Torenvalk; Electric prams/boats; Innovative bikes; Solar ferry for bikes; Sailing prams with electric engines; Small boats with electric engines; Solar challenge race	5 electric boats Ottersloop		Electric bikes; Horse carts	Electric trains; Ethanol buses	Solar electric boat for disabled		

And finally, in the category of sustainable vehicles measures are focused on demonstration of sustainable means of transport and assessment of possibilities for successful application of these means of transport in nature areas of National Parks. In table 7 activities per park in each category are presented.

As it is viewed from the table 7 many innovative activities have been realized during the project in all mobility categories and most of them are going to be scaled up in future. In information and communication category most national parks have started activities using multimedia facilities, like GPS, PDAs, SMS systems, 3D maps, video and audio information, etc. for better promotion. In transport systems category focus has been on the attractive tourist packages combining public transport, sustainable vehicles and interesting local facilities. Some national parks made studies and introduced strategies to improve recreation traffic and alternative transport means. In sustainable vehicle category there are solar cell vehicles and boats, innovative bikes, buggies, etc. However, not all national parks introduced activities in the last two categories. The participating partners have exchanged the ideas and implement new activities. The network of national parks that has been created during this project provides the ground for further follow up projects and activities.

Alde Feanen National Park

Alde Feanen National Park aims to maintain present characteristics and have aims concerning the management and structure plans.

An important goal in developing De Alde Feanen into a national park is to stimulate use by people interested in learning about and enjoying the natural world: eco-recreation. Promoting eco-recreation will help to promote support for both natural habitats and recreation in De Alde Feanen.

This approach will provide new opportunities: providing more quiet in the nature conservation area plus improving the image of recreation and developing recreational products. The “sale” of quiet surroundings and the experience of the natural world offer possibilities for new recreational packages. Future visitors and recreational entrepreneurs will no longer see the natural environment as a threat but as a partner and an opportunity. Just one of many possibilities would involve taking visitors out in the morning in an “antique” flatboat – the kind commonly in use a hundred years ago – powered by sail or an almost-silent electric motor to experience the area from the water, and then having them spend the second half of the day cycling through the surroundings. These kinds of ideas are the results of discussions about promoting the use of electric-powered boats in combination with a form of zoning that would distinguish this national park from others and make it better able to meet the needs of the future; Efforts that should result in benefits for both ecology and economy (Mopark, 2006).

Activities such as the Veenquest and other GPS activities, solar powered webcams, info panels, etc help to promote eco-recreation. Besides being able to enjoy the nature in a sustainable way, visitors that use these GPS activities would be provided with information regarding the nature around the national park. The solar powered webcams that provide real-time images of the national park not only trigger visitors’ interest, they also provide the opportunity for visitors to enjoy parts of the national park that are prohibited for them. This way, these webcams also help to conserve parts of the national park that are most sensitive to human interference.

The quietness of the area can be enjoyed better by using electric boats and solar powered boats since these boats produce less noise pollution. The national park is made more accessible by providing bicycles for the disabled. These activities are made available and more attractive to visitors by incorporating them in holiday packages in De Alde Feanen.

However, it is perceived that the environment could further be conserved by the increase of government interference in this matter for example by prohibiting fossil fuelled boats in the area of the national park. Another form of support would be to increase subsidies for electric boats considering that the main obstacle for entrepreneurs not to rent out these boats is due to high investment needed even though the results of a certain study mentioned that 100% of the visitors that experienced these boats were satisfied (Minnema, 2006).

Unfortunately, direct profitability of these activities is still unknown yet, therefore it cannot be concluded yet whether they are profitable or not. However, based on interviews with two of the companies that were responsible in renting out bicycles for disabled (Zandberg, 2006), it is known that these special bicycles do not affect their income. Quite the contrary, they require more time and effort to explain to the interested visitors. Nevertheless, a ripple effect of the increased amount of visitors due to this project has been perceived to create a positive ripple effect on local economy of that area, for example by the increase of activities in local cafes, restaurants, hotels, etc and also due to the fact that these activities employ mostly local inhabitants.

Weerribben National Park

Weerribben National Park aims to maintain present characteristics and have aims concerning the management and structure plans.

The GPS on board the Otter Fleet guides visitors around the national park to places and points which are most attractive whilst at the same time guiding them away from areas where national park authorities perceive to be most sensitive. These electrical powered boats also generate less noise and emissions making visitors able to enjoy nature without disruption from a conventional fossil fuel engine.

The Otter Fleet has created open-mindedness amongst the entrepreneurs around the Weerribben National Park. After receiving a pessimistic reaction from entrepreneurs during the initial phase of the Otter Fleet, the success of the pilot project showed that it was possible to attract new target groups whilst maintaining natural values using this new product (Kruk, 2006). This way, Otter Fleet stimulates entrepreneurs to generate new products to attract visitors. The Otter fleet was able to attract new target groups that spend more money than traditional visitors of Northwest Overijssel plus offering the possibility to attract tourists out of traditional tourism season.

However, the set up of the Otter Fleet foundation who owns the Otter Fleet concept has been seen as an obstacle for entrepreneurs to feel more involved in this project. The trans-national cooperation between national parks in this project is seen to be beneficiary in opening possibilities for further trans-national cooperation. Examples of the utilization of the GPS in walking routes from other national parks in the Mopark project has also triggered the idea of creating a GPS walking route for children.

Hardangervidda National Park

The main project objectives in the Norwegian project are (Mopark, 2006):

- Improve income and economic development for local people
- Take care of the biodiversity by reducing the negative effects of tourist traffic
- Improve attractiveness of Hardangervidda and influence the use
- Experiment with new types of tools to achieve a better visitor's behavior and experience of the area

Hardangervidda aims to protect a part of a very valuable mountain area so that the landscape with plants, nature, and cultural environment are preserved. Canalising documents help to direct tourist traffic helps to avoid damage on the environment and natural wildlife.

The web page, information boards and downloadable GPS/PDA routes were developed to provide information about the park and improve the attractiveness of the National Park. Besides that, adventure and discovery trips, bike routes as a part of adventure trips involving GPS devices and tourist packages were all developed to support these means. The 3D course on board the Fjellvåken before entering the national park is expected to increase awareness and improve tourists' behaviour. Behaviour guidelines are also mentioned on the national park's website. Project management itself provided a meeting place between public and private management of Hardangervidda.

The public buses that operate during summer and the cooperation with local businesses on supporting public transport up to the mountain plateau will help reduce air pollution. Positive environmental impacts are also a result of the modification of the Fjellvåken to save up to 1000L of diesel/season (Hope, 2006).

These activities have impacts on the local community in a way that they look at technology as a tool to create sustainable products thus also motivating local technology experts. The canalizing documents, for example, change the way of thinking of locals on how to develop tourism (Hope, 2006) Moreover, new business ideas are triggered as a result of this project, for example developing new activities involving reindeers as a result of the canalizing documents. Seeing the results of this project, once pessimistic government officials are now more enthusiastic about the follow up of this project and other trans-national projects (Huitfeldt, 2006). However, it is perceived that if there were less bureaucracy and paperwork required for this project, there would be more time to be spent on actual work on activities.

Lille Vildmose National Park

Lille Vildmose aims to attract more visitors, to make the National Park the most important nature protection and education location in the new municipality of Aalborg as well as to secure and develop the natural values, to improve accessibility and to start a nature school education centre next to Lille Vildmose Centre.

Many activities were developed in Lille Vildmose that has means to attract more visitors. To name a few are the brochure and website development and the development of the visitors centre. A report to investigate the possibility of horse back riding and horse carriage activities in the national park is hoped to stimulate local entrepreneurs to start new businesses.

Horse back riding and horse carriages, alongside with electrical and manual bicycles, will provide the possibility to enjoy the nature in a sustainable way. These activities have been perceived to contribute to CO_2 reduction considering that otherwise visitors would enjoy the nature using private cars.

The viewpoint towers will not only provide the possibility to enjoy the nature in a sustainable way but also provide educational purposes as information regarding natural local wildlife are available in those towers. The special construction of these towers and the pathways surrounding them make them accessible for the handicapped.

Economic impacts of this project, however, can so far only be estimated: commercial horseback riding will grow; reports will hopefully encourage small enterprises to start new businesses, etc. Besides direct impacts, this project has also given indirect impacts such as rising prices on real estates in the area surrounding the national park. Moreover, an unexpected increased amount of activities has occurred in the local café at the visitors centre, owned by a local inhabitant.

Nature schools, nature youth hostels, information boards, new bicycle routes, additional bird watch towers are among a few of the activities that are spin-offs of this project. Continuous horse rides from Dokkedal to the visitor centre are also being planned to support public buses that only travel to Dokkedal.

As a result of seeing how the nature is able to bring so much value to its surroundings, the local government now takes nature conservation issues more seriously. This result is also viewed to attract other source of funding for other projects such alike.

Söderåsen National Park

Main objectives of the Mopark project in Söderåsen National Park are (Mopark, 2006):

- Improve economic development in the local area and strengthen the connection to the nature as an important resource
- Develop infrastructure to make nature and recreational areas accessible with public transportation
- Find solutions to make nature accessible to physical disabled persons
- Present an information concept that attracts a broader group of the public as well as to lengthen the season for visitors

The nature, culture, and heritage course that is provided for locals who receive tourists has not only increased their knowledge but also has created a network amongst participants. This course is hoped to increase the quality of visit for tourists and to help conservation purposes for example several heritage sites that can be found around the national park.

Tourist quality has also been improved by the building of the visitors' center in the village of Röstånga where information about the national park can be found. This visitors' centre has been specially constructed to accommodate the disabled, with a heightened viewpoint where they can also enjoy the nature.

Besides brochures and seasonal exhibitions at the visitors' centre, information about flora and fauna in Söderåsen National Park can be found along the path in the national park. Digitally, this information can be downloaded and heard from an Ipod device, thus hoping to attract younger generations.

A certain focus is directed towards attracting children from big urban areas into the nature has been translated into a nature educational programme for children. A pilot programme was done for children between 6-12 years old from Copenhagen by taking them through an educational trip through the national park where they not only learned about the nature but also about survival and team building skills. The children were afterwards been found to be enthusiastic about the nature (Wigrup, 2006).

Female immigrants from Denmark were brought to experience the national park as an exchange programme of female immigrants between Denmark and Sweden in hope to get them out into the nature more. As a result, they gained a positive experience and were interested to visit again.

Another attention of Söderåsen National Park is to promote network for female entrepreneurs and actions to find cooperative solutions. This is translated into a female entrepreneurship programme for local female entrepreneurs. The result of this was found to be able to improve way of doing businesses thus increasing profit (Ulrika, 2006).

Focus on the disabled is not only limited to building special infrastructures but also includes a therapy by horse riding for disabled children. In the project efforts will be made to adapt these possibilities to take physically disabled out in nature with quality in combination with an educational effort. This effort resulted in a study about how to get handicapped youth out in the nature. This study has been used as presentation materials in schools. From this study, it has been found that the nature has an important impact regarding the well-being and also the logic and motoric development of a human being. However, unfortunately, the ethanol buses and electric trains are not yet available.

Loch Lomond and the Trossachs National Park

For Loch Lomond and The Trossachs National Park the priority is to conserve and enhance the natural and cultural heritage, to promote the sustainable use of natural resources, to promote understanding and enjoyment of the Park's special qualities and to promote the sustainable development of the park communities.

The interpretation activities and the 3D map are meant to provide better understanding about the qualities of the national park by increasing awareness of sustainability issues and awareness of the special qualities of the national park and the importance of conservation. Further development of these activities will be a spin-off of this project besides the development of downloadable programmes from the website. A better understanding of the park's qualities is also hoped to be able to support efforts of natural and cultural heritage conservation. Conservation efforts are also supported by the support boat on Loch Katrine, which is perceived to have a positive environmental impact by CO_2 reduction considering that the fossil fuel engine have been replaced with a biofuel engine.

The solar buggies have been viewed to increase amount of visitors in Loch Katrine by ±12-15% (Allan, 2006). Moreover, they provide accessibility for the disabled to be able to enjoy nature in a sustainable way since they operate on solar power and electricity.

However, increasing amount of visitors is not the national park's goal since they already receive a high amount of visitors during peak season. Distributing them according to time of visit, lengthening period of stay, and increasing visitors' expenditure has become more of their focus. Increasing tourist quality and attractiveness of the national park besides lengthening tourist season is hoped to help them achieve these goals.

Another sustainable vehicle that has been developed in Loch Lomond and The Trossachs National Park is the solar electric boat operating in Loch Lomond. This boat increases tourist quality by providing them the possibility to enjoy the silence of the nature without disturbance from a conventional engine. This boat may be used during shoulder seasons, thus lengthening tourist season.

Economical impacts of this project on the local community have been perceived to be positive, however only marginally. Measuring direct profit of these activities is not applicable in this case since the national park's organization is not profit oriented. However, no exact confirmation or measurements have been conducted to measure environmental, economical or social impacts of this project.

British Waterways

British Waterways aims to become a major tourist destination and education resource with good accessibility for disabled people and links to other recreation networks.

Educational purposes are perceived to be fulfilled through the interpretation plans in forms of brochures, CDs and information boards, and downloadable information resources from the website. These plans are also perceived to help support conservation of nature and heritage sites around Peak Forest Canal by increasing awareness of visitors regarding the history of the surrounding area thus increasing their sense of appreciation.

A study by British Waterways has shown that the re-opening of these canals has generated a profit of €444,871.87 in total and an increase of 12,000 extra visitors in 2005 (Lalieu, 2006). This increase in amount of visitors has given a positive impact on rural economical development by increasing activities in local pubs and restaurants, for example. This has been perceived to help achieve the goal of regenerating towns around Bugsworth Basin.

The construction that is made accessible for the disabled is perceived to be able to attract new target groups of visitors.

The increased road traffic overall, due to the increase in the number of visitors (despite the promotion of public transport) – at present this is dampened by the limited car parking on-site.

Environmental status in the surrounding areas is monitored by conducting an Environmental Impact Assessment. The result of this assessment shows that the area is under a very good ecological status. However, most of the visitors prefer coming to that area by private cars, thus creating air pollution. Air pollution is also generated from the boats that travel through the canals since most of them operate using fossil fuels.

However, to realize the aimed goals there are needs for a building as a base for an expanded voluntary sector range on site, need to improve accessibility encouraging public transport but also improve car parking, encouraging more facilities/activities thought the private sector e.g. bike hire, wetterbus service; and improve off-road links, especially to the Peak District National Park.

A positive impact as a result of the trans-national cooperation in this project is the 'Canal Link' cooperation between similar partners in the Netherlands and Germany.

Region Uthlande

Region Uthlande aims to work further on sustainable traffic connections and tourism offers, to work on protecting national park, islands and halligen against dangers from sea, like floods, pollution, etc.

The objectives of the MOPARK pilot projects in this national park are (Mopark, 2006):

- sustainable solutions for traffic connections between and to the Islands and Halligen;
- attractive and economic tourist packages for low season times, that might be applied into other regions;
- increase employment possibilities in the region;
- provide advertising for the product;
- find a balance between protection of nature and economic interests.

Improvement of public transportation in forms of trains, shuttle buses and ferries has been a solution for traffic connections between the islands and Halligen. This improvement has made the government officials take possibilities of transport more seriously and get into a closer common work with the other actors such as the national park office, tourist organizations, and traffic companies.

However, most of the visitors still prefer to travel by private cars, thus perceived to generate air pollution.

The unique nature feature of these islands has been made attractive by the 'Island Hopping' activity. This activity has been able to increase amount of visitors and generate direct profit. However, there are no current exact numbers regarding this information.

The 'Island Hopping' has been incorporated into holiday packages in combination with several others of the islands' attractions, thus also making it possible to lengthen tourist season.

The increase amount of visitors also affects other tourist activities on the island, such as demand for accommodation, restaurant activities, etc. Considering that most of these businesses belong to local inhabitants, this means that it has given a positive impact on the local economy.

The success of these activities has increased the awareness of the high nature and tourism potential in the national park. However, information is not well disseminated between organizations that are involved in this project. The national park authorities on the island of Föhr, for example, were not well aware of this project even though it had already started in 2003.

3.1.4. Project Results

The overall project results and promotion activities are related to the indicators which point to the sustainability aspect of the project. Project indicators are presented in terms of activity indicators, output indicators, result indicators and impact indicators. As seen from the table 8, the target for each indicator is achieved and in some cases even over reached.

Table 8. Project Indicators

Activity Indicators	baseline	target	Unit
1. Number of organizations involved in the project	25	75	206
2. Number of people involved in the project	30	500	1050
3. Number of transnational meetings	0	20	21
4. Number of newsletters (edition of 500)	0	6	6
5. Number of reports (edition of 250)	0	4	4
6. Project internet site	0	1	1
7. Introduced new tourist products based on info and communication technology	0	8	20
8. Introduced environmentally friendly vehicles	0	25	31
9. Introduced new transport systems and improved systems	0	6	11
10. Pilot activities apprised on costs and social benefits	0	8	10
Output Indicators			
1. Best practices for introducing applying environmentally friendly technologies in an economic viable way	0	5	5
2. Insight in cost and benefits of pilot activities	moderate	improved	Improved
3. Evaluated pilot projects	0	20	
Result Indicators	baseline	Target	Unit
1. Income from tourism in partner regions		improved	Improved
2. New ideas for economic viable environment friendly activities	0	10	14
3. 'Green Paper' with guidance for best ways to generate income by environment friendly innovations	0	1	1
4. The share of polluting visitors km / total visitors km.		reduced	Reduced
5. The number of non-polluting visitors km	low	increased	Increased
Impact indicators			
1. Emission of CO2		reduced	Reduced
2. Sustainable behaviour of visitors in nature areas		improved	Improved
3. The attractiveness of the North Sea Region for visitors		improved	improved
4. Participation of rural areas in economic progress		improved	improved
5. The number of non-polluting visitors km	Low	Increased	increased

In activity indicators category number of involved organizations and people involved is much more than it was targeted. With regard to the activities, according to the Table 7 it is seen that many activities and innovations have been realized during the project in all mobility categories and most of them are going to be scaled up in future. In information and communication category most national parks have started activities using multimedia facilities, like GPS, PDAs, SMS systems, 3D maps, video and audio information, etc. for better promotion. In transport systems category focus has been on the attractive tourist packages combining public transport, sustainable vehicles and interesting local facilities. Some national parks made studies and introduced strategies to improve recreation traffic and alternative transport means. In sustainable vehicle category there are solar cell vehicles and boats, innovative bikes, buggies, etc. However, not all national parks introduced activities in the last two categories. The participating partners have exchanged the ideas and implement

new activities. The network of national parks that has been created during this project provides the ground for further follow up projects and activities.

Regarding output indicators, best practices introduced in Mopark from Fryslân are: Infopanels, GPS routes, Wetterbus, Ferry on solar cells, and Veenquest. Pilot projects from Fryslân are: Wetterbus, Torenvlak, Electric bikes, prams, GPS on boats, holiday packages.

Regarding result indicators income from tourism in partner regions has improved as a result of the development of several activities in different partner regions. The share of polluting visitors has been reduced because e.g. diesel engines have been turned into electric engines. Normally diesel engines would have been much more polluting. Moreover, for example solar cell ferry created a safe route for bikers; usually people would have taken their cars for this round, now they use bikes. Electric engines on small boats, ferry, innovative bikes and other innovative mobility played a positive role in increase of the number of non-polluting visitors.

Regarding impact indicators, electric engines have reduced emissions of CO^2. Behavior of the visitors has been improved by using holiday packages which provide a safe way of leading tourists through national parks so that damaging of nature can be prevented. Web cams on solar cells make visitors more conscious about the value of the nature. New technologies in the national parks attract more visitors, so the attractiveness of the region has been improved. Cultural and historical issues are included in holiday packages making them more attractive as well as new forms of sustainable transport. Moreover many entrepreneurs and inhabitants in different regions are involved in the project and many enthusiastic people are willing to work in the project. Especially involving entrepreneurs in the providing innovative activities contributed positively into economic progress of the involved areas.

The results of the project are well above the expectations, which are shown by the indicators. The main critical point is that not all data have been made available by the participating national park, which hampered the analysis of the situation. As the main positive result it should be noticed that many organizations and people have been involved in the project.

The organizations around the parks indicated that there are many possibilities to use parks and neighboring areas for farming, sustainable outdoor life and nature experiences. Another positive result relates to income generation.

In most cases, people income in and around parks is much lower compared to the region. The development of tourism increases income of communities. It is also stated that there are more creative people in and around parks compared to the region, which stimulates economic development.

3.1.5. Adding Value to Park Qualities

It is indicated that the activities add value to the park qualities in terms of possibilities to discover areas by totally new ways of experiencing nature, which protects nature and the activities are important for the zoning of the tourism pressure.

The new technologies and innovative mobility services attract new target groups that provide more income to the areas than the traditional visitors. Innovative activities result in less local pollution and damage to nature and also provide improved accessibility for disabled visitors. In reward, there are social and economic benefits, like less disturbance to the nature and income generation based on cooperation among communities, entrepreneurs. The drawback is lack of financial instruments that enable sustainability of the activities.

4. ASSESSMENT OF IMPACTS FROM THE ACTIVITIES

Tourism may have many adverse impacts on the environment and the community living around the national parks.

On the other hand, they may have many beneficiary impacts such as contributing to environmental protection and conservation, income generation, revaluation of culture and traditions, etc.

In order to evaluate the success of this project, an impact assessment was conducted. These impacts were categorized into three categories: environmental, economic and social impacts. Considering that very limited amount of statistical data were available, the impacts were assessed by conducting interviews with key stakeholders of each national park. In total, 33 interviews were done.

4.1. Environmental Impacts

The fast growing pace of tourism industry is increasingly focusing on natural environments. Tourism can be a major cause of degradation of the environment and loss of local identity and traditional culture due to its fast and sometimes uncontrolled growth (CBD, 2005).

Negative impacts from tourism occur when the level of visitor use is greater than the environment's ability to cope with this use within the acceptable limits of change. Uncontrolled conventional tourism poses potential threats to many natural areas around the world. It can put enormous pressure on an area and lead to impacts such as soil erosion, increased pollution, discharges into the sea, natural habitat loss, increased pressure on endangered species and heightened vulnerability to forest fires. It often puts a strain on water resources, and it can force local populations to compete for the use of critical resources (UNEP, 2002).

The environmental impacts that are assessed in this project are categorized into three categories:

- Environmental impacts from the Mopark activities, e.g. water pollution, noise pollution, etc;
- Environmental impacts from transportation to the National Park, e.g. air pollution from automobiles;
- Environmental impacts from waste generation from tourist activities, e.g. solid wastes.

A Mopark activity would be considered to have a positive environmental impact if it would generate less pollution or consume less energy as opposed to the activity that the tourists would do or use before this project. As an example of this, the use of the Ottersloop, an electrical powered-GPS guided-boat in Weerribben National Park, is considered to have positive environmental impacts considering that visitors would otherwise use fossil fuel powered yachts or boats. Environmental impacts hereby presented are based on key stakeholders' perceptions.

As it is seen, the negative environmental impacts are mainly due to transportation to and from the National Parks considering that most visitors use their own cars for transportation and inconvenience of public transportation. Four out of eight of the national parks under study viewed that waste generation due to tourist activities would cause not significant impact on the environment. Whereas for environmental impacts from the activities, none of the national parks viewed that they would have a negative impact. Some even viewed that they would have a positive impact, for example by substituting fossil fuel with solar power or electrical power.

4.2. Economic Impacts

The main positive economic impacts of tourism relate to foreign exchange earnings, contributions to government revenues, and generation of employment and business opportunities (UNEP, 2002). However, as with other impacts, this may also bring negative consequences. UNEP defines these negative consequences to be: leakage, export leakage, import leakage, enclave tourism, and other negative impacts such as infrastructure costs, increase in prices, economic dependence of the local community on tourism, and seasonal character of jobs (UNEP, 2002).

The indicators that are used to assess the economical impacts from key stakeholders of the Mopark project are next:

1. New sources of income; to measure whether the national parks have gained new sources of income by developing new products and increase existing sources of income by improving tourist activities;
2. New activity for off-seasons; in order to measure the objective of this project of lengthening of tourism season by developing new products for the off-season;
3. Profitability;
4. Increase amount of visitors; to measure the increased level of attractiveness of the North Sea Region for visitors, and
5. Rural economical development; to measure ‘Participation of rural areas in economic progress’

The indicators above are intended to assess direct income of key stakeholders and induced income of local residences. New source of income, new activity for off-seasons and profitability all contribute directly to direct income. Increased amount of visitors will contribute indirectly to entrepreneurs’ income, whereas rural economical development will represent induced income of local residences.

The two most significantly positive economical impact categories that were cause by the Mopark project are ‘rural economical development’ and ‘off-seasonal activity’. All of the national parks under study viewed that the activities contributed positively towards those two categories. This means that Mopark activities help generate more employment opportunities for the local community and lengthen tourist season. Although the exact amount of profitability was the most difficult category to assess in most of the national parks, most of the respondents agreed that the increased amount of visitors would generate more profit in businesses such as local cafes, restaurants, hotels, etc.

In conclusion, the key stakeholders involved in this project view that it has positive economical impacts. Moreover, they are optimistic about the impacts in the future after scaling up and follow up of the activities.

4.3. Social Impacts

C. Cooper, et al. suggests several indicators that can be used to assess the social impacts of activities in national parks (Cooper, 2005):

1. *Improvement of environmental and cultural awareness within tourists and local inhabitants:* Tourism brings people to new places and should broaden their understanding and knowledge of other culture and environments. This is an educational process towards tourists and is a very important part of tourism industry. This kind of educational process can lead to environmental and cultural awareness improvement.
2. *Improvement of local infrastructure:* When tourism is developed in a destination the local infrastructure is often enhanced to meet the needs of this development. The local community can find that the quality of their life is also improved through being able to enjoy this improved infrastructure. For example, new sporting, recreation activities, entertainment facilities, restaurants etc.
3. *Tourism provides direct socio-cultural support:* The tourism industry can provide support to help restore heritage sites, conserve natural and cultural sites. The effects depend on the responsibility carried by stakeholders of the tourism industry including public and private sectors.
4. *Extra employment:* The economical impacts show that tourism can create more employment opportunities for the local community. But the employment opportunities for low level or front line workers are limited; the senior and middle management positions require experienced or high educated people, which also attract more people from out side the community.
5. *Increased resource occupation:* Tourism can cause high demands on land use, energy consumption, and competition between locals and tourist businesses for local resources will create social tension as local residents are competed out of their properties.

All the indicators mentioned above are relevant in this case; therefore all of them will be applied. ‘Improvement of local infrastructure’ in this case shall be focused on the infrastructure and activities for disabled peopled.

As it can be seen, Mopark project has cause positive social impacts. The category that almost all of the key stakeholders agreed on was that these activities would increase awareness regarding local nature and culture. Nevertheless, these activities were also viewed to contribute to socio-cultural support, provide new activities or facilities for the disabled and have a high level of local involvement.

4.4. Costs and Benefits of Alde Feanen Activities

Cost-benefit analysis of activities in Alde Faenen National Park was conducted to assess environmental, social and economic costs and benefits from the activities, and have an example for other National Parks. The data needed to estimate and calculate the costs and benefits for each activity have been obtained from interviews with different stakeholders.

4.4.1. Environmental Costs and Benefits

Gathered data from the interviews conducted with key stakeholders, helped to estimate CO_2 reduction, noise reduction, water pollution reduction and energy consumption from all the activities. For the assessment of the environmental costs and benefits activities related to innovative transportation, information and communication technologies and holiday packages have been reviewed.

Innovative Transportation

Innovative transportation aims to reduce the environmental impacts on the national park, such as CO_2 emission and noise. To reach this aim, there were some sustainable transportation systems introduced to the national park: electric boats, solar cell ferry, and innovative bicycles.

1) Electric Boats

There were four small and six large sized electric boats introduced to the national park in Mopark. Small and large electric boats have no CO_2 emissions, noise pollution and water pollution, thus they do not bring negative environmental impacts. However the use of electric boats does not reduce the negative impact significantly since in low season (weekends in spring and autumn) 90% of visitors prefer to use gasoline boats but the number of visitors is small and this makes environmental impact not significant as well. There is only 10% reduction in use of polluting forms of boats. The high season for boat renting is two months in summer. In this period all the boats are rented out, therefore the usage of gasoline boats is not reduced by the electric boats. Therefore, CO_2 reduction, noise reduction and water pollution reduction from this activity in the high season is not significant.

The opinions from boat rental entrepreneurs and stakeholders from Fryske Gea[3] all agreed that the electric boats themselves do not bring negative environmental impacts. They also do not think the boats can reduce the negative impacts since there are still not enough electric boats used in the national park.

2) Ferry on Solar Cell

Because of the limited possibilities for crossing the major fairway in the area of Alde Feanen, the land routes are heavily traveled by cars. Ferry on solar cell is a good way to makes it possible to cross the major fairway area of Alde Feanen and make less use of the land routes around the area to go from village to village. Solar cell ferry is a sustainable way of reducing the number of car kilometers driven and thus reducing CO_2 emissions, and making convenient for the visitors to move in the National Park. Stakeholders consider that solar cell ferry is able to reduce CO_2 emissions from cars, however there is no reduction in

[3] Tourist organisation, Available at: http://www.fryskegea.nl

noise and water pollution from gasoline boats, which are in use during season; the season for using solar ferry is the same as for boating. Calculations for the use of solar ferry during the season are made (table 9) to see the reduced CO_2 emissions from this activity.

3) Innovative Bicycles

Innovative bicycles are introduced into the national park for promoting cycle tourism, and attracting different target groups, e.g. disabled people. One of the ways of promoting innovative bicycles was through the bicycle rent companies. From the findings, it was found out that the visitors were using boats and cars to come to the bicycle rental, therefore the bicycle renting did not reduce the usage of these vehicles. Hence this activity does not reduce the CO_2 emission, noise and water pollution. There is also no extra energy consumption from the innovative bicycles. The bicycle rental companies viewed that the innovative bicycles do not bring negative environmental impacts neither do they bring any environmental benefits.

Information and Communication Technologies

Five different types of information and communication technologies have been introduced in the national parks through the project: handheld GPS, cyber guide, webcam, info panel and data base. They do not bring a positive environmental impact to the national park since they do not reduce the usage of cars and gasoline boats.

Holiday Packages

This activity is an added value for all the activities carried out in Mopark project. The tourist office VVV Midfryslan developed 12 trips for the Mopark project in Alde Feanen National Park. They helped to increase the visitor numbers to those special activities; therefore the activity itself does not bring positive environmental impacts.

Costs and Benefits

Based on the estimations, the comparison of overall environmental costs and benefits from different activities can be seen in table below.

Table 9. Environmental Costs and Benefits

Activities		CO_2 Reduction	Noise Reduction	Water Pollution Reduction	Energy Consumption
Innovative Transportation	Electric Boats	0	0	0	20 batteries charged over night
	Solar ferry	8,275 kg per year	0	0	0
	Innovative bike	0	0	0	0
Information And Communication	Handheld GPS	0	0	0	0
	Cyber guide	0	0	0	0
	Webcam	0	0	0	0
	Info panel	0	0	0	0
	Data base	0	0	0	0
Holiday package		0	0	0	0

From the table, it is seen that only solar ferry brings environmental benefits to the National Park, it reduces 8275 kilogram of CO_2 emission. Only electric boats bring environmental costs in the form of energy consumption, even though it is not significant.

4.4.2. Social Costs and Benefits

The social costs and benefits from every activity are estimated using indicators of extra employment, improved awareness, improved local infrastructure, resource occupation and social culture support.

Innovative Transportation

Besides environmental impact reduction, innovative transportation also aims at attracting extra visitors to the national park which may bring social impacts to the local society.

Use of *electric boats* is a small scale activity and does not generate significant impact on extra employment. As mentioned before, there are six large and four small boats operating in the national park and all the boats (electric and gasoline boats) are rented out during the high season (two months). The boat rentals introduce environmental benefits of the electric boats to the visitors, increasing awareness of the environmental issues; however this only happens upon request from the visitors, which is not happening often. However, this activity does help to improve the local infrastructure, as the local people enjoy the service provided by this activity. The total visitors for electric boats are about 5130 persons, out of them about 50% are from the local community.

Ferry on solar cell is a new transportation mean for the national park. The solar ferry provides 10 minute trip from one village to another. During the trip visitors are given information about environment. However this does not influence awareness rising significantly as the travelling time is too short and people express less interest in listening. Therefore it is advised to provide information in different way. From the data and interviews it is known that the season for using solar ferry is the same as for boating. There are about 8500 users in season out of it 50% are local users that enjoy this activity as it makes convenient to travel from village to village.

Regarding *innovative bicycles*, there are three bicycle rentals with innovative bicycles located in Earnewâld, Grou and De Veenhoop, which have 28 innovative bicycles in total. Since it is not a large amount, it does not require extra employees. The bicycle rentals provide brochures and folders with information about the surroundings, but not on the environmental issues. The visitors come specifically for bicycles. The data from the interview shows that the innovative bicycles does not significantly increase amount of visitors. It is assumed that there are 17 visitors for each bicycle rental per year. Considering that there are three bicycle rentals, the annual visitors for this activity is 51 people per year. On average, 5% of them come from the local community. The innovative bicycles do not occupy extra resource from the local society and do not give social cultural support as well.

Information and Communication

This type of activity is mainly focusing on awareness improvement and nature conservation; therefore it should bring social impacts to the local society. The *handheld GPS* provided in the park enables visitors to walk through the national park providing route information and information about nature. The GPS hiking attracted 300 extra visitors. Of

those 300 extra visitors, 50% are locals. The handheld GPS also gives social cultural support; it does not bring any social costs such as extra resource occupation.

The stakeholders of this activity show their positive opinion about handheld GPS. They view that it can help people improve their awareness sufficiently, since all the visitors enjoyed the game and the information provided by the handheld GPS.

Cyber Guide is a GPS system installed on boats. It provides information about the attractive area in the national park, and also gives information about the Mopark activities. This activity attracts people for different other activities in the national park. Same as handheld GPS, it does not create extra employment, and it does not occupy extra resource from the local society. There are 500 extra visitors to this activity who are able to acquire a large amount of information regarding the nature and environment actively. 50% of those extra visitors are locals. The cyber guide also gives social cultural support because it gives information on type of activities during the day, helping to support the local activities. This activity helps to improve the environmental and cultural awareness of people.

Data base is an indirect activity in Mopark project; it is an input for GPS system. It provides information and data to the handheld GPS and cyber guide. Therefore it does not create jobs for the local community. This activity also does not occupy extra resource from the local community. Since this activity gives the information to the GPS system, the awareness improved by data base is the same as the ones improved by handheld GPS and cyber guide. The same explanation applies for the improved local infrastructure. It also gives social cultural support due to the same reason.

Webcams are used to observe the wildlife and show the attractiveness of the area to the visitors without disturbing the area. Therefore, it gives social culture supports and does not occupy extra resource. There were two webcams installed in the national park; the webcam uses wireless data connection in order to transfer the information to the visitor centre and internet. This activity only requires technical people from outside the local society to work on the installation, therefore it does not create job for the locals.

The webcams only show the attractiveness of the area but no environmental educational information, therefore they do not improve awareness. However they help to improve the local infrastructure. There are 17,500 visitors that go to the visitor centre and can utilize the webcam in the visitor centre. 20% of visitors are locals (3,500 local inhabitants) enjoying this activity and having positive social impact. The stakeholders believe that webcams can help to attract extra visitors.

*Info panels***,** same as the webcams, show the attractiveness of the area without disturbing it. Therefore it helps to reserve the nature. Currently there are five info panels in the national park, two of them are installed in the visitor centre, and the rest are placed outside. This activity does not require extra employee and does not occupy local resource. There are 17,500 visitors coming to the visitor centre and using info panels, which are interactive and let visitors obtain knowledge about nature, therefore improving awareness of 17,500 visitors about environment. There are 3,500 local visitors enjoying info panels for the same reason as the web cam. The stakeholders of this activity view info panels as a very good approach to educate people and reserve the nature.

Holiday Packages - this activity is an added value for all the activities in the national park. This activity brings 1000 extra visitors to different Mopark activities. These visitors are provided with environmental information and about the attractiveness of the Mopark project

and of the national park. Therefore awareness of these 1000 visitors is highly improved. 20% of the visitors are locals, and therefore 200 local people enjoy this activity.

Costs and Benefits

The next table provides estimation from overview of social costs and benefits brought by different activities.

Table 10. Social Costs and Benefits

Activities		Extra Employment	Awareness Improvement (Person)	Improved Local Infrastructure (Person)	Resource Occupation	Social culture Support
Innovative Transportation	Electric boats	0	0	2565	0	0
	Solar ferry	0	0	4250	0	0
	Innovative bike	0	0	2	0	0
Information and Communication	Handheld GPS	0	300	150	0	Nature conservation
	Cyber guide	0	500	250	0	support activities
	Webcam	0	0	3,500	0	nature conservation
	Info panel	0	17,500	3,500	0	Nature conservation
	Data base	0	800	400	0	Nature conservation
Holliday package		0	1000	200	0	0

4.4.3. Economic Costs and Benefits

In this section, the economic costs and benefits take the annual income, payback period and induced income into account to assess the activities carried out in the national park. The payback period here only takes into account the direct income.

Innovative Transportation

This type of activity has a big amount of investment; therefore there should result in significant economical impacts on the society.

1) Electric Boats

An amount of €41,300 on electric motors was given from Mopark funds to this activity. Another €20,116.67 had to be invested by entrepreneurs themselves. Therefore the total investment on these electric boats is: €41,300 + €20,116.67 = €61,416.67

The prices for renting different size of boats are various; therefore the direct annual incomes are also different:

Big boats:

- The price for renting a big boat is €125/ day
- There are six large boats used 60 days per year; therefore the direct income is:
  €125 x 6 boats x 60days = €45,000/year

Small boats:

- The price for renting a small boat is €50/day
- There are 1,530 people per year for small boats
- Five people are able to fit in one boat; therefore the direct income is:

$$1530 \div 5 \frac{people}{boat} \times 50 euros = €15{,}300/\text{year}$$

Total: the total direct income from electric boats is: €45,000 + €15,300= €60,300

Knowing the direct annual income from this activity, the payback period can be calculated as follows: $\frac{61{,}416.67 euros}{60{,}300 euros} = 1.1 years$

This activity also brings visitors to local snack bars or restaurants. People normally spend an average of €12.5 per person on food and drinks. Since there are 5,130 visitors per year, the induced income from this activity is: €12.5 x 5,130 people = €64,125.

The boat rentals do not view this activity as being profitable, due to the high amount of investment. Therefore, they will not invest in extra electric boats in the future. Unfortunately, they did not look at this activity in long term because the result from the estimation shows that the payback period is relatively short. Therefore this result may be used to convince the boat rentals to continue this activity.

2) Ferry on Solar Cell

The total investment of this activity is €90,000 by the project, there is no extra investment. The price for using the solar ferry is €2 per person; there are 8,500 visitors per year. Therefore the direct income from solar ferry is:

€2 x 8,500people = €17,000

Making the payback period to be:

€90,000 / €17,000 = 5.3 years

The solar ferry also brings new customers to the bicycle rental and food restaurant. They normally spend €12.6 per person on bicycle renting and €12.5 on food. Therefore the induced income from this activity is: (€12.5 + €12.6) x 8,500 people = €213,350

People working on the solar ferry are not concerned about the direct profitability of the activity. They are satisfied by the ferry because they view that the ferry brings a lot of income to the surrounding communities.

Innovative Bikes

The total investment of this activity is €35,000 by the project, no extra investments. The average price for renting a bicycle is €12, there are 51 visitors per year, and therefore the direct income from innovative bicycles is:

€12 x 51people = €612 per year

The payback period of this activity is:

€35,000/ €612 = 57 years

The visitors of this activity normally spend €12.5 per person on food and drinks. Therefore the induced income from this activity is:

€12.5 x 51 people = €637.5

According to bicycle rentals, innovative bicycles can not bring any major income for them. They do not think these bicycles attract enough visitors, because the commercial promotions are not sufficient or effective enough.

Information and Communication

1) Handheld GPS

Currently there are two handheld GPS in the park. The total investment of this activity is €7,500 sponsored by the Mopark. The price for renting a handheld GPS is €5.5 per person per day, with 300 visitors per year, therefore the direct income from handheld GPS is:

€5.5 x 300 people = €1,650; The payback period of this activity is:

€7,500 / €1,650 = 4.6 years

The visitors of this activity normally spend €12.5 per person on food and drinks and €12.6 on bicycle renting. Therefore the induced income from this activity is:

(€12.5 + €12.6) x 300people = €7,530

It is believed that the payback period of the investment for this activity can be shorter as more visitors are expected in the future.

2) Cyber Guide

The investment of the cyber guide is €7,000, and the investment of developing the concept of cyber guide is €30,000. Therefore, the total investment of this activity is:

€7,000 + €30,000 = €37,000

The price of renting a boat with cyber guide is €26.6 per person per day with 500 visitors per year making the direct income to be: €26.6 x 500 people = €13,300

The payback period is: €37,000/ €13,300 = 2.8 years

The visitors of this activity normally spend €12.5 per person on food and drinks, thus the induced income from this activity is: €12.5 x 500 people = €6,250

The stakeholders of this activity are very positive towards it because it is profitable.

3) Data Base

The total investment of this activity is €10,000, but the data base itself does not have any income since it is only an added value to the GPS system. For that reason the investment will not be paid back. The stakeholders of this activity do not think about the profitability of it, because their main focus is improvement of awareness.

4) Webcam

The total investment of the webcams is €37,200. This activity does not charge any service fee; thus there is no income from it. The investment will not be paid back.

The stakeholders' opinion is the same as for data base; they are not concerned about the profitability.

5) Info Panel

The total investment of this activity is €37,240. The same as for data base and webcam, it does not charge service fee, hence there is no income from it. The investment will not be paid back. The stakeholders' opinion is also the same as for data base.

Holiday Package

The total investment for holiday packages is €23,000. However, this service does not charge any fees from visitors; consequently it does not have direct income. On the other hand, the visitors brought by this activity spend €50 per person on average on the activities in the park. There are 1000 visitors. Therefore, the induced income from this activity is:

€50 x 1000 people = €50,000

The people from this activity also do not expect direct income from it, but they do believe this activity brings extra income to the national park.

Costs and Benefits

Based on the estimation from chapter 3.4.3, the overview of economical costs and benefits brought by the activities can be seen in table below. The table includes the investment of different activities since it can give readers opportunity to make comparison.

Table 11. Economical Costs and Benefits

Activities		Total Investment	Direct Income (/yr)	Payback Period	Induced Income (/yr)	Total Income (direct+induced)
Innovative Transport.	Electric Boats	€ 61,416.67	€ 60,300	1.1 yr	€ 64,125	€ 124,425
	Solar ferry	€ 90,000	€ 17,000	5.3 yr	€ 213,350	€ 230,350
	Innovative Bike	€ 35,000	€ 612	57 yr	€ 650	€ 1,262
Information And Communi.	Handheld GPS	€ 7,500	€ 1,650	4.6 yr	€ 7,530	€ 9,180
	Cyber guide	€ 37,000	€ 13,300	2.8 yr	€ 6,250	€ 19,550
	Webcam	€ 37,200	€ 0	N/A	€ 0	€ 0
	Info panel	€ 37,240	€ 0	N/A	€ 0	€ 0
	Data base	€ 10,000	€ 0	N/A	€ 0	€ 0
Holliday package		€ 23,000	€ 0	N/A	€ 50,000	€ 50,000

4.4.4. Results Form Cost-Benefit Analyses

The results from calculation and analysis gave an overview of the activities which are beneficial. For example electric boats, solar ferry, handheld GPS and cyber guide are the activities that can foster the sustainability aim of Mopark project. They help to generate income for the national park and the local society without bringing any environmental and social negative impacts. Even though the activities as webcams, info panel, databases and holiday package only bring a cost to the park, their social benefits have to be considered as well. The environmental, social and economic issues are all given the same weight in this part, and the results are based on many assumptions from limited data. However, they still can be useful for different stakeholders to make decisions of activities that need improvement, and of activities that can be scaled up afterwards based on their own priorities. Although the results are mostly positive, still some improvements need to be done. These are among others: innovative bikes should be promoted more intensively to attract more visitors; the use of the electric boats should be better communicated and investments in more electric boats should be improved for having reduced CO2 emission (Shen, 2005).

CONCLUSION

The sustainable innovations in the National Parks suggest possibilities to reduce impacts from activities and generate income and use the biosphere in a sustainable way. Several lessons can be drawn that are relevant for development of the National Parks. Firstly, it is shown that rich biosphere can co-exist with tourism in one area. Secondly, innovative options can be found to attract tourism with less pressure on the biosphere. Third, organizations in the Parks can foster entrepreneurial activities and involve stakeholders such as experts, local business and community. Finally, attention is drawn to complex management of the Parks. The Parks are presently governed by authorities that focus on restrictions of activities to protect biosphere but management evolves from the protectionist strategy towards the

development strategies, which enables to generate income from tourism although at a cost and under uncertainty about effects on the biosphere.

The study introduced results of Mopark project which is a partnership of eight National Parks in six North European countries. The main question concerned in the project was related to income generation from the activities in the national parks by using innovative sustainable practices. From the results of the project it can be concluded that national parks provide different attractions and experiences for tourists; national parks vary a lot in the size but this does not prevent them to be attractive for tourists and generate income from different activities. Income from tourism is much important then from other sources; some national parks provide more diverse activities than others based on their qualities and features; sustainable activities can not only contribute to the parks environmentally, but also socially and economically, generating income to the parks as well as to the communities living in and around parks; more entrepreneurship can be stimulated, involving local communities in the development of the protected areas using environmentally friendly activities; activities can add value to the park qualities in terms of possibilities to discover the parks by the way of new technologies and mobility services; moreover, new technologies attract new target groups to the area, provide a new way of experiencing nature and are important for zoning tourism pressure.

Regarding the impacts it can be concluded that Mopark activities are considered to have more positive environmental impacts by using innovative technologies and new mobility services, as they generate less pollution and consume less energy. The negative environmental impacts are mainly due to the transportation to and from the national park as most visitors use their own cars for transportation. With regard to economical impacts, significant positive economic impacts from Mopark are rural economic development and off-seasonal activity. This means that Mopark activities help generate employment opportunities for the local communities and lengthen tourist season. For social impacts it is more positive, as activities help to increase awareness regarding local nature and culture, and can contribute to socio-cultural support, provide new facilities for disabled and have high level of local involvement. The major result of the Mopark project is its spin off in terms of generating ideas and entrepreneurship in the rural areas. An impressive number of entrepreneurs and experts have been involved in the Mopark projects. In addition, it is encouraging for sustainable relations between cities and rural areas and interest of tourists for new nature-based technologies and services has been mobilized. In many cases, innovations have been introduced. The project shows that the sustainable innovations are attractive and economically viable and that they can be introduced within a limited period of time by co-operative actions of policymakers, businesses and non-governmental organizations. The main difficulty with introduction of the sustainable innovations is tuning of market demands for attractive and sustainable products with supplies of the products that are still imperfect because they are new. Hence, more attention for development of sustainable products and services is instrumental. The Mopark project has shown that income generating activities can go hand in hand with sustainable use of nature. Natural qualities in the National Parks provide a major asset for innovations if combined with creativity and entrepreneurship in the region.

Managed in appropriate way, tourism can be an important driver for local and regional development as well as a significant tool for nature conservation and for increasing the awareness of the need to preserve those valuable areas.

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Chapter 2

MANAGEMENT OF NATURE-BASED TOURISM IN PROTECTED AREAS (THE CASE OF THE SIAN KA'AN BIOSPHERE RESERVE, MEXICO)

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1. INTRODUCTION

Pristine nature, spectacular landscapes, rare species, or the opportunity to watch wild animals are certainly quality features of tourism destinations such as National Parks, Biosphere Reserves and other Protected Areas (PAs). Accordingly, the United States National Parks have become a magnet for tourists, attracting more than 270 million visitors in 2006 (www.nps.gov; accessed Feb/08). However, effective nature conservation requires funding as well as the support of local communities and other actors involved. In this context, fostering tourism-driven regional economic development has come to be a major concern of management authorities, both in industrialized and less-developed countries.

Despite the creation of many PAs worldwide and measures taken to establish improved and more efficient administrative structures, there are still severe and increasingly complex problems regarding contemporary tourism management. In this context, the growing number of resource users with conflicting interests and action strategies are one crucial issue that requires a consent-seeking and participative approach in lieu of traditional top-down decision-making (Brenner and Job 2006; Weizenegger 2003). This shift is evident in the United Nations' Educational, Scientific and Cultural Organization's (UNESCO) concept of Biosphere Reserves (BR)[4], which explicitly enhances local participation in decision-making and economic benefits, and has become a leading paradigm of PA management in many countries (German Commission for UNESCO 2007; Melo 2002).

[4] In September 2007, UNESCO listed 529 internationally-approved Biosphere Reserves, of which 35 are located in Mexico (German Commission for UNESCO 2007).

Promoting nature-based tourism (NBT) plays an important role, as revenues from tourist activities may compensate the prohibition or limitation of traditional forms of resource use, such as logging, hunting or fishing (Bushell, *et al*. 2007). Moreover, income from tourism (entrance and user fees, concessions, licenses and taxes on retail purchases, to name a few), can provide additional revenue to notoriously under-funded management institutions, and thus offer an additional prerogative for establishing PAs, in addition to "pure" nature conservation (Bushell and McCool 2007). Due to increasing pressures on natural resources by a growing population, the creation of "black holes" in economic terms has proven not to be a political option, at least in the long run. On the contrary, today many PAs, especially the BRs, are supposed to generate regional socio-economic development, instead of remaining as unsettled areas for the exclusive purpose of nature conservation (Melo 2002; Strasdas 2006).

This point of view is shared by most authorities as well as by non-governmental organizations (NGOs), which are currently promoting a wide variety of nature-based tourist activities such as hiking, rafting or bird-watching, often labeled as "ecotourism".[5] However, a closer look at promotional practices reveals a marked focus on providing tourist infrastructure and services (such as accommodation facilities, visitor centers or signposting), as well as training the local population for tourism-related employment. In contrast, less attention is paid to the users of these services (Bushell *et al*. 2007). As a consequence, most promotional activities are not focused on specific visitor[6] segments, and it appears that most governmental institutions and NGOs simply assume that tourists form a homogenous segment. As some scholars state (Pearce 2007), there is no doubt that demand for nature-based tourist activities is by no means uniform; in fact, most PAs are currently frequented by a wide variety of visitors with different expectations and specific needs (Strasdas 2006). Another important issue regarding visitor management and the promotion of NBTs is the fact that rapidly changing consumption patterns make it more and more difficult to relate certain leisure activities to "typical" socio-economic groups (Torres 2002). Awareness of visitor structure and specific patterns of behavior is thus a crucial premise to contemporary PA administration and efficient visitor management. On the other hand, both providers of tourist services and visitors have to be considered as actors who pursue particular interests and, accordingly, attempt to push through specific modes of resource use in PAs and their surrounding areas (Bryant and Bailey 1997). Conflicts with other actors who are reluctant to accept the commoditization of PAs are hence likely.

Taking Mexico as an example, this contribution adopts an actor-oriented approach to analyze the tourism-related management problems that many PAs confront, particularly in less-developed countries. The study focuses on conflicts resulting from opposing interests and action strategies pursued by a wide variety of actors involved in NBT. In addition, the authors

[5] According to Epler Wood's (2002:3) widely-accepted definition, ecotourism "is responsible travel to natural areas that conserves the environment and sustains the well-being of local people". It focuses on the impacts of travel and stresses the need to minimize environmental and socio-cultural impacts, as well as the contribution to PA management and local economies. Therefore, ecotourism has to be considered an ambitious concept of sustainable tourism development rather than a description of specific market segments (Dawson 2001; Strasdas 2006; Taskforce Ecotourism 1995). In contrast, the term "nature-based tourism" has a broader denotation and can be defined according to Strasdas (2006: 56) as "a form of travel to natural areas where experiencing nature is a key motivation". It refers to the key motive of travel ("experiencing nature") and the setting ("natural areas"), but disregards any impact of tourist activities. Accordingly, "ecotourism" could be considered a sustainable form of NBT.

[6] Throughout this chapter the terms "visitor", "tourist" and "nature tourist" are used interchangeably and intended to cover all visitors to PAs.

offer some proposals for mitigating such conflicts and enhancing profitable and socially-balanced tourism development.

This chapter begins with a brief history of PAs that highlights the rapidly growing number of legally protected areas since 1970, as well as the diversity of the protected ecosystems that currently exist in the world. Emphasis is laid on the role of PAs in the context of general environmental policies since the mid-1970s and after the fall of the "Iron Curtain", especially in peripheral areas of middle-income and less-developed countries. The text continues with an explanation of the changes in PA management philosophies and strategies at the international level in the late 20th century, when the declaration of BRs became a cornerstone of conservation activities in many nations. In this context, the shift from a strict and often authoritative form of nature protection to a more flexible policy is an important feature, one that sought to mediate conflicting interests and achieve resource protection and socio-economic development at the same time. In this regard, NBT now plays an important role in fostering local well-being and participation.

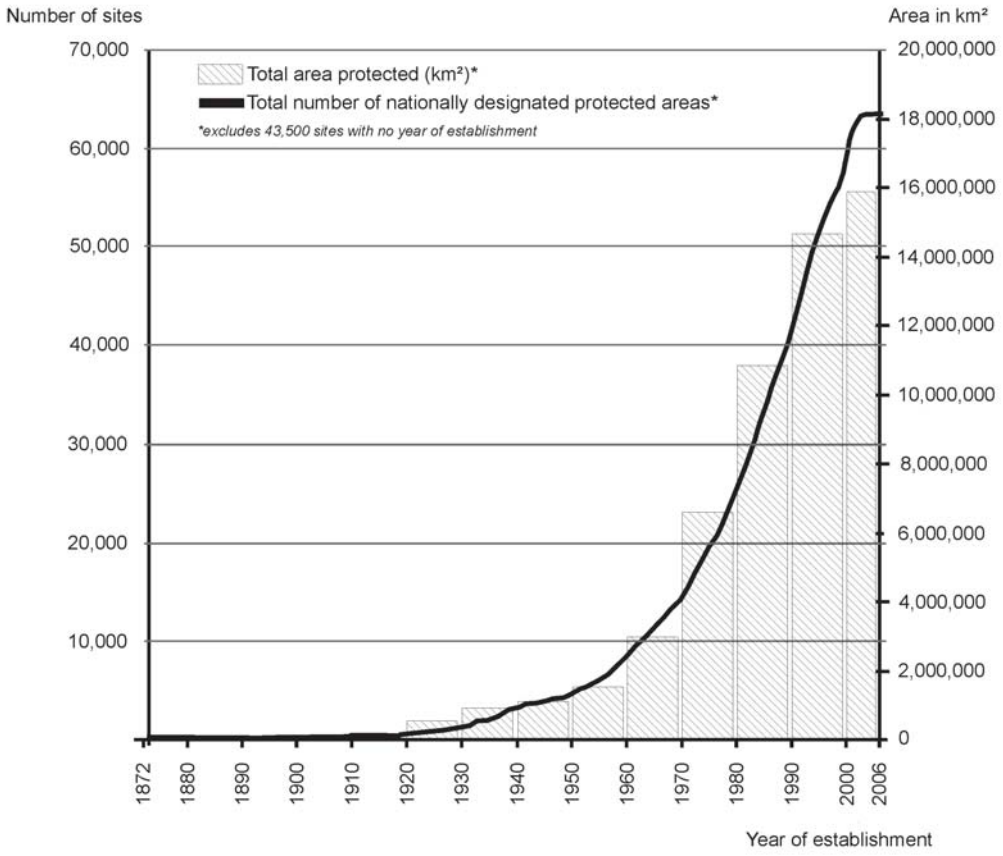
That section is followed by a brief conceptualization of the actors involved in NBT, based on a political ecology approach. Emphasis is placed on the interests and specific strategies that different actors pursue in order to take immediate advantage of natural attractions or to influence tourist development. Special attention is paid to the visitors who constitute a highly influential group of actors, though one rarely addressed by scholars. It is argued that the increasing demand for NBT services is related to changes in contemporary societies, as changing consumption patterns have led not only to increasing numbers but also to a more complex structure of visitors in many PAs (Bushell *et al*. 2007).

The remainder of the chapter reviews a case study from Mexico's well-known Sian Ka'an Biosphere Reserve, carried out by the authors, to highlight the challenges that tourism-management in PAs is currently confronting. Today, authorities have to deal not only with "traditional" problems, such as increasing pressure on natural resources due to population growth and expanding agricultural frontiers, but must also mediate the conflicting interests of a wide range of actors, including the increasingly influential tourist sector. Finally, paths leading to a more profitable, environmentally sounder and socially more balanced NBT are discussed.

2. EVOLUTION OF PROTECTED AREA MANAGEMENT

Modern nature protection activities began in 1872, when Yellowstone National Park (located in the states of Wyoming, Montana and Idaho) was formally established as the first PA in the world. Other PAs soon followed, at first mainly in North America, and later in New Zealand and Australia. The first European National Parks were created in Sweden in 1909. In Latin America, one of the first activities of the post-revolutionary Mexican government was the creation of the *Desierto de los Leones* National Park near Mexico City in 1917 (www.conanp.gob.mx; accessed: Jan/08).

In quantitative terms, the number of formally established PAs rose quite slowly during the first half of the 20th century. However, figures have spurted upwards since the 1960s (figure 1). Since then, a rapid increase can be observed, and the extension of formally declared areas has also risen significantly.



Source: WCMC 2007.

Figure 1. Evolution of Protected Areas, 1872-2006.

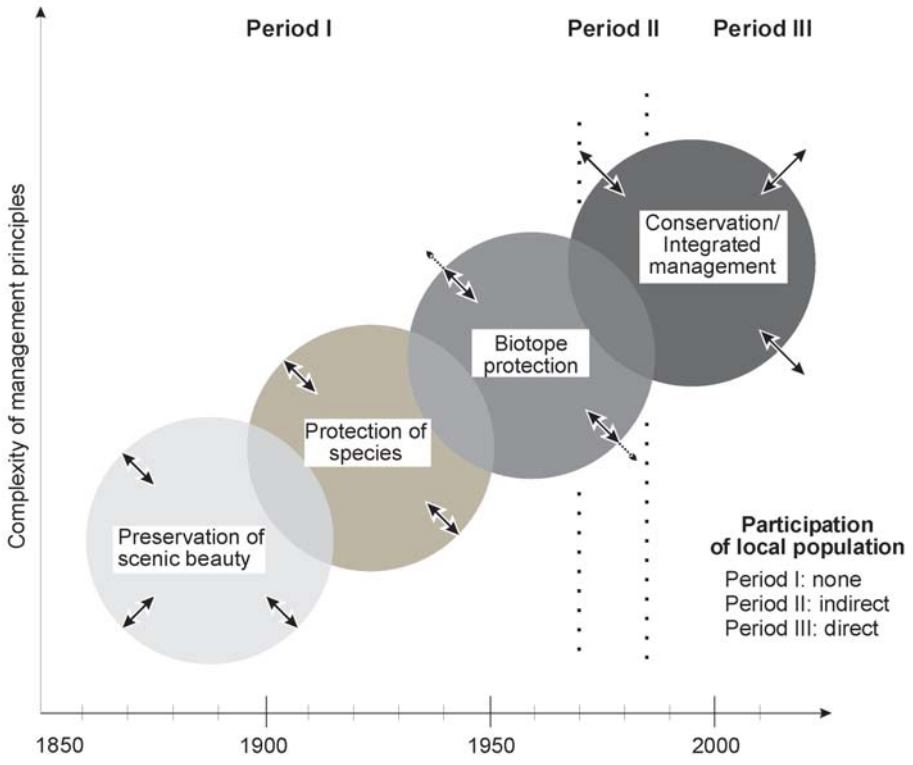
Today, the United Nations Environmental Programme World Conservation Centre lists more than 106,000 protected areas in almost every part of the world, covering 19.6 million square kilometers, nearly 12 % of the entire land area of the planet (not considering marine PAs), a surface larger than the total territories of China and India (www.unep-wcmc.org; accessed: Jan/08). It should be stressed, however, that PAs are extremely heterogeneous in terms of their legal status, extension, biological and socioeconomic conditions, scale of human impact, and management efficiency. A large number of formally established PAs, particularly in Latin America (Melo 2001), for example, lack efficient management structures and should definitely be considered "paper parks".

The largest extensions of protected terrestrial areas are located in middle-income, as well as less- and least-developed countries, particularly in Latin America, Southeast Asia and Sub-Saharan Africa. The largest single contiguous PA, however, is Greenland's Northeastern National Park (972,000 km^2), followed by the Ar-Rub'al Khali Wildlife Management Area in Saudi Arabia (640,000 km^2). These two examples also point out a characteristic pattern of international environmental policies: PAs are frequently located in otherwise "useless" areas, where unfertile soils, remoteness, or climatic conditions do not allow immediate utilization; a

fact that conservation biologists ironically call the “rocks and ice syndrome” (Terborgh and van Schaik 2002).

Moreover, existing biological systems are protected unevenly, and the aim of protecting at least 10 % of every biome has not yet been achieved. Whereas 23.3 % of all the (remaining) tropical rainforest is (at least formally) under protection, the corresponding shares for temperate deciduous forests and coniferous forests are only 7.6 and 8.6 %, respectively (Chape *et al*. 2003). Only 0.5 % of the world’s sea surface is currently protected, and the large coral reefs and mangrove forests, especially, still lack formal protection (*ibid*.).

Apart from the numerical increase and structural heterogeneity, there have been several marked shifts regarding management principles and policies. For almost a century (1872 until the 1960), PAs were established mainly for the purpose of preserving aesthetic and scenic beauty (figure 2). On the other hand, most western states attempted to enforce strict protection measures in their home countries, colonies and dependencies, aimed at protecting specific emblematic species (e.g. tigers, rhinoceros, elephants, buffalos). In this respect, the conservation of hunting grounds confined to European settlers also played an important role (Job and Weizenegger 2000). “Fencing-out” local communities was regarded as both legitimate and necessary, even after many African and Asian countries gained political independence. Authorities used to relocate indigenous peoples by force –in some cases even today– generally without any compensation or consultation (see figure 2).



Source: Job, Metzler and Vogt 2003 (adopted).

Figure 2. Evolution of management principles.

In addition, most traditional activities such as hunting, gathering or subsistence agriculture were forbidden by law and violations were sanctioned. In general terms, management was inward-oriented, *i.e*. PAs were considered "islands" and little attention was paid to their surrounding areas.

Therefore, it is not surprising that conflicts between management authorities and local communities became more frequent after World War II. Until the early 1970s, authorities attempted to implement a so-called "fences and fines" policy, frequently using armed rangers or even the army the keep local people out of PAs. As a consequence, support for protecting species and their habitats decreased significantly among local communities and people continued to carry out their traditional activities clandestinely.

In contrast, while most Latin American countries also established a considerable number of larger PAs, they generally spent less effort on law enforcement (Angulo and Córdova 2001; Melo 2002). Therefore, most of them existed on paper only, at least until the 1980s (Diamond 2005; Ceballos-Lascuraín 1996). This can be explained by two factors: first, almost all Latin American nations achieved political independence much earlier (i.e. early 19th century) than their African and Asian counterparts, and thus lacked a "colonial heritage" regarding nature conservation policies. On the other hand, neo-tropical regions in the Americas lack larger emblematic mammals deemed worthy of protection.

However, during the 1970s, most governments recognized that the "fences and fines" policy would not succeed in the long term, and management principles changed in at least three ways (figure 2). First, a certain degree of participation in management practice was considered indispensable to enhance local support, otherwise conservation measures proved inefficient. Second, some forms of economic activity had to be permitted in order to meet the protection objectives. And third, more attention had to be paid to the areas surrounding PAs, as population increases and the expansion of agricultural frontiers began to threaten the ecological equilibrium of formerly isolated and sparsely-populated areas (figure 2). At the international level, the UNESCO's Man and Biosphere Programme (1970) and the declaration of the first Biosphere Reserves in the mid-1970s are considered crucial shifts in protection principles and practices. Enhancing local participation and sustainable resource use were now considered not only necessary, but also conditions *sine qua non* of more efficient environmental policies. According to the UNESCO:

> "Biosphere Reserves are sites which innovate and demonstrate approaches to conservation and sustainable development. They are (…) under national sovereign jurisdiction, yet share their experience and ideas nationally, regionally and internationally. They outpace traditional confined conservation zones, combining core protected areas with zones where sustainable development is fostered by local dwellers and enterprises. Biosphere Reserves have three inter-connected functions: a) conservation: landscapes, ecosystems, species and genetic variation; b) development: economic and human and culturally adapted; and c) logistic support: research, monitoring, environmental education and training" (www.unesco/mab/BRs: accessed: Dec 2007).

According to the guidelines of the UNESCO, then, BRs should be divided into 'core', 'buffer' and 'development' zones. The only activities allowed in core zones are those that do not modify the existing ecosystem (e.g., scientific research and education). In the buffer and particularly in the development zones, however, activities that were traditionally practiced

before the declaration –such as agriculture and forestry, as well as tourism– are permitted. Today, the World Network of Biosphere Reserve lists 529 BRs in 105 countries (www.unesco/mab/BRs: access: Dec 2007).

The World Conservation Strategy elaborated by the World Conservation Union and the Word Wide Fund of Nature in 1980, reaffirmed this point of view. In the late 1980s, the discussion concerning sustainable development and a growing political consensus that new forms of socioeconomic development and conservation measures had to be put in place propitiated further shifts in management principles and strategies (figure 2). Today, most authorities involved in PA management emphasize the need to enhance local participation and the sustainable use of natural resources (Strasdas 2001). It also became evident that management faces more complex challenges than ever before (Stoll-Kleemann *et al*. 2006; figure 2). Moreover, the UNESCO concept of BR has come to be a cornerstone of conservation policies in many countries (www.unesco/mab/BRs: access: Dec 2007). But, despite the fact that new and more flexible legal frameworks and concepts do exist, PA management still faces serious problems:

(a) In many cases, local people are reluctant to participate in decision-making, even when seriously invited to do so. As several studies confirm (e.g., Tucker 2004), due to their lack of experience in administrative procedures and widespread distrust of governmental authorities, many local communities opt to stay away from negotiating tables and prefer to seek other ways to advance their interests, a fact that severely impedes local participation, particularly when it comes to reaching decisions as to how and where NBT should be promoted.
(b) New users, such as migrant peasants, transnational corporations and the tourism sector put additional pressure on natural resources. The scale and scope of these strains often depend on actors who are (at best) not involved in, or (at worst), reluctant to support nature conservation; which makes it difficult for management authorities to cope with these problems (Young 1999).
(c) The influence of management authorities on resource use may decrease, as they can rely less on traditional top-down policy implementation and law enforcement. Instead of simply executing measures considered suitable, these have be negotiated beforehand; which might delay or even impede urgent protection actions, including the promotion of sustainable tourism (Brenner and Job 2006).

3. ACTORS, INTERESTS AND CONFLICTS

In order to analyze the complex problems related to the management of NBT, an actor-oriented approach might be the best way to understand the underlying causes that currently jeopardize nature conservation (Walker 2006). The conceptualization and identification of actors, motives, strategies of action, and conflicts regarding resource use (including tourism) help to understand more thoroughly the conflicting interests and actions of specific actors, a precondition to solving management-related problems (Stonich 1998). In this context, political ecology offers a suitable approach to analyzing the highly complex nature of

environmental changes, which are interpreted from an actor-oriented perspective. Political ecology analyzes actors and their specific actions at different spatial levels in order to determine explicitly the power structures and relations that underlie them (Bryant 1992, 1997; Bryant and Bailey 1997; Blaikie 1985; 1995; Blaikie and Brookfield 1987). In addition, it assumes that the natural environment of a given area is 'appropriated' by a series of actors (Geist 1999), and that the outcome of this struggle depends on the will of the most powerful actors who are better able to push their interests through (Bryant and Bailey 1997).

As Job and Weizenegger (2000) point out, actors can be further classified according to their physical distance from the PA and the specific actions they carry out at different spatial levels. With regard to spatial integration and involvement, most scholars distinguish only between place-based actors (e.g. small-scale farmers or fishermen) and non-place-based actors (e.g. governmental institutions, politicians, international financial and economic corporations) (Bryant and Blaikie 1997; Geist 1999). This rather crude differentiation, though, may not always reflect the real complexity of the actors involved or the spatial implications of their actions. Therefore, it is suggested (Bryant 1992; Weizenegger 2003) that a further distinction be made between actors who operate at the local, regional, national and global levels, some of whom, such as influential government agencies, are capable of acting at different spatial levels at one and the same time (Job and Weizenegger 2000).

As Lambin *et al*. (1999:41-42) state, actors can be considered "as individuals, households, and firms that take specific actions according to their own calculus or decision rules". According to this perception, tourists can be considered "individuals" and suppliers of tourism-related services; *i.e*., as "firms". Other authors (Bryant 1992; Bryant and Bailey 1997), however, emphasize that governmental institutions, NGOs and local communities are also important actors, though the latter do not necessarily constitute homogenous units in social terms (Weizenegger 2003). As shown below, though, many of them are indeed likely to be involved in tourism. A brief review of the literature shows that tourists are rarely conceptualized as actors in their own right (Stonich 1998). Rather, many scholars tend to regard visitors to PAs (or tourists) as an essentially homogenous group, a contentious issue that requires further consideration (Strasdas 2001).

In this context, nature tourists are often characterized as "environmentally conscious, well-informed, selective individuals from a higher socioeconomic group" (Jones 1987, p. 356), emphasizing their (presumed) attitudes and social backgrounds. Other authors stress specific motives or activities such as "traveling to relatively undisturbed or uncontaminated natural areas" (Ceballos-Lascuraín 1987, quoted in Boo 1990, p. 2), or "study, enjoyment or volunteer assistance with a focus on the flora, fauna, geology and ecosystems of an area, as well as the people who live nearby, their needs, their culture and their relationship to the land" (Wallace and Pearce 1996, p. 848). According to these perceptions, nature tourists would be prone to request tourist services that "conserve the environment and improve the well-being of local people" (The International Ecotourism Society 1991, p. 3), or, to put it more simply, that "contribute to sustainable development" (Björk 2000, p. 196). Still others, however, question such unselfish motives. Referring to the attitudes and ethics of nature tourists, Blamey and Braithwaite (1997), for instance, point out that their value systems are far from homogenous and argue that self-centered motives are more common than is generally assumed. Therefore, nature tourists "may not be as environmentally aware and socially conscious as is often thought" (Blamey and Braithwaite 1997, p. 36).

Accordingly, a less value-loaded differentiation might be more appropriate. Strasdas (2006), for example, distinguishes five different segments in NBT, according to their pivotal interests and motivations: a) "committed nature tourists", e.g., members of NGOs; b) "interested nature tourists", those particularly concerned about, but not necessarily committed to, environmental issues; c) "sports nature tourists", who seek certain outdoor leisure activities such as hiking, rafting, hunting or fishing; d) "mixed-interests" nature tourists who are attracted by both natural and cultural highlights; and, e) "casual" nature tourists who tend to visit PAs as an "add-on" to other attractions (Strasdas 2006). Since the latter group is generally regarded as the most important segment, it deserves special attention. It also becomes apparent that only a fraction of PA visitors match the ideal of "conscious and environmentally committed" tourists, but all of these visitor groups may contribute to PA funding and/or spur regional economic development, albeit on different scales.

Strasdas' classification can further be related to a more general classification of overall tourist demand proposed by Pearce (2007), who segments demand according to the extent of the service arrangements purchased prior to departure. He thus distinguishes between "independent", "customized" and "package tourists". Independent tourists are those who demand few or no services prior to their trip and make most consumption-related decisions *en route* in a rather spontaneous way. Package tourists, in contrast, are more hesitant about facing unfamiliar situations and therefore prefer to pre-book standardized travel arrangements with few options for individual choice. Customized tourists, finally, are placed somewhere inbetween, as they arrange most services in advance, but do so in accordance with their personal needs and preferences. In the cases of package and customized tourists, tour-operators serve as intermediaries between the consumers and the final service providers (such as accommodation, transport or catering enterprises), who bundle together a wide array of different components of tourist services.

In the context of the present study, "casual" visitors conform to the model of package tourists, those who generally take organized daytrips offered by tour operators. Many PAs near major tourism destinations are frequented mainly by this type of nature tourist, whose primary travel purpose is *not* related to NBT (Arnegger 2007; Torres 2002). Customized tourists who demand tailor-made combinations of services, then, are similar to the "sports" nature tourists, though this segment might also include "committed" and "interested" visitors. Finally, independent tourists are likely to match the traits of "mixed-interest" and "interested" nature tourists (Strasdas 2006). As the case study below demonstrates, the aforementioned segments differ in their consumer behavior and attitudes towards nature conservation, as becomes manifest in disparities regarding spending and, hence, their contribution to regional and local economic development.

Service-providers for nature tourists also make up a heterogeneous group of actors. The variety of tour operators ranges from small, specialized agencies to larger companies that rely on economies of scale and serve large number of costumers. Whereas the former cater primarily to individual and customized nature tourists (niche markets), the latter tend to focus on mainstream visitors, offering standardized daytrips to attractive and easily accessible PAs. Over the course of time, NBT has inevitably opened up new destinations and eventually developed its own packages and –to a certain extent– infrastructure, designed for larger numbers of costumers (Ryan *et al*. 2000). It should be stressed, though, that few studies have addressed the specific features of NBT businesses (Higgins 1996), though there are some notable exceptions (see, for example, Ingram and Durst 1989; Higgins 1996; Sirakaya and

McLellan 1998 and Sirakaya *et al*. 1999). Nevertheless, these scholars essentially focus on small, highly-specialized firms that cater to niche markets and disregard the growing importance of larger tour operators who offer standardized arrangements to "mainstream" nature tourists.

4. CASE STUDY: THE SIAN KA'AN BIOSPHERE RESERVE, MEXICO

4.1. Natural and Socio-Economic Setting

The Sian Ka'an Biosphere Reserve (SKBR) is particularly appropriate for the analysis of the challenges that the efficient management of NBT faces: First of all, SKBR is a UNESCO World Natural Heritage Site, whose outstanding biodiversity and natural beauty draw the attention of the tourist sector, governmental institutions and NGOs, among others. Thus, a large number of highly heterogeneous actors with potentially conflicting interests are striving to appropriate this unique natural environment. Some of them intend to capitalize on this Biosphere Reserve's natural resources, particularly for the purpose of tourism development. This involves not only private and community-based enterprises, but also a wide range of governmental institutions and NGOs that aim to promote sustainable NBT.

The SKBR was established in 1986 and declared a World Natural Heritage Site only one year later. It is located in the Mexican State of Quintana Roo, on the eastern shore of the Yucatan Peninsula, a region marked by striking socio-economic disparities: the highly-developed coast is characterized by tourism-driven urbanization, whereas its hinterland is sparsely-populated and largely marginalized. It is approximately 150 kilometers south of the booming resort area of Cancún (figure 3), and covers an area of 652,193 hectares (274,704 in three separate core zones and 377,489 in the buffer zone), including 120,000 hectares of water areas that protect coral reefs and other marine species.

The SKBR is an important transition zone between well-conserved terrestrial and maritime tropical ecosystems and contains an extraordinary range of biodiversity. As soils are mainly infertile, rocky and vulnerable to erosion, agriculture is confined to subsistence shifting cultivation. Due to the periodically wet climate typical of tropical fringes[7], the Reserve is covered by extensive wetlands and perennial, semi-deciduous and mangrove forests. It is also the habitat of at least 800 plants and 2,100 species of fauna, some of them seriously endangered (Solares-Leal and Álvares-Gil 2003). In economic terms, the spin lobster (*Panulirus argue*) populations in Ascension Bay (Bahía de Ascención in Spanish, see figure 3) are, aside from subsistence fishing and, more recently, tourism, the most important source of income for local communities. The area was largely unsettled until the 1960s, basically due to its natural conditions, remoteness and ongoing military conflicts between the indigenous Maya population and the Mexican government, which seriously restricted the exploitation of natural resources such as precious woods and natural rubber. No permanent settlements were established until 1970, which is why today about 97 % of the SKBR is still federal property, and less than 3 % belongs to local communities or private owners (Bezaury-Creel 2003).

[7] Annual average is 26.5 degrees centigrade and 1,128 mm of rainfall (INE 1996).

Traditional activities such as rubber harvesting, logging and copra production were abandoned gradually, due to the extinction of valuable timber species, the replacement of natural rubber by synthetic materials and the outbreak of the copra palm disease (INE 1996; Solares-Leal and Álvarez-Gil 2003).

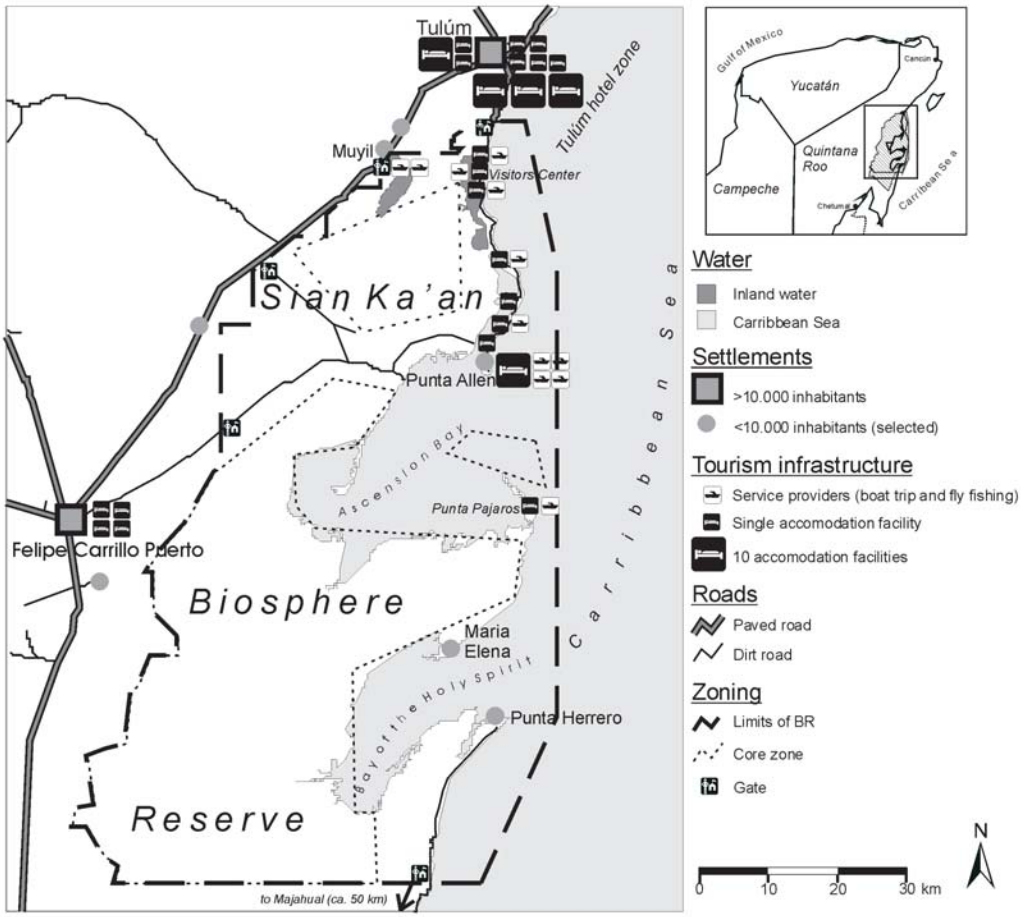


Figure 3. Sian Ka'an Biosphere Reserve.

In search of alternative sources of income, former copra producers shifted to commercial fishing and began to harvest the abovementioned spin lobster populations. In order to ensure their usufruct rights, they founded the *Vigía Chico* Fishing Cooperative (*Cooperativa de Producción Pesquera Vigía Chico*) in 1968. Two years later, the first permanent settlement, the *Colonia Javier Rojo Gómez*, was formally established on the northern shore of Ascension Bay. This village (*ca*. 600 inhabitants in 2006), known locally as *Punta Allen*, is still the only settlement of any significance in the Reserve (Brenner and Hüttl in press). At the same time, fishermen from other regions in Yucatan established two base fishing camps (called *Punta Herrero* and *María Elena*) at *Bahía de Espíritu Santo* (Bay of the Holy Spirit) (figure 3). These two camps are inhabited only seasonally by a few dozen fishermen during the lobster fishing season from July to February, which is why they lack drinking water, electricity and other infrastructure (*ibid*.). Aside from these three settlements, there are only a handful of tiny

ranches scattered along the coastline of the Reserve. Total population reaches only about 1,000 permanent residents, though the surrounding area is more densely populated. The burgeoning resort of Tulum near the Maya Ruins of the same name is located only 15 km. north of the Reserve and had some 15,000 permanent residents in 2005, next to 1,500 Mayan farmers and their families who settled in the western environs of SKBR (www.inegi.gob.mx, accessed FEB/08). Due to rapid tourism-driven urbanization, Tulum's population increased very quickly between 2000 and 2005, as annual growth rates averaged 17% during that period (*ibid.*).

Lobster trapping in Ascension Bay has so far been carried out in a sustainable way. To avoid overfishing, the entire bay area was divided into lots which were assigned to accredited cooperative members for personal usufruct, and they have kept fishing activities under strict surveillance (Carr 2003). Due to the fact that wholesale buyers pay high prices for lobster tails, cooperative members and their families enjoy a relatively high standard of living compared to regional standards (Solares-Leal and Álvarez-Gil 2003), although they are exposed to natural hazards, since hurricanes periodically hit Punta Allen, damage the lobster populations and destroy dwellings and fishing equipment (*ibid*.).

Since the early 1990s, increasing numbers of visitors from Cancún and the booming Riviera Maya[8] have stimulated the emergence of tourist services and ultimately led to economic diversification. The first local tourism cooperative was founded in Punta Allen in 1994, but others soon followed and now three more have been set up (Hüttl 2006). In general terms, tourism-related services have gained in importance with respect to traditional activities over the last 15 years. Currently, income from tourism and lobster-trapping have the same importance in the local economy (Brenner and Hüttel, in press).

In spite of its low population density and the comparatively low impact of human activities, reserve management faces some severe challenges. The most serious threats emanate from the fast-paced and barely-controllable tourism-driven urbanization from the Riviera Maya (which is already affecting the northern coastline of the SKBR) and, to a lesser degree, from the emerging resort of Majahual, located approximately 45 km. south of the Reserve (figure 3). This problem is further aggravated by the fact that tourism development in the entire area is being aggressively promoted by several influential governmental institutions (see below). Thus, there is already clear evidence of speculation at least in the northern part of the Reserve, including the sale (legal and illegal) of ocean-view lots to Mexican and foreign investors. Both the construction and operation of tourist facilities are likely to aggravate coastal erosion, harm coral reefs and contaminate groundwater (Bezaury-Creel 2003; 2005). Another, albeit less problematic, issue is poaching for subsistence purposes, which is carried out by local communities west of the Reserve. In addition, most adjacent communities still apply traditional forms of land use, such as shifting cultivation and extensive cattle-raising, which cause soil erosion and alter local land cover in the western fringe of the Reserve (INE 1996; figure 3). Illegal fishing in the maritime areas of SKBR also endangers some species which are sought after by Riviera Maya's high-end gastronomy.

[8] The Riviera Maya refers to the highly developed shoreline between Cancún in the north and Tulúm in the south (a total distance of approximately 130 km.). The area is characterized by fast-paced, tourist-driven urbanization, predominantly high standard hotels and club resorts (Torres & Momsen 2005).

4.2. Actors and Potentials for Conflict

In order to identify the interests and actions of the numerous actors involved (directly or indirectly) in tourism-related activities the SKBR, field research was conducted over a two-year period (December 2005 to December 2007), using both qualitative and quantitative research methods. Semi-structured, in-depth interviews with key informants were carried out during two periods (December 2005 to April 2006 and December 2007). Interviewees (65 in total) included government officials (nine from the national government, seven from the state of Quinatana Roo, and nine representatives of municipalities), employees of twelve NGOs, five tourism cooperatives, six private tourism operators and 19 key informants from local communities. A 'snowball method' was used, in which interviewees were asked to name other individuals who, in their opinion, were also relevant actors. Most interviews were taped upon approval by respondents and transcribed later. Only a few members of the local communities did not allow taping; in theses cases notes were taken during the interviews. In order to ascertain the veracity and plausibility of the statements made by the interviewees, the information obtained was compared with other sources of data (such as literature, reports, statistics and field-based observation), gathered during the fieldwork period.

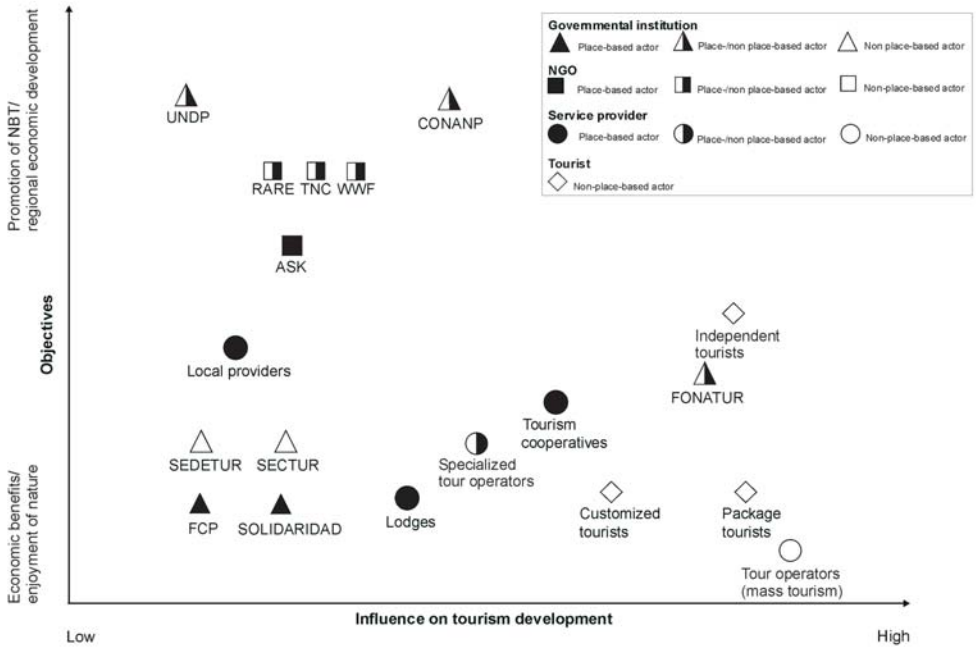
In addition, quantitative methods were applied to gather reliable information on visitors. During 39 days of fieldwork (December 2005-July 2006), face-to-face interviews were carried out at three frequently-visited locations in the SKBR. A random sample of 547 tourists was chosen and a short, standardized questionnaire applied in order to gather representative data on the overall visitor structure. In order to obtain additional information on spending, attitudes towards nature conservation and other relevant issues, extended interviews were conducted with 403 other visitors.

With regard to their economic and political interests in NBT and their particular influence on tourism development within the SKBR, four groups of actors can be identified (figure 4): a) six governmental and one supranational institutions involved in promoting NBT at different spatial and organizational levels; b) three international and one national NGO that attempt to stimulate and support community-based initiatives; c) tourism businesses (private sector and community-owned) that seek earnings from NBT; and, d) tourists demanding services and incurring expenditures.

The most influential *governmental institution* is the National Trust for Tourism Promotion (FONATUR for its initials in Spanish), which fosters tourist development at the Rivera Maya and, to a lesser extent, at Majahual (figure 4) by providing infrastructure, granting loans to private enterprises, and administering development areas. It also organizes and funds destination marketing in Mexico and abroad. Even though FONATUR is not directly involved in PA management and does not promote tourist activities within the reserve, it exerts substantial influence on the region's overall socio-economic and environmental development, as evidenced by the fact that state-aided coastal urbanization in the immediate vicinity of the Reserve is regarded by almost all interviewees as an immediate and severe threat. Moreover, state-driven improvement of infrastructure and, especially, road construction, spur the "opening-up" of the Reserve to potential investors, which is likely to aggravate existing environmental problems. FONATUR, however, intends to mitigate the impact by supervising and enforcing building and other environmental regulations, in conjunction with other state and municipal institutions.

Another important actor is the National Commission on Protected Areas (CONANP), the only authority in charge of supervising and regulating all tourism-related activities in the SKBR. In this context, CONANP's most effective tool turned out to be the issuing (and revoking) of licenses to tourist services providers, which enables it to exert pressure on tour operators and guides, local cooperatives, and hotel and restaurant owners, among others.

However, its ability to enforce regulations is hampered by the fact that it lacks assertiveness in its relations with other public authorities dedicated mainly to promoting economic development. Finally, CONANP is also responsible for improving the well-being of local communities, a fact that residents take advantage of by, for example, insisting on greater "flexibility" in the issuing of licenses.



Source: Authors' own research.

Figure 4. Sian Ka'an Biosphere Reserve: Actors involved in tourism development.

With the objective of fostering sustainable resource use and local economic development, the United Nations Development Programme (UNDP) has launched a number of small-scale projects to promote NBT, focused mainly on training, marketing and acquiring equipment. Due to budget restrictions, however, these measures have so far turned out to have only a marginal impact on overall regional tourist development. In contrast, both the federal and Quintana Roo State Departments of Tourism (SECTUR and SEDETUR, respectively), and the municipal authorities of Felipe Carrillo Puerto (FCP) and Solidaridad (where the BRSK is located), focus on additional measures to promote nature-based tourist activities, such as producing and distributing brochures and funding information booths. As in the case of UNDP, budgetary funds are limited, and this restricts the effectiveness of the measures taken.

With respect to the *NGOs involved in tourist development*, no fewer than three well-funded U.S.-based organizations are involved (figure 4): Rare Conservation (RARE), The Nature Conservancy (TNC), and the World Wide Fund for Nature (WWF). As interviewees stated, all of these agencies consider that carefully-planned, efficiently-managed and community-based NBT is a tool for sustainable economic development and resource use in PAs. Hence, encouraging locally-owned and controlled tourism enterprises –through measures similar to those applied by the UNDP– is part of their overall objectives and specific strategies. Unlike most governmental institutions, however, NGOs promote tourism not to foster regional or local development *per se*, but rather to provide an alternative to (now restricted) traditional or (potentially unsustainable) new forms of resource use. In this regard, income from NBT is a precondition for the acceptance of PA on the part of the local population. In addition, the internationally-respected Mexican NGO *Amigos de Sian Ka'an* (ASK), which played a decisive role in paving the way for the establishment of SKBR, cooperates with these international organizations, CONANP and international NGOs, with a view towards managing tourist development in the Reserve and its surrounding area. However, all NGO officials consider rapid tourism-driven and state-funded coastal urbanization a severe threat to Sian Ka'an's natural environment.

Tourism businesses comprise a wide variety of service providers (figure 4). First, the Rivera Maya-based commercial tour operators are influential, because they control an important portion of tourist flows: many visitors prefer to book an organized day-trip out of convenience, a perceived need for security, or because they are unaware of local conditions such as road or sanitary facilities (Torres and Momsen 2005). In addition, unlike local suppliers, established tour operators approach potential customers personally, which enables them to discourage tourists from taking self-organized trips into the Reserve by stressing the annoyances individual visitors might face. Moreover, tour operators are the only suppliers who are in a position to offer all-inclusive packages (ground transportation, food, boat trips, snorkeling gear, etc.), tailored to tourists' desires to avoid any kind of inconvenience. As all such packages include similar services (hotel pick-up, transportation in all-terrain vehicles, boat excursions and catering arranged through a local cooperative), tour operators are forced to compete for market share by cutting prices.

Even if the right to offer tourist services (mainly boat tours on Ascension Bay and food and beverages) in the SKBR is reserved to local tourism cooperatives (see below), they depend on tour operators with immediate and efficient market access, as not all visitors are willing to arrange trips on their own (Arnegger 2007). As stressed by several interviewees, due to their bargaining power, tour operators tend to impose their terms of contract on local cooperatives.[9] Occasionally, they were also able to cut prices for providing services by playing the cooperatives off against their competitors. As non-place-based actors, tour operators tend to be less concerned about the environmental impacts of tourist activities. Therefore, they show limited interest in prompting customers to observe regulations, an issue that causes conflicts with governmental authorities and NGOs concerned with nature conservation. In contrast, specialized tour operators catering to lucrative niche markets –in this case fly-fishing– operate from abroad (mainly the U.S. and Canada) and co-operate with

[9] Tour operators used to charge from 90 to 130 US$ per *pax* for a one-day excursion, including transportation, food and beverages, boat trip and entrance fees to the SKBR (2 US-$). In contrast, local tourism cooperatives generally obtain 25 US-$ per *pax*.

foreign-owned lodges that obtain most of their supplies form Cancún-based wholesalers. Local cooperatives, however, gain profits from providing boats and acting as fly-fishing guides for the lodges' clients. Fly-fishing is an exclusive niche market, as customized all-inclusive packages cost around 2,200 US$ a week. In addition to those groups, several privately-owned "eco-lodges", offering more traditional nature-based activities such as bird-watching and guided walking tours, also operate within the reserve. It can be assumed, however, that the overall influence of both fly-fishing lodges and eco-lodges on tourism development within the SKBR is generally limited, due to the low numbers of customers compared to other companies that cater more towards the mass market.

Tourism cooperatives in Punta Allen theoretically monopolize services within the Reserve. However, they all depend, albeit to different extents, on the tour operators, who take care of service-bundling at the destination. The cooperatives, on the other hand, arrange boat trips on Ascension Bay, provide snorkeling gear and prepare meals for package visitors. All these services are paid by tour operators at a fixed price. Tourism cooperatives are generally willing to accept restrictions, since members have a stake in maintaining their privileged position as exclusive service providers in one of Mexico's most important PAs. According to CONANP, infringements are infrequent and not considered a major threat to coastal areas. Operators of the exclusive and professionally-managed fly-fishing lodges[10] are also actors, since they attract a small, but highly profitable niche segment to the Reserve (figure 4). However, our interviewees indicated that fly-fishers contribute to regional economic development only to a minor degree, as most lodges are foreign-owned and supplies are purchased in Cancún or abroad. Therefore, their influence on regional tourism development is limited, especially in comparison to the larger Cancún-based firms. As most interviewees stated, the environmental impact of fly-fishing is considered minimal. Finally, the owners of Punta Allen's small, budget- to mid-priced hotels and restaurants are another, albeit less influential, group of actors. Due to capacity constraints and relatively low standards, they appeal primarily to budget-minded travelers; thus, their contribution to local economic development is rather marginal. Nonetheless, the economic impact of NBT on overall community development is assessed by most interviewees as "relevant", though most respondents also stressed that development potential is not used to its full capacity and that community members benefit unevenly from revenues (Brenner and Hüttl in press). This situation has led to growing tensions in lieu of efficient cooperation among business partners.

Finally, *tourists* are by no means a homogenous group of actors, but one better classified as independent, customized or package.[11] With a total of 65,207 visitors in 2006, the SKBR has experienced significant growth during the last decade, though this figure is rather modest compared to tourism flows to Cancún and the Riviera Maya. According to study results, these visitors generate annual regional gross turnovers of 4.4 million US$ in the SKBR and the adjacent region (Arnegger 2007).

[10] There are approximately ten fly-fishing lodges in the SKBR, most located in the northern part of the Reserve. Ecological impacts are assumed to be relatively low since they cater to a minor (albeit profitable) market segment and operate only during fishing season.

[11] Visitors are considered "independent" if they do not book any travel arrangements prior to their arrival at Sian Ka'an. "Package tourists", at the other extreme, are visitors that rely exclusively on standardized packages, for both the main trip to the Yucatan Peninsula and for the visit to the SKBR. "Customized" tourists are defined as visitors that travel independently to the region, but rely on packages purchased on-site, such as organized day-trips to Sian Ka'an. This segment also includes special interest visitors such as fly-fishermen and bird-watchers.

Independent tourists account for 63.6 % of all visitors and include both national (27.4 % of all independent tourists) and international day-trippers (55.5 %), as well as –less frequently– overnight visitors (17.1 %). Study results show that this important segment is likely to match up with interested or committed nature tourists, those who are willing to accept inconveniences, since visiting the SKBR with no previous travel arrangements arguably requires a certain degree of adventuresomeness and travel experience. Further evidence suggesting a particular interest in conservation issues is the fact that nearly a quarter (23.8 %) of all independent tourists interviewed indicated that they have visited the SKBR before; a substantial portion compared to customized (11.2 %) and package tourists (2.4 %). Moreover, independent tourists considered the fact that the SKBR is a well-known PA as an important motive for visiting the area. Though their average daily expenditures in the SKBR and its adjacent area (approximately 42 US$) are rather moderate, they account for 67.2 % (*ca*. USD 2,960,000) of the total gross turnover generated by visitors; which can be explained by the fact that independent travelers stay an average of 1.7 days in the reserve, considerably longer than package tourists.

Package tourists account for 21.5 % of all visitors in the SKBR, and they are mostly international visitors (97.8 %) who stay for just one day and are largely unwilling to take risks, as all of them resort to pre-booked packages, both to the Yucatan Peninsula and to the SKBR. Their level of interest in nature-related issues is less pronounced, as evidenced by the fact that only 2.4 percent of package tourists had visited the SKBR before. Package tourists also spend less than their counterparts (approximately 37 US$), which is why their contribution to gross turnovers is disproportionately small (523,800 US$ or only 11.9 % of the total) Thus, the package tourists' contribution to regional economic development is limited, since the lion's share of their expenditures accrues to tour operators (figure 4). Furthermore, package tourists only stay a few hours, which implies few opportunities to incur additional expenditures.

Finally, customized tourists account for 15.0 % of all visitors, comprising international (83.2 % of all custiomized tourists) and Mexican (11.0 %) day-trippers, as well as national (1.4 %) and foreign (4.4 %) overnight visitors. This segment tends to self-organize their trips to the Yucatan Peninsula, but generally book travel arrangements (offered by local tour operators) rather spontaneously at the destination in order to "personalize" their holiday. Nevertheless, 11.2 % had visited the SKBR before. It appears that "risk-free adventures off the beaten path" hold greater appeal for customized tourists. A particular type of customized tourists includes special interest visitors, mainly fly-fishers or birdwatchers who stay in all-inclusive, high-end lodges. Customized tourists are definitely more free-spending, as their daily expenditures add up to no less than 96.3 US$, more than twice as much as in the cases of package or independent tourists. A large proportion accrues directly to local owners of eco-lodges and other luxury accommodations. All-in-all, customized tourists generate a disproportionately high contribution to the regional economy (20.9 % of overall turnover, equivalent to 921,700 US$).

It is fair to say that Sian Ka'an is not an "alternative" or "ecotourism" destination, but one that attracts a wide variety of visitors. Proximity to one of the world's most important mass tourism destinations –Cancún– has a profound impact on visitor structure: one out of every four visitors can be classified as a "casual" package tourist, a result of the Fordist modes of tourism consumption promoted by the Mexican government over the last four decades (Brenner and Aguilar 2002). Though less prone to be concerned about environmental

issues than other visitors (Strasdas 2006), package tourists nowadays are an important segment in the spectrum of NBT, a fact that should be addressed appropriately by the agencies involved in visitor management. In contrast, independent and customized tourists are likely to be more open-minded about nature conservation, but also demand more specialized services.

As figure 4 indicates, conflicts arise from the opposed interests of two groups of actors: on the one hand, most NGOs, CONANP and UNEP encourage small-scale, low-impact, community-based tourism; while tour operators and most package tourists are primarily interested in drawing profits from marketing package tours or seeking an attractive setting for enjoying unspoilt nature, respectively. Assuming that all these objectives are legitimate, this situation is certainly conflict-laden and requires mechanisms of mediation. In addition, there are other clashes of interests among governmental institutions. Whereas FONATUR's *raison d'ètre* is based on mass tourism promotion (Brenner and Aguilar 2002), CONANP is opposed to fast-paced growth and seeks to limit tourist development to certain market niches. In this case, improved intra-governmental coordination is indispensable.

5. DISCUSSION

An actor-oriented approach has proven to be appropriate for the analysis of the tourism-related management problems that many Pas currently face. Qualitative research methods focused on interests and action strategies provide an in-depth insight into the complexity of social structures and processes. Awareness of these issues has come to be a crucial factor in the successful enhancement of sustainable NBT. Moreover, it became apparent that conflicting interests and opposing actions are likely to hamper the implementation of measures designed to foster a more balanced tourist development - even in internationally renowned and relatively well-funded PAs. In the case of the SKBR, severe conflicts exist between those actors principally concerned with nature conservation and other stakeholders interested in capitalizing on natural resources for the purpose of NBT. As the rapid urbanization of coastal areas and the frequent, but rarely sanctioned, violations of environmental regulations show, the latter group is clearly able to use efficient instruments of power, is extremely difficult to influence, and does not depend on the reserve's natural environment. Thus, non-place-based actors involved in local development tend to be in conflict with sustainable nature-based tourism. However, they do not oppose regulations *per se*, as long as they do not affect their key interests: profit yield and enjoying pristine nature.

Therefore, the authors suggest that an actor-oriented management approach could be an appropriate way to mediate conflicting interests among all actors involved, though it would entail management institutions taking on additional responsibility as skillful mediators. Consequently, the question arises as to which platforms of negotiation would be most suitable. Technically, this task pertains to the formally-established advisory board (*Consejo Asesor*) of the SKBR, a supposedly independent committee of experts, theoretically representing all relevant stakeholder groups, such as governmental institutions, NGOs, the tourism business, and the local population. In reality, though, this group's function is often limited to simply rubber-stamping decisions already taken by the administration of the PA, due to the marked apathy of the local population with respect to governmental activities, the

lack of administrative experience among board members and high staff turnover. Thus, collective decision-making in line with the existing legal framework has turned out to be ineffective, as most stakeholders are reluctant to enter into commitments. As a consequence, the CONANP is frequently forced to make unilateral decisions with regard to tourism management. But, given the resistance of powerful actors, this institution is not necessarily in the position to enforce regulations or collect user fees.

In view of this situation, two options remain: fostering a broader and more committed participation in the advisory board to turn it into an efficient decision-making body, or establishing other platforms for negotiation. Regardless of which option is chosen, any type of negotiating body should motivate the active participation of all actors, including the most influential ones, such as FONATUR, tour-operators and other tourism businesses, and play an important role in decision-making and in implementing new measures. In any case, two important issues must be addressed: first, both tour-operators and niche market enterprises would be amenable to participating and assuming commitments *only* if they perceive that this favors increasing their profits. Second, tourists as short-term, non-place-based actors are hardly concerned about management issues, but even so, their interests and preferences have to be taken into consideration, if for no other reason than that of reducing the environmental impacts of leisure activities and increase revenues from NBT.

Given this situation, an initial step could be the joint elaboration of a regional tourism master plan that would address both destination marketing and visitor management. Special emphasis should be placed on identifying crucial demand segments (both present and potential), as well as a more sophisticated, demand-oriented visitor management scheme for the reserve. Reliable data on demand would enable authorities to focus tourism planning on specific segments, instead of an ill-defined overall market. Visitor management constitutes a tool to (re-)distribute tourist streams more evenly within PAs, in accordance with individual expectations and preferences. At the same time, congestion and exceeding carrying capacities at vulnerable locations could be minimized. Finally, higher levels of visitor satisfaction may be achieved, potentially leading to more extended stays and, consequently, additional spending, which might benefit local communities and management authorities.

CONCLUSION

Tourism development is likely to be at odds with the goals of nature conservation. The effective mediation of conflicting interests therefore requires a willingness to compromise and to foster an open dialog among all stakeholders involved. However, PA management is still focused primarily on conservation issues, and this often hampers regional and local economies driven by NBT. Therefore, proactive destination management appears to be more promising and purposeful than attempting to restrain externally-controlled processes in an authoritarian way.

However, tourism development must also be regulated, particularly in fragile natural environments. Zoning and sophisticated visitor management have proven to be the most appropriate measures for channeling tourist flows towards activities that take place at less fragile, but still attractive areas. On the other hand, regulations have to be enforced to assure payment of user fees, as many service providers (in particular non-placed-based tour

operators) tend to be reluctant to absorb additional costs if sanctions are perceived to be unlikely. Moreover, monitoring should not be confined only to environmental factors, but also address socio-economic issues such as structure shifts related to regional economic development or the distribution of revenues among different stakeholder groups.

Finally, academia should make a greater effort to provide well-founded information to decision-making bodies, particularly in view of actor-orientated PA management, negotiation platforms, and innovative concepts of visitor management. In this way, the social sciences – and, more specifically, human geography– may be able to overcome their isolation from social realities and their lack of political influence, and come to contribute more actively to resolving existing problems in management-related issues.

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Chapter 3

THE INFLUENCE OF CLIMATE CHANGE ON TOURISM IN EUROPE

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ABSTRACT

This article focuses on climate change and its impact on tourism in Europe. It summarises studies on climate change and draws conclusions with respect to the impact on tourism. It considers the economic impact on tourism as a result of actual public and political discussions concerning the limitation of emissions based on air travel as an example. Finally some questions for research are stated in the conclusions section.

1. INTRODUCTION

The tourism industry is dependent on climate. Tourists and many of their activities are very sensitive to climate, and therefore have an impact on climate change (Amelung, Nicholls and Viner 2007; Bigano, Hamilton and Tol 2006; Buultjens, White and Willacy 2007; Lise and Tol 2002). According to Buultjens et al (2007) the impacts of climate change on tourism can be classified as either physical (e.g. the loss of biodiversity, damage to tourism infrastructure), economic (e.g. reduced tourism expenditure, reduced employment opportunities and increased costs for businesses and society), and social (e.g. health impacts). Bigano et al. (2006) suggest that the tourism industry is potentially one of the most significantly influenced of all markets/industries by the impacts of climate change.

Consumer behaviour is to impact climate development towards a more favourable direction and government policies introduced to address the impacts of climate change will have an impact on the tourism industry (Buultjens, White and Willacy 2007). The tourism industry is not only being affected by climate change, but also impacts on climate change itself (Preston and Jones 2006). For example, different activities undertaken by tourists leave the tourism industry with a carbon footprint (e.g. travel and accommodation) that contributes

to climate change (Buultjens, White and Willacy 2007). Research on the interrelationships between tourism and climate change has been limited until the beginning 21st century (Scott 2003; Hamilton, Maddison and Tol 2005). In order to develop short and long-term strategies to address the impacts on and from tourism on and from climate change it is relevant to have a sound understanding of the relationships that exist between climate change and tourism (Buultjens, White and Willacy 2007). This report provides an overview of the relationship between tourism and climate change. It takes the example of air transport into account and attempts to identify some research questions that need to be addressed in the future.

2. FACTS ON CLIMATE CHANGE AND TOURISM

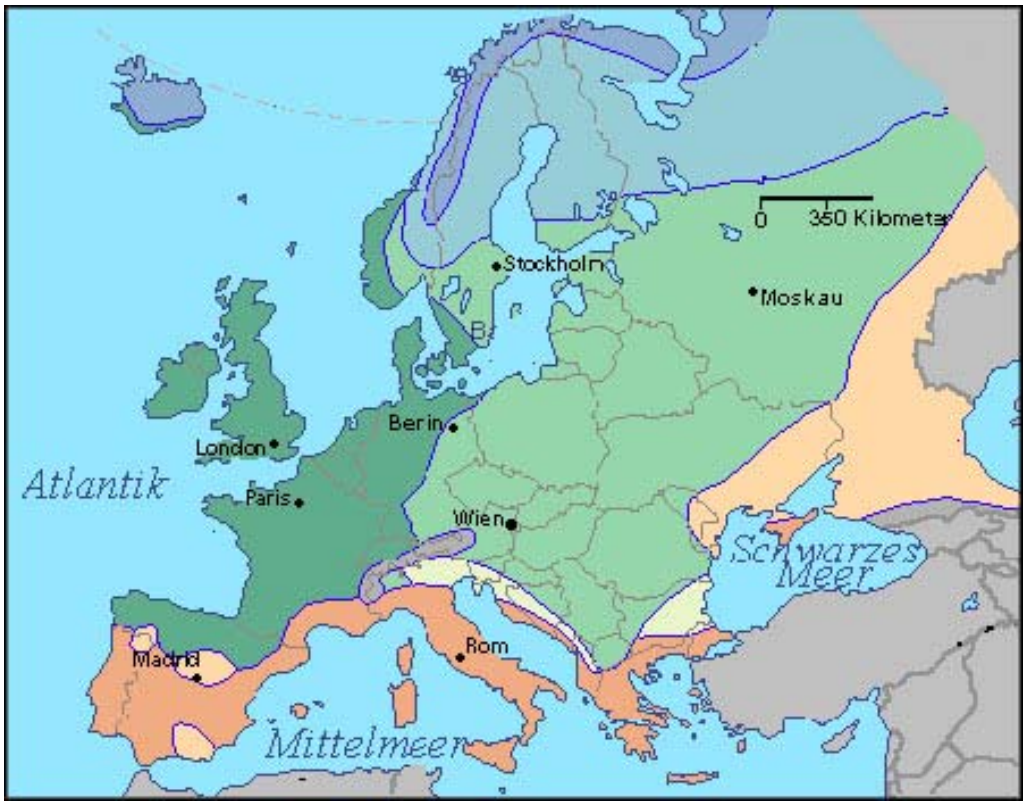
It is assumed that climatic changes, increased energy consumption and the shortage of the raw material oil, will be among the biggest challenges and risks for the tourism and transport industry. In recent decades, a global increase of natural disasters as floods, rainfall, hurricanes, droughts and extreme temerature changes were recorded in a frequency and in proportions that never existed before. This process is subject to some natural factors; however, it is strongly accelerated and partly caused by people. Although temperature changes occurred in the past, and even glacial periods appeared, it is undisputed that the people accelerate the process of climatic changes. The main cause is the release of CO2 from the consumption of oil, the use of fossil fuels (coal), and the clearing of forest land and natural areas. The results and implications for the nature and society are in the framework of the Inter-Governmental Panel on Climate Change (IPCC) in the Climate Change 2007 report. The IPCC is recognized worldwide as one of the most reknowned collection of scientists and researchers, who explore the latest findings and studies on climate change and its consequences, and discuss and present their results.

Before the consequences and impacts of climate change in Europe will be discussed, first a general overview of the current weather situation must be povided. Currently, the climatic situation in Europe, which is split in three climatic zones can be simplified in the following way:

- *Moderate climate*
  - Dry Mediterranean (Iberian peninsula, Côte d'Azur, Ital. Riviera)
  - Dry sub tropical (Murcia, Costa de Almería, south of Sicily)
  - Moist oceanic (Atlantic Coast, UK, France, Germany, the Czech Republic, northern Italy, An-rainer North and Baltic)
  - Moist continental (Helsinki, Stockholm, Moscow, Kiev, Warsaw)

- *Steppe climate*
  - Cold, Halbarid (Volga region, Odessa, Kharkiv, Crimea)

- *Cold climate (blue, violet)*
  - Boreal (Uvalygebirge, Bottnischer Gulf, White Sea)
  - Montan (Alps, the Pyrenees, Carpathians, Ural Mountains, Caucasus)
  - Polar (Iceland, Barents Sea)



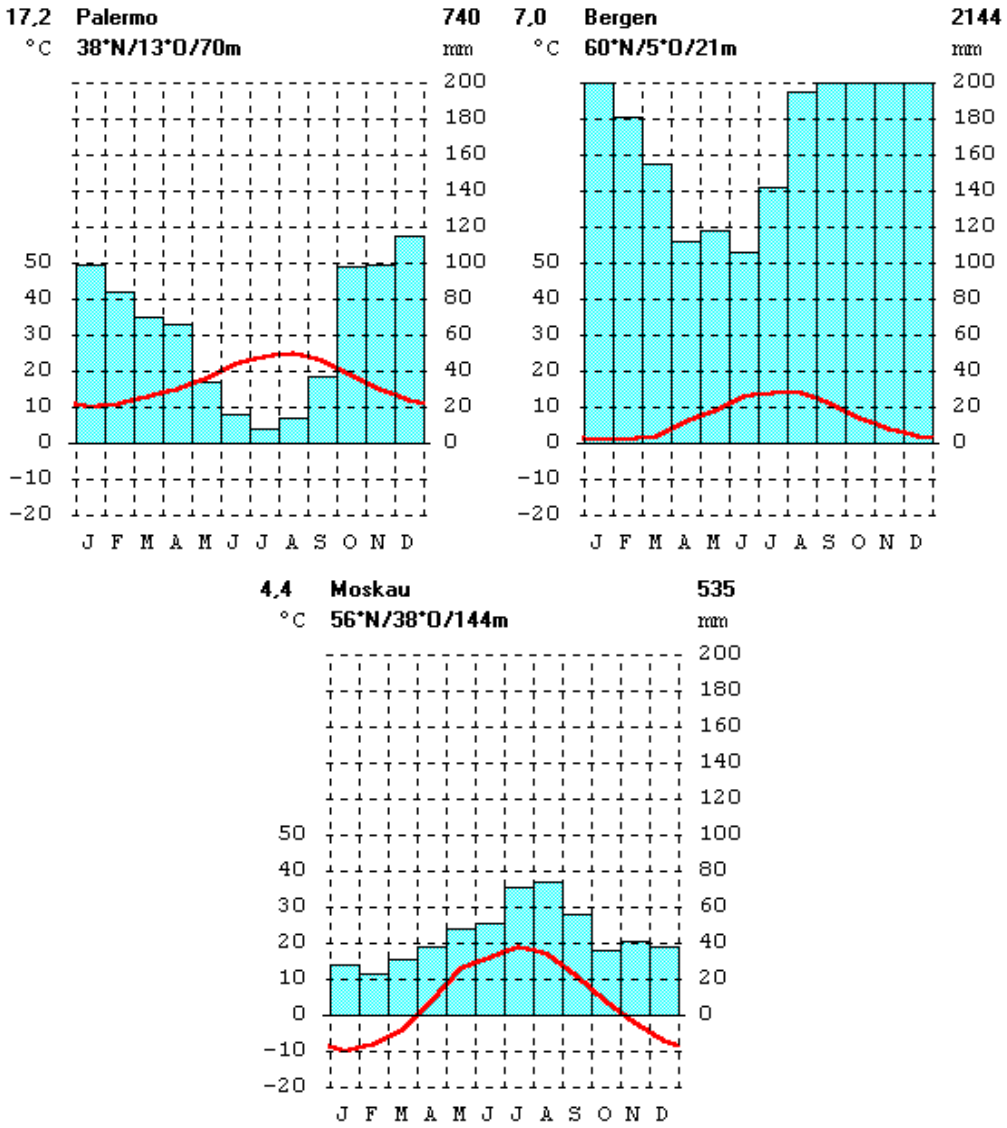
Source: http://www.hagel.at/site/images/Europa.jpg.

Figure 1. Climate zones in Europe.

Generally, it should be noticed that the climate in Europe is relatively mild in winter compared to the climate of North American cities such as Toronto on the same latitude. The reason for this is the impact of the Gulf Stream. The Gulf Stream appears in the north of the Bahamas and the Gulf of Mexico and transports warm water masses with it. Some of it flows all along to the Newfoundland coast in the North Atlantic direction towards Northwest Europe and increase with the accompanying warm water masses the water and air temperature of NW-Europa. Favouring for the climate are also the warm winds from the North Atlantic, because of a lack of high mountains along the west coasts of Europe. But the Atlantic influence contributes also the fact that the largest rainfall is to find in Europe mainly in the west of Britain, and along the west coast of Norway. The eastern part of Europe is influenced by a continental climate and is characterized by greater changes of temperatures between summer and winter and generally lower rainfall than in Western Europe. Generally, it should be noticed that the winter period in Northern and Eastern Europe is much longer and colder than in Western and Southern Europe.

The Mediterranean region compared to other regions is characterized by its special Mediterranean climate. The Mediterranean climate, termed as subtropical winter rain climate, is primarily characterized by hot, dry summers and mild, moist, mostly frost-free winters. The Strait of Gibraltar contributes to the fact that the water temperature in the Mediterranean Sea is higher than the water temperature of the Atlantic sea. These pleasant climatic peculiarities are responsible for ensuring that the Mediterranean is a popular holiday destination world

wide and has a good reputation. The three climate maps of the cities of Palermo, Bergen and Moscow were selected to highlight the different climatic conditions in Europe:



Source: www.fherrgen.de/Down/Klima/kl-europa/kl-europa.htm.

Figure 2. Comparison of climate diagrams.

The number on the top left is the average annual temperature of the city in degrees Celsius and the number on the top right shows the accumulated annual rainfall in millimetre. Below the city name the exact geographical name with longtitude and latitude indication is followed by the elevation above the sea level. The X-axis (horizontal line) of the climate chart reflects each month and is abbreviated by the first letter of each month. The single monthly average temperatures results in the course of the line in the climate diagrams. The columns in the graph represent the monthly average rainfalls of the place depicted.

Climate Chart Palermo

The provincial capital of Sicily represents Europe prevailing in the Mediterranean climate. With an annual average temperature of 17.2°C, in this region it is especially mild in the winter. The average low temperature is 10°C in January and thus is the warmest region of Europe also in the Mediterranean winter. Palermo is caused by seasonal rainfall, which is largest in the winter months of December (118 mm) and January (110 mm). Especially in the summer months of July, August and September there is hardly any rainfall. Although in Palermo the rainfall decreases in the summer and increases in the winter, it rains rather much in comparison to other regions in the Mediterranean region.

Climate Chart Bergen

Despite the northern situation of Bergen, 60°N to 5°E, the average low temperature in winter is not less than 0°C. The Gulf Stream and the warm Atlantic winds ensure that the temperatures especially on the west coast of Norway and the UK hardly fall below freezing. The highest average temperatures are measured in the months of July-August with about 14-15°C. The temperature difference between the average (August) warmest and coldest month (January) is 15°C, which is relatively low compared to other cities which are influenced by the continental climate. The direct access to the sea and inland to the rising mountain Hardagervidda ensure that Bergen is one of the rainiest regions in Europe. In the months from August to February, the rainfall with over 180 mm are constantly high and in the months of March to July it is lower with a lowest level of rainfall of about 108 mm in June.

Climate Chart Moscow

The Russian capital represents cities, influenced mainly by the continental climate. The continental climate is characterized by large temperature differences between summer and winter months, and a relatively low annual rainfall. The high temperature difference between the warmest (July 20°C) and the coldest (January -10°C) month is about 30°C and thus a remarkable characteristic of this particular type of climate. It is striking that, in comparison to the other two climate charts the rainfall in proportion to the increase in average monthly temperature rises. With about 78 mm rainfall August is the rainiest month followed by July with 70 mm.

3. IMMEDIATE CLIMATIC CONSEQUENCES IN EUROPE

In focusing on tourism, it is important to focus on the dimension of transport as well. According to UNTWO road an rail transport are generally dominant modes in domestic tourism. In broader regions, not only country domestic but rather Europe wide, air transport plays an important role and contributes more then average to the CO2 emissions. For this reason this section strongly relates to air transport, which is taken as an example.

The air transport in Europe is bound to the economic growth of the Economic Area (EU) and thus declines accordingly in bad economic times as well as grows in economically prosperous regions. However, air traffic is exposed to increased risks, which can put the aviation industry directly in severe turbulence. In addition to terrorism, which is especially a new type of threat after the attacks of 11 September 2001, economic recessions, epidemics and particularly natural disasters, as well as temperature changes and their consequences in more recent years are influencial threats.

Natural disasters influence the demand of holiday regions directly. If such disasters happen during the peak season, they have a direct influence on the earnings of the airlines. For example, evidence of the impact of climatic changes, as seen in the interim report for the second quarter of 2007 of Air Berlin are the poor weather conditions in the Balearic Islands and the summer heat in spring in Germany, which lead travelers not book flights to the Balearic Islands or other destinations. The weather effects significantly reduced the earnings of Air Berlin.

According to various reports and studies by internationally renowned institutions, Europeans must prepare for an increase of climatic changes such as floods, hurricanes, floods, prolonged droughts, fires, etc. in the future. Implications and impacts of climate change on Europe were assessed with the IPCC study (2007). According to this study first effects of climate change are already felt worldwide, but regional differences are reported, which will most likely worsen in the next few decades. World-wide ecosystems will particularly be confronted with higher temperatures.

For mountain and snow regions next to a shortened Winterskiseason, an extension of glacier lakes by the melting of snow ice masses are to be worried about. Due to to rapid melting of ice, it will be difficult to keep the melt water in local streams and rivers, so that the risk of flooding in mountain regions increases. In addition, due to low soil stability an increase of landslides and rock-beats are expected (Stern 2006).

It is questionable whether the shortened winter season in skiing and mountain regions can be compensated by a prolonged summer season. Only ski resorts at least at an altitude of 2000 m above sea level can continue their business with guaranteed snow in the winter and expect sufficient winter tourism (ICCP study 2007). 20-30 % of plant and animal species are facing a high risk of extinction if the climate change should lead to a global average temperature increase or more than 1.5-2.5°C (Stern 2006).

Some of the climate effects have the potential for very big changes after the 21st century. The complete melting of the Greenland ice shield and the western Antarctic shield would lead to an increase of the World sea levels by up to 7m (ICCP study 2007). Various scientific models assume that it is very unlikely that the melting of the North Pole and the Greenland ice shields abrubtly halt the circulation of the Gulf Stream. However, a slowdown in circulation, which will in turn increase the temperature in Europe, will not stop.

It should be noticed that even if countermeasures are taken up today, the short and middle term effects of the expected climate changes in the next few decades can not be undone. In other words, the impact of climate change worldwide is going to happen. Only the development of long-term climate changes can be partly influenced by immediate action and appropriate measures.

Coastal and Flat Regions

Erosion along the coast will lead to decline of surface. This process is unstoppable and can be slow at best. Especially countries like the Netherlands which gained land from the sea will have a difficult situation, because of some of the country lies under the sea level. If sea level rises it is acutely threatening.

Also flat island groups like the North, West and East Frisian Islands and small Mediterranean islands are under threat from the sea.

Almost all regions of Europe will mainly be affected by the negative effects of climate change in the future.

In addition to the already-mentioned consequences for the winter tourism, there is still an increased risk of domestic flooding as the „Oder“ flood in the year 1997 or the flooding of the Danube caused substantial material damage and put some countries in serious financial trouble.

Southern Europe

For Southern Europe the predicted climate changes primarily worsen the current conditions, which mean that the increased temperatures and heat waves, and thus the drinking water situation worsens.

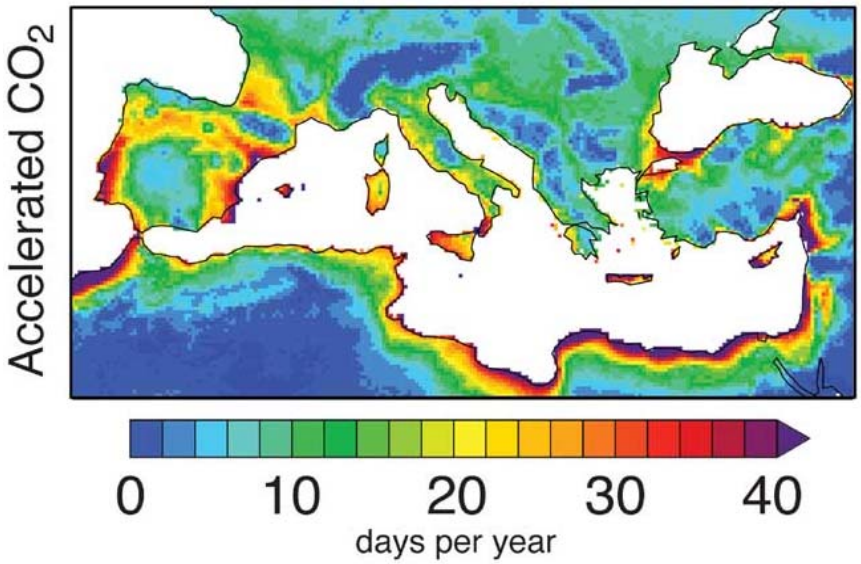
Even today, on some Mediterranean islands such as Sicily and the Balearics, the availability of drinking water in the summer months is limited. Latest studies of the Max Planck Institute for Meteorology, even assume tropical cyclones over the Mediterranean region in the future. The increased danger of fires in holiday regions such as Spain, Portugal, Italy and Greece could continue to have negative effects on the booking behavior of tourists in the summer season.

According to the magazine "Geophysical Research Letters" an increase of death of elderly people during extreme heat waves like in the year 2003 are likely to increase.

Figure 4 shows the Mediterranean destinations at the end of the century afflicted with extreme heat days, if the CO2 emissions continue to increase unabated. In addition to the Balearic Islands particularly small and large Mediterranean islands like Sardinia, Sicily, Malta, Cyprus, Crete, and Rhodes are disproportionately affected by extreme days of heat.

Central and Eastern Europe

In addition to the expected temperature increase is for Central and Eastern Europe, an increase in rainfall amounts and the probability of floods are predicted. These events are expected primarily to the end of the winter and beginning of spring season. It can not be excluded that the increased temperatures have a positive effect on the behavior of booking behaviour for holidays in these destinations, instead of the traditional summer holidays in the Mediterranean.



Source: Diffenbaugh et al. 2006.

Figure 4. Future regions with extreme heat days in the Mediterranean region.

Nordern Europe

For Northern Europe, climate change will have both positive and negative effects. An increase in temperature will cause the cost of energy (heating costs) to decrease and better climatic conditions for agricultural use and more favorable conditions for the growth of forest inventory will appear. It is also conceivable that electricity by hydropower will grow. However, there will be negative effects like floodings and surface instability in Northern Europe.

4. IMPACTS ON AND OF TOURISM

This paragraph highlights the connections between climate change, tourism and transport and outlines the economic impacts on tourism. An affected sector - the aviation sector - is explored with respect to tourism flows on short and long haul travels. Climate change is seen as economic costs, which are related to economic benefits.

4.1. Climate Change Impacts of Tourism Initiated by Air Travel as an Example

The main source of climate change, according to the IPCC world council is the consumption of fossil fuels such as oil, coal and gas and the emissions produced by them, primarily CO2. Generally, chemical compounds such as CO2, CH4, N2O, HFCs, PFCs and SF6 creat greenhouse gases, which are classified as dangerous, because these chemical

compounds contribute more than others to global warming. The study by Nicholas Stern (2006) and other internationally renowned institutions estimate that approximately 14 % of the greenhouse gases produced in the year 2000 are directly connected to traffic.

The assessment and research of climate change is quite controversial. Already for hundreds of years, there were natural climatic changes, with a constant exchange of heat and cold periods. A hypothesis of the IPCC-report is that CO2 is the main cause of climate change. How high the exact proportion of CO2 in the current climate change is cannot scientifically be explained with 100 % certainty. In addition, the role and importance of the sun on climate change has not yet been sufficiently explored. Thus, it cannot be excluded that the increasing tempreatures are not dependent on the solar activity. What the humanly created share compared to the natural warming is remains unclear. A global temperature increase also means an increased temperature of the world's oceans, releasing more CO2 to the atmosphere. If temperatures decrease, the World's oceans can absorb and store more CO2. The seas of the world are considered to be the greatest "CO2-stsorage". But it is true that human beings influenced the release of greenhouse gases by the economic progress of recent centuries. The following statements and explanations result from the IPCC world council.

The heads of several European budget airlines expressed themselfs on the subject of greenhouse gases and CO2 emissions and their impact on air travel as follows:

- "The proportion of air transport of the global greenhouse gas emission, the so-called Kyoto gases, is 1.6 percent, the share of the global CO2 emissions is 2.2 percent." (Hunold 2007)
- „Although aviation makes a very small contribution to climate change-accounting for less than 2% of global greenhouse gases we take our responsibilities seriously. That’s why we recently became the first major European airline to offer our customer the opportunity to offset the carbon emissions of thier flight by investing exclusively in United-Nations-certified projects.” (Harrison 2007.)
- "Air traffic causes worldwide only about two percent of all CO2 emissions. The total output of European domestic air transport of the global emissions is less than 0.2 percent and is vanishingly small. In our view, these figures demonstrate quite clearly that the air traffic is not the major factor responsible for climate change. "(Müller 2007).

The comments of the two CEO’s clarify the position of airlines. On one hand there is a low proportion of emissions of air transport responsible for the global warming, on the other hand it is a growing industry that grows more then the possible reduction of emissions which can be technologically achieved. Furthermore, a greater environmental awareness from customers result in higher financial expenses for airlines to keep their CO2 emissions as low as possible, keep passengers away of alternative means of transport. The actual contribution of aviation to global warming is likely to be much larger than the two percent particularly if other gases like CH4 and NOX are included in the calculations. These are often not taken into account, but are relevant in connection with global warming. For the next few years, new orders of aircrafts were placed, with the goal to replace older aircraft with more fuel efficient ones. Due to growth in air transport in Europe, despite kerosene-saving types of aircraft,

emissions of greenhouse gases will increase significantly. To limit the greenhouse gases for the future, there are, from a political perspective, the following possibilities:

Carbon Offsetting

The idea is to calculate the expected emissions separately per flight and per passenger. This amount is charged financially to the airline und most likely further to the passenger and used to support for example, reforestation programs or similar projects unter the protective umbrella of UN help organisations. Some companies who offer air passengers to calculate and pay for their emissions voluntarily appeard in the past years. For example customers of Lufthansa and Swiss can calculate their CO2 emissions of flights and pay for environmental projects on their websites. British airline provides its customers with an emission calculater through the company Climate Care. More such companies are Myclimate from providers of Switzerland, Climate Friendly from Australia and Native Energy from the United States. Even a step ahead is the privatjet operator Netjets Europe. Since October 2007 all new customers have to pay for their emissions which lead Netjets Europe to operate CO2-neutral flights. The money is used for climate protection programs. The European Union is working on an emissions pricing scheme for the airlines which is expected to be in place from 2011, and to make carbon offsetting mandatory.

Emission Trading Schemes (ETS)

Just as energy companies and industry sectors in Europe airlines should also be involved in the emissions trading. Emission trading is seen by many participants as the best possible procedure to reduce or stabilize the emissions of airlines. The EU wants to involve all flights within the European Union under an emissions trading scheme from 2011. By the inclusion of air transport in the EU trade system for greenhouse gas rights (ETS) the EU renounces other measures such as taxes. From 2012 even intercontinental flights, which either land or depart from an airport in Europe have to be held responsible for the emissions they generate. Disagreements with the ICAO could delay or change plans, so that a more precise launch date for the EU ETS is still not legally tenable. As a basis for the calculation of emissions per flight, the actual fuel quantity per trip planned is calculated by an Ops-Agent and transferred to a neutral body (e.g. Eurocontrol). The fuel quantity per trip refers to the amount of fuel required for the shortest route. Since the trip fuel quantity is only a proportion of the total quantity of kerosene used, the difference is calculated when refuelling at the destination. Differences can appear because of longer routs, holdings, long taxiing at airports, etc. Simply, Airlines can buy CO2 certificates, which are usually offered at auctions or are to a specific extent provided for free. These certificates entitle to a certain quantity of CO2 per ton/year. After a certain key distribution to all European airlines up to the annual ceiling of emission certificats, airlines can trade their certificates amongst each other or with other industries. Problems which can arrise with the emission trading schemes are related to the fact that not all countries in the world will implement such schemes and thus costs of travel may become more expensive in countries that implemented ETS compared to countries which did not. This might have an impact on the choice of destinations by travellers and thus impact tourism.

Fuel Tax

With the Chicago Convention (Article 24) of 1944 it was decided that kerosene for the international commercial air traffic is not taxed. This decision was taken with the special importance of air transport (transport of persons and goods), which contributes significantly to the global economic upswing. Since then and until today, airlines are exepted from fuel taxes compared to other modes of transport which are taxed. However, many airlines raised a fuel surcharge by the rise in oil prices. Since January 2004, it is possible according to EU law to implement a domestic tax on kerosene for airlines in an EU member state. Each state has autonomy on tax matters. Currently, there is no state in Europe, which implemented a tax on aviation fuel.

Effects of a Fuel Tax

The introduction of a kerosene tax would primarily hit the airlines, which would transfer this tax fully to the passengers. The quantity of emissions emitted would not diminish. Due to the increased fares, however, the demand for flights could partly be affectes and thus decrease the load on the machine. Unlike the EU emissions trading a taxation of kerosene on domestic flights introduces a competitive disadvantage for airlines which are especially active in domestic markets.

Carbon Tax

An even more specific taxation is described in the report „Climate Change Policies and Australian Tourism“of the STCRC Center for Tourism Economics and Policy Research at the notion carbon tax. This type of tax would not generally tax the kerosene, but rather take the measured emitted greenhouse gases. The goal is to set a progressive tax rate which takes the amount of greenhouse gases released emitted per tonne as a calculation base. The effect would be expected not only to reduce the greenhouse gases emitted, but is also thought to provoking new direction of development of alternative energy sources or otherwise composite fuels. However, this would only boost long-term thinking because aircrafts have a long service life and are only fueled with kerosene today. This tax would allow air companies to adapt to new, fuel-efficient aircrafts and support research in alternative fuels if sufficient financial resources were available. These higher costs of flying would increase air travel costs and have a negative impact on tourism demand. The main difference between this type of tax levy and the ETS is that the gains from the carbon tax, like all taxes accrue directly to the state, while with the ETS approach it is the nature of the distribution which is crucial. If the majority allocated emission certificats are distributed free of charge, the profit does not flow into the state but to the airlines.

Summary

Aviation accounts for a small proportion of Greenhouse Gas Emissions GGEs (around 2%), though the damage from aviation emissions is considered to be significantly greater than from other industries emissions. While technology is reducing emissions, this is not likely to counter the strong growth in aviation, and thus aviation is likely to account for a growing proportion of GGEs. Because technology is locked in, climate change mitigation policies are not likely to reduce GGEs for aviation by as much as in other industries. Thus, the benefit of emission reduction is greater in other industries. Impacts of climate change policies on air

fares will depend on the extent of pass through of emission costs to passengers. When airlines are granted free permits, they may not increase air fares to reflect the full value of the permits (Forsyth, et al 2007; Buultjens, et al 2007).

If emissions are priced by any of the mentined possibilities, travel becomes more expensive. This might have an impact on travel behaviour of tourists and business people. Next to increasing emission costs, fuel prices are increasing continuously and impact on tourism.

4.2. Economic Impacts of Climate Change Policies on Tourism

According to the World Tourism Organisation, transport accounted for 75 % of total tourism emissions (UNWTO 2007). Green House Gas (GHG) emissions in the transport sector are defined as emissions produced by the direct use of fuels (Forsyth, P., Dwyer, L., Spurr, R., 2007) in road transportation, railways, navigation, and aviation, with a view that tourism possibly shares a reasonable portion of total emissions produced from the European domestic transport sector. Transport is the fifth largest contributor of global GHG emissions, producing 13% of all emissions, behind energy (26%), industry (19%), Forestry (17%) and agriculture (14%) (IPCC 2007). In the sustainable tourism deveolopment discussions about enviornmental impacts of tourism, particularly energy use and GHG emissions, are almost not present (Becken 2002).

Climate change is likely to be negative for tourism. Tourist attractions will be changing. The quality of the experience will diminish or the attraction might disapear as a whole. Natural attractions such as Galciers will be most affected, but created attractions such as the Eiffel Tower will be less affected. Coastal areas of Europe might be affected by flooding. It is likely that these changes lead to less tourism. In some cases it will be possible to adapt to preserve the attraction, to lessen the damage done by climate change, or to eliminate the damage. Adaptation however, will have a cost. Some attractions may become more popular. For example beaches in the north of Europe. Places in southern Europe might disapear or become less attractive. Hence, domestic and international patterns of tourism will change. Business tourism may be less volunerable to climate change, and holiday tourists who mainly come to see cities and participate in city life will not be particularly affected (Forsyth, P., Dwyer, L., Spurr, R., 2007).

According to Forsyth, P., Dwyer, L., Spurr, R. (2007) there are several costs and some benefits potentially associated with climate change. These include:

1. Loss of natural attractions. It may be that some attractions will not function any more as attractions for tourists. E.g. tourists may be visiting a coastal town to snorchel and dive in a nearby reef. Climate change, which leads to warmer sea water may influence to colours of the reef which leaves the reef unattractive and not worth visiting. A ski resort in the Alps may have to close, because it is situated to low and does not get enough snow to operate a ski area anymore. These impacts of climate change have an influence on domestic and international tourist arrivals. They lead to a cost for destinations and a loss of benefits for toursits, which are associated with a negative economic impact for a whole region or country. Tourism expenditurers might decrease at some places, but at

other places they might increase. There will be a shift of spendings on tourism in Europe towards nordern European countries.

2. Loss of quality of natural attractions. Many of the surviving attractions may experience a reduction of quality of the visitor experience. This will lead to similar effects as for the complete elimination of an attraction. Domestic tourists will lose, and fewer international visitors will come. Tourism may shift to other places.
3. Costs of adaptation. Many attractions may be able to preserve their appeal by adapting to new climate situations. Ski resorts produce their own snow and resorts will be able to control water flows. Adaptation will be costly though. Costs of adaptation will vary on a case by case basis. Adaptation is not always technically possible, and if it is, it may be too costly to be worthwhile.
4. Costs of replacing tourism capital. In some cases, attractions can be retained by shifting them. E.g. a ski resort may no longer be viable, but it may be feasible to open up another nearby or to enlarge another existing one and merge small lower ones in a region with other ones on higher levels. If this is to happen, considerable capital expenditure will be needed, both for the facilities themselves and the associated infrastructure. Climate change will in some cases result in existing facilities and infrastructure becoming useless. New facilities will be needed at the new locations. New ski lodges and resorts will have to be built, and roads to them will have to be provided. Thus, even if, on balance, a region is able to maintain its level of attractions, there will be a major cost in replacing the capital investments which, after climate change, are located in the wrong places.
5. New or better attractions. Some attractions will be improved by climate change (Denmark's beaches?) and some attractions which were not viable before will become viable. The effects of these will be the reverse of those of 1 and 2 above.

It is important to put these changes which may be a result of climate change in perspective. The natural capitals of tourism will be changing. Some are likely to be reduced of devalued, some others will appear. Tourism and nature based tourism will not be lost, but changed. People will still have leisure time and income and their will be a market for tourism and attractions for short time weekend trips and longer time vacation trips to nature based attractions. According to Forsyth, P., Dwyer, L., Spurr, R. (2007), nature based tourism will not be affected, but if supply reduces or changes, prices are likely to rise. This results in higher prices for visiting attractrions either for the attraction itself of for higher transport cost.

The implications for Europe are not as negative as for other countries in the world, becauses as a hole; Europe has a much diversified supply of attractions from cultural sites and cities to beach places in southern Europe to beach places in northern Europe and natural sites like the Alps in the heart of Europe. The impact on tourism due to climate change from a European perspective results likely in a shift of preferred destinations and attractions. Regions that strongly depend on toursim today may loose some tourism income in the future and need to focus on new ways to create an economic gain. Other regions that are only peripheral touristic areas today may become destinations of choice. This development has an impact on regions or countries within Europe more then for Europe as a hole. Total demand is not likely to change from domestic tourism in Europe, but might slightly decrease from overseas tourism, due to higher travel costs. On one hand there will be a loss on the supply side and on

the other hand there will be an increase of supply and this might be partly counteracted by changes and shifts on the demand side.

CONCLUSIONS AND QUESTIONS FOR FURTHER RESEARCH

There are different costs caused by climate change which impact tourism. Climate change will directly impact on European tourism. In some regions attractions degrade faster then in others. It is possible to assess the costs to Europe of climate change damage by identifying attractions at risk, projecting impacts on visitor flows and adaptation costs, evaluating losses to domestic tourists and modelling the costs to the economy from reduced inbound international tourism (Forsyth, et al 2007).

Furthermore, tourism will be affected by the three main climate change mitigation policies: mandatory restrictions, carbon taxes and the Emissions Trading Scheme (ETS), all of which will increase the cost base of tourism and transport firms (Forsyth, et al 2007). This has an impact on domestic and international tourism in Europe.

Aviation accounts for a small proportion of Greenhouse Gas Emissions GGEs (around 2%), though the damage from aviation emissions is considered to be significantly greater than from other industries emissions. While technology is reducing emissions, this is not likely to counter the strong growth in aviation, and thus aviation is likely to account for a growing proportion of GGEs. Because technology is locked in, climate change mitigation policies are not likely to reduce GGEs for aviation by as much as in other industries. Thus, the benefit of emission reduction is greater in other industries. Impacts of climate change policies on air fares will depend on the extent of pass through. When airlines are granted free permits, they may not increase air fares to reflect the full value of the permits.

To conclude an important question which arrises concerning the alarming facts of climate change is, if it is politically correct to charge for emissions on the grounds that rich people or inhabitants of leading economies can afford to buy their emissions and pollute as much as they like, whereas inhabitants of transition economies and less developed regions cannot afford to cover emission costs, which might reduce the progress in their development.

Some questions for research are:

- What can destinations do to prepare for changes in tourist arrivals due to higher emissions and fuel costs?
- What can airlines do to prepare for emissions trading schemes?
- How can destinations cope with the fact that some countries might implement emissions pricing schemes, whereas others will not? Some destinations become more expensive then others.
- What kind of emission pricing schemes are the less limiting ones for tourism?
- How can emissions costs be transferred to the customer (visitor, passenger)? What is acceptable procedure for customers?
- What is the customer value of emission pricing?
- Where are the limits for customers to pay for emissions?

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Chapter 4

TERROR, TOURISM AND MISIDENTIFICATION

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ABSTRACT

This chapter builds on previous work by one of the authors (Johns 2007). The central argument is that tourism and anti-terror policy are part of a holistic agenda which in the short term is about creating 'status privileges' for white westerners at the expense of people in less developed countries and black and minority ethnic (BME) citizens. However, the ultimate strategy appears to be a modern form of colonialism driven by the desire for global hegemony (Chomsky 2003) by the United States, with the collusion of allies such as the United Kingdom. While in many ways the agenda of global domination is much more explicit than previously, its magnitude is concealed by the process labelled as misidentification by Edelman (2001). The time has come, the authors suggest, for those in the 'developed' world to make a choice, to accept hegemony or to challenge it in the name of survival.

INTRODUCTION

In an earlier paper, one of the authors (Johns 2007) set out an argument about the impact of tourism on sentencing policy and practice. The conclusion was that cases involving tourists were being influenced by the desire to minimise the economic consequences, and as a result western tourists were being offered status privileges. Thus a form of tiered justice was in operation. This chapter seeks to extend that analysis in a number of ways.

While sentencing remains important, and the arguments presented in that earlier paper will be reprised here, the idea is to open up tourism *per se* as an issue. In addition a new direction for this status-based analysis will be taken centring on the anti-terrorism measures adopted since the attack on the Twin Towers in 2001. It is apparent that significant freedoms have been lost and that many more are under threat. Furthermore, these attacks are presently directed at certain communities more than others. While tourism arguably affords

(predominantly) white westerners privileges, anti-terror policies undermine the status of black and minority ethnic visitors (BME) to the west as well as BME citizens.

There are certain parameters for the chapter that need to be made clear. Where tourism and anti-terror (or if Chomsky is correct, terror) policies are discussed The UK and United States form the bulk of the comparisons drawn. As well as establishing parameters we also need to make some qualifications. It might be expected that the chapter should look quite explicitly at the question of terrorism directed at tourists, but despite the apparent impact on tourism of terrorist activity (Greenbaum and Hulquist 2006), this is not the focus here. However, the fluctuating nature of status embodied in these different areas of policy and economic activity conceals a common feature which is a global form of institutionalised racism.

It is useful to set this into some form of conceptual framework, so in order to do this we will refer to the work of Edelman (2001) and his notion of misidentification, and by referring to a specific model of neo-colonialism. While tourism is viewed as merely an economic issue, anti-terror is portrayed as a simple matter of security. To allow the perception to remain that these are seemingly disparate aspects of global trade and policy is to implicitly accept the currently unequal distribution of power and resources they sustain.

SENTENCING AND TOURISM

The argument presented in the paper mentioned above (Johns 2007) drew attention to the reality that in some instances criminal trials are influenced by economic pressures. The example used to illustrate this was the case of UK tourist Kate Horton who was murdered on New Years Eve 2006 while walking along a beach in Thailand. The murder was particularly disturbing as she was dragged off the beach, beaten and raped and then hauled out into the ocean to drown. At the time of the attack she was on the phone to her mother.

Unsurprisingly, the case received a huge amount of news coverage and highlighted similar cases that had previously occurred in Thailand. The Commonwealth and Foreign Office in Britain was criticised at the time for not giving these cases a higher priority on their website. Though they denied that economic considerations influenced their advice, this was not widely accepted in the media (*The Daily Mail* 2006).

The justice process in Thailand subsequently went into overdrive and two fishermen were arrested in a matter of days. The case was quickly brought to trial and attracted the attention of the then prime minister (eventually deposed in a military coup) who insisted that the men should receive the death penalty in order to protect the tourist industry (Berger 2006). The trial was completed in a fraction of the time a murder case would ordinarily require in Thailand and the presiding judge acceded to the request of the prime minister by sentencing the men to death; despite the guilty plea lodged and the cooperation of the men with the local police. The judge underlined the importance of protecting the tourist industry from the potential lost revenue. The appeal was also fast tracked.

Evaluating this through the lens of conventional sentencing theory, Johns (2007) observed that justice was not the driving force of the decision. Although the prime minister suggested it was motivated by *lex talionis* (or an eye for an eye) in fact it was designed to

reduce crime. The purpose was to deter indigenous people from committing crimes against tourists, as well as to reassure those tourists that Thailand was a safe place to visit.

Certain aspects of the Thai criminal justice system had already been adapted to the specific needs of tourists. A specialist police unit was set up during the 1980s (Cohen 1986, 1987) and this has also been done in other parts of the world (Barker 1998). However, while this was a specific and transparent policy, allowing some form of scrutiny and public debate, sentencing in arbitrary ways on the basis of shifting circumstances is more problematic. Ultimately, the conclusion was that the real utility was economic, and that was mainly about securing the advantages of the social elite, rather than the wider majority. In the process – drawing on the literature debating the value of hate crime laws passed in the United States and the United Kingdom – white westerners were obtaining status privileges.

This then implies a two tier justice system disadvantaging indigenous people. On the one hand because they do not receive the same level of protection as western visitors, but also because they are more likely to be persecuted when crimes occur. Those arrested for the murder of Kate Horton in 2006 May well have been guilty but the possibility of mistakes and therefore injustices to occur must have been enhanced where the existing legal processes are accelerated to this degree.

EXTENDING THE ANALYSIS: TOURISM AS COLONIALISM?

Having shown one problem with tourism to less well-developed countries, it is now necessary to extend this analysis and think about the place of tourism in terms of relations internationally. There has been consistently strong support for tourism on the grounds of economics and cultural growth and exchange. From a sociological and anthropological perspective this has generally emerged from within a broadly symbolic interactionist approach. Tourism is thought to be transformative and anti-structural, with the potential to reform identities and lifestyles, moving different peoples towards an overarching humanity (Gottlieb 1982; Graburn 1983; Jafari 1987). For tourists the benefits are vital because they use their travelling to overcome a sense of dislocation and alienation, they have the opportunity to reconstruct their self-images in the context of liberating, unfamiliar environments (Crompton 1979; Pearce and Caltabiano 1983; Cohen and Taylor 1992).

The post-modern literature goes even further than this and – depending on who you read – maintains that tourism is eradicating ethnic and nationalist boundaries (Rojek 1993). It is also more democratic, as travel has become more affordable and diverse and new destinations have become available. Urry (2002) has claimed that tourism is more than just a consumer issue, travelling for leisure is now about rights and is a marker of citizenship.

As implied in the section above, the benefit for tourist countries, especially less developed countries is predominantly economic. Despite the terror attacks and the link between terror and Islamic countries, international tourism is a significant and growing industry. Indeed many parts of the world are reliant on tourism for their economic survival. During 2001 arrivals exceeded 690 million (World Trade Organisation 2002). This might be said to have a unifying effect in the sense of cultural exchange asdescribed above, but also in creating a degree of economic convergence.

Yet both the democratisation and unifying nature of tourism can be challenged. From the perspective of tourists, there is a developing literature which suggests that BME individuals from within the west are excluded from this tourist experience (Stephenson and Hughes 2005). Not only is this mediated by the perceptions, or the 'white gaze,' of fellow tourists but also by those of host populations. Therefore, the benefits for tourists might realistically be conceived as less readily available to BME citizens of the west than their white counterparts.

In terms of the unifying nature of tourism, we would argue particularly where it is trained on less developed parts of the world, that in fact it can be considered a part of a modern colonialism. In what ways might this be demonstrated? Even where tourists operate in accordance with traditional package holidays to 'developing' nations there is a tendency for this to have a repressive outcome. The desire to sustain tourism provides an incentive to preserve traditional ways of life, limiting the ability of certain peoples to make the most of modern advances. It arguably turns visited countries into living theme parks for the consumption of westerners.

Conversely, another aspect of colonialism derives from the displacement of local cultures. This is the product of what Mowforth and Munt (1998) have referred to as the mass industrial nature of modern tourism which is governed by Fordist principles. Not only does it function on large flows of people, but it is increasingly controlled by fewer and fewer operators (generally owned by western interests, highlighting potential problems with the notion of economic convergence posited earlier). On the flip side, tourists develop a 'collection' mentality which means they have little real interest in the visited environment, require rapid movement between different areas and visit places to add them to their experiential collection.

The accompanying issue is environmental, as the United Nations Environmental Programme has warned 'conventional' tourism has enormous implications for less developed countries. Pollution, soil erosion, loss of natural habitats and heightened pressure on endangered species are all listed as potential problems relating to what others refer to as mass tourism. Additionally it is claimed that tourism places a strain on internal relations, raising further questions about the unifying power of tourism, as local communities are pitted against one another for material resources (United Nations Environmental Programme 2008). Ultimately, from an environmental point of view we might have to do what Chomsky (2003) suggests and make a choice between hegemony and survival as the reality of global warming is now widely accepted and the role of air travel is underlined (Joint Science Academies 2005). In the short term though it appears that, again, certain people will disproportionately pay the price for western tourism and these appear to be those in less developed countries: 'It is clear that many of the world's poorest people are likely to suffer the most from climate change' (Joint Science Academies 2005:1).

Hampton (2003) reporting on research conducted in Yogyakarta, Indonesia, suggests that the problems of mass tourism might be avoided if less developed countries focused on eco-tourism or backpackers. On the basis of his evidence he claims that the old perceptions of backpackers has changed and that they are more cultured and behave more appropriately. He charts the growth of a small suburb of the city as an informal development providing accommodation and food to backpackers. This received little or no official assistance, but has improved the quality of life for the residents, and this is in no small part because the economic benefits accrue directly to local people. If governments in less developed countries

were to invest in this kind of tourism, bottom-up and locally sourced, tourism itself would be less problematic and more rewarding.

This makes a good deal of sense, particularly in terms of locally determined policy and the retention of economic control. However, there are some questions that remain unanswered about the potential for 'glocalised' tourism (Airriess 2001). Whether this would provide any incentive to social elites is doubtful, as they would by definition be losing some degree of economic power. Their desire to invest would therefore be arguably minimal. In making his case Hampton cites Bird (1989: 55) who asserts: 'Already, it is obvious that the needs of the local people are not a prime consideration of the country's decision-makers when it comes to tourism development'. In doing so he probably outlines the biggest hurdle to the promotion of locally driven tourism. Furthermore, the relationship between mass and local tourism is not fully articulated. The local provision for backpackers grew up in the shadow of the mass tourist trade - does this mean that it is simply a by-product? Or, in other areas has backpacking opened up areas for the mass industry? According to research by Noy (2002) with Israeli backpackers, there is a narration of experiences between individuals that promotes imitation and emulation. This seemingly creates an imperative for backpackers to share in the narrative by following in the story-tellers' footsteps. Thus we see one of the mechanisms that might drive the vanguard for mass tourism. It seems unlikely that this 'new tourism' could operate independently.

The description of backpacking also seems to be idealised. While it was based in some evidence this was not extensive. The depiction of this section of travellers in popular fiction does not equate with the lonely planet type characters described by Hampton. In *The Beach*, the backpackers were portrayed as bored middle-class young people desperate to go further and experience more than their compatriots. It was as experientially as collective as package tourism. Of course, this is a fictional account, but it does not stretch the point too far to suggest that backpackers are not as benign as Hampton claims. Certainly the evidence appears to be that backpacking is becoming increasingly part of the mainstream (O'Reilly 2006). Indeed Uriely *et al*. (2002) consider backpacking to be a form rather than a distinct type of tourism.

Finally, his work is based solely on economic premises, that tourism of a certain type is a positive thing for less developed countries. This starts from a definitively westernised perspective. Could it be that the people of Yogya would actually prefer to determine their own means of living and their own cultural heritage without having to engage with western imposition at all? The need to operate within a capitalist framework is thrust upon them therefore they will surely be better off having access to an income where that has been made a necessity. Would they actively prefer not to be subject to globalisation or even glocalisation at all? This is not a topic considered in the paper. While Hampton might be correct, there remain many unanswered questions.

But whether he is right or not, the reality is that mass tourism is the driving force and it has substantial social, cultural, economic and environmental implications that echo the territorial colonialism from the 17th century onwards. Arguably the contentions of Minn-Ha (1994: 22) seem apposite: 'For cultures whose expansion and dominance were intimately dependent upon the colonial enterprise, travelling as part of a system of foreign investment by metropolitan powers has largely been a form of culture-collecting aimed at world hegemony'. Tourism is just one aspect of an updated colonialism with a global form of institutional

racism at its heart. Another aspect, we will argue here is the so-called 'war on terror'. It is to this and its associated status implications that we now turn.

THE WAR ON TERROR: EXTERNAL AND INTERNAL CONTROL

The 'War on terror' was launched in the wake of the attack on the Twin Towers on September 11th 2001. It is a campaign that has drawn in mainly countries of the west, but also American allies from less developed countries. On a practical level it involves actions that span military, political, legal, religious and personal activities. It was officially authorised by Congress under the Authorization for the use of military force against terrorists measures on the 18th September 2001.

This has reintroduced an explicitly territorial aspect to Western colonialism, in that targeted countries – to date Afghanistan and Iraq – have been subject to invasion and occupation. The purpose of pre-emptive strikes has been subject to extensive speculation and debate. But it is clear that keeping a presence in these countries, whether for oil or for strategic military objectives, is a key western priority. As Sivanandan (2007) has stressed this is about external control and further underlines the different status of white western peoples when compared to those from developing countries.

The domestic measures taken also reflect the institutionalised racism which creates the corresponding status deductions for BME citizens of the west. In the United States there have been several measures since 2001. The establishment of the Department of Homeland Security and the Terrorist Information and Prevention System are key issues, but we want to focus here on the Patriot Act.

Of course the legislation has implications for control and an attack on civil liberties far beyond the experiences of specific groups. The notion that political opposition to government policy on the part of political groups and activists could amount to an unlawful act, along with the increased access to personal information is a serious cause for concern (Zedner 2005). However, the act does allow the Attorney General to incarcerate noncitizens on nothing more than suspicion, and prevent them from entering the US where they might be expected to engage in certain types of speech (even where that is permitted by the 1st amendment to the constitution).

It is only too apparent that this will have implications not only for noncitizens but also citizens from certain ethnic backgrounds. And it appears that this in fact the case. American citizens with Middle Eastern origins are being harassed and detained disproportionately under these provisions (Vidal 2002). Hence, just as (principally white) western tourists are being given status privileges, BME citizens are seeing a reduction in their status as a result of anti-terror initiatives.

There have been explicit calls for this approach to be formalised. Satchell (2002) documents a call for security checks at US airports to reflect European methods where people are profiled by 'race', ethnicity and other characteristics. Rather than an egalitarian model run on the basis of averages, 'high-risk' groups should be targeted. This was floated as a means of easing the burden on security staff, of making the lives of 'low risk' passengers easier and placing more pressure on terrorists. Civil liberties were mentioned, and the potential for terrorists to recruit western accomplices as well as the failures of systems that do operate on

these principles. What was not considered was the impact on innocent noncitizens, the international political ramifications of profiling, and the knock-on effects for US citizens from specific backgrounds. In this respect the 'race' effects of the 'war on terror' nicely complements the 'war on drugs'.

Indeed in certain parts of the world anti-terror measures appear to have been designed to, or at least interpreted as, a means of disciplining and controlling indigenous peoples. In New Zealand in October 2007 a police commissioner ordered raids on the Tuhoe community of Maoris in Whakatane (Lewis 2007). Heavily armed tactical response teams set up road blocks, searched vehicles and photographed residents. In total twelve people were arrested but none were charged. The Queen's Counsel appointed to defend those arrested accused the police of organising and publicising the raids in such a way as to create a connection between the targeted tribe and terrorism in the minds of the public. The Solicitor-General argued that on the basis of these raids and his inability to charge any of the suspects, the anti-terror legislation should be redrafted to make it more coherent.

A similar situation is unfolding in the UK also. We have seen detention without trial (the government wanted indefinite detention until the courts ruled it illegal) and replacement legislation, which means that people can be held under control orders rather than being brought to trial. Torture may not have been sanctioned but evidence obtained by it was to be ruled admissible in court at one stage.

We have seen demands that would reshape the nature of criminal justice in Britain:

- The abolition of juries in certain cases
- Closed sessions for terrorist cases
- Lower standards of proof
- A reduction of the right to silence
- More invasive and secretive methods of evidence collection

As we will see in just a moment, all of these measures have precedence in parts of the criminal justice system which once operated in Northern Ireland and which also had dubious validity and chequered outcomes.

On the streets we have seen stop and search stepped up for certain communities – young Asian men in particular. Measures available under the Terrorism Act 2000 have enabled 'racial' profiling to occur, as black people and 'Asians' were four times more likely to be stopped in 2003 under these measures than their white counterparts according to Home Office statistics (Home Office 2004). If the Institute for Race Relations is correct a more realistic figure is around twelve times the likelihood of being stopped for these groups (Dodd 2005). The powers themselves are not supposed to be used to target particular groups or communities but this is qualified in the following way:

> There may be circumstances, however, where it is appropriate for officers to take account of a person's ethnic origin in selecting persons to be stopped in response to a specific terrorist threat (for example, some international terrorist groups are associated with particular ethnic identities) (Kundnani 2006).

Muslims are named and consequently have been subject to the disproportionate rise already mentioned (even though they are a religious rather than ethnic group).

Furthermore, though the powers were geographically and temporally limited (48 hours) and required ministerial authority and oversight, in practice the Metropolitan Police Service have been issued with rolling authorisation (Kundnani 2006). An analysis of the efficacy of these measures reveals not a single conviction for terror-related activity, and the subsequent justification that they act as a deterrent runs counter to their original purpose which was intelligence-driven targeted campaigns (Kundnani 2006). The permanent renewal of these powers, which require no suspicion for their evocation, only became public during a court case in 2003. The desire to conceal anti-terror policies has been consistently identified.

In this vein we have seen the establishment of covert shoot-to-kill policies (which only properly came to light with the killing of Jean Charles de Menezes on the London underground). Furthermore, Muslim journalists have been arrested for reporting on terrorist activities and accused of aiding and abetting terrorism (Hillyard 2005).

It has reached the point where criminal justice professionals, as per the New Zealand case discussed earlier, are now calling for some sense and restraint. The Director of Public Prosecutions in January 2007 said that we were in danger of abandoning due process and the concept of a fair trial. He maintained that the focus should be on criminal acts and using the criminal justice system accordingly rather than emphasising terror and using the system inappropriately.

> London is not a battlefield. Those innocents who were murdered on July 7 2005 were not victims of war. And the men who killed them were not, as in their vanity they claimed on their ludicrous videos, 'soldiers'. They were deluded, narcissistic inadequates. They were criminals. They were fantasists. We need to be very clear about this. On the streets of London, there is no such thing as a 'war on terror', just as there can be no such thing as a 'war on drugs.

He was clear about the reason for this view: ‘We must protect ourselves from these atrocious crimes without abandoning our traditions of freedom.’ Just as the Patriot Act in the United States has the potential to shut down any political dissent, so too do the measures under the Terrorism Act 2000 and the 2006 amendment, as the measures highlighted above have been employed to target legitimate (non-terrorist-related) protests (Kundnani 2006). The tiered approach to justice which mirrors that of tourist-influenced justice in developing countries may be a component in a modern form of colonialism, but it has far-reaching effects and implications for western societies *per se*, as a brief review of recent British history underlines

TIERED JUSTICE?

To reiterate the central theme of this chapter then, one of the outcomes of this globalised racism is that justice systems are revised or overridden entirely. The consistent function of this is to provide white western citizens with status privileges.

Developing countries are providing westerners with status privileges as tourists in order to protect the economic benefits attached to tourism. As we have seen, and as was stated previously (Johns 2007), these benefits often bypass the majority of the indigenous populace and so they are being asked to accept secondary protection from their justice systems, and, the possibility of persecution at the hands of those who are supposed to protect them.

In the west we have seen a constant encroachment on civil liberties in the name of security. These measures have been designed to reduce opposition to government policy and to make people easier to control. Furthermore, they allow certain minority communities to be targeted (Lewis 2007), and internationally this has arguably taken the form of a thinly veiled crusade against Islam.

The dangers of tiered justice have been ably outlined by Hillyard (2005) in recounting the problems the British faced in Northern Ireland. He begins by itemising the ways in which justice was overridden:

- Internment
- torture
- targeted stop and search
- a reduction of the freedom of expression
- a two-tiered criminal justice system
- non-accountability

He then argues that not only did this provide no political room for resolution of the conflict, but that it actually corrupted the entire criminal justice system (the right to silence provisions were extended into British legislation via the Criminal Justice and Public Order Act 1994). Similarly Donovan (2005) in comparing the cases of the Irish community in the UK during the 1970s with that of the modern Muslim community records that under the Prevention of Terrorism Act 1974 between 1974 and 1991, 7,052 people were detained, with 86% subsequently released without charge. ‘So far as the Irish community were concerned, the message was clear: merely to be Irish was to arouse suspicion’ (Donovan 2005: 18). This is the situation currently occupied by members of the Muslim community in the UK. Between 2001 and 2004, 609 arrests were made of Muslim suspects under anti-terror legislation. Of these 99 were charged and only 15 were finally convicted.

Not only does this have a detrimental effect on social relations between different ethnic groups, and between those targeted and the state, but it has implications for the efficacy of justice systems. To work effectively justice requires assent and co-operation from the general population and it is apparent that trust and support is being squandered amongst those disproportionately effected.

> When a community draws in on itself, that is bad news. For the few terrorists who may be plotting bomb outrages, there is likely to be far more opportunity to hide, and the feeling of collective isolation and threat will foster sympathy where there may have been none. When that happens, both community relations and the drive to prevent terrorism are damaged (Donovan 2005: 18).

Furthermore, as both authors note, once justice is undermined for a select few, there is generally a creep for the rest of the society:

> The conclusion that `people like us' have nothing to fear from security measures may thus be born of a naive failure of imagination. To posit our loved ones or ourselves as possible subjects of security measures is no abstract act of jurisprudential conjecture. Rather, it is the stark, self- interested recognition that where measures are defined so as to capture every

> instance of political protest, we too might find ourselves subject to the very provisions whose introduction we approved (Zedner 2005: 515).

Justice itself becomes arbitrary (Vidal 2002). Zedner (2005) argues that the Anti-Terrorism Crime and Security Act 2001 was created with a deliberately vague definition of its targets to allow a wide range of people to be vulnerable to its provisions.

Of course these developments reflect the global context in which justice on a global scale has been all but abandoned by America and allies such as the UK. Not only are countries subject to invasion and occupation with questionable motives and without international sanction, but individuals are incarcerated in Guantanamo Bay on the basis of suspicion, essentially cast away in a legal wilderness (Vidal 2002). Again these features of justice or the absence of justice impact more on some people than others. The status of white western citizens, although subject to attack (particularly those declaring political opposition it might be assumed), is substantially safer than that of people from minority ethnic communities in the west and those in less developed countries. Once the principle is established however the question is: for how much longer?

MISIDENTIFICATION

The institutionalised form of racism we have discussed here is difficult to identify much less address because it forms part of a larger problem. Tourism and terrorism are treated as if they were separate concerns in policy terms, but as we have discussed so far this may be due to the desire to obscure their common elements.

In fact they are subject to what Edelman (2001) has labelled misidentification. This effectively constitutes a policy operated by social elites to deflect attention away from the essential injustice of society in order to prevent radical reform. So crimes against tourists are defined as problems from within the indigenous population, and the solution is simply that they need to be deterred from targeting tourists. The nature of tourism, and the question of whether it is a positive and sustainable industry, is never fully debated. The problems with tourism as we have set out above are seldom explored because that would require more far-reaching discussions about global wealth distribution and some adjustment of behaviour from people in the west.

The issue of terror is another problem that is only discussed at a certain level. On the whole it is set out as a calculated attack on the way of life, and in particular, the freedoms enjoyed in the west (Huntington 1997; Coker 2001). The underlying religious and economic tensions and the part the policies of the west play in those tensions are ignored or more generally revised out of existence (Hoodbhoy 2005; Poynting and Mason 2007). Furthermore, the war on terror simply stimulates more violence, and this is enhanced where countries like Iraq had no part to play in the attacks directed at the United States.

The principal misidentification though is that these seemingly disparate areas of policy are actually part of the same problem. They emerge from an institutionally racist view of the world and the economic agenda that spawns it. At times the truth does emerge, for instance the warning served by Hazel Blears then Home Office minister to the British Muslim community that they should expect to be subject to targeted stop and search campaigns. She

quickly backtracked however and claimed that she had been misrepresented (Branigan 2007). The essence of misidentification is:

> …the adoption and strengthening of policies that serve the interests of the elite and maintain or enlarge the inequalities that give rise to the problem in the first place. In this sense this phenomenon is another example of the creation of a "problem" to justify actions (policies, solutions) that a group already favours and from which it will benefit (Edelman 2001: 68).

Essentially it is a remix of the imperialism of the nineteenth century, whereby the social elite sustain their relative position and create a gap between their own populace and those in the developing world to reinforce that position. The underlying message, to put it colloquially is this: you are inadequate and inferior, and consequently deserving of your relative impoverishment, but at least you are less inadequate and inferior than those in less developed parts of the world.

But the truth for countries like Britain is that this neo-colonial imperialism is actually driven by the United States. Thus another misidentification, that although there are benefits for states like the UK in acting as Airstrip One (Orwell 1978), ultimately they are reserved from the US and then only for a small minority – the 'good men' not the beasts to be tamed (Chomsky 2003). The history of American imperialism has spanned the post war period (Chomsky 2003), what has been different since 2002 is the openness with which this is being pursued, including territorial colonialism. Ralph Peters, a retired army officer responsible for conceptualizing future warfare in the Office of the Deputy Chief of Staff for Intelligence, is clear about the interlocking forms of this new imperialism:

> We have entered an age of constant conflict. We are entering a new American century, in which we will become still wealthier, culturally more lethal, and increasingly powerful. We will excite hatreds without precedent.
>
> There will be no peace. At any given moment for the rest of our lifetimes, there will be multiple conflicts in mutating forms around the globe. The de facto role of the US armed forces will be to keep the world safe for our economy and open to our cultural assault. To those ends, we will do a fair amount of killing (Peters 1997, cited in Hoodbhoy 2005: 889).

Consequently Vidal (2002: 158-159) has said:

> Although we regularly stigmatize other societies as rogue states, we ourselves have become the largest rogue state of all. We honor no treaties. We spurn international courts. We strike unilaterally wherever we choose. We give orders to the United Nations but do not pay our dues. We complain of terrorism, yet our empire is now the greatest terrorist of all.

As we are all seemingly Americans now - as subjects if nothing more - it would appear essential that we do as Chomsky (2002) has suggested and attack this hegemony in the interests of the very survival of our species.

CONCLUSION

This chapter sought to explore the status effects of tourism and terrorism for the developing world and for minority ethnic groups within the west. The conclusion is twofold. First, that tourism and terrorism policies are two aspects of a holistic policy agenda – dominance of the west (directed by the United States) and colonialism expressed in different forms. Second, that this colonialism is part of the economic elitism that operates to maintain and reinforce material and economic inequalities. When we use Edelman's (2001) concept of misidentification we can see not only the connections but also the reason for the connection. Ultimately, the vital thing is that the social and economic elites maintain their status and wealth and that those in less advantaged positions rarely question the justice of the situation.

The problem for those seeking to maintain their power though is that injustice always generates the conditions for its challenge. As Callinocos (2001) has argued in relation to inequality, the recognition of inequality will always provoke dissatisfaction and the possibility of change. This then is the paradox: injustice always breeds the desire for justice and this is as true of the status issues that revolve around terror and tourism as with anything else. As human beings we have an obligation to challenge the current status quo for, as Benjamin Franklin once said: 'Those who would sacrifice essential liberties for a little temporary safety deserve neither liberty nor safety' (Wulf *et al.* 2003: 434).

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Chapter 5

CAUSAL RELATIONS AMONG TOURISM DEVELOPMENT, EXCHANGE RATE, EXPORTS AND ECONOMIC ACTIVITY

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ABSTRACT

This chapter investigates the causal relations among tourism development, exchange rate, exports and economic growth within four Asian tourist destinations- China, Singapore, South Korea and Taiwan. These markets are examined through a multivariate framework of Granger causality tests, and, while some results support previous studies of tourism-led economic growth, the findings primarily lend support to the conclusion of Kim et al. (2006) that mixed results regarding the existence of tourism-led economic growth may be due to the level of openness of an economy, travel restrictions, and the size of the national economy, as measured by population and gross domestic product. This chapter also reveals that the ability of tourism expansion to energize economic growth is dependent upon the degree to which a country's economic development is dependent upon tourism. Moreover, unlike the previous studies, the present research incorporates and examines the impact of various tourism-related mega events, such as the 1997–98 Asian financial crisis, the September 11 terrorist attacks in the US and the outbreak of severe acute respiratory syndrome (SARS) in 2003, on tourism development, economic activity, exchange rates and exports in the various tourist destinations. Along the way, the paper documents the crucial role of exchange rates in contributing to the national economy, tourism, and exports. Finally, export growth is found to significantly promote tourism expansion in all four Asian tourist destinations. This finding suggests that a promising direction for future research in tourism development will be to focus on the causality between "tourism and exports" rather than between "economic and tourism growth."

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Keywords: tourism development; economic activity; exchange rate; exports; causality.

1. INTRODUCTION

It is well known that tourist receipts, an alternative form of exports and services, can contribute to the balance of payments through foreign exchange earnings (Mishkin and Eakins, 2003). McKinnon (1964) noted that foreign exchange earnings from international tourism could be utilized to import capital goods for the production of goods and services, which in turn triggers the growth of the national economy. Tourism activity can also generate economic benefits, such as tax revenues, increased employment, and additional sources of income (Archer, 1995; Avelini Holjevac, 2003; Thea Sinclair, 1998; West, 1993). Dritsakis (2004) further stated that tourism also influenced the cultural sector by improving living standards of people, cultural standards, facilities, and the fiscal sector via the beneficial effects of tourism on overall national economy. Consequently, tourism has been widely promoted in many countries as part of the solution to their economic problems.

Because of the crucial role of the tourism industry in the world economy, the positive impact of tourism development on a nation's economy is commonly assumed. However, Papatheodorou (1999) has pointed out that economists have not paid much attention to empirical investigation of the impact of tourism development on a nation's economy. A vast amount of economic research has been conducted on the causal link between trade and economic growth. In comparison, only a few research papers have examined the relationship between tourism and economic growth. Balaguer and Cantavella-Jorda (2002) proposed a tourism-led growth hypothesis that tourism plays as a major role in national long-run economic growth. Marin (1992) argued that tourism-led growth could happen when tourism acts as a stimulating factor across the overall economy in the form of spillovers and other externalities.

Balaguer and Cantavella-Jorda (2002) tested the tourism-led growth hypothesis stating that the tourism sector played a key role in the development of the Spanish economy. Results of co-integration and causality tests supported the hypothesis by showing a long-term relationship between tourism and economic growth and a one-way causality running from tourism activity to economic growth. Additionally, Dritsakis (2004) examined whether tourism could serve as a long-run economic growth factor in Greece. He showed that there existed a relationship between tourism and economic growth and a two-way causality between the two variables. Kim, Chen and Jang (2006) found similar results to that of Dritsakis (2004) with Taiwanese data. Kim et al. (2006) also detected a long-run link and a two-way causality between tourism expansion and economic development in Taiwan.

However, not every study supports the hypothesis that tourism expansion can lead to economic growth. Oh (2005) reported no long-run link between tourism and economic growth in South Korea, and found a one-way causality running from economic growth to tourism development. Because of mixed findings on a causal relationship between the two factors, Kim et al. (2006) and Oh (2005) recommended more vigorous research on this issue for the purpose of generalization. Therefore, the first goal of this chapter is to make such a contribution. The second goal aims to examine the causality between tourism and exchange rate as well as between tourism and export growth because there are also very few empirical

studies analyzing these issues. Consequently, this chapter investigates the casual relationship among tourism development, exchange rate, exports and economic growth using data from four Asian tourist destinations, including China, Singapore, South Korea and Taiwan. Results from the examination of South Korea and Taiwan can offer a comparative investigation on the empirical relationship between tourism expansion and economic growth found in Oh (2005) and Kim et al. (2006).

Further, two popular Asian tourist destinations, Singapore and particularly China, provide us two unique cases to conduct research on the interactions among tourism development, exchange rate, exports and economic growth. The China National Tourism Administration (2002) reported that China ranked fifth in terms of the number of international tourists traveling to China (31.24 million), and seventh in terms of the tourism receipts (16.23 billion in US dollars) in the world in 2000. Avelini Holjevac (2003) predicted that Europe would have the lowest tourist growth rate, whereas East Asia and the Pacific would have the largest tourist growth rate according to the forecasts by World Tourism Organization (1997). Pizam (1999) believed that, by the year 2050, China would be one of four major tourist destinations.[12] On the other hand, China has also become one of the fastest growing economies in the world since its economic reform and opening up to the outside world in 1979 (Liu, Burridge, and Sinclair, 2002). Understanding the causal links among tourism development, exchange rate, exports and economic growth can provide important knowledge regarding development strategies for China and many other countries that may want to promote tourism as part of their national economic development plan.

Several issues along with the interactions between tourism development and economic growth are scrutinized in this chapter. First, when testing the tourism-led economic growth, Balaguer and Cantavella-Jorda (2002), Oh (2005) and Kim et al. (2006) used a bivariate analysis of the Granger causality test, which ignored the potential impact of exchange rates on the dynamic links between tourism expansion and economic growth. Dritsakis (2004) stated that studies based on bivariate analysis may suffer from specification error. Copeland (1991) argued that exchange rates play a crucial role in the contribution of tourism expansion to economic growth in a small open economy. Moreover, the exchange rate is universally used as one of the determinants of tourism demand and forecasting studies in the tourism literature. Dritsakis (2004) also found that foreign exchange rate had an impact on economic growth for Greece and its international tourism earnings. In this chapter, all empirical examinations along with the inclusion of the exchange rate factor based on a multivariate analysis of the Granger causality are performed.

Second, Singapore, South Korea and Taiwan have been commonly known for their export-oriented economy (Feenstra, Yang, and Hamilton, 1999; Ghartey, 1993; Jin, 1995; Sengupta and Espana, 1994; Wu and Eng, 1991). Nonetheless, Oh (2005) and Kim et al. (2006) did not consider the critical role of exports in both countries when they studied the causality between tourism expansion and economic development. Shan and Wilson (2001) contended that theoretically there exists a causal link between trade and travel and the causality could run in either or both directions. Without a doubt, tourism development in the host country can attract tourist arrivals and foreign tourists traveling to a host country can promote a positive image of the country for its goods and services all over the world. This in turn generates trade opportunities. In addition, trade between countries can also create

[12] India, Indonesia and Brazil are the other three countries.

subsequent travels to the destination country after the first visit. Greater trade consequently expands awareness of each country and hence tourism demand. Shan and Wilson (2001) further showed that there existed a two-way causality between exports and tourism growth. Therefore, the export factor, along with exchange rate, is incorporated into the examination.

Third, quarterly data predominated in previous research concerning tourism-led growth. Following Chen (1991), Estrella and Hardouvelis (1991), Miffre (2001), Shan and Wilson (2001) and Nakaota (2005), this chapter uses monthly industrial production (IP) to approximate economic growth. Note that economists usually use quarterly data on gross domestic product (GDP) to measure the quarterly value of the economy, while they use IP to measure monthly output of the economy (Shapiro, 1988). The advantage of using IP is that data are usually available on a monthly basis, which in turn can offer a more sufficient sample of observations. This is especially necessary as vector autoregression (VAR) requires a large sample size to generate sufficient degrees of freedom for estimation. Moreover, by using monthly data of tourist arrivals (TA) and IP, the findings can offer a comparative investigation of the causality between tourism and economic development in Korea and Taiwan. This is based on the fact that Kim et al. (2006) used quarterly GDP and TA, and Oh (2005) hired quarterly GDP and tourist receipts to perform the empirical test.

Lastly, the potential impact of some mega events related to the tourism industry in those four Asian tourist destinations is taken into consideration as well. For example, Chen, Kim and Kim (2007) reported that the outbreak of the Severe Acute Respiratory Syndrome (SARS) in 2003, the terrorist attacks of September 11, 2001 in the U.S., the 1997-98 Asian financial crisis and the earthquake on September 21, 1999 had a negative impact on the hotel and tourism industry in Taiwan. Similarly, Chen (2007) found that the SARS outbreak in China and the terrorist attacks in the U.S. negatively affected the Chinese hotel industry. Raab and Schwer (2003) further reported that the Asia financial crisis in 1997 had a destructive influence on Las Vegas Strip baccarat revenues. Most of empirical studies failed to take those mega-events into consideration when Granger causality tests were performed. Thus, when running the multivariate Granger causality tests, this chapter also utilizes dummy variables of mega events to control for possible influences of those forces on causal links among tourism development, exchange rate, exports and economic growth.

Note that although this chapter examines the dynamic interactions among four factors, the major focus is on the causal relationship between tourism development and the other three factors. Specifically, whether there is at least one-way causality between tourism development and economic growth (exchange rates or exports) is investigated. The following hypotheses are tested accordingly.

Hypothesis 1: Tourism-led economic (exchange rate or export) growth, i.e. a unidirectional causality, runs from tourism expansion to economic (exchange rate or export) growth.

Hypothesis 2: The economy-led (exchange rate-led or export-led) tourism development, i.e. a unidirectional causality, runs from economic (exchange rate or export) growth to tourism expansion.

Hypothesis 3: A bi-directional causality between tourism development and economic (exchange rate or export) growth exists. That is, they reinforce each other.

The remaining sections of this paper are structured as follows: Section two describes data and methodology. The Granger causality test and test results are presented in section three. Section four discusses major findings. The final section concludes the paper and provides some future research directions.

2. DATA AND METHODOLOGY

Total tourist arrivals (TA) are used as the proxy of tourism expansion (Kim et al., 2006; Shan and Wilson, 2001; Wang and Godbey, 1994). Taken from the Taiwan Economic Journal database, the monthly time series data of TA cover the period from July 1996 to July 2004 for China and from January 1979 to April 2005 for Taiwan. The monthly TA data over the period from January 1994 to May 2005 for Singapore and from January 1980 to January 2001 for South Korea were obtained from the Singapore Tourism Board and Korean National Tourism Organization, respectively. The choice of sample period for each country was considered for data availability.

Monthly data of industrial production (IP), exchange rate (EXCH) and export (EXP) for all four Asian tourist destinations were obtained from the Taiwan Economic Journal database and the selected time period was identical with that of TA for each destination. Table 1 presents the summary statistics of growth rates of IP, TA, EXCH and EXP for each tourist destination.

The methodology used to examine the causal relationship among tourism development, economic activity, exchange rates and exports follows three steps. First, the Augmented Dickey-Fuller (Dickey and Fuller, 1981) unit root test is performed to examine the stationarity (the degree of integration) of all variables in their natural logarithms. Second, a maximum likelihood approach developed by Johansen and Juselius (1990) is used to conduct the Vector Autoregression (VAR)-based cointegration test. Lastly, the direction of the causal link among four factors is investigated based on the Granger causality test in the next section. All monthly time series data of IP, TA and EXP are seasonally adjusted.

Results of the Augmented Dickey-Fuller unit root test are reported in Table 2. The terms *LIP*, *LTA*, *LEXCH*, and *LEXP* denote IP, TA, EXCH and EXP in their natural logarithms respectively. For China, test outcomes show that the null hypothesis of one unit root cannot be rejected for levels of *LIP*, *LTA* and *LEXP*, but is rejected for their first differences. Moreover, the null hypothesis is rejected for both level and first difference of *LEXCH*. That is, *LEXCH* are *I*(0), and *LIP*, *LTA* and *LEXP* are $I(1)$ for their levels; however, all variables are *I*(0) for their first differences. For the case of Singapore, it is found that *LTA* is *I*(0) and *LIP*, *LEXCH* and *LEXP* are $I(1)$ for their levels. All variables are *I*(0) for their first differences. In Korea and Taiwan, all four factors are $I(1)$ for their levels and *I*(0) for their first differences.

Based on the unit root test results, the Johansen cointegration techniques (Johansen, 1988 and1991; Johansen and Juselius, 1990) are then employed to test whether there exists a long-run equilibrium (cointegrating) relationship among tourism development, economic activity, exchange rates and exports in Korea and Taiwan. For cases of China and Singapore, *LIP*, *LTA*, *LEXCH*, and *LEXP* are of different integration orders and thus cannot be cointegrated.

Table 1. Summary statistics of growth rates of industrial production (IP), tourist arrivals (TA), exchange rates (EXCH) and exports (EXP)

Growth rates of IP (in percent)	Mean	Maximum	Minimum	Standard deviation
China	0.02	14.47	–16.47	3.70
Singapore	0.17	26.95	–27.81	5.02
South Korea	0.76	18.87	–12.37	3.12
Taiwan	0.48	34.37	–27.24	9.28
Growth rates of TA (in percent)	Mean	Maximum	Minimum	Standard deviation
China	–1.32	70.03	–252.26	66.82
Singapore	0.19	57.69	–101.19	14.32
South Korea	0.68	32.46	–36.15	11.65
Taiwan	0.17	99.27	–101.11	13.92
Growth rates of EXCH (in percent)	Mean	Maximum	Minimum	Standard deviation
China	–0.03	2.68	–0.36	0.29
Singapore	0.03	5.51	–7.15	1.65
South Korea	0.38	37.60	–16.57	3.55
Taiwan	–0.02	7.89	–6.78	1.38
Growth rates of EXP (in percent)	Mean	Maximum	Minimum	Standard deviation
China	1.44	36.12	–55.64	14.85
Singapore	.62	29.45	–26.18	9.93
South Korea	.98	231.29	–221.39	24.61
Taiwan	.80	35.27	–34.31	11.96

Table 2. Unit root tests

China	LIP	LTA	LEXCH	LEXP
ADF (level)	–2.46 (2)	–1.87 (2)	–21.63*** (2)	–.55 (2)
ADF (first difference)	–8.88*** (2)	–6.30*** (2)	–28.83*** (2)	–7.39*** (2)
Singapore	LIP	LTA	LEXCH	LEXP
ADF (level)	–.03 (4)	–3.83*** (4)	–.88 (4)	–1.27 (4)
ADF (first difference)	–7.70*** (4)	–7.80*** (4)	–5.67*** (4)	–5.78*** (4)
South Korea	LIP	LTA	LEXCH	LEXP
ADF (level)	–.65 (4)	–.43 (4)	–1.93 (4)	–2.06 (4)
ADF (first difference)	–8.38*** (4)	–10.85*** (4)	–7.34*** (4)	–13.53*** (4)
Taiwan	LIP	LTA	LEXCH	LEXP
China	LIP	LTA	LEXCH	LEXP
ADF (level)	–1.18 (4)	–2.05 (4)	–1.38 (4)	–2.00 (4)
ADF (first difference)	–11.48*** (4)	–11.84*** (4)	–6.34*** (4)	–11.01*** (4)

Note: The symbol *** indicate rejection of the null hypothesis of a unit root at the 1%, 5% and 10% level respectively, based on MacKinnon (1991) critical values. The ADF test equation includes an intercept but no time trend since the inclusion of a time trend generates no significantly different results. The optimal lags selected for the ADF tests, using the Akaike Information Criterion (AIC, Judge et al., 1985) and Schwartz Bayesian Criterion (SBC, Schwarz, 1978), are in parentheses.

According to the Johansen cointegration test, the number of significant cointegrating vectors is determined using two likelihood ratio test statistics, the trace statistic and the maximum eigenvalue statistic. Table 3 summarizes the Johansen test results of the cointegration among *LIP*, *LTA*, *LEXCH*, and *LEXP* in Korea and Taiwan. Both trace and maximum eigenvalue test statistics show that there are two cointegrating equations at the 1% level among four variables in Korea. For the case of Taiwan, trace test indicates one cointegrating equation at the 1% level and maximum eigenvalue test indicates two cointegrating equations at the 1% level among four factors. Thus, cointegration tests confirm a long-run equilibrium relationship among tourism development, economic activity, exchange rates and exports in Korea and Taiwan.

Table 3. Results of cointegration tests

Null hypothesis	Trace Statistic				Maximum Eigenvalue Statistic			
	$r = 0$	$r \leq 1$	$r \leq 2$	$r \leq 3$	$r = 0$	$r = 1$	$r = 2$	$r = 3$
South Korea (3)	86.73***	40.19***	4.78	0.48	46.54***	35.40***	4.30	0.48
Taiwan (3)	78.01***	28.60	2.96	0.88	49.41***	25.63***	2.08	0.88
CV 1	47.21	29.68	15.41	3.76	27.07	20.97	14.07	3.76
CV 2	54.46	35.65	20.04	6.65	32.24	25.52	18.63	6.65

Note: CV1 and CV2 represent Osterwald-Lenum (1992) critical values of trace and maximum eigenvalue tests for rejection of the hypothesis of no cointegration at 5% and 1% level, respectively. *** Significant at the 1% level. ** Significant at the 5% level.

3. CAUSALITY ANALYSES

3.1. Granger Causality Tests

When considering China and Singapore, the multi-variate analysis of a Granger-type test of causality is performed without considering the error-correction term since the four factors are of different integration orders and hence cannot be cointegrated. As mentioned, the dummy variables of mega events are included to control for the possible impact of those forces on the short-run dynamics of interactions among them. The test equations are described as in Eqs. (1)-(4):

$$\Delta LIP_t = a_1 + \sum_{i=1}^{n} b_{1i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{1i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{1i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{1i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{1i} Event_dum_j + v_{1t}, \quad (1)$$

$$\Delta LTA_t = a_2 + \sum_{i=1}^{n} b_{2i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{2i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{2i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{2i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{2i} Event_dum_j + v_{2t}, \quad (2)$$

$$\Delta LEXCH_t = a_3 + \sum_{i=1}^{n} b_{3i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{3i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{3i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{3i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{3i} Event_dum_j + v_{3t}, \quad (3)$$

$$\Delta LEXP_t = a_4 + \sum_{i=1}^{n} b_{4i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{4i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{4i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{4i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{4i} Event_dum_j + v_{4t}, \quad (4)$$

where α is the deterministic component, Δ is the difference operator, v denotes white noises, and *Event_dum* is the mega event dummy variable: *Event_dum* = D9798, the dummy variable of the Asian financial crisis (August 1997), *Event_dum* = D911, the dummy variable of the September 11 terrorist attacks in the US (September 2001), and *Event_dum* = DSARS, the dummy variable of the SARS outbreak (February 2003). The optimal lag *n* is selected based on the Akaike Information Criterion (Judge et al., 1985) and the Schwartz Bayesian criterion (Schwarz, 1978).

To identify the direction of the causality, statistics of the Wald test are computed under the null hypothesis that all the coefficients of b_i, c_i, d_i and γ_i in Eqs. (1)-(4) are equal to zero. Based on this channel (*first channel*), the evidence of causality is identified through short-run dynamics. The hypothesis of the tourism-led economic growth is supported, i.e. one-way causality from tourism development to economic growth $(\Delta LTA \Rightarrow \Delta LIP)$, if $c_{11} = c_{12} = ... = c_{1n} = 0$ is rejected. The hypothesis of economy-led tourism growth is accepted, i.e. one-way causality from economic growth to tourism expansion $(\Delta LIP \Rightarrow \Delta LTA)$, if $b_{21} = b_{22} = ... = b_{2n} = 0$ is rejected. There is a two-way causality between economic growth and tourism development $(\Delta LIP \Leftrightarrow \Delta LTA)$ if both $c_{11} = c_{12} = ... = c_{1n} = 0$ and $b_{21} = b_{22} = ... = b_{2n} = 0$ are rejected.

Similarly, the hypothesis of export-led tourism growth (a unidirectional causality from exports to tourism development, $\Delta LEXP \Rightarrow \Delta LTA$) is found if $\gamma_{21} = \gamma_{22} = ... = \gamma_{2n} = 0$ is rejected. The hypothesis of tourism-led export growth (a unidirectional causality from tourism development to export growth, $\Delta LTA \Rightarrow \Delta LEXP$) is confirmed if $c_{41} = c_{42} = ... = c_{4n} = 0$ is rejected. There exists a bi-directional causality between the two factors $(\Delta LEXP \Leftrightarrow \Delta LTA)$ if both $\gamma_{21} = \gamma_{22} = ... = \gamma_{2n} = 0$ and $c_{41} = c_{42} = ... = c_{4n} = 0$ are rejected.

To determine the direction of causation among the four variables in Korea and Taiwan, Granger causality tests augmented with an appropriate error-correction term derived from the cointegrating relationship among tourism development, economic activity, exchange rates and exports are given as follows:

$$\Delta LIP_t = a_1 + \eta_1 ect_{t-1} + \sum_{i=1}^{n} b_{1i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{1i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{1i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{1i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{1i} Event_dum_j + v_{1t}, \quad (5)$$

$$\Delta LTA_t = a_2 + \eta_2 ect_{t-1} + \sum_{i=1}^{n} b_{2i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{2i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{2i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{2i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{2i} Event_dum_j + v_{2t}, \quad (6)$$

$$\Delta LEXCH_t = a_3 + \eta_3 ect_{t-1} + \sum_{i=1}^{n} b_{3i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{3i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{3i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{3i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{3i} Event_dum_j + v_{3t}, \quad (7)$$

$$\Delta LEXP_t = a_4 + \eta_4 ect_{t-1} + \sum_{i=1}^{n} b_{4i}\Delta LIP_{t-i} + \sum_{i=1}^{n} c_{4i}\Delta LTA_{t-i} + \sum_{i=1}^{n} d_{4i}\Delta LEXCH_{t-i} + \sum_{i=1}^{n} \gamma_{4i}\Delta LEXP_{t-i} + \sum_{j=1}^{m} \theta_{4i} Event_dum_j + v_{4t}, \quad (8)$$

where ect is the error-correction term derived from the cointegrating equation among *LIP*, *LTA*, *LEXCH* and *LEXP*, and *Event_dum* is the mega event dummy variable: *Event_dum* = D9798, the dummy variable of the Asian financial crisis (August 1997), *Event_dum* = D921, the dummy variable of the September 21 earthquake in Taiwan (September 1999), *Event_dum* = D911, the dummy variable of the September 11 terrorist attacks in the US (September 2001), and *Event_dum* = DSARS, the dummy variable of the SARS outbreak (April 2003).

In addition to the Wald test mentioned above (i.e. *first channel*), the direction of the causality in the vector error-correction model can be identified through another channel (*second channel*), which is through the lagged error-correction term or the disequilibrium mechanism (Granger, 1988). If the error-correction terms in Eqs. (5)-(8) are statistically significant, it is said that independent variables Granger-cause the dependent variable. For instance, if η_1 is significantly different from zero in Eq. (5), independent variables ΔLTA, $\Delta LEXCH$ and $\Delta LEXP$ Granger cause dependent variable ΔLIP ($\Delta LTA \Rightarrow \Delta LIP$, $\Delta LEXCH \Rightarrow \Delta LIP$ and $\Delta LEXP \Rightarrow \Delta LIP$). In the same way, ΔLIP, $\Delta LEXCH$ and $\Delta LEXP$ Granger cause ΔLTA ($\Delta LIP \Rightarrow \Delta LTA$, $\Delta LEXCH \Rightarrow \Delta LTA$ and $\Delta LEXP \Rightarrow \Delta LTA$) if $\eta_2 \neq 0$ in Eq. (6).

3.2. Causality Test Results

Because the four variables in China are of different integration orders and thus cannot be cointegrated, the causality can be identified only through the first channel using the Wald test. Results of the Granger causality test for the case of China are reported in Table 4. It is found that the null hypothesis regarding no causality from export growth ($\Delta LEXP$) to economic development (ΔLIP) is rejected at the 1% significance level and the null hypothesis concerning no causality from $\Delta LEXP$ to tourism expansion (ΔLTA) is also rejected at the 10% significance level. That is, there is a one-way causality from $\Delta LEXP$ to ΔLIP and a one-way causality from $\Delta LEXP$ to ΔLTA.

Table 4. Results of Granger causality tests: China

Dependent variable	Wald test statistic [*p*-value]				*t*-test (*t*-statistic)		
	ΔLIP	ΔLTA	$\Delta LEXCH$	$\Delta LEXP$	D9798	D911	DSARS
ΔLIP	---	.23 [.63]	2.49 [.12]	7.58 [.01]***	.01 (.34)	.01 (.31)	–.01 (–.54)
ΔLTA	.05 [.83]	---	.05 [.83]	2.92 [.09]*	.02 (.07)	–.00 (–.01)	–.42 (–2.35)**
$\Delta LEXCH$	.00 [.98]	.11 [.74]	---	3.77 [.05]**	–.00 (–.20)	–.00 (–.01)	–.00 (–.22)
$\Delta LEXP$	.56 [.45]	.00 [.98]	4.50 [.04]**	---	.04 (.77)	.02 (.21)	.00 (.09)

Note: *** Significant at the 1% level. ** Significant at the 5% level. * Significant at the 10% level.

In addition, a two-way causality between $\Delta LEXP$ and $\Delta LEXCH$ is detected. Both the tourism-led economic growth and the economy-led tourism development are not found in China. Among three mega events, the SARS outbreak in 2001 was found to have a significantly negative impact on tourism expansion ΔLTA.

Similarly for Singapore, the causality is tested through the first channel only since the four factors are of different integration orders and cannot be cointegrated. The Granger causality test results in Table 5 show that both ΔLTA and $\Delta LEXP$ can Granger-cause ΔLIP. Empirical results also support a unidirectional causality running from $\Delta LEXP$ to ΔLTA, from ΔLTA to $\Delta LEXCH$, and from $\Delta LEXCH$ to $\Delta LEXP$. Further, $\Delta LEXCH$ was significantly affected by the Asian financial crisis.

For Korea, the causality among the four factors can be identified either through the first channel based on the Wald test or through the second channel (i.e. through the lagged error-correction term). This because the four variables are of the same integration orders and cointegrated. Table 6 presents results of causality tests, Wald test statistics, *t*-statistics on error-correction terms, and the dummy variables of mega events.

Table 5. Results of Granger causality tests: Singapore

Dependent variable	Wald test statistic [*p*-value]				*t*-test (*t*-statistic)		
	ΔLIP	ΔLTA	$\Delta LEXCH$	$\Delta LEXP$	D9798	D911	DSARS
ΔLIP	---	22.52 [.00]***	2.75 [.43]	6.00 [.10]*	.01 (.96)	–.01 (–1.04)	.00 (.01)
ΔLTA	0.03 [.99]	---	2.68 [.44]	12.44 [.01]***	–.02 (–.33)	–.07 (–1.08)	–1.11 (–1.45)
$\Delta LEXCH$	1.96 [.58]	7.04 [.07]*	---	.89 [.83]	.03 (2.37)**	.02 (1.67)	.01 (.84)
$\Delta LEXP$	.18 [.98]	4.44 [.22]	7.59 [.06]*	---	–.05 (–1.28)	.00 (.10)	–.01 (–.23)

Note: *** Significant at the 1% level. ** Significant at the 5% level. * Significant at the 10% level.

Table 6. Results of Granger causality tests: South Korea

Dependent variable	Wald test statistic [*p*-value]				*t*-test (*t*-statistic)	
	ΔLIP	ΔLTA	$\Delta LEXCH$	$\Delta LEXP$	ect_{t-1}	D9798
ΔLIP	---	.21 [.65]	5.21 [.02]**	.20 [.65]	–.02 (–.93)	–.01 (–1.40)
ΔLTA	.64 [.42]	---	.04 [.85]	3.97 [.05]**	–.09 (–2.16)**	–.00 (–.06)
$\Delta LEXCH$	5.58 [.02]**	2.07 [.15]	---	.47 [.49]	.03 (1.19)	.02 (1.70)
$\Delta LEXP$	0.53 [.47]	5.83 [.02]**	.20 [.66]	---	.96 (8.78)***	.11 (2.42)**

Note: *** Significant at the 1% level. ** Significant at the 5% level. * Significant at the 10% level.

Test results illustrate that a bi-directional causality between $\Delta LEXCH$ and ΔLIP exists through the first channel and a bi-directional causality between $\Delta LEXP$ and ΔLTA is identified through both the first and second channels.

Moreover, a unidirectional causality runs from ΔLIP to ΔLTA, from $\Delta LEXCH$ to ΔLTA, from ΔLIP to $\Delta LEXP$, and from $\Delta LEXCH$ to $\Delta LEXP$ via the second channel. Hence, the Asian financial crisis had a beneficial impact on export growth $\Delta LEXP$.

Similar to the case of Korea, for Taiwan both channels are used to test the direction of causality among the four factors since the four variables are also of the same integration orders and cointegrated. Test results in Table 7 reveal that a one-way causality from ΔLTA to ΔLIP exists via the first channel, and a one-way causality from ΔLIP to ΔLTA by both channels. That is, there is a bi-directional causality between ΔLTA and ΔLIP. There also exist a one-way causality from $\Delta LEXP$ to ΔLIP, a one-way causality from ΔLIP to $\Delta LEXCH$, and a one-way causality from $\Delta LEXP$ to $\Delta LEXCH$ according to the first channel. Through both channels, a one-way causality from $\Delta LEXCH$ to ΔLTA and a one-way causality from $\Delta LEXP$ to ΔLTA were identified.

Table 7. Results of Granger causality tests: Taiwan

Dependent variable	Wald test statistic [*p*-value]					*t*-test (*t*-statistic)			
	ΔLIP	ΔLTA	$\Delta LEXCH$	$\Delta LEXP$	ect_{t-1}	D9798	D921	D911	DSARS
ΔLIP	---	22.50 [.00]***	.72 [.70]	17.32 [.00]***	–.01 (–1.52)	–.00 (–.04)	–.03 (–.53)	.03 (.48)	.00 (.14)
ΔLTA	13.05 [.01]***	---	5.57 [.06]*	6.75 [.03]**	–.07 (–10.39)***	–.07 (–1.13)	–.19 (–3.11)***	–.08 (–1.31)	–1.00 (–15.40)***
$\Delta LEXCH$	10.14 [.01]***	.50 [.78]	---	4.61 [.10]*	.00 (.88)	.01 (1.21)	–.00 (–.02)	–.00 (–.06)	.00 (.12)
$\Delta LEXP$	3.23 [.20]	2.41 [.30]	.84 [.66]	---	.00 (.38)	–.00 (–.06)	.01 (.14)	.05 (.66)	.01 (.14)

Note: *** Significant at the 1% level. ** Significant at the 5% level. * Significant at the 10% level.

Of all four mega events, both the earthquake on September 21, 1999 and the SARS outbreak in 2003 were found to significantly damage tourism development in Taiwan. The 911 terrorist attacks in the U.S. also had a negative impact on tourism expansion, but the effect was not statistically significant.

4. DISCUSSION AND POLICY IMPLICATIONS

This chapter examines the causal relationship among tourism development, economic activity, exchange rates and exports in China, Singapore, Korea and Taiwan. Results of this research effort are based on a multivariate analysis of the Granger causality test, which also incorporated mega events related to the tourism industry in those four Asian tourist destinations. The main goal concentrates on the causality between tourism development and the other three factors as mentioned above. Results of the causality test from four tourist destinations are summarized in Table 8. The major findings, which both support and contradict empirical findings in the literature, are discussed below.

Table 8. Summary of causality among ΔLIP, ΔLTA, $\Delta LEXCH$ and $\Delta LEXP$

	China	Singapore	Korea	Taiwan
$\Delta LTA \Rightarrow \Delta LIP$	No	Yes	No	Yes
$\Delta LEXCH \Rightarrow \Delta LIP$	No	No	Yes	No
$\Delta LEXP \Rightarrow \Delta LIP$	Yes	Yes	No	Yes
$\Delta LIP \Rightarrow \Delta LTA$	No	No	Yes	Yes
$\Delta LEXCH \Rightarrow \Delta LTA$	No	No	Yes	Yes
$\Delta LEXP \Rightarrow \Delta LTA$	Yes	Yes	Yes	Yes
$\Delta LIP \Rightarrow \Delta LEXCH$	No	No	Yes	Yes
$\Delta LTA \Rightarrow \Delta LEXCH$	No	Yes	No	No
$\Delta LEXP \Rightarrow \Delta LEXCH$	Yes	No	No	Yes
$\Delta LIP \Rightarrow \Delta LEXP$	No	No	Yes	No
$\Delta LTA \Rightarrow \Delta LEXP$	No	No	Yes	No
$\Delta LEXCH \Rightarrow \Delta LEXP$	Yes	Yes	Yes	No

Note: $\Delta LTA \Rightarrow \Delta LIP$ denotes ΔLTA can Granger cause ΔLIP.

While there is no long-run link between quarterly tourism receipts and economic growth in Korea (Oh, 2005), an equilibrium relationship among monthly tourism development, economic activity, exchange rates and exports in Korea is found. Causality test results in this chapter are similar to findings by Oh (2005) and Kim et al. (2006). That is, Korea has an economy-led tourism growth rather than a tourism-led economic growth, and a reciprocal link between tourism expansion and economic growth in Taiwan. Empirical results also indicate that for Singapore, tourism development leads to economic growth, but economic growth cannot cause tourism expansion. Also, there is no casual relationship between the two factors in China.

Kim et al. (2006) asserted that the mixed results regarding the existence of the tourism-led economic growth in Taiwan but not in Korea could be attributed to 1) level of openness and travel restriction and 2) size of a national economy in destination countries. The empirical findings of this chapter suggesting that tourism development can promote economic growth in Singapore but not in China seems to support their explanations. Zhang, Pine and Lam (2005) further indicated that tourism was not regarded as a business or industry after the People's Republic was established in 1949. Instead, tourism served the purpose of special political activities and was considered to be an aspect of the foreign affairs of the country. It was not until 1978 that tourism was regarded as an economic activity that can contribute to the national economy through foreign exchange earnings.

In comparison, Teo (1994) stated that technological improvements in transportation and communication after 1965 promoted Singapore's tourism. In Singapore, tourism was welcomed and viewed as a means to create much-needed employment in a newly-independent nation (Chang and Yeoh, 1999; Yeoh, Ser, Wang and Wong, 2002). Toh and Low (1999) stated that the establishment of the Singapore Tourist Promotion Board in 1964 shows that the government recognizes the significance of the tourism industry to Singapore's economic and planning agenda. Therefore, as Kim et al. (2006) claimed, a country like Singapore with a more open society is more likely to promote tourism and enhance economic growth.

Kim et al. (2006) argued that the world demand for tourism would have a favorable impact on the long-run growth of a small economy. They used per capita GDP and population to measure the size (big or small) of an economy, and concluded that Taiwan exhibits tourism-led economic growth because of its relatively small economy compared to Korea. To check if their explanation is reasonable, annual data of per capita GDP, population, and GDP from 1997 to 2005 for all four countries are summarized in Table 9. Given that tourism-led economic growth exists only in Singapore and Taiwan, it seems to be more appropriate to measure the size of economy in terms of population and GDP, but not in terms of per capita GDP since per capita GDP in China and Korea is less than in Singapore and Taiwan.

In addition, the degree of dependence of economic development on tourism may be another possible answer to whether tourism development can lift economic growth. Oh (2005) stated that value-added revenue derived from tourism-related activities accounts for 3.5 % of South Korea's gross domestic product (GDP), and Kim et al. (2006) reported that tourism receipts accounted for 4.2% of the Taiwanese GDP in 1996.

Table 9. Summary statistics of per capita GDP, population and GDP

Per capita GDP (in US$)	China	Singapore	Korea	Taiwan
1997	774	25269	11237	13904
1998	821	21009	7477	12679
1999	865	20910	6549	13609
2000	949	23078	10888	14519
2001	1042	20723	10178	13093
2002	1135	21209	11485	13163
2003	1274	22155	12707	13327
2004	1490	25352	14161	14271
2005	1714	26833	16306	15291

Population (in million)	China	Singapore	Korea	Taiwan
1997	1230.9	3.8	46.0	21.6
1998	1241.8	3.9	46.3	21.8
1999	1252.4	4.0	68.0	22.0
2000	1262.8	4.0	47.0	22.1
2001	1271.4	4.1	47.4	22.3
2002	1280.9	4.2	47.6	22.4
2003	1288.1	4.2	47.8	22.5
2004	1296.4	4.2	48.1	22.6
2005	1303.6	4.4	48.3	22.7
GDP (in billion US$)	China	Singapore	Korea	Taiwan
1997	952.7	95.9	516.4	300.0
1998	1019.5	82.4	346.1	276.1
1999	1083.3	82.60	445.2	298.8
2000	1198.4	92.7	511.8	321.2
2001	1324.8	85.6	482.0	291.7
2002	1453.8	88.5	546.9	294.8
2003	1641.0	92.7	608.0	299.8
2004	1931.6	107.5	680.9	322.2
2005	2234.3	116.8	787.5	346.4

Data source: Directorate-General of Budget, Accounting and Statistics, Executive Yuan, ROC. http://www.dgbas.gov.tw/ct.asp?xItem=15609&ctNode=3572.

The reason that tourism-led economic growth was found in Taiwan but not in Korea may be due to Taiwan's higher degree of dependence of economic development for tourism. To further validate our conjecture, the corresponding percentage of tourism receipts accounting for the national GDP in China and Singapore is computed.[13] Over a ten-year period from 1990 to 2000, it is found that tourism receipts accounted for about 0.6% of the Chinese GDP in 1990 and 1.4% in 2000 with an average rate of 1.1%. In comparison, the ratio of tourism receipts to GDP in Singapore is about 10.7% in 1990, 12.5% in 1991, 12.2% in 1992, 6.6% in 2000 with an average ratio for a ten-year period of 9.2%. Given the above information, Singapore compared to China, apparently exhibits a much higher dependence of economic development for tourism. This finding may explain the existence of tourism-led economic growth in Singapore, but not in China.

Test results also support Copeland's (1991) argument that exchange rates can act as an important factor in the contribution of tourism expansion for economic development in a small open economy. This is in line with the findings of Dritsakis (2004). He suggested that foreign exchange rate can influence economic growth and tourism expansion. Specifically, it is found that foreign exchange rate can contribute to both economic and tourism growth in a small open economy like Korea. In another small open economy, such as Taiwan, changes in the foreign exchange rate can also cause tourism expansion. Foreign exchange rate plays an important factor in export development for China, Singapore and Korea as well.

[13] Data of tourism receipts are taken from China National Tourist Office (http://www.cnto.org/chinastats.asp) and Singapore Tourism Board (http://app.stb.com.sg). GDP data are obtained from TEJ database.

From another perspective, Shan and Wilson (2001) declared that the causal relationship between trade and tourism could run in either or both directions and detected a two-way causality between trade and tourism growth in China. Empirical outcomes in this chapter reveal a one-way causal link between exports and tourism when another two factors, economic activity and exchange rate, are incorporated into the investigation. A unidirectional causality running from export growth to tourism development is found not only in China, but also in Singapore, Korea and Taiwan. In other words, advances in exports can promote tourism development in all four countries. However, tourism expansion can reinforce export growth only in Korea. Indeed, the export-led tourism growth hypothesis is the only one identified in all four Asian tourist destinations. Compared with the mixed results regarding the economy-led tourism development and the tourism-led economic growth in different countries, the support of the export-led tourism growth in all four Asian tourist destinations is considered as the most consistent and promising finding in this chapter.

Lastly, this chapter evaluates the impact of some tourism-related mega events, which were reported to significantly damage the hospitality and tourism industry in East Asia. These events are analyzed in relation to the four variables based on the VAR or VECM framework when running the multivariate Granger causality tests. For China, the SARS outbreak in 2003 did not only harm the hotel industry (Chen, 2007), but did hurt tourism expansion. The SARS outbreak in 2003, the September 11 terrorist attacks in the U.S., the Asian financial crisis and the September 21 earthquake in 1999 were reported to inflict severe damage on the Taiwanese hotel and tourism industry (Chen et al., 2005; Chen et al., 2007). Additionally, the SARS outbreak and the September 21 earthquake deteriorated tourism development on the island country. It is also found that the Asian financial crisis considerably increased export growth in Korea and depreciated the national currency in Singapore. Furthermore, the September 11 terrorist attacks in the U.S. initiated a negative impact on the growth of foreign tourist arrivals to Asian tourist destinations, but the destructive influence was not statistically significant.

CONCLUSION AND FUTURE RESEARCH DIRECTION

Despite the belief that tourism development will positively affect a national economy, not many studies have empirically examined a causal relationship between tourism and economic growth. What's more, empirical findings based on previous studies suggested the need for continuous inspections of the relationship between tourism and economic growth using various destination countries for the purpose of generalization. There also exists very few academic papers in the tourism research literature investigating the causality between tourism and exchange rate and between tourism and exports. This chapter contributes to tourism development research by examining the casual relationship among tourism development, exchange rate, exports and economic growth using data from four Asian tourist destinations, namely China, Singapore, South Korea and Taiwan, based on a multivariate analysis of the Granger causality.

Cointegration tests show the presence of a long-run relationship among four factors in Korea and Taiwan. Results of causality analyses between tourism and economic growth demonstrate that tourism development can serve as an “engine” of economic growth in

Singapore and Taiwan, but cannot lead to economic growth in China and Korea. In other words, this chapter still obtains mixed results regarding the tourism-led economic growth hypothesis. Moreover, economic growth can enhance tourism expansion in Korea and Taiwan, but no economy-led tourism development exists in China and Singapore.

Nonetheless, our causality test results further validate the argument by Kim et al. (2006) that mixed results regarding the existence of tourism-led economic growth may be due to the level of openness, travel restrictions, and the size of a national economy in the destination countries. However, empirical outcomes based on this chapter suggest that it may be more suitable to measure the size of an economy in terms of population and GDP rather than per capita GDP. Whether tourism expansion can boost economic growth also relies on a country's degree of dependence of economic development on tourism. Moreover, exchange rate plays a crucial role in contributing to the national economy, tourism and exports is identified in this chapter as well. Particularly, exchange rates act as a significant growth factor of tourism development in Korea and Taiwan, and reinforce export growth in China, Singapore and Korea. Among three factors (tourism, exchange rate and exports) in Korea, it is found that the exchange rates actually play the most important role in improving the national economy.

Different from previous empirical work, this chapter incorporates tourism-related mega events, such as the Asian financial crisis, the earthquake and the SARS outbreak, into the analysis and evaluates their impact on tourism development, economic activity, exchange rates and exports in China, Singapore, Korea and Taiwan. It is observed that the SARS outbreak in 2003 damaged tourism development in both China and Taiwan. In addition to the SARS outbreak, the 921 earthquake also injured Taiwanese tourism expansion. The Asian financial crisis is found to have a significant effect on export growth in Korea as well as the exchange rate in Singapore. The 911 terrorist attacks also damaged tourism expansion in all four Asian tourist destinations, although the negative impact was not statistically significant.

Finally, although the theory and empirical evidence suggest a strong link between tourism and economic growth, the direction of the causality between the two factors is still under debate due to the mixed empirical results regarding economy-led tourism development and tourism-led economic growth from various countries. In comparison, this chapter provides a promising future research direction for the tourism development research area. Instead of investigating the direction of the causality between economic and tourism growth, this chapter finds that examining the casual relationship between tourism and exports may offer a more consistent and generalized conclusion. Causality test results reveal that export growth can robustly strengthen tourism expansion, i.e. the existence of export-led tourism growth, in all four Asian tourist destinations.

However, it is worth noting that empirical findings in this chapter should be interpreted with caution. For example, data from China and Singapore are only available over a limited nine-year and twelve-year period, respectively. Moreover, the support of export-led tourism growth in China, Singapore, South Korea and Taiwan could be due to the export-oriented economy in those four countries. In other words, whether the export-led tourism growth can be found only in those countries characterized by the export-oriented economy deserves further exploration.

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Chapter 6

THE DEVELOPMENT OF MINING HERITAGE TOURISM: A SYSTEMIC APPROACH

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ABSTRACT

The link between heritage and tourism is a strategic field of study to examine and analyse the development of mining heritage tourism. Traditionally, research into heritage tourism chiefly focuses on analysing aspects such as management and consumption, and little concern is shown for the emergence and development of heritage until it becomes a resource for tourism. Studies about heritage do not emphasise its importance for tourism or its value as a communication tool between people and heritage. The process of heritagisation and tourism development must be tackled simultaneously. Heritage and tourism are not two links in a causal chronological chain; in the majority of cases, they are two facets of the same strategies. Therefore, integrating considerations of heritage and tourism will help to clarify the nature of certain elements and factors that contribute to the development of mining heritage tourism.

Ethnographic methods and graph theory have been used in this paper as a research strategy to study (and subsequently compare) the cases of five declining mining areas in Andalusia, Spain. Analysis revealed the clearly inextricable nature of heritage and tourism. Both dimensions appear in each case study without a clear definition of where one ends and the other begins. The results highlight the recursive relationship between heritage and tourism: not only does heritage favour tourism, but tourism can also favour heritage. Hence consumption, business, local politics and social identities appear as highly complex and profoundly interwoven aspects that affect the development of mining heritage tourism. This study allows for a conceptualisation of the viability and sustainability of mining heritage tourism beyond the traditional economic viewpoint.

INTRODUCTION[14]

The link between heritage and tourism is a strategic field of study to examine and analyse the development of heritage tourism. Nuryanti claims that "the complexities and tensions between heritage and tourism have not been the focus of many studies, and the lack of explicit linkage of multidisciplinary theories is a major limitation in advancing understanding on this theme." (1996:258).

Research into heritage tourism largely focuses on analysing aspects such as management and consumption. In this respect, considerable progress has been made in terms of understanding its many dimensions. Richards (1996) points out the conjunction of product and processes. Several researchers have worked on tourists' reinterpretations, perceptions, experiences and motivations, as well as the individual and cultural dimensions of consumption (Beeho and Prentice 1996; Chronis 2005; McIntosh and Prentice 1999; Nuryanti 1996; Prentice, Witt and Hamer 1998). The effects of heritage tourism on the identity of tourists has also been successfully reported (Chronis 2005; Palmer 1999, 2005; Pretes 2003; Stebbins 1997), as has the integration of a supply and demand focus through the analysis of authenticity (Apostolakis 2003). From a strategic perspective, Aas, Ladkin and Fletcher (2005) and Hampton (2005) noted the opportunity for collaborative and participative planning in relation to the management of heritage tourism. However, little concern is shown for the emergence and development of heritage until it becomes a resource for tourism.

In addition, studies about heritage do not emphasise its importance for tourism and its value as a communication tool between people and heritage. Indeed, heritage studies tend to focus almost exclusively on the undesired, perverse, mystifying or even alienating characteristics of heritage when it is converted into a tourist resource affecting both social and cultural functioning (Boissevain 1996; Chambers 1997; Prats 1997; Smith 1989; Valcuende 2003). If the presence of tourism is not analysed in depth as a major factor in understanding heritage management and consumption in the contemporary world, it will be difficult to gain a comprehensive understanding of the importance of heritage.

It is widely accepted that tourism is a highly dynamic phenomenon, but heritage also has a socio-political nature marked by an extraordinary dynamism (Hufford 1994; Jeudy 1990; Kirshenblatt-Gimblett 1998; Lowental 1995). What is or is not heritage is subject to much debate, far beyond the idea of heritage as an achieved state. This dynamism occurs during the process known as heritagisation, referring to the means by which certain phenomenon achieve 'heritage' status. In this chapter, heritagisation is understood as the process through which objects, installations, buildings, infrastructure, activities, and even behaviour, rituals and forms of sociability, and the places where all these phenomena occur, become heritage.

The processes of heritagisation and tourism development must be tackled simultaneously. Heritage and tourism are not two links in a causal chronological chain; in the majority of cases, they are two facets of the same strategies. Therefore, integrating considerations of heritage and tourism will help to clarify the nature and origin of certain elements and factors that contribute to the development of heritage tourism.

[14] This research was carried out with the support of Andalusia's Department of Culture through the project entitled "Interventions in mining heritage in Andalusia: analysis of heritagisation processes in the provinces of Huelva, Seville, Jaén, Granada and Almería" and as part of the I+D Project "Environmental recreations in relation to cultural and nature tourism in Andalusia: local actors, economic agents, government and tourists" (SEJ2004-06161).

The aim of this chapter is not to establish a simple causal link between heritagisation and tourism development, but rather to take a more recursive, systemic and integrated methodological approach (Morin 1990). Therefore, this research paper examines heritagisation processes and tourism development jointly. This will enable a framework to be created with a view to analysing the following: the cultural and the tourist uses of heritage; the interrelation between local identities, heritagisation and tourism development; relationships between hosts and tourists with respect to the same objects (basically tourist for some and cultural for others); and the viability and sustainability of heritage tourism beyond mere economic considerations.

This viewpoint requires a broader perspective of the actors involved in the processes that affect the tourist industry, and emphasises the vital role played by owners and custodians of the heritage in the development of heritage tourism (Peters 1999). Together with the State and the Market, the people who are culturally linked to heritage have a great deal to say and do in this matter, something that is better understood in terms of resistance, from the initial concept of a tactic to a full blown strategy (De Certau 1990:43). This perspective has been used recently — though indirectly — to help understand culture and heritage tourism (Brown 1999; Kirtsohlou and Theodossopoulos 2004; Morales and Mysyk 2004; Pretes 2002). The approach developed in this paper intertwines the processes of group identification, local politics and the viability of the tourist business. This chapter attempts to demonstrate the advantages of systemic integration in the study of heritagisation and tourism development using ethnographic methodology and Graphs Theory. The aim is twofold: to explore the association between heritage and tourism from a dynamic point of view, and in doing so, to consider conditions for the development of heritage tourism.

The study of tourism development and heritagisation processes in mining areas clearly illustrates the shortcomings of the treatment of heritage tourism described above. It seems that deactivated mining regions claim to recover their heritage and put it forward as a resource for tourism in order to favour alternative economic development when the mines are in crisis or no longer in use (Balcar and Pearce 1996; Chon and Evans 1989; Clarrke *et al.* 2001; Dicks 2000; Escalera, Ruiz and Valcuende 1995; Harris 1989; Hewison 1987; Wanhill 2000). However, the social and cultural dimensions of mining heritagisation and the effects of mining heritage tourism on identity are rarely researched (Dicks 2000). Therefore, it is hardly surprising that one of the recurrent problems for mining heritage tourism is the limited employment generated by the tourist industry in these mining areas; parallel to this is a certain feeling of contempt towards the effect of the heritagisation process on social life (cf. Edwards and Llurdés 1996:359). At the same time, studies that stress the social and cultural dimensions of heritagisation in mining areas skirt around the consequences of its potential tourist exploitation (Escalera, Ruiz and Valcuende 1995; Ruiz 1999b; Ruiz and Iglesias 1999). Hence, it is logical to suppose that mining areas in crisis, immersed in potential processes of heritagisation and tourism development, are an ideal field to examine the theoretical approaches as indicated above.

CONTEXT AND METHODOLOGY

From the mid 19th Century to the late 20th Century, Andalusia was an important region in Spain's mining industry. Today, practically the whole of this industry has now been dismantled. In addition, Andalusia has been the most popular tourist destination in Spain since the 1960s. The region's tourism industry has been based fundamentally on 'sun and sand' packages, but new consumption trends have sparked the large-scale development of cultural and heritage tourism.

The social and economic crises experienced by these mining areas and the need to find alternatives for their continuity[15] have contributed to the development of heritage initiatives. On one hand, such initiatives protect the trace remains of mining activity and, on the other hand, facilitate the emergence of new economic activities through an incipient tourism venture. Although these processes have been rather late and modest in comparison to other European areas (Edwards and Llurdés 1996), at present they are gaining importance in both mining and rural areas (Aguilar 2002). Throughout the 1990s, various initiatives were implemented in this respect, making it possible to construct a framework to study the links between heritagisation and tourism development in greater depth. This analytical suitability is based firstly on the reference to a unique kind of heritage (mining) and secondly on the significant differences observed between the processes and casuistry of heritagisation and tourism development in each specific region of Andalusia.



Figure 1. Location.

[15] The characteristics of Andalusian mining areas in decline have greatly limited the search for economic alternatives when the mines are closed down. These areas have traditionally exported raw material and have very little industrial development *in situ*. The enclave nature of these areas also impedes communication and accessibility. Furthermore, the international situation and economic trends in Europe have hindered their reindustrialisation, which is made even more difficult by the peripheral location of Spain and Andalusia. Few viable alternatives have emerged to overcome this crisis.

There has been a major player in the development of tourism and heritagisation processes in Andalusian mining areas: the State. This State leadership hinges on two key factors. The first is national and regional legislation for the protection of historical and cultural heritage, which encourages the declaration of all major cultural elements as heritage assets. Mines have been a favourite context for such cultural policies. The second factor relates to the fact that both the central Spanish Government and the Regional Government of Andalusia prioritise the development of the tourism industry and therefore devote large portions of regional, national and European budgets to this aspect. Tourism is one of the main economic sectors in this region of Spain — 21.5 million visitors in 2006 (Consejería de Turismo 2007) — and prospects for social and economic development largely rest with this industry. Similarly, cultural policies emphasise the protection of heritage in general and specifically of the mining industry. These two focuses coincide in the heart of Andalusia's mining regions.

This study examines five mining areas in the south of Spain: Villanueva del Río y Minas (Seville), Alquife (Granada), Las Menas (Almería), Linares (Jaén) and Riotinto (Huelva). These cases were chosen as a qualitative sample that encompasses the industrial, geographical, historical and social variety of mining in Andalusia. The selection of these specific towns was guided by two fundamental concerns. Firstly, because all of them offer remains and landscapes that are characteristic of mining activity (underground and surface mines, mining facilities, towns, workshops, offices, transport infrastructure), as well as intangible elements (ways of working, rituals, expressions of sociability, memory…); in other words, a compendium that reflects the most important aspects of mining culture in Andalusia (Ruiz 1999a). All these cultural elements could become heritage if the corresponding social process of "heritagisation" (Hernández and Ruiz 2005) were to take place. Secondly, because there is significant variation in several aspects: the type of mining carried out in these areas, their evolution, the socio-economic situation of the town, the status of conservation work carried out or interventions in relation to mining heritage, as well as the development of mining heritage tourism (see Table 1).

All these circumstances ensure a reasonable balance between homogeneity and heterogeneity when comparing cases and for the eventual extrapolation of conclusions in relation to other types of industrial heritage tourism.

This study follows a basically qualitative methodology and fieldwork was carried out throughout 2004 and completed by February 2005. In each of the areas, the process of mining heritagisation and the development of heritage tourism were studied. By consulting available documentation and conducting in-depth interviews with the key participants in these processes, we have been able to reconstruct, analyse and compare the different heritage tourism development initiatives. A detailed study was carried out of the heritage available in each area, tourist attractions, such as heritage projects and specific tourism developments. The local political context of each area was studied in depth to reveal the institutional, organisational and individual agents that were most important to the processes analysed here. Subsequently, the relevant civil associations were studied and in-depth interviews were carried out with people who are strongly involved in heritagisation and tourism in each mining town (sixty semi-structured interviews using a guided script were recorded and transcribed). After processing all the data, analysis of the heritagisation processes was achieved by means of an exhaustive study of all the information available. Finally, a specific ethnography (Palmer 2001) was drawn up for the tourist destinations.

Table 1. Main features of the areas studied

	Villanueva	Alquife	Las Menas	Linares	Riotinto
Population 2006	5,217	788	2,422	61,452	4,401
variation 1996-2006	-12.3%	-22.5%	-11.6%	+2%	-15.5%
Proximity to other tourist destinations and access to the town	Seville (42 km), near the Sierra Norte Natural Park. Good road and rail access.	Granada (80 km), near the Sierra Nevada Natural Park and ski resort. Good road access.	The coast of Almería (60 km). Roads recently improved.	Close to Úbeda and Baeza (30 km), cities that have been declared Heritage World Sites. Good road access.	Seville (90 km), near the Aracena Natural Park. Good road access.
Type of mining	Coal, underground and surface mining.	Iron, surface.	Iron, underground mining.	Lead, underground.	Copper, gold, silver. Underground and surface mining
Mine closure	1973	1996	1968	1991	1995/2001
Mining heritage and location	Unique buildings, mining facilities. Round the outskirts of the town.	Mining facilities, town and pit on the outskirts of the town.	Mining facilities, town and pit. 15 km from the town.	Remains of mining sites dotted around the township, railway stations.	Opencasts, former industrial installations, viewing points, mining railway, archaeological remains. All around the town.
Public heritage declaration	Declared an Historic Area, 2002.	No declaration has been made and there are no protection measures in place.	Partial collective declaration, 2004.	Partial collective declaration, 2004.	Declared an Historic Area, 2006.
Heritage property	Municipal.	Private.	Public/private.	Private.	Private.
	Villanueva	Alquife	Las Menas	Linares	Riotinto
Availability of tourist infrastructure and products	Non-existent.	Non-existent.	Aparthotel and campsite in the mining town. Poorly signposted pathway.	Mining education centre (opening 2008), network of pathways, illumination of mining remains.	Mining Park, hotels, Museum, tourist railway, British quarter.
Tours or tourist activities organised and control of visits	There are no tourist activities organised and visits are not controlled.	The company that owns the facilities does not allow visits. It selectively manages tours for visitors it deems appropriate (visits by schools and specialists).	There are no tourist activities organised and visits are not controlled. Guided tour services are offered at the hotel.	There are no tourist activities organised and visits are not controlled. Guided tours are offered by individuals and institutions.	Fully developed tourist product, with visits organised by the Fundación Río Tinto.

In order to do this, participant observation was chosen as the main technical resource, including visits to tourist settings accompanying tourists and members of the different local societies examined. This strategy was deemed to be the most appropriate way of ascertaining the real meaning of mining heritage and its use in tourism. Even though the research objectives were clearly homogeneous, we tried to apply a versatile technique in each mining area, paying close attention to any intrinsic differences as well as the different levels of heritagisation and tourism development.

HERITAGISATION AND TOURISM DEVELOPMENT IN ANDALUSIAN MINING AREAS

Analysis of heritagisation processes and tourism development in the five mining areas studied is based around six key factors. The first is the role of the State[16] as an active agent in the creation of infrastructure for tourism, heritage renovation and also in the official declaration of mining areas and their installations as heritage assets or sites. The second factor is the ownership — private or public — of the industrial mining remains, which helps or hinders its change of use (from mining to heritage and/or tourism). The third is the level of plundering and deterioration of the mining remains, which significantly affects the possibility of renovating these elements for possible use in tourism and/or heritage. The fourth is the importance of everything connected with mining in local symbolic imagery and local politics, in other words, in the process of symbolic construction of the community (Cohen 1985). In this respect, the degree to which locals identify with an area's mining past is extremely important. The conflicts and debates sparked by the heritagisation and conversion of the mining area into a tourist setting are also significant. All of this is undoubtedly linked with expectations of continuity or reopening of the mine and the stances adopted by trade unions and civil organisations. The fifth factor, the presence and interest of the private sector in either heritagisation or tourism development, determines different potentials in the processes that are analysed. The sixth and final factor is the degree of development of an alternative wider economic and productive framework in the region studied. Tourism and heritagisation will be tightly interwoven with the social and economic vitality of the areas in which they will be developed. A brief — but hopefully illuminating — overview of the heritagisation process and tourism development in each area studied is provided below in relation to these six factors.

1.- Villanueva del Río y Minas. The coalmines were closed down in 1973. Since then, an acute process of demographic, social and economic crisis has affected the area. The dismantling of local society runs parallel to a de-identification of its inhabitants with respect to the mining remains, which have been the object of plundering and deterioration since the end of active coal mining.

At the start of the 1980s, two local citizens' associations emerged, concerned for their mining heritage: *Munigua* and *Huéznar*. *Munigua* put forward the idea of creating a mining museum, protecting and rehabilitating the mining installations. At the same time, it

[16] Unlike other contexts, specifically in Spain and more generally in Europe as a whole, the State plays a leading role in these processes of reconversion, playing a strongly interventionist role in the socioeconomic functioning of society.

maintained a clear strategy to sensitise the local population with respect to its mining roots (exhibitions, publications, etc.). Meanwhile, *Huéznar* combined heritage awareness with ecological concerns, and initiated a tourism development project that would generate employment in the town. This strategy favoured different training activities as well as modest intervention in relation to the main heritage element in the locality, known as *shaft number five*. At that time, the main problem, as far as heritagisation was concerned, was precisely the ownership of the mining installations and redundant lands, a matter that was not clarified until after the closure and subsequent changes in the ownership of the property. At the end of the 1980s, the State made an effective appearance and initiated proceedings to protect the local mining heritage according to the different legal figures. This process did not reach a head until 2001, precisely once the local council gained ownership of the installations and control over the lands occupied by the mines. Of particular importance is the role played by the local consistory court throughout this extended period, since some of the phases were actually hindered by the heritage declaration issued by the State. The various political parties in local government also created a pendulum effect in heritagisation as part of the local political agenda, since this matter and the interests that surrounded it were treated differently by groups vying for local political control. In mining areas in decline, the symbolic dimension of mining often becomes a resource used to construct models of collective identification and differentiated political agendas. Hence, whereas certain political groups defend mining as the "main mark of local identity" and wish to promote its heritagisation, others base their discourse precisely around a negation of the past and the search for other alternative symbolic points of reference. The presence of these different groups in local government will largely define the direction taken by the processes studied here.

At present, the local council is leading the way in terms of heritage rehabilitation with the intention of using this heritage as a key element in the town's tourism development. It is currently working on the creation of a mining park, a project that combines the restoration of symbolic remains from the local coalmines so that people can visit the inside of a mine, and the restoration of part of an old railway line for recreational trips. The financial investment required to carry out this project is in fact its major hindrance.

This long heritagisation process spanning more than 30 years has generated very little effective restoration, not to mention the tourism development they claimed it would bring. Nevertheless, heritagisation and tourism development continue to be two priorities on the local political agenda. Even though the dismantling of local society could not be overcome and effective symbolic recognition has not been developed through heritagisation, mining heritage is still defended as a tourist resource. Could the symbolic weakness of mining in Villanueva explain the difficulties converting mining heritage into a tourist resource? Is it merely a financial matter that is holding up the heritagisation process and tourism development?

2.- Alquife. The iron mines were closed down at the end of 1996 after a long demise (Checa 1999). This closure was extremely controversial because the mining company owed money to its suppliers and employees. Finally, in 2000, the miners became the owners of the installations, machinery and the land, and debate commenced about what to do with the mine. This circumstance sparked an open conflict in the local community among the ex-miners who claimed that mining should be resumed as a cooperative, and those who preferred to 'sell up and forget everything to do with the mine'. The group that was interested in continuing with mining acquired the machinery and mining permits, and wanted nothing to do with mining

heritage or tourism development since they believed that both options signified the end of mining. Those who wanted to sell up became the owners of the installations and the land, which they sold to private investors who claimed that they would exploit the area by creating a mining park with the Government's support. So far no significant action has been taken in relation to mining heritage or tourism development, and mining activity has similarly not resumed.

The mining unions have openly pledged their support for the continuity of the mines and have opposed heritagisation processes that would lead implicitly to the end of any mining activity. The local authorities have been utterly passive in the midst of all this overt local conflict and have only very recently intervened in the matter. The regional government has promoted a mining park project, which similarly has not been implemented. Furthermore, certain sections of the local population (in close contact with academics) have put forward a series of proposals favouring the protection of both mining and geological heritage (Cohen and Zubiaur 2002), making the potential development of cultural tourism compatible with the reopening of the mines if this possibility arose. However, these proposals have no real impact on the local community which — as our fieldwork revealed — knows almost nothing about them. Hence, mining heritage is currently in private hands with the intention of making it profitable through tourist exploitation. The local community is still immersed in a deep social and economic crisis that is seriously threatening their livelihood and so has begun to focus on its agricultural and stockbreeding traditions (Checa 1995). Mining heritage and heritage tourism have been subject to innumerable projects and are central issues in a bitter local wrangle. A decade after the mine's closure, and in spite of the potential for tourism development and the advantages of mining heritagisation, nothing significant has been achieved in the region.

3.- Las Menas. This mining area is fifteen kilometres from the town of Serón (Almería), at the summit of an impressive mountain range, 1500 metres above sea level. It was in operation between the end of the 19th Century and 1968 (Reche 1988). Unlike other mining contexts studied here, Las Menas is located far from residential areas of the municipality, and so in its day it was a social and economic enclave separate from the town itself. Shortly after the mines closed down, a spate of plundering began which left the towns and the mining installations in a significant state of neglect and ruin. From the early 80s onwards, the local authorities of Serón tried to gain ownership of the mining area. Finally, in 1989, after acquiring a large section of the land from the Regional Government, they drew up an ambitious Global Plan for the Restoration and Rehabilitation of the mining town of Las Menas (Espinosa and Mena 1997), which encompassed cultural, recreational and tourist uses for the old mining installations. Buildings in ruins were shored up, blocks of houses were demolished to clear the area and prepare the land for construction; a campsite was set up in the area around the old hospital, and an aparthotel complex was built, which currently houses the club and two blocks of flats for miners. All of these actions were the responsibility of the Regional Tourist Board, which subcontracted the tasks to private enterprises, which were then awarded tender contracts for the right to exploit them. It was not until 2004 that a declaration was issued and official protection of the mining site was recognised as part of the mining heritage of the province of Almería. Hence, so far, any intervention in the area has been aimed at the tourist industry, promoting hotel infrastructure, and practically nothing has been done from a heritage point of view. In other words, all efforts have focused on achieving tourism development in an enclave that was previously used for mining, but full advantage

has not been taken of this area as potential cultural and heritage site. Las Menas does not even offer a mining museum or any heritage-based recreation activities in relation to mining; there is just a trail that superficially indicates certain milestones from the area's mining past.

Ever since mining activity commenced in the 19th Century, the town of Serón has maintained a remarkable indifference to the mining area in terms of its social life and local identity; some people even criticise government investment in an area that is so far removed from the municipality, especially when State funding for the town itself is limited. In spite of all this, there is a significant amount of heritage consumption in the mining area, with tourist implications, led by groups of emigrants. The closure of the mines at the end of the 1960s led to a mass exodus to Catalonia in search of work. Nowadays, the mines that were inhabited in the 1950s and 60s are becoming a great source of attraction for returning emigrants, and especially for the second generation. The consequence of this phenomenon is twofold. On one hand, it brings about an influx of long term visits that are not unappreciated; and on the other hand it causes fairly significant heritage intervention in relation to the mines. This sentimental attachment and the economic potential of these emigrants explain their active involvement in heritage intervention. The renovation of the mining town's small chapel, the building of a monument dedicated to the miners and the summer occupancy of the aparthotel complex could be clear indicators of the active intervention of these sectors in heritage and the promotion of Las Menas, interestingly in a more organised and dynamic way than Seron's local community. It is not a new idea that the importance of personal links with the mines should bring visitors to tourist destinations based upon mining heritage (Prentice, Witt and Hamer 1998:8); nevertheless, in this case, the situation is even more relevant, bearing in mind that the visitors are, at the same time, promoting the renovation of heritage through their donations and specific intervention projects.

Paradoxically, the emigrants' interest for the mining enclave where their families once lived has revived the focus on the mines as a tourist attraction and increased the value of its potential. In this case, it seems that the demand for mining heritage tourism can substantially vary the original content moving away from a tourist offer that avoided the heritage dimension. The emigrants, highly organised and capable of political and economic influence, are influencing the renewed significance of mining for the area as a whole and its tourist promotion. This in turn acts as a catalyst for the matter to be considered within the local community of Serón. What is particularly remarkable is that a growing interest in mining heritage has been detected here since the emigrants and their descendants became involved.

However, for the people of Serón, mining has always been a contradictory point of reference: the town itself has never identified with the mining activity carried out in Las Menas, remaining materially and symbolically linked to agriculture and livestock farming. Following the closure of the mines, Serón tailored its economy towards meat products, on which it currently bases its symbolic imagery. Yet all of this seems to be shifting slightly with the incipient development of tourism in the mining area. Hence, Las Menas is a paradoxical case in which the development of tourism has unleashed a heritagisation process.

4.- Linares. The zenith of mining activity in this area came at the turn of the 20th century, and although the last remaining mines were closed in the early 1990s, everything related with mining is viewed by the locals as a subject of the past. However, the former lead mines have left numerous traces of this activity in the areas around the town. The mines gave rise to strong industrial development that has left an indelible mark on the social and economic character of the town.

Since the last mine closed, local concern for mining has followed three major trends: a concern for heritage, which involves renovating the mining remains and landscapes as a source of cohesion and local identity (Moreno and Molero 1999); the possibility of developing tourism on the basis of mining heritage (Cantarero 2000); and the third perspective, stressed by politicians, relates to the profitability of heritagisation and tourism development as issues on the local political agenda. There are no contradictions between these focuses, though it is useful to separate them for the purpose of analysis. Linares is a fertile forum for planning and discussing the pros and cons of heritagisation and tourism development against the backdrop of the old mines, a discussion that makes up a very active part of the political agenda. However, in this area, there has been no significant intervention in relation to mining heritage or any major development of the tourist business, which make it an interesting test bed when considering the themes tackled in this paper.

A local socio-political dispute has kicked off in relation to whether the mining remains and landscapes should be used as a means of securing a strong local identity or mainly as a tourist resource. As a result of this broader outlook, the mines have not become the reference for local identity that their past key role would justify; in this respect, renovation of the mines would have a clear symbolic dimension. Certain sections of the local community, led by an association called *Arrayanes*, are calling for the recovery of the area's mining heritage as "the mining-industrial landscape will help the people of Linares to understand who they really are, and so give the local population a sense of social cohesion, to recognise signs of common identity." (Moreno and Molero 1999:265). The heritage awareness fostered by local government must be understood on the basis of these parameters, which explain the installation of certain heritage symbols (hoists, for example) in the town centre and the illumination of mining remains situated on the outskirts of the urban area. It is a question of making it clear that the city's mining past was not futile but rather the cause of its subsequent industrial development, which is also facing a critical situation today. This heritagisation strategy is contradicted by the local community's indifference towards anything to do with the mines:

> "Mining in Linares ended a long time ago, young people do not feel anything for it, the mines are light years away from the people, in the last mines there were very few miners, lots of Pakistanis and, in fact quite a lot of social rejection towards the mines and the miners; recently it has not brought anything good to Linares, and so you don't have strong feelings for the mining remains either…" (an industrial worker)

However, parallel to this interest in heritage, in the late 1990s the Regional Tourist Board proposed a series of initiatives that were much more on the right track in terms of promoting tourism. An example of this strategy is a regional tourist product known as "*Sierra Morena, tierra minera*" which aims to put a real value on mining activity as a whole, including its archaeological and prehistoric resources. For the administrators of this project, the local symbolic significance of mining heritage is a complimentary matter.

> "In Linares, the tourist product emerged long before any social awareness of heritage. The people from Linares do not identify with the mines, most of them do not, some do, perhaps those of us who are more involved with the future of the city and public affairs. People will only become aware when the tourist product creates jobs and wealth. As is so often the case, you don't appreciate something until it's gone, or you see it somewhere else

> and that's when you realise what you have… I have no doubt that for the future the mines [mining heritage] will be important. Now there are people who are beginning to take an interest in the mines, maybe because they've been involved; before it was dead…" (local political leader)

This local situation has sparked a very interesting debate about the means and the end. Which comes first, heritage or tourism? The relevance of mining heritage for the local community is open to debate. At the same time, the opportunity for business tourism is questioned. Interestingly, critical viewpoints are put forward for both sides of the same phenomenon. What is mining heritage for?

> "To learn about ourselves and broaden our horizons, even to promote the activity of the tourist economy, but, for me, the most important thing is the cultural side of things, the cultural incentive; the tourist side of things is secondary. The mines would be a magnet for other cultural things, it would encourage people to study everything together, for example…[…] The political commitment to mining heritage is linked to its tourist profitability; […] if people come from all over to see the mining remains, we think it's great, but that is not what is important; for politicians it is the goal, for us it is the means to preserve our heritage, preserve it so that we can trace our historical memory and deepen our knowledge; it's a cultural aim, to learn about ourselves, to be more self aware." (heritage association leader)

Linares is an interesting context in which to analyse the overlapping of heritage/tourism development at the very start of a process that intends to value and use the remains of mining activity.

5.- Riotinto. Internationally, Riotinto is the most famous mining region in Andalusia. The whole area has been shaped by and for mining in terms of its geographical, social, economic and cultural dimensions (Ruiz 1998). Riotinto is an archetypal mining enclave in Southern Europe. The exploitation of gold, silver and copper, which dates back 5000 years, experienced a significant boom from 1873 onwards when the Rio Tinto Company Limited was founded. However, mining activity in the region began to decline in the 1980s, a gradual yet unremitting process that culminated at the start of the new millennium with the ultimate closure of the mines. The last period of mining activity was particularly troubled since the workers themselves continued to run operations as mine owners between 1995 and 2001 (Gallego and Ruiz 1996, Escalera and Ruiz 2002). Following this experience of self-management, a series of different business groups have taken over the ownership of the mines, yet none of them has reopened the mines. Parallel to this, different strategies have been launched in an attempt restart the local economy by embarking on various industrial and agricultural ventures (Escalera, Ruiz and Valcuende 1995), which have created alternative sources of employment.

Mining heritage goes back a long way and is even linked to the first archaeological findings at the start of the 20th Century, sponsored by the British company (Ruiz and Iglesias 1999). In the 1980s and 90s, it was mining company itself that, when faced with closure, proposed mining heritage as a basis for tourism development that would favour economic diversity in the area. From this perspective, in 1987, the mining company set up the *Fundación Río Tinto* (FRT) with the purpose of protecting its mining heritage and making it more dynamic as a social and economic alternative. Whilst continuing with its mining

operations — clearly in decline — the company gradually transferred redundant installations and land over to the foundation. And so, FRT became the mining heritage owner in the area. Hence in this case, heritagisation ran parallel to the abandonment of the mines (Escalera, Ruiz and Valcuende 1995). The underlying idea is that 'there is another mine within the remains of the mine' if a flow of tourists can be created. In Riotinto, it was the private sector that promoted the direct conversion of productive elements into heritage assets. A mining park was set up in 1987 and in 2007 it received about 70,000 visits. The mining park includes a mining museum, a roman necropolis, a railway line that runs along the river Tinto, open cast mines (Corta Atalaya, Cerro Colorado and Peña de Hierro), and the old British quarter of Bella Vista.

Heritagisation and tourism were developed in parallel to the gradual abandonment of the mines, and this overlap gave rise to opposing social views. The State supported the mining company in its intention to close the mines and its commitment to heritage tourism, creating a strong front in this respect. On the other hand, a section of the workers' movement stood in open opposition to this strategy, provoking a clear antagonism for heritagisation and the development of tourism: the main goal of the unions, which represented most of the workers, was to keep the mine open and operating. The period in which the unions took control of the mines (1995-2001) coincided with the period of strongest tourism development, and when mining activity was part of the mining park, which added new value to the tourist attractions on offer, as seen elsewhere (Pretes 2002). Nevertheless, there was still latent tension between these two strategies; at that time, there was debate as to whether to continue mining or develop tourism as exclusive strategies. Perhaps the most interesting aspect of the Riotinto case is the fact that mining activity and tourism development coexisted for almost fifteen years, and redundant tools and working situations were gradually converted into tourist resources. The development of cultural tourism in the region has helped blur the distinctions between mining, mining heritage and heritage tourist resources.

Heritagisation in Riotinto has been mainly a private phenomenon. Even though FRT has received major public funding for most of its interventions, it is, nonetheless, a private institution and the owner of the heritage assets, and therefore the tourist product has been drawn up following its criteria. Mining heritage in Riotinto has only recently (2006) been granted official protection in accordance with current legislation, although previous technical studies had already pointed out the most important elements as part of the catalogue for official heritagisation. However, Riotinto has the most highly developed mining tourism industry of anywhere in Andalusia and indeed the whole of Spain. In Riotinto, there are two key issues that are of great interest: the relationship between the elements included in the official catalogue of mining heritage and the elements used for tourism purposes; and the nature of both the tourist product and its consumption.

The FRT has focused on features that displayed greatest potential for tourism, where heritage and tourism were combined without differentiation. This area offers three kinds of features. Firstly, there are elements that are an integral part of regional mining heritage and, at the same time, play a key role as tourist resources (in the case of open cast mines, archaeological ruins…). Secondly, other elements, although they play a key role in tourism, display a very weak, or even nonexistent, heritage side (some heritage-based attractions, such as the replica roman galleries at the mining museum). And thirdly, some very significant heritage components are of absolutely no relevance to tourism (the workers' district, abandoned mines, places and forms of sociability, rituals…). In all of this, the distance

between heritage and tourist activity is patent, as is the profound overlapping between the two.

As previously established in other contexts of heritage tourism (Poria, Butler and Airey 2001, 2003), the consumption of Riotinto's mining tourist product is heterogeneous and polyphonic and depends on the visitors' motivation. In addition to more standardised tourist consumption, there is a significant level of more emotional and evocative consumption (inhabitants of the region, emigrants, and people from other mining areas…). All of this helps to blur the boundaries between the strictly heritage consideration, linked to group identities and the mining culture, and more obvious tourist references, associated with leisure, recreation and enjoyment. Both viewpoints are instilled in the same elements, but attract very different kinds of visitors and consumption, and also heighten the importance of mediation between subjects and heritage/tourist objects.

In one of the more visible areas in the region, a piece of graffiti states: "The mine is not a business, it is an emotion", which summarises the ambivalence of consumption, heritagisation and tourism development, revealing all the rough edges and contradictions, and testifying to the complexity of the matter. In reality, the mine and its cultural heritage are as much an object of business as of emotion.

THE COMPLEX NATURE OF MINING HERITAGE TOURISM DEVELOPMENT

The relationship between the six factors in each case is very heterogeneous. The key role of the State, ownership of the industrial-mining installations, levels of plundering and deterioration of these installations, the role of the mines in models of collective identity and local political agendas, the presence of the private sector (market), and the vitality and economic diversification of the region, make up a specific constellation that ultimately explains the degree of development of both heritagisation and tourism in each case. Analysis reveals that these factors are clearly concurrent, complementary and antagonistic all at the same time, but never incompatible or mutually exclusive (Morin 1990). For this reason, it is not generally advisable to establish simple or linear correlations between them, or mechanical combinations either. The nature of this issue is unquestionably complex and its systemic condition requires the use of appropriate tools and analytical guidelines, rather than simple mechanical relationships between factors. The different configurations of the processes studied in each of the cases analysed clearly show that the factors should not be interpreted as simplified variables, and that there is no constant relationship between them. Although the existence of influences and interconnections is unquestionable, it does not seem reasonable to suggest standardised interrelation patterns.

All the factors used to guide our analysis are relevant in terms of explaining the current state of heritagisation and the development of tourism in each case. But not in the same way, nor in the same direction nor with a verifiable intensity. Hence, in order to gain a proper understanding of the process of heritagisation and tourism development, considering all factors simultaneously, we must move towards a kind of analysis that allows for the systemic comparison of different cases. For this purpose, following the completion of an ethnographic study, we deemed it opportune to apply Graph Theory to the qualitative findings.

Graph Theory is a branch of Mathematics with many practical applications. A general introduction to this discipline can be found in manuals such as the one produced by Harary (1969). This Theory emerged in 1735, when Leonard Euler resolved the famous Königsberg bridge problem. Since then, radically different situations have been modelled using Graph Theory. Chemistry, Electronics, IT, Architecture, Economics, Psychology, Physics, and above all Recreative Mathematics regularly use graphs and their properties.

In formal terms, a graph is a pair (V, E), where V is a set of vertices (nodes) and E is a set of edges, pairs of elements of V. Although a graph can be represented in many different ways, for the purposes of this study, a graph is understood to be a graphic representation in which each vertex is a dot and each edge is a line connecting two dots.

Graphs usually represent binary relations, but it is possible to generalise them in order to obtain more complete or useful models for the problem at hand. For example, multigraphs can be used to represent several edges between the same pair of vertices, and neural networks can be used to assign a weight to each edge (usually called an "arc", in this case) to weight the importance of each relationship between each pair of vertices.

In our case, owing to the interaction between different factors, independent variables were not used and a broad set of factors must be considered simultaneously, without adding or simplifying their characteristics by means of a single indicator. Hence in this case, Graph Theory is more appropriate than other classic models.

However, the factors that guided and shaped the ethnographic study had to be specified with a view to turning them into more specific indicators so that the relationships between them could be illustrated by means of graphs. The six general factors that structured the ethnographic study were broken down into twelve indicators and then assigned an incidence level in every case study (Table 2). The transition from a qualitative ethnographic study to the determination of indicators and the attribution of an incidence level for each case is undoubtedly the most critical stage of this research. It involves operating with two often antithetical logics so as not to lose either the specificity of a monographic study or the possibility for analytical comparison. Traditionally, the data used in one or the other perspective are very different in nature. Taking it a step further, in order to combine the intensity of the qualitative study with the extensiveness of the quantitative findings, a careful path must be trodden, encompassing these two heterodox routes. Otherwise it would be almost impossible to apprehend the complexity of real processes. In this case, the team of researchers had to convert – on the basis of discussion and comparison between the cases studied – the data gathered by means of qualitative monographic studies of each area into a table that reflects indicators and the estimated value of their incidence in each context.

From a systemic point of view, no one indicator is more important than the others, but understanding each case study involves understanding the comprehensive interaction between all the indicators. This analytical strategy is coherent with the findings of the ethnographic study conducted, which revealed that the situation observed in each case study obeys a particular arrangement of the indicators, without any of them taking precedence over the others; furthermore, highly disparate levels of heritagisation and tourism development were observed. As indicated above, these indicators assume configurations that are at one and the same time concurrent, complementary and antagonistic, a paradoxical circumstance that must be reflected in the analysis. Accordingly, in this study, the important question is not the incidence of each specific indicator, but rather the patterns of interaction between them in each case study.

Table 2. Indicators analysed for each case study. Incidence level: strong (a), moderate (b), weak (c), or non-existent (d)

	Villanueva	Alquife	Menas	Linares	Riotinto
1. Public intervention in tourism	d	d	a	c	b
2. Public intervention in heritagisation	c	d	c	b	a
3. Official heritage declaration	a	d	c	b	a
4. Public heritage ownership	b	d	b	c	d
5. Local identity based on mining	c	d	b	b	a
6. Conflict heritagisation/mining closure	d	a	c	c	a
7. Civil association for heritage	c	c	b	a	c
8. Private heritage ownership	c	a	b	b	a
9. Private intervention in heritagisation	d	b	b	d	a
10. Private intervention in tourism	d	c	a	d	a
11. Economic development after mining crisis	d	d	b	b	b
12. Heritage plundering	b	b	a	b	b
Evaluation of total incidence level	30.6%	33.3%	66.7%	50.0%	77.8%

The indicators affect all the cases studied to a greater or lesser degree; what is truly significant is the relationship established between them. The systemic configuration of their relationships and the varying influence of the indicators determine the shape of the graph for each case study. All the factors affect all the others, but this influence is tinged by the incidence of each factor in each mining area. Hence, the combination of the four levels of incidence produces ten potential interaction patterns, which are represented on a graph through the thickness of the lines that link the indicators (graph vertices) (Table 3).

Once we have the indicators, an estimation of their incidence in each case (Table 2) and the potential interaction patterns (Table 3), the relationship between the indicators in each specific case can be determined (Table 4 shows the example of Alquife).

Using these data, a graph can be constructed for the area studied. Each case is represented through vertices (indicators placed as dots on a circumference, clockwise) and edges (lines or arcs where there is interaction between items); differences in the thickness of the edges indicate the intensity of the interactions (Figure 2), although this is usually represented using a multigraph or a neural network. Hence, for example, in the case of Alquife, there is no line that links indicators 1, 2, 3, 4 and 5, since their incidence is non-existent; therefore their mutual interaction is similarly non-existent. Stronger linkage only occurs between indicators 6 and 8 which are the only factors that bear a strong influence in this area. The representation of the series of interactions provides a graphic representation of the systemic configuration for every case and allows us to compare them. For our purposes, the main virtue of graphs is the opportunity of graphically synthesising the systemic and complex approach pursued: indicators related with heritagisation are linked to indicators related with tourism development, as well as the actions of local institutions, agents and local society itself.

Greater co-concurrence and the stronger incidence of indicators (thick edges) are associated with greater simultaneous development of tourism and heritagisation. In the case of Riotinto, private and public initiatives run in unison and the issue has a very active presence in local political life (confrontation of interests and outlooks), all interwoven in a social and economic framework that was reactivated as mining was in the process of disappearing.

Table 3. Potential interaction patterns between indicators

indicator	a (strong)	b (moderate)	c (weak)	d (non-existent)
a (strong)	a-a (thicker line)	a-b	a-c	a-d
b (moderate)	b-a	b-b	b-c	b-d
c (weak)	c-a	c-b	c-c	c-d
d (non-existent)	d-a	d-b	d-c	d-d (no line)

Table 4. Interaction patterns: Alquife

	1	2	3	4	5	6	7	8	9	10	11	12
1		d-d	d-d	d-d	d-d	d-a	d-c	d-a	d-b	d-c	d-d	d-b
2			d-d	d-d	d-d	d-a	d-c	d-a	d-b	d-c	d-d	d-b
3				d-d	d-d	d-a	d-c	d-a	d-b	d-c	d-d	d-b
4					d-d	d-a	d-c	d-a	d-b	d-c	d-d	d-b
5						d-a	d-c	d-a	d-b	d-c	d-d	d-b
6							a-c	a-a	a-b	a-c	a-d	a-b
7								c-a	c-b	c-c	c-d	c-b
8									a-b	a-c	a-d	a-b
9										b-c	b-d	b-b
10											c-d	c-b
11												d-b
12												

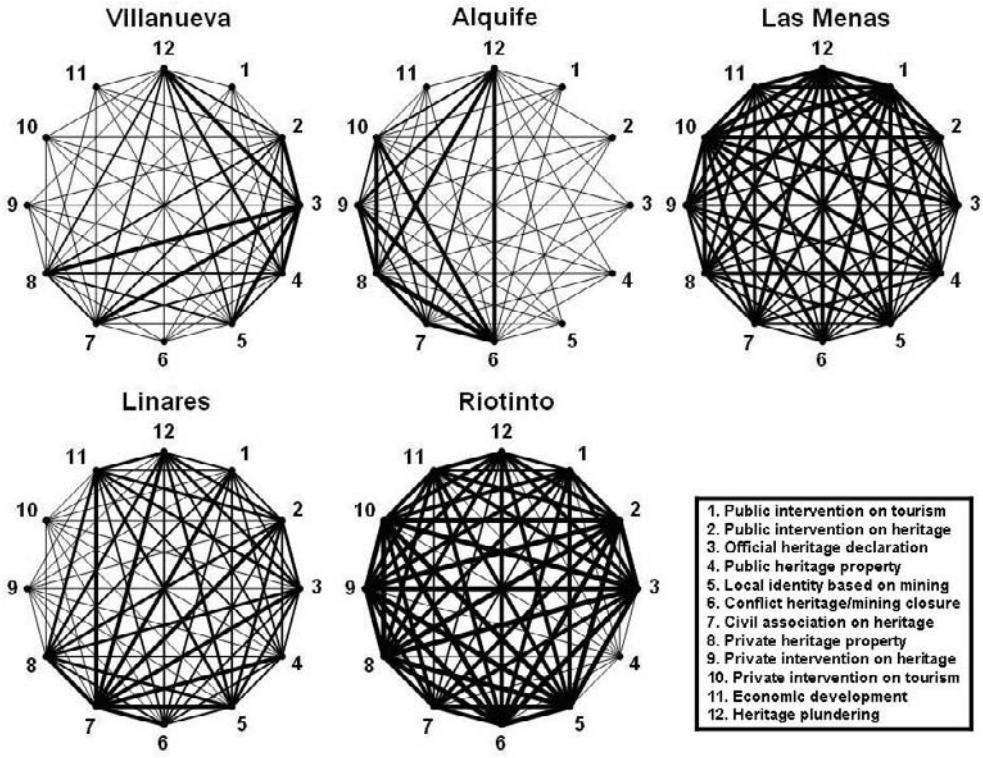

Figure 2. Graphs for each case study.

The interpretation of some of these factors in isolation could give the impression of contradiction. Would the convergence of public and private interests not be a problematic focus? Would the opposition of the union movement to mining heritagisation not have an obstructing effect? Would alternative economic development other than mining block the interest in developing heritage tourism? However, when grouped together, the overall result is one of vitality for the heritage and tourist initiative. In Alquife, however, the lack of State intervention (items 1 to 4)**,** together with limited private intervention and the weak symbolic dimension of mining for the locals (indicator 5), explain the practical non-existence of heritagisation and tourism development. It is remarkable that the chronological threshold of the ultimate deactivation of these two mines is practically analogous, at the end of the nineties. Understanding of these processes cannot stem from simplification, which would overemphasise the relevance of some factors over others, but from the contextualised interpretation and interrelated reading (systemic and complex) of all the relevant indicators. Graphic representation greatly facilitates analysis, and even allows us to focus directly in each case study on indicators that perform in a particular way.

It is interesting to ponder this systemic overlapping, which clearly shows the coexistence of concurrent, complimentary and antagonistic factors, making it inadvisable to attempt to establish causal linear links. The incidence of a single factor can have different consequences depending on the case. So, the systemic event is much more important than the indicator itself. For example, the level of deterioration and plundering of heritage (indicator 12) can be an obstructing factor for heritagisation and tourism development if there is no strong social link with mining activity (Alquife); however, it can be turned into a social incentive to recover and rehabilitate the mining remains if mining is important for local identity 'imagery', which could ultimately facilitate the development of heritage tourism (Las Menas). All the relevant factors only acquire a specific explanatory dimension when linked with the others, not individually.

The graphic readings also enable us to isolate certain indicators in order to understand each case study. Hence, the weakness of heritagisation and tourism development in Alquife stems mainly from a weakness in factors 1 to 5, related with State intervention and presence, in addition to an almost non-existent local mining identity. In Villanueva, on the other hand, the weakness of the situation chiefly stems from a weakness in different factors, particularly in relation to private intervention.

This graphic expression of complexity also allows us to identify anomalies. For example, the graph for Riotinto — the thickest one, indicating a high level of heritagisation and tourism development — shows a specific weakness in factor 4 (public heritage ownership). It seems strange that such a weak factor can be found in the most solid case. What might be the consequence of this for the management of heritage and tourism activities? Interestingly, very recently, a change in local politics in Riotinto led to the closure — as a decision of its privates owners — of the main open cast to tourist use. Hence, a further virtue of this graphical representation becomes clear: it is able to point to factors that could strengthen the development of heritage tourism. Riotinto is now embroiled in a social debate about the private ownership of the mining heritage. Hence, a factor that was positive in the initial stages of heritagisation now becomes an obstacle for further consolidation.

Following this analytical reading, the graph for Linares' highlights the factors that significantly hinder the development of heritagisation and tourism: despite the heritage private ownership (factor 8), private intervention in heritage or tourism are non-existent

(factors 9 and 10). It seems that a strong incidence of these indicators on the system as a whole would have the required effect to consolidate the development of heritage tourism at a similar level as in Las Menas, for example.

There is much more to say about the use of graphs in Tourism Analysis, but at this juncture**,** it seems more appropriate to remark on the usefulness and potential of this new approach, based on ethnographic comparison facilitated by the use of graphs.

CONCLUSIONS

To analyse the conditions that give rise to the development of mining heritage tourism, relationships and context take precedence over the intrinsic nature of the factors in question (Capra 1996). This perspective reinforces the need for a systemic approach and the analytical inseparability of the heritage and tourist spheres. Nevertheless, it is possible to construct a homogeneous comparative analytical framework using Graph Theory without falling into a reductive simplification that can sometimes give rise to *a priori* indexes that homogenise whilst neglecting the intrinsic diversity of the cases analysed.

Analysis clearly reveals the inextricable nature of heritage and tourism. Both dimensions appear in each of the case studies without a clear distinction between where one ends and the other begins. The bi-dimensionality of heritage and tourism in the strategies, attitudes, objects and installations studied in each of the regions analysed show how impossible it is to separate them when attempting to gain a comprehensive understanding of heritagisation or tourism development. Nevertheless, it does demonstrate that a partial consideration from one or the other perspective (from the point of view of either heritage or tourism) will produce a biased conclusion.

The simultaneous research of heritagisation and tourist processes yields broader analysis perspectives. In addition with tourist uses, the indigenous social and cultural use of mining heritage must not be analytically undervalued. This circumstance becomes clearer when the relationship between the rehabilitation of identities and the development of tourism is analysed (Ruiz and Hernández 2007). In some of the researched contexts, the identity-based dimension of the mines is very important and reinforces the development of tourism (Riotinto), whereas in others, the symbolic irrelevance of mining represents a major obstacle to heritage tourism, making its development virtually impossible (Alquife, Villanueva). All of this becomes patently clear when one realises that the same elements (tourist-focused for some and identity-related for others) have concurrent, complimentary and even antagonistic meanings —even when integrated — for hosts and potential tourists. This process converts such elements into the objects of a complex and polyphonic cultural consumption, even beyond the perceptive suggestions put forth by Chronis (2005). Furthermore, the case studies of Linares and Las Menas clearly show how the development of tourism could trigger an increase in the symbolic significance of the mines and mining heritage. This demonstrates that not only does tourism feed off heritage, but it is also perfectly possible for heritage to feed off tourism development. The polyphonic and complex nature of heritage tourism consumption indeed helps to understand and even justify the viability and sustainability of heritage tourism beyond mere economic perspectives. Hence, modest heritage tourism development — small-scale tourism in the economic sense (Hampton 2005) — could bring to

bear a significant influence on the owners and custodian of the heritage in question, which justifies global viability. So, for example in Riotinto, an annual flow of around 70,000 visitors provides work for around 20 people in the mining park and fosters economic activity that, although limited, proves to be important for the modest local service sector. All of this is of limited relevance for a region of some 12,000 inhabitants. Nevertheless, the symbolic significance of mining heritage renovation cannot be dismissed in an area that has suffered acute social and economic crisis following the dismantling of the mining industry. In this case, sustainability should be analysed from a wider point of view than the traditional economic perspective (cf. Edwards and Llurdés 1996; Hampton 2005), taking into account the effect produced on collective cohesion and self-esteem. In the same way, the limited symbolic relevance of the mines in other regions — Villanueva, Alquife and even, to a certain extent, Linares — becomes an extremely relevant factor to help understand the limits of heritagisation and heritage tourism development, but at the same time it opens doors onto the potential consideration of tourism development as a factor that generates a sense of community: the mere fact of receiving a flow of visitors, no matter how few, can boost the host group's self-esteem and alter its model of collective identification. Heritage tourism can have an extremely positive influence on the host society far beyond the economic sphere (Thierry 2003).

Not only does heritage favour tourism, but tourism can also favour heritage. The middle-to-end correlation that traditionally combines the link between heritage and tourism must be reviewed, just as the correlation between nature and nature tourism has been raised as an issue (Ospina 2001, 2006): it is tourist activity that makes sense out of nature. So, it could be that without heritage intervention, the development of heritage tourism is impossible, but could heritagisation be effective without the parallel development of tourism? Furthermore, in the planning or exploitation stages, the attitudes of the locals, civil associations and of groups within the local political system become crucial analytical factors in order to gain a full understanding not only of heritage and tourism management (Aas, Ladkin and Fletcher 2005; Hampton 2005), but also of heritagisation as a complex process of "heritage creation" without which heritage tourism would not be possible. Therefore, the need to develop methodologies that take into account both cultural and economic viewpoints is evident. This would provide a comprehensive understanding of the polyphony of heritage and the consumption of tourism, as the conditions that give rise to the development of heritage tourism are recognised and compared within specific contexts and for particular types of heritage.

The aim of this paper was to apply a research model that, by linking ethnography and Graph Theory, would be capable of integrating analysis of specificity and a comparative strategy. The fundamental aspiration in doing so was to develop and apply a more comprehensive framework than the generally applied preconception based on linear relationships of cause and effect. This process undoubtedly has limitations but also offers potential advantages in terms of activating a systemic and complex analysis of the development of heritage tourism.

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Chapter 7

RECENT DEVELOPMENTS IN THE ITALIAN TOURISM MARKET

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Travel is fatal to prejudice, bigotry and narrow mindedness.
Mark Twain, Innocents Abroad, 2002

ABSTRACT

This chapter investigates the Italian tourism market in a long run perspective. After a statistical analysis of international tourism flows to Italy, the main tourist destinations and the accommodation structures are highlighted. A special attention is devoted to an important form of niche tourism: the cultural tourism with a specific focus on museums, their characteristics and price policies. With reference to the main competitors of the Italian tourism destinations, a comparative analysis is presented of the extent to which Italian higher prices resulted in tourists preferring other EU and Mediterranean destinations, such as Spain, France, Croatia or Slovenia. Some policy implications of the main results of the analysis are illustrated.

1. INTRODUCTION

Over the last decades, tourism[17] has become a key sector in the world economy: its contribution to balance of payments, incomes and employment has significantly increased over time. While in 1950 international tourism receipts totalled about 2 billion dollars, by

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[17] The United Nations in 1994 defined tourism as "the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated within the place visited".

2006 this value had reached 735 billion dollars —about 2 billion dollars a day (World Tourism Barometer, 2007). Nowadays, the sector originates more than one third of world exports of services and over 70% of those in the poorest countries (European Commission, 2007). Tourism is therefore an important driver of growth and prosperity and, particularly within developing countries, the sector is also important for poverty reduction (World Economic Forum, 2007).

Mainly dominated by small-medium enterprises, tourism accounts for 4% of the Euro Area's GDP, with about two million enterprises employing about 4% of the total labour force (approximately eight million jobs). When linkages to other sectors are considered, the contribution of tourism to GDP increases to about 11%, and the employment rate reaches about 12%, creating about 24 million jobs.

Besides incomes and jobs, tourism has fostered development in the vast majority of European regions; infrastructures built for tourism reasons contribute to local development, and jobs are created or preserved even in areas suffering industrial or rural decline or experiencing urban regeneration (European Commission, 2007).

Within the Euro Area, Italy is one of the leading tourism destinations. According to the World Travel and Tourism Council (WTTC), Italy's travel and tourism sector has generated 272 billion dollars of income in 2007, and this is expected to grow (in nominal terms) up to 370 billion dollars by 2016. The direct and indirect impact of the Italian travel and tourism sector has accounted for more than 10% of Italy's GDP and 11.5% of Italian total employment (2,65 million jobs) in 2007.

The present chapter provides an overview of the evolution of tourism sector in Italy with the aim to identify its strengths and weaknesses and to offer insights for policy makers oriented to the enhancement of the competitive positioning of the Italian tourism sector. The remainder of the chapter is organised as follows. Section 2 shows the dynamics of the international tourism market in a long run perspective. Sections 3 and 4 review the main Italian tourism destinations and explore the accommodation market. Section 5 presents an international price competitiveness analysis. Section 6 assesses the environmental and cultural attractiveness of Italy with a special attention to the case of museums. Section 7 concludes.

2. THE INTERNATIONAL TOURISM MARKET

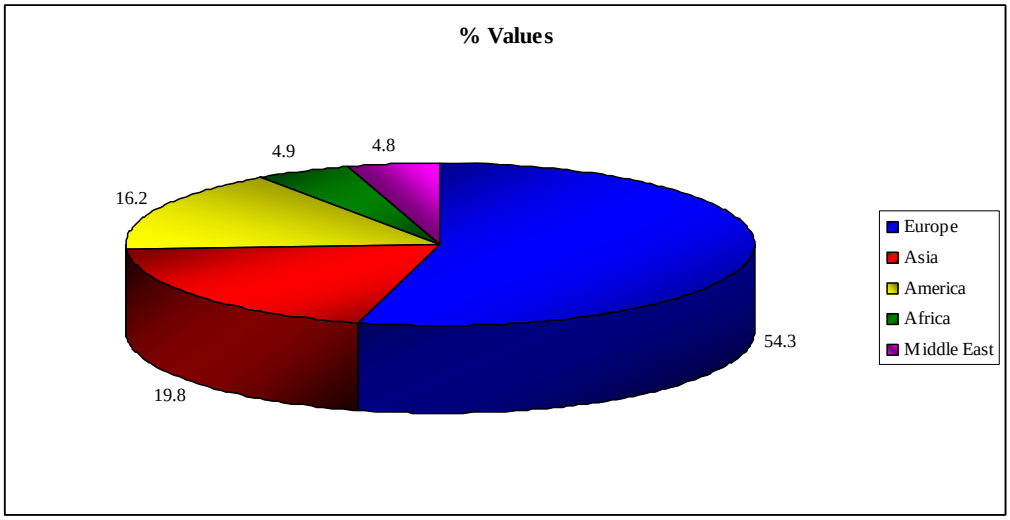
At a global level, the number of tourist arrivals expanded from 439 million visitors in 1990 to 842 million in 2006, with an average growth rate of 4.2% per year. At a continental level, Middle East records the highest average annual growth rate between 1990 and 2006 (9.4%), followed by Asia (7.1%), Africa (6.4%), Europe (3.4%) and America (2.4%) (Table 1).

In terms of market share, Europe enjoys the highest quota of tourist arrivals with a percentage of 54.3, followed by Asia (19.8%), America (16.2%), Africa (4.9%), and Middle East (4.8%). Europe's leadership in tourism is mainly due to the historical, artistic and cultural heritage of the "old continent" (Chart 1).

Table 1. International tourist arrivals in millions

	1990	1995	2000	2005	2006	annual growth rate 90-06
World	439	540	687	802	842	4.2
Europe	265.6	315	395.8	438.3	456.9	3.4
Asia	56.2	82.4	110.5	155.4	167.4	7.1
America	92.8	109	128.1	133.2	136	2.4
Africa	15.2	20.3	28.2	37.3	40.9	6.4
Middle East	9.6	13.7	24.2	38.3	40.7	9.4

Source: Own Elaborations WTO, 2008.



Source: Own Elaborations WTO, 2008.

Chart 1. Tourist Arrivals Market share, 2006.

In a long run perspective, it is interesting to notice that, since the 50s, France, Italy and the USA were among the top five destinations in terms of international arrivals; the global picture has however changed quite a lot throughout the years, as table 2 reveals.

This table shows two interesting features. First, the distribution of tourism flows across different destinations has become more balanced going from 1950 to 2006. There was a significant drop in the tourism attractiveness of the traditionally most visited countries: the top five countries in fact absorbed about 70% of international arrivals in the 50s, while this percentage fell to 33% in 2006. This change has been mainly ascribed to the improvement in transportation and new technologies, the emergence of a large educated population seeking to learn more about different culture and places, increasing competitive prices and rising diversification among destinations. Put differently, globalization has brought about a greater movement of people, many of them tourists, across states and encouraged new entrants into the tourism market. Second, some developing countries emerged on the tourism scenario: China ranked four among the most visited destinations in 2006, a position that was occupied by Italy throughout the 90s. China's tourism has been a major beneficiary of the so-called "open door" policy started in the 80s.

Table 2. Leading countries in terms of international tourist arrivals

1950	world market share	1970	world market share	1990	world market share	2006	world market share
USA		Italy		France		France	
Canada		Canada		USA		Spain	
Italy	71%	France	43%	Spain	38%	USA	33%
France		Spain		Italy		China	
Switzerland		USA		Hungary		Italy	
Ireland		Austria		Austria		UK	
Austria		Germany		UK		Germany	
Spain	17%	Switzerland	22%	Germany	19%	Mexico	14%
Germany		Yugoslavia		Canada		Austria	
UK		UK		Mexico		Russia	
Other countries	12%	Other countries	35%	Other countries	43%	Other countries	53%

Source: Own Elaborations on Confindustria, Economic Notes, 2007.

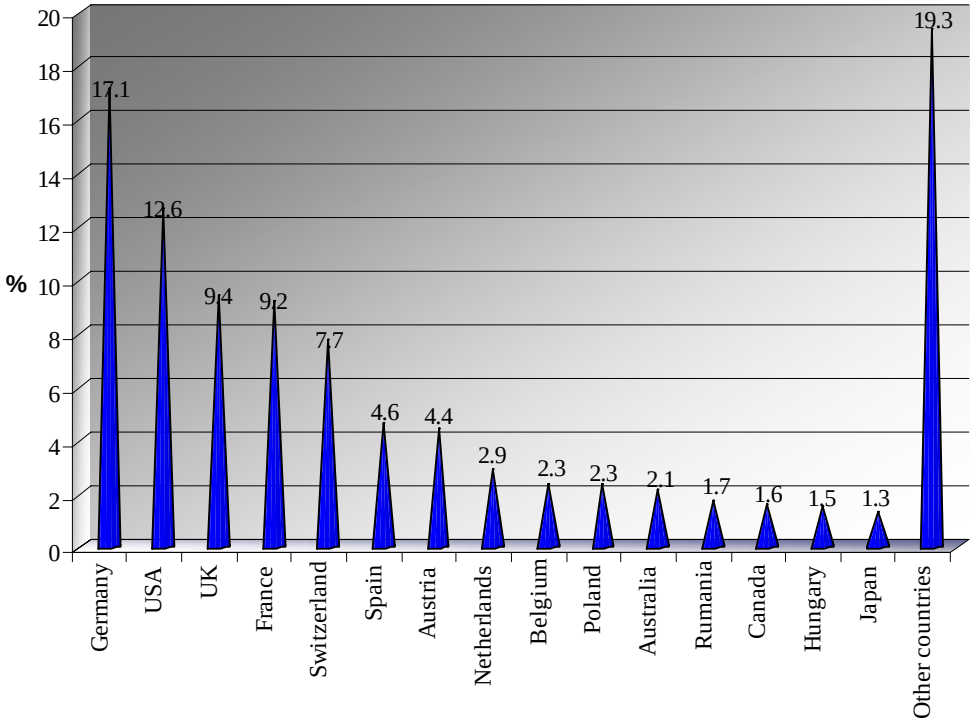
Although China's tourism infrastructure is still publicly owned, the government holds in fact 63% of country's hotels, there are upcoming reforms that aim to withdraw public capital from commerce and distribution. The deteriorated position of Italy in the world ranking is worrying: the country passed from the first place in the 70s to the fifth position in 2006, with a 4.9% market share in terms of total arrivals. Against this background the position of the other traditional competitors with similar history, development and income level, especially France and Spain, has strengthened.

In 2006, Italy was visited by 41.6 million foreigners, ranking fifth worldwide in terms of tourist arrivals, after France, the USA, Spain and China. It is worthwhile noting that during the same period, Italy registered the highest positive percentage variation in terms of number of visitors (12.4%) among the most prestigious tourist destinations. In terms of international tourism receipts, it ranked fourth in the world with US$38.1 billion, after the USA (US$85.7 billion), Spain (US$51.1 billion) and France (US$46.3 billion) (World Tourism Barometer, 2007). Most of the Italian tourism revenues are generated from German, American, English, French, and Swiss tourists (Chart 2).

Giving a deeper look at the component "travel" in the Balance of Payment[18], which register all the international transactions of goods and services bought by visitors during their stay abroad, it is interesting to observe that since 1996 Italy registers significant surpluses. Year 2000 is the one to record the best performance in terms of tourist receipts as a consequence of the Giubileum. In 2007 the travel component in the Balance of Payment

[18] Following the UN and UNWTO (1994) definitions, *tourism receipts data* are obtained from the item "travel, credits" of the Balance of Payments of each country and corresponds to the "expenditure of non-resident visitors (tourists and same-day visitors)" within the economic territory of the country of reference. Vice-versa, *tourism expenditure* data in other countries are obtained from the item "travel, debits" of the Balance of Payment of each country and corresponds to the "expenditure of resident visitors (tourists and same-day visitor)" outside the economic territory of the country of reference.

scored a surplus of 11,968 million euros, with receipts equal to 31,079 million euros (UIC, 2008).



Source: Own Elaborations on Confindustria, Economic Notes, 2007.

Chart 2. Share of tourism revenues in Italy (% of total), 2006.

3. THE MAIN ITALIAN TOURISM DESTINATIONS

Italy has several tourism locations of worldwide reputation and prestige. The country can rely not only on the cities of art and beautiful landscapes but also on a significant coastline development endorsed by a prosperous industry of “summer on the beach” holidays located mainly in Emilia Romagna on the Adriatic Sea and in Sardinia and Campania on the Tyrrhenian Sea. Besides, some northern regions, mainly Val d’Aosta and Trentino Alto Adige, offer winter holidays thanks to the Alps and high mountains. Tourists selecting winter holidays can be divided into two groups: a fidelized segment and an explorative segment. The first is made of families which come back every year on the same holiday spots for about two weeks and spend from 500 to 1500 euros per person. The second segment is made prevalently of young people travelling in group which stay about one week in a given location and spend less than 500 euros (Confindustria, 2007).

The share of visitors distributed by geographical area is shown in Chart 4. All together the Northern part of the country has the highest number of vacationers, followed by the Central regions and the South and Isles. According to the International Centre of Studies on the Tourist Economy (CISET, 2007), the key Italian regions to attract worldwide tourists are Lombardy and Veneto, located in the North, Lazio and Tuscany situated in the Centre.

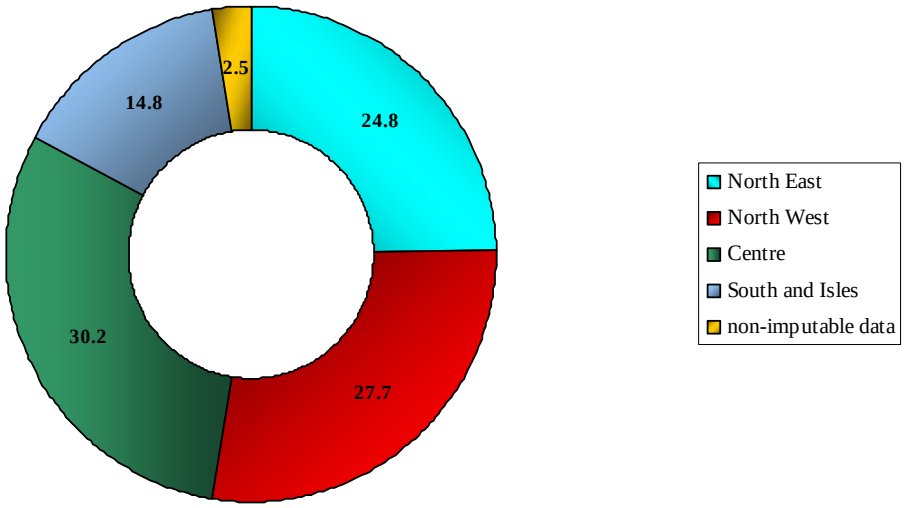


Chart 3. Italy's map.

Combined, these regions produce 68% of the total value-added tourism of the country. The main cities to generate tourism returns are Rome, Venice, Florence and Naples. The average foreign tourist spends about 126 Euros per day, 46.7% of which is due to accommodation costs, 22% to eating and 17% to shopping (Turismo e Finanza, 2007).

Tourism flows are concentrated mainly during the summertime period, during which Italy records its highest volume of tourist receipts. This strong seasonality between June and September is mainly caused by the predominance of seaside vacationers, with about 75% of Italians and 36% of foreigners[19] preferring 'sun and sea' tourism during these months (Turismo e Finanza, 2007). It is worthwhile noticing that several Mediterranean destinations are becoming very competitive in the segment "sun and sea" tourism, especially Turkey, Croatia and Slovenia represent the direct competitors of Italy.

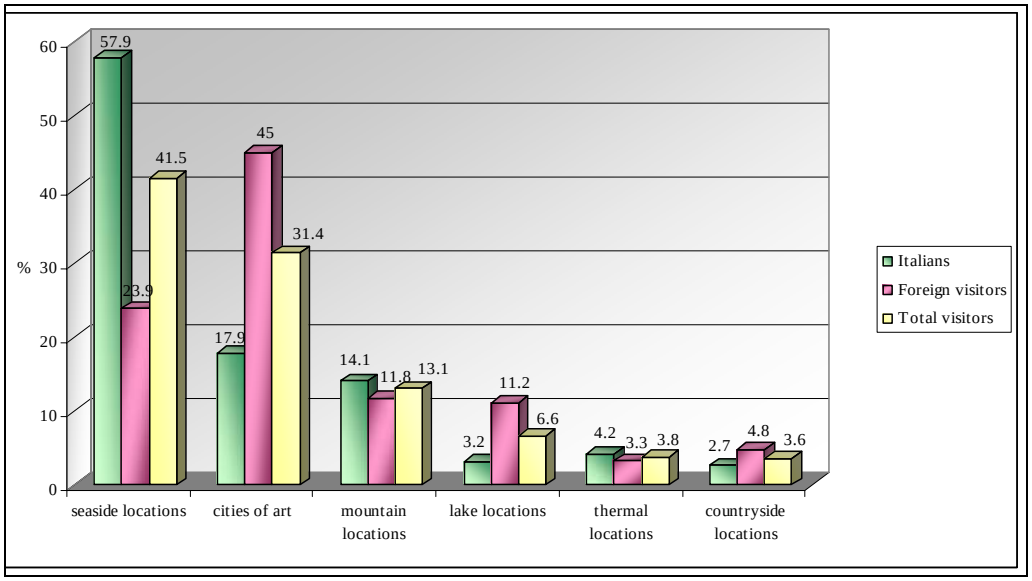
[19] About 60% of foreigners prefer tourism in cities where art is featured.



Source: Own Elaborations on Confindustria, Economic Notes, 2007.

Chart 4. Share of tourists visiting different area in Italy. % values, 2006.

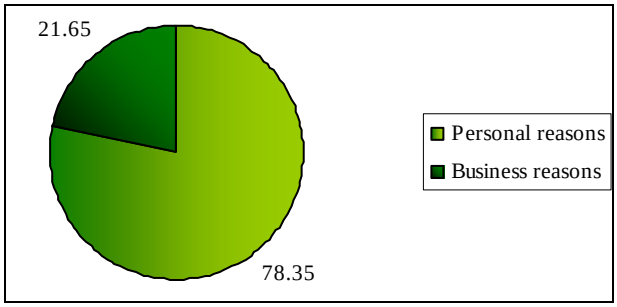
In the last years also thermal tourism has started to spread rapidly in the country. Tourist flows are concentrated in a few specific resorts: very renowned are the thermal routes in the isle of Ischia and the therme Eugane. Campania is the region with the highest number of thermal establishments (114), followed by Veneto (110), Emilia Romagna (24), Tuscany (22), Lazio (18), and Lombardy (16). The majority of thermal resorts are of medium large dimensions with more than 25 workers per establishment (Federterme, 2008). Within the region of Campania, Ischia, the largest of the Neapolitan islands, has the largest number of thermal spas and some of the largest in the world. The importance of Ischia as big thermal centre can be explained by the volcanic origin of the isle and the presence of 67 fumaroles, 103 natural springs and 29 thermal baths. If one speaks of "La Dolce Vita" and thinks of Ischia, it immediately recalls the beginning of the 1960s, when the island was discovered by an elite class of tourists, thanks to several movie productions set there. During that period many stars arrived on the island, for work or for leisure, among them, Liz Taylor and Richard Burton, Sofia Loren, Kirk Douglas, Ava Gardner, Burt Lancaster. Today, Ischia has not lost its appeal: Forio and Ischia downtown are places with the most famous clubs on the island, then there are many tiny and cosy villages, such as Sant'Angelo, where it is possible to explore the typical alleyways and visit the "Positano d'Ischia" with its charming small square overlooking the sea. The place with the largest social atmosphere is Ischia Porto: at the sunsets, the right-hand side of the port, known as the "Rive Droite", becomes extremely lively with vacationers and local people gathering to the restaurants, trattorias, wine bars and night clubs. These are the first stops before the vivacious Ischia night sets off. The "piazzetta dei pini", surrounded by shops and lounge bars is the place most frequented by younger people.



Source: Own Elaborations on Rapporto sul Turismo Italiano, 2007.

Chart 5. Tourists hosted in different locations, 2006.

Concerning the motivations to travel to Italy, tourists visits the country mainly for personal reasons (78.35%) and then for business (21.65%). Among the personal reasons, "going on holiday" is the major incentive for doing tourism (74.62%), followed by visits to relatives and friends (11.37%) and travel for study (5.68%). Among the business reasons, professional activities (81.69%) are the chief spur to travel, followed by seasonal jobs (9.18%) and the participation to conferences and workshops (9.18%) (Chart 6).



Personal reasons	Absolute values	% values
Holidays	17730	74.62
Study	1350	5.68
Religious purposes	102	0.43
Wellness	146	0.61
Wedding	167	0.70
Visits to relatives and friends	2701	11.37
Shopping	1091	4.59
Other reasons	473	1.99
Total	23760	100

Business reasons	Absolute values	% values
seasonal jobs	603	9.18
conferences plus workshops	599	9.12
professional activities	5364	81.69
Total	6566	100

Source: Own elaborations on Tourism and Finance, 2008.

Chart 6. Motivations to travel to Italy, 2006 % values.

4. THE ACCOMMODATION MARKET

In 2006, there were 4,499,671 tourist beds in Italy, distributed across 87,127 tourism establishments (ISTAT, 2007). The Italian accommodation supply in 2006 is made of "non-hotel establishments" with a quota of 66.3%, of hotels with a share of 28.5% and of private rented houses with a share of 7.9%. The composition has changed with respect to the past years when both the share of non-hotel accommodations and hotels in the total Italian supply were greater. In year 2000, these shares were of about 71.5% and 28.5% respectively. The presence of a vast majority of non-hotel accommodations is a special feature of the Italian accommodation system, because other European countries offer especially accommodation in hotels. In any case, as far as overnight stays are concerned, hotels are the preferred accommodation by international tourists, in 2006 they accounted for 61% of the nights spent, tourist apartments and Bed and Breakfast (B&B) for 9.2%, camping for 8.8% and agri-tourism for 1.8%. The remaining visitors opted for other types of non-hotel accommodation.

Since the mid-1990s, the number of nights spent in three/four star hotels has increased, reflecting, among other things, the growing importance of conference tourism and the trend toward 'quality tourism', that has in turn led to a rationalization (with a decline of 1 and 2 stars hotels) and an upgrading of many existing establishments towards higher quality standards. The hotels with an higher category are generally of larger dimensions compared to 1 or 2 stars establishments which have on average 23 rooms per hotel. Besides, the accommodations in hotels has been pushed by the increase in weekend trips and city breaks. Other type of accommodations are growing in popularity, and they are mainly selected by tourists of the so called "niche travel segment" such as eco-tourism, gastronomy-tourism and adventure trips.

Foreign tourists that choose to overnight in hotels come especially from Germany, UK, the USA and France. Other vacationers from the Netherlands, Denmark and Czech Republic prefer other type of accommodations (RTI, 2007).

The supply of accommodations in hotels is characterized by a strong seasonality and under-utilized capacity. The Italian National Institute of Statistics (ISTAT) has estimated that on average only 40.1% of the total capacity (occupancy) is effectively used throughout the year. The value is computed considering the ratio between the number of bed places available in accommodation establishments all year long (including seasonal closures) and the number of nights spent by tourists (residents and non residents) over the same period. The summer months register the highest percentage with about 70% of the total capacity utilization; November has the smallest occupancy rate in the year (about 24%).

4.1. International Price Competitiveness

Relative prices, i.e. the price of a certain destination compared to the price of alternative destinations, are one of the main drivers of tourism demand. Taking into account that a fixed exchange rate operates into the Euro Area and that the Euro itself has appreciated with respect to the dollar, price discrimination policies across type of tourists become crucial selling strategies to promote the competitiveness of a given destination. The problem of setting a certain price encountered by the Italian accommodation establishments is relatively new, because until the 90s a controlled regime of administered prices was in place. This implied a homogenization of prices among similar type of accommodation. After the liberalisation in 1991, each tourism establishment has been able to decide its own price strategy. The policy strategy adopted by the accommodation sector has been almost in line with the average at European level. Those of "transportation", "packages all inclusive", "food and drink segment" have been above the average. Table 3 depicts the international price competitiveness of four categories of tourism services for the period 2000-2006.

For all the four service's categories, the Italian prices have increased more than the EU-15 average between 2000 and 2006. Major upsurges have been recorded for the groups "tourism packages" and "transport", whose prices have raised by 32.2% and 28.9%, respectively against average increases in the Euro Area of 17% and 22%, respectively (Table 3). The tourism packages for a vacation in Sardinia, Sicily or Puglia are about 30% higher than a similar holiday in Tunisia or Crete. Minor increases have been registered for the categories of "accommodation" and "food and drinks" (Table 3).

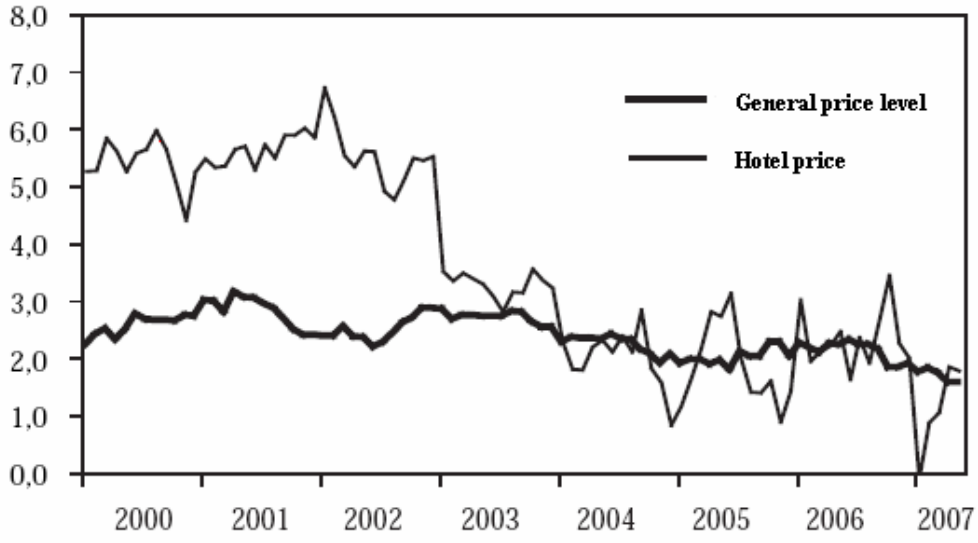
As for accommodations, Italian increases in price have been almost similar to those of France, lower than those of Greece, UK and Spain and greater than those of Germany, Austria and Portugal. For the food and drink sector, Italian prices have increased more than those of UK, France and Germany and less than Spain, Greece and Portugal.

Table 3. Price dynamics (Harmonized Consumer Price Index, % variations 2000-2006)

	Tourism Package %		Transport %		Accommo-dation %		Food and Drinks %
Greece	35.3	Spain	37.3	Greece	36.5	Spain	30.6
Italy	32.2	Greece	34.8	UK	31.7	Greece	28.9
Spain	28.2	Portugal	32.2	Spain	26.4	Portugal	27
UK	23.7	Italy	28.9	Italy	24	Italy	22.3
France	20.4	UK	28	France	22.9	UK	19.5
Portugal	16.6	Malta	21.7	Portugal	20.9	France	18
Germany	7.2	Germany	19.3	Austria	17.5	Germany	9.2
Austria	2.9	France	13.8	Germany	10.5	Malta	-8.7
Average EU-15	17%	Average EU-15	22%	Average EU-15	22.90%	Average EU-15	21%

Source: Confturismo, 2007.

Within the accommodation services, hotel price is the component that has augmented the most. Generally, hotel prices have grown higher than the inflation rate (see Chart 7); the gap between the two variables has narrowed or inverted since 2004.



Source: CSC, 2007.

Chart 7. General price and hotel price dynamics. % variations.

Making an international price comparison for hotels' price in the medium high category, it turns out that Rome is the third most expensive European capital, after Paris and London, with a price per night of 228 euros in December 2007. The cheapest cities are mainly in Central Northern Europe, such as Berlin and Amsterdam (Table 4).

Table 4. International Hotel Performance Data. December 2007

	Occupancy		Average Room Rate	
	2007 %	Change %	2007 US$	Change %
Europe (Hotel Benchmark sample represents approximately 3,500 hotels across the region)				
Amsterdam	67.9	0.90%	202	23.10%
Berlin	60.2	2.90%	122	16.00%
Brussels	67.4	0.40%	156	24.00%
London	74.5	1.20%	258	10.30%
Madrid	61	-1.30%	158	18.40%
Paris	73.3	6.80%	299	15.60%
Rome	54.7	-6.60%	228	13.60%
Vienna	77.8	-2.30%	167	16.90%

Source: http://www.hotelsmag.com/performance-data/.

The same trend is found if average prices for 2005 and 2006 are considered (Table 5).

Table 5. International Hotel Performance Data. 12-Month Running Average 2005-2006

	Occupancy		Average Room Rate	
	2007 %	Change %	2007 US$	Change %
Europe (Hotel Benchmark sample represents approximately 3,500 hotels across the region)				
Amsterdam	80.1	3.10%	167	8.30%
Berlin	67.3	5.40%	120	10.50%
Brussels	71	4.90%	120	0.10%
London	81.5	7.60%	212	5.50%
Madrid	70	2.50%	135	3.90%
Paris	73.3	5.20%	248	6.60%
Rome	75.8	4.50%	188	2.30%
Vienna	74.8	4.10%	117	4.50%

Source: http://www.hotelsmag.com/performance-data/.

In general high prices for hotels in Italy, are primarily due to the lack of low cost hotellerie. This is because there is a predominance of family run businesses –which reduce the possibility to benefit from economies of scale with the consequent cost reduction- and the presence of hotel chains of medium-high category. In addition, in Italy there are legal constraints regarding the minimum dimension of the room that make difficult for the low cost hotels to operate. These constraints on one side guarantee a better quality of services for the consumers, on the other, they are a limit for price flexibility. Finally, price levels are influenced by taxation burdens on tourism business. In Italy the VAT[20] rate on hotels is relevant (10%), if compared to the VAT rate on hotels in other EU countries, such as Spain (7%), France (5.5%), Slovenia (8.5%), Poland (7%) and the Czech Republic (5%). The VAT rate levied on restaurant, café and bar in Italy is more contained compared to France, Ireland and Czech Republic (Table 6).

Table 6. VAT rates, 2007

	Standard VAT rate	VAT on hotels	VAT on meals
Austria	20%	10%	10%
Czech Republic	19%	5%	19%
France	19.60%	5.50%	19.60%
Ireland	21%	13.50%	13.50%
Italy	20%	10%	10%
Poland	22%	7%	7%
Slovenia	20%	8.5%	8.5%
Spain	16%	7%	7%

Source: Highland Council, 2007.

[20] The value added tax (VAT) is a consumption tax paid by the final consumer. It is not a direct charge on business, but since the application of this tax has an impact on the price charged by businesses, it directly affects business competitiveness.

4.2. The World Economic Forum Indicator of Competitiveness in Tourism

According to Richardson (1987) the travel and tourism sector is "fully internationally tradeable in the sense that suppliers from any country could compete in these markets in a fully liberalized institutional environment." Since vacationers receive "an experience" from their selected destination, factor conditions become important determinants of attractiveness. The theory of factor proportions by Heckscher-Ohlin, which identifies spatial variations in relative endowments of factors of production as the main driver of international specialization, seems to explain quite well the competitiveness of tourist destinations, but it is perhaps not sufficient to explain competitive advantages completely. Porter (1990) identified five broad categories of factors of competitive advantages: physical resources, human resources, knowledge resources, capital resources and infrastructure. In addition one has to add historical and cultural resources as a supplementary resource category (Keller and Biegert 2007; Keller, 2006; Crouch and Brent, 1999).

The World Economic Forum, an institute which has always paid attention to the international competitiveness of countries has created an indicator to explore the factors and policies driving travel and tourism competitiveness in nations worldwide, called *Travel and Tourism Competitive Index* (TTCI). In general Tourism and Travel industry to be competitive has to enjoy both internal and external competitiveness. Internal competitiveness refers to the availability of human and managerial resources, the abundance of technological infrastructures, proper firm dimension and organization, good branding policies, competitive price and superior quality of the supplied services. External competitiveness refers to a favourable socio-economic and productive context, to a good credit market and to a solid fiscal regime. In order to consider the internal and external aspects of competitiveness, the TTCI has been built around three main macro-indicators, namely the travel and tourism regulatory framework, the travel and tourism business environment and infrastructure, and the travel and tourism human, cultural and natural resources. The travel and tourism regulatory framework is measured on the basis of the legal and regulatory measures, mainly those concerning the environment, health and hygiene protection that are in place in a given country. The travel and tourism business environment and infrastructure comprises all types of transportation, tourism infrastructures (such as car rental, number of bank mat), ICT accessibility and price competitiveness (included the cost of carburant, airport taxes, etc.) of a certain country. Human, cultural and natural resources particularly relevant for tourism include the degree of professionalism of the labour force, the level of flexibility in the labour market and the quality of education. Each of these three macro-categories is, in turn, divided into 13 subcategories. The World Economic Forum has calculated the TTCI for 130 countries. Switzerland takes the leading position in the Tourism and Travel Competitive Index ranking, followed by Austria and Germany. France the most visited destination in the world, occupies only 12th place. Italy, the country with the highest number of World Heritage sites in the world, has even a worse position, it is 28 in the ranking in 2008. Italy is positively evaluated for its cultural aspects and the very good tourism infrastructures (presence of major car rental companies, hotels with ATMs accepting visa). However, the country's travel and tourism competitiveness shows several weaknesses, mainly there are few policy interventions addressed to the tourism sector, insufficient marketing and branding strategies. For instance, France and Spain invest in tourism marketing more than double of public funding than Italy. Conversely, in Italy there are too much regulations and restrictions concerning foreign

ownership, extra-EU visitors and FDI. For example, the average time to get a VISA for a Chinese, Japanese or Russian from an Italian consulate is of about 3 weeks against 1 week for the same vacationers going to France or Spain. The very long time pushes the operators of those extra-EU countries to select other Tour operators belonging to the Schengen agreement. These factors of weakness together with the lack in price competitiveness (especially the extent and effect of taxation, high fuel price level) push the overall index down. The analysis of the TTC index thus becomes useful for government to improve the TandT competitiveness of their own country (Chart 8).

	Rank (out of 130)	*Score (1-7 scale)*
2008 INDEX	**28**	**4.8**
T&T regulatory framework	**41**	**5**
Policy rules and regulations	57	4.4
Environmentalsustainability	39	4.9
Safety and security	81	4.8
Health and hygiene	19	6.3
Prioritization of travel &tourism	46	4.6
T&T business environment and infrastructures	**24**	**4.8**
Air transport infrastructure	26	4.4
Ground transport infrastructure	40	4.5
Tourism infrastructures	4	6.9
ICT infrastructure	25	4.6
Price competitiveness in the T&T industry	124	3.5
T&T human, cultural and natural resources	**15**	**4.7**
Human resources	39	5.2
Education and training	35	5.1
Availability of qualified labour	55	5.3
Affinity for travel and tourism	67	4.8
Natural resources	60	3.2
Cultural resources	8	5.8

Source: WEF, 2008

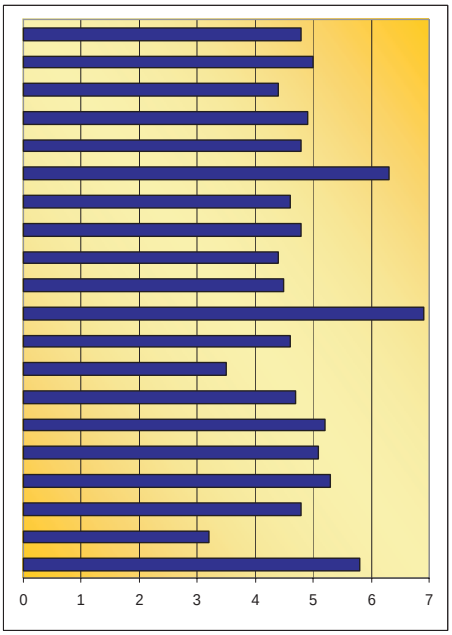


Chart 8. Travel and Tourism Competitiveness Index, for Italy.

The government is in fact a “co-producer” in tourism (OECD, 2008). On the one hand, it contributes to create the policy environment necessary for growth in tourism, on the other it designs and reinforces the necessary services (above all in terms of efficient means of public transportation and branding) in order to render a given destination attractive to potential visitors.

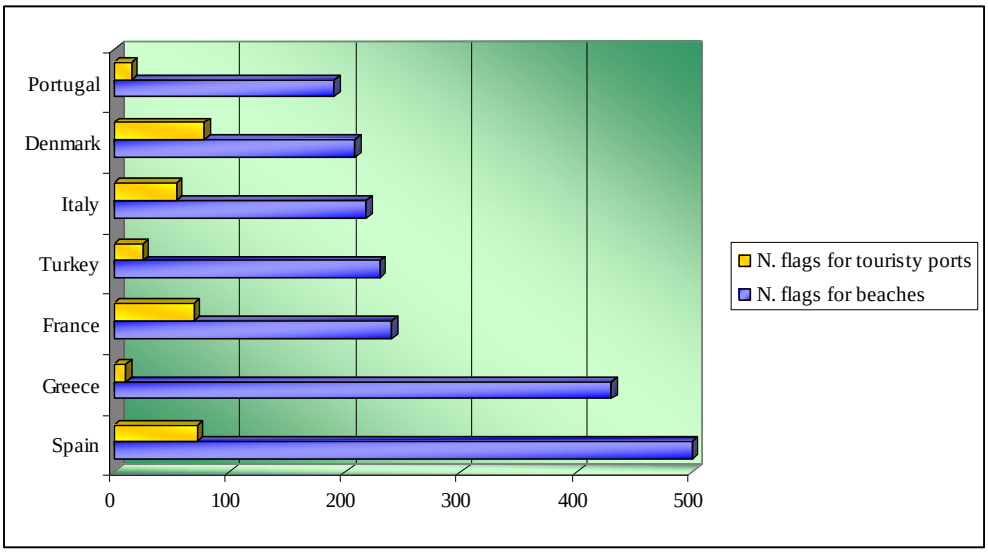
4.3. Environmental and Cultural Attractiveness

The natural environment and the cultural heritage are the main strengths of Italian tourism; these – as already highlighted by the TTC index – are however not sufficient to endorse tourism in the country, it is important that a series of policy measures are put in place to promote adequately the image of Italy, to preserve and ameliorate the quality of the environment and to create a set of complementary services. It is illustrative the case of the

costal zones: albeit Italy has about 8400 km of coastline, only 603.54 km are considered legally protected (CSC, 2007). This is about 7% of the total. Furthermore, a bigger effort in promoting the quality of sea should be pursued. In 2007, Italy has scored 218 blue flags for the quality of beaches and sea and 54 blue flags for the quality of touristy ports. The Blue Flag is given to beaches and marinas that meet a specific set of criteria concerning environmental information and education, water quality, safety and services and environmental management. It has become a symbol of quality recognised by tourists and tour operators and can be used for the promotion of the awarded beach or marina (Blue Flag, 2007). The result of Italy is not satisfactory if compared to the other outcomes reached by Italy's main competitors, especially Spain and France (Chart 9).

Of course this type of evaluation has an impact on tourist perception and therefore it is clear that the only natural endowment, such as sea and coastlines, is a necessary but not sufficient condition to ensure a competitive advantage.

The cultural attractiveness of a given location is a combination of several elements: the presence of archaeological parks, historical city centres, monuments, museums and galleries, and all the complementary services planned to preserve and valorise the resource endowments. The Italian cultural supply is very significant: the United Nations Educational, Scientific and Cultural Organization (UNESCO) has recognised 41 Italian locations on a total of 851 in the world, as part of the common heritage of humankind (see Annex for details). UNESCO adopted the Convention concerning the Protection of the World Cultural and Natural Heritage in 1972. Since then, 184 countries have ratified the treaty, and at present 851 properties are inscribed on the List — 660 of which are cultural, 166 natural and 25 mixed (a combination of the two). Cultural heritage refers to monuments, groups of buildings and sites with historical, aesthetic, archaeological, scientific, ethnological or anthropological value.

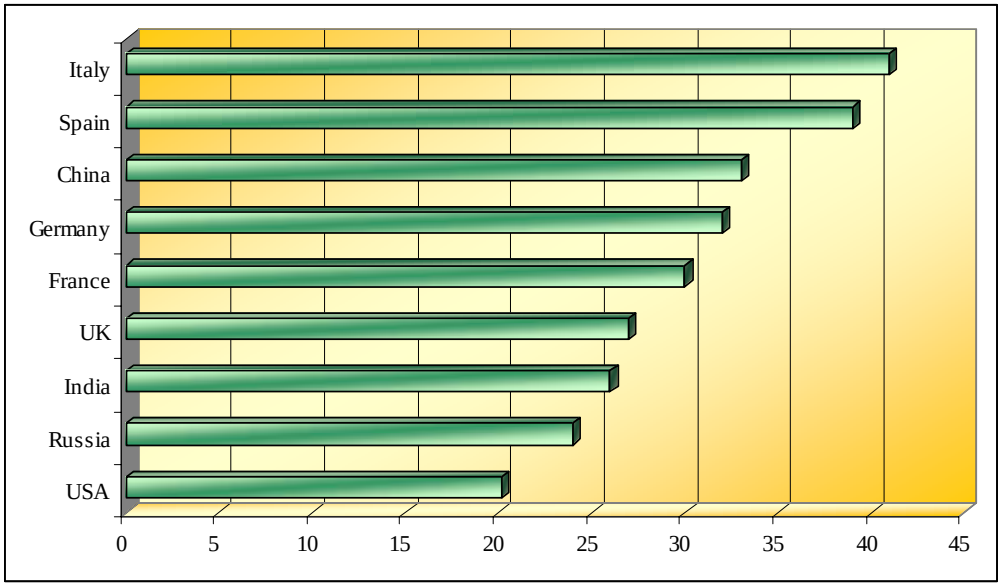


Source: Own elaborations on www.Blueflags.org.

Chart 9. Blue Flags, 2007.

Natural heritage refers to outstanding physical, biological and geological formations, habitats of threatened species of animals and plants and areas with scientific, conservation or aesthetic value.

Recently, Italy has passed a law (N.77, 2006) with the objective to create a series of "managerial and strategic plans" for all the locations declared heritage of the humanity by UNESCO. These plans define also the necessary interventions to recover financial resource and recruit the personnel.



Source: UNESCO, 2008.

Chart 10. Unesco Sites, 2007.

The UNESCO sites represent only a part of the vast cultural supply of Italy, there are a great number of Institutes of ancient art, many of them can be accessed free of charge. Among those with an entrance fee, there are Pompeii archaeological site near Naples, the Coliseum and Palatine Institutes in Rome, the Uffizi Gallery and Academy in Florence.

Vacationers are not only attracted by the archaeological sites and museum, but also by those locations with an historical and artistic patrimony, the so called "cities of art". The latter are less susceptible to the seasonality of tourism flow compared to the sun and beach tourism and therefore they can contribute to reinforce the competitive advantage of Italy.

4.4. Cultural Tourism in Italy

Cultural tourism is an important segment of the Italian tourism and it includes a host of activities for vacationers, including the country's historic towns and cities of art, its folklore and traditions, traditional regional gastronomy, wine paths, religious and music festivals. All together, the cultural and historic heritage includes 95,000 monumental churches, 20,000 historic town centres, 40,000 fortresses and castles, 56,500 villas and historical buildings and

4,200 museums. Cultural tourism in Italy increased by 80% from 1990 to 2000, and by 10% between 2000 and 2006%. Within cultural tourism, museums are a set course.

In 2006 the 400 national museums, monuments and archaeological sites have been visited by 34,492,875 people (+4.3% with respect to 2005). Piedmont is the Italian region that experienced the highest growth (+63% visitors with respect to 2005) followed by Lombardy (+12.8%) and Abruzzi (+7.3%). A research on the Italian factors of attractiveness carried out by Doxa, Mercury and Touring Club in 2006 showed that “art and culture” are the most important elements of attractiveness for foreigners (with a score of 8.3 out of 10) followed by “food and wine” and “landscape and natural environment”. The study also shows that the most renown Italian places abroad are Rome (64.3%), Venice (35.9%), Milan (27.5%) and Florence (23.4%) and also Naples, Turin and Verona.

Museums have a special role in attracting tourists. The great majority of the most visited museums is located in important cities of art such as Florence, Rome and Venice (Table 7). The Vatican Museums is the most visited museum in Italy with more than 4 million visitors in 2006 followed by the Excavations of Pompeii (2,569,872 visitors) and Uffizi Gallery in Florence. In 2006 the 30 most visited Italian museum reached 23,798,502 visitors (Table 7). The first ten museums counted 15,980,863 entrances, 67% of the whole top 30 (Touring club, 2007). During the same year Turin’s museums have registered brilliant performances: an increase in visitors by 93.8% for the Egyptian Museum and by 39.1% for the National Film Museum. Compared to 2005, excellent results have been also recorded by the National Museum of Science and Technology "Leonardo Da Vinci” in Milan (+21.8%).

Museums are divided into four categories: artistic, archaeological, science and company museums. About 17 museums present in Top 30 are artistic museums. The artistic museums with more than one million entrances are the Vatican Museums, the Uffizi Gallery and the Vasari Corridor in Florence, the Doge’s Palace in Venice, the Academy Gallery and the St. Croce Church in Florence (Table 8). Among the archaeological museums and sites, very renown are the Excavations of Pompeii (2,569,872), the archaeological area “Grotte di Catullo” located near Sirmione on the Garda lake (233,419 visitors) and the Egyptian Museum in Turin (554,911) (Table 9). The majority of science museums are located in Northern and Central Italy. Nearly all the scientific museums experienced an increase in their visitors in 2006, with the only exception of the Genoa Aquarium (-3.2%) (Table 10). The five most visited company museums in Italy are the Ferrari Gallery, the Historical Museum Perugina, the Ducati Museum, the Moto Guzzi Museum and the Aboca Museum (Table 11).

Table 7. The 30 most visited museums in Italy (2006)

Museums	Locality	Number of visitors 2006	Number of visitors 2005	% variation 05-06
Vatican Museums	Vatican City	4267014	3822234	11.6
Old and new excavations at Pompeii	Pompeii	2569872	2370940	8.4
The Uffizi Gallery and the Vasari Corridor	Florence	1664232	1342558	24.0
Doge's Palace[1]	Venice	1499285	1446017	3.7
Genoa Aquarium	Genoa	1262000	1304000	-3.2
Academia Gallery	Florence	1237012	1177513	5.1
St. Croce Church	Florence	1008157	958182	5.2
National Museum of Castel Sant'Angelo	Rome	875893	808787	8.3
Central Museum of Risorgimento	Rome	850000	820000	3.7

Table 7. (Continued)

Museums	Locality	Number of visitors 2006	Number of visitors 2005	% variation 05-06
Biopark of Rome	Rome	747398	601846	24.2
Egyptian Museum	Turin	554911	286296	93.8
National Film Museum[2]	Turin	534655	384415	39.1
Capitoline Museums	Rome	515266	480050	7.3
Borghese Gallery	Rome	484920	439986	10.2
St. Marco Museum	Venice	478600	522000	-8.3
Caserta Royal Palace[3]	Caserta	462579	447383	3.4
Archaeological Museum of the Roman Villa del Casale	Armerina Square	423168	406565	4.1
The City of Science	Naples	389215	377412	3.1
National Archaeological Museum[4]	Naples	382784	344056	11.3
National Museum of Science and Technology "Da Vinci"[5]	Milan	380221	312091	21.8
The Peggy Guggenheim Collection	Venice	375717	349720	7.4
Museum of Medici Chapels	Florence	374297	369585	1.3
Old Palace and Monumental Quarters	Florence	349189	359907	-3.0
Cenacolo Vinciano	Milan	333195	328379	1.5
Archaeological Area[6]	Paestum	332983	314394	5.9
Academy Gallery	Venice	301583	369656	-18.4
Historical Museum Saint Peter's Basilica	Vatican City	297534	277407	7.3
Ercolano Excavations	Ercolano	295517	284129	4.0
Ostia Excavations	Ostia-Rome	292256	292392	0.0
Historical Museum of Miramare	Trieste	259067	252293	2.7

sky blue=Art Museum
yellow= Archaeological Museum
green= Science Museum

[1].The Doge's Palace is part of the Area Marciana Museum Pass. The figure includes only the entrances to the Doge's Palace.

[2].The figure excludes the entrances to the Cinema Massimo – Sala 3 Cineteca (28,434 in 2006).

[3].The number refers to the museum's visitors and excludes the entrances to the Reggia's gardens.

[4].The value considers only entrances with Artecard (28.931).

[5].Visitors of special events are not included (37.224 in 2006).

[6].Provisional data from the Statistical Office of the Ministero per i Beni e le Attività Culturali. The figure considers also "inclusive tickets" with Paestum National Archaeological Museum.

Source: Touring Club 2007.

Table 8. The 10 most visited artistic museums in Italy (2006)

Museums	Locality	Number of visitors 2006	Number of visitors 2005	% variation 05-06
Vatican Museums	Vatican City	4267014	3822234	11.6
The Uffizi Gallery and the Vasari Corridor	Florence	1664232	1342558	24.0
Doge's Palace[1]	Venice	1499285	1446010	3.7
Academia Gallery	Florence	1237012	1177513	5.1
St. Croce Church	Florence	1008157	958182	5.2
National Museum of Castel Sant'Angelo	Rome	875893	808787	8.3
National Film Museum[2]	Turin	534655	384415	39.1
Borghese Gallery	Rome	484920	439986	10.2
St.Marco Museum	Venice	478600	522000	-8.3
Caserta Royal Palace[3]	Caserta	462579	447383	3.4

[1.] The Doge's Palace is part of the Area Marciana Museum Pass. The number considers only entrances to the Doge's Palace.

[2.] The figure leaves out the entrances to the Cinema Massimo – Sala 3 Cineteca.

[3.] The number refers to the museum's visitors and doesn't take into account the entrances to the Reggia's gardens.

Source: Touring Club 2007.

Table 9. The 10 most visited archaeological museums and sites in Italy (2006)

Museums	Locality	Number of visitors 2006	Number of visitors 2005	% variation 05-06
Old and new excavations at Pompeii	Pompeii	2569872	2370940	8.4
Central Museum of Risorgimento	Rome	850000	820000	3.7
Egyptian Museum	Turin	554911	286296	93.8
Capitoline Museums	Rome	515266	480050	7.3
Archaeological Museum of the Roman Villa del Casale	Armerina Square	423168	406565	4.1
National Archaeological Museum[1]	Naples	382784	344056	11.3
Archaeological Area[2]	Paestum	332983	314394	5.9
Ercolano Excavations	Ercolano	295517	284129	4.0
Ostia Excavations	Ostia-Rome	292256	292392	0.0
Museum "grotte di Catullo" and the Archaeological Area	Sirmione	233419	218516	6.8

[1.] The figure comprises only entrances with Artecard (28.931).

[2.] Provisional data from the Statistical Office of the Ministero per i Beni e le Attività Culturali. The number refers to "inclusive tickets" with Paestum National Archaeological Museum.

Source: Touring Club 2007.

Table 10. The 10 most visited science museums in Italy (2006)

Museums	Locality	Number of visitors 2006	Number of visitors 2005	% variation 05-06
Genoa Aquarium	Genoa	1262000	1304000	-3.2
Biopark of Rome	Rome	747398	601846	24.2
The City of Science	Naples	389215	377412	3.1
National Museum of Science and Technology "Da Vinci"[1]	Milan	380221	312091	21.8
Civic Museum of Natural History	Milan	247000	240752	2.6
Botanic Garden Villa Taranto	Verbania	171853	164042	4.8
Zoological Garden of Pistoia	Pistoia	129650	110352	17.5
Planets and Astronomic Museum	Rome	106957	101425	5.5
Civic Museum of Natural Science, "E. Caffi"	Bergamo	89270	85977	3.8
Tridentino Museum of Natural Science[2]	Trento	72759	n.a.[3]	-

[1].Visitors of special events are not incorporated.

[2].The Tridentino Museum of Natural Science is a network of museums which includes: the Museum of Aeronautic Gianni Caproni, the Museum of Palafitte of the Ledro Lake, the Alpine Botanic Garden Viotte of Bondone Mountain, the Terrazza delle Stelle Viotte of Bondone Mountain, the Arboreto di Arco and the Train station Limnologia of Tovel Lake.

[3].Data for 2005 were not available.

Source: Touring Club 2007.

Table 11. The five most visited company museums in Italy (2006)

Museums	Locality	Legalus stat	Number of visitors 2006
Ferrari Gallery	Maranello	mixed	166530
Histirical Museum Perugina	San Sisto	private	64000
Ducati Museum	Bologna	private	45000
Motor Guzzi	Mondello del Lario	private	20000
Aboca Museum	Sansepolcro	private	15000

Source: Touring Club 2007.

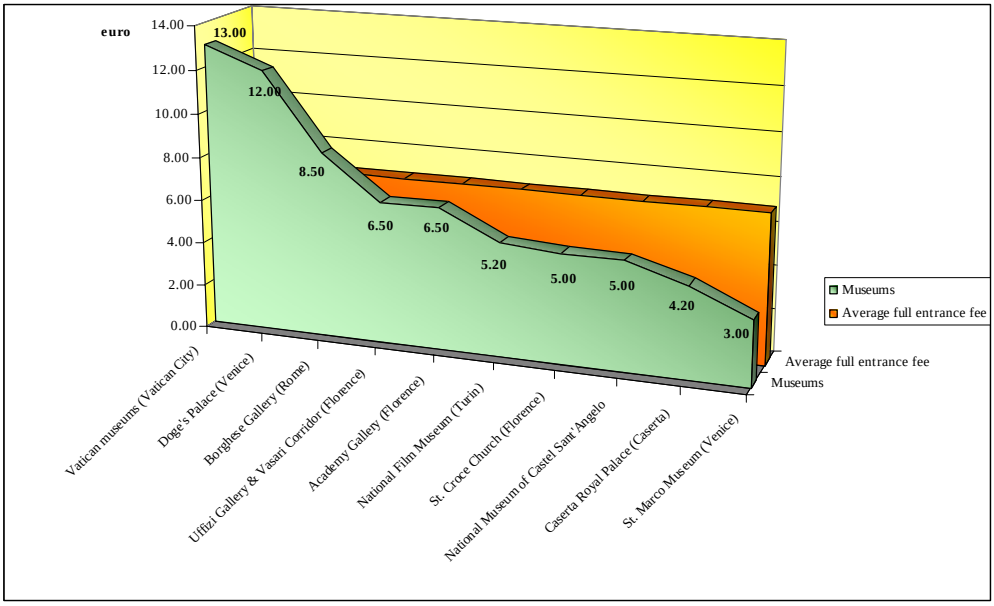
Table 12. Average entrance fee of museums by category

	Average entrance fee, full price in euro	Average entrance fee, reduced price in euro	Discount rate %
Artistic	6.89	3.96	42.6
Archaeological	6.20	3.20	48.4
Science	6.85	4.75	30.7

Source: Own Elaborations on Touring Club 2007.

According to the Touring Club in 2007, the average full entrance fee was of 6.20 euro for the archaeological museums and sites, 6.89 euro for the artistic museums, 6.85 euro for science museums. This means that there are no price differences among the types of museums. All the categories of museum offer reduced price tickets for students, pensioners and children. In this case the difference in prices between categories is larger than that concerning full fare (Table 12).

Considering prices at a more disaggregated level, the Vatican Museum is the most expensive, with a full entrance fare of 13 euro, followed by Doge's Palace in Venice (12 euro) and Borghese Gallery in Rome (8.50 euro). The cheapest price is due for the St. Marco Museum in Venice with an entrance ticket of only 3 euro (Chart 11).



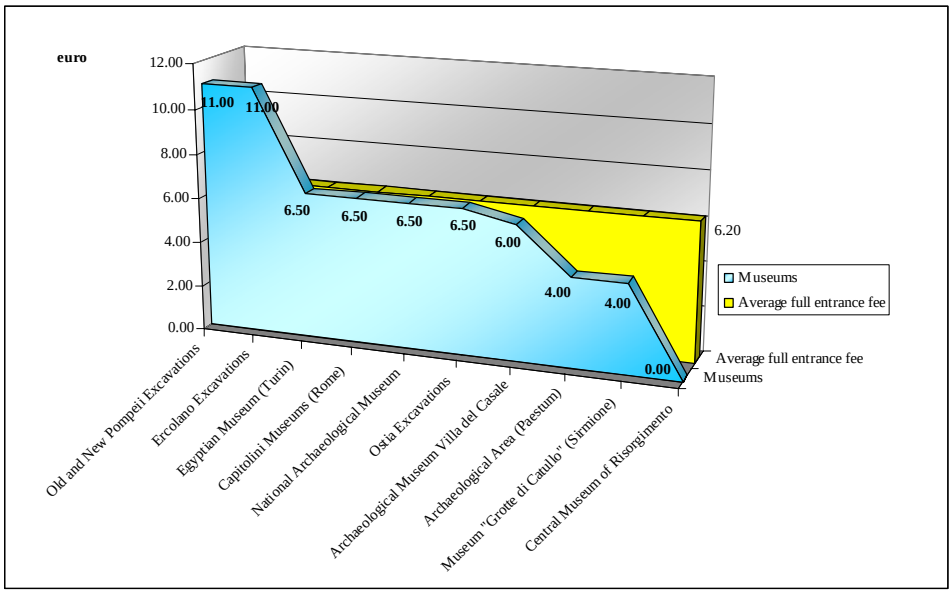
Source: Own Elaborations on Touring Club 2007.

Chart 11. The 10 most visited artistic museums: full fare entrance fees.

As regards the archaeological museums, the Pompeii archaeological sites and the Ercolano excavations are the dearest, with a full entrance fee of 11 euro, followed by the Egyptian museum and the Capitolini museums (6.50 euros). The Grotte di Catullo and the Paestum sites are the most inexpensive museums (4 euros). The entrance to the Central Museum of Risorgimento is free of charge (Chart 12).

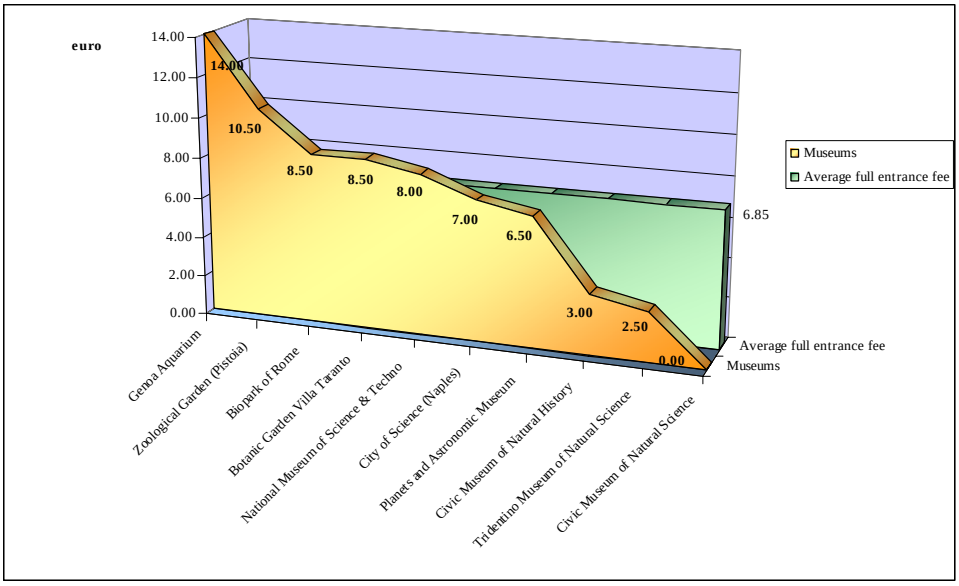
With reference to the science museums, the Genoa Aquarium is the most expensive with a full entrance fare of 14 euro, followed by the Zoological garden of Pistoia with 10.50 euro. The Trident museum of science is the most economical and the Civic museum of Natural Science in Bergamo is gratuitous (Chart 13).

The vast majority of museums is closed on Mondays, although there are eleven museum that are always open. In order to better promote long week-ends and foster cultural tourism the Monday's closure should be changed. Concerning the type of services offered by museums, only few of them present a nursery and all of them are science museums: the City of Science Museum in Naples, the Tridentino Museum of Natural Science in Trento and the Zoological Garden in Pistoia. Online ticketing and tours for children are not so much diffused and also more traditional services such as telephone booking in general are not so common. Normally, science museums seem have a better managerial system compared to the other types of museums and most of them are concerned in activities of customer care, including the preparation and administration of surveys among visitors at the end of their visits (Touring Club, 2007).



Source: Own Elaborations on Touring Club 2007.

Chart 12. The 10 most visited archaeological museums and sites: full fare entrance fees.



Source: Own Elaborations on Touring Club 2007.

Chart 13. The 10 most visited science museums: full fare entrance fees.

CONCLUSIONS

Tourism brings together people of different cultures and habits, it shapes the modes of behaviours, it leads to development of institutions and new laws and accelerates the process of globalization (OECD, 2008). Compared to the 50s, nowadays people have an increasing

number of destinations and a significant set of products and services among which to choose. The traditional tourism destinations have lost their monopoly position in the world market and they currently face a new type of competition from countries whose resources are still very much genuine and enjoy favourable business conditions in terms of prices and currency.

The role of tourism in the Italian economy is relevant. The value generated directly and indirectly by the sector was 272 billion dollars of income in 2007. Throughout the same year, tourism accounted for about 10% in the total national value added, and it employed directly and indirectly 2.6 million people (Confturismo, 2008). Currently, the Italian tourism market shows both strengths and weaknesses. Among the first, there is the vast cultural and historical heritage of the country, its significant coastline and the great potentiality in diversifying tourism offer (from winter to summer holidays, from thermal to wine and gastronomy tourism, from agri-tourism to movie-tourism etc.). Among the problems, there are mainly the high bureaucracy and regulations of the sector and the lack in price competitiveness.

The Italian government policies, thus, become important to foster tourism and solve the criticalities of the sector. In particular, policies should be addressed to areas where market might be not able to provide what is necessary to improve the performance of tourism services, especially for small and medium enterprises. Explicitly, the Italian government should provide positive business environments by reducing bureaucracy, promoting innovations and improving infrastructures. At the same time, policy measures should push tourism firms to adopt best practices in networking and strengthen the competitiveness through fiscal incentive and VAT reductions. Besides, they should also endorse education and professional training. Finally, marketing and promotion become essential to generate viable levels of demand for tourism products and to succeed in a very competitive arena. Well-targeted promotion can also contribute to tourism diversification and sustainability.

ANNEX
WORLD HERITAGE SITES IN ITALY, 2007

1. Rock Drawings in Valcamonica
2. Church and Dominican Convent of Santa Maria delle Grazie with “The Last Supper” by Leonardo da Vinci
3. Historic Centre of Florence
4. Historic Centre of Rome
5. Venice and its Lagoon
6. Piazza del Duomo, Pisa
7. Historic Centre of San Gimignano
8. The Sassi and the Park of the Rupestrian Churches of Matera
9. City of Vicenza and the Palladian Villas of the Veneto
10. Historic Centre of Siena
11. Historic Centre of Naples
12. Crespi d’Adda
13. Ferrara, City of the Renaissance and its Po Delta
14. Castel del Monte
15. The *trulli* of Alberobello

16. Early Christian Monuments of Ravenna
17. Historic Centre of the City of Pienza
18. 18th-Century Royal Palace at Caserta with the Park, the Aqueduct of Vanvitelli and San Leucio Complex
19. Residences of the Royal House of Savoy
20. Botanical Garden (Orto Botanico), Padua
21. Cathedral, Torre Civica and Piazza Grande, Modena
22. Archaeological Areas of Pompeii, Herculanum and Torre Annunziata
23. Villa Romana del Casale
24. Su Nuraxi di Barumini
25. Portovenere, Cinque Terre and the Islands (Palmaria, Tino and Tinetto)
26. Costiera Amalfitana
27. Archaeological Area of Agrigento
28. Archaeological Area and the Patriarchal Basilica of Aquileia
29. Cilento and Vallo di Diano National Park with the Archaeological Sites of Paestum and Velia and the Certosa de Padula
30. Historic Centre of Urbino
31. Villa Adriana (Tivoli)
32. City of Verona
33. Isole Eolie (Aeolian Islands)*
34. Assisi, the Basilica of San Francesco and other Franciscan Sites
35. Villa d'Este, Tivoli
36. Late Baroque Towns of the Val di Noto (South- Eastern Sicily)
37. *Sacri Monti* of Piedmont and Lombardy
38. Etruscan Necropolises of Cerveteri and Tarquinia
39. Val d'Orcia
40. Syracuse and the Rocky Necropolis of Pantalica
41. Genoa: The *Strade Nuove* and the system of the *Palazzi dei Rolli*

*natural property.
Source: UNESCO, 2008.

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Chapter 8

INNOVATION AMONG TOURISM ENTREPRENEURS AND THE IMPLICATIONS FOR RURAL DEVELOPMENT: THE CASE OF RURAL TOURISM IN LA PALMA[21]

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1. INTRODUCTION

As an economic activity, tourism has grown and diversified constantly over the last fifty years, with increasingly specialised activities. This transformation process has seen the emergence of rural tourism, which may be defined as 'tourist activity undertaken in a rural environment, comprising an integrated leisure offer aimed at a demand motivated by contact with the surroundings and which interacts with the local community' (Cánovas and Villarion, 2006).

Rural tourism as we know it today is a relatively recent phenomenon in Spain. The first action by the authorities to encourage such tourism in the country dates back to the end of the 1960s and was taken by the then Ministry of Information and Tourism to promote tourist stays in the homes of farm labourers by restoring the houses to cater for the growing demand. Later, in the mid-1980s, the Ministry of Transport, Tourism and Communications offered incentives in the form of grants to associations, cooperatives, companies and business groups to promote and market rural tourism as a way of generating employment and diversifying the tourism offer.

[21] This paper is based on an empirical study entitled 'Study of the segmentation of demand for rural tourism on the island of La Palma' (2007), which was commissioned by the Isla Bonita Rural Tourism Association.

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During the 1980s the crisis in agriculture, the population drain, and the limited opportunities to tackle unemployment and embed young people in the rural environment in Spain led to a number of experiences aimed at establishing tourism accommodation in rural parts. Legislative initiatives by a number of regions in Spain to plan and regulate the activity eventually spread to the entire country[22]. The early development of rural tourism was boosted by the emergence of a specific demand, driven by a desire for contact with nature and for the peace and tranquility of rural areas, as well as by a willingness to discover other destinations and the attractions of rural environments (Fuentes García, 1995, pp. 565-566).

The aim of the present work is two-fold. Firstly, it aims to define the factors that have encouraged entrepreneurship among rural accommodation proprietors and, secondly, to define the factors contributing to innovation in this sector of tourism. In the following section we will review some of the literature on entrepreneurship, with particular reference to tourism. Section 3 sets out hypotheses arising out of a study conducted on the island of La Palma. Section 4 examines the need for a reappraisal of rural tourism policy and, finally, some recommendations will be formulated.

2. ENTREPRENEURSHIP AND INNOVATION IN RURAL ENVIRONMENTS

An important process of urban growth has taken place over the last 100 years. This transformation of society creates new needs and new demands. Diversification of demand (see Ander and Levinthal, 2001) creates opportunities for new economic activities and innovations to be introduced.

2.1. Entrepreneurship

Economic literature considers entrepreneurship as a decision problem for an individual - the entrepreneur - who is located in a given environment. In line with Venkataraman (1997), entrepreneurship may be defined as the discovery, evaluation and exploitation of future goods and services, For Shane et al (2003), the entrepreneurial process is important for a number for reasons: 1) it fosters innovation and technological change; 2) it is the process through which supply and demand are balanced and 3) it is a process in which new knowledge is transformed into products and services.

Accordingly, entrepreneurship is considered the nexus of individual and opportunity (Sarason, Dean and Dillard, 2006). Economic literature considers opportunity from various perspectives: as an objective circumstance of the environment which is discovered by a number of alert individuals, or as the result of human creation. Eckhart and Shane (2003), following Casson and Shane and Venkataraman, define *entrepreneurial opportunities* as situations in which new goods, services, raw materials, markets and organisational methods can be introduced via relations between new means, ends or means-ends.

[22] The first regions to enact regulation governing rural tourism accommodation and agrotourism were Catalonia, 1983; Aragón, 1986; the Basque Country, 1988; Castilla-León, 1989; Asturias, 1991; the Balearic Islands, 1991; Navarre, 1991 and the Canary Islands, 1998 (Decree 18/1998).

Recent years have seen a significant development of entrepreneurship literature, with various types of situations highlighted (Christensen, 2004; Carrier, 1996): on the one hand are those situations where entrepreneurship is accompanied by the creation of a new organisation (company) to exploit the new opportunities. However, the entrepreneurship may also arise within an existing company, i.e., the discovery of new opportunities for profit within the company. The literature uses different terms to refer to this latter situation: 'intrapreneurship', which often refers to small undertakings, and 'corporate entrepreneurship', which is used in the case of large firms.

2.2. Rural Tourism Support Policies

Support policies are among the cornerstones of the early stages and subsequent development of rural tourism. The new direction in regional policy and rural development promoted by the European Community (European Commission, 1990, p. 3) called for a series of measures '*aimed at creating rural tourism products, which can be marketed in such a way as to encourage the setting up and development of business responsible for managing them*'. In addition, in the context of its reflection on rural development - which it noted should not depend solely on the farm sector - the Commission proposed '*other forms of economic activity that contribute to maintaining the rural population and consolidating the economy in rural regions*' (European Commission, 1991, p. 10).

The European Parliament also referred specifically to the 'promotion of rural tourism based on bringing countries closer together, knowledge of cultural heritage, the discovery of local cultures, and regard for the natural environment and the lifestyles of the populations concerned' (European Parliament, 1991, p. 91). The Parliament therefore welcomed new initiatives such as LEADER and the proposed Community actions on rural tourism.

The publication of the LEADER initiative (links between rural economy activities) - LEADER I (1991); LEADER II (1994) and LEADER + (2000-2006) - provided real support for the creation of a wide-ranging and diverse rural tourism provision both in Spain and at European level.

LEADER I set out the basic objectives needed for the rural tourism sector: better knowledge of leisure demand in rural areas, development of supply, improved organisation of supply and linkage of supply to demand, among others. For its part, LEADER II promoted the creation of new public and private initiatives, both individual and collective, geared to the needs of the new tourism offer and to the implementation of new rural tourism products. LEADER + aimed to promote the application of original and quality integrated sustainable development strategies designed to create new forms of valuing natural and cultural heritage, with a view to improving the natural environment and thus contribute to job creation and to enhancing the organisational capacities of local communities.

A similar philosophy of support for rural tourism has characterised Spain's PRODER programme (Operational Programme for the Development and Economic Diversification of Rural Zones in Objective 1 Regions) which covers two periods, 1996-1999 and 2000-2006. In the second period, it was extended to the whole country, albeit with separate operational and programming arrangements for Objective 1 and non-Objective 1 regions.

For their part, the White Paper on Rural Tourism (1992) and the Framework Plan for Tourism Competitiveness in Spain[23] (FUTURES) (1992-1995) sought to provide a new direction for Spain's tourism model, viewing rural tourism as an important sector within the country's overall tourism industry. The second Framework Plan for Tourism Competitiveness[24] (1996-1999) proposed support for new tourism products, including mountain tourism, ecotourism and agritourism.

Spain's Integral Tourism Quality Plan (PICTE) 2000-2006 summed up the situation of rural tourism when it noted that that '*a significant volume of investment and differences in the types of tourism and regulation have propitiated the placing on the market of a heterogeneous offer lacking common development criteria and with major difficulties in terms of profitability and marketing*'. Accordingly, the Plan proposed strengthening coordination between the country's regions to facilitate a more homogenous offer, as well as to coordinate incentives and help ensure the objectives of both the sector and the rural environment 'coincide and are guided by knowledge of the tourism market' (Ministry of Economy and Finance, 1999, p. 40).

By way of summary, rural tourism policies are supply-side policies based on two elements: on the one hand, they establish regulations governing rural tourism accommodation provision and, secondly, they put in place a system of incentives, based on grants designed to assist with the renovations needed in rural homes to turn them in to tourist accommodation.

2.3. Entrepreneurship and Innovation in Rural Areas

Agricultural economists have devoted little attention to entrepreneurship and innovation in agriculture (Knudson, Wysocki, Champagne and Peterson, 2004), although some studies have been conducted on the differences between rural and urban firms (Patterson and Anderson, 2003).

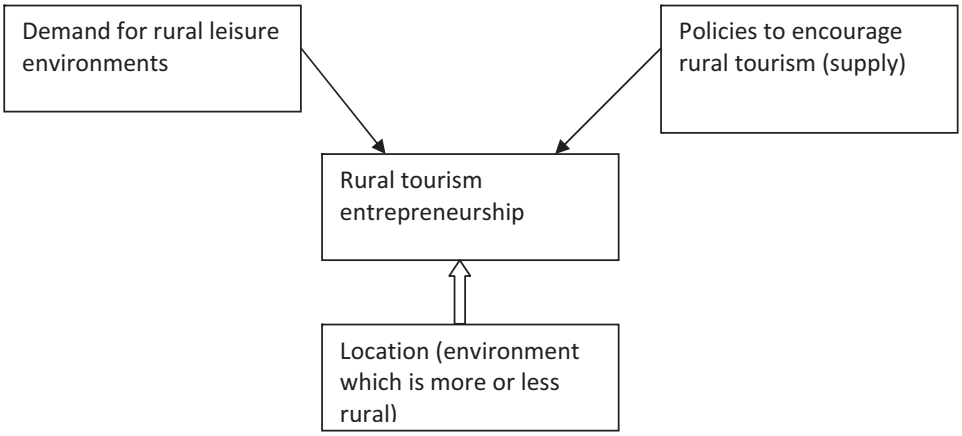
The few works dealing with entrepreneurship in tourism are quite recent (Lerner and Haber, 2000; Russell and Faulkner, 2004; Lordkipanidze et al, 2005). Some authors, such as Ateljevic and Doome (2000), note that despite the little research carried out it is clear that small-scale tourism entrepreneurs are seeking a lifestyle as opposed to maximisation of profit. Given the limited treatment of the subject in the field of tourism, our approach is based largely on the general approach taken with regard to entrepreneurship.

Rural tourism support policies have tended to view tourism as a secondary economic activity linked to agriculture, a diversification of the primary activity. From the supply perspective, the diversification of tourism demand creates new business opportunities for agribusinesses. Meanwhile, the depopulation of rural areas leads governments to contemplate policies to maintain and in some way promote rural development. These include policies designed to encourage the development of rural tourism.

[23] Order of 19 August 1992, Ministry of Industry, Trade and Tourism, creating incentives for small and medium-sized businesses and tourism bodies for tourism promotion actions in Spain, in accordance with the Framework Plan for Tourism Competitiveness in Spain[23] (FUTURES).

[24] Royal Decree 2346/96, of 8 November, Ministry of Economy and Finance, establishing and regulating the management of an aid system under the Framework Plan for Tourism Competitiveness, 1996-1999.

In this way, the development of rural tourism has seen the convergence of, on the one hand, a growing demand among the urban population for rural environments and, on the other, the implementation of public policies deliberately aimed at developing rural environments through rural tourism.



Ever since Schumpeter, entrepreneurship has been linked to innovation, either in the shape of the arrival of new innovative entrepreneurs on the markets or innovations in existing firms. Despite the relatively scant attention accorded to innovations in tourism, recent years have seen the publication of a number of new studies (Hjalager, 2002; Jacob et al., 2004; Sundbo et al., 2006). In this paper we will consider such innovations (mostly technological, such as websites, e-mail or computerised bookings, but also innovations in management and quality) and endeavour to identify the factors which have contributed to them. On the general level, we will focus on age and education as factors that determine innovative capacity in entrepreneurs (Romijn and Albadalejo, 2000). However, bearing in mind that we are concerned here with innovations in small-scale rural businesses, certain spatial variables have been introduced. The literature has drawn attention to the very diverse innovative behaviour between some areas and others, as well as between rural and urban areas (Thwaites and Wynarczyk, 1996), while access to new information and to innovation support structures (Keeble and Tyler, 1995; North and Smallbone, 2000) has been identified as the most relevant factor accounting for the different behaviours. Here we will use as the indicator of accessibility by small rural businesses the degree of ruralisation/urbanisation of the area in question.

Having reached this point, it is appropriate to characterise rural tourism entrepreneurs in terms of their entrepreneurship, based on the following hypotheses:

i. The rural tourism accommodation is supplied by agricultural entrepreneurs (hypothesis that rural tourism complements the main activity).
ii. The rural tourism accommodation is supplied by proprietors of rural homes who opt to earn some income from their property, but their main activity is not agriculture.
iii. The age and education of the rural tourism entrepreneur/manager are related to the degree of innovation (technology or management innovations).

iv. The degree of urbanisation (whether the areas are more or less rural) influences the innovativeness of the rural tourism entrepreneur/manager.

Since Schumpeter's day, a large proportion of innovation has been linked to entrepreneurship (creative destruction model). In the particular case of rural tourism, innovation can be taken to mean both the introduction of new goods and services as well as the incorporation of new management, organisational and distribution methods for existing products.

3. RURAL TOURISM ON THE ISLAND OF LA PALMA

In order to verify the above hypotheses, a detailed study of rural tourism was conducted on the island of La Palma (Canary Islands), where the sector has grown significantly during the course of the last 15 years. The study took the form of a survey carried out in 2007 of 181 businesses supplying rural tourism accommodation and who make up the regulated or legal sector. It should be noted, however, that there is also a non-regulated sector which does not meet the mandatory requirements. According to estimates contained in La Palma's Tourism Management Plan, there were 636 non-regulated private accommodation units in 2004, with a total of 3406 beds. As already mentioned, however, the present study focuses exclusively on the legal sector.

3.1. Rural Entrepreneurship

Recent reforms to the European Union's structural funds have, in the case of rural development, aimed to strengthen diversification of production in the context of the gradual interdependence that comes with the rural environment's multifunctional character: production of goods and services, conservation of landscape and biodiversity, among others. However, rural tourism policy in the strict sense has been geared primarily to agricultural entrepreneurs. It has sought to diversify the resources available to farmers whose main activity is agriculture by creating a second source of income in the form of the provision of tourism services. Investment is required to adapt properties to these new needs. Rural entrepreneurs therefore weigh up the cost of the investment and their expectations of income in deciding whether or not to commence the new activity (first hypothesis).

A second possible scenario is where the individual owns rural assets (a house, farmland...), but is not an entrepreneur and wants to earn some income through rural tourism i.e. by creating value in the property (second hypothesis). Here, the investor weighs up the investment needed to upgrade the property and the potential income to be earned.

Entrepreneurship literature usually highlights two categories of determinants: personal characteristics and entrepreneurial motivations (Shane et al., 2003) on the one hand and, secondly, the characteristics of the environment in which the rural tourism accommodation is located.

Entrepreneurship = Function (personal characteristics, motivation, environment)

In the case studied here, the personal characteristics considered are the entrepreneur's age, level of education and main activity. The motivations behind the decision to engage in the rural tourism activity considered are as follows: as a business investment; to earn income from a family property; to supplement earnings; as a way of engaging in business; to obtain a grant; or for some 'other' motive. With regard to the environment, the element considered is the extent to which the town in which the rural accommodation is located is rural.

Table 1

Main occupation	%
Unemployed	1.3
Retired/pensioner	10.5
Housewife	2.0
Small farmer	*19.7*
Self-employed or entrepreneur (with 5 employees or less)	*12.5*
Entrepreneur (with 6 or more employees)	*2.6*
Liberal professional	3.9
Rural tourism entrepreneur	*15.8*
Other office worker	3.9
Manager with responsibility for 6 or more persons	2.6
Skilled worker	11.2
Civil servant	13.8
Total	100.0

As Table 1 shows, only 19.7% of those who began offering accommodation for rural tourism in La Palma were small farmers, while 15.1% were entrepreneurs from non-agriculture sectors. Thus, 34.8% of the investors can be considered entrepreneurs from various backgrounds (farming and otherwise) who began to diversify their business activity on realising the potential benefits of rural tourism. At the same time, rural tourism brings opportunities for new entrepreneurship among persons whose main source of income is already rural tourism and who represent a considerable proportion of the total provision (15.8%).

In sum, 50.7% of rural accommodation is supplied by entrepreneurs who have realised the opportunities available in the rural tourism segment. The remaining 49.4% is made up largely by persons in employment or who are currently not occupationally active (civil servants 13.8%, skilled workers 11.2%, retired persons 10.5%)[25].

Statistical Analysis

In order to verify whether profit-related motivations are higher in the case of self-employed entrepreneurs, statistical analysis was performed as follows.

We began by grouping the questionnaire items relating to the motivation for engaging in a rural tourism activity into three components. The same procedure was followed for the 'occupation' category.

[25] It is worth noting, however, that when the tourism activity commenced initially, a significant number of retired persons were occupationally active and, in some cases, were entrepreneurs.

Concerning motivation, the responses obtained were grouped as follows:

For profit	Form of business investment
	A business activity
	Supplementary income
Family property	To earn income from a family asset
Other	To obtain a grant
	Other

The different employment/occupation situations were grouped as follows:

Not working + unemployed	Housewife
	Unemployed
	Retired/pensioner
Self-employed	Small farmer
	Self-employed or entrepreneur (with 5 or less employees)
	Entrepreneur (with 6 or more employees)
	Rural tourism entrepreneur
	Liberal professional
In employment	Other office worker
	Manager with responsibility for 6 or more people
	Skilled worker
	Civil servant

Based on the above grouped variables, we calculated the correspondence tables and performed Chi-square tests of independence.

Table 2. Correspondence table

Initial proprietor motivation	Main occupation			
	Not working + Unemployed	Self-employed	In employment	Active margin
For profit	7	28	6	41
Family property	11	47	32	90
Other	3	8	10	21
Active margin	21	83	48	152

Table 3. Chi-square tests of independence

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	8.922 (a)	4	.063
N of valid cases	152		

(a) 1 cell (11.1%) has an expected frequency of less than 5.
Minimum expected frequency = 2.90.

The results of the hypothesis test for independence show that, with a possible error of 10%, there is significant evidence to suggest that the two variables (‘motivation’ and ‘occupation’) are linked. In other words, a certain degree of association is found between self-

employed persons and the desire for profit, in contrast to persons in employment, who mainly give 'other' motives.

Simple Correspondence Analysis

Given the apparent relationship, it is worth carrying out a simple correspondence analysis which will allow us to see the association between the modalities of the two variables.

The simple correspondence analysis (see diagram below) confirms that the profit-related motivations are associated with self-employed persons (entrepreneurs), whereas 'other motives' are associated with persons in employment. Moreover, the analysis classifies the two groups in opposite positions.

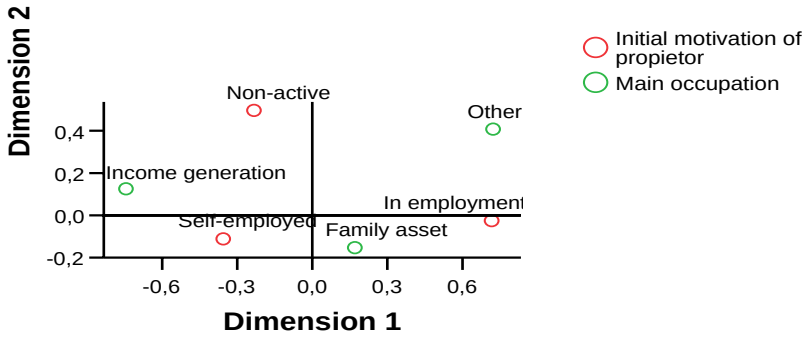


Figure 1.

In 59.1% of cases the motivation behind offering rural tourism accommodation is related to the desire to earn income from a family property, and in 14.9% of cases to obtain supplementary earnings. This would seem to be consistent with the different approach taken by investors in rural tourism, where around 50% of the investors are in employment, as opposed to being entrepreneurs, and their aim is simply to obtain revenue from a rural property owned.

Table 4

Initial proprietor motivation	%
A form of business investment	7.8
To earn income from a family property	59.1
A means of obtaining supplementary income	14.9
A means of engaging in a business activity	4.5
To obtain a grant	0.6
Other	13.0
Total	100.0

Two aspects are noteworthy. Firstly, the very low figure for those who acknowledge the importance of the grants available via rural tourism policies. Secondly, the fact that 13% indicate some 'other' motivation[26].

[26] The data show that this item ('other') consists largely of persons who said their main reason was merely to renovate their house.

Despite the negligible importance attached by the rural tourism investors interviewed to grants to upgrade properties for use as rural accommodation, the results show that 68.5% of first accommodation units (AU) received a grant, as did 54.2% of second units owned by the business and 36% of third units.

Table 5

Start-up grant	% valid of total of each AU
AU1	68.5
AU2	54.2
AU3	36.4
AU4	0.0

In order to check whether proprietors who obtained a grant to renovate their property initially considered the availability of the incentive (grant) as a motive to commence the activity, the following analysis was carried out.

Contingency table

Initial motivation of the proprietor? * AU1. Was a start-up grant received? AU1

Table 6

		AU1. Was a start-up grant received?		Total
		No	Yes	
Proprietor motivation?	For profit	17	35	52
	Family property	30	76	106
	Other	10	13	23
Total		57	124	181

Table 7. Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	2.066 (a)	2	.356

(a) 0 cells (0%) have an expected frequency of less than 5. Minimum expected frequency = 7.24.

The chi-square test shows there is no association between the two variables. The previous result can be understood better if we look at the two tables in Annex 2, which show that the percentage of No responses is lower than the Yes answers in all cases. Indeed, ‘other’ motivations present a lower Yes figure than the rest of the motivations. If we look at the percentages by columns we can see that the highest Yes figure corresponds to conservation of a family property.

By way of summary, the results obtained indicate that, despite the high percentage of entrepreneurs who received a grant and gave as their reason for commencing a rural tourism activity the desire to earn income from a family property (61.3%), statistically there is no association between the variables ‘motivation’ and ‘grant’.

3.2. Factors Determining Innovation

As noted above, capacity for innovation can be influenced by the level of education and the age of the entrepreneur, as well as by the extent to which the location is rural or urban.

Statistical Analysis Procedure

It was decided to use a multiple correspondence analysis (MCA) based on the above-mentioned variables as the statistical analysis procedure to study the innovativeness of rural tourism entrepreneurs.

Except for age, which is grouped by intervals, the variables chosen are all qualitative. This is an important reason for choosing the MCA. The modalities of each variable are as follows:

Table 8

Age interval	Education	Ruralisation	Innovation
26-35	Primary	Low	Innovative
36-50	Secondary	Medium	Not innovative
51-65	University	High	
> 65			

To determine and evaluate the innovativeness of rural tourism entrepreneurs we considered four types of innovation as applied in the activity: 1) use of a website, 2) use of e-mail, 3) use of computerised bookings system and 4) possession of a quality certificate. These elements were selected as indicators of innovation. In addition, a set of variables that might influence the innovation measured by these elements was also included. The second group of explanatory variables are age, level of education and the degree of ruralisation of the town.

Ruralisation was measured using an index for the town which takes the following indicators into consideration: 1) the population density of the town in relation to that of the island as a whole, 2) the number of people registered to pay the municipal business tax in relation to the number for the island as a whole; 3) the number of tourist beds compared to the number for the island overall; 4) the number of motor vehicles per inhabitant; 5) the number of phones per inhabitant, and 6) the number of jobs in the services sector in the town compared to the total for the island.

If any of the answers to the questions is Yes, the entrepreneur is considered to be innovative, otherwise he is considered not to be innovative. To apply the Multiple Correspondence Analysis we used a Burt table, which was created using the contingency tables for the variables and their modalities, two by two. Hence, on the diagonal of the table the contingency tables appear for each variable and its modalities, which is why all the cells are 0 except those on the diagonal (see Annex 3).

Results

We based the analysis on the first four dimensions, which are the most explanatory and together retain 73.25% of the original information, a high percentage for an MCA.

Table 9

Dimension	Own value	Inertia	Chi-square	Sig.	Proportion of inertia	
					Accounted for	Cumulative
1	.421	.177			.316	.316
2	.301	.091			.162	.478
3	.281	.079			.141	.619
4	.252	.063			.13	.732
Total		.560	1424.279	.000(a)	1.000	1.000

The above table gives the results of a chi-square test of independence. To the right of the decision function, which has a value of 1424.279, the area of significance is equal to 0, which means that for a level of significance of 1% there is ample evidence to reject the hypothesis of independence.

We can assume, therefore, that the modalities considered are associated and a Multiple Correspondence Analysis is meaningful.

- Examination of points

Given that we are dealing here with a Multiple Correspondence Analysis, the modalities of the rows and columns coincide and it is therefore only necessary to examine the row points or column points since they are the same. The results table for four dimensions is given in Annex 4.

The following should be borne in mind when analysing the results:

- Dimension scores

These are the distances to origin 0, measured on the basis of chi-square distances. The further the values are from the origin, both on the negative and positive side, the better represented are the modalities. The closer the values are to the origin, the less we can explain given that the corresponding modality will have a similar average behaviour for all.

- Contribution of points to the inertia of the dimension

This refers to the weight of each modality in the formation of the corresponding dimension.

- Contribution of the dimension to the inertia of the point

This is the correlation between each modality and the new dimension. The closer it is to 1, the higher the correlation.

These three concepts need to be analysed together such that the most explanatory modalities are those for which the results are significant in all cases. The table below summarises the main results for the four dimensions:

Table 10

Dimension	Weight	Correl.	Dimension	Weight	Correl.
Dimension 1			Dimension 2		
Positive			Positive		
> 65	High	High	36 - 50	High	Low
Max. primary	High	High	> 65	Low	Low
Non innovative	High	High			
Negative			Negative		
26 – 35	Low	Low	51 - 65	High	High
36 – 50	High	High	High rurality	High	High
Secondary	Low	Medium			
University	Low	Medium			
High rurality	Low	Medium			
Innovative	High	High			
Dimension 3			Dimension 4		
Positive			Positive		
University	High	Media	Low rurality	High	High
Negative			Negative		
26 – 35	High	High	Secondary	High	Low
Secondary	High	High	Medium rurality	High	High
			High rurality	Low	Low

- Figures

The figures for dimension 1 and each of the others will allow us to observe specific elements we have not managed to detect in the results analysis.

- Dimensions 1 and 2

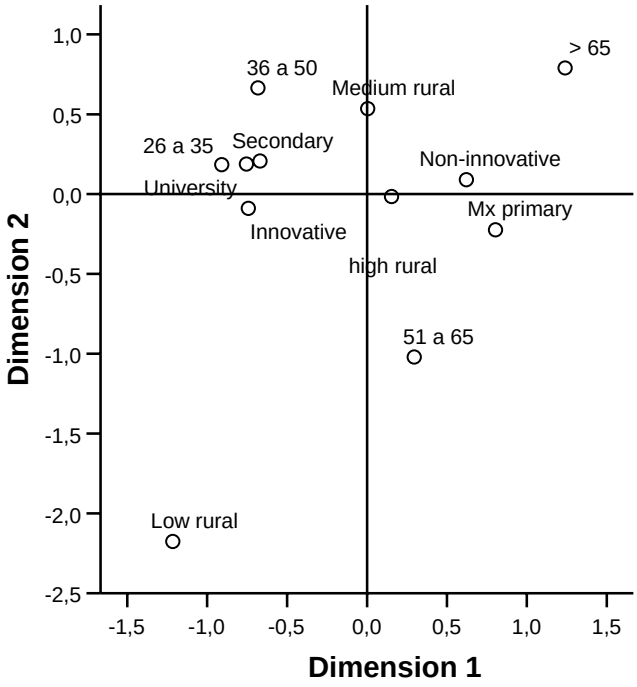
The x axis corresponds to dimension 1 and the y axis to dimension 2. As can be seen, the oldest entrepreneurs (> 65) with at best primary schooling and who are non-innovative, are situated opposite those aged 50 or less, who are more innovative.

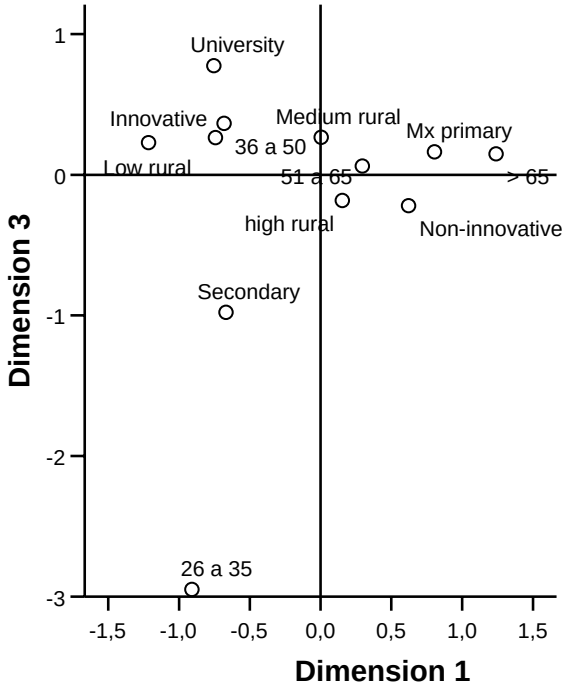
We can see also that a greater percentage of entrepreneurs aged between 51 and 65 are located in areas with a low degree of ruralisation. In terms of innovation and level of education, their behaviour tends to be closer to that of the over-65s.

- Dimensions 1 and 3

The x axis corresponds to dimension 1 and the y axis to dimension 3.

The figure shows that dimension 3 is related to the highest levels of education. The bulk of younger entrepreneurs (26-35 years) have completed secondary education, compared to the 36-50 age-group, where there is a larger proportion of entrepreneurs with university-level education and a lower degree of ruralisation.

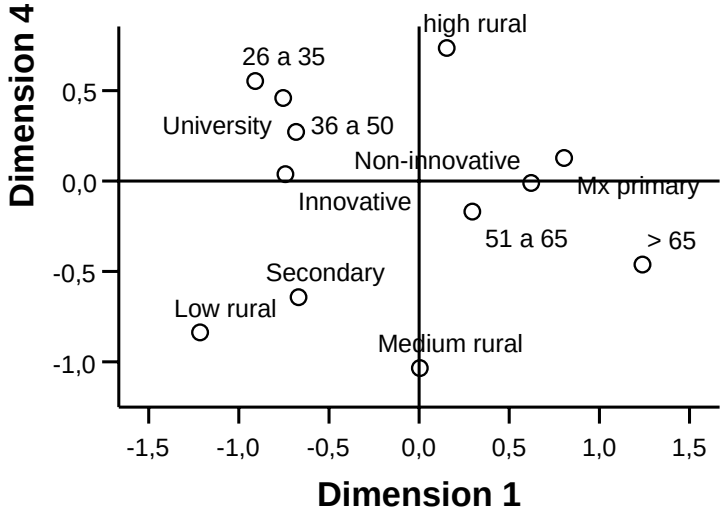




- Dimensions 1 and 4

The x axis corresponds to dimension 1 and the y axis to dimension 4. This figure shows more clearly that, proportionally-speaking, the younger entrepreneurs (26-50 years) are more innovative, have completed secondary or university education and are located in areas of low ruralisation, in contrast to the over-65 group, who are less innovative and have a lower level

of education. High ruralisation contrasts with medium ruralisation, although definitive conclusions cannot be reached with respect to the entrepreneurs associated with these levels.



By way of summary, the following can be concluded as regards the association between innovation among rural tourism entrepreneurs and the variables considered (age, education and ruralisation):

- The largest proportion of younger entrepreneurs (26-35 years old) corresponds to those with secondary schooling, compared to those aged 36-50, who have a higher proportion of entrepreneurs with a university education and a lower degree of ruralisation.
- The youngest entrepreneurs (26-50 years) are the most innovative, have secondary or university education and are located in areas with low ruralisation, in contrast to the over-65 group, who are less innovative and have a lower level of education.
- Compared to the other groups, a larger proportion of entrepreneurs aged between 51 and 65 are located in areas of low ruralisation. In terms of innovation and education, this group resembles the over 65 group most closely.

4. Results Obtained and Implications for Rural Tourism Policy

The first striking aspect, as already noted above, is the great disparity between the 'legal' rural accommodation sector and actual provision: a sizeable proportion of rural tourism accommodation does not meet the requirements set out in the applicable regulations. This difference, which indicates that the market circumvents the regulations, reflects serious failings both in the design and the implementation of rural tourism polices.

In terms of the impact of this form of tourism on the rural environment, we will consider its effect on employment and, secondly, the perceptions of rural tourism entrepreneurs with respect to its effect on the surrounding area.

By way of preliminary comment, it should be noted that the development of rural tourism has contributed to attaining the policy objectives pursued. Rural tourism has contributed in some measure to maintaining employment: 21.7% of properties are run by one person, 50.6% by two and 22.9% by three.

Table 11

Including the entrepreneur, how many people are directly involved in running the rural accommodation?	
Number of people	%
1	21.76
2	50.59
3	22.94
4	4.12
5	0.59
Total	100.00

Similarly, the vast majority of those surveyed believe that rural tourism has contributed to the creation of new activities, products and services (87.7%) and to opportunities for women in rural areas (97.4%). Moreover, 90.3% state that it has contributed to the creation of tourism infrastructure in rural areas. There is general agreement also as to the contribution made by the conservation of rural properties: 98.7% believe it has helped recuperate buildings and 99.4% that it has raised the value of rural property.

Table 12

Effects of rural tourism in La Palma	%
Contributes to creating new activities, products and services	87.7
Recuperation of buildings	98.7
Facilitates employment opportunities for rural women	97.4
Stimulates the creation of tourism infrastructure in rural areas	90.3
Raises the value of rural property	99.4

Thus, some of the objectives of rural tourism policy can be said to have been attained, at least in the opinion of entrepreneurs engaged in rural tourism.

Lastly, the evidence indicates that innovations implemented in the rural tourism sector are extremely limited. These observed limitations explain why the elements included in this empirical analysis to measure the degree of innovation among entrepreneurs are of a very basic nature (e-mail, own website, computerised bookings, quality certificates). This aspect should therefore be taken into consideration in rural tourism policy in order to strengthen the introduction of innovation strategies to raise levels of competitiveness in the sector. Moreover, actions should be promoted to boost innovation in the more rural districts and for older proprietors with lower levels of education.

CONCLUSIONS

The following salient conclusions may be drawn from the study.

Firstly, in regulating the characteristics of the rural accommodation supply, the policy put in place to promote rural tourism has served to restrict entry for a sizeable number of initiatives (entry barriers) and has excluded a substantial amount of provision. This problem will need to be addressed either by relaxing the rules or by increasing controls, or even by creating two categories of rural tourism.

Secondly, in the case of La Palma the aim of diversifying the activities of agricultural entrepreneurs has only partially been fulfilled, a situation which relativises the first hypothesis. This does not mean, however, that the impact of rural tourism has been irrelevant.

The second hypothesis is meaningful to the extent that the main characteristic of all rural accommodation providers is the fact that they have rural assets available (rural homes). Consequently, the activities of a substantial percentage of the sample consist almost exclusively of renting out the property. This may possibly restrict the impact of this form of tourism in terms of the local rural economy and it highlights the need for integrative strategies for actors and resources to facilitate the development of rural products that make more efficient use of endogenous resources. However, our analysis of the data shows also that a considerable proportion of rural tourism entrepreneurs, specifically those whose main activity is business, associate engaging in rural tourism with a profit motive. This result justifies the consideration and resolution of the third hypothesis.

The third hypothesis, namely, that education influences the incorporation of innovation in rural tourism activities, is also fulfilled. In addition, the results confirm that the degree of ruralisation influences the degree to which rural tourism entrepreneurs are innovative: innovation is higher among younger and better-educated entrepreneurs, with properties in the less rural - i.e. more urban - areas.

ANNEXES

ANNEX 1. ROW AND COLUMN PROFILES

Row profiles	Main occupation (grouped)			
Initial proprietor motivation	Non active	Self-employed	In employment	Active margin
For profit	17.1%	68.3%	14.6%	100.0%
Family property	12.2%	52.2%	35.6%	100.0%
Other	14.3%	38.1%	47.6%	100.0%
Mass	13.8%	54.6%	31.6%	
Column profiles	Main occupation (grouped)			
Initial proprietor motivation	Non active	Self-employed	In employment	Mass
For profit	33.3%	33.7%	12.5%	27.0%
Family property	52.4%	56.6%	66.7%	59.2%
Other	14.3%	9.6%	20.8%	13.8%
Active margin	100.0%	100.0%	100.0%	

ANNEX 2

% rows		AU1. Start-up grant received?		Total
		No	Yes	
Proprietor motivation	For profit	32.7%	67.3%	100.0%
	Family property	28.3%	71.7%	100.0%
	Other	43.5%	56.5%	100.0%
Total		31.5%	68.5%	100.0%

% of AU1. Did you receive a start-up grant? CR-AU1.

% columns		AU1. Start-up grant received?		Total
		No	Yes	
Proprietor motivation	For profit	29.8%	28.2%	28.7%
	Family property	52.6%	61.3%	58.6%
	Other	17.5%	10.5%	12.7%
Total		100.0%	100.0%	100.0%

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Chapter 9

INTERNATIONAL STUDENTS' PERCEPTIONS OF THE UNIVERSITY BAR ON AN AUSTRALIAN UNIVERSITY CAMPUS[#]

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ABSTRACT

This research outlines cultural influences on perceptions towards the university bar on an Australian university campus. Through the use of interviews, focus groups, observations and surveys, Asian students were researched as to how cultural background attributed to adapting to university life amidst the complexities of cultural space in a global/local diaspora.

In analyzing the data, a high percentage of respondents showed little motivation in repeat patronage of the university bar. The main cause of such a trend is the apparent lack of interaction between the international student with local students and the bar staff.

Keywords: international students, culture, alcohol, university, space, education.

PART 1: INTRODUCTION

The growth of international students attending university courses in Australia during the last decade has been phenomenal (Australia Education International 2004). Australian universities have confidently positioned themselves in the market place to attract foreign

[#] This paper explores the perceptions of international students on the university bar on an Australian university campus. This research assesses the role of cultural identity as a stimulus for acceptance or avoidance of the university bar premises and proposes measures to assist in international students' understanding/accpetance of the bar.

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students. The implementation of dedicated marketing activities in the Asian region has proved to be most advantageous for universities. In particular, Griffith University had 4866 international students enrolled at their campuses in 2003 (Griffith University 2003). This constituted 16.8 % of the total student population. The Gold Coast campus attracted 2,093 international students to undertake tertiary studies, the largest international student population of all Griffith campuses.

The focus of this research is to explore the motivations and attitudes of the Asian student population in regards to their utilisation of the university bar facilities at Griffith University's Gold Coast (GUGC) campus. In addition, this document will identify the cultural characteristics that impact on the social behaviours of Asian students in an academic environment.

1.1. Literature Review

International students reflect their respective cultures, beliefs and customs and encounter various cross-cultural exchanges with domestic and other foreign students. Culture is defined by Helman (1994) as a complex phenomenon encompassing knowledge, beliefs, arts, law, customs and other practices and abilities of the community.

Culture is a highly complex and widespread phenomenon. Briley, Morris and Simons (2000) highlight its significance in influencing decision-making. Feichtinger and Fink (1998) suggest that individuals go through a phase of acculturation involving numerous changes and cultural symptoms. The initial phase in the theory of collective culture shock reveals a level of enthusiasm since the excitement in living in a new environment, which is then followed by a stage of disorientation and then a stage of new take-off or adaptation over time. During the phases of adaptation, international students tend to adapt better when attachments to places or objects are developed (Ryan and Ogilvie 2001). This implies that the latter that can find a place or object and develop emotional attachment to it in a shorter period of time are better adapted to the new environment than other students. O'Sullivan (1994) highlights the fundamental differences which Australians tend to assume all cultures are basically the same. New students are therefore, expected to confirm to Australian culture.

The focus of this paper is therefore to establish cultural awareness and adoption towards tertiary education in Australia and that of the university university bar in particular by the Asian student population. Studies by Smart and Ogborne (2000) reveal the trend that the higher the per capita consumption of alcohol in adult populations, the higher the proportion of student drinkers. In a country where alcohol, bars and pubs are aplenty, this study on Asian students is crucial to reveal the role of culture as an influence on decision-making, as a stimulus for attachment and as a set of attitudes toward a university's university bar.

PART 2: THE STUDY

This study is based on exploratory and explanatory research regarding the Asian student population of GUGC. Data was collected amongst this population through survey, observation and focus groups over a two month period. Survey questions were printed in the

English language and took approximately seven minutes to complete. Forty five respondents completed the survey which was distributed to international students at various locations throughout the university. The 45 students comprised of 40 postgraduate students and 5 undergraduate students.

Two focus groups, based on the laddering technique, were conducted once the surveys had been collected. The objective was to obtain an in depth analysis of the Asian student perceptions toward the university bar. The laddering technique consists of probing questions based on the following suggestion: "Why is this important to you?". This method examines the primary motivation and attitudes of the Asian students towards frequenting the university bar. The number of participants ranged from five to seven representatives of the target population per group and lasted between 30 to 45 minutes. Focus groups were characterised by unstructured discussions between postgraduates and undergraduate Asian student population and were structured around food, beverages, service quality and environment at the university bar. Participants in the focus groups have been coded for analysis to allow for anonymity.

2.1. Findings

44 of the respondents mentioned that they were aware of the existence of the university bar and only 1 was unaware of such an existence. Of the 44 respondents who were aware of the existence of the university bar, 32 of them visited the premises at least once in their time on campus. The majority of the respondents have been to the university bar between 0 and 2 times. Five respondents reported to have visited the university bar between 3 to 5 times while only 3 other respondents went to the university bar 5 times or more.

The respondents' usual time of visit to the university bar and the length of stay on average per visit were recorded. Highest observations were recorded during lunchtime and during special events, with an average stay of less than an hour during lunch and duration of between 1 and 2 hours during special events like movie screenings. Respondents showed a tendency to visit the university bar in groups – 6 of them went with classmates while the majority went to the university bar with friends. Respondents' average spending at the university bar was mainly in the $5 to $10 range. Almost half of the respondents were reported to spend between $0 and $5. The overall experience is directly impacted by the event and promotions, cleanliness of bar and music volume. These variables should therefore be given immediate attention in order to improve the Asian population's experience.

2.2. Analysis

The GAPS model of customer satisfaction consists of seven areas where service failures causing customer dissatisfaction can be identified (as cited in Lovelock and Wright, 2002). This study has revealed an existing knowledge gap (Gap 1). The latter gap occurs when customers' needs and expectations are not well defined by management in terms of service delivery. This gap results in customers' dissatisfaction and can reflect poor market focus identification strategies. Our survey results suggest that the number of visits to the university bar is not related to the overall satisfaction of the target population. This reveals the existence

of a knowledge gap between the management's definitions of customer needs and expectations of Asian customers.

In the case of the university bar on campus, 32 respondents (71% of total respondents) have visited the premises at least once. However, only 18 respondents (40% of total respondents) demonstrated a positive intention to return.

According to Pan, Dixon, Himburg and Huffman (1999) Asian students carry different dietary habits according to their cultural background. As culture strongly influences attitudes and values, customer satisfaction is derived from the meeting of such needs. The Chinese, according to O'Sullivan (1994), tend to believe that "a non-Chinese is different from a Chinese and that a lack of adaptation is more to be expected and not necessarily indicative of hostility" (p.10). Zeithaml and Bitner (2003) state that customer satisfaction is measured at every service encounter through service and product quality as well as price. Further research indicated that 22% of the respondents were dissatisfied with the food quality - a key product attribute - and 37% of participants had a neutral attitude. Hence, customers do not consider the university bar in their evoked set when deciding where to dine.

2.2.1. Attitudes towards Alcoholic Beverages

In focus group 1, participants were asked how they felt about the idea of drinking alcoholic beverages at university. In addition, they were questioned on the kind of beverages they would like to see added on the drink menu. Caroline and Esther highlighted the absence of hot beverages (i.e. coffee and tea) on the menu and they perceived the university bar as a place for drinking alcoholic beverages. All participants mentioned that they did not have a university bar on campus in their countries of residence. They perceived that alcohol consumption is linked to Western cultures and raised the moral issues of such practices back home.

In focus group 2, some of the participants drink alcohol infrequently but it is unusual for them to consume it during the day, especially during the lunch break. They prefer to frequent the university bar in the late afternoon after class or on their days off. To participant Moe, it is a tradition that her culture does not mix alcoholic beverages with food. She states that lunch is an important meal during which no alcohol should be consumed.

Megan mentioned that she would like to have a drink during lunch in the university bar at least once in her time as an international student to "experience the Australian drinking culture". However, she has not done so as yet as she feels uncomfortable drinking in front of her non-drinking international peers. This behaviour demonstrates an intrinsic awareness of in-group norms and social cultures. The interviewees also suggested that more hot beverages as well as imported Asian beers should complement the menu. In regards to price, Jiro mentioned that alcohol beverages are too expensive for some students to afford. However, this comment had mixed responses because in many Asian countries, the levy on alcoholic beverages has been relatively higher than that in Australia.

2.2.2. Perceptions of the University Bar' Layout and Overall Environment

Participants were individually asked how they rated the layout and overall environment of the university bar. The question of repeat patronage was also presented to the interviewees. Lynn mentioned that on her first visit to the premises, she found the environment cozy and tables clean. She preferred the environment to that of the university dining cafe, though she mentioned that she felt a sense of hostility upon entering the premises initially. When probed,

Lynn said, "I don't know why this was so…… it seemed like there were many Australians and they gave me a strange look the moment I entered the door". Lucinda mentioned that it was her first visit to the newly furnished premises and that she felt it was an improvement to the previous décor which was designed with an outdoor theme. Esther raised the issue of music being too loud for conversation while Lucy said the music was outdated. All participants agreed that they would continue to patronize the Bar in the future. However, the responses could not say exactly on what occasions the next visit would be.

The second focus group did not consider themselves regular customers of the university bar as the food variety and price of meals had not changed. It appeared that a "regular" customer was one who appears often at the university bar for a significantly long period of time. Observations of the university bar recorded no more than 6 Asian international students at any one time during the day and these students stayed on the premises for approximately an hour on average.

Participants enjoy the live entertainment and music provided by the university bar. However, the volume (music wise and from the surroundings) was said to be too loud. Furthermore, most participants explained that, when socializing, they prefer more talking rather than drinking alcohol and therefore consider the university bar not a viable option to relax in the company of friends.

Both focus groups showed a keeness to meet new people in the university bar. Yet, the interviewees would feel too uncomfortable to approach them as they believe most students have their own 'groups' with which they socialize with. Moreover, they admit that they are 'scared and shy' to approach new people and would prefer a mediator to organize interaction between Australians and Asians. For instance, they believe that a karaoke night would allow this interaction between locals and international students.

The group also mentioned that the staff at the university bar do not go out of their way to provide customized service. They only seem to be 'just doing their regular job'. Service is not warm and friendly. On many occasions, participants have problems with pronunciation or were unfamiliar with the technical jargon used at the counter when ordering drinks and find bar personnel to be unfriendly and non cooperating.

2.2.3. Responses to the Food Menu

While the prices of food on the menus at the university bar and the university cafe did not reveal any significant differences, participants were not satisfied with both the university bar and university cafe menus. The university bar' food was said to be pre-cooked, which lessens the quality of its taste and flavor. In addition, the menu does not provide a variety of food that the participants were familiar with. The latter would prefer rice, noodles and 'spicy' food items and suggested adding them to the menu. Although the university café offers rice and noodle food items, the taste and flavor are not the same as the spices that the participants are used to. This suggests that food is taken as a serious expression of culture and the representations by the university bar as well as the university café in terms of the food menu do not belong to the cultural ideologies of space by these international students.

In most cases, the respondents bring their own home-cooked meal (mostly rice), and use two microwaves located in the university café to heat up their food. Participants argue that to pay for the ready meals from either the university bar or the university café is not only expensive but also not delicious. When asked on whether such meals were eaten within the university bar or at the university café, all respondents mentioned that they consumed their

home-cooked meals at the university café. This was an observation even when a microwave was placed in the compounds of the university bar. Janet stated, "I think I cannot eat my (home-cooked) lunch at the bar because everyone else is drinking beer and eating fries and I am afraid that I will be asked to leave if I eat rice or noodles." Further checks with the university bar' staff revealed that all students are allowed to eat their meals on the compounds and no student has been told to leave the university bar because of the type of food they consume.

PART 3: CONCLUSION

Culture is an important part of an individual's psychological makeup. In determining the impact of culture on the behaviours of Asian students associated with patronizing the university bar at Griffith University, it is essential to recognize that differences exist between cultures. Cross-cultural awareness is a good starting point to reduce cultural misunderstandings.

The research provided invaluable information pertaining to the intrinsic motivations and attitudes of Asian students of Griffith University Gold Coast Campus which were found to reflect a reluctance to frequent the license premises. The qualitative research indicated Asian students do not associate alcohol with an academic environment.

This was supported by quantitative statistical research and in-depth questionnaires which identified the reluctance to visit the university bar. However, the research indicated that respondents would consider frequenting the university bar should there be changes in the quality of customer service. In addition, the variety and price of the food available is a strong influence in attracting the Asian student population.

Thus, the existence of the university bar has provided an interesting exploration of the invisible space of cultural ideologies. The university bar are not a mere physical location or compound but involve socio-cultural spaces imagined by the international student. The discourses that are interwoven with the study experience and other social habits show a sense of tension when the issue of alcohol and public drinking is incorporated in an academic environment. Nevertheless, the research has raised some interesting observations and responses which are a valuable insight into the complex phases of international education.

BIOGRAPHICAL NOTE

The author is currently a full-time lecturer in tourism and hospitality in Singapore. He graduated with a Masters in International Tourism and Hospitality Management at Griffith University Australia after completing a first degree in Business at the Nanyang Technological University in Singapore. His research interests include tourism identities, globalisation and tourism and student tourism.

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APPENDIX I:
SURVEY OF INTERNATIONAL STUDENTS' ATTITUDES TOWARDS UNIVERSITY BAR ON CAMPUS

Q1. *Do you know the University has a Bar?*
(a) Yes
(b) No

Q2. *Have you ever visited the University Bar?*
(a) Yes
(b) No

Q3. *How often have you been there in the past month?*
(a) 0 times
(b) 1-2 times
(c) 3-5 times
(d) 5 and above times

Q4. *When do you usually go to the University Bar?*
(a) Morning
(b) Lunchtime
(c) Afternoon / Early Evening
(d) Night
(e) For special events (i.e. live bands)

Q5. *How long do you usually spend in the University Bar each visit?*
(a) Less than 1 hour
(b) 1-2 hours
(c) 2-3 hours
(d) 3 hours or more

Q6. *Who do you go to the University Bar with?*
(a) By myself
(b) With classmates
(c) With friends
(d) With family

Appendix I. (Continued)

Q7. *Why do you go to the University Bar?*

☐ To watch movies
☐ To relax and chat with friends
☐ To meet people
☐ To drink alcoholic beverages
☐ To play pool
☐ To have lunch/dinner
☐ To discuss assignments
☐ Others: _____

Q8. *How much do you spend on average each visit?*

(a) $1-$5
(b) $5-$10
(c) $10-$30
(d) $30 and above

Q9. *Do you intend to visit the University Bar again?*

(a) Yes
(b) No
(c) Possibly

Q10. *What is your usual country of residence?*

_____

Q11. *How long have you been living in Australia?*

_____

Q12. *How long have you been studying at Griffith University?*

_____

Q13. *Do universities in your usual country of residence have a bar on campus?*

(a) Yes
(b) No
(c) I do not know

Appendix I. (Continued)

Q14. *Please rank the following criteria on a scale of 1(highly dissatisfied) to 5 (highly satisfied):*

Availability of tables	1	2	3	4	5
Cleanliness of the bar	1	2	3	4	5
Friendliness of staff	1	2	3	4	5
Waiting time for service	1	2	3	4	5
Service quality	1	2	3	4	5
Food variety	1	2	3	4	5
Food quality	1	2	3	4	5
Drink variety	1	2	3	4	5
Value for money	1	2	3	4	5
Atmosphere	1	2	3	4	5
Music variety	1	2	3	4	5
Music volume	1	2	3	4	5
Events and promotions	1	2	3	4	5
Overall experience	1	2	3	4	5

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Chapter 10

THE MACROECONOMIC CONTRIBUTION OF TOURISM

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ABSTRACT

The main positive impact of tourism activities is, without doubt, their economic contribution, above all if we pay attention to the development of some macroeconomic variables. In the main tourism destinations, the increase in the number of tourists has been parallel to the increase in the Gross Domestic Product (GDP), giving place to a greater growth in employment and wealth than in a lot of economies that do not specialise in tourism. Moreover, tourism is one of the main sources of income in the balance of payments of numerous countries, surpassing, in the economies with an intense specialization in tourism, the income from the exports of goods, and compensating, on some occasions, the deficit between imports and exports of goods. Therefore, the aim of this study is to explain the relevance of tourism from the point of view of macroeconomics, analysing its contribution to the aggregate production, total employment, generation of income and the balance of payments.

The great difficulty in measuring the economic effects of tourism is that it is a cross sector which means there are multiple businesses in different branches of activity offering services to the tourists, at the same time as producing other goods and services not related to the tourism activity. For this reason, instead of studying tourism from the point of view of supply the normal option is to study it from the point of view of demand. Nevertheless, it would be erroneous to only consider the beneficial effects of direct tourism expenditure, given the existence of indirect and induced effects which should also be considered in order to have a complete evaluation. The direct effects are those generated in businesses that supply goods and services directly to the tourists. The indirect effects are those produced because of the intermediate demand of the tourism sectors made on the rest of the economy in order to produce the tourism service. And, finally the induced effects, income generated in the process of satisfying non-residents demand induce

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residents' expenditures that in turn have direct and indirect effects on all branches of the economy.

Economic literature offers different alternatives to measure the economic impact of tourism in terms of income, production and employment. Thus, this study is structured as follows. Firstly, different methodologies to measure the economic impact of tourism are shown. Secondly, an input-output model and tourism satellite account is described and finally these methodologies are applied to the Spanish economy, a highly specialised tourism economy, to quantify the impact of tourism on production, employment, exports and imports. In the last section the conclusions will be made.

1. INTRODUCTION

The main positive impact of tourism must be its contribution to the economy. In top tourist destinations, an increase in the number of tourists has gone hand in hand with a rise in the GDP, leading to growth and employment rates higher than those of many economies that do not specialize in tourism. Additionally, tourism is one of the main sources of income in many countries' balance of payments, even exceeding revenue from exports of goods in economies that specialize heavily in tourism and sometimes managing to offset the recorded international trade deficit. Thus tourism can make an important contribution to economic development [Henry and Deane (1997)]. The aim of this paper is to explain the relevance of tourism from a macroeconomic perspective, analysing its contribution to aggregate output, total employment, the generation of income and balance of payments.

Tourism is generally identified as an industry, although really it is a mixture. During their holiday or trip away, tourists consume an extraordinarily broad range of goods and services supplied by different types of businesses. Consequently, a definition of the "tourist supply" must be a consumer-oriented one, because, as the World Tourism Organization or WTO (1994) states, "the tourism supply is a set of tourism products and services on offer to tourists at a particular destination for them to use and consume". Consequently, the tourist industry is not a sector with well-defined limits or a well-defined content, but a set of different economic activities that are involved to a greater or lesser extent in meeting the needs of tourists as well as also partially meeting the demand of local residents. To get round the problem of its definition, analyses of tourism's contribution to the economy are generally demand oriented: that is, they are based on tourist expenditure at a particular destination. The result is an increase in the output and employment that are required to meet the higher demand generated by tourism, both in activities that benefit directly from spending by non-residents and those entailing direct supplies to tour operators. Furthermore, when the impact of tourism is estimated, it is usual to incorporate economic effects generated by the expenditure of income earned by residents through their direct or indirect participation in the production of goods and services aimed at meeting the tourism demand.

Since there are different ways of measuring the contribution of tourism in terms of income, output and employment, this paper is structured as follows. The second section reviews different existing methods for measuring the economic contribution of tourism. Following on from this, the third section describes one method of estimating the contribution of tourism at a macroeconomic level by using an input-output model and the tourism satellite account. In the next section, Spain - an economy that specializes heavily in tourism - is

chosen as a case study and the impact of tourism consumption on output, employment, exports and imports is estimated. Finally, an outline is made of the main conclusions.

2. MEASURING THE ECONOMIC CONTRIBUTION OF TOURISM

The main aim of this paper is to find out how tourism contributes to the achievement of common macroeconomic goals (production, employment, reducing the imbalance in the current account etc). Thus, to estimate the economic impact, the differences between two scenarios are measured: an economy with a tourist industry (the current situation) and an economy without one (a hypothetical situation).

What makes measuring the economic effects of tourism difficult is the fact that, on the supply side, it is a cross-cutting sector or activity. That is, a wide variety of businesses specializing in different economic activities are all involved in tourism-supply services, and they also produce other goods and services that have nothing to do with tourism. As a result, analyses tend to take a demand-oriented approach. Analyses of the economic impact of tourism are generally based on tourist expenditure at a particular destination, giving rise to an increase in output in order to meet the higher demand. However, it would be wrong to limit the beneficial effects of tourism to directly observable expenditure by tourists on tourist supplies of goods and services, given the existence of indirect and induced effects that should also be estimated if a fully-comprehensive analysis is to be made. According to the Spanish Institute of Statistics (INE, 2002), direct effects are the repercussions on suppliers of direct goods and services to visitors while indirect effects are those that arise when, through their activities, tourism-specific businesses promote the development of other businesses from the economy through inter-sectoral links. Lastly, induced effects are those originated by the expenditure of earnings generated by direct or indirect effects.

Different examples can be found in literature of how to measure the economic contribution of tourism in terms of income, output and employment, although the latest trends point to the adoption of tourism satellite accounts and computable general equilibrium models instead of input-output analyses or keynesian multiplier models.

Multipliers, based on the keynesian aggregate demand model in an open economy, facilitate a simple estimation of the potential effect of an additional unit of tourism expenditure on aggregate output, once the effect of imports[27] has been filtered. The application of this type of model to tourism has led to the creation of other more sophisticated, more realistic multipliers, since they incorporate other variables like direct and indirect taxes and transfers [Archer (1976)], the marginal propensity to invest [Fletcher and Archer (1991)] or categories of tourism and types of spending [Archer and Owen (1971)]. Attempts have also been made to distinguish the multiplier effects of different types of spending, depending on the type of tourism, in order to facilitate the development of ad-hoc multipliers divided into categories of tourism and types of spending [Archer and Owen (1971), Sinclair and Sutcliffe (1982) and Milne (1987)]. However, the over-simplification of their assumptions, the instruments' partial vision by overlooking possible inter-sectoral relations in successive rounds of activity, and difficulty in making international comparisons suggest that their conclusions are none too valid [Cooper et al. (1993)].

[27] See Sinclair and Sutcliffe (1988).

As an alternative to keynesian models, input-output models represent a more powerful analytical tool in helping to identify the multiplier effects of tourism. Their main advantage is the fact that an economic system's inter-sectoral relations can be explicitly modelled. In this way, the resulting direct, indirect and induced effects of a variation in tourism consumption can be obtained, broken down by sectors. Moreover, these models have a standard methodological framework that facilitates international comparisons. The numerous different studies that use input-output analyses to assess the economic impact of tourism on different national and regional economies, like those of Archer (1985, 1995), Archer and Fletcher (1996), Briguglio (1993), Fletcher (1985), Fletcher et al. (1981), Freeman and Sultan (1997), Herce and Sosvilla (1998), Lin and Sung (1983), Manente (1999), Payeras and Sastre (1994), Santos et al. (1983) and Song and Ahn (1983), all highlight how very useful this tool is.

Nonetheless, although it is a widely used method that offers advantages over keynesian models, input-output models have also received criticism.[28] One of the most common criticisms is that they over-estimate the impact of a growth in demand, in output and employment terms. Because they assume that there are no constraints in the availability of factors of production, they do not consider that an increase in a sector's output is partially achieved at the expense of production resources that are diverted away from other economic activities, whose output is thus reduced. Other criticisms of the input-output method are that it establishes rather unrealistic assumptions: it does not allow for intersectoral factor substitution, and prices are exogenous, which means that it does not take into account that an increase in demand leads to an increase in prices and in the cost of factors so that the net contribution of the effect on demand and employment is cushioned. Lastly, it assumes neutral behaviour by the public sector by not incorporating the fact that an increase in public income generated by a rising demand would allow the public authorities to reduce other taxes or increase spending, which would affect the level of economic activity. In recent years, these criticisms have led to the development of different instruments aimed at improving on input-output analyses, like tourism satellite accounts and computable general equilibrium models.

Satellite accounts are simply instruments for measuring the importance of the tourism supply and demand in terms of macroeconomic variables, using national accounting methods. The main advantage of satellite accounts resides in the fact that the definitions, concepts and accounting rules that are used are agreed on by consensus so that comparisons can be made among countries and periods of time. As Fretchling (1999) states, estimations of the economic impact of tourism are coherent with the way in which countries measure national income and output, so the economic implications of tourism can be properly ascertained in relation to the rest of the economy. Examples of pioneering work in this field are studies by Cañada (2001), Holz-Eakin (2001), Suich (2002) and Mak (2005). Nevertheless, this instrument only considers the effects directly generated by the total final tourism demand minus imports. However, to extend the calculations performed in tourism satellite accounts, Spain has proposed the inclusion of so-called indirect effects on output and employment by using the input-output method [see INE (2002)].

As for general equilibrium models, effects on the economy as a whole can be simulated associated with changes in tourism variables. These models manage to overcome some of the limitations of the input-output model by taking into account factor supply constraints, the inter-sectoral reallocation of factors, the existence of market interaction and price flexibility,

[28] See Dwyer, Forsyth and Spurr (2004 y 2005).

and by endogenizing the behaviour of economic agents, thus achieving a more realistic vision of how the economy functions. Computable general equilibrium models have been developed and applied to tourism by Adams and Parmenter (1995 and 1999), Blake et al. (2003), Blake and Sinclair (2003), Dwyer et al. (2003a and 2003b), Kumar (2004) and Zhou et al. (1997). Generally, the results show tourism growth to have a lower impact than that obtained with the input-output method [see Zhou et al. (1997)]. However, this instrument also has certain limitations, like the high number of assumptions on which it is based, hindering possible comparisons, and the additional costs that it involves in relation to input-output methods.

It should be added that neither of these two tools in assessing the economic contribution of tourism constitute a cost-benefit analysis of it. Both methods assess different things and they seek to achieve different goals. A cost-benefit analysis seeks to measure a change in the net social benefit and it is normally used to take decisions about specific projects that are therefore assessed in advance. In contrast, analyses of economic contributions are performed afterwards, estimating the income or employment generated by a project or, more generally, for a specific activity where the costs are not considered. Thus the sociocultural, environmental and fiscal costs of tourism have not been taken into account in this paper.

3. METHODOLOGY

Two main instruments have been used to measure the economic contribution of tourism. Firstly an input-output model applied to Spain for 2000 was used, more specifically the symmetric input-output table for the Spanish economy [see Table 1], drawn up using supply and use tables. This is aimed at quantifying production flows between homogenous branches of activity. Secondly, information from the *"Domestic tourist consumption (current prices) by products, periods and components"* section of Spain's tourism satellite account for the said year was used [see Table 2]. Two alternative ways of using the input-output method, both contemplated in the tourism satellite account, can be used to estimate the economic contribution of tourism.

The first is based on knowledge of the part of the final demand that is attributable to tourism, which the Spanish Institute for Statistics denotes as *Ty*. In this way, from the equation shown below, the direct and indirect tourism-related output can be estimated:

$$Tq = (I - A)^{-1} Ty \tag{1}$$

where Tq is the total tourism-related output and $(I - A)^{-1}$ is the Leontif inverse matrix.

The second method redefines the intermediate and final demand, excluding business travel from the first and including this concept in the second. The tourism output can then be obtained from the following equation:

$$Tq^{*} = \left(I - A^{*}\right)^{-1} Ty^{*} \tag{2}$$

where *Ty** is the tourism-related component of the final extended demand and *Tq** is the vector of tourism output acquired directly or indirectly by visitors correspondent with the total tourism demand, including business travel expenditure.

The option that was chosen to estimate the direct and indirect effects of tourism was the first one presented in the tourism satellite account. This choice is justified by the fact that insufficient data is available for us to exclude business travel from the intermediate input matrix of the symmetric table for the Spanish economy for the year 2000.

In continuation, using the tourism satellite account, the final tourism demand (CT) was estimated, capturing inbound tourism consumption, household tourism consumption, and expenditure on tourism consumption by the public authorities. Intermediate tourism consumption was not included in this final demand, as it is captured in the intermediate input matrix. Neither was inbound tourism consumption nor household tourism consumption of non tourism-characteristic products estimated, since it is not broken down among the different economic activities into which the economic structure of the input-output table is divided.

As a result, the model takes the following matricial expression:

$$Y = \left[I - A\right]^{-1} * CT \tag{3},$$

where Y is the total supply at basic prices.

Next, the necessary employment to cover tourism consumption was estimated. To estimate the total (direct and indirect) need for employment, the following expression was used:

$$E = \left[I - A\right]^{-1} * CT * \lambda \tag{4}$$

where λ is a vector of employment per unit of output. Import and export requirements can also be analysed in the same way.

To estimate the direct, indirect and induced effects within the framework of the input-output model, expenditure on final household consumption minus inbound tourism consumption and household tourism consumption was endogenized, extending the inter-sectoral transaction matrix to include the domestic economy as if it were yet another productive sector. The elements in the last row of the new matrix indicate the earned income that is directly generated when one unit of sector *i* is obtained. The last column of the new matrix represents the direct need for product *i* in the obtainment of a final unit of private consumption minus tourism consumption.

$$\begin{pmatrix} Y_1 \\ Y_2 \\ L \end{pmatrix} = \begin{pmatrix} a_{11} & a_{12} & cf_1 \\ a_{21} & a_{22} & cf_2 \\ l_1 & l_2 & \end{pmatrix} * \begin{pmatrix} Y_1 \\ Y_2 \\ L \end{pmatrix} + \begin{pmatrix} CT_1 \\ CT_2 \\ \end{pmatrix} \tag{5}$$

where $a_{ij} = \frac{x_{ij}}{Y_j}$, $l_i = \frac{L_i}{Y_i^I}$ and $cf_i = \frac{CFN_i}{L}$.

Thus, a_{ij} is the technical coefficient that captures intermediate purchases (x_{ij}), divided by the total value of the supply, and cf_i is the ratio of expenditure on final household consumption minus inbound tourism consumption and household tourism consumption (CFN_i) to earned wages (L). Lastly, CT_i is tourism consumption represented by inbound tourism consumption, household tourism consumption and expenditure on tourism consumption by the public authorities.

4. RESULTS FOR SPAIN

Spain holds a leading position in the ranks of international tourism flows. In 2006, it maintained its position as the world's second top country with the highest visitor numbers (58.5 million, accounting for almost 7% of world tourism and 13% of tourism to Europe) and tourism expenditure. Tourism is therefore the Spanish economy's most important sector in terms of the generation of wealth, employment and income from exports. As a result, tourism demand fluctuations have a big impact on aggregate activity and, through inter-sectoral links, on most branches of economic activity. This makes Spain an excellent case study for exploring the impact of tourism on the economy using an input-output model. This paper drew on information for the year 2000 in order to estimate the direct, indirect and induced effects of inbound tourism consumption, household tourism consumption and expenditure on tourism consumption by the public authorities. The reference year corresponds to the year of the last available input-output table for the Spanish economy [see Table 1].

According to the tourism satellite account for 2000, inbound tourism consumption (that is consumption by foreign tourists) rose to 26,527.2 million euros, taking into account tourism-characteristic products alone. Meanwhile households spent 23,484.7 million euros on tourism and the public authorities spent 1,549.0 million euros [see Table 2].

4.1. Output and Employment

This level of tourism consumption makes a substantial impact. The sum of inbound tourism consumption, household tourism consumption and public authority consumption of tourism-characteristic products generated a direct or indirect output, at basic prices, worth 82,648 million euros. This figure represents 6.92% of the Spanish economy's output of goods and services in 2000[29] [see Table 3]. 22.8% of this output was generated by the restaurant sector, 21.2% by lodging activities, 5.6% by the air transport sector, 5.1% by ancillary transport activities, and 3.2% by the land-based transport sector. In terms of employment, tourism consumption originated the equivalent to 6.46% of the total full-time employment in the year 2000.

The contribution of the different components of tourism consumption (inbound tourism, domestic tourism by residents, and tourism consumption by the public authorities) was not a balanced one.

[29] In terms of the GDP, the direct and indirect impact of the tourism demand was equivalent to 7.33% of the GDP.

Table 1. Total Symmetric I-O Table at basic prices 2000 Units: millions of euros

	Agriculture	Manufacturing	Construction	Services	**Total**	Total final consumption expenditure	Final consumption expenditure by households	Final consumption expenditure by non-profit institution serving households (NPISH)	Final consumption expenditure by Public Administration	Gross capital formation	Gross fix capital formation	Change in inventories and valuables	Total exports	Exports intra EU	Exports extra EU	**Final uses**	**Total use**
Agriculture	2 969,6	23 359,9	401,3	2 276,0	**29 006,8**	7 790,4	7 790,4	0,0	0,0	946,2	391,1	555,1	7 453,3	6 473,1	980,2	16 189,9	45 196,7
Manufacturing	9 154,9	200 343,6	35 488,2	69 807,0	**314 793,7**	97 291,8	92 536,9	0,0	4 754,9	47 777,3	45 520,4	2 256,9	109 254,3	76 315,1	32 939,2	254 323,4	569 117,1
Construction	212,4	1 349,5	28 035,2	13 936,5	**43 533,6**	3 177,0	3 177,0	0,0	0,0	78 791,0	78 791,0	0,0	9,0	3,0	6,0	81 977,0	125 510,6
Services	3 530,1	65 950,9	14 986,0	143 933,7	**228 400,7**	363 603,1	254 883,0	5 426,0	103 294,1	26 509,4	26 509,4	0,0	36 058,4	23 169,8	12 888,6	426 170,9	654 571,6
CIF/FOB adjustments	0,0	0,0	0,0	0,0	**0,0**	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-2 305,0	-1 320,0	-985,0	-2 305,0	-2 305,0
Purchases on the domestic territory by non-residents	0,0	0,0	0,0	0,0	**0,0**	-32 738,0	-32 738,0	0,0	0,0	0,0	0,0	0,0	32 738,0	26 734,0	6 004,0	0,0	0,0
Direct purchases abroad by residents	0,0	0,0	0,0	0,0	**0,0**	5 561,0	5 561,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	5 561,0	5 561,0
Import Taxes less subsidies on products	7,0	291,6	22,3	105,0	**425,9**	501,2	501,2	0,0	0,0	145,9	145,9	0,0	0,0	0,0	0,0	647,1	1 073,0
Taxes less subsidies on products	-414,4	-2 092,7	510,2	5 088,2	**3 091,3**	11 668,5	11 668,5	0,0	0,0	5 706,2	5 706,2	0,0	-216,0	0,0	-216,0	17 158,7	20 250,0
VAT	17,8	153,7	23,7	4 938,8	**5 134,0**	27 504,0	27 193,0	0,0	311,0	5 742,0	5 742,0	0,0	0,0	0,0	0,0	33 246,0	38 380,0
TOTAL INTERMEDIATE CONSUMPTION	15 477,4	289 356,5	79 466,9	240 085,2	**624 386,0**	484 359,0	370 573,0	5 426,0	108 360,0	165 618,0	162 806,0	2 812,0	182 992,0	131 375,0	51 617,0	832 969,0	1 457 355,0
Compensation of employees	3 863,3	65 562,7	30 567,7	212 182,3													
Other net taxes on production	-971,1	-391,2	545,1	3 713,2													
Operating surplus/mixed income, gross	20 634,2	47 713,0	14 912,9	172 227,9													
Gross value added at basic prices	**23 526,4**	**112 884,5**	**46 025,7**	**388 123,4**													
Output at basic prices	**39 003,8**	**402 241,0**	**125 492,6**	**628 208,6**													
Imports	**6 192,9**	**166 876,1**	**18,0**	**26 363,0**													
Total supply at basic prices	**45 196,7**	**569 117,1**	**125 510,6**	**654 571,6**													

Table 2. Domestic tourist consumption (current prices) by products, period and components. Units: millions of euros

	Incoming tourist consumption	Household tourist consumption	Average tourist consumption	PA tourist consumption expense	Total domestic tourist consumption
Accommodation services	8 674,70	9 046,50	2 324,30	46,20	20 091,70
- Hotels and the like	7 038,80	3 303,00	2 324,30	46,20	12 712,30
- Real estate rent services	1 635,90	5 743,50	0,00	0,00	7 379,40
Restaurants and the like	10 155,80	8 501,70	412,00	1,50	19 071,00
Passenger transport	4 267,40	3 626,20	2 661,00	668,70	11 223,30
- Transport of passengers by road	327,90	811,60	549,10	407,80	2 096,40
- Transport of passengers by rail	198,50	647,30	273,80	85,50	1 205,10
- Transport of passengers by sea	68,00	186,40	123,00	24,90	402,30
- Transport of passengers by air	3 673,00	1 980,90	1 715,10	150,50	7 519,50
Travel agency services	270,20	1 041,70	1 643,50	109,10	3 064,50
Services linked to transport	1 902,30	198,30	491,30	0,00	2 591,90
Transport equipment rental	429,40	172,80	401,40	0,00	1 003,60
Cultural, leisure and sport-related services	827,40	897,50	0,00	439,10	2 164,00
-Market cultural, leisure and sport services	802,30	883,60	0,00	0,00	1 685,90
-Non-market cultural, leisure and sport services	25,10	13,90	0,00	439,10	478,10
Non-market PA tourist services	0,00	0,00	0,00	284,40	284,40
Total characteristic products	26 527,20	23 484,70	7 933,50	1 549,00	59 494,40
Goods	4 451,30	2 699,60	0,00	0,00	7 150,90
Goods distribution margins	2 217,20	974,20	0,00	0,00	3 191,40
Other products	1 662,40	1 647,60	126,00	0,00	3 436,00
Total non-characteristic products	8 330,90	5 321,40	126,00	0,00	13 778,30
Total at basic prices	34 858,10	28 806,10	8 059,50	1 549,00	73 272,70

Table 3. Direct and indirect effects of inbound tourism consumption, household tourism consumption and public authority consumption of tourims characteristic products

		Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	NEW TOTAL JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1	Agriculture, livestock and hunting	35 226,5	1 771,4	2,1	18 560,8	933,3	2,0	852,7	42,9	4,2	4 907,3	246,8	2,8	7 058,6	354,9	4,6	108,2
2	Forestry, logging and related service activities	1 559,1	38,6	0,0	1 339,3	33,2	0,1	34,9	0,9	0,1	505,9	12,5	0,1	165,0	4,1	0,1	-8,4
3	Fishing	2 218,2	211,1	0,3	1 468,5	139,8	0,3	63,7	6,1	0,6	779,7	74,2	0,8	229,7	21,9	0,3	-52,4
4	Mining of coal and lignite; extraction of peat	1 154,1	44,7	0,1	164,0	6,3	0,0	17,3	0,7	0,1	878,7	34,0	0,4	1,1	0,0	0,0	-34,0
5	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	10,7	0,0	67,9	3,9	0,0	1,1	0,1	0,0	15 449,8	880,1	10,0	3,5	0,2	0,0	-879,9
6	Mining of metal ores	188,7	2,7	0,0	63,0	0,9	0,0	1,5	0,0	0,0	1 147,8	16,2	0,2	33,2	0,5	0,0	-15,8
7	Other mining and quarrying	2 495,1	40,5	0,0	933,0	15,1	0,0	21,6	0,4	0,0	552,7	9,0	0,1	503,0	8,2	0,1	-0,8
8	Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	1 317,9	1,6	14 853,7	921,9	2,0	8,2	0,5	0,1	5 533,1	343,4	3,9	5 251,8	326,0	4,2	-17,5
9	Production and distribution of electricity	19 592,6	805,2	1,0	10 072,9	414,0	0,9	37,6	1,5	0,2	118,6	4,9	0,1	124,5	5,1	0,1	0,2
10	Manufacture of gas; steam and hot water supply	3 856,7	136,7	0,2	1 189,9	42,2	0,1	5,3	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11	Collection, purification and distribution of water	3 389,2	161,2	0,2	1 555,8	74,0	0,2	32,6	1,6	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12	Manufacture of meat products	15 675,6	922,8	1,1	3 944,2	232,2	0,5	71,1	4,2	0,4	998,6	58,8	0,7	1 220,2	71,8	0,9	13,0
13	Manufacture of dairy products	6 247,8	309,1	0,4	1 417,5	70,1	0,2	31,0	1,5	0,2	1 132,2	56,0	0,6	384,5	19,0	0,2	-37,0
14	Manufacture of other food products	31 108,2	1 877,1	2,3	7 068,1	426,5	0,9	249,4	15,0	1,5	7 021,6	423,7	4,8	5 871,3	354,3	4,6	-69,4
15	Manufacture of beverages	11 813,9	2 602,7	3,1	4 095,9	902,4	2,0	53,7	11,8	1,2	1 199,9	264,3	3,0	1 519,0	334,6	4,3	70,3
16	Manufacture of tobacco products	1 397,0	0,0	0,0	6 115,8	0,0	0,0	7,5	0,0	0,0	638,2	0,0	0,0	37,4	0,0	0,0	0,0
17	Manufacture of textiles	9 541,1	308,1	0,4	3 403,1	109,9	0,2	115,8	3,7	0,4	3 717,9	120,1	1,4	2 776,3	89,7	1,2	-30,4
18	Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	76,4	0,1	4 821,1	43,9	0,1	155,3	1,4	0,1	3 766,9	34,3	0,4	1 552,7	14,2	0,2	-20,2
19	Manufacture of leather and leather products	6 405,4	18,0	0,0	2 343,0	6,6	0,0	82,8	0,2	0,0	1 739,1	4,9	0,1	2 468,0	6,9	0,1	2,1
20	Manufacture of wood and wood products	8 727,4	368,8	0,4	2 547,2	107,6	0,2	111,8	4,7	0,5	1 851,1	78,2	0,9	935,1	39,5	0,5	-39,7
21	Manufacture of pulp, paper and paper products	10 093,3	367,3	0,4	3 166,0	115,2	0,2	55,7	2,0	0,2	4 036,9	146,9	1,7	2 387,8	86,9	1,1	-60,0
22	Publishing and printing	13 860,1	510,5	0,6	5 465,6	201,3	0,4	161,6	6,0	0,6	825,5	30,4	0,3	1 096,7	40,4	0,5	10,0
23	Manufacture of chemicals and chemical products	30 995,6	860,5	1,0	10 025,1	278,3	0,6	153,4	4,3	0,4	18 632,3	517,3	5,9	10 671,9	296,3	3,8	-221,0
24	Manufacture of rubber and plastic products	13 218,2	361,9	0,4	4 406,1	120,6	0,3	117,4	3,2	0,3	4 594,1	125,8	1,4	3 911,6	107,1	1,4	-18,7
25	Manufacture of cement, lime and plaster	2 621,8	41,6	0,1	1 269,0	20,1	0,0	15,4	0,2	0,0	244,6	3,9	0,0	131,0	2,1	0,0	-1,8
26	Manufacture of glass and glass products	2 739,8	170,7	0,2	1 126,1	70,2	0,2	24,9	1,6	0,2	920,5	57,4	0,7	634,4	39,5	0,5	-17,8
27	Manufacture of ceramic products	5 367,8	102,0	0,1	2 283,8	43,4	0,1	65,7	1,2	0,1	465,9	8,9	0,1	2 140,0	40,7	0,5	31,8
28	Manufacture of other non-metallic mineral products	9 711,5	130,0	0,2	2 892,4	38,7	0,1	87,0	1,2	0,1	401,8	5,4	0,1	813,4	10,9	0,1	5,5
29	Manufacture of basics metals	21 178,2	287,4	0,3	6 148,1	83,4	0,2	110,9	1,5	0,1	9 298,5	126,2	1,4	6 073,3	82,4	1,1	-43,8
30	Manufacture of fabricated metal products	26 911,7	600,5	0,7	9 839,6	219,6	0,5	314,4	7,0	0,7	3 943,1	88,0	1,0	3 512,8	78,4	1,0	-9,6
31	Manufacture of machinery and equipment n.e.c.	20 109,1	295,3	0,4	8 370,5	122,9	0,3	197,9	2,9	0,3	16 108,0	236,5	2,7	8 770,3	128,8	1,7	-107,7
32	Manufacture of office machinery and computers	3 749,7	48,3	0,1	1 080,4	13,9	0,0	22,9	0,3	0,0	5 327,9	68,6	0,8	1 819,9	23,4	0,3	-45,2
33	Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	183,9	0,2	3 719,1	57,7	0,1	91,0	1,4	0,1	5 426,9	84,2	1,0	4 023,8	62,4	0,8	-21,8
34	Manufacture of electronic equipment and apparatus	5 472,2	45,5	0,1	1 949,5	16,2	0,0	47,4	0,4	0,0	9 589,2	79,8	0,9	3 720,6	30,9	0,4	-48,8
35	Manufacture of medical, precision and optical instruments	3 402,3	11,6	0,0	1 502,4	5,1	0,0	31,7	0,1	0,0	4 354,0	14,8	0,2	1 414,8	4,8	0,1	-10,0
36	Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	166,7	0,2	12 712,6	45,8	0,1	228,0	0,8	0,1	29 754,1	107,3	1,2	29 019,2	104,6	1,4	-2,6
37	Manufacture of other transport equipment	7 229,3	333,4	0,4	2 197,9	101,4	0,2	65,8	3,0	0,3	3 940,0	181,7	2,1	3 726,9	171,9	2,2	-9,8
38	Manufacture of furniture; manufacturing n.e.c.	13 278,0	291,7	0,4	6 591,7	144,8	0,3	227,6	5,0	0,5	3 266,6	71,8	0,8	2 704,3	59,4	0,8	-12,4
39	Recycling	2 827,9	41,4	0,1	87,3	1,3	0,0	13,3	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40	Construction	125 492,6	1 585,4	1,9	51 931,8	656,1	1,4	1 749,1	22,1	2,2	18,0	0,2	0,0	9,0	0,1	0,0	-0,1
41	Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	509,4	0,6	11 174,5	255,2	0,6	358,9	8,2	0,8	0,0	0,0	0,0	1 473,4	33,7	0,4	33,7
42	Wholesale trade and commission trade	48 464,0	1 597,3	1,9	28 630,7	943,6	2,0	588,2	19,4	1,9	956,0	31,5	0,4	8 387,5	276,4	3,6	244,9
43	Retail trade; repair of personal and household goods	39 955,9	299,6	0,4	28 880,8	216,5	0,5	1 535,3	11,5	1,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44	Hotels	12 380,8	17 526,5	21,2	8 648,6	12 243,2	26,5	224,6	317,9	31,4	597,0	845,1	9,6	0,0	0,0	0,0	-845,1
45	Restaurants	60 285,1	18 853,1	22,8	38 576,3	12 064,1	26,1	771,1	241,1	23,8	11,0	3,4	0,0	0,0	0,0	0,0	-3,4
46	Railway transport	2 084,2	956,7	1,2	657,7	301,9	0,7	37,0	17,0	1,7	35,0	16,1	0,2	78,5	36,0	0,5	20,0
47	Other land transport; transport via pipelines	28 695,1	2 638,8	3,2	13 272,0	1 220,5	2,6	463,5	42,6	4,2	1 885,0	173,3	2,0	4 659,0	428,4	5,6	255,1
48	Water transport	1 831,0	306,7	0,4	655,7	109,8	0,2	11,2	1,9	0,2	86,0	14,4	0,2	1 062,0	177,9	2,3	163,5
49	Air transport	5 804,3	4 596,6	5,6	2 140,1	1 694,8	3,7	36,4	28,8	2,8	2 060,0	1 631,4	18,6	3 317,0	2 626,9	34,1	995,5
50	Support and auxiliary transport activities	19 894,5	4 192,2	5,1	7 728,5	1 628,6	3,5	97,2	20,5	2,0	1 766,0	372,1	4,2	2 397,0	505,1	6,6	133,0
51	Travel agencies activities	5 860,9	1 774,6	2,1	2 449,4	741,7	1,6	40,6	12,3	1,2	230,0	69,6	0,8	0,0	0,0	0,0	-69,6
52	Post and telecommunications	25 351,6	1 217,9	1,5	14 788,8	710,4	1,5	205,5	9,9	1,0	818,0	39,3	0,4	737,0	35,4	0,5	-3,9
53	Financial intermediation, except insurance and pension funding	25 215,9	900,7	1,1	18 637,1	665,7	1,4	249,2	8,9	0,9	2 190,0	78,2	0,9	1 973,0	70,5	0,9	-7,8
54	Insurance and pension funding, except compulsory social security	6 245,0	129,4	0,2	2 628,2	54,5	0,1	51,2	1,1	0,1	93,0	1,9	0,0	372,0	7,7	0,1	5,8
55	Activities auxiliary to financial intermediation	9 572,4	190,2	0,2	5 401,1	107,3	0,2	56,4	1,1	0,1	370,0	7,4	0,1	473,0	9,4	0,1	2,0
56	Real estate activities	70 374,2	1 999,4	2,4	51 669,5	1 468,0	3,2	118,9	3,4	0,3	27,0	0,8	0,0	43,0	1,2	0,0	0,5
57	Renting of machinery, personal and household goods	6 902,0	1 213,6	1,5	4 157,3	731,0	1,6	47,1	8,3	0,8	1 118,0	196,6	2,2	104,0	18,3	0,2	-178,3
58	Computer and related activities	9 693,3	149,5	0,2	6 452,9	99,5	0,2	112,2	1,7	0,2	1 715,0	26,4	0,3	2 244,0	34,6	0,4	8,2
59	Research and development	3 577,7	66,7	0,1	1 847,1	34,5	0,1	9,9	0,2	0,0	280,0	5,2	0,1	283,0	5,3	0,1	0,1
60	Other business activities	60 444,0	2 611,7	3,2	40 760,2	1 761,2	3,8	939,4	40,6	4,0	10 076,0	435,4	5,0	7 679,0	331,8	4,3	-103,6
61	Market education	10 759,9	98,6	0,1	8 289,0	76,0	0,2	250,1	2,3	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62	Market health and social work	17 979,1	203,2	0,2	11 216,2	126,8	0,3	308,8	3,5	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63	Market sewage and refuse disposal, sanitation and similar activities	3 742,9	121,7	0,1	2 050,8	66,7	0,1	37,1	1,2	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64	Market activities of membership organization n.e.c.	421,9	30,5	0,0	262,9	19,0	0,0	12,2	0,9	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65	Market recreational, cultural and sporting activities	19 737,1	2 115,0	2,6	14 079,5	1 508,7	3,3	220,1	23,6	2,3	2 049,0	219,6	2,5	776,0	83,2	1,1	-136,4
66	Other service activities	5 572,6	127,2	0,2	4 007,8	91,5	0,2	197,7	4,5	0,4	1,0	0,0	0,0	0,0	0,0	0,0	0,0
67	Public Administration	42 965,3	284,4	0,3	32 229,2	213,3	0,5	1 238,7	8,2	0,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68	Non-market education	21 730,4	0,0	0,0	19 537,2	0,0	0,0	584,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69	Non-market health and social work	25 470,7	0,0	0,0	17 442,8	0,0	0,0	567,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70	Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	0,0	0,0	309,7	0,0	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71	Non-market activities of membership organization n.e.c. NPISHs	1 875,6	0,0	0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72	Non-market recreational, cultural and sporting activities	5 343,5	478,1	0,6	2 350,8	210,3	0,5	108,4	9,7	1,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
73	Private households with employed persons	5 809,0	0,0	0,0	5 809,0	0,0	0,0	405,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		1 194 946,0	**82 648,9**	**100,0**	**630 263,0**	**46 204,3**	**100,0**	**15 669,5**	**1 012,1**	**100,0**	**199 450,0**	**8 784,1**	**100,0**	**152 775,0**	**7 703,7**	**100,0**	**-1 080,4**
			6,92			**7,33**			**6,46**			**4,40**			**5,04**		

Table 4. Direct and indirect effects of inbound tourism consumption

		Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	NEW TOTAL JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1	Agriculture, livestock and hunting	35 226,5	921,2	2,2	18 560,8	485,4	2,1	852,7	22,3	4,4	4 907,3	128,3	2,7	7 058,6	184,6	4,3	56,3
2	Forestry, logging and related service activities	1 559,1	20,6	0,0	1 339,3	17,7	0,1	34,9	0,5	0,1	505,9	6,7	0,1	165,0	2,2	0,1	-4,5
3	Fishing	2 218,2	109,0	0,3	1 468,5	72,1	0,3	63,7	3,1	0,6	779,7	38,3	0,8	229,7	11,3	0,3	-27,0
4	Mining of coal and lignite; extraction of peat	1 154,1	22,0	0,1	164,0	3,1	0,0	17,3	0,3	0,1	878,7	16,7	0,4	1,1	0,0	0,0	-16,7
5	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	5,7	0,0	67,9	2,1	0,0	1,1	0,0	0,0	15 449,8	472,3	9,9	3,5	0,1	0,0	-472,2
6	Mining of metal ores	188,7	1,4	0,0	63,0	0,5	0,0	1,5	0,0	0,0	1 147,8	8,6	0,2	33,2	0,2	0,0	-8,3
7	Other mining and quarrying	2 495,1	20,6	0,0	933,0	7,7	0,0	21,6	0,2	0,0	552,7	4,6	0,1	503,0	4,2	0,1	-0,4
8	Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	712,0	1,7	14 853,7	498,1	2,1	8,2	0,3	0,1	5 533,1	185,5	3,9	5 251,8	176,1	4,1	-9,4
9	Production and distribution of electricity	19 592,6	394,8	0,9	10 072,9	203,0	0,9	37,6	0,8	0,2	118,6	2,4	0,1	124,5	2,5	0,1	0,1
10	Manufacture of gas; steam and hot water supply	3 856,7	68,7	0,2	1 189,9	21,2	0,1	5,3	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11	Collection, purification and distribution of water	3 389,2	80,6	0,2	1 555,8	37,0	0,2	32,6	0,8	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12	Manufacture of meat products	15 675,6	480,2	1,1	3 944,2	120,8	0,5	71,1	2,2	0,4	998,6	30,6	0,6	1 220,2	37,4	0,9	6,8
13	Manufacture of dairy products	6 247,8	161,1	0,4	1 417,5	36,6	0,2	31,0	0,8	0,2	1 132,2	29,2	0,6	384,5	9,9	0,2	-19,3
14	Manufacture of other food products	31 108,2	979,9	2,3	7 068,1	222,6	0,9	249,4	7,9	1,6	7 021,6	221,2	4,6	5 871,3	184,9	4,3	-36,2
15	Manufacture of beverages	11 813,9	1 377,9	3,2	4 095,9	477,7	2,0	53,7	6,3	1,2	1 199,9	140,0	2,9	1 519,0	177,2	4,1	37,2
16	Manufacture of tobacco products	1 397,0	0,0	0,0	6 115,8	0,0	0,0	7,5	0,0	0,0	638,2	0,0	0,0	37,4	0,0	0,0	0,0
17	Manufacture of textiles	9 541,1	160,9	0,4	3 403,1	57,4	0,2	115,8	2,0	0,4	3 717,9	62,7	1,3	2 776,3	46,8	1,1	-15,9
18	Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	40,4	0,1	4 821,1	23,2	0,1	155,3	0,7	0,1	3 766,9	18,1	0,4	1 552,7	7,5	0,2	-10,7
19	Manufacture of leather and leather products	6 405,4	9,1	0,0	2 343,0	3,3	0,0	82,8	0,1	0,0	1 739,1	2,5	0,1	2 468,0	3,5	0,1	1,0
20	Manufacture of wood and wood products	8 727,4	198,9	0,5	2 547,2	58,0	0,2	111,8	2,5	0,5	1 851,1	42,2	0,9	935,1	21,3	0,5	-20,9
21	Manufacture of pulp, paper and paper products	10 093,3	193,1	0,5	3 166,0	60,6	0,3	55,7	1,1	0,2	4 036,9	77,2	1,6	2 387,8	45,7	1,1	-31,5
22	Publishing and printing	13 860,1	258,6	0,6	5 465,6	102,0	0,4	161,6	3,0	0,6	825,5	15,4	0,3	1 096,7	20,5	0,5	5,1
23	Manufacture of chemicals and chemical products	30 995,6	450,3	1,1	10 025,1	145,7	0,6	153,4	2,2	0,4	18 632,3	270,7	5,7	10 671,9	155,1	3,6	-115,7
24	Manufacture of rubber and plastic products	13 218,2	199,4	0,5	4 406,1	66,5	0,3	117,4	1,8	0,4	4 594,1	69,3	1,5	3 911,6	59,0	1,4	-10,3
25	Manufacture of cement, lime and plaster	2 621,8	20,7	0,0	1 269,0	10,0	0,0	15,4	0,1	0,0	244,6	1,9	0,0	131,0	1,0	0,0	-0,9
26	Manufacture of glass and glass products	2 739,8	89,5	0,2	1 126,1	36,8	0,2	24,9	0,8	0,2	920,5	30,1	0,6	634,4	20,7	0,5	-9,3
27	Manufacture of ceramic products	5 367,8	52,6	0,1	2 283,8	22,4	0,1	65,7	0,6	0,1	465,9	4,6	0,1	2 140,0	21,0	0,5	16,4
28	Manufacture of other non-metallic mineral products	9 711,5	64,7	0,2	2 892,4	19,3	0,1	87,0	0,6	0,1	401,8	2,7	0,1	813,4	5,4	0,1	2,7
29	Manufacture of basics metals	21 178,2	152,0	0,4	6 148,1	44,1	0,2	110,9	0,8	0,2	9 298,5	66,7	1,4	6 073,3	43,6	1,0	-23,1
30	Manufacture of fabricated metal products	26 911,7	323,9	0,8	9 839,6	118,4	0,5	314,4	3,8	0,8	3 943,1	47,5	1,0	3 512,8	42,3	1,0	-5,2
31	Manufacture of machinery and equipment n.e.c.	20 109,1	155,5	0,4	8 370,5	64,7	0,3	197,9	1,5	0,3	16 108,0	124,6	2,6	8 770,3	67,8	1,6	-56,7
32	Manufacture of office machinery and computers	3 749,7	25,2	0,1	1 080,4	7,3	0,0	22,9	0,2	0,0	5 327,9	35,8	0,7	1 819,9	12,2	0,3	-23,5
33	Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	94,5	0,2	3 719,1	29,6	0,1	91,0	0,7	0,1	5 426,9	43,3	0,9	4 023,8	32,1	0,7	-11,2
34	Manufacture of electronic equipment and apparatus	5 472,2	23,7	0,1	1 949,5	8,4	0,0	47,4	0,2	0,0	9 589,2	41,5	0,9	3 720,8	16,1	0,4	-25,4
35	Manufacture of medical, precision and optical instruments	3 402,3	5,6	0,0	1 502,4	2,5	0,0	31,7	0,1	0,0	4 354,0	7,2	0,2	1 414,8	2,3	0,1	-4,9
36	Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	87,4	0,2	12 712,0	24,0	0,1	228,0	0,4	0,1	29 754,1	56,3	1,2	29 019,2	54,9	1,3	-1,4
37	Manufacture of other transport equipment	7 229,3	177,6	0,4	2 197,9	54,0	0,2	65,8	1,6	0,3	3 940,0	96,8	2,0	3 726,9	91,6	2,1	-5,2
38	Manufacture of furniture; manufacturing n.e.c.	13 278,0	150,8	0,4	6 591,7	74,9	0,3	227,6	2,6	0,5	3 266,6	37,1	0,8	2 704,3	30,7	0,7	-6,4
39	Recycling	2 827,8	21,9	0,1	87,3	0,7	0,0	13,3	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40	Construction	125 492,6	773,0	1,8	51 931,8	319,9	1,4	1 749,1	10,8	2,1	18,0	0,1	0,0	9,0	0,1	0,0	-0,1
41	Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	247,2	0,6	11 174,5	123,9	0,5	358,9	4,0	0,8	0,0	0,0	0,0	1 473,4	16,3	0,4	16,3
42	Wholesale trade and commission trade	48 464,0	841,8	2,0	28 630,7	497,3	2,1	588,2	10,2	2,0	956,0	16,6	0,3	8 387,5	145,7	3,4	129,1
43	Retail trade; repair of personal and household goods	39 955,9	157,9	0,4	28 880,8	114,1	0,5	1 535,3	6,1	1,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44	Hotels	12 380,8	8 450,6	19,9	8 648,6	5 903,2	25,0	224,6	153,3	30,5	597,0	407,5	8,5	0,0	0,0	0,0	-407,5
45	Restaurants	60 285,1	10 257,3	24,1	38 576,3	6 563,6	27,8	771,1	131,2	26,1	11,0	1,9	0,0	0,0	0,0	0,0	-1,9
46	Railway transport	2 084,2	213,4	0,5	657,7	67,3	0,3	37,0	3,8	0,8	35,0	3,6	0,1	78,5	8,0	0,2	4,5
47	Other land transport; transport via pipelines	28 695,1	1 035,2	2,4	13 272,0	478,8	2,0	463,5	16,7	3,3	1 885,0	68,0	1,4	4 659,0	168,1	3,9	100,1
48	Water transport	1 831,0	83,6	0,2	655,7	29,9	0,1	11,2	0,5	0,1	86,0	3,9	0,1	1 062,0	48,5	1,1	44,6
49	Air transport	5 804,3	2 843,5	6,7	2 140,1	1 048,4	4,4	36,4	17,8	3,5	2 060,0	1 009,2	21,2	3 317,0	1 625,0	38,0	615,8
50	Support and auxiliary transport activities	19 894,5	3 100,0	7,3	7 728,5	1 204,3	5,1	97,2	15,1	3,0	1 766,0	275,2	5,8	2 397,0	373,5	8,7	98,3
51	Travel agencies activities	5 860,9	432,3	1,0	2 449,4	180,7	0,8	40,6	3,0	0,6	230,0	17,0	0,4	0,0	0,0	0,0	-17,0
52	Post and telecommunications	25 351,6	606,1	1,4	14 788,8	353,6	1,5	205,5	4,9	1,0	818,0	19,6	0,4	737,0	17,6	0,4	-1,9
53	Financial intermediation, except insurance and pension funding	25 215,9	466,4	1,1	18 637,1	344,7	1,5	249,2	4,6	0,9	2 190,0	40,5	0,8	1 973,0	36,5	0,9	-4,0
54	Insurance and pension funding, except compulsory social security	6 245,0	67,3	0,2	2 628,2	28,3	0,1	51,2	0,6	0,1	93,0	1,0	0,0	372,0	4,0	0,1	3,0
55	Activities auxiliary to financial intermediation	9 572,4	99,8	0,2	5 401,1	56,3	0,2	56,4	0,6	0,1	370,0	3,9	0,1	473,0	4,9	0,1	1,1
56	Real estate activities	70 374,2	1 027,7	2,4	51 669,5	754,6	3,2	118,9	1,7	0,3	27,0	0,4	0,0	43,0	0,6	0,0	0,2
57	Renting of machinery, personal and household goods	6 902,0	775,6	1,8	4 157,3	467,2	2,0	47,1	5,3	1,1	1 118,0	125,6	2,6	104,0	11,7	0,3	-113,9
58	Computer and related activities	9 693,3	73,9	0,2	6 452,9	49,2	0,2	112,2	0,9	0,2	1 715,0	13,1	0,3	2 244,0	17,1	0,4	4,0
59	Research and development	3 577,7	34,4	0,1	1 847,1	17,8	0,1	9,9	0,1	0,0	280,0	2,7	0,1	283,0	2,7	0,1	0,0
60	Other business activities	60 444,0	1 324,8	3,1	40 760,2	893,4	3,8	939,4	20,6	4,1	10 076,0	220,8	4,6	7 679,0	168,3	3,9	-52,5
61	Market education	10 759,9	50,6	0,1	8 289,0	39,0	0,2	250,1	1,2	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62	Market health and social work	17 979,1	100,8	0,2	11 216,2	62,9	0,3	308,8	1,7	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63	Market sewage abd refuse disposal, sanitation and similar activities	3 742,9	62,5	0,1	2 050,8	34,2	0,1	37,1	0,6	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64	Market activities of membership organization n.e.c.	421,9	15,3	0,0	262,9	9,6	0,0	12,2	0,4	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65	Market recreational, cultural and sporting activities	19 737,1	976,0	2,3	14 079,5	696,3	2,9	220,1	10,9	2,2	2 049,0	101,3	2,1	776,0	38,4	0,9	-63,0
66	Other service activities	5 572,6	62,5	0,1	4 007,8	44,9	0,2	197,7	2,2	0,4	1,0	0,0	0,0	0,0	0,0	0,0	0,0
67	Public Administration	42 965,3	0,0	0,0	32 229,2	0,0	0,0	1 238,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68	Non-market education	21 730,4	0,0	0,0	19 537,2	0,0	0,0	584,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69	Non-market health and social work	25 470,7	0,0	0,0	17 442,8	0,0	0,0	567,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70	Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	0,0	0,0	309,7	0,0	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71	Non-market activities of membership organization n.e.c. NPISHs	1 875,6	0,0	0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72	Non-market recreational, cultural and sporting activities	5 343,5	25,1	0,1	2 350,8	11,0	0,0	108,4	0,5	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Direct and indirect output for a value of 42,517 million euros was needed to cover the inbound consumption of tourism-characteristic products, which represents 3.56% of the Spanish economy's total output in the year 2000[1]. By economic activities, 24.1% of the output was generated by the restaurant sector, 19.9% by the lodging industry, 7.3% by ancillary transport activities, and 6.7% by the air transport sector [see Table 4]. As for employment, the equivalent of 3.21% of all full-time employment was needed to cover consumption by foreign tourists to Spain.

As for household tourism consumption, directly or indirectly it gave rise to output worth 37,617 million euros, equivalent to 3.15% of the Spanish economy's total output in 2000[2] at basic prices [see Table 5]. 23.9% of this output can be attributed to the lodging industry, 22.8% to the restaurant sector, 4.3% to the air transport sector, and 3.2% to activities by travel agencies. Likewise, the employment that was needed to meet the domestic tourism demand was equivalent to 3.01% of all full-time employment.

As for tourism consumption by the public authorities, direct or indirect output worth 2,513 million euros was needed to satisfy this consumption, representing 0.21% of Spain's total output [see Table 6]. This is a much smaller contribution than that of the other components of tourism consumption, analysed above. Furthermore, unlike the previous cases, the sectors involved in generating this output were not mainly the lodging and catering industries. 17.5% of the output correspondent with the public-sector demand for tourism was generated by the non-market leisure and cultural sectors, 16.7% by the land-based transport sector, and 11.3% by the public authorities themselves.

The results analysed above only capture the direct and indirect output that is needed to meet the tourism demand. Thus so far, the expenditure effect of earnings made by workers and business entrepreneurs from the tourist industry has not been considered. That is, the induced impact. When this effect is included, tourism's economic contribution rises, and output for a value of 134,749.9 million euros was needed to satisfy both the direct and indirect effects of tourism consumption and induced expenditure from tourism consumption. This is tantamount to 11.28% of the total output of the Spanish economy at basic prices[3]. By economic activities, restaurants (17.1%) and the lodging industry (13.1%) accounted for most of the output. To a lesser extent, real estate activities (5.6%), other business activities (3.6%), ancillary transport activities (3.6%), air transport (3.5%), wholesale trade (3.1%) and retail trade (2.9%) also contributed to the output directed at meeting the tourism demand. Outside the service sector, agriculture, livestock and hunting (3%), other food industries (3%), and drink manufacturing (2.5%) were the activities most involved in this output [see Table 7]. To achieve it, 1.7 million jobs were needed, equivalent to 10.86% of all full-time employment.

If the total impact is broken down into the different components of tourism consumption, a direct, indirect and induced output worth 68,846.4 million euros was generated by inbound tourism. This represents 5.76% of the total output valued at basic prices[4] [see Table 8]. Employment equivalent to 850.5 thousand full-time jobs was needed to generate this output, correspondent with 5.43% of all employment. The total contribution of household tourism consumption to this output amounted to a value of 61,489.4 million euros, representing about

[1] In terms of the GDP, the contribution of inbound tourism amounted to 3.75% of the GDP.
[2] Discounting intermediate consumption and estimating just the added value and net tax on products, the contribution of household tourism consumption was equivalent to 3.38% of the GDP.
[3] Approx. 11.97% of the GDP.
[4] 6.10% of the GDP.

5.15% of the total output of the Spanish economy[5] [see Table 9]. Likewise, domestic tourism consumption created the equivalent of 788.0 thousand full-time jobs directly, indirectly or through induced means, accounting for 5.03% of total employment. As for the overall impact of expenditure on tourism consumption by the public authorities, the new output was equivalent to 4,412.1 million euros, which scarcely represents 0.37% of the total output at basic prices, and the employment that was generated only amounts to 0.4% of the total or about 62.5 thousand jobs [see Table 10].

4.2. Tourism Multipliers

Tourism multipliers compare tourism expenditure with the total supply that is needed to meet it. Thus if the value of the direct and indirect supply that is needed to satisfy tourism consumption (91,433 million euros) is divided by the value of this tourism consumption (51,560.9 million euros), the multiplier comes to 1.77. This means that for every one euro increase in tourist expenditure, the Spanish economy experienced a rise of 1.77 euros in the supply. If the induced effects are included (in which case the value of the supply that is needed to meet tourism consumption comes to 150,450.5 million euros), the value of the multiplier is 2.92.

When the value of the total supply needed to meet tourism consumption was broken down into direct, indirect and induced effects, it was found that 34.27% of the said supply was directly generated. The indirect effect, derived from intersectoral relations among suppliers of tourism-characteristic goods, represented a supply worth 39,872.1 million euros, which accounts for 26.50% of the total impact. Meanwhile, the induced effect gave rise to a supply worth 59,017.5 million euros, approximately 39.23% of the total effect on the supply. The lower magnitude of the indirect effect, compared with the direct and induced effects, can be attributed to tourism expenditure's high content in services, which implies a reduced demand for intermediate inputs. Likewise, the high relative value of the induced effect is also significant, comparable to the direct impact of the inbound tourism demand [see Table 11].

4.3. Foreign Trade Sector

Inbound tourism consumption has traditionally served in Spain to offset the deficit in the goods account of the balance of payments. However, end products must be imported to meet the demand for this consumption. Additionally, businesses must import a series of intermediate goods that are needed in production in order to meet the tourism demand. The effects on imports do not stop there, given that purchases of foreign goods and services are also affected by consumption generated by earnings from tourism, the induced effect. Thus, the positive effect of inbound tourism on the foreign trade sector is much less than that reflected by earnings from tourism in the balance of payments.

[5] 5.5% of the GDP.

Table 5. Direct and indirect effects of household tourism consumption

		Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	NEW TOTAL JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1	Agriculture, livestock and hunting	35 226,5	841,7	2,2	18 560,8	443,5	2,1	852,7	20,4	4,3	4 907,3	117,3	3,1	7 058,6	168,7	5,4	51,4
2	Forestry, logging and related service activities	1 559,1	17,1	0,0	1 339,3	14,7	0,1	34,9	0,4	0,1	505,9	5,5	0,1	165,0	1,8	0,1	-3,7
3	Fishing	2 218,2	101,6	0,3	1 468,5	67,3	0,3	63,7	2,9	0,6	779,7	35,7	1,0	229,7	10,5	0,3	-25,2
4	Mining of coal and lignite; extraction of peat	1 154,1	20,3	0,1	164,0	2,9	0,0	17,3	0,3	0,1	878,7	15,5	0,4	1,1	0,0	0,0	-15,5
5	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	4,4	0,0	67,9	1,6	0,0	1,1	0,0	0,0	15 449,8	364,2	9,7	3,5	0,1	0,0	-364,2
6	Mining of metal ores	188,7	1,2	0,0	63,0	0,4	0,0	1,5	0,0	0,0	1 147,8	7,1	0,2	33,2	0,2	0,0	-6,9
7	Other mining and quarrying	2 495,1	18,8	0,0	933,0	7,0	0,0	21,6	0,2	0,0	552,7	4,2	0,1	503,0	3,8	0,1	-0,4
8	Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	538,4	1,4	14 853,7	376,6	1,8	8,2	0,2	0,0	5 533,1	140,3	3,7	5 251,8	133,2	4,2	-7,1
9	Production and distribution of electricity	19 592,6	370,9	1,0	10 072,9	190,7	0,9	37,6	0,7	0,2	118,6	2,2	0,1	124,5	2,4	0,1	0,1
10	Manufacture of gas; steam and hot water supply	3 856,7	63,2	0,2	1 189,9	19,5	0,1	5,3	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11	Collection, purification and distribution of water	3 389,2	75,5	0,2	1 555,8	34,7	0,2	32,6	0,7	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12	Manufacture of meat products	15 675,6	440,1	1,2	3 944,2	110,7	0,5	71,1	2,0	0,4	998,6	28,0	0,7	1 220,2	34,3	1,1	6,2
13	Manufacture of dairy products	6 247,8	147,1	0,4	1 417,5	33,4	0,2	31,0	0,7	0,2	1 132,2	26,7	0,7	384,5	9,1	0,3	-17,6
14	Manufacture of other food products	31 108,2	889,9	2,4	7 068,1	202,2	1,0	249,4	7,1	1,5	7 021,6	200,9	5,4	5 871,3	168,0	5,3	-32,9
15	Manufacture of beverages	11 813,9	1 219,3	3,2	4 095,9	422,7	2,0	53,7	5,5	1,2	1 199,9	123,8	3,3	1 519,0	156,8	5,0	32,9
16	Manufacture of tobacco products	1 397,0	0,0	0,0	6 115,8	0,0	0,0	7,5	0,0	0,0	638,2	0,0	0,0	37,4	0,0	0,0	0,0
17	Manufacture of textiles	9 541,1	143,2	0,4	3 403,1	51,1	0,2	115,8	1,7	0,4	3 717,9	55,8	1,5	2 776,3	41,7	1,3	-14,1
18	Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	33,6	0,1	4 821,1	19,3	0,1	155,3	0,6	0,1	3 766,9	15,1	0,4	1 552,7	6,2	0,2	-8,9
19	Manufacture of leather and leather products	6 405,4	8,3	0,0	2 343,0	3,0	0,0	82,8	0,1	0,0	1 739,1	2,3	0,1	2 468,0	3,2	0,1	0,9
20	Manufacture of wood and wood products	8 727,4	163,3	0,4	2 547,2	47,7	0,2	111,8	2,1	0,4	1 851,1	34,6	0,9	935,1	17,5	0,6	-17,1
21	Manufacture of pulp, paper and paper products	10 093,3	162,7	0,4	3 166,0	51,0	0,2	55,7	0,9	0,2	4 036,9	65,1	1,7	2 387,8	38,5	1,2	-26,6
22	Publishing and printing	13 860,1	227,5	0,6	5 465,6	89,7	0,4	161,6	2,7	0,6	825,5	13,6	0,4	1 096,7	18,0	0,6	4,5
23	Manufacture of chemicals and chemical products	30 995,6	394,9	1,0	10 025,1	127,7	0,6	153,4	2,0	0,4	18 632,3	237,4	6,3	10 671,9	136,0	4,3	-101,4
24	Manufacture of rubber and plastic products	13 218,2	152,4	0,4	4 406,1	50,8	0,2	117,4	1,4	0,3	4 594,1	53,0	1,4	3 911,6	45,1	1,4	-7,9
25	Manufacture of cement, lime and plaster	2 621,8	19,6	0,1	1 269,0	9,5	0,0	15,4	0,1	0,0	244,6	1,8	0,0	131,0	1,0	0,0	-0,8
26	Manufacture of glass and glass products	2 739,8	79,9	0,2	1 126,1	32,8	0,2	24,9	0,7	0,2	920,5	26,8	0,7	634,4	18,5	0,6	-8,3
27	Manufacture of ceramic products	5 367,8	47,5	0,1	2 283,8	20,2	0,1	65,7	0,6	0,1	465,9	4,1	0,1	2 140,0	18,9	0,6	14,8
28	Manufacture of other non-metallic mineral products	9 711,5	61,0	0,2	2 892,4	18,2	0,1	87,0	0,5	0,1	401,8	2,5	0,1	813,4	5,1	0,2	2,6
29	Manufacture of basics metals	21 178,2	126,5	0,3	6 148,1	36,7	0,2	110,9	0,7	0,1	9 298,5	55,5	1,5	6 073,3	36,3	1,2	-19,3
30	Manufacture of fabricated metal products	26 911,7	262,6	0,7	9 839,6	96,0	0,5	314,4	3,1	0,6	3 943,1	38,5	1,0	3 512,8	34,3	1,1	-4,2
31	Manufacture of machinery and equipment n.e.c.	20 109,1	130,0	0,3	8 370,5	54,1	0,3	197,9	1,3	0,3	16 108,0	104,1	2,8	8 770,3	56,7	1,8	-47,4
32	Manufacture of office machinery and computers	3 749,7	21,1	0,1	1 080,4	6,1	0,0	22,9	0,1	0,0	5 327,9	30,0	0,8	1 819,9	10,3	0,3	-19,8
33	Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	83,2	0,2	3 719,1	26,1	0,1	91,0	0,6	0,1	5 426,9	38,1	1,0	4 023,8	28,2	0,9	-9,9
34	Manufacture of electronic equipment and apparatus	5 472,2	19,7	0,1	1 949,5	7,0	0,0	47,4	0,2	0,0	9 589,2	34,4	0,9	3 720,6	13,4	0,4	-21,1
35	Manufacture of medical, precision and optical instruments	3 402,3	5,0	0,0	1 502,4	2,2	0,0	31,7	0,0	0,0	4 354,0	6,4	0,2	1 414,8	2,1	0,1	-4,3
36	Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	67,6	0,2	12 712,0	18,6	0,1	228,0	0,3	0,1	29 754,1	43,5	1,2	29 019,2	42,4	1,3	-1,1
37	Manufacture of other transport equipment	7 229,3	139,4	0,4	2 197,9	42,4	0,2	65,8	1,3	0,3	3 940,0	76,0	2,0	3 726,9	71,9	2,3	-4,1
38	Manufacture of furniture; manufacturing n.e.c.	13 278,0	133,1	0,4	6 591,7	66,1	0,3	227,6	2,3	0,5	3 266,6	32,7	0,9	2 704,3	27,1	0,9	-5,6
39	Recycling	2 827,8	18,2	0,0	87,3	0,6	0,0	13,3	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40	Construction	125 492,6	756,7	2,0	51 931,8	313,1	1,5	1 749,1	10,5	2,2	18,0	0,1	0,0	9,0	0,1	0,0	-0,1
41	Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	227,1	0,6	11 174,5	113,8	0,5	358,9	3,7	0,8	0,0	0,0	0,0	1 473,4	15,0	0,5	15,0
42	Wholesale trade and commission trade	48 464,0	732,4	1,9	28 630,7	432,7	2,0	588,2	8,9	1,9	956,0	14,4	0,4	8 387,5	126,8	4,0	112,3
43	Retail trade; repair of personal and household goods	39 955,9	134,8	0,4	28 880,8	97,5	0,5	1 535,3	5,2	1,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44	Hotels	12 380,8	8 992,5	23,9	8 648,6	6 281,7	29,5	224,6	163,1	34,5	597,0	433,6	11,6	0,0	0,0	0,0	-433,6
45	Restaurants	60 285,1	8 582,7	22,8	38 576,3	5 492,0	25,8	771,1	109,8	23,2	11,0	1,6	0,0	0,0	0,0	0,0	-1,6
46	Railway transport	2 084,2	656,8	1,7	657,7	207,3	1,0	37,0	11,7	2,5	35,0	11,0	0,3	78,5	24,7	0,8	13,7
47	Other land transport; transport via pipelines	28 895,1	1 182,6	3,1	13 272,0	547,0	2,6	463,5	19,1	4,0	1 885,0	77,7	2,1	4 659,0	192,0	6,1	114,3
48	Water transport	1 831,0	197,0	0,5	655,7	70,6	0,3	11,2	1,2	0,3	86,0	9,3	0,2	1 062,9	114,3	3,6	105,0
49	Air transport	5 804,3	1 623,5	4,3	2 140,1	598,6	2,8	36,4	10,2	2,2	2 060,0	576,2	15,4	3 317,0	927,8	29,4	351,6
50	Support and auxiliary transport activities	19 894,5	974,1	2,6	7 728,5	378,4	1,8	97,2	4,8	1,0	1 766,0	86,5	2,3	2 397,0	117,4	3,7	30,9
51	Travel agencies activities	5 860,9	1 216,8	3,2	2 449,4	508,5	2,4	40,6	8,4	1,8	230,0	47,8	1,3	0,0	0,0	0,0	-47,8
52	Post and telecommunications	25 351,6	558,3	1,5	14 788,8	325,7	1,5	205,5	4,5	1,0	818,0	18,0	0,5	737,0	16,2	0,5	-1,8
53	Financial intermediation, except insurance and pension funding	25 215,9	410,8	1,1	18 637,1	303,6	1,4	249,2	4,1	0,9	2 190,0	35,7	1,0	1 973,0	32,1	1,0	-3,5
54	Insurance and pension funding, except compulsory social security	6 245,0	57,8	0,2	2 628,2	24,3	0,1	51,2	0,5	0,1	93,0	0,9	0,0	372,0	3,4	0,1	2,6
55	Activities auxiliary to financial intermediation	9 572,4	85,6	0,2	5 401,1	48,3	0,2	56,4	0,5	0,1	370,0	3,3	0,1	473,0	4,2	0,1	0,9
56	Real estate activities	70 374,2	943,7	2,5	51 669,5	692,9	3,3	118,9	1,6	0,3	27,0	0,4	0,0	43,0	0,6	0,0	0,2
57	Renting of machinery, personal and household goods	6 902,0	414,1	1,1	4 157,3	249,4	1,2	47,1	2,8	0,6	1 118,0	67,1	1,8	104,0	6,2	0,2	-60,8
58	Computer and related activities	9 693,3	68,7	0,2	6 452,9	45,7	0,2	112,2	0,8	0,2	1 715,0	12,1	0,3	2 244,0	15,9	0,5	3,7
59	Research and development	3 577,7	28,9	0,1	1 847,1	14,9	0,1	9,9	0,1	0,0	280,0	2,3	0,1	283,0	2,3	0,1	0,0
60	Other business activities	60 444,0	1 186,9	3,2	40 760,2	800,3	3,8	939,4	18,4	3,9	10 076,0	197,8	5,3	7 679,0	150,8	4,8	-47,1
61	Market education	10 759,9	45,3	0,1	8 289,0	34,9	0,2	250,1	1,1	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62	Market health and social work	17 979,1	98,1	0,3	11 216,2	61,2	0,3	308,8	1,7	0,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63	Market sewage abd refuse disposal, sanitation and similar activities	3 742,9	57,0	0,2	2 050,8	31,2	0,1	37,1	0,6	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64	Market activities of membership organization n.e.c.	421,9	14,3	0,0	262,9	8,9	0,0	12,2	0,4	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65	Market recreational, cultural and sporting activities	19 737,1	1 045,8	2,8	14 079,5	746,0	3,5	220,1	11,7	2,5	2 049,0	108,6	2,9	776,0	41,1	1,3	-67,4
66	Other service activities	5 572,6	61,6	0,2	4 007,8	44,3	0,2	197,7	2,2	0,5	1,0	0,0	0,0	0,0	0,0	0,0	0,0
67	Public Administration	42 965,3	0,0	0,0	32 229,2	0,0	0,0	1 238,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68	Non-market education	21 730,4	0,0	0,0	19 537,2	0,0	0,0	584,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69	Non-market health and social work	25 470,7	0,0	0,0	17 442,8	0,0	0,0	567,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70	Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	0,0	0,0	309,7	0,0	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71	Non-market activities of membership organization n.e.c. NPISHs	1 875,6	0,0	0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72	Non-market recreational, cultural and sporting activities	5 343,5	13,9	0,0	2 350,8	6,1	0,0	108,4	0,3	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
73	Private households with employed persons	5 809,0	0,0	0,0	5 809,0	0,0	0,0	405,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		1 194 946,0	**37 617,8**	**100,0**	**630 263,0**	**21 283,9**	**100,0**	**15 669,5**	**472,3**	**100,0**	**199 450,0**	**3 747,2**	**100,0**	**152 775,0**	**3 151,9**	**100,0**	**-595,3**

Table 6. Direct and indirect effects of public authority consumption of tourims characteristic products

		Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	NEW TOTAL JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1	Agriculture, livestock and hunting	35 226,5	8,4	0,3	18 560,8	4,4	0,3	852,7	0,2	0,5	4 907,3	1,2	0,4	7 058,6	1,7	0,6	0,5
2	Forestry, logging and related service activities	1 559,1	0,9	0,0	1 339,3	0,8	0,1	34,9	0,0	0,1	505,9	0,3	0,1	165,0	0,1	0,0	-0,2
3	Fishing	2 218,2	0,6	0,0	1 468,5	0,4	0,0	63,7	0,0	0,0	779,7	0,2	0,1	229,7	0,1	0,0	-0,1
4	Mining of coal and lignite; extraction of peat	1 154,1	2,4	0,1	164,0	0,3	0,0	17,3	0,0	0,1	878,7	1,8	0,7	1,1	0,0	0,0	-1,8
5	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	0,5	0,0	67,9	0,2	0,0	1,1	0,0	0,0	15 449,8	43,5	16,3	3,5	0,0	0,0	-43,5
6	Mining of metal ores	188,7	0,1	0,0	63,0	0,0	0,0	1,5	0,0	0,0	1 147,8	0,5	0,2	33,2	0,0	0,0	-0,5
7	Other mining and quarrying	2 495,1	1,0	0,0	933,0	0,4	0,0	21,6	0,0	0,0	552,7	0,2	0,1	503,0	0,2	0,1	0,0
8	Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	67,5	2,7	14 853,7	47,2	3,7	8,2	0,0	0,1	5 533,1	17,6	6,6	5 251,8	16,7	6,1	-0,9
9	Production and distribution of electricity	19 592,6	39,5	1,6	10 072,9	20,3	1,6	37,6	0,1	0,2	118,6	0,2	0,1	124,5	0,3	0,1	0,0
10	Manufacture of gas; steam and hot water supply	3 856,7	4,8	0,2	1 189,9	1,5	0,1	5,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11	Collection, purification and distribution of water	3 389,2	5,0	0,2	1 555,8	2,3	0,2	32,6	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12	Manufacture of meat products	15 675,6	2,5	0,1	3 944,2	0,6	0,0	71,1	0,0	0,0	998,6	0,2	0,1	1 220,2	0,2	0,1	0,0
13	Manufacture of dairy products	6 247,8	0,9	0,0	1 417,5	0,2	0,0	31,0	0,0	0,0	1 132,2	0,2	0,1	384,5	0,1	0,0	-0,1
14	Manufacture of other food products	31 108,2	7,3	0,3	7 068,1	1,7	0,1	249,4	0,1	0,2	7 021,6	1,7	0,6	5 871,3	1,4	0,5	-0,3
15	Manufacture of beverages	11 813,9	5,5	0,2	4 095,9	1,9	0,1	53,7	0,0	0,1	1 199,9	0,6	0,2	1 519,0	0,7	0,3	0,1
16	Manufacture of tobacco products	1 397,0	0,0	0,0	6 115,8	0,0	0,0	7,5	0,0	0,0	638,2	0,0	0,0	37,4	0,0	0,0	0,0
17	Manufacture of textiles	9 541,1	4,1	0,2	3 403,1	1,5	0,1	115,8	0,0	0,1	3 717,9	1,6	0,6	2 776,3	1,2	0,4	-0,4
18	Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	2,4	0,1	4 821,1	1,4	0,1	155,3	0,0	0,1	3 766,9	1,1	0,4	1 552,7	0,5	0,2	-0,6
19	Manufacture of leather and leather products	6 405,4	0,6	0,0	2 343,0	0,2	0,0	82,8	0,0	0,0	1 739,1	0,2	0,1	2 468,0	0,2	0,1	0,1
20	Manufacture of wood and wood products	8 727,4	6,6	0,3	2 547,2	1,9	0,1	111,8	0,1	0,2	1 851,1	1,4	0,5	935,1	0,7	0,3	-0,7
21	Manufacture of pulp, paper and paper products	10 093,3	11,6	0,5	3 166,0	3,6	0,3	55,7	0,1	0,2	4 036,9	4,6	1,7	2 387,8	2,7	1,0	-1,9
22	Publishing and printing	13 860,1	24,4	1,0	5 465,6	9,6	0,7	161,6	0,3	0,8	825,5	1,5	0,5	1 096,7	1,9	0,7	0,5
23	Manufacture of chemicals and chemical products	30 995,6	15,3	0,6	10 025,1	4,9	0,4	153,4	0,1	0,2	18 632,3	9,2	3,4	10 671,9	5,3	1,9	-3,9
24	Manufacture of rubber and plastic products	13 218,2	10,0	0,4	4 406,1	3,3	0,3	117,4	0,1	0,2	4 594,1	3,5	1,3	3 911,6	3,0	1,1	-0,5
25	Manufacture of cement, lime and plaster	2 621,8	1,3	0,1	1 269,0	0,6	0,0	15,4	0,0	0,0	244,6	0,1	0,0	131,0	0,1	0,0	-0,1
26	Manufacture of glass and glass products	2 739,8	1,3	0,1	1 126,1	0,5	0,0	24,9	0,0	0,0	920,5	0,4	0,2	634,4	0,3	0,1	-0,1
27	Manufacture of ceramic products	5 367,8	1,9	0,1	2 283,8	0,8	0,1	65,7	0,0	0,1	465,9	0,2	0,1	2 140,0	0,7	0,3	0,6
28	Manufacture of other non-metallic mineral products	9 711,5	4,4	0,2	2 892,4	1,3	0,1	87,0	0,0	0,1	401,8	0,2	0,1	813,4	0,4	0,1	0,2
29	Manufacture of basics metals	21 178,2	8,9	0,4	6 148,1	2,6	0,2	110,9	0,0	0,1	9 298,5	3,9	1,5	6 073,3	2,6	0,9	-1,4
30	Manufacture of fabricated metal products	26 911,7	14,0	0,6	9 839,6	5,1	0,4	314,4	0,2	0,4	3 943,1	2,1	0,8	3 512,8	1,8	0,7	-0,2
31	Manufacture of machinery and equipment n.e.c.	20 109,1	9,8	0,4	8 370,5	4,1	0,3	197,9	0,1	0,3	16 108,0	7,8	2,9	8 770,3	4,3	1,6	-3,6
32	Manufacture of office machinery and computers	3 749,7	2,0	0,1	1 080,4	0,6	0,0	22,9	0,0	0,0	5 327,9	2,8	1,1	1 819,9	1,0	0,4	-1,8
33	Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	6,2	0,2	3 719,1	1,9	0,2	91,0	0,0	0,1	5 426,9	2,8	1,1	4 023,8	2,1	0,8	-0,7
34	Manufacture of electronic equipment and apparatus	5 472,2	2,2	0,1	1 949,5	0,8	0,1	47,4	0,0	0,0	9 589,2	3,8	1,4	3 720,6	1,5	0,5	-2,3
35	Manufacture of medical, precision and optical instruments	3 402,3	1,0	0,0	1 502,4	0,4	0,0	31,7	0,0	0,0	4 354,0	1,2	0,5	1 414,8	0,4	0,1	-0,8
36	Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	11,6	0,5	12 712,0	3,2	0,2	228,0	0,1	0,2	29 754,1	7,5	2,8	29 019,2	7,3	2,7	-0,2
37	Manufacture of other transport equipment	7 229,3	16,3	0,6	2 197,9	5,0	0,4	65,8	0,1	0,4	3 940,0	8,9	3,3	3 726,9	8,4	3,1	-0,5
38	Manufacture of furniture; manufacturing n.e.c.	13 278,0	7,8	0,3	6 591,7	3,9	0,3	227,6	0,1	0,4	3 266,6	1,9	0,7	2 704,3	1,6	0,6	-0,3
39	Recycling	2 827,8	1,3	0,1	87,3	0,0	0,0	13,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40	Construction	125 492,6	55,7	2,2	51 931,8	23,0	1,8	1 749,1	0,8	2,1	18,0	0,0	0,0	9,0	0,0	0,0	0,0
41	Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	35,0	1,4	11 174,5	17,6	1,4	358,9	0,6	1,5	0,0	0,0	0,0	1 473,4	2,3	0,8	-2,3
42	Wholesale trade and commission trade	48 464,0	23,1	0,9	28 630,7	13,6	1,1	588,2	0,3	0,7	956,0	0,5	0,2	8 387,5	4,0	1,5	3,5
43	Retail trade; repair of personal and household goods	39 955,9	6,9	0,3	28 880,8	5,0	0,4	1 535,3	0,3	0,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44	Hotels	12 380,8	83,4	3,3	8 648,6	58,3	4,5	224,6	1,5	4,0	597,0	4,0	1,5	0,0	0,0	0,0	-4,0
45	Restaurants	60 285,1	13,1	0,5	38 576,3	8,4	0,7	771,1	0,2	0,4	11,0	0,0	0,0	0,0	0,0	0,0	0,0
46	Railway transport	2 084,2	86,5	3,4	657,7	27,3	2,1	37,0	1,5	4,1	35,0	1,5	0,5	78,5	3,3	1,2	1,8
47	Other land transport; transport via pipelines	28 695,1	421,0	16,7	13 272,0	194,7	15,1	463,5	6,8	18,2	1 885,0	27,7	10,4	4 659,0	68,4	25,0	40,7
48	Water transport	1 831,0	26,0	1,0	655,7	9,3	0,7	11,2	0,2	0,4	86,0	1,2	0,5	1 062,0	15,1	5,5	13,9
49	Air transport	5 804,3	129,6	5,2	2 140,1	47,8	3,7	36,4	0,8	2,2	2 060,0	46,0	17,2	3 317,0	74,1	27,1	28,1
50	Support and auxiliary transport activities	19 894,5	118,1	4,7	7 728,5	45,9	3,6	97,2	0,6	1,5	1 766,0	10,5	3,9	2 397,0	14,2	5,2	3,7
51	Travel agencies activities	5 860,9	125,5	5,0	2 449,4	52,4	4,1	40,6	0,9	2,3	230,0	4,9	1,8	0,0	0,0	0,0	-4,9
52	Post and telecommunications	25 351,6	53,4	2,1	14 788,8	31,2	2,4	205,5	0,4	1,2	818,0	1,7	0,6	737,0	1,6	0,6	-0,2
53	Financial intermediation, except insurance and pension funding	25 215,9	23,5	0,9	18 637,1	17,4	1,3	249,2	0,2	0,6	2 190,0	2,0	0,8	1 973,0	1,8	0,7	-0,2
54	Insurance and pension funding, except compulsory social security	6 245,0	4,3	0,2	2 628,2	1,8	0,1	51,2	0,0	0,1	93,0	0,1	0,0	372,0	0,3	0,1	0,2
55	Activities auxiliary to financial intermediation	9 572,4	4,7	0,2	5 401,1	2,7	0,2	56,4	0,0	0,1	370,0	0,2	0,1	473,0	0,2	0,1	0,1
56	Real estate activities	70 374,2	28,0	1,1	51 669,5	20,6	1,6	118,9	0,0	0,1	27,0	0,0	0,0	43,0	0,0	0,0	0,0
57	Renting of machinery, personal and household goods	6 902,0	23,9	1,0	4 157,3	14,4	1,1	47,1	0,2	0,4	1 118,0	3,9	1,5	104,0	0,4	0,1	-3,5
58	Computer and related activities	9 693,3	6,9	0,3	6 452,9	4,6	0,4	112,2	0,1	0,2	1 715,0	1,2	0,5	2 244,0	1,6	0,6	0,4
59	Research and development	3 577,7	3,4	0,1	1 847,1	1,8	0,1	9,9	0,0	0,0	280,0	0,3	0,1	283,0	0,3	0,1	0,0
60	Other business activities	60 444,0	100,0	4,0	40 760,2	67,4	5,2	939,4	1,6	4,2	10 076,0	16,7	6,3	7 679,0	12,7	4,7	-4,0
61	Market education	10 759,9	2,7	0,1	8 289,0	2,1	0,2	250,1	0,1	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62	Market health and social work	17 979,1	4,4	0,2	11 216,2	2,7	0,2	308,8	0,1	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63	Market sewage abd refuse disposal, sanitation and similar activities	3 742,9	2,3	0,1	2 050,8	1,2	0,1	37,1	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64	Market activities of membership organization n.e.c.	421,9	0,9	0,0	262,9	0,5	0,0	12,2	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65	Market recreational, cultural and sporting activities	19 737,1	93,2	3,7	14 079,5	66,5	5,2	220,1	1,0	2,8	2 049,0	9,7	3,6	776,0	3,7	1,3	-6,0
66	Other service activities	5 572,6	3,2	0,1	4 007,8	2,3	0,2	197,7	0,1	0,3	1,0	0,0	0,0	0,0	0,0	0,0	0,0
67	Public Administration	42 965,3	284,4	11,3	32 229,2	213,3	16,6	1 238,7	8,2	21,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68	Non-market education	21 730,4	0,0	0,0	19 537,2	0,0	0,0	584,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69	Non-market health and social work	25 470,7	0,0	0,0	17 442,8	0,0	0,0	567,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70	Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	0,0	0,0	309,7	0,0	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71	Non-market activities of membership organization n.e.c. NPISHs	1 875,6	0,0	0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72	Non-market recreational, cultural and sporting activities	5 343,5	439,1	17,5	2 350,8	193,2	15,0	108,4	8,9	23,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0
73	Private households with employed persons	5 809,0	0,0	0,000	5 809,0	0,0	0,0	405,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		1 194 946,0	**2 513,9**	**100,0**	**630 263,0**	**1 286,5**	**100,0**	**15 669,5**	**37,4**	**100,0**	**199 450,0**	**266,7**	**100,0**	**152 775,0**	**273,0**	**100,0**	**6,3**
			0,21			**0,20**			**0,24**			**0,13**			**0,18**		

Table 7. Direct, indirect and induced effects of inbound tourism consumption, household tourism consumption and public authority consumption of tourims characteristic products

		Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	NEW TOTAL JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1	Agriculture, livestock and hunting	35 226,5	4 037,8	3,0	18 560,8	2 127,5	2,8	852,7	97,7	5,7	4 907,3	562,5	3,6	7 058,6	809,1	6,1	246,6
2	Forestry, logging and related service activities	1 559,1	79,6	0,1	1 339,3	68,4	0,1	34,9	1,8	0,1	505,9	25,8	0,2	165,0	8,4	0,1	-17,4
3	Fishing	2 218,2	398,5	0,3	1 468,5	263,8	0,3	63,7	11,4	0,7	779,7	140,1	0,9	229,7	41,3	0,3	-98,8
4	Mining of coal and lignite; extraction of peat	1 154,1	105,3	0,1	164,0	15,0	0,0	17,3	1,6	0,1	878,7	80,1	0,5	1,1	0,1	0,0	-80,0
5	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	19,4	0,0	67,9	7,0	0,0	1,1	0,1	0,0	15 449,8	1 596,5	10,2	3,5	0,4	0,0	-1 596,2
6	Mining of metal ores	188,7	6,1	0,0	63,0	2,0	0,0	1,5	0,0	0,0	1 147,8	37,0	0,2	33,2	1,1	0,0	-36,0
7	Other mining and quarrying	2 495,1	78,9	0,1	933,0	29,5	0,0	21,6	0,7	0,0	552,7	17,5	0,1	503,0	15,9	0,1	-1,6
8	Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	2 265,0	1,7	14 853,7	1 584,4	2,1	8,2	0,9	0,1	5 533,1	590,2	3,8	5 251,8	560,2	4,3	-30,0
9	Production and distribution of electricity	19 592,6	1 934,4	1,4	10 072,9	994,5	1,3	37,6	3,7	0,2	118,6	11,7	0,1	124,5	12,3	0,1	0,6
10	Manufacture of gas; steam and hot water supply	3 856,7	360,4	0,3	1 189,9	111,2	0,1	5,3	0,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11	Collection, purification and distribution of water	3 389,2	412,8	0,3	1 555,8	189,5	0,3	32,6	4,0	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12	Manufacture of meat products	15 675,6	2 273,1	1,7	3 944,2	571,9	0,8	71,1	10,3	0,6	998,6	144,8	0,9	1 220,2	176,9	1,3	32,1
13	Manufacture of dairy products	6 247,8	874,0	0,6	1 417,5	198,3	0,3	31,0	4,3	0,3	1 132,2	158,4	1,0	384,5	53,8	0,4	-104,6
14	Manufacture of other food products	31 108,2	4 068,9	3,0	7 068,1	924,5	1,2	249,4	32,6	1,9	7 021,6	918,4	5,8	5 871,3	768,0	5,8	-150,5
15	Manufacture of beverages	11 813,9	3 349,1	2,5	4 095,9	1 161,1	1,5	53,7	15,2	0,9	1 199,9	340,2	2,2	1 519,0	430,6	3,3	90,5
16	Manufacture of tobacco products	1 397,0	141,5	0,1	6 115,8	619,3	0,8	7,5	0,8	0,0	638,2	64,6	0,4	37,4	3,8	0,0	-60,8
17	Manufacture of textiles	9 541,1	800,0	0,6	3 403,1	285,3	0,4	115,8	9,7	0,6	3 717,9	311,7	2,0	2 776,3	232,8	1,8	-79,0
18	Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	769,2	0,6	4 821,1	442,2	0,6	155,3	14,2	0,8	3 766,9	345,5	2,2	1 552,7	142,4	1,1	-203,1
19	Manufacture of leather and leather products	6 405,4	397,7	0,3	2 343,0	145,5	0,2	82,8	5,1	0,3	1 739,1	108,0	0,7	2 468,0	153,2	1,2	45,3
20	Manufacture of wood and wood products	8 727,4	655,2	0,5	2 547,2	191,2	0,3	111,8	8,4	0,5	1 851,1	139,0	0,9	935,1	70,2	0,5	-68,8
21	Manufacture of pulp, paper and paper products	10 093,3	728,5	0,5	3 166,0	228,5	0,3	55,7	4,0	0,2	4 036,9	291,4	1,9	2 387,8	172,3	1,3	-119,0
22	Publishing and printing	13 860,1	1 204,1	0,9	5 465,6	474,8	0,6	161,6	14,0	0,8	825,5	71,7	0,5	1 096,7	95,3	0,7	23,6
23	Manufacture of chemicals and chemical products	30 995,6	1 785,0	1,3	10 025,1	577,3	0,8	153,4	8,8	0,5	18 632,3	1 073,0	6,8	10 671,9	614,6	4,7	-458,4
24	Manufacture of rubber and plastic products	13 218,2	703,5	0,5	4 406,1	234,5	0,3	117,4	6,2	0,4	4 594,1	244,5	1,6	3 911,6	208,2	1,6	-36,3
25	Manufacture of cement, lime and plaster	2 621,8	78,7	0,1	1 269,0	38,1	0,1	15,4	0,5	0,0	244,6	7,3	0,0	131,0	3,9	0,0	-3,4
26	Manufacture of glass and glass products	2 739,8	261,3	0,2	1 126,1	107,4	0,1	24,9	2,4	0,1	920,5	87,8	0,6	634,4	60,5	0,5	-27,3
27	Manufacture of ceramic products	5 367,8	174,7	0,1	2 283,8	74,3	0,1	65,7	2,1	0,1	465,9	15,2	0,1	2 140,0	69,7	0,5	54,5
28	Manufacture of other non-metallic mineral products	9 711,5	256,9	0,2	2 892,4	76,5	0,1	87,0	2,3	0,1	401,8	10,6	0,1	813,4	21,5	0,2	10,9
29	Manufacture of basics metals	21 178,2	667,0	0,5	6 148,1	193,6	0,3	110,9	3,5	0,2	9 298,5	292,9	1,9	6 073,3	191,3	1,5	-101,6
30	Manufacture of fabricated metal products	26 911,7	1 137,9	0,8	9 839,6	416,0	0,6	314,4	13,3	0,8	3 943,1	166,7	1,1	3 512,8	148,5	1,1	-18,2
31	Manufacture of machinery and equipment n.e.c.	20 109,1	655,1	0,5	8 370,5	272,7	0,4	197,9	6,4	0,4	16 108,0	524,7	3,3	8 770,3	285,7	2,2	-239,0
32	Manufacture of office machinery and computers	3 749,7	99,9	0,1	1 080,4	28,8	0,0	22,9	0,6	0,0	5 327,9	142,0	0,9	1 819,9	48,5	0,4	-93,5
33	Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	379,1	0,3	3 719,1	119,0	0,2	91,0	2,9	0,2	5 426,9	173,6	1,1	4 023,8	128,7	1,0	-44,9
34	Manufacture of electronic equipment and apparatus	5 472,2	149,5	0,1	1 949,5	53,3	0,1	47,4	1,3	0,1	9 589,2	262,0	1,7	3 720,6	101,6	0,8	-160,3
35	Manufacture of medical, precision and optical instruments	3 402,3	78,8	0,1	1 502,4	34,8	0,0	31,7	0,7	0,0	4 354,0	100,8	0,6	1 414,8	32,8	0,2	-68,1
36	Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	1 471,9	1,1	12 712,0	404,8	0,5	228,0	7,3	0,4	29 754,1	947,5	6,0	29 019,2	924,1	7,0	-23,4
37	Manufacture of other transport equipment	7 229,3	424,0	0,3	2 197,9	128,9	0,2	65,8	3,9	0,2	3 940,0	231,1	1,5	3 726,9	218,6	1,7	-12,5
38	Manufacture of furniture; manufacturing n.e.c.	13 278,0	960,0	0,7	6 591,7	476,6	0,6	227,6	16,5	1,0	3 266,6	236,2	1,5	2 704,3	195,5	1,5	-40,7
39	Recycling	2 827,8	94,2	0,1	87,3	2,9	0,0	13,3	0,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40	Construction	125 492,6	3 230,3	2,4	51 931,8	1 336,8	1,8	1 749,1	45,0	2,6	18,0	0,5	0,0	9,0	0,2	0,0	-0,2
41	Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	1 978,1	1,5	11 174,5	991,1	1,3	358,9	31,8	1,9	0,0	0,0	0,0	1 473,4	130,7	1,0	130,7
42	Wholesale trade and commission trade	48 464,0	4 114,3	3,1	28 630,7	2 430,6	3,2	588,2	49,9	2,9	956,0	81,2	0,5	8 387,5	712,0	5,4	630,9
43	Retail trade; repair of personal and household goods	39 955,9	3 960,4	2,9	28 880,8	2 862,6	3,8	1 535,3	152,2	8,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44	Hotels	12 380,8	17 697,7	13,1	8 648,6	12 362,7	16,4	224,6	321,1	18,9	597,0	853,4	5,4	0,0	0,0	0,0	-853,4
45	Restaurants	60 285,1	23 030,0	17,1	38 576,3	14 736,9	19,5	771,1	294,6	17,3	11,0	4,2	0,0	0,0	0,0	0,0	-4,2
46	Railway transport	2 084,2	1 025,5	0,8	657,7	323,6	0,4	37,0	18,2	1,1	35,0	17,2	0,1	78,5	38,6	0,3	21,4
47	Other land transport; transport via pipelines	28 695,1	3 772,8	2,8	13 272,0	1 745,0	2,3	463,5	60,9	3,6	1 885,0	247,8	1,6	4 659,0	612,6	4,7	364,7
48	Water transport	1 831,0	328,9	0,2	655,7	117,8	0,2	11,2	2,0	0,1	86,0	15,4	0,1	1 062,0	190,8	1,4	175,3
49	Air transport	5 804,3	4 676,1	3,5	2 140,1	1 724,1	2,3	36,4	29,3	1,7	2 060,0	1 659,6	10,6	3 317,0	2 672,2	20,3	1 012,7
50	Supporting and auxilliary transport activities	19 894,5	4 829,3	3,6	7 728,5	1 876,0	2,5	97,2	23,6	1,4	1 766,0	428,7	2,7	2 397,0	581,9	4,4	153,2
51	Travel agencies activities	5 860,9	2 110,0	1,6	2 449,4	881,8	1,2	40,6	14,6	0,9	230,0	82,8	0,5	0,0	0,0	0,0	-82,8
52	Post and telecommunications	25 351,6	2 800,5	2,1	14 788,8	1 633,6	2,2	205,5	22,7	1,3	818,0	90,4	0,6	737,0	81,4	0,6	-8,9
53	Financial intermediation, except insurance and pension funding	25 215,9	2 589,5	1,9	18 637,1	1 913,9	2,5	249,2	25,6	1,5	2 190,0	224,9	1,4	1 973,0	202,6	1,5	-22,3
54	Insurance and pension funding, except compulsory social security	6 245,0	651,7	0,5	2 628,2	274,3	0,4	51,2	5,3	0,3	93,0	9,7	0,1	372,0	38,8	0,3	29,1
55	Activities auxiliary to financial intermediation	9 572,4	974,6	0,7	5 401,1	549,9	0,7	56,4	5,7	0,3	370,0	37,7	0,2	473,0	48,2	0,4	10,5
56	Real estate activities	70 374,2	7 511,7	5,6	51 669,5	5 515,2	7,3	118,9	12,7	0,7	27,0	2,9	0,0	43,0	4,6	0,0	1,7
57	Renting of machinery, personal and household goods	6 902,0	1 473,9	1,1	4 157,3	887,8	1,2	47,1	10,1	0,6	1 118,0	238,8	1,5	104,0	22,2	0,2	-216,5
58	Computer and related activities	9 693,3	279,7	0,2	6 452,9	186,2	0,2	112,2	3,2	0,2	1 715,0	49,5	0,3	2 244,0	64,7	0,5	15,3
59	Research and development	3 577,7	139,9	0,1	1 847,1	72,2	0,1	9,9	0,4	0,0	280,0	10,9	0,1	283,0	11,1	0,1	0,1
60	Other business activities	60 444,0	4 904,3	3,6	40 760,2	3 307,2	4,4	939,4	76,2	4,5	10 076,0	817,5	5,2	7 679,0	623,1	4,7	-194,5
61	Market education	10 759,9	788,1	0,6	8 289,0	607,1	0,8	250,1	18,3	1,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62	Market health and social work	17 979,1	1 519,6	1,1	11 216,2	948,0	1,3	308,8	26,1	1,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63	Market sewage and refuse disposal, sanitation and similar activities	3 742,9	325,2	0,2	2 050,8	178,2	0,2	37,1	3,2	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64	Market activities of membership organization n.e.c.	421,9	51,9	0,0	262,9	32,4	0,0	12,2	1,5	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65	Market recreational, cultural and sporting activities	19 737,1	3 452,7	2,6	14 079,5	2 463,0	3,3	220,1	38,5	2,3	2 049,0	358,4	2,3	776,0	135,8	1,0	-222,7
66	Other service activities	5 572,6	670,4	0,5	4 007,8	482,2	0,6	197,7	23,8	1,4	1,0	0,1	0,0	0,0	0,0	0,0	-0,1
67	Public Administration	42 965,3	284,4	0,2	32 229,2	213,3	0,3	1 238,7	8,2	0,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68	Non-market education	21 730,4	116,6	0,1	19 537,2	104,8	0,1	584,2	3,1	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69	Non-market health and social work	25 470,7	18,0	0,0	17 442,8	12,3	0,0	567,0	0,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70	Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	3,5	0,0	309,7	0,6	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71	Non-market activities of membership organization n.e.c. NPISHs	1 875,6	0,0	0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72	Non-market recreational, cultural and sporting activities	5 343,5	499,5	0,4	2 350,8	219,7	0,3	108,4	10,1	0,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0
73	Private households with employed persons	5 809,0	602,1	0,4	5 809,0	602,1	0,8	405,2	42,0	2,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Table 8. Direct, indirect and induced effects of inbound tourism consumption

		Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1	Agriculture, livestock and hunting	35 226,5	2 066,6	3,0	18 560,8	1 088,9	2,8	852,7	50,0	5,9	4 907,3	287,9	3,5	7 058,6	414,1	5,9	126,2
2	Forestry, logging and related service activities	1 559,1	41,3	0,1	1 339,3	35,5	0,1	34,9	0,9	0,1	505,9	13,4	0,2	165,0	4,4	0,1	-9,0
3	Fishing	2 218,2	203,6	0,3	1 468,5	134,8	0,4	63,7	5,8	0,7	779,7	71,6	0,9	229,7	21,1	0,3	-50,5
4	Mining of coal and lignite; extraction of peat	1 154,1	52,6	0,1	164,0	7,5	0,0	17,3	0,8	0,1	878,7	40,1	0,5	1,1	0,1	0,0	-40,0
5	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	10,1	0,0	67,9	3,7	0,0	1,1	0,1	0,0	15 449,8	834,4	10,1	3,5	0,2	0,0	-834,2
6	Mining of metal ores	188,7	3,1	0,0	63,0	1,0	0,0	1,5	0,0	0,0	1 147,8	19,1	0,2	33,2	0,6	0,0	-18,5
7	Other mining and quarrying	2 495,1	40,1	0,1	933,0	15,0	0,0	21,6	0,3	0,0	552,7	8,9	0,1	503,0	8,1	0,1	-0,8
8	Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	1 190,6	1,7	14 853,7	832,9	2,2	8,2	0,5	0,1	5 533,1	310,2	3,8	5 251,8	294,5	4,2	-15,8
9	Production and distribution of electricity	19 592,6	965,5	1,4	10 072,9	496,4	1,3	37,6	1,9	0,2	118,6	5,8	0,1	124,5	6,1	0,1	0,3
10	Manufacture of gas; steam and hot water supply	3 856,7	181,8	0,3	1 189,9	56,1	0,1	5,3	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11	Collection, purification and distribution of water	3 389,2	207,8	0,3	1 555,8	95,4	0,2	32,6	2,0	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12	Manufacture of meat products	15 675,6	1 162,6	1,7	3 944,2	292,5	0,8	71,1	5,3	0,6	998,6	74,1	0,9	1 220,2	90,5	1,3	16,4
13	Manufacture of dairy products	6 247,8	446,6	0,6	1 417,5	101,3	0,3	31,0	2,2	0,3	1 132,2	80,9	1,0	384,5	27,5	0,4	-53,4
14	Manufacture of other food products	31 108,2	2 087,6	3,0	7 068,1	474,3	1,2	249,4	16,7	2,0	7 021,6	471,2	5,7	5 871,3	394,0	5,6	-77,2
15	Manufacture of beverages	11 813,9	1 755,1	2,5	4 095,9	608,5	1,6	53,7	8,0	0,9	1 199,9	178,3	2,2	1 519,0	225,7	3,2	47,4
16	Manufacture of tobacco products	1 397,0	71,5	0,1	6 115,8	313,0	0,8	7,5	0,4	0,0	638,2	32,7	0,4	37,4	1,9	0,0	-30,7
17	Manufacture of textiles	9 541,1	409,5	0,6	3 403,1	146,0	0,4	115,8	5,0	0,6	3 717,9	159,6	1,9	2 776,3	119,1	1,7	-40,4
18	Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	390,5	0,6	4 821,1	224,5	0,6	155,3	7,2	0,9	3 766,9	175,4	2,1	1 552,7	72,3	1,0	-103,1
19	Manufacture of leather and leather products	6 405,4	201,0	0,3	2 343,0	73,5	0,2	82,8	2,6	0,3	1 739,1	54,6	0,7	2 468,0	77,5	1,1	22,9
20	Manufacture of wood and wood products	8 727,4	343,7	0,5	2 547,2	100,3	0,3	111,8	4,4	0,5	1 851,1	72,9	0,9	935,1	36,8	0,5	-36,1
21	Manufacture of pulp, paper and paper products	10 093,3	375,6	0,5	3 166,0	117,8	0,3	55,7	2,1	0,2	4 036,9	150,2	1,8	2 387,8	88,9	1,3	-61,4
22	Publishing and printing	13 860,1	609,1	0,9	5 465,6	240,2	0,6	161,6	7,1	0,8	825,5	36,3	0,4	1 096,7	48,2	0,7	11,9
23	Manufacture of chemicals and chemical products	30 995,6	917,5	1,3	10 025,1	296,8	0,8	153,4	4,5	0,5	18 632,3	551,6	6,7	10 671,9	315,9	4,5	-235,6
24	Manufacture of rubber and plastic products	13 218,2	372,0	0,5	4 406,1	124,0	0,3	117,4	3,3	0,4	4 594,1	129,3	1,6	3 911,6	110,1	1,6	-19,2
25	Manufacture of cement, lime and plaster	2 621,8	39,4	0,1	1 269,0	19,1	0,0	15,4	0,2	0,0	244,6	3,7	0,0	131,0	2,0	0,0	-1,7
26	Manufacture of glass and glass products	2 739,8	135,3	0,2	1 126,1	55,6	0,1	24,9	1,2	0,1	920,5	45,5	0,5	634,4	31,3	0,4	-14,1
27	Manufacture of ceramic products	5 367,8	89,4	0,1	2 283,6	38,0	0,1	65,7	1,1	0,1	465,9	7,8	0,1	2 140,0	35,6	0,5	27,9
28	Manufacture of other non-metallic mineral products	9 711,5	128,8	0,2	2 892,4	38,4	0,1	87,0	1,2	0,1	401,8	5,3	0,1	813,4	10,8	0,2	5,5
29	Manufacture of basics metals	21 178,2	343,9	0,5	6 148,1	99,8	0,3	110,9	1,8	0,2	9 298,5	151,0	1,8	6 073,3	98,6	1,4	-52,4
30	Manufacture of fabricated metal products	26 911,7	595,4	0,9	9 839,6	217,7	0,6	314,4	7,0	0,8	3 943,1	87,2	1,1	3 512,8	77,7	1,1	-9,5
31	Manufacture of machinery and equipment n.e.c.	20 109,1	337,3	0,5	8 370,5	140,4	0,4	197,9	3,3	0,4	16 108,0	270,2	3,3	8 770,3	147,1	2,1	-123,1
32	Manufacture of office machinery and computers	3 749,7	51,3	0,1	1 080,4	14,8	0,0	22,9	0,3	0,0	5 327,9	72,8	0,9	1 819,9	24,9	0,4	-48,0
33	Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	193,1	0,3	3 719,1	60,6	0,2	91,0	1,5	0,2	5 426,5	88,4	1,1	4 023,8	65,6	0,9	-22,9
34	Manufacture of electronic equipment and apparatus	5 472,2	76,2	0,1	1 949,5	27,2	0,1	47,4	0,7	0,1	9 589,2	133,6	1,6	3 720,6	51,8	0,7	-81,8
35	Manufacture of medical, precision and optical instruments	3 402,3	39,6	0,1	1 502,4	17,5	0,0	31,7	0,4	0,0	4 354,0	50,7	0,6	1 414,8	16,5	0,2	-34,2
36	Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	747,0	1,1	12 712,0	205,4	0,5	228,0	3,7	0,4	29 754,1	480,9	5,8	29 019,2	469,0	6,7	-11,9
37	Manufacture of other transport equipment	7 229,3	223,4	0,3	2 197,9	67,9	0,2	65,8	2,0	0,2	3 940,0	121,8	1,5	3 726,9	115,2	1,6	-6,6
38	Manufacture of furniture; manufacturing n.e.c.	13 278,0	488,6	0,7	6 591,7	242,6	0,6	227,6	8,4	1,0	3 266,6	120,2	1,5	2 704,3	99,5	1,4	-20,7
39	Recycling	2 827,8	48,6	0,1	87,3	1,5	0,0	13,3	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40	Construction	125 492,6	1 604,3	2,3	51 931,8	663,9	1,7	1 749,1	22,4	2,6	18,0	0,2	0,0	9,0	0,1	0,0	-0,1
41	Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	989,5	1,4	11 174,5	495,8	1,3	358,9	15,9	1,9	0,0	0,0	0,0	1 473,4	65,4	0,9	65,4
42	Wholesale trade and commission trade	48 464,0	2 113,8	3,1	28 630,7	1 248,8	3,3	588,2	25,7	3,0	956,0	41,7	0,5	8 387,5	365,8	5,2	324,1
43	Retail trade; repair of personal and household goods	39 955,9	2 007,9	2,9	28 880,8	1 451,4	3,8	1 535,3	77,2	9,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44	Hotels	12 380,8	8 537,1	12,4	8 648,6	5 963,6	15,5	224,6	154,9	18,2	597,0	411,7	5,0	0,0	0,0	0,0	-411,7
45	Restaurants	60 285,1	12 368,2	18,0	38 576,3	7 914,4	20,6	771,1	158,2	18,6	11,0	2,3	0,0	0,0	0,0	0,0	-2,3
46	Railway transport	2 084,2	248,1	0,4	657,7	78,3	0,2	37,0	4,4	0,5	35,0	4,2	0,1	78,5	9,3	0,1	5,2
47	Other land transport; transport via pipelines	28 695,1	1 608,3	2,3	13 272,0	743,9	1,9	463,5	26,0	3,1	1 885,0	105,6	1,3	4 659,0	261,1	3,7	155,5
48	Water transport	1 831,0	94,9	0,1	655,7	34,0	0,1	11,2	0,6	0,1	86,0	4,5	0,1	1 062,0	55,0	0,8	50,6
49	Air transport	5 804,3	2 883,7	4,2	2 140,1	1 063,2	2,8	36,4	18,1	2,1	2 060,0	1 023,4	12,4	3 317,0	1 647,9	23,4	624,5
50	Support and auxiliary transport activities	19 894,5	3 422,0	5,0	7 728,5	1 329,4	3,5	97,2	16,7	2,0	1 766,0	303,8	3,7	2 397,0	412,3	5,9	108,5
51	Travel agencies activities	5 860,9	601,8	0,9	2 449,4	251,5	0,7	40,6	4,2	0,5	230,0	23,6	0,3	0,0	0,0	0,0	-23,6
52	Post and telecommunications	25 351,6	1 405,9	2,0	14 788,8	820,1	2,1	205,5	11,4	1,3	818,0	45,4	0,5	737,0	40,9	0,6	-4,5
53	Financial intermediation, except insurance and pension funding	25 215,9	1 319,9	1,9	18 637,1	975,5	2,5	249,2	13,0	1,5	2 190,0	114,6	1,4	1 973,0	103,3	1,5	-11,4
54	Insurance and pension funding, except compulsory social security	6 245,0	331,3	0,5	2 628,2	139,4	0,4	51,2	2,7	0,3	93,0	4,9	0,1	372,0	19,7	0,3	14,8
55	Activities auxiliary to financial intermediation	9 572,4	496,3	0,7	5 401,1	280,0	0,7	56,4	2,9	0,3	370,0	19,2	0,2	473,0	24,5	0,3	5,3
56	Real estate activities	70 374,2	3 813,5	5,5	51 669,5	2 799,9	7,3	118,9	6,4	0,8	27,0	1,5	0,0	43,0	2,3	0,0	0,9
57	Renting of machinery, personal and household goods	6 902,0	907,2	1,3	4 157,3	546,4	1,4	47,1	6,2	0,7	1 118,0	145,9	1,8	104,0	13,7	0,2	-133,3
58	Computer and related activities	9 693,3	139,7	0,2	6 452,9	93,0	0,2	112,2	1,6	0,2	1 715,0	24,7	0,3	2 244,0	32,3	0,5	7,6
59	Research and development	3 577,7	71,4	0,1	1 847,1	36,8	0,1	9,9	0,2	0,0	280,0	5,6	0,1	283,0	5,6	0,1	0,1
60	Other business activities	60 444,0	2 483,5	3,6	40 760,2	1 674,7	4,4	939,4	38,6	4,5	10 076,0	414,0	5,0	7 679,0	315,5	4,5	-98,5
61	Market education	10 759,9	399,0	0,6	8 289,0	307,4	0,8	250,1	9,3	1,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62	Market health and social work	17 979,1	766,0	1,1	11 216,2	477,9	1,2	308,8	13,2	1,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63	Market sewage and refuse disposal, sanitation and similar activities	3 742,9	165,3	0,2	2 050,8	90,6	0,2	37,1	1,6	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64	Market activities of membership organization n.e.c.	421,9	26,2	0,0	262,9	16,3	0,0	12,2	0,8	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65	Market recreational, cultural and sporting activities	19 737,1	1 652,1	2,4	14 079,5	1 178,5	3,1	220,1	18,4	2,2	2 049,0	171,5	2,1	776,0	65,0	0,9	-106,6
66	Other service activities	5 572,6	337,0	0,5	4 007,8	242,4	0,6	197,7	12,0	1,4	1,0	0,1	0,0	0,0	0,0	0,0	-0,1
67	Public Administration	42 965,3	0,0	0,0	32 229,2	0,0	0,0	1 238,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68	Non-market education	21 730,4	58,9	0,1	19 537,2	53,0	0,1	584,2	1,6	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69	Non-market health and social work	25 470,7	9,1	0,0	17 442,8	6,2	0,0	567,0	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70	Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	1,8	0,0	309,7	0,3	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71	Non-market activities of membership organization n.e.c. NPISHS	1 875,6	0,0	0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72	Non-market recreational, cultural and sporting activities	5 343,5	35,9	0,1	2 350,8	15,8	0,0	108,4	0,7	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
73	Private households with employed persons	5 809,0	304,3	0,4	5 809,0	304,3	0,8	405,2	21,2	2,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		1 194 946,0	**68 846,4**	**100,0**	**630 263,0**	**38 422,9**	**100,0**	**15 669,5**	**850,5**	**100,0**	**199 450,0**	**8 266,7**	**100,0**	**152 775,0**	**7 042,9**	**100,0**	**-1 223,8**
			5,76			**6,10**			**5,43**			**4,14**			**4,61**		

Table 9. Direct, indirect and induced effects of household tourism consumption

		Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1	Agriculture, livestock and hunting	35 226,5	1 880,2	3,1	18 560,8	990,7	2,9	852,7	45,5	5,8	4 907,3	261,9	3,8	7 058,6	376,7	6,7	114,8
2	Forestry, logging and related service activities	1 559,1	35,9	0,1	1 339,3	30,8	0,1	34,9	0,8	0,1	505,9	11,6	0,2	165,0	3,8	0,1	-7,8
3	Fishing	2 218,2	187,4	0,3	1 468,5	124,1	0,4	63,7	5,4	0,7	779,7	65,9	1,0	229,7	19,4	0,3	-46,5
4	Mining of coal and lignite; extraction of peat	1 154,1	48,1	0,1	164,0	6,8	0,0	17,3	0,7	0,1	878,7	36,6	0,5	1,1	0,0	0,0	-36,6
5	Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	8,4	0,0	67,9	3,0	0,0	1,1	0,0	0,0	15 449,8	692,5	10,0	3,5	0,2	0,0	-692,4
6	Mining of metal ores	188,7	2,7	0,0	63,0	0,9	0,0	1,5	0,0	0,0	1 147,8	16,7	0,2	33,2	0,5	0,0	-16,2
7	Other mining and quarrying	2 495,1	36,4	0,1	933,0	13,6	0,0	21,6	0,3	0,0	552,7	8,1	0,1	503,0	7,3	0,1	-0,7
8	Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	972,4	1,6	14 853,7	680,2	2,0	8,2	0,4	0,0	5 533,1	253,4	3,7	5 251,8	240,5	4,3	-12,9
9	Production and distribution of electricity	19 592,6	888,3	1,4	10 072,9	456,7	1,3	37,6	1,7	0,2	118,6	5,4	0,1	124,5	5,6	0,1	0,3
10	Manufacture of gas; steam and hot water supply	3 856,7	165,7	0,3	1 189,9	51,1	0,1	5,3	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11	Collection, purification and distribution of water	3 389,2	190,8	0,3	1 555,8	87,6	0,3	32,6	1,8	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12	Manufacture of meat products	15 675,6	1 058,8	1,7	3 944,2	266,4	0,8	71,1	4,8	0,6	998,6	67,4	1,0	1 220,2	82,4	1,5	15,0
13	Manufacture of dairy products	6 247,8	405,9	0,7	1 417,5	92,1	0,3	31,0	2,0	0,3	1 132,2	73,6	1,1	384,5	25,0	0,4	-48,6
14	Manufacture of other food products	31 108,2	1 894,2	3,1	7 068,1	430,4	1,2	249,4	15,2	1,9	7 021,6	427,6	6,2	5 871,3	357,5	6,3	-70,0
15	Manufacture of beverages	11 813,9	1 561,3	2,5	4 095,9	541,3	1,6	53,7	7,1	0,9	1 199,9	158,6	2,3	1 519,0	200,7	3,5	42,2
16	Manufacture of tobacco products	1 397,0	64,8	0,1	6 115,8	283,8	0,8	7,5	0,3	0,0	638,2	29,6	0,4	37,4	1,7	0,0	-27,9
17	Manufacture of textiles	9 541,1	368,6	0,6	3 403,1	131,5	0,4	115,8	4,5	0,6	3 717,9	143,6	2,1	2 776,3	107,2	1,9	-36,4
18	Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	351,0	0,6	4 821,1	201,8	0,6	155,3	6,5	0,8	3 766,9	157,7	2,3	1 552,7	65,0	1,1	-92,7
19	Manufacture of leather and leather products	6 405,4	182,3	0,3	2 343,0	66,7	0,2	82,8	2,4	0,3	1 739,1	49,5	0,7	2 468,0	70,2	1,2	20,7
20	Manufacture of wood and wood products	8 727,4	294,5	0,5	2 547,2	86,0	0,2	111,8	3,8	0,5	1 851,1	62,5	0,9	935,1	31,6	0,6	-30,9
21	Manufacture of pulp, paper and paper products	10 093,3	328,2	0,5	3 166,0	102,9	0,3	55,7	1,8	0,2	4 036,9	131,2	1,9	2 387,8	77,6	1,4	-53,6
22	Publishing and printing	13 860,1	545,3	0,9	5 465,6	215,0	0,6	161,6	6,4	0,8	825,5	32,5	0,5	1 096,7	43,1	0,8	10,7
23	Manufacture of chemicals and chemical products	30 995,6	818,5	1,3	10 025,1	264,7	0,8	153,4	4,1	0,5	18 632,3	492,0	7,1	10 671,9	281,8	5,0	-210,2
24	Manufacture of rubber and plastic products	13 218,2	309,9	0,5	4 406,1	103,0	0,3	117,4	2,7	0,3	4 594,1	107,4	1,6	3 911,6	91,4	1,6	-16,0
25	Manufacture of cement, lime and plaster	2 621,8	36,6	0,1	1 269,0	17,7	0,1	15,4	0,2	0,0	244,6	3,4	0,0	131,0	1,8	0,0	-1,6
26	Manufacture of glass and glass products	2 739,8	121,4	0,2	1 126,1	49,9	0,1	24,9	1,1	0,1	920,5	40,8	0,6	634,4	28,1	0,5	-12,7
27	Manufacture of ceramic products	5 367,8	80,9	0,1	2 283,8	34,4	0,1	65,7	1,0	0,1	465,9	7,0	0,1	2 140,0	32,2	0,6	25,2
28	Manufacture of other non-metallic mineral products	9 711,5	119,1	0,2	2 892,4	35,5	0,1	87,0	1,1	0,1	401,8	4,9	0,1	813,4	10,0	0,2	5,0
29	Manufacture of basic metals	21 178,2	300,5	0,5	6 148,1	87,2	0,3	110,9	1,6	0,2	9 298,5	131,9	1,9	6 073,3	86,2	1,5	-45,8
30	Manufacture of fabricated metal products	26 911,7	508,8	0,8	9 839,6	186,0	0,5	314,4	5,9	0,8	3 943,1	74,6	1,1	3 512,8	66,4	1,2	-8,1
31	Manufacture of machinery and equipment n.e.c.	20 109,1	294,8	0,5	8 370,5	122,7	0,4	197,9	2,9	0,4	16 108,0	236,2	3,4	8 770,3	128,6	2,3	-107,6
32	Manufacture of office machinery and computers	3 749,7	44,8	0,1	1 080,4	12,9	0,0	22,9	0,3	0,0	5 327,9	63,6	0,9	1 819,9	21,7	0,4	-41,9
33	Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	172,6	0,3	3 719,1	54,2	0,2	91,0	1,3	0,2	5 426,9	79,1	1,1	4 023,8	58,6	1,0	-20,4
34	Manufacture of electronic equipment and apparatus	5 472,2	67,3	0,1	1 949,5	24,0	0,1	47,4	0,6	0,1	9 589,2	117,9	1,7	3 720,6	45,8	0,8	-72,2
35	Manufacture of medical, precision and optical instruments	3 402,3	35,8	0,1	1 502,4	15,8	0,0	31,7	0,3	0,0	4 354,0	45,8	0,7	1 414,8	14,9	0,3	-30,9
36	Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	665,7	1,1	12 712,0	183,1	0,5	228,0	3,3	0,4	29 754,1	428,5	6,2	29 019,2	417,9	7,4	-10,6
37	Manufacture of other transport equipment	7 229,3	180,9	0,3	2 197,9	55,0	0,2	65,8	1,6	0,2	3 940,0	98,6	1,4	3 726,9	93,3	1,6	-5,3
38	Manufacture of furniture; manufacturing n.e.c.	13 278,0	439,3	0,7	6 591,7	218,1	0,6	227,6	7,5	1,0	3 266,6	108,1	1,6	2 704,3	89,5	1,6	-18,6
39	Recycling	2 827,8	42,4	0,1	87,3	1,3	0,0	13,3	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40	Construction	125 492,6	1 510,4	2,5	51 931,8	625,0	1,8	1 749,1	21,1	2,7	18,0	0,2	0,0	9,0	0,1	0,0	-0,1
41	Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	900,1	1,5	11 174,9	451,0	1,3	358,9	14,5	1,8	0,0	0,0	0,0	1 473,4	59,5	1,1	59,5
42	Wholesale trade and commission trade	48 464,0	1 885,7	3,1	28 630,7	1 114,0	3,2	588,2	22,9	2,9	956,0	37,2	0,5	8 387,5	326,3	5,8	289,2
43	Retail trade; repair of personal and household goods	39 955,9	1 812,2	2,9	28 880,8	1 309,9	3,8	1 535,3	69,6	8,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44	Hotels	12 380,8	9 070,9	14,8	8 648,6	6 336,5	18,3	224,6	164,6	20,9	597,0	437,4	6,3	0,0	0,0	0,0	-437,4
45	Restaurants	60 285,1	10 496,5	17,1	38 576,3	6 716,7	19,4	771,1	134,3	17,0	11,0	1,9	0,0	0,0	0,0	0,0	-1,9
46	Railway transport	2 084,2	688,3	1,1	657,7	217,2	0,6	37,0	12,2	1,6	35,0	11,6	0,2	78,5	25,9	0,5	14,4
47	Other land transport; transport via pipelines	28 695,1	1 702,2	2,8	13 272,0	787,3	2,3	463,5	27,5	3,5	1 885,0	111,8	1,6	4 659,0	276,4	4,9	164,6
48	Water transport	1 831,0	207,2	0,3	655,7	74,2	0,2	11,2	1,3	0,2	86,0	9,7	0,1	1 062,0	120,2	2,1	110,5
49	Air transport	5 804,3	1 659,9	2,7	2 140,1	612,0	1,8	36,4	10,4	1,3	2 060,0	589,1	8,5	3 317,0	948,6	16,8	359,5
50	Support and auxiliary transport activities	19 894,5	1 266,0	2,1	7 728,5	491,8	1,4	97,2	6,2	0,8	1 766,0	112,4	1,6	2 397,0	152,5	2,7	40,2
51	Travel agencies activities	5 860,9	1 370,5	2,2	2 449,4	572,8	1,7	40,6	9,5	1,2	230,0	53,8	0,8	0,0	0,0	0,0	-53,8
52	Post and telecommunications	25 351,6	1 283,5	2,1	14 788,8	748,7	2,2	205,5	10,4	1,3	818,0	41,4	0,6	737,0	37,3	0,7	-4,1
53	Financial intermediation, except insurance and pension funding	25 215,9	1 184,6	1,9	18 637,1	875,5	2,5	249,2	11,7	1,5	2 190,0	102,9	1,5	1 973,0	92,7	1,6	-10,2
54	Insurance and pension funding, except compulsory social security	6 245,0	297,1	0,5	2 628,2	125,0	0,4	51,2	2,4	0,3	93,0	4,4	0,1	372,0	17,7	0,3	13,3
55	Activities auxiliary to financial intermediation	9 572,4	445,0	0,7	5 401,1	251,1	0,7	56,4	2,6	0,3	370,0	17,2	0,2	473,0	22,0	0,4	4,8
56	Real estate activities	70 374,2	3 469,4	5,6	51 669,5	2 547,3	7,3	118,9	5,9	0,7	27,0	1,3	0,0	43,0	2,1	0,0	0,8
57	Renting of machinery, personal and household goods	6 902,0	533,3	0,9	4 157,3	321,2	0,9	47,1	3,6	0,5	1 118,0	86,4	1,2	104,0	8,0	0,1	-78,4
58	Computer and related activities	9 693,3	128,3	0,2	6 452,9	85,4	0,2	112,2	1,5	0,2	1 715,0	22,7	0,3	2 244,0	29,7	0,5	7,0
59	Research and development	3 577,7	62,5	0,1	1 847,1	32,2	0,1	9,9	0,2	0,0	280,0	4,9	0,1	283,0	4,9	0,1	0,1
60	Other business activities	60 444,0	2 237,3	3,6	40 760,2	1 508,7	4,3	939,4	34,8	4,4	10 076,0	373,0	5,4	7 679,0	284,2	5,0	-88,7
61	Market education	10 759,9	361,2	0,6	8 289,0	278,3	0,8	250,1	8,4	1,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62	Market health and social work	17 979,1	701,2	1,1	11 216,2	437,5	1,3	308,8	12,0	1,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63	Market sewage and refuse disposal, sanitation and similar activities	3 742,9	150,2	0,2	2 050,8	82,3	0,2	37,1	1,5	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64	Market activities of membership organization n.e.c.	421,9	24,1	0,0	262,9	15,0	0,0	12,2	0,7	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65	Market recreational, cultural and sporting activities	19 737,1	1 658,7	2,7	14 079,5	1 183,3	3,4	220,1	18,5	2,3	2 049,0	172,2	2,5	776,0	65,2	1,2	-107,0
66	Other service activities	5 572,6	310,5	0,5	4 007,8	223,3	0,6	197,7	11,0	1,4	1,0	0,1	0,0	0,0	0,0	0,0	-0,1
67	Public Administration	42 985,3	0,0	0,0	32 229,2	0,0	0,0	1 238,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68	Non-market education	21 730,4	53,4	0,1	19 537,2	48,0	0,1	584,2	1,4	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69	Non-market health and social work	25 470,7	8,3	0,0	17 442,8	5,7	0,0	567,0	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70	Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	1,6	0,0	309,7	0,3	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71	Non-market activities of membership organization n.e.c. NPISHs	1 875,6	0,0	0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72	Non-market recreational, cultural and sporting activities	5 343,5	23,7	0,0	2 350,8	10,4	0,0	108,4	0,5	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
73	Private households with employed persons	5 809,0	275,9	0,4	5 809,0	275,9	0,8	405,2	19,2	2,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		1 194 946,0	**61 489,4**	**100,0**	**630 263,0**	**34 692,5**	**100,0**	**15 669,5**	**788,0**	**100,0**	**199 450,0**	**6 917,2**	**100,0**	**152 775,0**	**5 658,0**	**100,0**	**-1 259,2**
			5,15			**5,50**			**5,03**			**3,47**			**3,70**		

Table 10. Direct, indirect and induced effects of public authority consumption of tourims characteristic products

	Output at basic prices	NEW OUTPUT	%	GDP pm	NEW GDP pm	%	Total jobs full-time equivalents	JOBS FULL-TIME EQUIVALENTS	%	Imports	NEWS IMPORTS	%	Exports	NEW EXPORTS	%	EXPORTS-IMPORTS
	2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		2000	IMPACT		IMPACT
1 Agriculture, livestock and hunting	35 226,5	91,0	2,1	18 560,8	47,9	2,0	852,7	2,2	3,5	4 907,3	12,7	2,4	7 058,6	18,2	3,9	5,6
2 Forestry, logging and related service activities	1 559,1	2,4	0,1	1 339,3	2,1	0,1	34,9	0,1	0,1	505,9	0,8	0,2	165,0	0,3	0,1	-0,5
3 Fishing	2 218,2	7,4	0,2	1 468,5	4,9	0,2	63,7	0,2	0,3	779,7	2,6	0,5	229,7	0,8	0,2	-1,8
4 Mining of coal and lignite; extraction of peat	1 154,1	4,6	0,1	164,0	0,6	0,0	17,3	0,1	0,1	878,7	3,5	0,7	1,1	0,0	0,0	-3,5
5 Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	187,5	0,8	0,0	67,9	0,3	0,0	1,1	0,0	0,0	15 449,8	69,6	13,4	3,5	0,0	0,0	-69,6
6 Mining of metal ores	188,7	0,2	0,0	63,0	0,1	0,0	1,5	0,0	0,0	1 147,8	1,3	0,2	33,2	0,0	0,0	-1,2
7 Other mining and quarrying	2 495,1	2,4	0,1	933,0	0,9	0,0	21,6	0,0	0,0	552,7	0,5	0,1	503,0	0,5	0,1	0,0
8 Manufacture of coke, refined petroleum products and nuclear fuel	21 233,8	102,0	2,3	14 853,7	71,4	3,0	8,2	0,0	0,1	5 533,1	26,6	5,1	5 251,8	25,2	5,3	-1,4
9 Production and distribution of electricity	19 592,6	80,6	1,8	10 072,9	41,5	1,8	37,6	0,2	0,2	118,6	0,5	0,1	124,5	0,5	0,1	0,0
10 Manufacture of gas; steam and hot water supply	3 856,7	12,9	0,3	1 189,9	4,0	0,2	5,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
11 Collection, purification and distribution of water	3 389,2	14,2	0,3	1 555,8	6,5	0,3	32,6	0,1	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
12 Manufacture of meat products	15 675,6	51,7	1,2	3 944,2	13,0	0,6	71,1	0,2	0,4	998,6	3,3	0,6	1 220,2	4,0	0,9	0,7
13 Manufacture of dairy products	6 247,8	21,5	0,5	1 417,5	4,9	0,2	31,0	0,1	0,2	1 132,2	3,9	0,8	384,5	1,3	0,3	-2,6
14 Manufacture of other food products	31 108,2	87,2	2,0	7 068,1	19,8	0,8	249,4	0,7	1,1	7 021,6	19,7	3,8	5 871,3	16,5	3,5	-3,2
15 Manufacture of beverages	11 813,9	32,7	0,7	4 095,9	11,3	0,5	53,7	0,1	0,2	1 199,9	3,3	0,6	1 519,0	4,2	0,9	0,9
16 Manufacture of tobacco products	1 397,0	5,2	0,1	6 115,8	22,6	1,0	7,5	0,0	0,0	638,2	2,4	0,5	37,4	0,1	0,0	-2,2
17 Manufacture of textiles	9 541,1	22,0	0,5	3 403,1	7,8	0,3	115,8	0,3	0,4	3 717,9	8,6	1,7	2 776,3	6,4	1,4	-2,2
18 Manufacture of wearing apparel; dressing and dyeing of fur	8 386,1	27,7	0,6	4 821,1	15,9	0,7	155,3	0,5	0,8	3 766,9	12,4	2,4	1 552,7	5,1	1,1	-7,3
19 Manufacture of leather and leather products	6 405,4	14,4	0,3	2 343,0	5,3	0,2	82,8	0,2	0,3	1 739,1	3,9	0,8	2 468,0	5,5	1,2	1,6
20 Manufacture of wood and wood products	8 727,4	17,0	0,4	2 547,2	5,0	0,2	111,8	0,2	0,3	1 851,1	3,6	0,7	935,1	1,8	0,4	-1,8
21 Manufacture of pulp, paper and paper products	10 093,3	24,7	0,6	3 166,0	7,8	0,3	55,7	0,1	0,2	4 036,9	9,9	1,9	2 387,8	5,9	1,2	-4,0
22 Publishing and printing	13 860,1	49,7	1,1	5 465,6	19,6	0,8	161,6	0,6	0,9	825,5	3,0	0,6	1 096,7	3,9	0,8	1,0
23 Manufacture of chemicals and chemical products	30 995,6	49,0	1,1	10 025,1	15,8	0,7	153,4	0,2	0,4	18 632,3	29,4	5,7	10 671,9	16,9	3,6	-12,6
24 Manufacture of rubber and plastic products	13 218,2	22,5	0,5	4 406,1	7,5	0,3	117,4	0,2	0,3	4 594,1	7,8	1,5	3 911,6	6,7	1,4	-1,2
25 Manufacture of cement, lime and plaster	2 621,8	2,7	0,1	1 269,0	1,3	0,1	15,4	0,0	0,0	244,6	0,2	0,0	131,0	0,1	0,0	-0,1
26 Manufacture of glass and glass products	2 739,8	4,6	0,1	1 126,1	1,9	0,1	24,9	0,0	0,1	520,5	1,6	0,3	634,4	1,1	0,2	-0,5
27 Manufacture of ceramic products	5 367,8	4,5	0,1	2 283,8	1,9	0,1	65,7	0,1	0,1	465,9	0,4	0,1	2 140,0	1,8	0,4	1,4
28 Manufacture of other non-metallic mineral products	9 711,5	9,0	0,2	2 892,4	2,7	0,1	87,0	0,1	0,1	401,8	0,4	0,1	813,4	0,8	0,2	0,4
29 Manufacture of basics metals	21 178,2	22,7	0,5	6 148,1	6,6	0,3	110,9	0,1	0,2	9 298,5	10,0	1,9	6 073,3	6,5	1,4	-3,5
30 Manufacture of fabricated metal products	26 911,7	33,6	0,8	9 839,6	12,3	0,5	314,4	0,4	0,6	3 943,1	4,9	0,9	3 512,8	4,4	0,9	-0,5
31 Manufacture of machinery and equipment n.e.c.	20 109,1	22,9	0,5	8 370,5	9,5	0,4	197,9	0,2	0,4	16 108,0	18,3	3,5	8 770,3	10,0	2,1	-8,4
32 Manufacture of office machinery and computers	3 749,7	3,9	0,1	1 080,4	1,1	0,0	22,9	0,0	0,0	5 327,9	5,5	1,1	1 819,9	1,9	0,4	-3,6
33 Manufacture of electrical machinery and apparatus n.e.c.	11 851,5	13,3	0,3	3 719,1	4,2	0,2	91,0	0,1	0,2	5 426,9	6,1	1,2	4 023,8	4,5	1,0	-1,6
34 Manufacture of electronic equipment and apparatus	5 472,2	5,9	0,1	1 949,5	2,1	0,1	47,4	0,1	0,1	9 589,2	10,4	2,0	3 720,6	4,0	0,9	-6,4
35 Manufacture of medical, precision and optical instruments	3 402,3	3,4	0,1	1 502,4	1,5	0,1	31,7	0,0	0,1	4 354,0	4,4	0,8	1 414,8	1,4	0,3	-2,9
36 Manufacture of motor vehicles, trailers and semi-trailers	46 222,9	59,2	1,3	12 712,0	16,3	0,7	228,0	0,3	0,5	29 754,1	38,1	7,3	29 019,2	37,2	7,9	-0,9
37 Manufacture of other transport equipment	7 229,3	19,6	0,4	2 197,9	6,0	0,3	65,8	0,2	0,3	3 940,0	10,7	2,1	3 726,9	10,1	2,1	-0,6
38 Manufacture of furniture; manufacturing n.e.c.	13 278,0	32,1	0,7	6 591,7	15,9	0,7	227,6	0,6	0,9	3 266,6	7,9	1,5	2 704,3	6,5	1,4	-1,4
39 Recycling	2 827,8	3,2	0,1	87,3	0,1	0,0	13,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
40 Construction	125 492,6	115,6	2,6	51 931,8	47,8	2,0	1 749,1	1,6	2,6	18,0	0,0	0,0	9,0	0,0	0,0	0,0
41 Sale and retail of motor vehicles; retail sale of automotive fuel	22 301,7	88,5	2,0	11 174,9	44,4	1,9	358,9	1,4	2,3	0,0	0,0	0,0	1 473,4	5,8	1,2	5,8
42 Wholesale trade and commission trade	48 464,0	114,8	2,6	28 630,7	67,8	2,9	588,2	1,4	2,2	956,0	2,3	0,4	8 387,5	19,9	4,2	17,6
43 Retail trade; repair of personal and household goods	39 955,9	140,3	3,2	28 880,8	101,4	4,3	1 535,3	5,4	8,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0
44 Hotels	12 380,8	89,7	2,0	8 648,6	62,6	2,7	224,6	1,6	2,6	597,0	4,3	0,8	0,0	0,0	0,0	-4,3
45 Restaurants	60 285,1	165,3	3,7	38 576,3	105,8	4,5	771,1	2,1	3,4	11,0	0,0	0,0	0,0	0,0	0,0	0,0
46 Railway transport	2 084,2	89,0	2,0	657,7	28,1	1,2	37,0	1,6	2,5	35,0	1,5	0,3	78,5	3,4	0,7	1,9
47 Other land transport; transport via pipelines	28 695,1	462,3	10,5	13 272,0	213,8	9,1	463,5	7,5	11,9	1 885,0	30,4	5,9	4 659,0	75,1	15,9	44,7
48 Water transport	1 831,0	26,8	0,6	655,7	9,6	0,4	11,2	0,2	0,3	86,0	1,3	0,2	1 062,0	15,6	3,3	14,3
49 Air transport	5 804,3	132,5	3,0	2 140,1	48,9	2,1	36,4	0,8	1,3	2 060,0	47,0	9,1	3 317,0	75,7	16,0	28,7
50 Support and auxiliary transport activities	19 894,5	141,3	3,2	7 728,5	54,9	2,3	97,2	0,7	1,1	1 766,0	12,5	2,4	2 397,0	17,0	3,6	4,5
51 Travel agencies activities	5 860,9	137,7	3,1	2 449,4	57,5	2,4	40,6	1,0	1,5	230,0	5,4	1,0	0,0	0,0	0,0	-5,4
52 Post and telecommunications	25 351,6	111,1	2,5	14 788,8	64,8	2,8	205,5	0,9	1,4	818,0	3,6	0,7	737,0	3,2	0,7	-0,4
53 Financial intermediation, except insurance and pension funding	25 215,9	85,0	1,9	18 637,1	62,8	2,7	249,2	0,8	1,3	2 190,0	7,4	1,4	1 973,0	6,7	1,4	-0,7
54 Insurance and pension funding, except compulsory social security	6 245,0	23,4	0,5	2 628,2	9,8	0,4	51,2	0,2	0,3	93,0	0,3	0,1	372,0	1,4	0,3	1,0
55 Activities auxiliary to financial intermediation	9 572,4	33,3	0,8	5 401,1	18,8	0,8	56,4	0,2	0,3	370,0	1,3	0,2	473,0	1,6	0,3	0,4
56 Real estate activities	70 374,2	228,8	5,2	51 669,5	168,0	7,1	118,9	0,4	0,6	27,0	0,1	0,0	43,0	0,1	0,0	0,1
57 Renting of machinery, personal and household goods	6 902,0	33,4	0,8	4 157,3	20,1	0,9	47,1	0,2	0,4	1 118,0	5,4	1,0	104,0	0,5	0,1	-4,9
58 Computer and related activities	9 693,3	11,7	0,3	6 452,9	7,8	0,3	112,2	0,1	0,2	1 715,0	2,1	0,4	2 244,0	2,7	0,6	0,6
59 Research and development	3 577,7	6,1	0,1	1 847,1	3,1	0,1	9,9	0,0	0,0	280,0	0,5	0,1	283,0	0,5	0,1	0,0
60 Other business activities	60 444,0	183,5	4,2	40 760,2	123,8	5,3	939,4	2,9	4,6	10 076,0	30,6	5,9	7 679,0	23,3	4,9	-7,3
61 Market education	10 759,9	27,8	0,6	8 289,0	21,4	0,9	250,1	0,6	1,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
62 Market health and social work	17 979,1	52,3	1,2	11 216,2	32,6	1,4	308,8	0,9	1,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0
63 Market sewage abd refuse disposal, sanitation and similar activities	3 742,9	9,7	0,2	2 050,8	5,3	0,2	37,1	0,1	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
64 Market activities of membership organization n.e.c.	421,9	1,6	0,0	262,9	1,0	0,0	12,2	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
65 Market recreational, cultural and sporting activities	19 737,1	141,9	3,2	14 079,5	101,2	4,3	220,1	1,6	2,5	2 049,0	14,7	2,8	776,0	5,6	1,2	-9,2
66 Other service activities	5 572,6	23,0	0,5	4 007,8	16,5	0,7	197,7	0,8	1,3	1,0	0,0	0,0	0,0	0,0	0,0	0,0
67 Public Administration	42 965,3	284,4	6,4	32 229,2	213,3	9,1	1 238,7	8,2	13,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
68 Non-market education	21 730,4	4,2	0,1	19 537,2	3,8	0,2	584,2	0,1	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
69 Non-market health and social work	25 470,7	0,7	0,0	17 442,8	0,4	0,0	567,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
70 Non-market sewage disposal, sanitation and similar activities. Public Administration	1 867,0	0,1	0,0	309,7	0,0	0,0	10,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
71 Non-market activities of membership organization n.e.c. NPISHs	1 875,6		0,0	732,5	0,0	0,0	39,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
72 Non-market recreational, cultural and sporting activities	5 343,5	439,9	10,0	2 350,8	193,5	8,2	108,4	8,9	14,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
73 Private households with employed persons	5 809,0	21,9	0,5	5 809,0	21,9	0,9	405,2	1,5	2,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0
	1 194 946,0	**4 412,1**	**100,0**	**630 263,0**	**2 352,7**	**100,0**	**15 669,5**	**62,5**	**100,0**	**199 450,0**	**518,76**	**100,00**	**152 775,0**	**472,3**	**100,0**	**-46,5**
		0,37			**0,37**			**0,40**			**0,26**			**0,31**		

Table 11. Direct, indirect and induced effects of tourism consumption

	Tourism consumption	Direct and indirect Supply	Direct, indirect and induced Supply	Direct effect	Indirect effect	Induced effect
Agriculture, livestock and hunting	0,0	2 018,2	4 600,2	0,0	2 018,2	2 582,1
Forestry, logging and related service activities	0,0	51,1	105,4	0,0	51,1	54,3
Fishing	0,0	285,4	538,6	0,0	285,4	253,2
Mining of coal and lignite; extraction of peat	0,0	78,7	185,4	0,0	78,7	106,7
Extraction of crude petroleum and natural gas; mining of uranium and thorium ores	0,0	890,7	1 615,9	0,0	890,7	725,2
Mining of metal ores	0,0	18,9	43,1	0,0	18,9	24,2
Other mining and quarrying	0,0	49,4	96,4	0,0	49,4	47,0
Manufacture of coke, refined petroleum products and nuclear fuel	0,0	1 661,4	2 855,2	0,0	1 661,4	1 193,8
Production and distribution of electricity	0,0	810,1	1 946,1	0,0	810,1	1 136,1
Manufacture of gas; steam and hot water supply	0,0	136,7	360,4	0,0	136,7	223,7
Collection, purification and distribution of water	0,0	161,2	412,8	0,0	161,2	251,6
Manufacture of meat products	0,0	981,6	2 417,9	0,0	981,6	1 436,3
Manufacture of dairy products	0,0	365,1	1 032,3	0,0	365,1	667,2
Manufacture of other food products	0,0	2 300,8	4 987,4	0,0	2 300,8	2 686,5
Manufacture of beverages	0,0	2 867,0	3 689,2	0,0	2 867,0	822,2
Manufacture of tobacco products	0,0	0,0	206,1	0,0	0,0	206,1
Manufacture of textiles	0,0	428,2	1 111,8	0,0	428,2	683,5
Manufacture of wearing apparel; dressing and dyeing of fur	0,0	110,8	1 114,7	0,0	110,8	1 003,9
Manufacture of leather and leather products	0,0	22,9	505,7	0,0	22,9	482,8
Manufacture of wood and wood products	0,0	447,0	794,2	0,0	447,0	347,3
Manufacture of pulp, paper and paper products	0,0	514,2	1 019,8	0,0	514,2	505,6
Publishing and printing	0,0	541,0	1 275,8	0,0	541,0	734,8
Manufacture of chemicals and chemical products	0,0	1 377,8	2 858,0	0,0	1 377,8	1 480,2
Manufacture of rubber and plastic products	0,0	487,6	948,0	0,0	487,6	460,4

	Tourism consumption	Direct and indirect Supply	Direct, indirect and induced Supply	Direct effect	Indirect effect	Induced effect
Manufacture of cement, lime and plaster	0,0	45,5	86,0	0,0	45,5	40,5
Manufacture of glass and glass products	0,0	228,1	349,1	0,0	228,1	121,0
Manufacture of ceramic products	0,0	110,8	189,9	0,0	110,8	79,0
Manufacture of other non-metallic mineral products	0,0	135,4	267,5	0,0	135,4	132,1
Manufacture of basics metals	0,0	413,5	959,9	0,0	413,5	546,4
Manufacture of fabricated metal products	0,0	688,5	1 304,6	0,0	688,5	616,1
Manufacture of machinery and equipment n.e.c.	0,0	531,8	1 179,8	0,0	531,8	648,0
Manufacture of office machinery and computers	0,0	116,9	241,9	0,0	116,9	125,0
Manufacture of electrical machinery and apparatus n.e.c.	0,0	268,1	552,7	0,0	268,1	284,6
Manufacture of electronic equipment and apparatus	0,0	125,3	411,5	0,0	125,3	286,2
Manufacture of medical, precision and optical instruments	0,0	26,4	179,6	0,0	26,4	153,3
Manufacture of motor vehicles, trailers and semi-trailers	0,0	273,9	2 419,4	0,0	273,9	2 145,4
Manufacture of other transport equipment	0,0	515,1	655,0	0,0	515,1	139,9
Manufacture of furniture; manufacturing n.e.c.	0,0	363,5	1 196,2	0,0	363,5	832,7
Recycling	0,0	41,4	94,2	0,0	41,4	52,8
Construction	0,0	1 585,6	3 230,7	0,0	1 585,6	1 645,1
Sale and retail of motor vehicles; retail sale of automotive fuel	0,0	509,4	1 978,1	0,0	509,4	1 468,7
Wholesale trade and commission trade	0,0	1 628,8	4 195,5	0,0	1 628,8	2 566,6
Retail trade; repair of personal and household goods	0,0	299,6	3 960,4	0,0	299,6	3 660,8
Hotels	17 767,4	18 371,7	18 551,0	17 767,4	604,3	179,4
Restaurants	18 659,0	18 856,5	23 034,2	18 659,0	197,5	4 177,7
Railway transport	931,3	972,7	1 042,7	931,3	41,4	69,9
Other land transport; transport via pipelines	1 547,3	2 812,2	4 020,6	1 547,3	1 264,9	1 208,5
Water transport	279,3	321,1	344,4	279,3	41,8	23,3
Air transport	5 804,4	6 228,0	6 335,6	5 804,4	423,6	107,6
Support and auxilliary transport activities	2 100,6	4 564,3	5 257,9	2 100,6	2 463,7	693,6
Travel agencies activities	1 421,0	1 844,3	2 192,8	1 421,0	423,3	348,5

Table 11. (Continued)

	Tourism consumption	Direct and indirect Supply	Direct, indirect and induced Supply	Direct effect	Indirect effect	Induced effect
Post and telecommunications	0,0	1 257,2	2 890,8	0,0	1 257,2	1 633,6
Financial intermediation, except insurance and pension funding	0,0	978,9	2 814,4	0,0	978,9	1 835,5
Insurance and pension funding, except compulsory social security	0,0	131,3	661,4	0,0	131,3	530,1
Activities auxilliary to financial intermediation	0,0	197,5	1 012,3	0,0	197,5	814,8
Real estate activities	0,0	2 000,2	7 514,6	0,0	2 000,2	5 514,4
Renting of machinery, personal and household goods	602,2	1 410,2	1 712,7	602,2	808,0	302,5
Computer and related activities	0,0	175,9	329,2	0,0	175,9	153,3
Research and development	0,0	72,0	150,8	0,0	72,0	78,9
Other business activities	0,0	3 047,0	5 721,9	0,0	3 047,0	2 674,8
Market education	0,0	98,6	788,1	0,0	98,6	689,4
Market health and social work	0,0	203,2	1 519,6	0,0	203,2	1 316,3
Market sewage abd refuse disposal, sanitation and similar activities	0,0	121,7	325,2	0,0	121,7	203,5
Market activities of membership organization n.e.c.	0,0	30,5	51,9	0,0	30,5	21,4
Market recreational, cultural and sporting activities	1 685,9	2 334,5	3 811,2	1 685,9	648,6	1 476,7
Other service activities	0,0	127,2	670,5	0,0	127,2	543,3
Public Administration	284,4	284,4	284,4	284,4	0,0	0,0
Non-market education	0,0	0,0	116,6	0,0	0,0	116,6
Non-market health and social work	0,0	0,0	18,0	0,0	0,0	18,0
Non-market sewage disposal, sanitation and similar activities. Public Administration	0,0	0,0	3,5	0,0	0,0	3,5
Non-market activities of membership organization n.e.c. NPISHs	0,0	0,0	0,0	0,0	0,0	0,0
Non-market recreational, cultural and sporting activities	478,1	478,1	499,5	478,1	0,0	21,4
Private households with employed persons	0,0	0,0	602,1	0,0	0,0	602,1
	51 560,9	91 433,0	150 450,5	51 560,9	39 872,1	59 017,5
		1,77	2,92	34,27	26,50	39,23
		Multiplicadores		%		

Inbound tourism consumption generated the need to import end and intermediate products (a direct and indirect effect) for a value of 4,770.3 million euros, which represents 2.39% of all imports to Spain in 2000. These imports can be considered to be capital flight abroad, limiting tourism's multiplier impact on output and income [see Hernández (2004)]. In turn, inbound tourism also originated induced imports, through household consumption generated by the increase in earnings. Through these three channels, imports came to 8,266.7 million euros, which more or less accounts for 4.14% of all Spanish imports. By economic sectors, the air transport sector (12.4%), oil and natural gas sectors (10.1%), chemical products sector (6.7%), and motor vehicle manufacturing sector (5.8%) account for most foreign purchases generated directly, indirectly or in an induced way by inbound tourism [see Tables 4 and 8].

As for exports, leaving aside the direct effect of inbound tourism consumption (equivalent to a value of 26,527.2 million euros), because the input-output method assumes fixed coefficients[1], increased output by exporter sectors implied a growth in exports worth 7,042.9 million euros. Thus the impact on the balance of the current account was 25,303.4 million euros, 1,223.8 million euros less than inbound tourism consumption [see Table 8].

Meanwhile to satisfy household tourism consumption, direct, indirect and induced imports worth 6,917.2 million euros were needed (which more or less accounts for 3.47% of foreign purchases by Spain in 2000) plus exports worth 5,658 million euros (3.7% of Spanish sales abroad). In this way, domestic tourism had a negative impact on the balance of the current account to the tune of 1,259.2 million euros [see Table 9].

CONCLUSION

Tourism is an activity in the process of expansion, and a growth in tourism flows is seen as something beneficial that justifies public and private investment. The role as an economic growth pole that has been ascribed to tourism [Williams and Shaw (1991)] justifies interest in measuring its effect on economic activity.

This paper outlines a method of estimating tourism's macroeconomic contribution. By combining input-output tables and the tourism satellite account, an analytical tool is achieved that might not have the flexibility of computable general equilibrium models but nonetheless provides a well-specified model and clear information on which political decision-makers and business entrepreneurs can base their decisions.

In Spain, tourism consumption's total macroeconomic impact generates about 11.3% of the total output and 10.9% of employment, with the contribution of foreign tourism accounting for about half the total effect. Additionally, tourism has a notably positive effect on the foreign trade balance although very often this benefit is over-estimated by overlooking the imports needed to meet the tourism demand, both directly and indirectly, and induced imports originated by the earnings generated by tourism.

The methodology that has been described offers something more than a mere method of quantifying the contribution of tourism to aggregate economic activity. One particularly interesting outcome of this analysis is a breakdown of the contribution of each individual

[1] Using fixed coefficients means that if part of a sector's output is directed at the export market, when there is an increase in output, exports rise proportionally in line with the established coefficient.

branch of activity. Some agents, like hoteliers, see themselves as playing an essential role in tourism. Others, like doctors, teachers or building labourers, do not. However, in the sense that part of their work is aimed at directly or indirectly meeting the needs of tourism, they are part of the tourist industry. Understanding this reality can contribute toward a positive view of tourism by residents and, by extension, influence their support for policies aimed at promoting tourism.

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