

Profile of sustainability in some Mediterranean tourist destinations



Synthesis: Torremolinos, Spain
Based on the case study by Enrique NAVARRO JURADO

Loïc BOURSE

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Introduction

The case study by Enrique Navarro Jurado on Torremolinos (Spain) is part of the Plan Bleu project “Profiles of sustainability in some Mediterranean tourist destinations”. It is based on an experimental method and involves measuring and assessing the impacts of tourism from the perspective of the key goals of the Mediterranean Strategy for Sustainable Development (MSSD), and taking into account environmental, social and economic issues in the destinations studied. A “profile of sustainability” has been produced for 11 tourist destinations¹ across eight Mediterranean countries using the DPSIR² approach.

First the sustainability of the destination was studied using economic performance indicators (e.g. accommodation occupancy rates), territorial, demographic and sociological indicators (e.g. the effect of seasonality on employment, income levels of the local population, the quality of essential amenities and services) and environmental indicators (e.g. damage to the landscape associated with coastal development). Secondly, thought was given to political measures that could be taken to improve the sustainability of the destination. This systemic and territorial approach has been used to examine the destination, which is the basic unit of tourism development, as well as taking into account several different scales (local, national and regional) and the various stakeholders across the region, while relating the Mediterranean tourist system with the other priority areas from the MSSD: water, transport, waste, energy, etc.

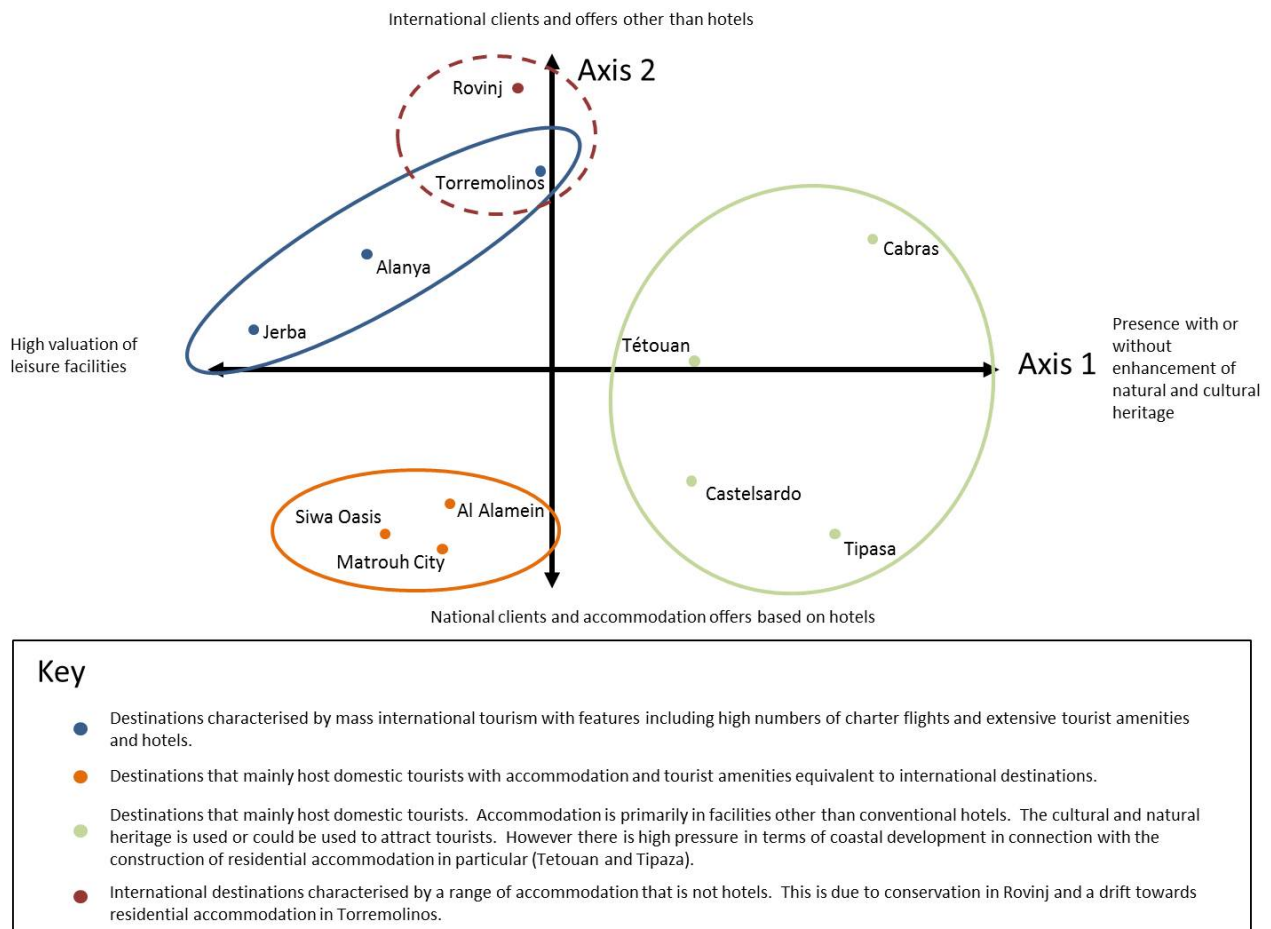
In selecting the destinations to be studied, Plan Bleu defined a methodology requiring that the destination studied should be an administrative unit on the Mediterranean coast with significant international and/or domestic tourism that is also home to a permanent population but is not a major city. Based on the variables identified and the data supplied by the experts who have authored the case studies, Plan Bleu proposed a classification of destinations (Figure 1):

- Type one (Torremolinos, Alanya and Djerba) are international destinations with extensive tourist amenities, and are characterised by a range of hotel accommodation, particularly 4 and 5 star hotels, with a wide selection of leisure activities (health spas, marinas, golf courses, casinos, etc.) and a dependence on tour operators. The sea, beach and associated activities are the main attraction, so these mass tourism destinations are referred to as “3 S” destinations (Sea, Sand and Sun).
- Type two (El Alamein, Siwa Oasis and Marsa Matrouh) are domestic destinations with extensive tourist amenities, and are characterised by mainly hotel accommodation (4 and 5 stars) with luxury amenities (health spas, marinas, golf courses, casinos, etc.) and a significant range of cultural centres, e.g. historical sites. Type two destinations are distinguished from type one on the basis of the origin of the tourists - internal demand as opposed to foreign tourists.
- Type three (Cabras, Castelsardo, the Tetouan coast and Tipaza) are basically destinations with domestic tourists who mainly stay in accommodation other than hotels (residential accommodation, bed and breakfasts, camp sites, etc.) Factors that attract tourists to these destinations are also their significant cultural and natural heritage (markets selling local products, nature reserves, etc.).
- Type four (Rovinj) are destinations that are in rejuvenation phase, and represent destinations with primarily international customers, where Tour Operators do not play a significant role and whose accommodation options are primarily facilities other than hotels.

¹ Torremolinos (Spain), Cabras and Castelsardo (Sardinia, Italy), Rovinj (Croatia), Alanya (Turkey), El Alamein, Marsa Matrouh and Siwa Oasis (Egypt), Djerba (Tunisia), Tipaza (Algeria), the Tetouan Coast (Morocco).

² Drivers – Pressures – State – Impacts – Responses

Figure 1: Graph showing the types of tourist destinations studied



Source: Principal Component Analysis by Loïc Bourse based on data produced by the experts and processed by Ioannis Spilanis, 2011.

Guide (see also Figure 14 in the Appendix):

Axes 1 and 2 explain 64% of the data variance.

Axis 1 alone explains 39% of the information:

- on the right side, it represents domestic tourism with visitors using accommodation other than hotels (residential accommodation or camping), focusing on cultural products (e.g. markets selling local goods, craft demonstrations, etc.) and/or natural features (e.g. national parks, nature reserves and marine nature reserves);
- on the left side, it represents the international character of tourism characterised by widespread use of charter planes (influence of Tour Operators), extensive tourist amenities and a high density of hotel accommodation in the administrative area.

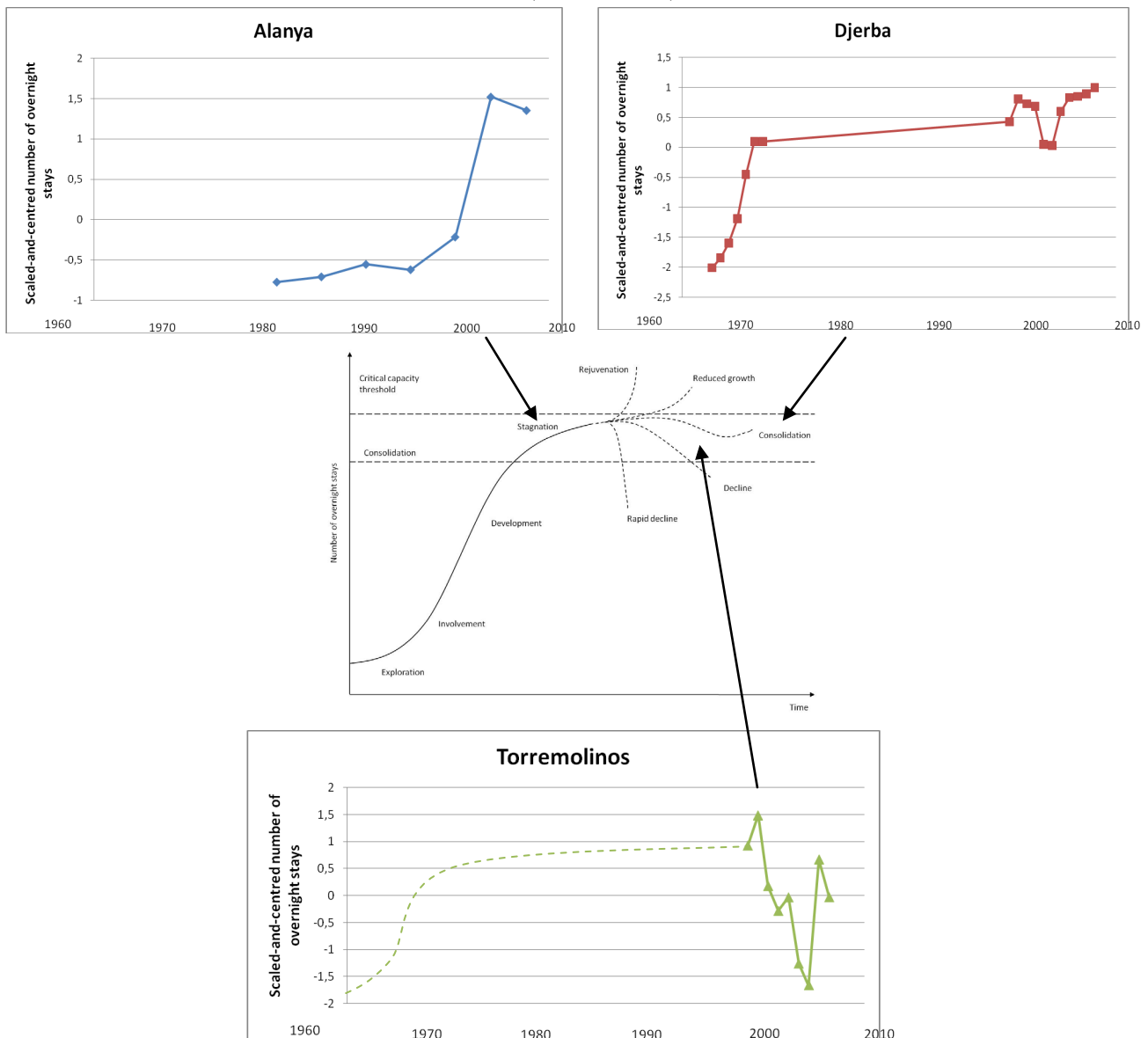
Axis 2 explains 25% of the information:

- on the top part it represents tourism characterised by international visitors using accommodation other than hotels;
- on its bottom part, it represents tourism with extensively equipped hotels with historical sites and primarily domestic visitors.

Torremolinos is an “international destination with extensive tourist amenities”. According to the Butler model (BUTLER 1980), it is somewhere between consolidation phase and decline phase. In comparison with other international destinations with extensive tourist amenities, Alanya (Turkey) is in stagnation phase and Djerba (Tunisia) is in consolidation phase (Figure 2).

Against a backdrop of strong competition between tourist destinations, Torremolinos is seeing a diversification of its offer in terms of accommodation and leisure facilities. The destination is marked by an increase in residential accommodation and a high land pressure index, which explains its high position on axis 1 of Figure 1. These changes raise serious questions about the destination’s sustainability, since coastal development created by the explosion of residential accommodation is causing significant damage to the natural environment.

Figure 2: Comparison of life cycle stages for “international destinations with extensive tourist amenities” based on the Butler model (BUTLER 1980)



Source: The data was produced by the experts then scaled and centred by Bourse, 2011.

In the 1960s tourism was seen as the way to bring the local and regional economy out of a state of under-development. Tourism had positive economic and social effects – in the 1950s Torremolinos was characterised by a subsistence economy (agriculture and fishing), high social inequality and unemployment levels and a falling population (emigration). Now it is in a leading position within the regional economy. Tourism has helped it make a successful transition towards a modern economy based on service industries and improve employment security and the population's education level. However, these positive effects are counteracted by negative or counter-intuitive effects. Revenue from tourism remains low, employment is still unstable and the integration of foreign workers has led to conflict. Add to this the environmental impacts from land use, treatment of solid and liquid waste and the consumption of natural resources (water and energy).

On the basis of these observations, and with a view to presenting the Torremolinos profile of sustainability, the case study is structured in four sections – corresponding to the four main variables identified in the MSSD (PLAN BLEU 2009) – through which we will discuss various indicators (SPILANIS & VAYANNI 2011), in particular:

- economic indicators: the number of hotel beds, the number and size of accommodation facilities, occupancy rates, the effect of seasonality and revenue per bed;
- socio-territorial indicators: demographic changes, the overall share of tourism in local employment by gender and types of employment contract, and unemployment statistics;
- environmental indicators: natural resource and energy consumption, the production and treatment of solid and liquid waste, land pressure and biodiversity;
- governance indicators: implementation of an internationally-defined model of governance, local governance practices and the categories of stakeholders involved in governance.

In the conclusion, we will bring these four variables together in graphic form and assess the state of sustainability at the destination, then we will present Navarro Jurado's proposals for political measures with regard to the improvement of sustainability in Torremolinos.

I. Tourism and economic development

During the period between 1995 and 2003, the province of Malaga accounted for 29% of the Andalusian economy and saw more businesses started and a higher density of entrepreneurs than any other province of Andalusia for eleven years running. The data produced by Navarro Jurado is presented below, in order to summarise the consequences and economic impact of tourist activity in Torremolinos, focusing on changes in the tourism offer and revenue from tourism.

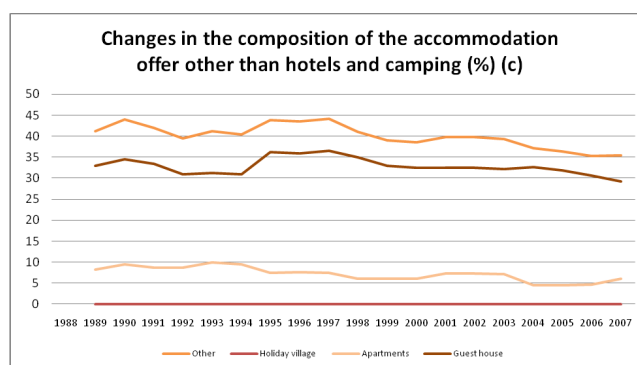
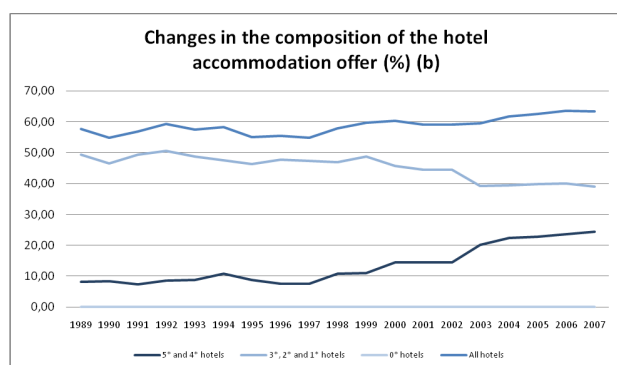
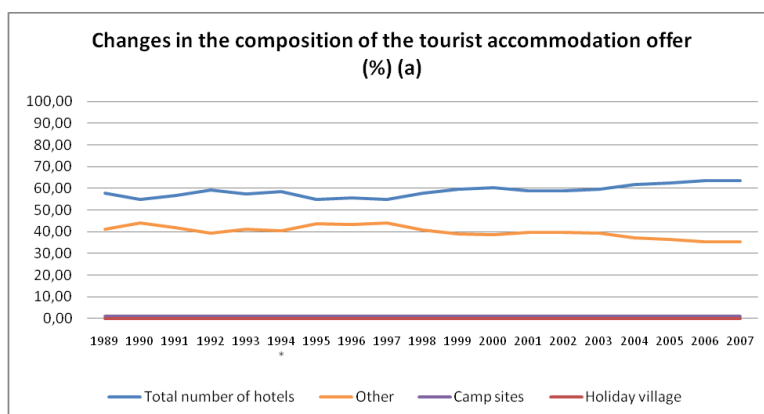
1. Changes in the tourism offer and demand

Over a period of about twenty years (1990-2010), the range of accommodation available has changed in response to the decline of the destination. By the late 1980s, accommodation was primarily low-range hotels (1, 2 and 3 star hotels), but the 1990s were characterised by an increase in residential accommodation and a reduction in hotels. Hotel bed numbers dropped from 28,443 beds in 1997 to 26,196 beds in 1998, while residential accommodation stagnated at around 11,000 beds during the 1990s.

From 2000, further changes occurred in the business strategy relating to the accommodation offer:

- Hotel accommodation went on the rise again with a major change involving a “qualitative leap” – an increase in the number of 4 and 5 star hotels (up from 10.98% of hotels in 1999 to 24.39% in 2008) and a reduction in the number of 1, 2 and 3 star hotels (down from 48.78% in 1999 to 39.02% in 2007).
- Residential accommodation dropped from 43% of total beds in 1999 to 38% in 2007 (Figure 3).
- The “camp site” offer has not changed significantly in the last ten years. Consequently, in order to maintain the same number of beds, the business strategy has focused on an improvement in accommodation quality.

Figure 3: Changes in the tourist accommodation offer in Torremolinos. Number of beds and places. 1988-2007



Source: Data collected by Navarro Jurado, 2011.

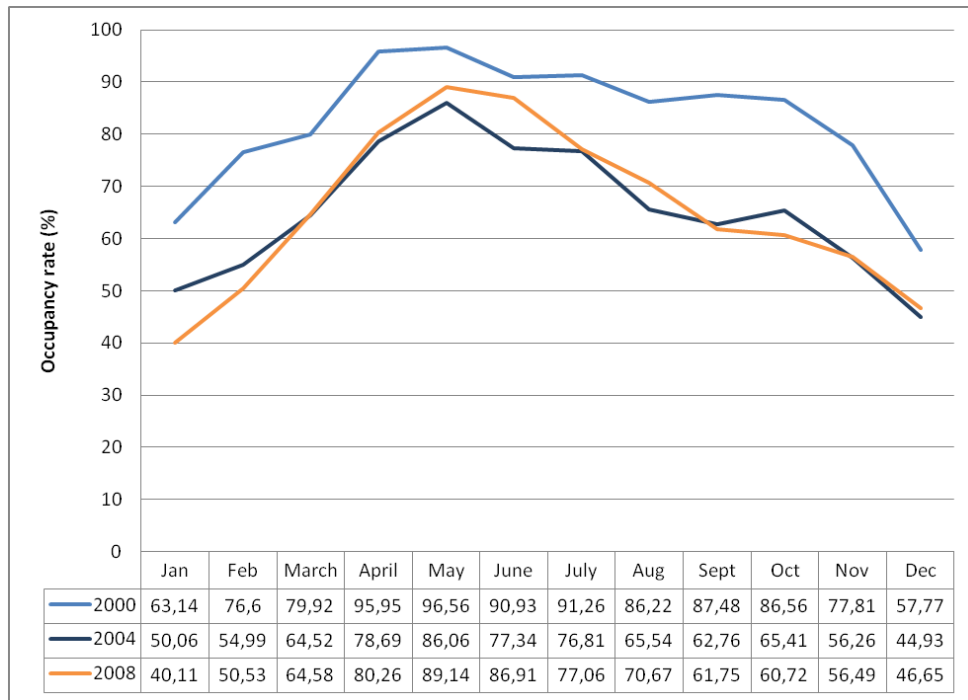
These changes in the tourist accommodation offer can also be explained by land availability. The Torremolinos municipality covers an area of 640.3 ha of urban landscape (32%), 254.3 ha of developed land (13%) and 1,1158.08 ha of green space (55%), primarily comprised of the Mijas mountains. The scarcity of available land significantly reduces the possibility of continuing the development of residential accommodation (saturation). Navarro Jurado explains that 25% of residential accommodation consists of second homes that are empty most of the time.

As for tourism demand and the issue of seasonality, the accommodation occupancy rates demonstrate two phenomena:

- a shrinking occupancy rate between 1999 and 2008. The rate dropped from a median value of 81.05% for 1999 to a median value of 63.17% in 2008.
- the growth in seasonality (Figure 4). The coefficient of variation between the occupancy rate in the busiest month (August) and the quietest month (January or December) was 0.148 in 2000, whereas by 2008 it had risen to over 0.2.

Falling occupancy rates and increased seasonality led to an increase in the number of hotels that close in the low season (winter), which makes for a significant loss of jobs and lower levels of revenue generation.

Figure 4: Five-yearly changes in monthly occupancy rates for accommodation in Torremolinos



Source: Data collected by Navarro Jurado, 2011.

These observations can be backed up with a remark: the drop in the overall occupancy rate between 1999 and 2008 is explained by decreasing numbers of foreign tourists. In 2005, 2006 and 2007, the drop in the number of foreign tourists was characterised by falling numbers of British visitors (the leading source of foreign tourists in Torremolinos) and German visitors (second foreign tourists).

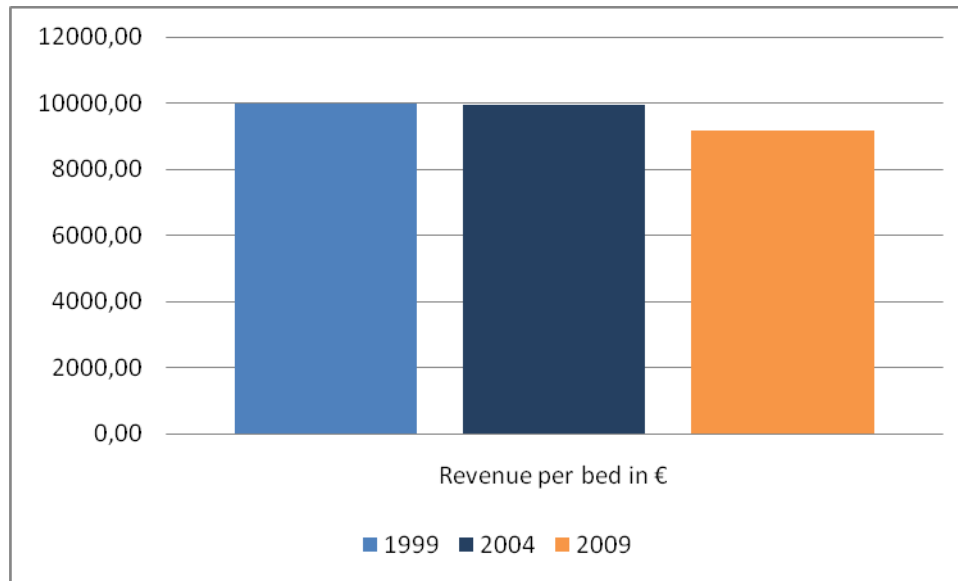
Alongside the drop in international tourists, there has been a significant increase in domestic tourists since 2003. The Spanish became the leading consumer nation in Torremolinos in 2006, overtaking all foreigners. This development is undoubtedly positive, as it offsets the reduction in international tourists with internal demand, but there are nevertheless two negative effects: the increase in seasonality due to the fact that the Spanish come during the school holidays; the drop in the average length of stays.

2. Revenue from tourism

Seasonality has an effect on the revenue from tourism, especially with regard to the month-by-month breakdown of annual tourism revenue, since 50% of revenue from tourism in Torremolinos is made during the summer period from July to September. As a result, while the operators' business strategy has increased the number of beds and the range of accommodation provision while also increasing quality, it has not managed to deal with seasonality.

How does this affect overall revenue? In addition to the overall decline in tourist numbers, Navarro Jurado notes a decline in per bed prices which dropped from €41.76 in 2002 to €36.04 in 2009. This decrease in per bed price together with diminishing numbers of tourists led to an overall drop in profits from €9,999 per bed in 1999 to €9,182 per bed in 2009 (Figure 5).

Figure 5: Changes in revenue from tourism in Euros



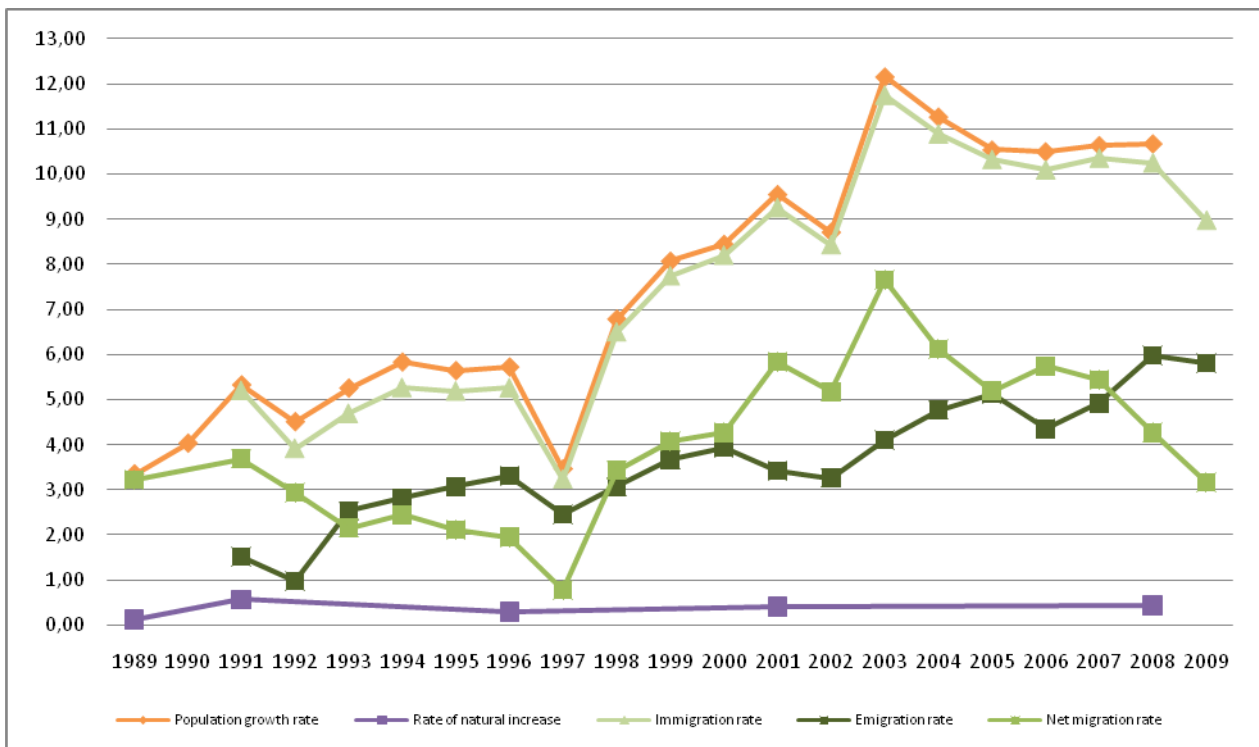
Source: Data collected by Navarro Jurado, 2011.

Navarro Jurado queries the appropriateness of what he describes as the “Fordist” business model adopted by Torremolinos. Indeed, if significant investment is made to improve the quality of tourist accommodation and diversify the accommodation offer, and in return profits from tourism decrease and seasonality increases, Torremolinos has fallen into the “vicious circle of devaluation of mature destinations” (NAVARRO JURADO 2011). What are the effects of this vicious circle of devaluation on territorial, social and environmental issues?

II. Tourism and socio-territorial development

The economic growth that Torremolinos saw from the 1960s onwards has made this area very attractive. This increased appeal has led to the arrival of Spanish and foreign immigrants. Figures for the last twenty years show that the immigration rate of 5.21% in 1991 rose to 10.25% in 2008 and the population growth rate of 5.32% in 1991 rose to 10.68% in 2008 (Figure 6). The immigration rate is continually rising, and the population growth rate is directly associated with the immigration rate. In Figure 6, the population growth rate curve tracks the immigration rate curve very closely. The high immigration rate has also boosted the rate of natural increase which rose from 0.12% in 1989 to 0.43% in 2008. Nonetheless, economic changes in the destination and its recent saturation have also increased the emigration rate which rose from 1.51% in 1991 to 5.98% in 2008, obviously leading to a decrease in the net migration rate which dropped from 3.22% in 1989 to 3.17% in 2009.

Figure 6: Changes in the population of Torremolinos in %



Source: Data collected by Navarro Jurado, 2011.

The demography of Torremolinos is therefore directly associated with the economic health of the destination in general and the tourism sector in particular. Tourism is at the heart of job creation in Torremolinos, both in terms of direct employment (in the hotel industry in particular) and indirect employment (e.g. in business, cottage industries and construction). According to Navarro Jurado, although it is difficult to quantify the repercussions of tourism on employment because there are significant levels of informal employment, tourism accounted for 65 to 70% of direct and indirect employment in Torremolinos in 2001.

In order to illustrate the effects of tourism on the improving social conditions of the population, we shall focus on the figures relating to the hotel industry. In 2008, hotels accounted for 9.50% of jobs, and as can be seen from Table 1, the number of jobs held by women was close to that of men (42.26% for women as opposed to 45.23% for men).

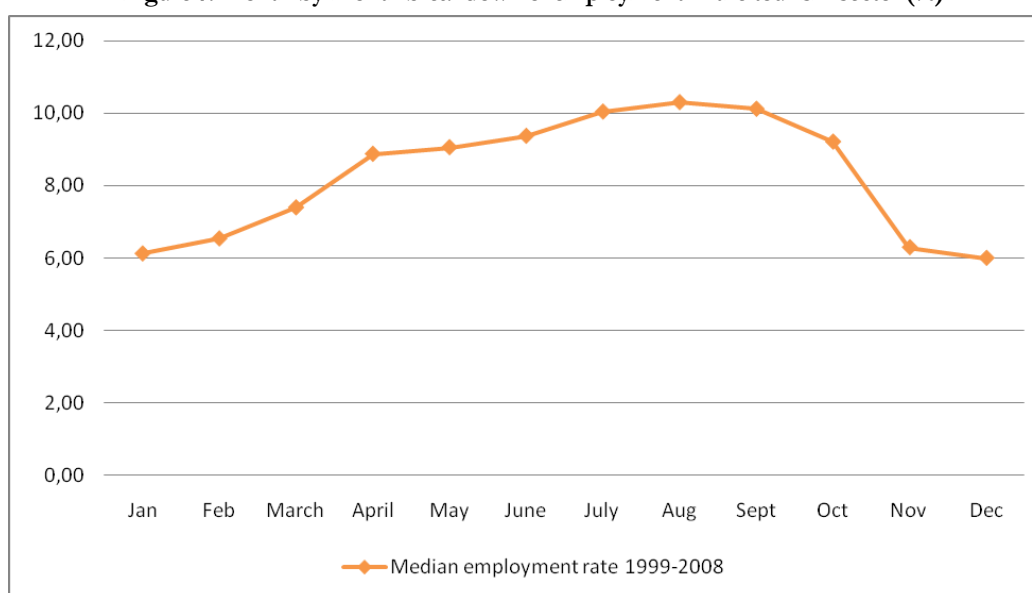
Table 1: Share of tourism in the number of jobs (%) (2008)

Total hotel jobs/Total labour force		9.49
Of this 9.49%,	Men accounted for	45.23
	Women accounted for	42.26
	Young people accounted for	12.51

Source: Data collected by Navarro Jurado, 2011.

However, hotel employment remains extremely seasonal. If we look at the employment figures month by month, between 1999-2008, the median employment rate in low season was around 6% but rose to over 10% in high season (Figure 7).

Figure 7: Month-by-month breakdown of employment in the tourism sector (%)



Source: Data collected by Navarro Jurado, 2011.

Issues of seasonality have a minimised effect in terms of contract type, since permanent contracts made up the majority in 2008 (56%). However, temporary or seasonal contracts are significant in number and represent 44% of the hotel workforce, which leads to an increased dependence on this labour with respect to the economic performance of the tourism sector. So, although there is an overall improvement in hotel staff unemployment over against overall unemployment in the destination, hotel staff unemployment accounted for over 20% of the unemployed labour force between 1999 and 2008.

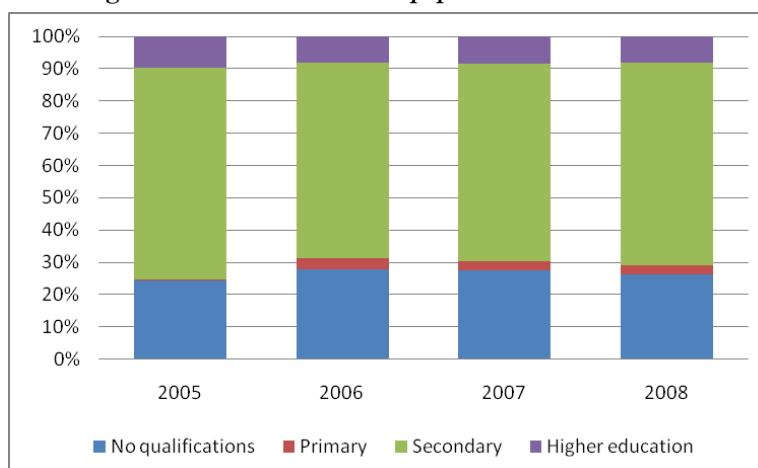
Table 2: Employment conditions in the tourism sector (%) (2008)

Types of contracts for tourism-related labour	
Permanent contracts	56
Temporary contracts	32
Seasonal contracts	12
Share of tourism in the unemployed population (based on the hotel industry)	
1999	24
2004	23.00
2008	20.95

Source: Data collected by Navarro Jurado, 2011.

Which categories of people are most affected by the variations in economic performance of the tourism sector? To answer this question, Navarro Jurado uses two indicators: the education level and unemployment rate by gender. With regard to education level, the higher a person's level of education, the lower their chance of ending up unemployed. However, since the largest share of people that make up the tourism workforce have a low level of education (33% as opposed to 14% for people with a high level of education), they have an even higher chance of ending up unemployed (Figure 8).

Figure 8: Education level of the population of Torremolinos



Source: Data collected by Navarro Jurado, 2011.

As for unemployment by gender, although there was an overall improvement in the employment situation for women between 1991 and 2008 (the female unemployment rate dropped from 33% in 1991 to 14% in 2008), women are nevertheless still the most affected by the economic climate and decline in tourism.

III. Tourism and the environment

On the basis of the economic and socio-territorial indicators used, the following observations can be made:

- high numbers of summer visitors to Torremolinos, with the population density rising from 3,300 people per km² in low season to 10,000 people per km² in high season (2009);
- high land pressure generated by the construction of hotel and residential accommodation;
- an increase in the total residential population and an increased life expectancy (from 79.15 years in 1991 to 83.49 years in 2007 for women and 72.16 years in 1991 to 76.96 years in 2007 for men).

These various observations will be used to examine the consequences of tourism on the environment through three components: the consumption of water and energy resources, and the production and treatment of solid and liquid waste; the footprint of tourism in terms of land use; the state of biodiversity in Torremolinos.

1. Water and energy consumption, production and processing of solid and liquid waste

Given that Torremolinos is supplied with water exclusively from the underground aquifers of the Sierras de Mijas (estimated at 113 Hm³/year³) and that annual consumption is 122 Hm³/year (Figure 9), there is an issue around water availability. Add to that the Mediterranean climate (with alternating dry and rainy periods), the type of landscape (steep sloping land above the coastline) and the condition of watercourses (which are often dry) and there is a high degree of variation in water availability between and within years. Variation within the year means that there is a lack of water over the summer period: consumption drops from 10,892 m³/day in summer to 7,624 m³ in winter, that is a variation of 42.8% between high and low season. So, based on data supplied by Navarro Jurado, the estimated capacity to supply water consumption needs in the tourism sector does not seem sustainable in that the water available per person per day is 0.79 m³, while water consumption in the tourism sector is 0.71 m³ per overnight stay (Figure 9).

³ According to data from Andreo Navarro, B. (1997): Hidrogeología de los acuíferos carbonatados en las Sierras Blancas y Mijas (Cordillera Bética, Sur de España). Universidad de Málaga. Malaga.

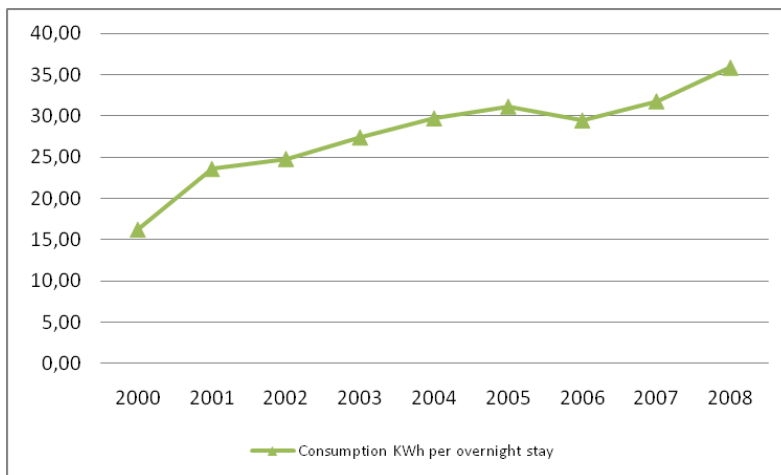
Figure 9: Capacity to supply water consumption in the tourism sector (1999)



Source: Data collected by Navarro Jurado, 2011.

In addition, electricity consumption in Torremolinos (Figure 10) increased by 160% between 1989 and 2008, from 124,139 to 322,769 MWh/year. This growth in electricity consumption is directly associated with tourism, which represented 43.53% of average monthly electricity consumption in 2000 and 49.57% in 2008 (Figure 10). However, electrical power is supplied to hotels from a variety of sources⁴ and the use of solar power is increasing: “a dozen hotels use this type of energy in Torremolinos, a figure that is set to rise, primarily due to the Building Code which requires the use of this renewable energy to supply hot water for washing and indoor pools. This requirement applies to all buildings, and hotel managers have led the way by using solar power in 45% of the hotels on the Costa del Sol” (NAVARRO JURADO 2011). The promotion of solar power should make it possible to reduce electricity consumption produced by other sources and move tourism over to a more sustainable model.

Figure 10: Mean electricity consumption from tourism in KWh per overnight stay



Source: Data collected by Navarro Jurado, 2011.

⁴ 46% of electrical power comes from a thermal power plant run on diesel (33%), natural gas (22%) and propane (45%). The author has taken this data from AHECOS y SOPDE (2009). Informe de situación energética de establecimientos hoteleros. SOPDE. Malaga.

As for the production and treatment of solid waste (Table 3), the annual production of solid waste is estimated at 1,026.77 kg per person per year in Torremolinos, on the basis of the case study data. Despite the lack of a municipal waste sorting system, around 30% of hotels recycle glass, paper and card, 4% recycle oil, 22% recycle packaging, 12% recycle batteries (NAVARRO JURADO 2011), which bodes well for increasing good practice. However, there is a crucial disparity between the quantity of solid waste produced and recycled on one hand, and the capacity of infrastructure for processing this waste on the other.

Table 3: Water and electricity consumption, production of solid and liquid waste

	Unit	Value
Water consumption (1999)	m ³ per overnight stay	0.71
Average electricity consumption (2008)	KWh per overnight stay	35.89
Waste production (2004)	kg per person per day	2.81
Wastewater production (2000)	m ³ per day	50,000

Source: Data collected by Navarro Jurado, 2011.

Finally with respect to the production and processing of wastewater (Table 3), the municipality of Torremolinos has no wastewater treatment plant. Wastewater from the destination is primarily treated at the Guadalhorce plant in Malaga (with a capacity of 165, 000 m³/day) which is supplemented by the Benalmadena plant (treatment capacity of 40,000 m³/day). According to Navarro Jurado, a daily production in the order of an average of 50,000 m³ of wastewater in Torremolinos (2000), together with the increase in summer volumes due to the number of tourists means that the current capacity of the treatment system is insufficient. This system does not have the capacity to treat all the wastewater from Malaga and the surrounding towns, so some waste is released directly into the sea which leads to “spots of marine pollution” on the main beaches along the Costa del Sol. However, a new wastewater treatment plant is planned in the near future, which should increase the wastewater treatment capacity for the towns of Torremolinos, Churriana, Alhaurín de la Torre, Campanillas and Malaga.

2. Land pressure associated with tourism

In Torremolinos, the population density is around 3,300 people per km² and can rise to 10,000 people per km² in August (1999). In addition, Torremolinos is hemmed in between the sea and the mountains, and the coastal strip is the only land available for construction – and it has already been built on and saturated. To determine the level of coastal development, Navarro Jurado analysed a kilometre-wide area separating the coastline from the inland areas. Along six kilometres of coastline, only 10 ha are undeveloped (the areas shown in green in Figure 11) and the developed area represents 85% of the overall surface area.

Figure 11: Coastal development in Torremolinos



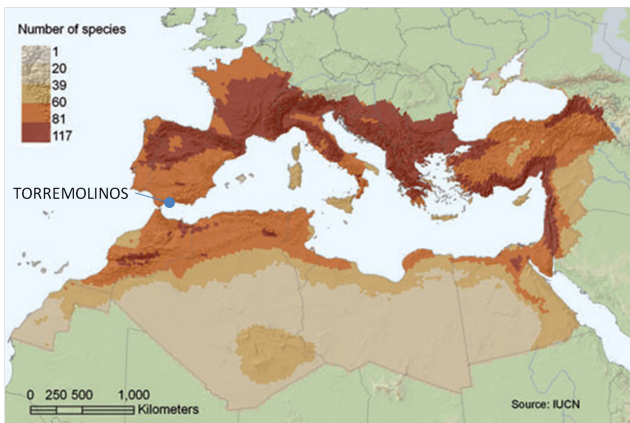
Source: Navarro Jurado, Google Earth 2010

In addition to dense urbanisation, coastal development and the saturation of the area, the road infrastructure that runs parallel to the coastline has been expanded. It creates a separation that is difficult to cross between the coast and the interior. This infrastructure facilitates the transportation of tourists and the workforce (61% of the tourism workforce lives outside Torremolinos), but also leads to an increase in road traffic (up from 46,001 vehicles per day in 1996 at the A7 motorway exit to Torremolinos to 84,093 vehicles per day in 2003) and therefore an increase in atmospheric pollution.

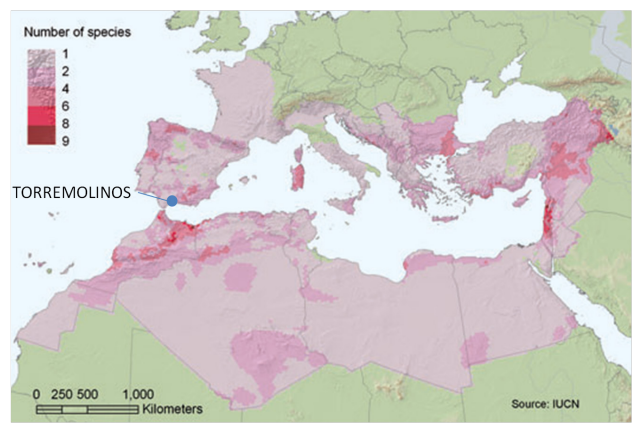
3. Biodiversity

In terms of biodiversity, one of the major impacts of tourism on the environment relates to the destruction of natural habitats. Indeed, “the transformation of the region produced by tourism could lead to a reduction in protected areas in the province” (NAVARRO JURADO 2011). The issue of conservation and protection of biodiversity is all the more crucial in Torremolinos since there are no protected areas. According to the International Union for Conservation of Nature and Natural Resources (IUCN), Torremolinos is located in an area with a high degree of biological diversity, in terms of terrestrial fauna (Figure 12 a) and marine fauna (Figure 12 c). Two terrestrial species (including the chameleon) and four marine species are under threat (Figure 12 b and d). Although efforts were made in 2009 to boost the population of these species, no significant result has been achieved.

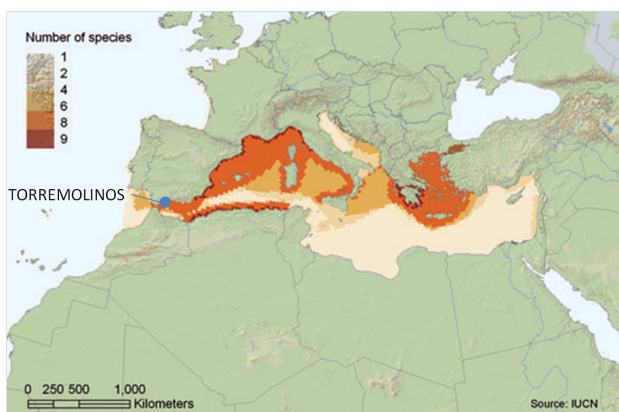
Figure 12: Torremolinos and Mediterranean biodiversity, as defined by the IUCN (CUTTELOD et al. 2008)



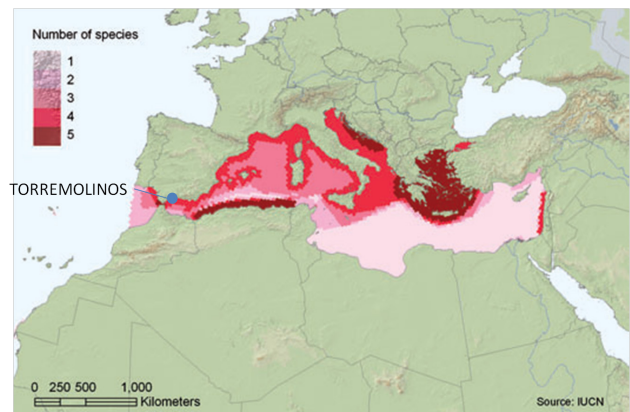
a. Species richness of terrestrial amphibians, mammals, dragonflies and reptiles in the Mediterranean basin.



b. Species richness of threatened terrestrial amphibians, mammals, dragonflies and reptiles in the Mediterranean basin.



c. Species richness of marine mammals in the Mediterranean Sea



d. Species richness of threatened marine mammals in the Mediterranean Sea

Source: CUTTELOD, A. et al., 2008. The Mediterranean: a Biodiversity Hotspot under Threat. The IUCN Red List of Threatened Species.

IV. Tourism and governance

Here we will examine the connections between governance at a national and at a local level.

Firstly, with respect to governance at a national level, the political body responsible for tourism is the Ministry for Industry, Commerce and Tourism which produced, for example, Plan 2020, which is currently in force, in order to set out the principles which the *Junta* (regional) and provincial governments use to define local strategies. Plan 2020 therefore serves as a framework for the application of local plans, such as the *Plan Qualifica*, in order to implement the principles of sustainable development at a local level.

Plan Qualifica, for which Torremolinos has been a pilot project since 2005, is part of a model of governance that has been developed on an international level. It functions on the basis of a single body for governance - the *Western Costa del Sol Classification Consortium* which brings together national political representatives (ministries) and local stakeholders (nine municipalities and four Andalusian Government councils working in the areas of tourism, the environment, construction and land-use planning). Representatives of public interest groups (unions) and business (entrepreneur associations) do not participate in the decision-making process. The make-up of the €335.5 million budget is also an indicator of this model of governance. Contributions come from the Tourism, Business and Sports Councils of the Andalusian Government (€117.1 million), national and local authorities (€166.8 million) and private companies (€51.6 million). This mode of governance therefore only involves politicians in decision-making and includes business representatives only in terms of contribution to the budget.

Secondly, the exercise of local governance is directly connected to the application of the principles of decentralisation, in particular as regards land-use planning. Torremolinos has two forms of land-use planning: the General Plan for Urban Organisation (PGOU) for the municipality, and the Regional Plan for the Malaga Metropolitan Area (POTAUM) which covers a much wider area.

First of all, the Torremolinos PGOU has been characterised by several years of disputes between the various authorities with executive powers. During the period between 2006 and 2007, the town of Torremolinos targeted very high population growth in the PGOU (doubling the total population in eight years), based on an urbanisation model that included more residential accommodation than hotels. To meet this objective, construction and maximum use of space was promoted, to the detriment of green space, especially in the area between the town and the Sierra de Mijas, the few existing industrial areas were reclassified and building heights were increased. However, the goals of the municipality were completely paralysed both by the competent authority within the government of the *Junta*, which opposed all development in the Sierra de Mijas, and by the General Directorate for the Coast, which opposed the increased building heights. The problem underlying these conflicts is property speculation. For example, after four years of disputes, the Municipality of Torremolinos took the General Directorate for the Coast to court in February 2010. The outcome of these conflicts has eventually been to focus the PGOU on correcting the principal imbalances in Torremolinos by seeking to limit density and the built-up area.

Next, the POTAUM sets the basis for organising and structuring of the territory of the twelve municipalities that make up the Malaga metropolitan area. The POTAUM is an Andalusian Government land use planning body that cannot legislate on the specific use of the urban area, which is under the jurisdiction of the municipalities through the PGOU. The primary objectives of the POTAUM are to improve the organisation of the territory by ensuring the accessibility and functionality of the towns, improve the functions to be developed in Malaga and conserve natural, historical and cultural areas. More specifically, the POTAUM aims to organise the development of the territory by focusing on the areas dedicated to economic activity, including residential areas and areas focused on tourism. The actions planned for Torremolinos by the POTAUM are the improvement of the power supply, improvement of water infrastructure, expansion and improvement of extraction of underground water supplies, while also ensuring that development does not damage the Sierra de Mijas.

In Navarro Jurado's view, the Municipality of Torremolinos and the Andalusian Government offer different responses to the same phenomenon. While the Municipality is aiming to lay the foundations to ensure

strong increase in urban density, the Andalusian Government is looking to provide the infrastructure necessary for this growth.

The examples given by Navarro Jurado show that the main socio-economic and environmental problems are explained by local governance in Torremolinos. The reality is that the financial stakes associated with land are so high that local political representatives no longer regulate the environmental pressure of development but speculate on the price of land.

V. Proposals of policy measures

Following the various observations on the sustainability of Torremolinos, this final section focuses on the policy measures put forward by Navarro Jurado. We will base the structure of these proposals on an observation agreed upon by the group of experts who worked together on the Plan Bleu project “Profiles of sustainability – Mediterranean Destinations”: tourism should be seen as a means to develop an area and not as an end in itself. Tourism must be rooted in the territory, such that the tourism offer can be developed through encouraging quality rather than quantity by mobilising economic and social forces in the area. Thus, the proposals regarding integrated and sustainable local development are set out as follows: proposals for local governance with regard to decision-making; economic proposals proposals for the environmental sector.

1. Defining local governance for improved political regulation of tourism

According to Navarro Jurado, the aim of improving the local and global environment could be advanced through the production of a local Agenda 21, for the town of Torremolinos, or even for the entire Costa del Sol through the creation of a Western Costa del Sol Consortium. Together with this consortium, a management authority, which would serve as a permanent environmental and tourism watchdog, could be associated with the management of the local Agenda 21, with the purpose of regularly assessing progress. This watchdog would provide a greater capacity for supervision, monitoring, analysis and proposals. In addition, due to the current lack of involvement of NGOs in local governance, the local Agenda 21 could be a way of involving the public and property management companies through a participative process. In order to be efficient, these proposed measures require better control of land use, or even the proposal of a moratorium on planning and construction in order to rethink the tourism development model and land use in general.

In addition, Navarro Jurado proposes the creation of an organisation that brings together political, business and public interest group representatives - *Green Costa del Sol*. This multi-party organisation would be a trailblazing body for driving changes in society with two key objectives: 1) zero CO² emissions and 100% renewable energy using new technologies; (2) promoting green mobility, CO²-neutral buildings, more room for pedestrians in the beach area, public areas, etc.

2. Policy measures in the business sector

Navarro Jurado suggests focusing on the diversification of the hotel offer by improving their quality in order to help reduce seasonality and increase tourist spending. The construction of quality hotels with subsidies from the Andalusian Government has been a positive but inadequate step.

To achieve an increase in revenues from tourism, measures must encourage the supply of additional activities like hosting conferences, fairs, cultural events and the construction of health tourism centres. This would mean diversifying the classic seaside offer (monoculture) with health tourism, conferences, cultural tourism, etc. To encourage this diversification, the author suggests the idea of a “Costa del Sol” accreditation scheme and the strengthening of relationships between Torremolinos and Malaga so that Torremolinos can benefit from the considerable effort that Malaga has put in to developing its cultural offer (events, festivals, amenities, etc.) in recent years. In addition, the creation of cultural activities must be based

on a year-long calendar including events right along the Costa del Sol, which would help improve the cohesion of the offer and reduce the effect of seasonality.

As for diversification of the demand and the possibility of removing intermediaries, regional and supra-municipal investments which are responsible for the policies of the different sectors should aim at reducing dependence on Tour Operators. An approach based on the goal of direct selling of high added-value products, such as products produced with local expertise, will make it possible to increase income and restrict “economic drain” without having to increase the number of tourists and use external intermediaries. Other measures should encourage the improvement of human skills, in particular in the hotel sector, through the development of technical training in new sales methods and online sales. These actions should be mainly focused on young people who are the most affected by unemployment.

To reduce economic drain, it is also important to promote the initiatives of local businesses, in particular through “active employment policies”. The creation of an “ideas bank” for new innovative companies would be an ideal location where entrepreneurs could get financial support, for example.

3. Policy measures in the environmental sector

Navarro Jurado suggests several measures for resolving environmental issues:

- the development of a Costa del Sol reforestation plan;
- the increase of public finance for renewable energy generation and solid and liquid waste treatment, while also tightening up sanctions for polluters through a legal framework produced in partnership with industry;
- additional infrastructure to reduce water and energy consumption, and the organisation of awareness-raising campaigns amongst professionals, locals and tourists with a view to better management of water and electricity consumption;
- inclusion of the definition of natural areas to be protected in law, so that local policies prohibit the urbanisation of each metre of undeveloped land;
- mandatory compliance with “Blue Flag” beach certification standards for the town of Torremolinos;
- the support of business in the sound-proofing of accommodation.

Conclusion

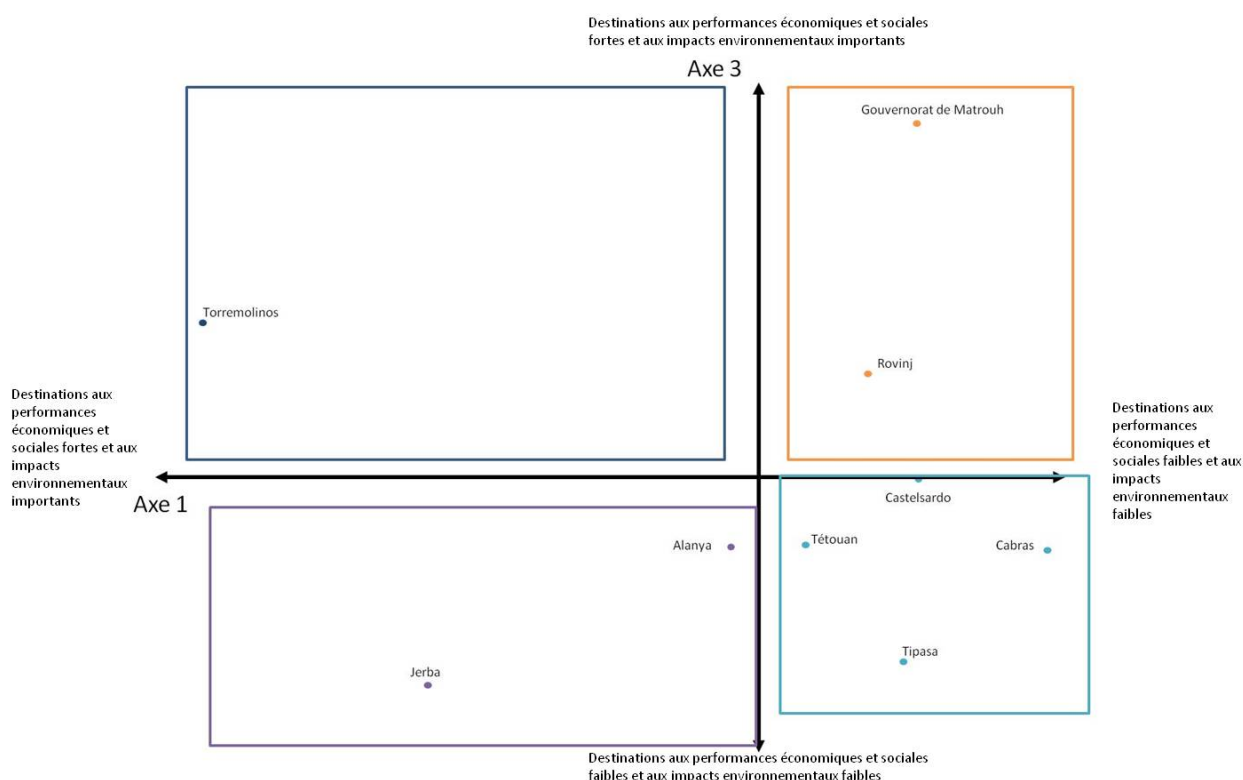
In order to summarise the profile of sustainability for Torremolinos, we compared it with the other destinations studied in the “Profiles of sustainability – Mediterranean Destinations” project: a second Principal Component Analysis (Figure 13) compares the sustainability of each destination with the mean and standard deviation⁵ for all sites studied and for each indicator used, based on the MSSD variables. This second Principal Component Analysis (PCA) does not incorporate information regarding governance because the “governance” variable can be considered more as a component used to explain the results and the economic, social, territorial and environmental impact of tourism on the destinations. In other words, the results observed correlate closely with the policy choices implemented in each destination. For instance, in destinations where the availability of water is not a problematic issue, this is due to the fact that the authorities have invested in infrastructure projects such as dams and desalination plants. In contrast, in destinations where, for instance, the land pressure caused by tourist and residential accommodation facilities is high, this is often because of a failure to enforce the regulatory framework or a lack of regulation, as well as because of property-related and financial speculation.

The PCA results are used to distinguish between four types of “sustainability profile” for the destinations:

⁵ Standard deviation is the difference between the largest value and the smallest value in a sample.

- destinations with a high level of economic performance, where social protection offers cohesion and the environmental impact of tourism is high (e.g. Torremolinos),
- destinations that are economically competitive, socially fragmented and where the environmental impact is significant (e.g. Djerba and Alanya),
- destinations that, in economic terms, are emerging or in rejuvenation phase, that are socially fragmented and where the environmental impact is either controlled (e.g. Rovinj) or geographically limited (e.g. Matrouh Governorate),
- destinations whose economic performance is poor, that are socially fragmented and where the environmental impact is low or controlled, but where land pressure is a threat (e.g. Cabras, Castelsardo, Tipasa and the Tétouan Coast).

Figure 13 : Graph showing the profiles of sustainability for the tourist destinations studied



Légende

- Destination économiquement et socialement performante aux forts impacts environnementaux : Torremolinos
- Destinations économiquement compétitives, socialement inégalitaires et aux impacts environnementaux régulés : Jerba et Alanya
- Destinations émergentes et/ou en renaissance (économiquement et socialement encore peu performantes) aux impacts environnementaux régulés dans le cas de Rovinj et contraints dans le cas du Gouvernorat de Matrouh
- Destinations économiquement et socialement peu performantes à faible impact environnemental : Cabras, Castelsardo, Tipasa et Littoral de Tétouan

Source: Principal Component Analysis by Loïc Bourse, 2011.

Guide (see also Figure 15 in the Appendix):

Axes 1 and 3 explain 61% of the data variance.

Axis 1 alone explains 53% of the data:

- The further the destination is to the right on Axis 1, the higher the environmental performance and the lower the social and economic performance in the destination,
- The further the destination is to the left on Axis 1, the higher the economic and social performance of the destination, alongside more negative environmental impacts.

Axis 3 explains 8% of the data:

- The higher the destination is on Axis 3, the higher the economic and social performance of the destination, with high environmental impacts,
- The lower the destination is on Axis 3, the lower the social and economic performance in the destination, with controlled or low environmental impacts.

Torremolinos, which is an “international destination with extensive tourist amenities”, achieves the best economic and social performance of the destinations studied. Although Torremolinos is in decline phase in terms of the number of overnight stays and wealth generated by tourism, revenue per bed and tourist spending nevertheless remain significantly higher than the mean for the destinations. From a social perspective, the number of jobs created per bed is low (rationalised human resource management), but the balance between the active population and dependent population in the destination remains sustainable. In addition, the Spanish social welfare system guarantees a form of security for local people, particularly in terms of public health and access to care, which leads to longer life expectancy; the education system further offers access to relevant training courses. The immigrant population that is drawn by the economic pull of Torremolinos, chiefly made up of unskilled workers, therefore has access to improving living standards, even though working conditions, wages and employability all remain areas for improvement.

However, the environmental performance of the destination is causing irreversible consequences on natural resources. Water and electricity consumption, production of solid and liquid waste and land use are all significantly higher than the mean for the destinations as a whole. There is, furthermore, a flagrant lack of waste treatment infrastructure, in particular for treating liquid waste. This has a major impact on the maritime environment, which is the main “asset” of this seaside resort. With respect to the high water consumption, the issue of supply is crucial because, on the one hand, the gap between supply capacity and consumption is now very small, and on the other, the options for increasing water extraction from natural sources are now ever more limited. These environmental impacts are heightened by increasing man-made pressure caused by the growth in the resident population, residential areas and the road and motorway infrastructure.

Although diversification of tourist activities could be a strategy for reducing the issues of seasonality related to tourism, it will not significantly affect the problem of job insecurity in the hotel industry. Labour market flexibility, which enables Torremolinos to remain competitive, leads to employment instability, both in terms of contract type and periods of unemployment. In addition, while diversifying the accommodation offer has reduced the influence of the international clientele and the dependence on tour operators for marketing Torremolinos as a destination, it has also increased the numbers of domestic visitors, thus reducing the length of stay. In order to respond to the dissatisfaction of the labour force, which is marginalised in terms of their living standards and stability, the impact of the drive for international competitiveness should be reduced by focusing the tourism offer not on economies of scale, whereby profitability is driven by wage levels and the flexibility of tourism labour, but instead on a high-quality offer, which is what Navarro Jurado suggests. Torremolinos is becoming saturated in terms of its tourism offer, land use and environmental damage. It therefore seems vital to follow the recommendations put forward to improve tourist activities, but also to review the business model as a whole. The wealth generated by tourism in this area needs to be reinvested in other business sectors, in order to provide opportunities for the unemployed workforce to find jobs in other industries.

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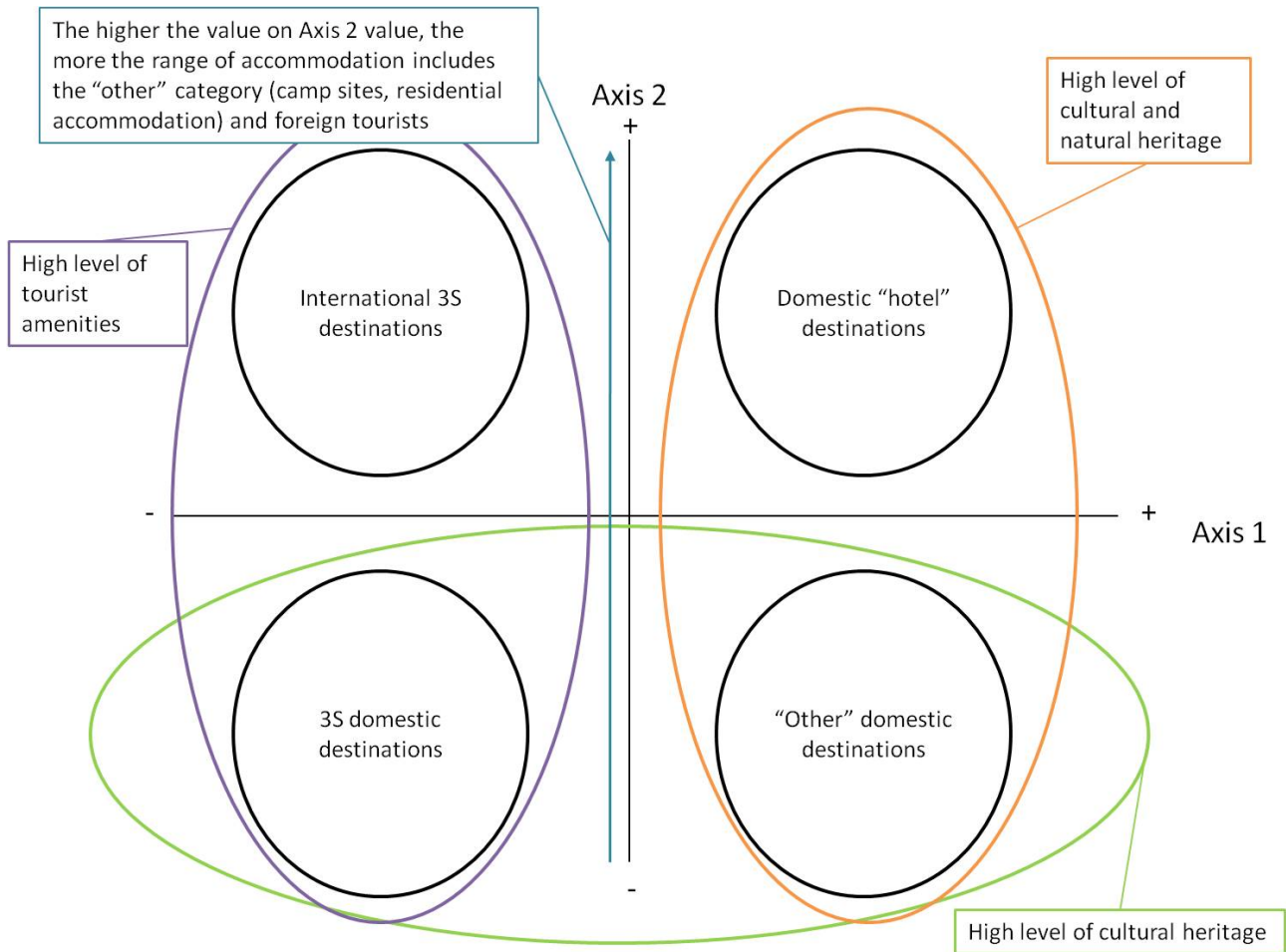
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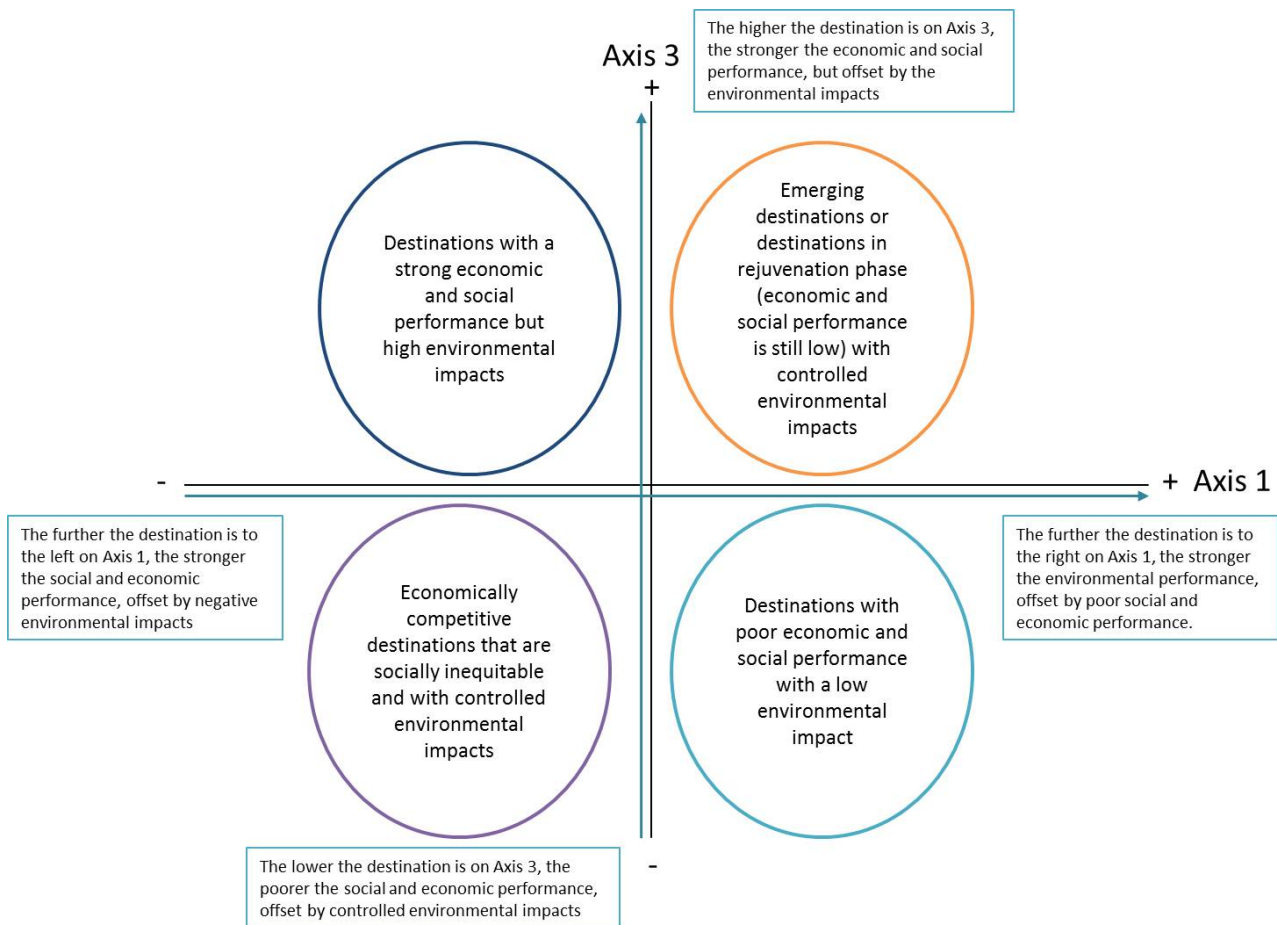
Appendices

Figure 14: Schematic representation of the classification based on a Principal Component Analysis



Source: Loïc Bourse, 2011.

Figure 15 : Schematic representation of the Principal Component Analysis of the sustainability profiles



Source : Loïc Bourse, 2011.

Table 4 : Destination Datasheet of Torremolinos

	Année	Valeur (1 : oui ; 0 : non)
Demand		
Residents (%)	2007	48,66%
Non-residents (%)	2007	51,34%
Charter passengers/total passengers	2007	33%
Airport	2011	1
Harbour	2011	0
Accommodation offer		
Number of beds	2007	28 250
Hotel beds / total number of beds (%)	2007	60%
Holiday village beds (%)	2007	0
Other beds (%)	2007	38%
Campsite spaces (%)	2007	1,78%
Leisure amenities		
Spas / health clubs	2011	1
Sports amenities	2011	1
Casino	2011	1
Golf courses	2011	1
Leisure parks	2011	1
Marinas	2011	1
Conference and exhibition centres	2011	1
Beaches	2011	1
Natural and cultural heritage		
Historic monuments	2011	0
Places of worship	2011	1
Museums	2011	0
Cultural events (festivals or traditional events)	2011	1
Nature reserves	2011	0
Places selling local products (craft markets)	2011	0
Cultural activities	2011	0
Economic performance		
Number of overnight stays	2007	4 916 305
Daily spending per tourist (€)	2009	71
Revenue per bed (€)	2009	11 824
Revenue per overnight stay (€)	2009	41
Seasonality		
Mean annual occupancy rate	2008	65,41%
Social performance		
Direct employment per bed (number of jobs)	2008	0,14
Unemployment	2008	9,59%
Level of education of employees: higher education	2008	8,26%
Level of education of employees: secondary education	2008	62,63%
Level of education of employees: primary education	2008	2,81%
Level of education of employees: no qualifications	2008	26,30%
Demographic indicators		
Total population	2008	63 077
Dependent population	2008	28,53%
Life expectancy	2008	79,9 yrs
Population growth rate	2008	4,70%
Migration rate	2008	4,26%
Environmental performance		
Water consumption	1999	0,71 m3/night spent
Energy consumption	2008	35,89 kwh/night spent
Waste production	2004	2,81 kg/tourist/day
Wastewater production	2000	29 165 m3/day
Land area of tourist accommodation / total area governed by local authority	2007	1 389,73