Sun beds vs. sand dunes: a conservation – tourism conflict

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Abstract

Travel and tourism in the Mediterranean can be dated back to the classical civilisations of Greece, Rome and Egypt. However, it was not until after the Second World War that mass tourism began to evolve. The astonishing expansion of tourism development in Greece after the 1960s, has transformed the basis of the socioeconomic structure, altering the country’s life chances and welfare, followed, however, by adverse sociocultural and ecological ramifications. Rapid and uncontrolled tourism growth has contributed to the deterioration of the coastal environment, but there is now a growing recognition that the natural and cultural environment is an important resource worth preserving.

The island of Crete has gained importance in Greek tourism in the mid-1980s. Development has concentrated on the north coast, where the absence of strategic planning has devastated coastal habitats and degraded landscapes both ecologically and aesthetically. However, the less accessible southern shores remain, in general terms, unspoiled.

Three hundred interviews were conducted, using structured questionnaires. In addition to establishing the personal background of interviewees, questions were asked aiming at establishing a type of ‘lifestyle’ of the beach users, as well as their level of ‘environmental awareness’. The strongest influence on awareness comes from the origin of the interviewees. A second factor affecting environmental sensitivity is the level of development of the beach.

There is an urgent need for restructuring the whole tourism system in western Crete. Nevertheless, the different development histories, between north and south, allow for a consideration of more diversified sustainable strategies to be followed, leaving space for conservation of vulnerable coastal areas.
Introduction

The Mediterranean region has been the cradle of western civilisation and some of the world’s oldest cultures have developed on its shores. The Mediterranean Sea has also served as one of the world’s primary travel and trade routes. Travel and tourism can be traced back from the classical Mediterranean civilisations of Greece, Rome and Egypt, through the medieval pilgrims to the Holy Land, to the Grand Tourist of the eighteenth and nineteenth centuries [1].

After the industrial revolution, and due to changes in world trade relations and transport technology, travel and transport activity gradually shifted to the Atlantic Ocean, leaving, by the 1950s, the Mediterranean with the relics of the past [2]. That was the time when the Mediterranean landscape was transformed from the world’s centre of commerce and trade to a tourist park [3].

Mass international tourism began in the 1950s, involving the movement of thousands of tourists initially from the United Kingdom to Spain and then to France and Italy [4] and in the early 1960s to Greece. The astonishing expansion of tourism development in Greece since then has transformed the basis of the socioeconomic structure, altering the country’s life chances and welfare, followed, however, by adverse sociocultural and ecological ramifications [1].

The concentration of tourist activity in relatively few key locations around cultural and natural attractions (i.e. archaeological sites, coastal areas, and islands) is accompanied by the concentration of other economic activities as well. In fact, in Greece, 90 per cent of tourism, 80 per cent of the industrial sector, 35 per cent of fishing and agriculture, as well as infrastructure (i.e. roads, airports) are located along coastal areas [2]. Rapid and uncontrolled tourism growth has contributed to the deterioration of the coastal environment, but there is now a growing recognition that the natural and cultural environment is an important resource worth preserving.

Today there is a growing interest in the environmental effects of tourism from governments, non-governmental organisations, the private sector, and the public. A growing number of tourists also became more interested, to varying degrees, in the environmental aspects of tourism. ‘Green tourism’, ‘eco-tourism’ and ‘sustainable tourism’, became favourite phrases in the tourist industry [4]. Tourism in Greece however, is still dominated by group tourism, a phenomenon attributed mainly to ineffective public policies [1] and the strong influence of tour operators who control the tourist market since they are more organised and can offer ‘tourist packages’ at low prices to travellers in the countries of origin [5].

The case of Crete

The island of Crete has gained importance in the national tourist market in the mid 1980s [6]. Development has concentrated around the major cities of Herakleion, Chania and Aghios Nikolaos, where the absence of strategic planning combined with the inability of the authorities to control illegitimate and often illegal construction have devastated coastal habitats and degraded...
Coastal environments both ecologically and aesthetically. On the other hand, the less accessible South (due to the geomorphology of the island but also due to the less dense transport infrastructure) has remained, in general terms, unspoiled.

We could thus say that the northern beaches of Crete are at Butler’s [6] ‘stagnation’ stage of the tourist area life cycle, demanding a considerable rejuvenation effort in order to avoid decline [7]. On the contrary, the southern (and in our case study, western) coast is still in the stage of ‘involvement’ or even ‘exploration’ [7] allowing for a more organised development pursuant a planning policy that can incorporate the principles of regional and sustainable development.

Changes in tourism towards more sustainable practices need the support of not only tourists but also the local community, as several sustainability criteria involve changes beyond the individual tourism facility construction. In order to assess the perceptions and attitudes of tourists and residents toward sustainability and environmental initiatives, we interviewed three hundred two beach visitors during August and September 2001.

Methodology

The study area

Crete, with a total surface of 8729 km², a west-east extension of about 254 km and a north-south of 62 km at its maximum and 13 km at its minimum, is the fifth largest island in the Mediterranean basin. Due to its geographic position it forms the cardinal point of three continents: Europe, Asia, and Africa.

Crete is divided into four administrative regions, “prefectures”, and our study area includes all sandy beaches of the Prefecture of Chania. Twenty-five sites are identified. Their location and placenames are given in Figure 1. The north facing coasts of the study area consist of several long stretching sandy beaches with well developed dune systems in Georgioupoli, but in most cases severely degraded dunes due to uncontrolled building of tourist facilities right at the edge of the shore (e.g., Platanias, Ag. Marina). To the west, the study area includes sites of natural dunes of outstanding beauty, such as the cases of Elafonissi and Falasarna, as well as the only lagoon ecosystem in Crete, at Gramvousa. To the south, Frangokastelo is worth noting with its spectacular cliff-dunes. The west and south sites suffer mostly from lack of management and less from housing development.

The methodological approach

Previous to the here presented opinion survey, the authors have concluded a landscape structure and human impact survey of the sandy coasts of western Crete [8]. Every site of the study area, was divided into land units according to land management and hinterland. These stretches of beach were classified, according to their state of natural environment, into ‘highly developed’, ‘less-highly developed’, and ‘undeveloped’. Drawing from the results of this
Site names and code key:

1. Petres (PET1)
2. Kaklis beach (KAK1)
3. Georgioupolis (GEO1)
4. Kyani Akti (KYA1)
5. Stavros (STV1)
6. Kalathas beach (KAL1)
7. Nea Chora (NCH1)
8. Chrysi Akti (CHR1)
9. Ag. Apostoloi - small bay (APO1)
10. Ag. Apostoloi (APO2)
11. Kato Stalos (STA1)
12. Agia Marina (MAR1)
13. Platanias (PLA1)
14. Tavronitis (TAV1)
15. Kissamos bay (KIS1)
16. Kissamos beach (KIS2)
17. Gramvousa – Balos lagoon (GRA1)
18. Falasarna (FAL1)
19. Elafonissi - Island (ELA1)
20. Elafonissi - Main beach (ELA2)
21. Kedrodasos (KED1)
22. Palaichora - Grameno beach (PAL1)
23. Palaichora - Paxia ammos (PAL2)
24. Palaichora - Gialiskari (PAL3)
25. Frangokastelo - Orthi ammos (FRA1)

Figure 1: Study area and placenames of sampling sites.

classification, representative land units of each class were chosen, where interviews of beach visitors were carried out.

Structured questionnaires, translated into three languages (i.e. English, German, and Greek) were used for the interviews. Beach visitors received a verbal introduction of the aims of the survey and a copy of the questionnaire to help them choose their answers. In total 302 interviews were conducted, with the help of five interviewers. Questions were asked aiming at establishing a type of ‘lifestyle’ of the beach users, according to the reason of visiting the particular stretch of beach, preferences on facilities and landscape features, as well as type of accommodation, and previous experiences from visiting Crete. Furthermore, the level of ‘environmental awareness’ was estimated with the help of environmental and conservation oriented questions. Finally, background information on the interviewees was recorded, including age, level of education, monthly income, and country of origin.

The sample was stratified according to the country of origin (48% Greeks, 52% international tourists) the landscape class of the beach (45% undeveloped, 29% highly developed, 26% less-highly developed) and the gender of the interviewee (51.3% male, 49.7% female) (see also Figure 2).

For questions where multiple sub-points were asked, a classification of the answers reduced the variables, providing groups or “types of answer”. Questions on preferences and travel type were ordinated using the HOMALS procedure [9], resulting in “lifestyle types”. For the questions focusing on nature conservation,
a weighted score was calculated so as to establish the overall level of environmental awareness of the interviewed person.

Data were analysed using the Statistical Package for Social Sciences (SPSS) software, version 10.0. Since most of the variables were categorical, cross-tabulation, one-way ANOVA and the procedure HOMALS [9] (also known as multiple correspondence analysis) were used to analyse and classify the data.

Results

Of the 302 interviewees in total, 145 were Greeks (48%) either permanent residents or inland tourists (Figure 2). Of the 157 international tourists 53 per cent came from Scandinavian countries, while another 20.4 percent came from Central Europe, mainly Germany. These values confirm the dominance of the Greek tourism market from Germans and Scandinavians as has been also supported by Williams [3] and Pearce [10]. However the equally advocated high influence of British tourism is not verified for western Crete.

When beach visitors were asked why they chose to come to that particular beach, 28 per cent answered that the reason was either the ‘quietness’ or the ‘unspoiled nature’. This portion went up to 41 per cent for people visiting undeveloped beaches, and was as low as 18 per cent for those at highly developed coasts. However, when people were asked why they would recommend to a friend to visit that specific beach, 57 per cent answered for ‘the scenery’ or the ‘natural environment’, irrespectively of the level of development of the beach (no significance found using a χ² test). This fact shows that there is a difference between the pragmatical reason for choosing a beach (e.g. near the
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hotel, plenty of parking places) and the more illustrious reason that would persuade someone else to visit the beach too.

The preferences expressed, during the interviews, for facilities and landscape features showed significant differences ($\chi^2$-test, $p < 0.001$) among the three degrees of development of the beaches. People visiting undeveloped shores rated natural landscape features higher than the facilities, while those in developed coasts valued both the landscape and the facilities high. This result can be used to support the hypothesis that people visiting an undeveloped beach are prepared to find fewer facilities, for an unspoiled landscape.

In order to exemplify such differences among the beach visitors, multiple correspondence analysis (HOMALS) was used to divide the sample in groups of 'lifestyles'. These 'lifestyle' types reflect the type of accommodation, previous visits and experiences of Crete, preferences and dislikes of facilities, as well as the reason for choosing and recommending the specific stretch of shore. As can be seen in Figure 3, the sample cases (i.e. the interviewees) can be assigned to three types of lifestyle. These were identified as i) the permanent residents and those tourists that have been to Crete several times already, ii) those tourists that were in Crete for the first time, and iii) the visitors that have been to Crete only once or twice before (and that mainly in the past few years).

Figure 3: HOMALS ordination graph according to the 'lifestyle' questions. Crosses represent cluster centres, $c_1 =$ Permanent residents \& frequent visitors, $c_2 =$ First time in Crete, $c_3 =$ Recent visitors (once or twice, in the 1990s).
As expected, in the group of permanent residents and frequent visitors 62 per cent of the 124 individuals were residents, while another 22.5 per cent were domestic tourists. On the other hand, nearly half of the first-comers in Crete (49.1%) came on a charter flight with hotel package, and another 16 per cent on a 'last minute' offer. More than half (54.2%) of the recent visitors came on a charter-hotel package. Finally 51.4 per cent of recent visitors came from a Scandinavian country, showing the raise of the northern European influence in the Greek tourism market.

Environmental awareness

As already mentioned, a section of the interview was dedicated to estimating the environmental awareness of beach visitors on issues related to marine and coastal conservation and management. A weighted scoring of the answers was used to obtain a numerical value of awareness. This awareness score ranged in the sample from -17 to 116. These numerical values were used to analyse a variety of the categorical data (using one-way analysis of variance), so as to establish the effect of the background variables and the lifestyle types on environmental awareness.

The strongest influence on awareness comes from the origin of the interviewees (F=4.38, 6df, p<0.001) with central and southern Europeans showing a significantly higher level of awareness than Scandinavians, Greeks, or non-Europeans. The low level of environmental responsibility of Greeks and especially the residents (mean score of 53.91) is alarming, as an eventual sustainable management initiative for the coast, needs to find a local consensus to be viable. On the contrary, the increased sensitivity of southern Europeans can be attributed to their experience and first-hand knowledge of tourism’s effects on the coast, as their countries have been facing the problem for a longer period of time. The outstanding environmental awareness of central Europeans and particularly the Germans has also been shown in Kaæ's [10] study of tourists' perceptions of sustainability principles.

A second factor affecting environmental sensitivity is the landscape class (or level of development) of the specific stretch of beach where the interview was carried out (one-way ANOVA F=5.086, 2df, p=0.007). In other words, people visiting more natural beaches are more environmentally aware. This means that they visit the undeveloped beaches, exactly because they are undeveloped! Such a conclusion can be a very useful argument in supporting the protection of more natural beaches from uncontrolled development, enabling those to play an important role in the expansion of alternative forms of tourism in the region.

Finally, an interesting note should be taken of the lack of significance of income, education, or lifestyle, for the level of environmental awareness.

Discussion

Tourism impacts on the natural environment can arise through the construction and operation of tourist facilities or services and from the activities of tourists
themselves. Hunter and Green [11] provide a summary of the major potential impacts of tourism on the natural environment. The more relevant of those in our study area include land use change, visual degradation of landscape, loss of natural habitats and species to urban sprawl, over-exploitation of biological resources, and trampling by feet and vehicles [8]. Even apparently innocent tourist activities, such as using an umbrella, building a bonfire, or just laying a towel, can have profound consequences, for example, on the breeding of the Loggerhead sea turtle (*Caretta caretta*). Such activities could impair breeding success because of the change in the temperature of the eggs incubating in the sand, or the chance of hitting a nest with an umbrella spike [11].

The cultural impacts of tourism assume many forms, but cultural commoditisation is one of the more widespread [3]. Different levels of tourism development cause different social changes in the socio-economic structure of the region [12]. In Crete, where for certain periods, demand has surpassed supply in the case of tourism, provision of low quality services and neglect of environmental considerations had not been an obstacle to the tourism industry [13].

Mass tourism was used to alleviate the chronic trade deficit and to increase foreign exchange inflows in Greece. The lack of a master plan has exacerbated the various effects of tourism on the socio-cultural spheres. These include a loss of control over local resources, socio-economic inequality, spatial unevenness, commercialisation of traditions and customs, unequal relationships between tourists and locals, and rising alienation among locals [1]. Furthermore, because of the high degree of dependence of Greek tourist enterprises on foreign tour operators, the actual tourist spending remaining in the country was only 40-50% of total tourist spending in the 1980s [5]. As Loukissas [14] explains it:

> “a short range increase in opportunities controlled by outsiders that benefits only a small segment of the population, while providing managerial jobs to outsiders and low esteem jobs for locals ... does not constitute development” [14, p.526].

In this context, there is an imperative need for restructuring, reorganisation, innovation, and modernisation of the system as a whole. For our study area in particular, the dissimilar development histories of northern and western shores must be considered when planning such a reorganisation. The northern shores could be said to be in a ‘stagnation’ phase [7], where peak numbers have been reached and the destination is becoming less fashionable. They now rely on repeat visits or resident day-trippers (68% ‘permanent residents and frequent visitors’), and show already significant social and environmental problems [8]. Here a rejuvenation process is necessary, either deciding on new uses, new customers, new distribution channels [7], or on a ‘sustainable growth strategy’ [15] concentrating on maintaining existing markets and achieving a low level of growth by new recruitment of visitors to supplement the loyal repeat clientele.

On the other hand, the south and west coast, could be assigned to the ‘involvement’ stage of Butler’s [6] tourist area life cycle (or even to the initial ‘exploration’ stage for some secluded beach in the south). The high proportion of
first-time visitor’s (64%) can further support this hypothesis. In this case, a different strategy than the currently used in the north coast is needed. The diversity of the landscape provides the opportunity for diversification of the interests of tourists. This, accompanied with the hesitant steps taken so far by the tourist operators to provide variety that do not seem to satisfy customer needs to the desired extent, leave space of manoeuvre to the proponents of alternative ways of tourism development [13].

Concluding remarks

On a more positive note, tourism has also the potential to benefit conservation efforts in the area. Beach users with higher environmental awareness choose significantly more often (p=0.007) to visit an undeveloped beach, and value natural landscape features higher than facilities. They can be the critical mass that will raise the sensitivity of locals towards environmental and conservation issues. It is often the case that restoration activities are associated with tourism projects [16]. Moreover, the tourists can apply “market pressure” on the local community in order to promote sustainability principles, by selecting some particular stretches of the coast in favour of others. Our study has shown that such preferences do exist.

Clearly, the argument is that tourism ultimately relies for its continued well being on the maintenance of environmental resources. There are now many calls for conservationists and the tourism industry to begin to work more closely together. It now appears increasingly rare for mass tourism to be regarded as a panacea for economic development. Those involved in the tourism industry and in decision-making public authorities, appreciate that tourism, as an exploiter of resources, can be environmentally destructive and, therefore, potentially short lived. The conservation of environmental quality has come to be seen as a future investment for the tourism industry and the local community.

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References

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