

## **Tourism Management**

# **SEARCHING THE DEVELOPMENT GAP BETWEEN THE HINTERLAND AND THE COAST EVIDENCE FROM THE ISLAND OF CRETE**

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## **ABSTRACT**

Past research has illustrated that island tourism is mainly developed along the coast, and that hinterland areas face inherent disadvantages in developing their tourism industry. Peripherality; rurality; limited infrastructure and facilities; and the increasing demand of international tourists for beach holidays has shown that the alternatives of hinterland areas for 'touristisation' and self-sustaining growth are limited. In effect, rural population tends to leave their birthplaces and migrate to the cities and the coastal resorts in the search for better life and employment opportunities. All the above issues reported in tourism literature are evident in Crete. Through a literature review and a statistical analysis it was found that in Crete there is an unequal distribution of tourist spending and accentuated regional imbalances with the vast majority of tourism activity concentrated on the coast and economic activity in the hinterland mainly directed to agriculture. Bearing all these in mind, it is the aim of this paper to study the development gap between the hinterland and the coast and provide recommendations for bridging this gap.

*Keywords:* Development gap, coast, hinterland, rurality, tourism, Crete.

## **INTRODUCTION**

The level of socioeconomic development is not uniform across all regions of each country. The problem of unequal distribution of income, employment opportunities and economic activities often acts as a powerful stimulus for mass internal migrations from the less to the more developed parts of a country (Karkazis and Thanassoulis, 1998; Nash and Martin, 2003). For example, in countries, such as Italy, Turkey and Greece, it is a common fact that populations move from the economically less developed regions to the more developed in search of work.

Tourism is very often confined to a few attractive regions which benefit significantly from investments and tourist expenditures, while other regions tend to be more or less neglected (Oppermann & Chon, 1997; Peppelenbosch & Tempelman, 1989; Tosun, Timothy and Ozturk, 2003). Although tourism has been promoted by many governments as a mean of addressing the socio-economic problems associated with the decline of traditional agrarian industries (Sharpley 2002), numerous studies have shown that tourism can not only stimulate regional development, but can also produce regional imbalances (Bryden, 1973; de Kadt, 1979; Komilis, 1994; Tosun, Timothy and Ozturk, 2003).

Since tourism is the mainstay of most islands' economy (INSULA, 2000) and nowadays seaside vacationers have multiplied rapidly (Andriotis, 2003a), a development gap has been created between the coast and the hinterland of most insular regions. Although islands hold a particular attraction in tourism research, because they provide excellent 'laboratory' conditions for the study of international tourism growth, where

theories can be tested and processes can be observed in the setting of a semi-closed system (Andriotis, 2004a; Ioannides, 1995; King, 1993), tourism literature has not extensively investigated this gap. Indeed, most past research for islands (e.g. Andriotis, 2003a; 2003b; 2004a; Coccossis and Parpairis, 1996; Saveriades, 2000; Tsartas, 2004) has been focused on coastal areas. Although tourism in the interior can be considered an important theoretical and practical research agenda, the issue of overdevelopment of the coast and underdevelopment of the hinterland has rarely been addressed, mainly due to the difficulty associated with the spatial fragmentation of islands' interior.

According to Irvine and Anderson (2003: 229) tourism is likely to be the only growth industry for peripheral geographically isolated rural locations. Bearing in mind that tourism has the potential to combat economic decline and eliminate the loss of population in hinterland areas (Nash and Martin, 2003; University of the Aegean, 2002), the current study was undertaken with the aim to study the development gap between coast and hinterland and provide recommendations for bridging this gap. In doing so, the Greek island of Crete has been used as a case. (Details of the specific survey work, on which the results given in this paper are based, are given in Appendix One). Crete represents an interesting case of a large, heterogenous island tourist destination that although enriched with the necessary resources (such as interior mountains and cultural sites) that permits it to sell a diversified tourist product, has nonetheless suffered serious regional imbalances and mass internal migrations towards the coast. As a result, the notion that tourism is a 'magic wand that will speed up economic progress' (Hoggart et al., 1995: 36), should be treated with caution for the hinterland of the island. This paper is structured as follows. The first section reviews the literature focusing on three main

issues: nature of the development gap; causes of the gap; and differential outcomes of tourism on coastal and hinterland areas. The second section examines the tourism industry and the existence of the development gap in Crete, taking each of the foci identified in the literature. The third section provides recommendations for bridging the gap. The final section presents the conclusions of the study.

## **SEARCHING THE DEVELOPMENT GAP**

### **Nature of the gap**

Development is a process of change. However, change does not take place in all parts of the world, but there are areas that expand extensively their tourism industry, while others never move from the potential of development. All over the world population has always been attracted to coastal areas. EU (2001) estimates that more than half of Union's population lives within 50 kilometres of the sea and trends indicate that this percentage will grow in the future. Since most people (residents and tourists) are attracted to the sea, the biggest agglomerations are located in coastal areas (University of Aegean, 2002). In this respect, Goymen (2000: 1030) reports that in Turkey a pronounced spatial dichotomy has evolved between a privileged space along the coast and an underprivileged space in the interior, where hinterland locations have been used as complementary attractions to coastal tourism. Likewise, safari tourism in the hinterland of Kenya started as being complementary to coastal tourism (Rajotte, 1987).

With limited exemptions, the greatest development problem faced by islands is that tourism expansion occurs only on or near the coast, and interior areas face inherent disadvantages in developing their tourism industry (Andriotis, 2003a; Oppermann and Chon, 1997). In fact, coastal areas dominate as far as location of tourist enterprises is concerned. For example:

*(in Mauritius) only a small number of hotels are situated inland and all of those hotels are to be found in the towns along the major route across the island between the airport and the main town. By 1995, tourism had definitely transformed the landscape along many stretches of the Mauritius coastline and only the south coast remained largely untouched. Yet it is quite obvious that tourism development had not occurred in inland areas and that a large part of the country could be classified as non-tourism space. While tourism may not have attained a dominant status in the overall economy, it certainly appears on its way to be the dominant landscaping industry along the coast (Oppermann and Chon, 1997: 54).*

In many islands, hinterland areas are in downward transitional states because they are either located far from the centres of economic activity, or their social norms are traditional and conservative (Andriotis 2000; 2003b). As reported by Sharpley (2002):

*Over the last three decades, many rural economies have suffered a severe downturn, with failing employment and income levels in traditional*

*agrarian industries contributing to a vicious circle of economic decline and socio-economic problems. In particular, per capita rural incomes have fallen well below national averages, whilst the loss of public services, high unemployment levels and the consequential out-migration of younger, better educated members of rural communities have collectively endangered the fabric and structure of rural areas (p. 234).*

In the absence of alternative local employment opportunities, residents of the hinterland tend to leave their birthplaces and migrate to the cities and coastal resorts in the search of better life and employment opportunities (Andriotis and Vaughan, 2004; Ayres, 2000; Cukier-Snow and Wall, 1993; Cukier, 1996; Tsartas, 1989). Because the out-migrants tend to be younger, the average age of the remaining rural population increases and there is a relatively low birth rate (Hodge and Monk, 2004). In some cases there is a type of seasonal migration, as reported in Turkey by Seckelmann (2002: 88), where jobseeking people move to the coast during the summer and return to their homes or to the bigger towns in search for a job during the rest of the year. In Croatia, Jordan (2000) estimates that about 90% of seasonal labour in the tourism industry of the coast comes from the interior of former Yugoslavia. As a result, he reports that in Croatia villages set back from the coast suffer rather than profit from tourism, since tourism pulls capital and labour to coastal settlements and any attempts to involve hinterlands generally had little success (Jordan, 2000: 526-527). Rural residents who stay at their birthplaces in an attempt to respond to the problems associated with the decline of traditional agrarian industries adopt a range of adjustment strategies. According to Ilbery et al. (1998) these

include pluriactivity, where farm households search for new sources of income from a range of alternative economic activities, such as tourism.

Due to their rural status hinterland areas are automatically rendered peripheral. According to Baum (1999) and Brown and Hall (2000) peripheral areas suffer from remoteness, poor access to and from markets, low population density, small settlement size and high unemployment. This peripherality is more evident in the interior of most islands, since a dichotomy of needs and expectations exists between the affluent center (coast) and the struggling periphery (hinterland). In the words of Oppermann (1993) “the center/periphery dichotomy of tourism’s regional distribution ... has to be understood as capital city/coastal areas versus rural/inland areas (p. 546)”. As a result, a development gap is evident in most islands. From the tourism perspective this gap can be defined as the existence of socioeconomic imbalances and unequal distribution of tourism demand and supply between coastal and hinterland areas resulting to a series of positive and negative outcomes to islands and their communities.

### **The causes of the gap**

The uneven distribution of utilised resources and the inversely negative proportionate development of inland in comparison to coastal areas contribute to their slow development. In addition, tourism development does not develop in an empty space, but in coastal resorts often close to the capital and the large urban centres where international airports exist, and in consequence, coastal zone attracts continuing investment in infrastructure (Britton, 1982; Oppermann, 1993; Pearce, 1987).



As a result, hinterland spaces cannot compete on equal terms with coastal areas and become inaccessible. Because of a lack of diversity in their resources, most island destinations depend overwhelmingly on the 4S's (sun, sea, sand and sex), and only a small number of larger island destinations (e.g. Cyprus and Jamaica) are enriched with the resources that may allow the marketing of a diversified tourist product (Andriotis, 2004a; Butler, 1993; Ioannides, 1995). Peripherality; rurality; limited infrastructure and facilities; a labour market characterised by a limited skills base; the addressed immobility of international tourists in developing countries and the fact that the increasing demand of international tourists for beach holidays have shown that, in the past, the alternatives of hinterland areas for "touristisation" and self-sustaining growth were limited.

Only in the last years with a changing nature of tourism demand toward specialised forms of tourism (Montanari and Williams, 1994); rural amenities (Muheim and Salant, 1994) and remote and unspoilt areas (Bailly, Butler and Leontidou, 1996; Nash and Martin, 2003) has tourism aided the economic regeneration of hinterland areas. In reality, there is something particularly appealing about hinterland areas and rural living, since such areas are seen as authentic, rich in symbolic representations of the unspoilt, the pristine and the traditional (Irvine and Anderson 2003: 230; Urry, 1990). Hinterland locations with lakes, rivers, mountains, forests, rich nature and heritage, and picturesque villages can provide relaxation and an appealing environment different to the pace and pressures of 'normal' urban living. However, while many tourists are attracted by the "otherness" of rural locations, the conception of difference can rapidly shift from attraction to repulsion (Irvine and Anderson, 2003: 230).

### **The associated outcomes**

The consequences of the above have been reported by various studies (e.g. Andriotis, 2002a; Gannon, 1993; Getz, 1980; Lewis, 1996; Pearce, 1989; Richards, 1999; United Nations, 1997) and have been grouped under three broad issues: environmental, socio-cultural and economic (Table 1). In brief, the impacts of tourism on the environment, the society and the culture are more negative for coastal places, mainly due to the mass nature of tourist arrivals and the intensive type of development. On the other hand, the economic dependence on farming and the lack of population needed to sustain a vibrant business community due to the out-migration of the young population have created many economic difficulties for hinterland locations, although it is acknowledged that incomes generated by any economic activity have greater potential to remain in the hinterland economy. Due to the fact that the positive effects of tourism to hinterland locations outweigh the negative, most rural areas wish to move from outlying production zones to areas which are consumed in their own right (Anderson 2000; Irvine and Anderson 2003; Kneafsey, 2001).

**INSERT TABLE 1**

## THE CASE OF CRETE

### Crete and its tourism industry

Crete, with a population of approximately 603,000 inhabitants, is the largest Greek island and the fifth largest in the Mediterranean. Geographically, Crete is situated as a spatial autonomous system that lies outside the principal development axes of Greece (Archi-Med 2001: 2-3). Crete has remarkable natural resources. Its coastline totals 1,300 km, 15 percent of which consists of sandy beaches. Approximately 48 percent of Cretan land is mountainous, plains cover 23 percent of the land, and the remainder is semi-mountainous. Crete has 1,624 native plant species of which around 8.6 percent are endemic and the fauna amount up to 1,000 species (Anagnostopoulou et al., 1996). The recorded caves on the island number 3,500 and there are 100 gorges (Anagnostopoulou et al., 1997; Tourism Agency of Crete, 1997). The island has many historical monuments of perfect architecture from all periods, from the Minoan civilisation (2600 BC-1150 BC) to the religious Byzantium. It has approximately 25 archaeological sites, 20 museums, 25 Byzantine monasteries, 860 Byzantine churches, Turkish mosques and Venetian public buildings and castles (Areia, 1996). With these rich cultural and environmental resources, the expansion of the Cretan tourism industry was inevitable.

In the last decades Crete has experienced significant levels of tourism growth. As a result, tourism is now the largest economic activity of the island. In 2002, close to 3 million tourists visited the island (HNT0, 2003). It has been estimated that approximately 40 percent of the local population is, directly or indirectly, involved in tourism activities

(Anagnostopoulou et al., 1996; Region of Crete, 1995). Tourism is expected to increase and to remain the island's largest foreign exchange earner (Andriotis, 2002b; 2002c; Andriotis and Vaughan, 2003; Eurostat, 1994) building on the rapid growth of arrivals of international tourists: an increase of approximately 350 percent between 1980 and 1990, and more than 200 percent between 1990 and 2004. However, the island attracts, almost entirely, package tourists looking for the 4S's (sun, sea, sand and sex) (Andriotis, 2004b; Andriotis and Vaughan, 2003). In addition, the island face high pressures on land use, detected mainly in the urban and coastal zones, a problem that has led to the phenomena of weak realisation of the historical and natural image of Crete, because extensively ungraceful and negative landscapes have been built, degrading areas of aesthetic and cultural value (Archimed, 2001: 11).

### **The development gap in Crete**

Although tourist arrivals in Crete have increased steadily, the money brought by tourism does not yet seem to be well-distributed (Andriotis, 2000; 2001; 2003a; Greger, 1988). Thus, tourism development in Crete intensified the following types of regional inequalities or development gaps:

#### *Gap 1: North vs. South*

The three largest cities (Heraklio, Chania and Rethymno); the four main ports (Heraklio, Chania, Rethymno and Agios Nikolaos) and the two international airports of the island (Heraklio and Chania) are located on the northern coast (see map in Figure 1).

As a result, more than 88 percent of tourist enterprises and approximately 90 percent of beds and rooms are located on the northern coast (Tables 2 and 3) and, consequently, the vast majority of municipalities on the northern coast have high importance indexes (more than 3.135) (Figure 2). Since tourism generates employment and business opportunities, the northern coast has attracted more than 70 percent of the island's population (Andriotis, 2003b; Eurostat, 1994). As a result, the southern part of the island lags behind development because of inattentive tourism planning and access difficulties (the bad road network connections and the mountains), and only a small number of southern coastal areas (e.g. Ierapetra, Agia Galini, Matala, Plakias and Paleohora) have a well-developed tourism industry.

**INSERT FIGURE 1**

**INSERT TABLE 2**

**INSERT TABLE 3**

**INSERT FIGURE 2**

*Gap 2: Urban centers vs. rural areas*

Evidence at city level shows a tendency towards the maintenance or strengthening of the dynamism of the five main urban centers of the island (Heraklio, Chania, Rethymno, Agios Nikolaos and Ierapetra). The population of the five largest cities corresponds to 42.1 percent of the island's total (253,231 inhabitants) and a large share of

tourist enterprises (approximately 60% of travel agencies, 30% of car rentals, 24% of bike rentals and 19% of rooms and beds). In addition, many tourist enterprises are found on coastal resorts on the vicinity of cities, the so-called urban-rural fringe, which is defined by Weaver and Lawton (2001: 439) as the area extending from the edge of a city's contiguous urban development to the outer edge of vehicular commuter belt. As shown in Figure 2, most municipalities with an importance index of over 1.442 were either urban or on the vicinity of cities.

### *Gap 3: Coast vs. hinterland*

The vast majority of the islands' tourist enterprises (95.6 of travel agencies, 99% of car rentals and 100% of bike rentals) are located on coastal areas (Table 2). In addition, 96 percent of accommodation establishments representing 98.7 percent of beds and rooms are situated on the coast (Table 3). In particular, within 982 Cretan accommodation establishments, 87.3 percent were located at a distance of less than 500 metres from the coast and only three percent were located on a distance more than one kilometre from the coast. As a result of the 26 non-coastal municipalities, 12 had no registered accommodation establishment, and, as a result, an importance index of zero, while the remainder had a very low importance index ranging from 0.005 to 0.404 (Figure 2).

Since the major resorts of the island and the largest urban centres are found on the coast and the non-coastal municipalities have the lowest levels of tourism-induced

development, it is considered that the gap between the coast and the hinterland is the largest problem of the regional government of the island.

The unprecedented increase in coastal tourism during the last decades has resulted in the attraction of rural population to coastal resorts in search of employment opportunities (Kousis, 1984; Papaioannou, 1987). Although most villages along the coastal strip are now booming financially through tourism, hinterland areas, where tourism is under-developed, witness serious depopulation due to the migration of a large proportion of their economically active population to the urban centres and the fast growing coastal resorts of the island. For example, Tsartas et al. (1995) found that the population of Tzermiado, in Lassithi, has decreased 20 percent since the 1980s due to the out-migration of young people to the tourist resorts. Likewise, Papadaki-Tzedaki (1997) reports that Amari, the municipality with the least developed tourism industry in the Prefecture of Rethymno, faces the highest depopulation problem.

In the interior of the island only a limited number of areas, such as Samaria gorge, Zeus' cave, Archanes village, Zaros, Lassithi plateau and few others, have managed to attract tourists. These tourists come mainly on day trips and very seldom stay overnight. In fact, the economy of most rural areas is directed to farming and small industry, with tourism playing a secondary role in their economy. As Terkenli (2001) reports for the coastal resort of Chersonissos:

*a large number of the region's geographical characteristics have been drastically altered by the long-term presence of mass tourism along the coast, whereas the hinterland has been affected by the same forces in a*

*roughly inversely proportionate way to its distance from the coast - measured in terms of accessibility and contact (p. 232).*

Only a limited number of hinterland areas, usually the ones closest to the resorts, receive some benefits from tourism spending. For instance, in Anoya, a Cretan mountain village, tourism was seen as a new economic activity that entered village life and many women with manual looms opened small shops, where they could sell their products to tourists (Saulnier, 1980). Since the number of tourists was not sufficient for the sale of increasing production, outside merchants bought the products and resold them to the tourist centers of the coast.

Although the urban and coastal Crete has become prosperous, most interior villages have remained poor and unchanged from tourism. As Greger (1988) reported for the mountain village of Magoulas:

*apart from the arrival of tourist cars, busses and coaches passing along the main road at the lowest level of Magoulas, only occasionally to stop, the village has not been noticeably changed by tourism (p. 15).*

Although Greger wrote about Magoulas more than 15 years ago, the situation still remains unchanged.



## **Regional policy**

The development gap identified above for the island of Crete is a function of past tourism policies that provided incentives just for the development of coastal areas, and more specifically for the development of the northern coast. More specifically, from 1950 until now, most Greek governments provided incentives for tourist development to the already developed and even congested areas. Although the 1981-1985 five year plan for Economic Development proposed restrictions of further tourism development in saturated areas, and attempted to use tourism for the development of underdeveloped regions that had suffered steady population drain, uneven tourism development on the island has been consolidated rather than suspended (Andriotis, 2001; Leontidou, 1998).

European Union's Maastrich Treaty acknowledged that tourism should reduce regional disparities (Wanhill 1997). In Crete, only recently, various programs are used as ultimate mechanisms for bridging the development gap between the coast and the hinterland. More specifically, under Natura 2000 and Agenda 21, plans have been designed in co-operation with the local authorities and businesses aiming at increasing awareness in tourists and locals, and inducing the local population, especially the young people, to remain in mountain areas through promotion of alternative livelihood opportunities, such as eco-tourism, mountain tourism and agro-tourism (Agenda 21, 1998).

In order to achieve balanced development by narrowing the disparities between coastal and hinterland regions of Crete, the European Union finances various projects. Under the LEADER program attempts are being made in Psiloritis (a Cretan mountainous area) to associate tourism with traditional farming activities through agro-tourism

promotion (EU, 2000). On the same lines, the EU's Social Development Programme for the period 2000-2006 for Crete, out of a total budget of €730.310 million (64% of which will come from EU Structural Funds), offers €208.603 million (28.6% of the total) for safeguarding the environment and narrowing the disparities between Cretan regions and €221.551 million (30.3% of the total) for developing mountain and other rural areas (EU, 2004). Although these funds will not be given directly to tourism, planned projects will have a positive effect on hinterland areas' tourism development. However, past research has shown that although the availability of EU funding clearly acts as a catalyst for change and contributes to the enhancement of the island's tourist product, the lack of a strategic master plan, bad management and inadequate co-ordination of regional and national programmes with relevant EU ones, have resulted in various deficits for the implementation of EU projects (Andriotis, 2001; 2004c)

## **BRIDGING THE GAP**

Although in Crete the concentration of tourist supply in coastal resorts may result in some advantages, because concentration of infrastructural investments restricts tourism problems, permits greater use of existing infrastructure and creates economies of scale by requiring a smaller level of infrastructural investments, residents of the less-developed hinterland may think that the limited tourism expansion in their areas will harm the goal of the economic revitalisation of their communities (Andriotis, 2001). As a result, various measures are urgently required to bridge the gap, curb the phenomenon of intense

population pressure on certain urban and coastal areas and improve rural dwellers' standard of living through tourism.

First, to achieve balanced development among coastal, urban and hinterland areas of the island, conditions for reducing the population drain from rural and isolated districts should be created by upgrading the role of and improving social services in small towns and villages with actions aimed at reconstruction of their space and supporting infrastructure, transportation and communications, e.g. construction of roads and parks, better water supply and sewage network, etc. In addition, coastal areas can play a particular role as growth poles and gates to their hinterlands. Hinterland regions can be promoted as an alternative to sun, sea and sex tourism. Great importance should be given to the attraction of alternative forms of tourism, such as cultural, agro-tourism, eco-tourism, mountain and trekking tourism. In doing so, there is a need for financial assistance policies to create the necessary infrastructure and facilities and improve accessibility, e.g. through subsidize of interest rates for business loans, fund allocation through Community Support Framework, better incentives through new development laws, etc. Certain natural elements, such as forests, caves, gorges, mountains, etc. should be developed and exploited in specific sustainable ways.

Second, to increase benefits from tourism through higher participation of rural dwellers from interior Crete and generate employment opportunities in lagging areas, more small-scale tourist facilities and tourism centres should be developed. Future small scale developments may be realised in the interior villages, incorporating small traditional lodgings, restaurants, shops selling local products and enterprises offering various recreational, leisure and sport activities and promoted by Hellenic National

Tourism Organisation's offices, local travel agencies and foreign tour operators. As already found by Andriotis (2002b), small hospitality firms in Crete result in larger benefits to the local economy. To these ends, it is necessary to support rural residents to invest in the establishment of small tourist enterprises. However, consideration should be given to carrying capacity levels.

Third, a viable relationship of the two co-operating sectors, farming and tourism, is of decisive importance. Development and planning in Crete should be directed to an increased production and consumption of interior farming and cattle-breeding products, such as: fruits and vegetables, dairy, stock-farming, bee-keeping, aromatic herbs, spices, etc., as well as Cretan folk-art crafts, such as: basket-weaving, wood sculpture, knifemaking, ceramics and leather. As Kalomiris (2000) supports:

*the recyclable circulation of economic flows gradually produces additional flow values within the island's economic activity, which self-finances development at a lower cost. Thus, the distribution of financial resources from and to the island maximises the returns on planning investment, which is, the preservation of the population in the interior with the local characteristic quality of agricultural produce. The coastal course of development not only selects the culture of the interior in a folklore style, as is usually the case, but is inter-related to and socially and economically dependent on the mountain interior (p. 5).*

Fourth, the problem of regional concentration of tourism is a consequence of tourism demand. Crete is a mass tourism destination visited mostly by Western European tourists. These tourists are confined to a short season and their influx pushes both the natural receptor and the infrastructure beyond their limits of tolerance. Therefore, the development of domestic tourism, which is directed to different areas and seasons than those of mass tourism might have a positive effect on the retention of population in the hinterland areas of the island.

Finally, from this study it was evident that up to now policies to keep the population in the Cretan hinterland were limited and have largely failed. Taking into account that in the last two decades, a significant part of the planning and funding related to regional policy originating from the EU, it implies that the public sector should be concerned with the speed of planning implementation, and EU funding should be directed towards hinterland areas which are well behind both the expectations and needs of the island. It is hoped that such a policy will more fully utilise the potential of hinterland areas, and, enhance the overall competitiveness of the island's tourism industry.

## **CONCLUSION**

This work aimed to examine the development gap that tourism creates between coastal and hinterland areas. The reason was to provide recommendations to bridge this gap. In doing so, various recommendations were proposed taking as a case the island of Crete. The main conclusion of this study is that increased significance of non-agricultural incomes can only create economic opportunities to hinterland Crete.

It should be noted that although the increase of revenues in hinterland locations through tourism would be desirable, it should not come at the expense of destroying the interior's natural and cultural environment. Only if there is continuous and unprejudiced control, will future investments be environmentally-friendly, directed to the development of alternative and cultural forms of tourism and inspired by local culture and architectural tradition. In achieving the aim of sustainable development, the proposed interventions for Crete should be applied with consistency, continuity and efficiency.

To conclude, the regional development effect of tourism on islands is a complex process that should be further studied. Although, the results reported in this study for the island of Crete made it possible to identify the development gap between coast and hinterland and the necessity to bridge this gap, the results cannot be generalized but should be viewed as indicative rather than definite for all island settings. The findings of this study should be strengthened by a more thorough investigation of hinterland vs. coastal areas gap in order to identify whether development patterns to Crete differ, compared to other locations.

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# APPENDIX ONE

## **Methodology**

### *Overall approach and sampling*

This paper reports on a case study of the regional disparities created by tourism in Crete. Given the limited research on the development gap between coastal and hinterland areas, secondary data were collected from public and private organisations and libraries in order to receive information in statistics, development laws, plans, regulations and all relevant research having been undertaken. Region of Crete provided data on the location of travel agencies (N = 458), car rentals (N = 521) and bike rentals (N = 140). For the spatial distribution of accommodation establishments (in total 1,387), their rooms (N = 66,340) and beds (N = 124,591) within the island, data were obtained by the Hotel Directory of Greece published in 2003 by the Hellenic Chamber of Hotels. The tourist enterprises used in the sample included all enterprises operating under the license of the Hellenic National Tourism Organisation (HNTO).

### *Statistical Analysis*

When the data on the location of tourist enterprises were collected, they were analysed using the Statistical Package for the Social Sciences (SPSS) version 11.5. The statistics carried out and, where appropriate, reported in this paper were frequency distributions and crosstabulations.



To identify differences between coastal and hinterland municipalities of Crete the Capital City Importance Index (CCI), proposed by Mergard (1986), was modified as follows.

$$CCI = (A_m/A_i)(P_c/P_i)$$

where  $A_m$  = Accommodation in each municipality;

$A_i$  = Accommodation in the island;

$P_m$  = Population of each municipality;

$P_i$  = Population of the whole island.

As shown above this index is a ratio of the percentage of beds in each municipality and the latter's share of the island's population and was calculated to measure each municipality's share in the island's total tourism industry.

GIS was used to illustrate differences among municipalities. Data used to calculate the importance index refer to accommodation establishments having obtained a license by the HNTA. However, the island's hospitality industry consists of a considerable number of undeclared unlicensed units and rooms, known as 'parahoteleria' (Andriotis 2003d) that are not included in the calculations.

**Table 1: Coast/hinterland outcomes' dichotomy**

	<b>Coast</b>	<b>Hinterland</b>
<b>Environmental Impacts</b>		
Traffic / Congestion	High	Low
Noise / Air / Water pollution	Maximum	Minimum
Landscape	Urbanised	Natural
Use of land	Incompatible/Extensive	Compatible/Lower
Carrying capacities	Exceeded	Controlled
<b>Socio-cultural Impacts</b>		
Number of inhabitants	Increasing	Decreasing
Damage to cultural heritage	Maximum	Minimum
Architectural style	Modern	Traditional
Tourists/residents interaction	High	Low
<b>Economic Impacts</b>		
Tourist enterprises	Many	Few
Dependence on imports	High	Low (for food products)
Control of development	International	Local
Type of economic activity	Tourism	Agriculture

**Table 2: Allocation of travel agencies, car and bike rentals (2003)**

	<b>Travel Agencies</b>		<b>Rent a Car</b>		<b>Rent a Bike</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
North (of which urban)	403 (274)	88.0 (59.8)	472 (146)	90.6 (28.0)	123 (32)	87.9 (22.9)
South (of which urban)	35 -	7.6 -	44 (9)	8.4 (1.7)	17 (1)	12.1 (0.7)
Hinterland	20	4.4	5	1.0	-	-
<i>Total</i>	<i>458</i>	<i>100</i>	<i>521</i>	<i>100</i>	<i>140</i>	<i>100</i>

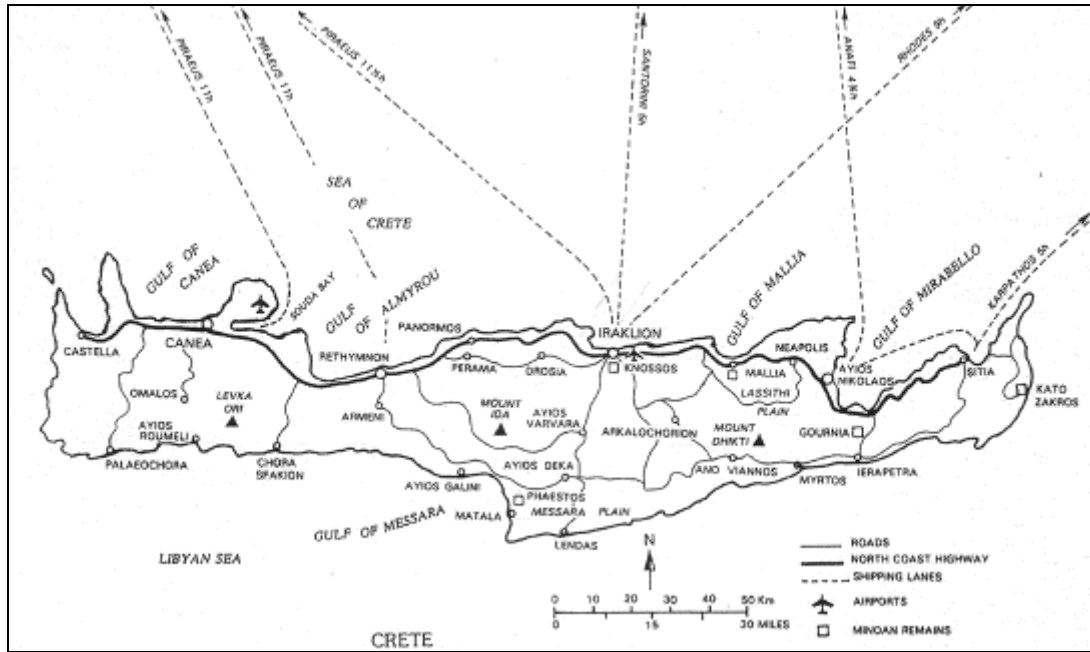
**Source: Compiled by data provided by the Region of Crete (2004)**

**Table 3: Allocation of accommodation establishments (2003)**

	Accommodation Establishments		Rooms		Beds	
	N	%	N	%	N	%
North (of which urban)	1,165 (286)	84.0 (20.6)	59,526 (11,086)	89.7 (16.7)	111,719 (20,639)	89.7 (16.6)
South (of which urban)	168 (28)	12.1 (2.0)	5,929 (1,494)	8.9 (2.3)	11,182 (2,914)	9.0 (2.3)
Hinterland	54	3.9	885	1.3	1,690	1.3
<i>Total</i>	<i>1,387</i>	<i>100.00</i>	<i>66,340</i>	<i>100.00</i>	<i>124,591</i>	<i>100.00</i>

**Source: Compiled by data provided by the Hellenic Chamber of Hotels (2003)**

Figure 1: Map of Crete



**Figure 2: Importance index for each municipality**

