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**Andriotis, K. (2008). Integrated Resort Development: The Case of Cavo Sidero, Crete. *Journal of Sustainable Tourism*, 16(4): 428-444.**

**Abstract:** Many governments have encouraged integrated resort development in an attempt to improve the well-being of the local population by generating jobs and increasing income and because of the easier control of tourism activities within their boundaries. However, most research reports various adverse environmental and social impacts. Due to the difficulty to assess the impacts that may result from the construction of an integrated resort, the majority of research has been conducted after their construction. This study is an impact assessment carried out prior to a large scale development aiming to examine whether an integrated resort proposed for development in Cavo Sidero, Crete, will result in positive impacts to the destination and the local community and to investigate whether any conflicting interests have arisen within stakeholder groups. Through a primary research of various stakeholder groups it is revealed that economic impacts are perceived as mostly positive, while social and environmental impacts, in many cases, are viewed as negative, and that conflicting interests have arisen within different stakeholder groups.

**Keywords:** integrated resorts, large-scale developments, impacts, perceptions, conflicting interests, Crete

## **Introduction**

As a reaction to the proliferation of unplanned beach resorts, development of integrated resorts has grown rapidly the last two decades (Stanton and Alislabie 1992; Wong 1998). On the supply side, many governments have increasingly turned to integrated developments in an attempt to improve the well-being of the local population by generating jobs and increasing income (Anthony 1997; Smith 1991) and private investors have seen integrated resorts as a way to maximise their profits (Stanton and Alislabie 1992). On the demand side, although there are no statistics on the relative proportion of tourist demand for integrated resorts, in the context of globalisation and widening international tourist markets, it is acknowledged that integrated resorts offer great opportunities to visitors for leisure, recreation, and sports (Henderson 1998; Smith 2003).

Due to the difficulty to assess the impacts that may result from the construction of an integrated resort, and the fact that plans for integrated resorts are developed by consultancy firms and private investors that rarely publish or divulge their 'secrets' before resort operation, the majority of research, e.g. Henderson (1998); Smith (1992); (2003); Stanton and Alislabie (1992); Stiles and See-Tho (1991), has been conducted after the construction of integrated resorts. This study is an impact assessment carried out prior to a large scale development aiming to examine whether an integrated resort proposed for development in Cavo Sidero, Crete, will result in positive impacts to the destination and the local community and to investigate whether any conflicting interests have arisen within stakeholder groups.

Cavo Sidero resort was selected as study area for two reasons. The first is that until now, research about integrated resorts in the Mediterranean coasts remains limited, and most research on the impacts of integrated resorts has focused on the Asian region. Crete, a Mediterranean island with extensive tourism development is a typical sand, sea and sex destination that through the construction of integrated resorts aims at attracting high-spending tourists while limiting the further growth of mass package tourism. The second factor is related to the fact that the integrated resort proposed for development in Crete has been announced as one of the largest and most luxurious resorts in the Mediterranean, and, perhaps, all over the world.

This paper is divided into five sections. Following this introduction, section two reviews the literature on the impacts of integrated resort development. Section three provides the methodology adopted for the writing of this paper. Section four describes the study area and the plans for the construction of the Cavo Sidero integrated resort. The final section provides the implications and the conclusions of the study.

### **Impacts of Integrated Resorts**

There can be little doubt that tourists visiting upscale resorts with golf courses, recreational facilities and hotels are high spenders, since they have a higher propensity to consume luxury goods and services. In addition, integrated resorts can be viewed as an attempt to provide a carefully planned, controlled, and well-defined tourism product (Wall 1997:715), expanding the opportunity to design an environment that ensures compatible and complementary land uses (Stiles and See-Tho 1991:26). However, the results are not always encouraging (Ayala 1995; Warke, Bradley and Guilding 2005). Because of the large size of integrated resorts, adequate financial and supporting resources are critical for seeing integrated resorts through their development (Wong 1998:94). To overcome the high outlays required for a single developer to undertake such up-market investments, development costs are frequently spread among several investors reducing uncertainty for each one and enhancing economies of scale in mass advertising (Stiles and See-Tho 1991). This action frequently results in delays to the time required to bring an integrated resort to operation (Wong 1998).

Upscale resorts are usually owned and managed by large metropolitan investors and rely heavily on imports of items required to cater for the tourist demand, e.g. furniture, computers, luxury foods and drinks, although the local population is largely excluded from the development process (Freitag 1994; Mbaiwa 2005; Wall 1997). In practice, since integrated resorts provide most of the facilities required by tourists, their aim is to retain a large proportion of visitor spending by encouraging visitors to remain within their boundaries and they seek to internalize visitor expenditures within the resort precinct (Stanton and Alislabe 1992). This is evident in the Luperon Beach resort, Dominican Republic, where the management of the resort seeks to limit the interaction between tourists and host community in an attempt to improve its own profits (Freitag 1994:551). In such cases integrated resorts can be transformed into tourist enclaves, where the economic links with the host communities are limited, and locals are prevented from entering the premises (Jenkins 1982; Wall 1997).

Frequently, the only linkage to the local community is through employment of workers during construction and subsequent staffing of the resort

(Freitag 1994; Ioannides and Holcomb 2003; Pearce 1989:68). However, as found in Luperon although jobs offered by the resort are more desirable than local jobs due to higher pay, the vast majority of locals are employed in low quality jobs such as waiting staff, kitchen porters and maids, and only a few held low level supervisory positions, while all higher administrative positions at the resort are filled by non-local people (Freitag 1994). On the other hand, there are cases where attempts have taken place to integrate integrated resorts into the local economy by providing economic opportunities for the local population, e.g. by fostering economic links between the resort and the neighbouring communities through the purchasing of local food production (Inskip and Kallenberger 1992; Telfer and Wall 1996; Wall 1997:715). Also, social conflicts may arise due to the sociocultural differences and purchasing power gaps between the host community and tourists (Tosun 2002) and various social impacts emerge such as commercialization, criminality, change of social values, and negative demonstration effects (Andriotis 2003a; Freitag 1994; Mbaiwa 2003; 2005).

Although within integrated resorts there is a high control of activities, outside their borders, developments may be undertaken in an unplanned and ad hoc basis, as reported by Smith (1992:215) for Nusa Dua, where the larger area is characterized by unrestrained development with all the attendant environmental, social and other problems found at unplanned resorts. In addition, several studies suggest that large-scale developments in environmentally sensitive areas “not only degrade the natural environment, but also destroy the economic value of natural resources for tourism in the long-run (Lee 1997:587)”. This happens because they demand large stretches of land for construction of recreational, sports, residential and infrastructural facilities. This demand results in disastrous effect on reefs, beach erosion and direct loss of flora and fauna, as reported for many island destinations (Selwyn 2001; Stonich 1998; van der Duim and Caalders 2002).

Integrated resorts seriously strain local resources due to their increased demand for electricity and water, as well as generation of waste. Hotels have among the highest water and energy consumption rates, because of their unique characteristics (operate on a 24 hour basis), and the behavior of their occupants (hotel occupants are not resource conscious, but tend to be unusually reckless in their energy and water use habits) (Chan and Lam 2002; EC 2000; Ioannides and Holcomb 2003). As a result, water and electricity use by tourists is substantially greater than that of local residents (Essex, Kent and Newnharm 2004; Goodwill 1995; Holden 2000; Stonich 1998). On the other hand, there are cases where water consumed by tourism enterprises is discharged directly into drainage system, rivers and sea, causing bad odor and pollution, although many destinations face difficulties to dispose solid waste generated by tourism (Trung and Kumar 2005).

### **Methodology of the Study**

The research results presented in this paper are from an ongoing study on the anticipated socio-economic and environmental impacts of the Cavo Sidero integrated resort. Initially, the lack of information on the study area made it extremely difficult to make causal connections between the current situation and the anticipated impacts of the proposed resort. To overcome this limitation, various methods of research were employed.

First, to support the identification and evaluation of the various impacts of integrated resort developments, material from scientific referred journals and grey literature (newspapers, internet, integrated resorts project reports, reports of NGOs and international and national organisations, etc.) was collected.

Second, a study on local community perceptions towards the integrated resort was undertaken. Most community studies on the impacts of tourism experience have adopted a positivist methodology approach (e.g. Andriotis 2002; 2004; 2005; Andriotis and Vaughan 2004; Korca 1998; King, Pizam and Milman 1993; Pizam 1978; Fredline and Faulkner 2000). However, such methodologies are criticized for reducing the complexities of human attitudes to numbers and statistics. Therefore, there was a need to adopt alternative strands of interpretivist methodologies based on the notion that local community groups have their opinions and mindsets and they should be able to give accurate accounts of them. To investigate the attitudes of key stakeholders toward the proposed development being involved to the integrated resort development, interviews with local decision-makers were undertaken, including the representative of a local non-Governmental Organization (NGO), the abbot of the monastery of Toplou, as representative of the Public Welfare Foundation Panagia Akrotiriani (the landholder), and from the public sector the Mayor of Itanos, and the president of the Development Organization of Sitia. The interviews of the local decision makers lasted between 40 minutes and three and a half hours. During each interview the researcher recorded notes. These notes were transcribed at the end of each interview and were used to evaluate respondents' perceptions. Although it did not become possible to interview the developers, various parts of this study were supported by material provided by the developer through telephone conversations, e-mails, and regular post.

An additional research method employed was a survey conducted among the people living in the area. Formal interviews, initially planned, were abandoned as, after some attempts, the locals felt uneasy to speak in public. Instead, informal discussions with locals from the area surrounding the proposed site became an invaluable part of the research. The informal interviews were conducted in public areas such as local shops and kafenia (coffee shops), through a conversational process, during which the researcher was able to ask about the informants' views concerning the proposed development. In total, 23 locals were interviewed in groups consisting of 2 to 7 persons. After each discussion the researcher recorded notes in private, in order to make the note-taking process look less suspicious.

Although the interviews were unstructured, certain common information was requested and each interviewee was given the opportunity to discuss freely his viewpoints on the impacts of the proposed development. The issues covered in the discussions with the locals, as well as with the decision-makers, were drawn from past studies on the impacts of integrated resorts (e.g. Henderson 1998; Hernandez, Cohen, and Garcia 1996; Smith 1992), and from the characteristics of the specific case. The interviews were conducted between March and August 2005, and included questions on the environmental, social, cultural and economic impacts that the integrated resort will bring to the area and the local population. Also questions were included on whether the respondents are positive to the construction of the resort. All data were probed further for detail, and were read and re-read and compared to select significant statements to identify common themes. Themes occurred more regularly across the interviews were categorised afterwards to identify the main issues of respondents' attitudes.

When analysing the data, the author provides excerpts from the interviews, to illustrate the most powerful and eloquent expressions of more general attitudes.

Finally, since the impacts of an integrated resort are multidimensional, and resort construction is a multifaceted activity which touches many sciences, academics with specialized knowledge on various aspects of the proposed development provided useful input.

### **The Cavo Sidero Project**

Tourism is the largest foreign exchange earner in Crete. Approximately 40% of the local population is directly or indirectly involved in tourism activities. Tourist arrivals increased approximately 350% between 1980 and 1990, and nearly 190% between 1990 and 2005. However, the island's tourism industry faces serious problems, such as low spending power of tourists, seasonality, environmental pollution and insufficient infrastructure (Andriotis 2003a; 2003b; 2005; 2007; Briassoulis 2003). All these problems, in conjunction with the concentration of many small and medium sized enterprises in coastal areas and the difficulty to control their activities, are among the justifications offered for the shift of Greek tourism policy (for example see Development Law 2601/98) towards the establishment of Integrated Development Tourist Areas.

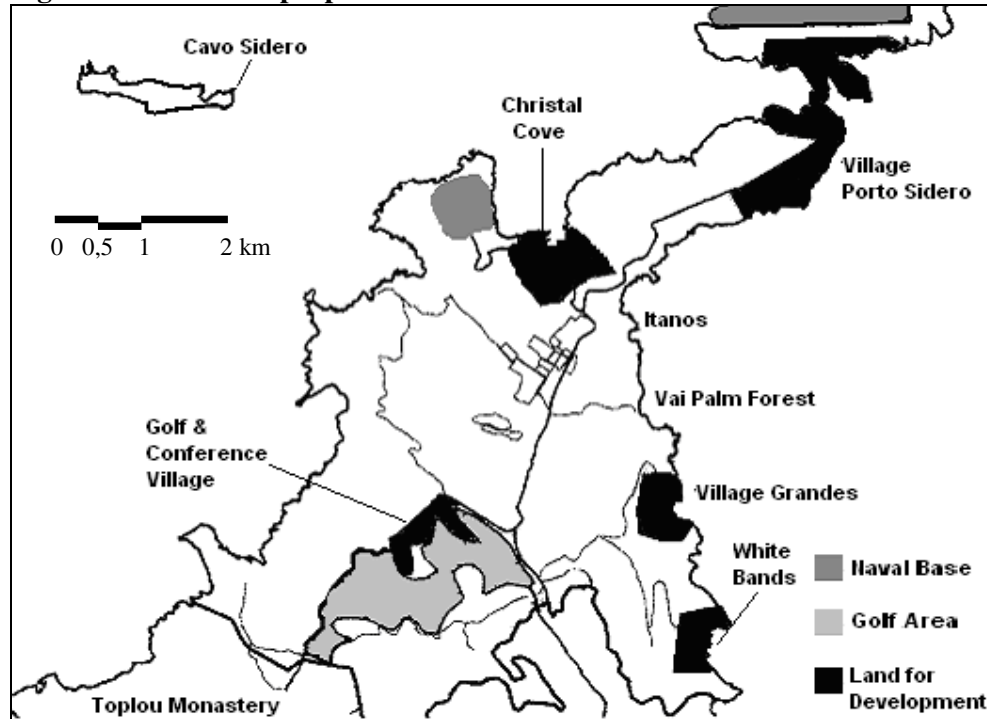
To ensure that future tourism investments in Crete will not result in additional problems, but their positive will outweigh their negative impacts, the Greek state encourages the construction of the first integrated resort in Crete. This resort will be located in the peninsula of Cavo Sidero within the borders of the municipality of Itanos, northeastern Crete. The municipality of Itanos has a population of 2,807, of which slightly more than 5% are migrants. 54.5% of the residents are involved in the primary sector and 31.6% in services. Its tourism industry consists of 8 hotels with 261 beds and 52 rented room and apartment enterprises totalling 531 beds (HNT0 2004).

The Cavo Sidero site covers most of a rugged promontory used mainly for grazing. About 12,000 sheep and goats breed in the area, more than twice as many as it can sustain in terms of available grazing resources. This has led to serious environmental impacts such as degradation of soil and flora (Anipsitakis 2001:246). However, the area has been unaffected by any other types of activities, such as urbanisation, intense tourism activity and industrial development. The site includes the sandy beach of Vai, fringed by Europe's only natural palm forest, and perhaps the only forest of Phoenix Theophrasti in the world that is protected by NATURA 2000 and its conservation has been financed by the European Union Life programme. Vai, with some 200,000 visitors every year, is one of Crete's main tourist attractions threatened by uncontrolled human activities (EC 2002). In addition, the broader region features some very important cultural elements on the island, such as: the Holy Monastery of Toplou and the Minoan ruins at Itanos.

Minoan Group PLC (formerly Loyalward Group PLC), Greece's biggest-ever UK investor, plans to build a massive tourist complex with a total capacity of 7,000 beds and a budget of US\$ 1.4 million (€1.2 million), in a 26-square kilometre site (Figure 1). The master plan of the development includes five individual hotel complexes, 750 villas, 250 townhouses, two 18-hole and one 9-hole golf courses, retail shops and leisure facilities (including an open-air theatre). Buildings will cover only a small percentage of the site (less than 2%) mainly because of the vast area leased by the monastery (Green 2003). The

company considers the development as a large ecotourism project that will be able to achieve total eco-practices in application, although a local journalist calls the project as “an inside trading or real estate investment”. The land has been leased for 80 years, from the Public Welfare Foundation “Panagia Akrotiriani”, a church body (founded by the Toplou Monastery and the Archdiocese of Siteia) that launched the original tender (Green 2003). On operation, the foundation will receive 10% of yearly revenues.

**Figure 1 Location of proposed Cavo Sidero Resort in Crete**



In 1994, a comprehensive study for the project started after its announcement and initial approval made by the Public Welfare Foundation Panagia Akrotiriani of Toplou Monastery. In May 2002, zoning approval and first level environmental approval was granted for the development and two months later an approval by the 13<sup>th</sup> Ephorate of Antiquities was obtained. The project has already received approval from the Ministry of Environment and Public Works (YPEXODE) on the overall Environmental Impact Assessment (EIA), despite the three pleas submitted by NGOs, academics and locals.

The EIA was over 2.500 pages long and extremely technical. This lengthy document was made public for a 30-day consultation/review period at the office of the municipal administration. Citizens and all interested parties could examine the document and provide written comments. They could also make copies of the EIA documents, but should bear the copying cost, which in this case was prohibitive. The EIA study team, headed by an environmental engineer, consisted of engineers (civil, chemical, environmental, etc.), architects, surveyor, geologists, silviculture and agricultural scientists, legal advisers, sociologists, and archaeologists. Since the EIA study relates to a vast field of scientific knowledge and expertise, and only part of these issues can be sufficiently addressed solely by one of the disciplines mentioned, it was not possible for the author, as well as the

local population, to judge its findings. The same applies to the competent Greek authorities which, as Androulakis and Karakassis (2006) support, do not have the necessary staff and expertise to reliably handle the total number of studies submitted.

On May 2007 the locals appealed to the Supreme Administrative Court (Council of the State, in Greece) in an attempt to annul the administrative act which approved the construction of the Cavo Sidero Resort. The rationale for this appeal as well the criticisms on the EIAs are as follow. First, the EIA lacks sufficient documentation and methodological rigor to support its findings despite the fact it has followed the legal framework. Second, the absence of alternatives in the EIA, other than the null, became starkly apparent. Third, according to the pleas the EIA for the proposed development has many technical errors, and fails to address, or addresses inadequately, very critical issues such as water quality and quantity, electricity supply, carrying capacity, golf courses construction and overall environmental quality. For instance, in one of the pleas, a NGO mentioned: “The EIA is not convincing when it supports the construction of 7,000 beds because the same number was mentioned 12 years ago when the agreement was signed. Then, they talked for 7,000 beds although they had not conducted any carrying capacity study. Only if the EIA assessments were proposing another figure, for example, 5,000 or 8,000 beds, their findings could be convincing”. Finally, the EIA was criticised for making no effort to encompass people living in communities adjacent to the area needs, as well as, any type of involvement in the preparation of the plans.

### **Analysis of Impacts**

The data collected though the primary research are presented in this section. Attempts have been made to identify common patterns of responses and develop relevant generalizations and conflicting interests arising from the project under study.

### **Socio-economic Impacts**

During the field research many potential economic impacts of the Cavo Sidero project were reported. As stated by the developers the project is estimated to provide 2,300 direct jobs at full operation, 1,000 indirect jobs, as well as 1,200 non-permanent jobs during the construction phase. Discussions with the president of the Development Organisation of Sitia, revealed that the development will help stem internal migration by providing jobs for the local population. In this respect, one resident stated: “Locals who migrated in search of a better life will return to their homeland”. Direct benefits in the form of personal income also accrue to host communities from large scale investments. According to a resident’s statement: “I own a shop in the area and I believe that the resort will increase my shop’s turnover, and it will bring new opportunities for work to locals through the selling of food, drinks and souvenirs to tourists”. To these ends, one decision-maker mentioned that the proposed ‘mega-resort’ will increase public sector revenue through the easier control of economic activities and increased taxation.

Along with the advantages, also various disadvantages were reported. The threat of a ‘luxurious ghetto’, where foreigners will take the control of planning and development away from the local people, was noticed by the NGO representative and one resident. In addition, one hotelier expressed his anxiety



that the proposed investment will result in reduced demand for his property, since incoming tourists can be directed by tour operators to the new established resort. Some interviewees, mainly decision-makers, were worried about increased economic leakage, foreign employment, and cumulative negative threshold effects. To avoid increased external domination one decision-maker suggested: “The development should take the form of a joint venture, where locals will be able to get a better proportion of the land to be developed and more participation in the planning and the execution of the plans”, and two others demanded from the developers to assure economic links with the local community through purchases of local production at market prices and recruitment of locals. Likewise, all decision-makers and one resident suggested that tourists staying in Cavo Sidero resort should consume locally grown organic products, something already accepted by the developer.

The unemployment rate in the area is 10.5%, 3.8% higher than that of the island’s total. However, after the construction of the resort jobs on offer will exceed the number of local residents in the municipality of Itanos. Given the lack of tourism-related skills of the local population reported by academics, an increase in the migrant workforce will be inevitable. This demand/supply situation will not prevent calls being made by most respondents to ensure that any of the new jobs should be for locals rather than outsiders or that certain types of managerial jobs should be reserved for hosts. As one resident believed: “The Cavo Sidero resort will bring new opportunities for work during construction, although these opportunities will be reduced during its operation through employment of foreigners”. From another point of view, one resident was afraid that: “Many farmers and agricultural workers will abandon the ‘plough’ to set up a souvenir shop, a restaurant or a bar and many vineyards and olive groves will be put ‘under concrete’ for tourist use”. As a result, tourism development might result in the abandonment of traditional agricultural and craft-related occupations, since past studies undertaken in Crete (e.g. Andriotis and Vaughan 2004; Kousis 1989) have shown that tourism-related jobs are perceived as more attractive and generating higher income, compared to traditional professions, something expressed also by an older resident who was enthusiastic about the prospect of his grandchildren to work in the resort or get involved in a tourism-related profession. Finally, a small number of residents anticipated that the development will increase inflation, especially in food and land prices. This cost of increased prices was believed that will fall on the surrounding community, rather than the tourists and the developers.

Today, in the Cavo Sidero surrounding area the ratio of host population to beds is 1 to 0.28. After operation of the resort, the ratio will increase almost tenfold to 1 to 2.78. (If it is taken into account that other investments of 7,000 beds have been announced in the area, the ratio will be more than 1 to 5.5.) Under the condition that there will be sufficient tourist demand, social carrying capacity will be reached or even exceeded soon after the operation of the resort. However, the number of tourists, the location and its sensitive natural environment can support without incurring any negative effects has not been specified. As a result, fears were expressed by most residents and decision-makers that the tranquility of their community will be affected because of the visitors and employees that the resort will attract from other areas. Also, decision-makers, with one exception, expressed various concerns about the scale of the development, and they demanded by the developer to downscale the

proposed development. However, downsizing the development is not necessarily a solution as it may cause similar environmental and sociocultural problems, while being economically unsustainable, something mentioned by the abbot of Toplou Monastery.

Some residents offered public testimony about the possible impacts of the resort on traditional Cretan culture and way of life. One farmer owning a field in the vicinity of the proposed development, mentioned that he was delighted with the potential of his grandchildren to learn playing golf. Another respondent anticipated that: “The way of life of the locals will change as a result of their contact with tourists .... Mixed marriages may increase and drinking habits and consumption patterns may change”. As reported by one resident: “The locals’ demand for foreign products, such as imported drinks may increase”, and another believed that: “Imitation of tourists liberated behavior will result in changes of the social values and revision of the local moral codes”. These changes to be brought by the Cavo Sidero resort, signal the inevitable modernization of the local social structure.

The proposed development includes the best unspoiled beaches in the area that constitute an important component of the way of life for local residents, who fish and swim in these coastal areas. Therefore, concerns were expressed by two residents about future restrictions to the beaches of the Cavo Sidero Resort. Also, one resident said that up to now there is no criminality in his village where they do not even need to lock their doors, and expressed concerns that with the arrival of tourists, criminality and burglaries will increase. On the other hand, some interviewees believed that the resort will offer more opportunities for entertainment. “We will be able to visit and enjoy with our children the recreational areas of the resort”, as one resident pointed out.

### **Environmental Impacts**

The pressures that the proposed resort will have on resources were a point of concern for some academics and decision makers. Integrated resorts use a large amount of energy for heating, ventilation, air conditioning, laundry, dry-cleaning, hot water, cooking, refrigeration, sport facilities and fuel for vehicles. For instance, a study undertaken by Assariotaki and Keniadaki (2003) in Crete, estimates that a large four star hotel consumes 18.023 kwh for electricity and 1.476 liter of fuel per overnight stay for heating during the summer season. Based on these figures, if the Cavo Sidero resort operates in full capacity 126,161 kwh and 10.332 m<sup>3</sup> of fuel will be required per day. (The calculations for energy use, as well as water consumption and waste generation below, are indicative and therefore should be treated with caution. In addition, these calculations can be much higher if the incoming workforce is taken into account.) However, a study by the Technical Chamber of Greece (2005) estimates that energy consumption in the Cretan hospitality industry can be reduced from 10 to 25% depending on the energy-saving technologies utilized.

Nevertheless, one resident pointed out that: “During the summer season the island faces severe electric power shortages that will be aggravated in the area after the construction of the resort”. Even if the resort management reduces energy consumption to half, by using renewable energy sources and energy-saving technologies, as reported by two decision-makers and one academic, electricity demand will still be tremendous. However, one decision-maker believed that the problem of electricity shortage is not severe for the study area,

but for the island as a whole, since the area produces high amounts of renewable energy.

In Crete, during the peak tourist season, water sources are tapped beyond limits (Chartzoulakis, Paranychianakis and Angelakis 2001; Lambrakis 1998) and sometimes the local population and entrepreneurs have to buy water from water-wagons (Andriotis 2003a). According to Presidential Decree 43/2002 each overnight guest at a luxury hotel in Greece requires 450 litres per day. Based on this estimation the Cavo Sidero resort will require 3,150 m<sup>3</sup> a day when operating in full capacity. The area's scarce resources in water will be also disrupted from the construction of the golf courses, since an average golf course requires 2,300 m<sup>3</sup> of water on a daily basis (Mastny 2002).

Although most residents interviewed did not anticipate water shortages to be associated with the planned tourism development, academics and decision-makers expressed concerns that after project implementation their area will face water shortages. Also, one resident was concerned that the high water demand after the construction of the resort will make water supply more expensive for locals. As it was suggested: "The high demand of water on an island with several rainless months, and in an area renowned for droughts will place undue burden on the island's scarce water resources". However, the mayor of Itanos is confident that: "Water resources will be sufficient to satisfy increased demand under the condition that various infrastructural projects will take place by the developer". According to the developer, these projects include the construction of seawater desalination plants and boreholes, as well as construction of 'desert type' and naturalistic golf courses. However, these options have been criticized by various authors (e.g. Briassoulis 2007; Essex Kent and Newnharm 2004; WWF/Adena 2004), that they do not always reduce water consumption, although they imply high construction and maintenance costs, as well as serious ecological and health related problems.

An additional problem that the resort will face, is waste and sewage disposal. In Crete, a conservative estimate is that each tourist generates on average 400 to 450 litres of sewage and 2 to 2.25 kilos of waste per overnight stay (Manios 2004). This means that 7,000 tourists in Cavo Sidero will generate at least 2,800 m<sup>3</sup> of sewage and 14 tons of waste every day. The solid waste disposal issue for an investment of 7,000 beds is a very serious one, according to an academic. Thus worries were expressed by an academic that the rubbish produced by 7,000 people in a remote area such as Cavo Sidero will be difficult to be disposed of, when even the major cities of Crete have technical and legal difficulties to deal with waste. In this respect, the mayor of Itanos believed that waste disposal will be the largest problem to be faced, since the landfill (XYTA) of the municipality of Itanos is very small to cope with such a large amount of waste. However, the developers and a decision-maker supported that the problem will be reduced through recycling of glass, paper, and raw material. Also, biological treatment is believed to reduce the amount of wastewater.

In Crete, the increased tourist presence and other human activities have already degraded the natural coastal environment (Andriotis 2003c; 2007; Lambrakis 1998; Legakis et al 1993). Beaches, wetlands and coastal forests already suffer from the presence of hotels, vehicle circulation, cultivation, and recreational activities (Legakis et al 1993:149). Although the Minoan Group reports that the integrity of the physical and cultural resources will be preserved and indigenous flora will be used for landscaping, destruction of vegetation and

habitat loss for the construction of golf courses, buildings, facilities and access roads will inevitably degrade the natural environment. In the words of one resident “The soil and sand along the coasts will be concreted over, as sports and leisure facilities and restaurants will replace them”. Since the natural vegetative cover will be replaced by artificially-created lawns, the NGO representative reported that his organization is against the construction of golf courses because they believe that: “Golf courses do not fit with the Cretan environment”. As far as the built landscape is concerned, the developers plan to adopt Cretan traditional architecture and use of natural materials and traditional techniques for buildings’ construction. However, a main point of friction is the exact building sites. As the NGO representative stated: “The investors wish to conceal them in streambeds, which the NATURA personnel regard as particularly vulnerable and in need of protection”. On the other hand, the problem of visual appearance of the area was a concern for a resident who was afraid that: “After project completion, many parts of this scenic area will lose their natural character and will irreversibly be transformed into concrete for the benefit of high class mass tourism”.

As far as golf construction in Cavo Sidero is concerned, worries have been expressed in local newspapers (see Briassoulis 2005), and in a forum organized in 2005 by the Pancretan Network of Ecological Organizations (ECOCRETE). Although the proposed golf developments will upgrade the island’s tourist package and may reduce the seasonality problem, since golfers from northern countries will be attracted to the area in the off-season to play golf when it is too cold in their own country, they will increase environmental problems. Golf course development requires a substantial amount of land. For example, Markwick (2000:516) estimates that an 18-hole golf course requires approximately 50-60 hectares of land, while at least a further 25 hectares are required for a 9-holes course. The two 18-hole and the one 9-hole golf courses planned for construction in Cavo Sidero require at least 125 hectares of land. In the case of Sitia, where land supply is limited, the construction of the resort will generate conflicts with other uses, such as agriculture, stock raising and nature protection.

Upon completion of the project, the threat of erosion from indiscriminate visitor use will be of particular concern. As one resident wondered: “What will happen when tourists travel around the Cavo Sidero site to areas of cultural and environmental value?” Due to the size of the resort, the vegetative cover, the beach system and cultural sites will be damaged through trampling or crushing by tourist vehicles, as supported by the NGO representative and academics. In an attempt to eliminate these problems, the abbot of Toplou Monastery stated that: “The contract with the developer does not involve sensitive areas around the monastery and the Vai Palm forest, as well as the antiquities of Itanos”. Likewise, the developer asserts that the transfer of visitors within the villages and from the neighboring destinations (Sitia & Palaikastro) will take place in a small fleet of mini buses and mini vans powered by hybrid fuel-efficient engines. However, it will be difficult to control the large number of incoming tourists from renting cars and exploring sensitive locations. On the other hand, one resident believed that: “People investing millions of euro in Cavo Sidero will have an interest to take all necessary precautions to preserve the natural and built environment”, and one decision-maker stated that: “The resort developers will be

committed to protect the environment, since allowing the site to become polluted would damage their business”.

A major problem of the area will also be the limited infrastructure. Based on the average length of stay in Crete that is approximately nine days, 7,000 tourists will depart and a further 7,000 will arrive every nine days during peak seasons. Although the airport of Sitia has been further developed to serve international charter flights, the question of another resident was: “Is there the adequate infrastructure to cope with such a large number of tourists, who, for example, need land transport from the nearby airport to the resort?” Additional questions were raised, such as: “Are there adequate services (transport, police, health) to carry that volume of traffic?” and “Does the government have funds to undertake the required public work programmes?” The answers to most of these questions are negative. Although, according to the mayor of Itanos: “The development will resolve various infrastructure problems .... Road construction will commence and the local quality of life will be improved”. However, concerns were expressed by a resident, who believed that the excessive expenses of providing infrastructure to facilities will fall upon local communities, as opposed to the developers. This is true, since the developers will undertake infrastructure projects only within the development borders, and, obviously, it is not the infrastructure within the development that worries people who already live on the Peninsula. Instead, the real worry is the provision of infrastructure outside the resort borders that has to be covered by the local and national governments. Finally, although decision-makers have reported that up to now the area does not face problems of uncontrolled tourism development, after project implementation they feared that unplanned activities will take place outside the Cavo Sidero resort borders. As a result, a resident foresaw the possibility of Cavo Sidero to face similar problems as Chersonissos and Malia resorts on the northern coast, where condominiums have been constructed.

## **Conclusions**

Assessment of tourism impacts is especially important, when large projects perceived to be controversial or risky, are being proposed. In the Cavo Sidero case, it is evident that the impacts and effects will be pervasive, and will result in changes to lifestyle, living conditions, land uses, eco-system degradation and an over-exploitation of natural resources that will not easily be reversible. Thus the proposed development has caused much interest and controversy among the developers, academics, locals, NGOs and public sector officials. At one extreme, the developers, the EIA consultants and the abbot of Moni Toplou were largely supportive of the development, emphasizing its positive economic impacts in terms of employment and income generation and supporting that the positive impact will outweigh the negative. In between, public sector officials perceived to a smaller or higher degree, a balance between the costs and benefits, although they acknowledged various problems, mainly associated with the use of resources. At the other extreme, the NGOs and academics believed that the proposals will threaten the socio-cultural context of the area and will result in overexploitation of resources and loss of habitat and environmental destruction. They thought that it will be very difficult to manage the tremendous increased demand for water and electricity, as well as waste and sewage disposal and for this reason they were against the project. Finally, discussions with the people living in the area revealed complex and ambiguous attitudes. From one hand,

there were residents expressing various concerns about the project, although others were not highly concerned about the detrimental effects that such a large-scale investment will have on the ecological and socio-cultural environment.

But what was the reason for this? The vast majority of locals admitted lacking knowledge on the possible impacts of the proposed project, and many reported that they were not well informed about the proposed development, a situation that prevented them from venturing an opinion. Thus locals' assessment of the Cavo Sidero resort impacts should be examined in relation to their awareness as regards the true impacts. In other words, local people base their opinion on what they know about the project which may much or mismatch reality. The degree of match between what will happen (reality) and what people think will happen (perceptions) is an important consideration in the development and management of tourism. The support of the local community for tourism development and management is as much conditioned by the perceptions of the reality as by the actual outputs and outcomes (Andriotis and Vaughan, 2003; Swarbrooke, 1993).

In practice, major decisions in relation to the future of the Cavo Sidero integrated resort are taken without the full participation of the local community. In response, there were residents who complained that the local population is excluded from the development procedures in their area. As a resident felt: "The project has been imposed upon us without considering of our thoughts, and we are unable to do anything to prevent or improve it", and another added: "Cavo Sidero is left in the hands of foreign developers whose only interest is profit". However, only when the local community has access to the planning process and their concerns are being considered, they will support the development of the integrated resort. Thus it is pointless for the community to expand tourism without involving the community (Lankford and Howard 1994).

From a political economy perspective, foreign capital flows in the area will threaten state and local control over the economy and the developers will be able to exercise oligopolistic power over the labor force. There are certainly difficult political questions, not just because relative income and cultural access are at stake in the development of the Cavo Sidero resort, but also because the well-being of the locals should be a prime concern. Quite clearly, small societies have a right to maintain and improve the quality of their existence and should have the freedom of choice (Aspelin 1977). Locals should be economically, socially, and culturally involved in any type of development. However, in the current situation, the approval of the project is ultimately a political decision where the locals have little or no choice at all.

This study was an initial attempt to anticipate tourism impacts on a proposed integrated resort, in an area where tourism is not a dominant economic activity. It was undertaken at a particular time, the predevelopment stage. However, the assessment of the socio-economic and environmental effects of an integrated resort should take place not only before, but also after the construction of the project. Future ex post research is required in the case of Cavo Sidero in order to investigate whether assessments on the anticipated impacts reported in this paper will be experienced after the construction of the resort.

To conclude, the evolution of integrated resorts is a complex process, which cannot be fully analyzed in a short paper. In the case of Cavo Sidero, the plans included the construction of villas, in the form of second homes. However, it was not the aim of this paper to examine the impacts of such type of

developments. Further research is necessary to investigate the impacts of second homes within the borders of integrated resorts. Based on the limitations of the study and the complexity of integrated resorts development, it is extremely difficult to make generalized, universally accepted proposals for ameliorating problems resulting from integrated resort construction. Despite this limitation, some of the findings of this study can be used to predict the repercussions of integrated resort proposals on other locations, Mediterranean or not. The review of the anticipated impacts undertaken in this paper may assist policy-making in explaining the persistent difficulties possible to be experienced not only in Cavo Sidero, but also elsewhere in the world.

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## References

- Andriotis, K. (2003a) Tourism in Crete. A Form of Modernisation. *Current Issues In Tourism* 6(1):23-53.
- Andriotis, K. (2003b) Problems Faced by the Cretan Tourism Industry as Perceived by the Business Sector. *Tourism: An International Interdisciplinary Journal* 51(1):21-30.
- Andriotis, K. (2003c) Coastal Resorts Morphology: The Cretan Experience. *Tourism Recreation Research* 28(1):67-76.
- Andriotis, K. (2005) Seasonality in Crete. Problem or a Way of Life? *Tourism Economics* 11(2):1-18.
- Andriotis, K. (2006) Host, Guests and Politics. Coastal Resorts Morphological Change. *Annals of Tourism Research* 33(4): 1079-1098.
- Andriotis, K. (2002) Residents' Satisfaction or Dissatisfaction with Public Sector Governance: The Cretan Case. *Tourism and Hospitality Research: The Surrey Quarterly Review* 4:53-68.
- Andriotis, K. (2004) The Perceived Impact of Tourism Development by Cretan Residents. *Tourism and Hospitality Planning and Development* 1:1-22.
- Andriotis, K. (2005) Community Groups' Perceptions and Preferences to Tourism Development: Evidence from Crete. *Journal of Hospitality and Tourism Research* 29:67-90.
- Andriotis, K. & Vaughan, D.R. (2003). Urban residents' attitudes towards tourism development: The case of Crete. *Journal of Travel Research*. 42(2):172-185.
- Andriotis, K., and Vaughan, D.R. (2004) The Tourism Workforce and Policy: Exploring the Assumptions Using Crete as the Case Study. *Current Issues in Tourism* 7(1):66-87.
- Androulakis, I. and Karakassis, I. (2006) Evaluation of the EIA System Performance in Greece, Using Quality Indicators. *Environmental Impact Assessment* 26:242-256.
- Anipsitakis, A. (2001) Sustainable Development and Ecological Tourism in the Valleys of the Rivers Ezousas, Xeros and Diarizos in Eastern Paphos, Cyprus and the Mountain Region of Sitia, Crete. In Symposium Tourism in Protected Regions of Greece, 15-16<sup>th</sup> October, Sitia, Crete, Greek Center of Biotopes – Hydrotopes, ed., pp. 241-249.
- Anthony, E.J. (1997) The Status of Beaches and Shoreline Development Options on the French Riviera: A Perspective and a Prognosis. *Journal of Coastal Conservation* 3(2):169-178.
- Aspelin, P.L. (1977) The Anthropological Analysis of Tourism. *Annals of Tourism Research* 4(3):135-160.
- Assariotaki, Z. and Keniadaki, M. (2003) Promotion of Integrated Electric Services in the Public Buildings of Crete. *Paper Presented at the KAPE-Region of Crete Public Hearing, 3<sup>rd</sup> April 2003, [in Greek]*.



- Ayala, H. (1995) Ecoresort: A 'Green' Masterplan for the International Resort Industry. *Hospitality Management* 14(3/4):351-374.
- Briassoulis, H. (2003) Crete: Endowed by Nature, Privileged by Geography, Threatened by Tourism? In Bramwell, B., (ed.) *Coastal Mass Tourism. Diversification and Sustainable Development in Southern Europe*, pp. 114-132. London: Channel View Publications.
- Briassoulis, H. (2005) Questions for the Construction of Golf Course. *Patris* 27 June.
- Briassoulis, H. (2007) Golf-centered Development in Coastal Mediterranean Europe: A Soft Sustainability Test. *Journal of Sustainable Tourism* (forthcoming).
- Britton, S.G. (1982) The Political Economy of Tourism in the Third World. *Annals of Tourism Research* 9(2):331-358.
- Chan, W.W. and Lam, J.C. (2002) A Study on Pollutant Emission through Gas Consumption in the Hong Kong Hotel Industry. *Journal of Sustainable Tourism* 10(1):70-81.
- Chartzoulakis, K.S., Paranychianakis, N.V. and Angelakis, A.N. (2001) Water Resources Management in the Island of Crete, with Emphasis on the Agricultural Use. *Water Policy* 3:193-205.
- EC (1999) *Finally Report on the Study on the Assessment of Indirect and Cumulative Impacts, as well as Impact Interactions within the Environmental Impact Assessment (EIA) Process*. EC Directorate General XI, Environment, Nuclear Safety and Civil Protection. Cardiff, European Community.
- EC (2000) *Feasibility and Market Study for a European Eco-label for Tourist Accommodations (FEMATOUR)*. CREM Project no. 00.402. Amsterdam: European Commission, DG ENV.
- EC (2002) Towards a Guidance Document on NATURA 2000 and Forestry – “Challenges and Opportunities”. <[www.ucn.org](http://www.ucn.org)>.
- Essex, S., Kent, M. and Newnham, R. (2004) Tourism Development in Mallorca: Is Water Supply a Constraint? *Journal of Sustainable Tourism* 12(1):4-28.
- Fredline, E., and B. Faulkner (2000). “Host Community Reactions. A Cluster Analysis”. *Annals of Tourism Research*. 27(3): 763-784.
- Freitag, T.G. (1994) Enclave Tourism Development: for Whom the Benefits Roll? *Annals of Tourism Research* 21(3):538-554.
- Goodwill, H. (1995) Tourism and the Environment. *Biologists* 42:3.
- Green, E. (2003) Cretan Resort Braves Red Tape. Athens News 5/12, A34.
- Henderson, J.C. (1998) *Integrated Resort Development in Bintan, Indonesia*. Nanyang Technological University: Singapore.
- Hernandez, S.A., Cohen, J. and Garcia, H.I. (1996) Residents Attitudes towards an Instant Resort Enclave. *Annals of Tourism Research* 23(4):755-779.
- HNTO (2004) *Statistics*. Athens: Hellenic National Tourism Organisation.
- Holden, A. (2000) *Environment and Tourism*. London: Routledge.
- Inskip, E. and Kallenberger, M. (1992) *An Integrated Approach to Resort Development: Six Case Studies*. Madrid: World Tourism Organisation.
- Ioannides, D. and Holcomb, B. (2001) Raising the Stakes: Implications of Upmarket Tourism Policies in Cyprus and Malta. In Ioannides, D., Apostolopoulos, Y. and Sonmez, S. (eds.), *Mediterranean Islands and Sustainable Tourism Development*, pp. 234-258. London: Continuum.

- Ioannides, D. and Holcomb, B. (2003) Misguided Policy Initiatives in Small Island Destinations: Why Up-market Tourism Policies Fail? *Tourism Geographies* 5(1):39-48.
- Jenkins, C.L. (1982) The Effects of Scale in Tourism Projects in Developing Countries. *Annals of Tourism Research* 9(2):229-249.
- King, B., Pizam, A. and Milman, A. (1993). Social impacts of tourism - host perceptions. *Annals of Tourism Research*. 20(4), pp.650-665.
- Korca, P. (1998). Resident perceptions of tourism in a resort town. *Leisure Sciences*. 20(3), pp.193-212.
- Kousis, M. (1989). Tourism and the family in a rural Cretan community. *Annals of Tourism Research*. 16(3), pp.318-332.
- Lambrakis, N.J. (1998) The Impact of Human Activities in the Malia Coastal Area (Crete) on Groundwater quality. *Environmental Geology* 36(1-2):87-92.
- Lee, C-K. (1997) Valuation of Nature-based Tourism Resources Using Dichotomous Choice Contingent Valuation Method. *Tourism Management* 18(8):587-591.
- Legakis, A., Kollaros, D., Paragamian, K., Trihas, A., Voreadou, C. and Kypriotakis, Z. (1993) Ecological Assessment of the Coasts of Crete (Greece). *Coastal Management* 21:143-154.
- Manios, T. (2004) The Composting Potential of Different Organic Solid Wastes: Experience from the Island of Crete. *Environment International* 29(8):1079-1089.
- Markwick, M.C. (2000) Golf Tourism Development, Stakeholders, Differing Discourses and Alternative Agendas: The Case of Malta *Tourism Management* 21:515-524.
- Mastny, L. (2002) Travelling Light: New Paths for International Tourism. [www.geog.nau.edu](http://www.geog.nau.edu).
- Mbaiwa, J.E. (2003) The Socio-economic and Environmental Impacts of Tourism Development on the Okavango Delta, North-Western Botswana. *Journal of Arid Environments* 54:447-467.
- Mbaiwa, J.E. (2005) Enclave Tourism and its Socio-economic Impacts in the Okavango Delta, Botswana. *Tourism Management* 26:157-172.
- Pearce, D.G. (1989) *Tourist Development* (2<sup>nd</sup> ed.). New York: Longman.
- Pizam, A. (1978). Tourism's impacts: the social costs to the destination community as perceived by its residents. *Journal of Travel Research*. 16(4), pp.8-12.
- Selwyn, T. (2001) Tourism, development, and society in the insular Mediterranean. In Ioannides, D., Apostolopoulos, Y. and Sonmez, S. eds., *Mediterranean Islands and Sustainable Tourism Development*, pp. 23-44. London: Continuum.
- Smith, R.A. (1991) Beach Resorts: A Model of Development Evolution. *Landscape and Urban Planning* 21:189-210.
- Smith, R.A. (1992) Review of Integrated Beach Resort Development in Southeast Asia. *Land Use Policy* 9:209-217.
- Smith, R.A. (2003) Planning for Coastal Tourism: Success and Failure in Southeast Asia. *Paper Presented at the 34<sup>th</sup> Annual Conference of Travel and Tourism Research Association, 15-17 June, St Louis, Missouri USA.*
- Stanton, J. and Alislabie, C. (1992) Up-market Integrated Resorts in Australia. *Annals of Tourism Research* 19:435-449.

- Stiles, R.B. and See-Tho, W. (1991) Integrated Resort Development in the Asia Pacific Region. *Travel and Tourism Analyst* 3:22-37.
- Stonich, S.C. (1998) Political Ecology of Tourism. *Annals of Tourism Research* 25(1):25-54.
- Swarbrooke, J. (1993) Local authorities and destination marketing. *Insights*. July, A15-A20.
- Technical Chamber of Greece (2005) *Energy Review in Buildings and Industry and the Preparation of Engineer in Crete*. Athens: TEE, [in Greek].
- Telfer, D. and Wall, G. (1996) Linkages between Tourism and Food Production. *Annals of Tourism Research* 23(3):635-633.
- Tosun, C. (2002) Host Perceptions of Impacts. A Comparative Tourism Study. *Annals of Tourism Research* 29(1):231-253.
- Trung, D.N. and Kumar, S. (2005) Resource Use and Waste Management in Vietnam Hotel Industry. *Journal of Cleaner Production* 13(1):109-116.
- University of the Aegean (2002) *Defining, Measuring and Evaluating Carrying Capacity in European Tourism Destinations*. Athens: EC.
- van der Duim, R. and Caalders, J. (2002) Biodiversity and Tourism. Impacts and Interventions. *Annals of Tourism Research* 29(3):743-761.
- Wall, G. (1997) Integrating Integrated Resorts. *Annals of Tourism Research* 23(3):713-717.
- Warren, J., Bradley, M. and Guilding, C. (2005) Eco-resorts vs. Mainstream Accommodation Providers: An Investigation of the Viability of Benchmarking Environmental Performance. *Tourism Management* 26:367-379.
- Wong, P.P. (1998) Coastal Tourism Development in Southeast Asia: Relevance and Lessons for Coastal Zone Management. *Ocean and Coastal Management* 38(2):89-109.
- WWF/Adena (2003) *Development in the Drought*. Madrid: WWF/Adena.

