

Coastal and marine protected areas as key elements for tourism in small islands

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ABSTRACT

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The Azores Archipelago (Portugal) is composed of 9 small islands located in the North Atlantic. To overcome the common challenges of this type of territory (e.g. isolation, closed systems, limited physical space and natural resources, endemism, small economies, small populations) and taking advantage of the natural and cultural heritage, the Regional Government of the Azores has based its Tourism Strategy on the high value of nature, landscape, flag species and outdoor experiences with a strong environmental friendly label. Pico Island offers the perfect scenario to enjoy such nature-based tourism activities, welcoming around 15,000 tourists per year, equivalent to the number of residents on the island. The island's natural and cultural heritage is outstanding and Pico Island Natural Park represents 35% of the territory, including several coastal and marine areas. Tourists' awareness about Pico protected areas, their activities and preferences can be extremely important to the management of the Island Natural Park. Integrated in the research project SMARTPARKS, a survey was conducted with 134 tourists, revealing the importance assigned to Pico protected areas and coastal zone. Among coastal and maritime activities, bathing and whale watching are the most frequent activities (57% and 44% of respondents, respectively) and 20% of respondents think whale watching should be promoted. This exploratory study gathered important information for decision-making agencies with respect to solving problems and possible solutions through tourism, namely the application of a fee system to help manage and conserve protected areas.

ADDITIONAL INDEX WORDS: Azores; Pico Island; island natural park; sustainable tourism

INTRODUCTION

Small islands' encounter particular challenges (their isolation, limited physical space and natural resources, closed systems, endemism, terrestrial/marine ecosystems linkages) which increase their vulnerability to threats such as climate variability, proliferation of invasive exotic species, natural catastrophes and overexploitation of natural resources (Rietbergen *et al.*, 2007). At the same time, economic and social development is a major concern in territories with small economies, seriously dependent on external markets, high transport costs and small populations (Millennium Ecosystem Assessment, 2005). Such characteristics make planning and management on small islands more demanding in scientific and technical terms (Calado *et al.*, 2007). Island systems represent the challenge of our time: how to balance ecological integrity with economic development and collective quality of life (Baldacchino and Niles, 2011).

Tourism can play an important role in small islands' economies, presenting some advantages over export of goods and traditional services, namely through job creation, tax revenues and increased

value of local products (Schubert *et al.*, 2011; Seetanah, 2011). Extraordinary natural and cultural assets found in small islands can be major attractions for tourists. In fact, nature-based tourism has a growing economic relevance and protected areas offer unique opportunities for visitor experiences (Tisdell & Wilson, 2012). Moreover, since protected areas restrict most primary sector activities, tourism is one of the few suitable tools for local development and also for financing protected areas management (Kafyri *et al.*, 2012; Emerton *et al.*, 2006).

Azores Islands Natural Parks

The Azores Archipelago is a Portuguese autonomous region, located in the North Atlantic. It consists of nine islands of volcanic origin situated between 37 to 40 °N and 25 to 31 °W. Due to their geographical distribution, the islands are divided into three groups: the Western Group (Flores and Corvo), the Central Group (Pico, Faial, São Jorge, Graciosa and Terceira) and the Eastern Group (São Miguel and Santa Maria) (fig. 1).

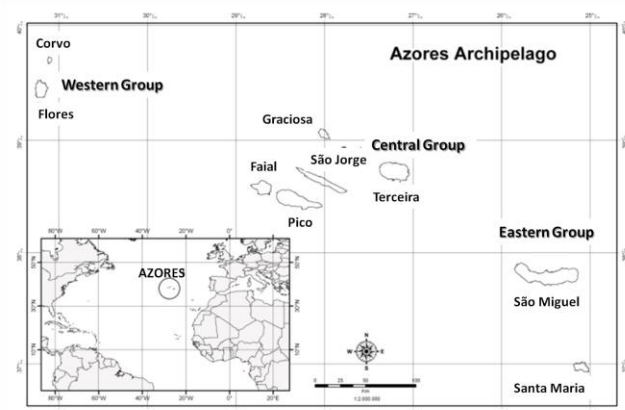


Figure 1. Azores Archipelago (Source: Centre of Geographic Information Systems, University of the Azores).

Considering UNESCO criteria for small islands' definition – an area equal to or less than 10.000 km² and 500.000 residents or less (Hess, 1990) – each of the Azorean islands is included in this classification (the archipelago itself occupies only 2.330 km² and has just over 246.000 inhabitants).

The environment is assumed to be a transverse pillar for all of the Region's social and economic activities and sectors (Azorean Regional Government, 2008a). This assumption is confirmed by the quantity (16) and diversity of current legal land-based instruments with environmental and spatial incidence in the Azores, regulating and acting at the archipelagic, island and municipal scale (Gil *et al.*, 2012). Azores natural characteristics, linked with its rich historical, architectural and cultural heritage, provide opportunities for the development of tourism as an economic activity of regional significance (DROTRH/IA, 2001; Moniz, 2009; Cruz *et al.*, 2011). In fact, tourism in the Azores has grown since the mid-1990s, and maritime and coastal recreational activities are major tourist attractions, namely whale watching and diving (Bentz *et al.*, 2013; Calado *et al.*, 2011). Therefore, the local authorities based its Tourism Strategy on the high value of nature, landscape, flag species (whales and dolphins) and outdoor experiences (hiking, bicycling), with a strong environmental friendly label (Azorean Regional Government, 2008b).

Although part of the Macaronesia Biogeographic Region, the Azores Archipelago presents distinctive characteristics in terms of climate and species composition, due to a stronger influence of northern European species (Sundseth, 2009). When compared to other archipelagos of Macaronesia, the diversity of terrestrial species is relatively poor but the occurrence of endemism makes it equally important for conservation (Cardoso *et al.*, 2008).

The regional network of protected areas includes 9 Island Natural Parks, one for each island of the archipelago. This scheme is the outcome of a reclassification process, undertaken in 2007, in which was applied the IUCN classification system. As a result, each island has a single park comprising several management units, each of which is assigned with one of the following categories: nature reserve, natural monument, protected area for habitat/species management, protected landscape and protected area for resources management. Such classification seeks to highlight the link between the statutory level of a protected area, its natural and cultural values and required management actions.

SMARTPARKS Project

SMARTPARKS Project - *Planning and Management System for Small Islands Protected Areas* – is a research project coordinated by Azores University and funded by the Portuguese Foundation for Science and Technology. It attempts to facilitate the development of sustainable protected areas, based on an active involvement of stakeholders, economic and cultural activities compatible with nature conservation and an innovative planning and management scheme for protected areas at island scale. Pico Island Natural Park was selected as the case study due to its singularity, percentage of classified area, diversity and representativeness of protection categories. It comprises Pico Mountain (highest point in Portugal, 2.351 m), important coastal sections and the unique vineyard landscape, classified as UNESCO World Heritage Site.

Involving stakeholders in planning and management brings important benefits: increased sense of 'ownership'; greater support for the protection of the area; greater public involvement in decision-making; and closer links between conservation and development. This promotes communication potentially leading to the identification and resolution of problems (Gil *et al.*, 2011). Therefore, stakeholders' involvement in the management of Pico Natural Park was one of the ambitions of SMARTPARKS and the methodological approach included public presentations, interviews and thematic workshops and surveys to residents and tourists (Fonseca *et al.*, 2011). Stakeholders are individuals, groups or communities likely to affect or to be affected by the management of the protected area (Alexander, 2008), thus tourists were targeted by the project. To better understand tourism activities and tourists' expectation, an exploratory survey was developed and applied. The objectives of such a survey were to identify the reasons to choose Pico as a destination, understand how tourists perceive the island and the existing offered tourism, identify preferred areas and activities and their relation with protected areas.

This paper presents preliminary results of the tourists' survey, highlighting the relevance of coastal areas and maritime tourist activities as an attractiveness factor and discussing the relation between protected areas and tourism in Pico Island.

METHODS

Study area

Pico Island is the second largest in the archipelago, with a total surface of 445 km² and 152 km of coastline length. The main economic activities, relevant for the island's competitiveness and sustainability, are linked with traditional value chains: agriculture, livestock, fisheries and tourism. The island has 14.144 inhabitants (2011) and receives a similar number of tourists per year, mostly attracted by landscape, natural and cultural values. Pico Island offers 40 tourist accommodation establishments, from which 35 are classified as rural tourism and country houses. There are 16 enterprises providing maritime tourist activities such as whale watching, boat tours, boat rental, diving, recreational fishing and windsurfing. Despite the absence of sandy beaches, bathing is also a significant attraction with 57 classified bathing areas.

Pico Island Natural Park is composed by 22 areas: 4 classified as nature reserve, one as natural monument, 8 as protected area for habitat/species management, 6 as protected landscape and 3 as protected area for resource management (fig. 2). The total protected area represents 35% of the island territory.

Pico Mountain is a majestic landscape feature and major tourism attraction, especially for hiking enthusiasts. It is classified

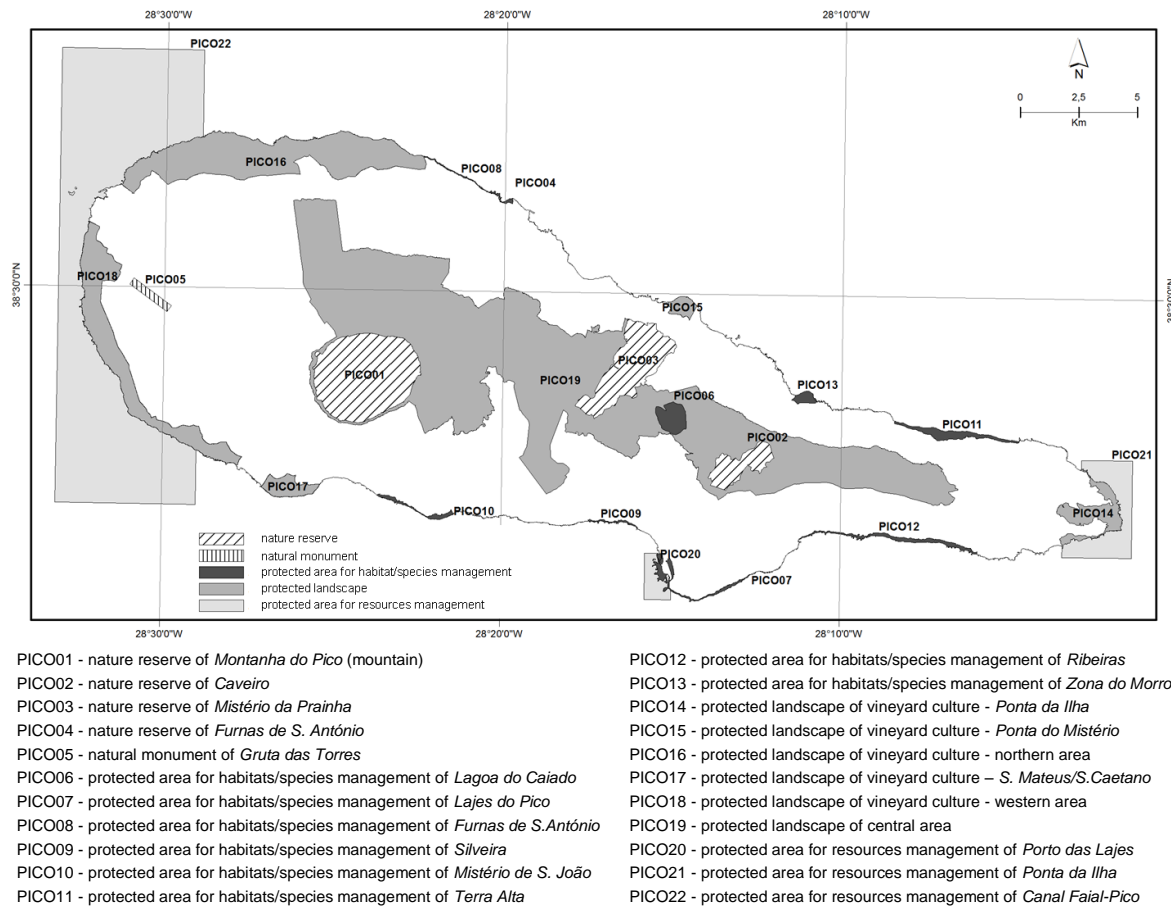


Figure 2. Pico Island Natural Park (Source: Centre of Geographic Information Systems, University of the Azores).

as a nature reserve (PICO 01 – fig. 2) and host protected habitats and species.

Protected areas in the coastal zone are divided in two categories: a) protected landscape of vineyard culture (PICO 14, 15, 16, 17 and 18 – fig. 2), and; b) protected areas for habitat/species management (PICO 07, 08, 09, 10, 11, 12 and 13 – fig. 2). The first group includes larger areas, mainly concentrated in the western part of the island, with well preserved structures of small walled vineyard fields (Portuguese: *currais*). Some are classified as UNESCO World Heritage Site. The second group comprises areas included in Natura 2000 network and some important bird areas, particularly relevant for protected seabirds such as *Sterna dougallii*, *Sterna hirundo* and *Calonectris deomedeae*. The marine protected areas included in Pico Island Natural Park (PICO 20, 21 and 22 – fig. 2) are near shore and contiguous to terrestrial protected areas and coincide with areas closed to limpets harvesting.

Survey

A total of 134 questionnaires were conducted during July 2011 with national and international tourists visiting Pico Island. The following information was collected on respondents: gender, age, occupation and nationality. The full questionnaire was composed of 22 questions taking around 20 minutes to complete. It was divided into three main sections: i) information about the respondent's visit to the island (motivation, duration, expenses,

visited sites and activities); ii) perceptions and preferences (knowledge about the island, positive and negative aspects), and; iii) position towards protected areas.

This paper focuses on two first sections, including the following questions:

Q1 - Why did you choose Pico as vacations' destination?

Q2 - Please indicate which activities have you done/plan to do during your vacations at Pico (it was possible to select more than one activity).

Q3 - Please indicate, on the map, the areas you have visited/plan to visit during your vacations at Pico.

Q4 - What do you associate to Pico landscape?

Q5 - Which are the 3 places you like the most at Pico?

Q6 - Which are the 3 places you dislike the most at Pico?

Q7 - Please indicate the 3 most positive aspects of Pico.

Q8 - Please indicate the 3 most negative aspects of Pico.

Q9 - Which are the activities developed at Pico that you consider positive and that you would like to see promoted/protected?

Q10 - Would you be willing to pay a fee to help to protect Pico protected areas? If yes, that fee should be directly applied for the protection of which areas or species?

Valid responses to Q5 and Q6 were classified as coastal or inland locations (considering the characteristics of Pico Island, inland landscape is associated to higher altitudes, usually more than 400 meters).

Sample characterization

The sample was composed of 73 males and 50 females (11 persons have chosen not to answer), belonging mostly to the age group 45-54 years (27%) and 25-34 (24.6%).

As for occupation, the majority was: intellectual/scientific professionals (32 respondents), associate professionals (18 respondents), senior executives (16 respondents), administrative professionals (11 respondents) and students (11 respondents).

Regarding nationality, 35% were national tourists and international visitants were from different countries, mostly European, with France slightly standing out (11%) (Table. 1).

Table 1. Distribution of respondents by their nationality (frequency and percentage).

Nationality	Frequency	%
American	1	1%
Austrian	5	4%
Belgian	8	6%
Canadian	6	4%
Dutch	7	5%
English	10	7%
French	15	11%
German	6	4%
Italian	8	6%
Polish	3	2%
Portuguese	47	35%
Scottish	1	1%
Spanish	5	4%
Swiss	5	4%
Not responding	7	5%
Total	134	100%

RESULTS

Tourists tend to choose Pico Island as vacations' destination (Q1) mainly because of its landscape and natural values (21.6%), maritime tourist activities (20.1%) and peculiarity (14.9%).

As for recreational activities during their stay (Q2), tourists indicated mainly: visits to museums, others cultural manifestations and events (63%), pedestrian trails (59%), bathing (57%), mountain climbing (45%) and whale watching (44%) (fig. 3).

Regarding the most visited areas (Q3), 34.3% of respondents indicated marine protected areas, 45.5% the Pico Mountain (PICO 01), 55.2% the central plateau area (PICO 19), 66.4% the Lajes village (where most of the whale watching companies are located), 67.2% vineyard areas (mainly PICO 16 and PICO 18) and 84.3% of respondents pointed protected areas other than those already mentioned.

The landscape of Pico Island (Q4) was inevitably associated to the mountain (40.3%) and to other landscape and natural values (34.3%).

Despite the relevance of the mountain, most of the preferred areas (Q5) are largely coastal (60%). The same applies to most disliked places (Q6), 85% of responses are placed on the coast.

When asked about Pico Island most positive aspects (Q7), 73.1% of respondents indicated landscape and natural values (other than the mountain and vineyard areas), 33.6% people's hospitality and 25.4% the sea. As for negative aspects (Q8), the most mentioned were: access and transports (other than aerial transport) (18.7%), spatial planning and urban development related issues (17.2%) and environmental quality problems (15.7%).

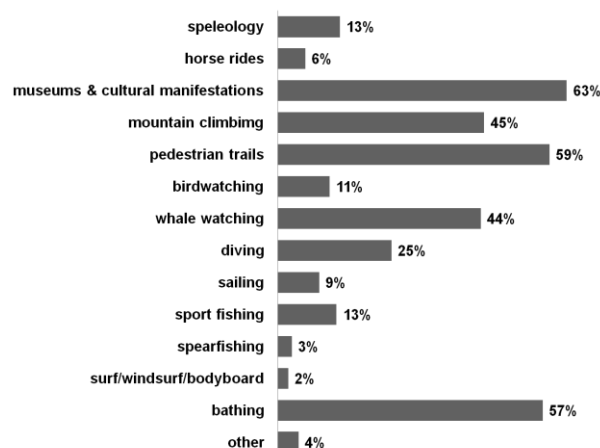


Figure 3. Recreational activities tourists enjoyed during their stay at Pico (Q2).

Activities considered positive and to be promoted (Q9) were mainly maritime tourist activities (20.1%), handicraft and culture (17.2%) and outdoor activities (13.4%).

Regarding willingness to pay a fee to help Pico's protected areas (Q10), 61.2% of the answers were positive. Of these, 27.6% think the fee should be directed to the conservation of the vineyard culture landscape, 20.9% to the mountain and 9% to the conservation of areas not yet classified as protected.

DISCUSSION

Results show that Pico Island is much appreciated for its landscape and natural values, validating the Regional Government's strategy based on the promotion of natural heritage.

Maritime tourist activities play an important role in Pico attractiveness with a potential to increase since visitors think these activities are positive and should be promoted. Currently, whale watching is the most significant of those activities but diving and bathing are also relevant. Other popular activities, such as pedestrian trails and visits to museums (fig. 3), can be partially linked with coastal and marine features. A significant part of existing trails have coastal segments and the two most important museums on the island (alongside with the vineyard culture interpretation centre) are related to the old whaling industry.

The relevance of the coastal zone in Pico Island can be explained by the typical territorial organization of an island with volcanic origin and high altitude. The combination of biophysical structure, climate and dependence on sea as a privileged route of communication contributes to concentrating human settlements along the coast and population tends to decrease with an elevation of above 350 meters (Azorean Regional Government, 2008b). Therefore, it is natural that both preferred and problematic places are pinpointed in the coastal zone, this being the most used, enjoyed and impacted area on the island.

Although coastal areas are highly valued and the sea is indicated as one of the main positive aspects of the island, Pico Mountain is a unique and imposing scenic feature attracting tourists inland. This mountain/sea contrast can be explored as complementary tourism products, based on a high environmental quality label.

But, if the mountain “*speaks for itself*”, maritime tourism activities should be promoted and diversified. Birdwatching industry should also be fostered, mostly at coastal sites, in order to establish synergies with further coastal-based touristic activities.

The good state of conservation of the island’s natural environment seems to play a crucial role in Pico’s attractiveness and the existing protected areas are expected to contribute highly to its maintenance. However, with 35% of the island’s territory included in the Island Natural Park, management can be a challenge, both in terms of human and financial resources. On the other hand, tourism can have negative effects on protected areas and biodiversity. The implementation of a fee system can help finance protected areas and minimize environmental impacts of visitors. There are several examples worldwide where fee systems have been successfully implemented, providing revenues for protecting, monitoring and restoring protected areas (Steckenreuter & Wolf, 2013). However, tourism-related benefits can generate socio-economic inequalities if not properly shared among local communities, accruing human-conservation conflicts and increasing environmental impacts (e.g. exceeding carrying capacity, etc.) (Brockington *et al.*, 2008).

With 61.2% of respondents declaring their willingness to pay a fee to help maintain Pico’s protected areas, responsible agencies, namely the Island Natural Park management board, can explore suitable alternatives to implement such a fee, including voluntary tools.

CONCLUSION

Tourism is expected to grow in the Azores in the next years, drawn by the high environmental quality of its territory. This is a key element for the development of these small islands, counterbalancing their natural disadvantages.

Our study at Pico Island explores the role of protected areas in tourism attractiveness and highlights the contribution of coastal and marine areas and activities. There is a clear potential for the growth of tourism on this island (as well as in others islands with similar characteristics) but such potential must be carefully exploited, ensuring the maintenance of the natural and cultural heritage and the environmental quality and crucial elements of Pico’s attractiveness as a tourism destination. To this end, tourist activities must be managed through an integrated approach promoting diversity and complementarity. Also, the adequate management of protected areas must be ensured in order to guarantee the preservation of natural values. Further studies should be conducted regarding carrying capacity and limits of acceptable change to determine the parameters which will allow the balance between conservation and enjoyment.

By facing visitors as stakeholders in the management of protected areas, SMARTPARKS Project gathered important information for decision-making agencies with respect to problems to be addressed and their possible solutions through tourism.

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