



**Universitat de les
Illes Balears**

Facultat de Turisme

Memòria del Treball de Fi de Grau

Research on Environmental Management of Island Tourism Destination: A case of Mallorca

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Grau de Turisme

Any acadèmic 2017-18

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Paraules clau del treball:

Island, Tourism, Environmental Impacts, Environmental management, Mallorca...

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1. Introduction

As one of the fastest growing sectors in the world, international tourism has become one of the main economic activities for many nations creating much needed job opportunities and bringing in important income and foreign exchange earnings (Zhao, 2011). Tourism is of particular significance for many islands as one of the few activities for which their location, coupled with exceptional natural and cultural resources, is a strong competitive advantage. In some well-known islands, such as those in the Caribbean and Pacific areas, tourism has become a major industry of the national economy, and contributes to more than half of its GDP (Yang, 2009). More and more developing islands with similar natural features realized the importance of tourism for the local economy, they started to take tourism as a key point for development.

However, every action needs careful consideration, unregulated development might bring high risks. Developing islands might cause problems easily because of their eagerness and lack of experience, such as neglect the protection of the environment while overly pursue the pace of development. When we are talking about the economic benefits brought by tourism, the costs of this activity cannot be ignored. Tourism is in a unique position compared with many other economic sectors in that it has a two-way relationship with the environment. The good environment can be considered as the basis for tourism development, but in reverse, overloaded tourists and excessive tourism activities will lead to resource depletion and environmental degradation. If there are no effective measures, the destination will lose its attraction to tourists and the economy will be at a standstill. Unlike other products, tourism is the 'product' that brings customers to the product, therefore when customers consume this product, the 'waste' produced at the same time will be left here. The negative impacts of tourism on destinations involves various aspects, of which the environmental impacts is the most significant, such as air pollution, sewage and solid waste pollution, the loss of biodiversity and so on. For developing islands, it is essential to have an awareness of negative environmental impacts that might derive from tourism and take actions to regulate tourism. Because in some earlier developed islands, tourism has greatly changed their original style, and has brought severe environmental and social problems to islands. Developing islands need to learn their experiences and lessons, to avoid negative impacts as far as possible, thus achieve sustainable tourism development.

Sustainable development through tourism requires an approach to the sector which is itself sustainable. Expressed simply, sustainable tourism can be defined as 'tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of the visitors, the industry, the environment and host communities' (UNWTO&UNEP, 2005). Moreover, sustainable tourism is not a special form of tourism; all forms of

tourism should strive to be more sustainable. If the tourism is improperly planned, developed and operated, it will greatly affect the sustainable development of the economy. When developing tourism, islands should take sustainable development as their goal and direction. Neither the government nor the enterprises can undermine the long-term benefits by only considering the short-term interests.

In order to give better guidance to developing islands, this thesis considers Mallorca as a case study by analyzing its environmental impacts that derived from tourism and policy measures of environmental management. Mallorca, as one of the most well-known tourist destination in Mediterranean sea, has usually been considered as a typical example of a second generation mass tourist resort (Knowles & Curtis, 1999). It is one of the most developed islands in the world for tourism, that can be observed since the period of mass tourism the benefits and negative impacts brought by tourism have been vividly reflected in Mallorca. In the process of tourism development, Mallorca has encountered many problems, such as environmental degradation, resource depletion and deteriorating relations between tourists and residents. These issues can also easily happen to developing islands if there is no adoption of correct measures. In order to achieve sustainable tourism, Mallorca has implemented several policy measures to deal with the negative impacts. As a reference, developing islands can take the essence and discard the dregs from Mallorca's experience and then adjust measures to local conditions, to develop tourism healthily and sustainably.

This thesis is structured in four chapters. Section 2 focuses on Mallorca, which divided into the description of the island, tourism development situation and the analysis of negative environmental impacts from transport, accommodation and tourists activities. Afterwards, possible measures is presented in section 3, which include internalization externality, ecotax, tourism laws, education for the industry, tourists as well as residents to raise environmental awareness, etc. Finally, section 4 draws the conclusion of the thesis.

2. The Case of Mallorca

2.1 The Description of the Island

Mallorca is one of the most visited tourist destinations in Spain and one of the most famous sun and sea destination in the Mediterranean Sea. Mallorca located in the east coast of Spain, it is the largest island in the Balearic Islands (the others are Menorca, Ibiza and Formentera), with a coastline of 555 km

including 36 small islets and two sizeable islands, Cabrera and Dragonera (Buswell, 2011).

Mallorca's climate is typically Mediterranean, with warm average temperatures and seasonal rains, the summer period being both hot and dry while the winter is mild and humid. Most of the rain that falls is concentrated within a few days of precipitation, with some very heavy rains in autumn and lighter rains over the rest of the year. Excluding the high mountain areas, the average annual temperature is between 16°C and 18°C, with a maximum summer average of 29 to 31°C (Buswell, 2011), providing perfect prerequisites for the development of 'sun and beach' tourism.

Mallorca's population was 859,289 in 2015, and half of whom, 434,517, lived in the capital, Palma (Instituto Nacional de Estadística, 2015). Tourism is the major industry in Mallorca, which accounts for about 85% of GDP (Muñoz & Martín, 2007), and 27.8% of the workforce is directly employed in the tourism sector (Agència de Turisme de les Illes Balears, 2017). In addition, agriculture, shoemaking, jewellery, and mining also play important roles in Mallorca's economy.

2.2 Tourism Development

Mallorca is a prime example of 'mainland island' (Royle, 2008), which means it is located within easy reach of major tourist demand and most of the tourists can arrive by air or cruise ship. Mallorca has a large number of direct flights with major European airports, and the road transport network on the island is also well developed, which has convenient accessibility.

Mallorca has rich tourism resources, not only has natural resources such as beaches and mountains, but also has magnificent cultural resources. Bays and beaches form several fascinating holiday resorts along the coast, while the landscapes and rural scenery in the interior of the island also attract a large number of tourists with their unique charm, one of the most famous attractions is 'Cultural Landscape of the Serra de Tramuntana' that was listed as a World Heritage Site by UNESCO (UNESCO, 2011).

Tourism in Mallorca can be traced back to the late 19 century (Buswell, 2011), at that time Mallorca was an inspiration source for painters, writers and artists, George Sand was deeply attracted by " this everywhere beautiful countryside" (Sand, 1855/1998: 117). She had been captivated by the landscape: " one of the most beautiful places in the world, and one of the least explored" (1855/1998: 9).

In 1950s Mallorca came into mass tourism stage and the first boom of tourist arrivals occurred in the 1960s when the island was fully engaged in the construction of hotels and infrastructure (Buswell, 2011). In 2016, The total tourist arrivals reached 10,920,237, accounting for 71% of the total tourist

arrivals in the Balearic Islands. Besides, 89% tourists come from abroad, and Germany (38.1%), the United Kingdom (21.4%) are its main source market. From the perspective of tourism motivation, more than 90% of total tourists come to Mallorca for leisure and holidays, which highlights the characteristic of leisure resorts. Summer is the peak season, from May to October, tourists were over one million monthly. The total expenditure of tourists in Mallorca reached 10,599.6 millions euros, daily expenditure per person was 127.9€ (Agència de Turisme de les Illes Balears, 2017).

However, there is also a concern that tourism is damaging Mallorca's environment and culture heritage, the consequences of mass tourism had begun to engender environmental, cultural and heritage concerns (Butler, 1980). As early as the late-1980s, there were local protests against some tourist and other developments on environmental grounds (Royle, 2009). The negative impact on the environment derives not only directly from tourists but also from transportation, accommodation and other tourism-related industries: the constant construction of infrastructure, the great increase of hotels and tourist apartments, the expansion of roads. Ten million tourists each year put severe pressure on the natural environment and ecosystem of this small island, which has seriously affected the interests of local residents. Increasingly severe conditions make more local residents start to protest mass tourism. In the summer of 2017, local residents conducted several anti-tourists parades. They thought the island has had enough visitors and wanted more sustainable forms of tourism (Belinda & Robinson, 2017).

2.3 Negative Environmental Impacts of Tourism

The good natural environment can be seen as the primary source for "sun, sea and sand" tourist destination like Mallorca. It is inevitable that tourism development will affect the local environment, if the impact is controlled within the capacity of the environment, environment can constantly support the development of tourism, but if the negative impact exceeds the capacity of environment, causes excessive consumption of natural resources and environmental degradation, the destination will lose its tourism advantages, thus the tourism economy will lead to stagnation.

As major components of tourism, tourism-related sectors such as tourism traffic, accommodation, and tourists themselves have different degrees of externality to the environment, and the mutual influence between them also makes the entire tourism industry to have an incredible impact on the environment.

2.3.1 Impacts from Tourism Traffic

Tourism traffic is an important factor in deteriorating the environment. It is estimated that 36% of total CO² emissions in Mallorca came from transport, of

which 58% was from road transport (Buswell, 2011). Due to the global warming has become a hot issue, now society has paid more attention to the tourism-related air pollution, especially greenhouse gas emissions.

2.3.1.1 Aircraft

Due to the geographical nature, aircraft is the main form for tourists to come to Mallorca. In 2016, there were 13,090,199 passengers arrivals by air (Agència de Turisme de les Illes Balears, 2017). The main pollutant emitted by the aircraft is carbon monoxide, but it is a relatively small amount when compared to other modes of transport. Although aircraft pollution accounts for a very small proportion of air pollution emissions, the ratio is increasing (Reng, 2011).

2.3.1.2 Road Transport

Mallorca has the highest per capita vehicle ownership in Spain, and a large percentage of them are used for tourism-related car rental services. Exhaust gases that emitted by vehicles can easily cause photochemical smog pollution, which will not only affect the growth of animals and plants, but also endanger human health. While from the perspective of global climate change, exhaust gas emissions may cause acid rain and induce ozone hole emptying. When compared with other modes of transport, automobiles are by far the largest source of greenhouse gases such as carbon monoxide.

In addition to air pollution, road transport also has other impacts on the environment: in order to improve accessibility on the island, the construction of the road transport system and other infrastructures directly alter the original type of land use and reduce the ecological area.

2.3.1.3 Cruise

Mallorca located in the western Mediterranean, is a stopover for many cruise lines, that making cruise tourism an important part of Mallorca's tourism industry. In 2016, Palma port docked 826 cruise and received 1,626,620 cruise passengers, which accounting for 80% of the Balearic Islands (Agència de Turisme de les Illes Balears, 2017). Cruise tourism brings economic benefits but at the same time it also has a negative impact on the environment, especially for carbon dioxide emissions. For example, it is estimated that a cruise liner on average emits 401g per passenger/kilometer, approximately three times that for a modern airliner.

2.3.2 Impacts from Tourism Accommodation

In 2016, there were 1669 tourist accommodation in Mallorca, with 292,435 hotel beds (IBESTAT, 2017). The average occupancy rate of available hotel beds was 79.5%, while it exceeded 90% in July and August (Agència de Turisme de les Illes Balears, 2017). The negative environmental impacts derived from tourists accommodation can not be underestimated, mainly reflected in land use, energy and water consumption, solid waste and sewage

discharge.

2.3.2.1 Land Use

Since Mallorca entered the period of mass tourism in the 1950s, large-scale tourism development constructions have been increasing (Buswell, 2011). For example, the construction of roads, resorts, entertainment venues, hotels, restaurants and other tourism related facilities have changed the types of land use on the island and taken up a large area of green land, which drastically reduces the vegetation coverage.

2.3.2.2 Energy Consumption

Energy consumption is a problem that can not be ignored in environmental protection. Tourism accommodation usually results in a large amount of energy consumption during operation, and mainly the consumption of electric energy. Especially in summer, electricity consumption can reach the peak demand. If tourism wants to save energy and reduce emissions, it must promote energy-saving and environmental protection measures in the accommodation industry. While due to the cost and technical limitations, only a few hotels can take effective measures.

2.3.2.3 Water Consumption

According to the Ministry of the Environment in the Balearic Islands, tourism consumes around 40 hm³ of water per year, while the main consumers are the accommodation and catering industries. Water resources for the tourism accommodation are mainly used for drinking water, sanitation, recreational facilities like swimming pool and central refrigeration equipment as well. During the high season from May to September, water consumption in the tourism sector increases sharply and peaks in August - requires 160% above the mean consumption. "In order to meet seasonal demand, more infrastructure needs to be built, but the cost has to be borne by residents or through general taxation", which caused residents' dissatisfaction. Furthermore, the shortage of surface water causes 80% of water supply coming from subterranean aquifers, the huge demand in summer made the water table lower and salt water ingress, which affects 39% of the underground sources (Buswell, 2011).

2.3.2.4 Solid Waste and Sewage Discharge

Solid waste, or colloquially called "rubbish". In addition to the waste that generated directly by tourists, the daily operation of hotels and other type of accommodation also produce a tremendous amount of solid waste per day, such as the hotel's kitchen waste, room waste, and sewage discharge from rooms, kitchens and laundry rooms, especially during peak season while the occupancy rates are very high.

At the same time, solid waste and sewage generated by the accommodation also affect the subsequent processing capacity of the treatment plant. For

example, booming tourists in summer can easily make a sewage treatment plant exceed its load, therefore it discharges excess sewage directly and then sewage will gradually affect the density of nutrients in the water, aggravate water eutrophication, consume excessive dissolved oxygen that may cause serious water pollution.

2.3.3 Impacts Directly from Tourist Activities

In addition to the environmental impacts derived from traffic, tourist accommodation, tourists also may cause direct impacts on the environment through their activities.

2.3.3.1 Impacts from Hiking

Mountainous areas such as Tramuntana in Mallorca attract a large number of hikers. Although this may seem like a kind of “ecotourism”, this activity poses a great threat to the ecological environment in the mountains: for example, in the process of hiking, tourists repeatedly trampling on the soil will have negative impacts on the soil, leading to increased organic pollutants, changing the nature and fertility of the soil, thus affecting the growth of vegetation and the disappearance of sensitive plant species; garbage not only causes visual pollution, but also changes the soil nutrients; tourists may also bring in exotic species to undermine the local ecological balance. At the same time, tourists' activities can interfere with animals as well. For example, tourists camping tents can affect the activities of surrounding animals and even endanger the habitat or the life of animals. Moreover, the respiratory activity of tourists increases the concentration of CO₂, SO₂ and NO_x in the forest and greatly reduces the photosynthesis activity of plants (Peng, 1998).

2.3.3.2 Impacts from Water Activities

Recreational activities on the water and sea also have impacts on the environment. Mallorca has a vast sea area that provides various water activities, such as yachts, motor boats, swimming and snorkeling. These activities enrich tourists' life but at the same time, it causes negative impacts to the water environment. For example, the discharge of sewage and accidental oil spills from yachts can contaminate water and even spread the toxic substances that may threaten the health of marine life; Solid wastes thrown by yacht passengers may be eaten by marine animals and pose a threat to waterfowls; The noise generated by the engines and propellers can interfere with the animal's communication system and make them losing contact with their peers; Street lights and yachts' lights at night can confuse sea turtles, disorienting them and then potentially changing their habitat.

3. Policy Measures

Compared with the mainland, the island's environment is more fragile. Any inappropriate development and utilization of the island's environment can easily lead to the destruction of the entire island's environment. Therefore, the speciality of the island's environment should be fully considered in the process of tourism development, and emphasizing the harmonious relationship between tourism and environment, planning scientifically and developing rationally, try to achieve the coordinated development of island environmental protection and tourism development.

3.1 Protection of the Environment

Follow the concept of sustainable development, adhere to the principle of protection first, rational development, scientific management, and everlasting use, to realize the unity of environmental benefits and economic benefits, and avoid blindly exploiting for temporary benefits. Therefore, it is necessary to pre-evaluate environmental impacts, that is, to analyze and evaluate the environmental impacts that might derived from different aspects of tourism so as to avoid serious environmental problems. The island's ecological system is relatively independent, and has a greater response to external disturbances, thus through the establishment of nature reserves can restrict the construction of tourist facilities and reduce the damage to the environment that caused by tourist activities. Islands can increase the area of national parks and nature reserves, which can protect the original ecosystem of the island to a great extent, and the various forms of protected areas can enrich the tourism activities of the islands. For example, visitors can watch various kinds of wild animals and plants in nature reserves.

3.2 Internalization of External Costs

Most of the natural resources on the island do not have property rights, this means no price is charged for the "use" of certain environmental resources, such as beaches, mountains, fresh air and water, they are all non-excludable and non-rival. But due to the island's environmental carrying capacity is limited, tourists may ignore the value of the resources and may easily lead to overuse of the environmental resources. From the perspective of the rational man in economics, people only consider their own utility maximization, while ignoring the external costs that derived from individual behavior on the natural environment. This kind of behavior brings negative externality to other people, and also can not maximize the social welfare. At the same time, as environmental quality is a public good, any individual's behavior to improve environmental quality will bring positive externality to others. Therefore, many people do not take the initiative actions themselves, but place their hopes on

other people and try to get the free ride. It is precisely because of the existence of the externality that causes the excessive use of resources by tourism related subjects such as tourism transportation, accommodation industry, and tourists, while the environment pollution and degradation are unmanned. This undermines the efficiency of the use of the environment and resources, that causes a decline in the attractiveness of tourism, and it is not conducive to the fairness of contemporary and inter-generation.

Therefore, in order to achieve social optimum, we need to take the external costs into account. One way is to put a price on polluting emissions based on the quantity of the pollutant, makes the fee equals to the environmental costs, thus to increase the marginal costs of the firm and raise their awareness to reduce polluting emissions. For example, charging hotels about sewage and waste disposal fees according to the scale or the number of rooms.

And another effective way which implement in many tourism destinations is by charging 'Pigovian tax'. In July 2016, the Balearic Islands began to charge 'tourist tax' directly from tourists. Tourists who stay overnight at hotels, resorts, tourist apartments and other types of accommodation on the island as well as cruise ship tourists are required to pay 0.5 to 2 euros (in peak season) or 0.25 to 1 euro (low season) per night. The tax income will be used to protect and recover the environment, develop technological innovation, improve the quality and competitiveness of the tourism sector, create diverse tourism products, maintain tourism infrastructure and protect historical heritage (La presidenta, 2016).

3.3 Regulation of Enterprise Operations

The government should put highly control on environmental protection, supervise the behavior of enterprises and tourists and also monitor the level of environmental pollution. In order to pursue economic growth, some developing islands have introduced projects that with serious environmental pollution or increased the amount of tourists blindly, and deliberately conniving at the destroying behavior of the company, thus cause serious problems in the environment. Therefore, local governments should adopt the green GDP accounting method as soon as possible to curb the short-sighted behavior of companies and reduce the environmental cost of economic growth (Li, 2012). The government can also use incentives such as subsidies and eco-labelling to mobilize the enthusiasm of companies and encourage them to innovate technology, thus realize the coordinated development of tourism development and environmental protection. For example, subsidizing hotels who have introduced energy-saving technology.

3.4 Tourism Policies and Laws

Environmental protection needs the assurance and maintenance of a sound legal system. The government needs to formulate corresponding policies and laws that can intervene in the operation of the tourism industry, and strictly handle improper behaviors that have negative impacts to the environment.

The mandatory nature of laws has the effect of deterring tourism operators or tourists and can effectively compensate for the inadequacies of market instruments. Policies and laws can be divided into bans, standards and permits. Such as establishing a licensing system, exam strictly the qualifications and reputation of companies, thus to eliminate illegal construction and development; Setting up specific environmental quality standards and tourist capacity in the resort, and supervise constantly; Publishing land use and zoning policies, etc.

3.4.1 Important Legislations in Mallorca

3.4.1.1 Vacation Rental Decree

The Law 6/2017, entered into force on August 1st 2017, amending the Tourism Law in the Balearic Islands, concerning the commercialization of tourist housing stays. It takes into account the need to adequately protect the environment and make sustainable use of the infrastructures and resources of the Balearic Islands, as well as the protection of tourists. All residential homes that want to touristically commercialize are required to have a specific energy certification to state that they are energy efficient, depending on the age of the property. The housing on the protected rural area may never allowed to be touristically commercialized. Likewise, it is determined that only new declarations responsible for the start of tourist activity will be possible for owners who have individual meters or meters of water, and other energy supplies, if applicable. The intention behind the new decree is to avoid tourist saturation, regulate tourist rentals in multi-family buildings, guarantee access to housing for locals/residents and solve the problem of reduced supply of rental apartments for residents as well as the increase in the cost of rents (La presidenta, 2017).

3.4.1.2 Balearic Tourist Tax Law

The Law 2/2016, the tax on tourist stays in the Balearic Islands and measures to boost sustainable tourism. The purpose of this law is to create and regulate the essential elements of the tax on tourist stays in the Balearic Islands, and also set the fund to promote sustainable tourism.

The tax depends on the type and category of accommodation (plus 10% VAT). According to the update 2018 (from 01st May until 31st October), the details are as follows: 5-star, 5-star luxury and 4-star superior hotels, city hotels and

aparthotels: €4; 4-star and 3-star superior hotels, city hotels and aparthotels: €3; 1, 2 and 3-star hotels, city hotels and aparthotels: €2; 4-key and 4-key superior tourist apartments: €4; 3-key superior tourist apartments: €3; 1, 2 and 3-key tourist apartments: €2; Non-residential accommodation establishments of tourism-residential companies: €4; Tourist holiday homes and homes subject to tourist stay marketing: €2; Rural hotels, agrotourisms and interior tourism accommodation: €2; Hostels, pensions, inns and camping sites: €1; Lodges and refuges: €1; Any other establishment of a “tourist character”: €2; Tourist cruise ships: €2. The definition of stay is the 24 hours between 12 midday and 12 midday the following day. But any part of a day over 12 hours becomes a “day”. During low season (between 1st November and 30th April of the following year) the tax will be discounted by 50%. In addition, after nine days of any stay, the rate will also be cut by 50%. Children under the age of 16 are exempt from paying the tax.

The tax is collected to compensate the environmental and social cost and the precariousness of work that involves the exercise of certain activities that distort or deteriorate the environment in the territory of the Balearic Islands, and to improve the competitiveness of the tourism sector through sustainable, responsible and quality tourism in the archipelago(La presidenta, 2016).

3.4.1.3 Previous Legislation on Tourism

POOT (Plan D’Ordenacio de L’Oferta Turistica) is an urban plan that implemented from 1995, it set out rules for tourism resorts to ensure the ‘quality’ of tourism development. The restrictions on the hotel capacity expansion were established and concepts such as carrying capacity were introduced. It was the first attempt in Spain to regulate and rationalize the tourism service at a resort level. POOT stipulates the minimum surface area and maximum building height of new buildings; The distance between newly-built hotels and sea should not be less than 500 meters, therefore to control the density of buildings on the coastal area (Batle, 2000).

Hotel Modernization Plan: This plan followed the POOT and set a series of hotel equipment requirements that all hotels should comply with (i.e. letting the old hotels invest in renovating their facilities) (Rachel, 2007).

The Balearic Tourism Law: Passed in the late 1990s, its purpose is to prevent over development of tourism hotel capacity and try to increase the quality of tourism facilities. According to this law, all new hotel development should have at least a 4 star quality rating level (Rachel, 2007).

3.5 Ecotourism

Ecotourism enables tourists not only to get relaxation in a good environmental atmosphere, but also to increase their knowledge about ecology thus to protect the environment better (Weaver, 2012). Ecotourism also enables tourism

destinations to obtain economic benefits, social benefits, and environmental benefits under the precondition of protecting tourism resources. Therefore, in the process of developing island tourism, the environmental resources should be used reasonably, pay attention to the development and promotion of ecotourism, therefore to improve the environment quality of islands through ecotourism, and realize the coordination of economic benefits and ecological benefits, thus promote the sustainable development of island tourism.

3.6 Raising Environmental Awareness

In addition to the role of market and government, it is essential to enhance the environmental awareness of tourism-related sectors and tourists and let them protect the environment consciously. Governments as well as NGOs can make efforts into the education and promotion of environmental protection knowledge, through a series of speeches, lobbying, advertisements and leaflets, etc.

All tourism industry sectors should take action to assume responsibility for environmental protection and reduce the negative impact of tourism on the environment. Promote green recycling economy mode to tourism companies and follow the principle of environmental protection in the production process, try to reduce the consumption of non-renewable resources, such as using solar energy and wind energy, and introducing energy-saving facilities. For example, the hotel industry tries to establish environmentally friendly hotels, by using energy-saving lamps and water-saving toilets, waste recycling, to reduce hotels energy consumption and pollution (Essex, 2004).

From the perspective of tourists, sustainable consumption should be promoted to reduce consumption that may cause environmental pollution and damage to ecosystems. By strengthening the publicity and education of environmental protection knowledge, it will emphasize to tourists the environmental impact that might derive from tourism, thereby increasing their environmental protecting awareness, and restricting their own behaviour while traveling, such as save water, do not litter, to create a harmonious atmosphere.

4. Conclusions

In a context in which sustainable development in tourism are assuming increasing importance, research on environmental impacts derived from tourism in tourism destinations has gained more attention. Especially when tourism has been identified as an opportunity for islands to gain benefit from their special character as small maritime areas with exceptional natural and cultural resources, it is essential to figure out environmental impacts from

different tourism-related sectors and thus to implement efficient regulations on environmental protection.

This paper presents an overview of tourism in Mallorca, which is considered one of the main mature tourism destinations in the world, lists out negative environmental impacts from tourism transport, tourism accommodation and tourist activities. The impacts on the environment can mainly manifest on the destruction of the land and soil, the degradation of air and water quality, noise pollution, the impacts to animals and plants and so on. Then combined with existed regulations in Mallorca to illustrate possible measures for achieving sustainable tourism in developing islands.

When islands start to develop tourism, governments and tourism-related sectors should think carefully about the vulnerability of environment, adhere to protection, keep in mind that cannot take environmental degradation and resource depletion as the costs of tourism development.

The whole area of environmental management is very challenging for islands. Avoiding damaging the benefits of local community and residents during the developing process is a fundamental requirement. When islands start to develop tourism, governments and tourism-related sectors should think carefully about the vulnerability of environment, adhere to protection, keep in mind that cannot take environmental degradation and resource depletion as the costs of tourism development. In order to minimize the negative environmental impacts, measures should be taken. The government intervention and regulatory instruments will remain of fundamental importance in islands, notably in implementing land use planning and development control policies that are essential in sensitive coastal areas and wherever there is a scarcity of land and other resources (WTO, 2012).

At the same time, in order to increase the efficiency of economic activities, market mechanism can also be applied in conjunction with policies. therefore, when facing increased costs companies will try to innovate and develop technology to reduce pollution and energy use, thus put less threat on the environment and resource. Private businesses like hotels and other tourism-related companies should actively engage in environmental protection, cooperate with the public sector and take social responsibility initiative.

Most islands have exceptional coastal environments with rich and unique natural resources. Beaches, coral reefs and wild animals are the feature of the majority of islands and are key tourism assets. These precious resources need very careful handling. The expansion and management of protected areas can be a wise strategy. Promoting Ecotourism can also play an important role here in supporting conservation both directly and indirectly.

It is increasingly recognised that sustainable tourism development requires strong engagement by a wide range of public and private stakeholders.

Raising companies and tourists' environmental protection awareness through promotion and education. Enhancing effective communication between stakeholders, for instance, to build up formal organizations or informal groupings of tourism stakeholders, including community representatives and NGOs, to work together and attribute to sustainable tourism.

Due to the limited knowledge and time, this paper only takes Mallorca as a case study. It is very welcoming that academics and researchers can do some research on other worldwide known island tourism destinations, by analyzing the environmental impacts derived from tourism and important management measures, thus to give more comprehensive and objective guidance to tourism developing islands. It is useful that mature tourism developed islands can share their considerable experience in sustainable tourism initiatives with tourism developing islands, to ensure that tourism is able to meet its great potential to deliver sustainable development in developing islands.

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