Sustainable Tourism Development in the Greek Islands and the Role of Tourism research and Education

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1. Tourist development and labour market features - in relation to education - in the Greek islands

In the post-war period, Greek islands have been one of the most important tourist poles of the country. Their development features, which vary considerably and form different tourist development patterns, constitute an interesting research subject, especially in the context of sustainable tourism.

In the first part of our paper, we shall examine the tourist development features in the Greek islands and the characteristics of the tourist labour market in conjunction with the education level of people employed in the tourist sector. In the second part we shall elaborate on those factors which contribute towards more sustainable development patterns in the Greek islands. Finally, in the third part, we shall suggest a set of measures and interventions in tourist research and education, which can shape a positive framework for the sustainable tourism development in the Greek islands.

(a) Tourist development features in the Greek islands

Tourist development in the Greek islands is characterised by a wide variety of types and models of infrastructure and services supplied. The most important factors which have contributed in shaping this insular tourist development are the following:

- The non-coherent nature of tourist development together with the lack of programming and planning in the islands.
- The effort to adjust infrastructure and services to different demand requirements - especially those of international demand.
- The post-war tourist policy at both national and regional levels.
- The role of individuals, e.g: professionals, local representatives, groups of residents, people employed in the tourist sector who contribute to local development.
- The tourist resources of each island, which determine the infrastructure it offers.


After the Second World War and, more specifically, after 1970, Greek insular tourism was developed through existing patterns and models. Their predominant tendencies are:

1. **Development heavily characterised by infrastructure and services for organised and individual mass tourism demand.** This type of demand is characterised by seasonality (2-7 months), the linkage of travelling with vacationing and the large number of foreigners in total tourist arrivals. In most islands which have adopted this model their whole development depends on tourism, influencing the local socio-economic structure. Quite often, this model has been developed in an unprogrammed way, with considerable consequences in local socio-economic and environmental structure.

2. **Development in which tourist infrastructure and services are gathered in specific - spatially - clusters (settlements or regions) which either have tourist resources or organised infrastructure.** It mainly concerns areas with geographical comparative advantages. In most cases, tourism follows the “mass” model and is linked with holiday making. However, there are islands with different types of development patterns (mass tourism, holiday tourism, cultural tourism, etc). The lack of planning and the dominant role of tourism, constitute a characteristic feature of this model.

3. **Development in which tourism constitutes a structured production activity and a special feature of the island’s overall development, without affecting or competing with the other production sectors.** In this case, tourism is developed in parallel to and complements the other sectors of the local economy. In most cases, tourism is the most dynamic sector in the island, while in some cases it is merely one of the sectors making up the local production structure. In this model, tourism is more “integrated” to the local structure, either because there were elements of programming or because different factors contributed towards this direction.

4. **Development in which different types of infrastructure and services co-exist and are addressed to different types of demand.** A characteristic feature of this model is that it constitutes either a combination of special and alternative forms of tourism, or a mixed model where both infrastructure of these forms and mass holiday tourism infrastructure can be found. In most cases, this development model is “integrated” to local socio-economic and environmental structure. It was developed either because there were elements of programming, or as an effort to adapt to competition or, finally, because different factors contributed towards this direction.

In conclusion, we would like to note that the aforementioned models usually relate to one island. However, there are cases where more than one of these patterns or models co-exist in an island. Some demonstrate a larger number of sustainability elements, while others only a few. The role of research and education is decisive not only in supporting these elements but also in shaping a structured sustainable development framework.

**(b) Characteristic features of the tourist labour market - relating to employees’ education - in the Greek islands**

Most of these features are also found in regions where tourism is characterised by: mass development, organised infrastructure and services, seasonality in demand, production dynamism and variety in development models. The main characteristic features are:

A small or medium share of employees having some kind of tourist education; they are usually employed in medium or high class hotels and organised tourist agencies.

- A small share of tourism entrepreneurs having some kind of tourist education.
- A small share of executives in tourist enterprises with university or post-graduate degrees in tourism or other disciplines.
• Considerable differences in employment patterns for men and women, especially those employed in hotels and agencies; these differences concern the posts, the education level and the period of employment during the tourist season.

• High percentage of unqualified - and often “underground” - employment in all types and sizes of tourist enterprises, which usually concerns women and young persons.

• Empirical knowledge in small-medium tourist enterprises (hotels, rooms to let, hostels, etc.) with a parallel lack of employees with tourist education or training.

• Considerable lack of local administration executives trained in tourism; this lack is also apparent in other public services and private enterprises which are indirectly related to tourism (commerce, transport, services, restaurants, etc.).

• The continuous specialisation and diversification of tourist services offered has led to a relevant demand for executives or employees with specialised tourist education in: organisation and planning of tourist development, group leaders for alternative forms of tourism (ecological tourism, excursions, cultural tourism, etc.). Generally, the lack of such executives bears upon the Greek tourist labour market and, especially, areas - e.g. islands - where the tourist product is characterised by variety and specialisation.

• Tourist education of the majority of employees concerns mainly secondary education or vocational training programmes.

The conclusion which can be drawn is that the level of education of people employed in the tourist sector has considerable weaknesses; measures have to be taken in order for the sector to be able to respond to the special features of demand.

2. Factors influencing the elements and procedures of sustainability in the Greek islands

The period after 1980 could be considered as an interesting transitional period in tourist development of the Greek islands, as regards the diversification in their development features. Our analysis focuses mainly on issues which support the “sustainable” features of this development. We shall point out that this has not been the result of an organised attempt or a structured policy, but rather a series of developments which, directly or indirectly, have supported the procedures of sustainable tourist development in Greece and, in particular, its islands. The lack of organisation and planning poses threats similar to those of “spontaneous” and unprogrammed mass tourism development which took place in the Greek islands in the ’60s and ’70s. This caused many problems in tourist development and the tourist “product” Greece offered at the time. This does not reduce the importance of factors supporting sustainability; it merely records the framework in which these factors are manifested. The most important of these factors are:


a) Efforts made by enterprises and local authorities to support competitiveness of the local tourist product

We refer to efforts aiming at supporting activities - and developing infrastructure - in order to create a product with “sustainable” features. These efforts are evident in many islands and mostly concern: organisation of alternative tourism activities, services and infrastructure for special or new tourist products, professional training in services which support the diversification and specialisation of the tourist product.

b) The policy of the European Union

After 1990, EU tourist policies and initiatives support sustainable tourist development, especially at a local level. Such developments are apparent in: development of special and alternative forms of tourism; tourist development programmes in the countryside linking tourism to other production sectors; training programmes for the unemployed; programmes for the protection of the environment and cultural heritage. One of the geographical areas where such policies have been implemented is insular Greece.

c) Greek policy on tourism

The effort to diversify and improve the tourist product through the specialisation of supply and the development of new services (special and alternative forms of tourism) constitutes a constant parameter of tourist policy, especially after 1970. Even though this policy cannot be assessed as a whole, it has contributed in supporting elements of sustainable tourist development in the country. Two parameters which should be assessed in parallel are: linkage of this policy with European Union policies (one of the most interesting examples is the programme “Tourism-Culture”) and efforts to upgrade the country’s tourist product in view of the more intensified international competition.

d) Local tourist development plans and programmes

In the past years, a large number of local development plans and programmes - designed and promoted at regional, prefectural or settlement level, e.g. seaside zones, regions with special environmental/cultural resources, etc. - were based on sustainable tourism and its elements. Islands benefited from such programmes, while local authorities, public entities and the European Union played an important role in assigning, promoting and monitoring them.

e) Certain parameters of tour-operators’ policy

It is a factor which, indirectly, has contributed towards supporting sustainable tourist development. They concern: i) the turn of tour-operators to new or specialised tourist products and services, mainly related to cultural, educational, scientific, ecological, sea tourism, etc.; ii) the effort to support entrepreneurial policies which aim at a balanced “integration” of tourist activities into the local social and environmental structure.

f) Changes in motives of both Greek and foreign tourists

In the past decades, Greece has responded to the new demands by gradually developing the necessary infrastructure and services related to modern tourist motives: cultural travels, travels to the countryside, excursions, travels to traditional settlements, travels with a naturalist content, etc. These travels shape a new, dynamic tendency of foreign and domestic demand. This demand contributed to the development of infrastructure and services with sustainable features in many areas and islands of the country.
g) Local socio-professional groups and agencies

It is a factor which functions indirectly, by supporting initiatives and procedures which contribute to sustainable tourist development. Some examples are: programmes supporting activities and infrastructure related to special forms of tourism, programmes relating to the environment or the protection of countryside settlements; promotion of production and handicraft activities relating to tourism; activities and infrastructure promoting local tradition and culture. Quite often, such initiatives are generated by local development agencies, which can be found in islands, as well.

h) The contribution of specialised scientists

This factor functioned widely - at the country as a whole - and indirectly supported the tendency to search for sustainable development models. We consider that the contribution of specialised scientist is important, especially in the following issues:

- The promotion of the need to have balanced tourist development models, integrated in the local socio-economic and environmental structure.
- The special features of the insular area, as regards its social, cultural and environmental structure and its geo-morphology.
- The critic assessment of the dominant mass tourist development model in all areas which have the relevant resources.
- The promotion of the view that tourism, culture and environment should coexist in efforts aiming at developing tourist regions.

The aforementioned factors support sustainable tourist development in the islands and other regions. However, the non-coherent nature and the lack of co-ordinated development in the islands hinder the shaping of structured “sustainable tourist products”. The third part of our analysis examines the issues in which tourist research and education must focus, in order to accelerate sustainability procedures in the islands.

3. Tourist research and education in the islands: a framework of interventions and measures supporting sustainable development

a) Tourist research

i) Registering tourist resources connected to sustainability

An analytical and complete registering of these resources aims at the following:

- To reveal geographical entities (region, island, group of islands) offering comparative advantages and which could be developed as “sustainable tourism areas”.
- To promote the characteristic features of these resources in order to lead to the formulation of a special promotion policy of the areas offering such resources.
- To register the special needs that these resources require in terms of local organisation and management and the development programmes required.

ii) Research of the potential and the needs of the islands’ labour market

This research constitutes a basic parametre in investigating the medium-term potential of sustainable development in the islands. It aims at:

- Registering the labour market needs to promote sustainable tourism programmes.
- Pointing out to the potential of some islands over others where specific factors (number of residents, demographic composition etc.) hinder the formulation of sustainability.

iii) Examination of existing development models in the islands, in order to assess the possible relation with sustainable tourist development

This will allow to assess some of the development features directly connected with the possibility to support sustainable development. It aims at analysing the following:

- Which development models are potentially related in a sustainable tourism context.
- Which are the necessary terms and conditions in order for areas offering special and alternative tourism infrastructure and services to acquire a structured and organised sustainable development framework.
- To what extent is it possible to achieve “co-existence” of areas where the dominant development pattern is mass tourism with areas where this pattern is the sustainable one.
- Which are the local production branches and sectors which can be linked to tourist development by promoting the necessary interlinking of the area’s production structure.
- Which are the possible necessary adjustments of tourist supply - based on the sustainability targets - in the medium-term characteristics of demand.

b) Tourist education

i) Education and professional training structures in the islands: upgrading and specialisation aiming at sustainability

The problems of tourist education in the islands are multiple and are directly related to the “tourist product” offered. To achieve sustainability, measures and interventions in the following areas are required:

- Upgrading the educational level of all employees in the tourist sector. This can be achieved through tourist education and training programmes. Emphasis should be placed on the increase in employees with higher and post-graduate tourist education.
- Specialisation of tourist education by enacting curricula focusing on sustainable tourist development requirements. These are: studies on special or alternative forms of tourism; studies in organising tourist enterprises; studies in planning and programming tourist development; studies in environmental management in tourist areas and enterprises.
- Upgrading the role of the Aegean University as regards both Tourist Studies programmes offered and their systematic interrelation with tourist research.

ii) Innovative tourist education programmes in the islands

Sustainable development is supported by innovative programmes which aim at creating a tourist product with long-term production features. In this context, the following tourist education and sustainable development training programmes are suggested:

- Distance learning curricula of three types: a complete tourist studies programme, continuous training programmes for people already employed in the sector and training programmes in tourism.
- “Polyvalente” education programmes in tourism for businessmen and people employed in tourist enterprises. This kind of education offers different courses within a thematically coherent education programme; it aims at offering knowledge on the operation of a tourist enterprise. It can improve the quality of services offered, especially in this area which is dominated by unqualified and empirical employment.

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- Training programmes in tourism for those indirectly employed in the sector, e.g. traders, individuals employed in transport, services, etc. This way, the educational level of people employed in a growing branch of the wider tourist sector will improve.

In conclusion, supporting the elements and procedures for sustainable tourist development in the Greek islands is directly linked with the quality upgrading and the specialisation of tourist research and education.
Tourism Development in Greek Insular and Coastal Areas: Sociocultural Changes and Crucial Policy Issues

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The paper analyses two issues that have characterised tourism development in Greek insular and coastal areas in the period 1970–2000. The first issue concerns the socio-economic and cultural changes that have taken place in these areas and led to rapid – and usually unplanned – tourism development. The second issue consists of the policies for tourism and tourism development at local, regional and national level. The analysis focuses on the role of the family, social mobility issues, the social role of specific groups, and consequences for the manners, customs and traditions of the local population. It also examines the views and reactions of local communities regarding tourism and tourists. There is consideration of the new productive structures in these areas, including the downgrading of agriculture, the dependence of many economic sectors on tourism, and the large increase in multi-activity and the black economy. Another focus is on the characteristics of mass tourism, and on the related problems and criticisms of current tourism policies. These issues contributed to a model of tourism development that integrates the productive, environmental and cultural characteristics of each region. Finally, the procedures and problems encountered in sustainable development programmes aiming at protecting the environment are considered.


The analysis here focuses on three main areas where these changes are observed: sociocultural life, production and communication. It should be noted that a large proportion of all empirical studies of changes brought about by tourism development in Greece have been of coastal and insular areas.

Social and cultural changes in the social structure

The most significant of these changes concern the family and its role in the new ‘urbanised’ social structure, social mobility and the choices of important groups, such as young people and women.

The first changes were registered in areas such as Mykonos (Loukissas, 1982; Stott, 1973), Crete (Kousis, 1989; Tsartas et al., 1995), Corfu (Tsartas, 1991; Tsartas et al., 1995), the Cyclades (Loukissas, 1982; Tsartas, 1992), Samos (Galani-Moutafi, 1993–4, parts I & II; Haralambopoulos & Pizam, 1996), and Rhodes (Kasimati et al., 1995) and concern the special features and functions of a typical family. Gradually, the paternal model, in which the father was the one who decided on the main choices of the family members (such as in relation to profession, education and savings), started to lose its dominant position. The gradual social and financial independence of other members of the family, owing to
revenue from tourism, led to a new type of family, in which individualism and collectivism coexist in decision making. In this context, the role of the younger – and usually more educated – members of the family, who have been socialised in the period of rapid tourism development, is being upgraded. The family now operates on the basis of strategies (Kousis, 1989; Stott, 1973; Tsartas 1992) for the expansion of this small ‘economic unit’, with the aim of taking advantage of opportunities arising from the ‘touristification’ of the social structure.

A different social structure is being formed, which is directly, but not exclusively, affected by the ‘urban-type’ social and economic relationships imposed by tourism. In this structure, one may find the social models of the ‘closed’ agricultural structure typical of the Mediterranean together with urbanised consumption models which, especially in the first phases of tourism development, are restricted to the urban centres, leading to a superficial ‘modernisation’ (Galani-Moutafi, 1993; Tsartas et al. 1995). In this context, the role of customs (e.g. festivities), as elements that reconfirm the tradition and the history of the region, starts to be downgraded. Their place is taken by new ‘urban-type’ entertainments (e.g. going to restaurants, tavernas and bars). At the same time, the pressing speed of employment and the new production relationships of all people living in these areas (Kousis, 1989) become the key argument for the gradual abandoning – especially by the younger population – of a way of life where the relationship between work and leisure time was more balanced and where social and professional mobility was less intense (Tsartas, 1991).

The social structure of these areas is gaining other new characteristics, the most important of which are an accelerating social mobility and a change in the way in which social positioning is measured. For many generations, social mobility used to be very restricted in these areas, since wealth and political power were usually concentrated within a relatively small social group (Tsartas, 1991, 1992). However, the spread of tourist income to larger groups of the population has led to the creation of an ‘expanded’ middle class, with high levels of consumption and dynamism in investment. In this context, social positioning has started to be measured more on the basis of income indices (levels of income) and less on social indices (such as education, family tradition and profession). This trend is most probably also related to the downgrading, mainly on the part of men, of education as a means of social mobility. In this new social reality, employment in tourism and the subsequent rise in income are considered to be a more secure way to gain upward social mobility.

Young people and women constitute the two groups in the population that play increasingly important roles in these insular and coastal areas (Stott, 1973; Tsartas et al., 1995). Young people tend to be those initially pressing for rapid tourism development, considering it to be the ‘ticket’ to modernisation and to change in their way of life. They tend to participate actively in all processes of social and economic change brought about by tourism in their areas, while, more recently, they have also taken the lead in forming groups seeking to change the mass tourism development model, which they now consider to be problematic for local development. Women, too, are benefiting from tourism development, which improves their position not only in the field of production but also in the social structure of these areas. The economic side of this improvement is more important, as in many cases women become employed for the first time, they
earn income and they have a significant presence in the creation of businesses. On the social side – although their status is improved – women, and especially the older ones, are often left aside, having at the same time to deal with the quite different and complex reality of their social and family relationships.

The ‘meeting’ of tourists and locals: Changes in customs and manners, preferences and stereotypes

Researchers in Greece and elsewhere have argued that tourism is not the only cause of change in a region’s customs and manners. Other social changes have moved in the same direction, such as the spread of mass media, expanding urbanisation, better communication, and extended use of information technologies. However, in the case of the Greek coastal, and especially insular, areas where tourism has developed, the historic phase of this development has been a very important influence. In most cases, tourism development took place before the above-mentioned social changes (Galani-Moutafi, 1993; Labiri-Dimaki, 1972; Stott 1973; Tsartas, 1992) so that it functioned as a strong transmitter of messages and it clearly contributed to the change in social relationships. At this point it is useful to consider the views and positions of people living in these insular and coastal areas, as they have been examined in two research studies carried out by the Greek Tourism Organisation for the period 1979–1986 and by EKKE for 1980 and 1989. Aspects of these views and positions are presented in Tables 1 and 2.

One may see that the views about tourism among residents of islands at the initial stages of tourism development are often more positive (Naxos, Kalymnos, Leros and Kythira in Table 1, and Serifos and Lasithi in Table 2). On the other hand, people living in islands where tourism had already been developed seem more sceptical and their views are divided between positive and negative assessments of tourism (Mykonos, Paros, Santorini, Ios and Corfu). As regards residents’ assessments of the ‘bad’ or adverse impacts of tourism, it is worth mentioning some of the answers given to the EKKE researchers. These related to ‘Problems of morals and nudism’, the ‘Low quality of tourism’, ‘Vagrancy and bad influences on the young’, ‘Changes in customs and manners’, the ‘Destruction of families’, increased ‘Freedom of the young’, ‘Disputes’, and ‘Drunkenness’. Such answers were also registered more frequently in the case of islands where tourism had already been developed.

Thus, a conflicting social situation arises, as the one also identified by Greenwood (1972: 90), whereby at the end of the tourist season the local population is glad to see the tourists go, but at the same time they also worry in case the tourists do not come back next year. This situation is related to the many changes in social customs (derived from the rapid urbanisation brought by tourism), which have affected social relationships, including relationships between the sexes and within families. The result is a new and often conflictual social reality. In this context, there is evidence of a change in social relationships due to the dominance of individualist models and of modernising views in the tourist settlements (as against the rural areas) of Corfu and Lasithi. In these two areas there have also been problems in the relationships between the sexes, usually due to the short-lived relations between men and foreign tourists (the kamaki phenomenon) and due to conflicts within the family resulting from the autonomy of the young and the adoption of more modern ways of living.
Table 1 Views about tourism among residents of selected Greek insular and coastal areas (in percentages)

Question: 'What does Tourism bring?'

<table>
<thead>
<tr>
<th></th>
<th>Mykonos</th>
<th>Naxos</th>
<th>Kalymnos</th>
<th>Leros</th>
<th>Paros</th>
<th>Santorini</th>
<th>Kythira</th>
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<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
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<td>2</td>
<td>1</td>
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<tr>
<td>Money and employment</td>
<td>93.9</td>
<td>100.0</td>
<td>100.0</td>
<td>94.2</td>
<td>96.8</td>
<td>97.4</td>
<td>98.0</td>
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<td>98.0</td>
<td>96.4</td>
<td>87.6</td>
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<td>93.8</td>
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<td>Modernisation</td>
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<td>73.7</td>
<td>70.0</td>
<td>78.3</td>
<td>52.3</td>
<td>89.6</td>
<td>76.0</td>
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<td>89.1</td>
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<td>Corruption of morals</td>
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<td>52.6</td>
<td>46.7</td>
<td>59.4</td>
<td>25.4</td>
<td>53.9</td>
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<td>62.5</td>
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<td>High prices</td>
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<td>52.6</td>
<td>36.7</td>
<td>47.9</td>
<td>42.9</td>
<td>57.4</td>
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<td>56.3</td>
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</table>

Note: 1. The percentages shown refer to positive answers. The research in Mykonos and Naxos was carried out in 1979, in Kalymnos and Leros in 1980, and in Santorini, Paros and Kythira in 1986. ‘1’ refers to answers given by professionals (in their shops), while ‘2’ refers to answers given by the general public (in their households).

The locals have also been found to prefer tourists of specific nationalities. This has undoubtedly been affected by the process of stereotyping tourists and also by the economic dynamism of tourism which in most areas is associated with foreign tourists. The views of the locals about differing nationalities of tourists are clearly affected by the related perceived economic benefits (positive attitudes and expectations) and social issues (both positive and negative attitudes and social issues raised). Here it is worth examining the views of the local populations as identified in the two research studies used previously (Tables 3 and 4).

Greek tourists are mainly preferred by the residents of the insular and coastal areas with less tourism development, such as Leros, Kalymnos, Kythira, Serifos and Lasithi (with the exclusion of Naxos). On the other hand, people living in areas with high tourism development are more likely to prefer foreign tourists (Mykonos, Paros, Santorini, Corfu and Ios). These preferences are justified by comments such as, ‘Greeks are quieter, you can discuss with them, they have families’, while ‘foreigners are more easy going, they do not complain, they spend more’. Thus, choices are commercialised and what counts most are the economic characteristics of tourists as a commodity. This trend is increased if we add to it the high percentage who declare that nationality makes no difference, especially when they go on to say that they are only interested in ‘how many tourists come, irrespective of their nationality’. The shaping of national stereotypes has been registered quite clearly in research conducted in the Cyclades (Tsartas, 1989: 166), where locals commented that, for example, ‘Germans and Scandinavians spend more and are just in their transactions’, and the ‘French spend enough, but quite often they are demanding and arrogant’. It is very interesting to note that the economic element is very important in these preferences. A good example is the case of Corfu, where the British tourists have been a catalyst for the island’s tourism (50–70% of arrivals per annum). However, only a few of the inhabitants seem to prefer them, since the British are often considered to be ‘cheap tourists’. Views about tourists among locals seem to be positively affected by factors such as age (younger age groups), work ties with tourism and acquaintance with tourists (a high percentage of interviewees in Corfu and Lasithi noted

Table 2 Views about tourism among residents of Ios, Serifos, Corfu and Lasithi (in percentages)

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<thead>
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<tbody>
<tr>
<td></td>
<td>Ios</td>
<td>Serifos</td>
</tr>
<tr>
<td>1. Do you consider that tourism in your area has a good impact?</td>
<td>15.7</td>
<td>60.3</td>
</tr>
<tr>
<td>2. Do you consider that tourism in your area has a bad impact?</td>
<td>1.4</td>
<td>9.5</td>
</tr>
<tr>
<td>3. Do you consider that tourism in your area has both good and bad impacts at the same time?</td>
<td>82.9</td>
<td>30.2</td>
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</table>

Note: In the 1989 survey a percentage of the population replied ‘I do not know / No reply’ (0.3% in Corfu and 0.4% in Lasithi).
Table 3 Views about tourists of different nationalities among residents of selected Greek insular and coastal areas (in percentages)

Question: ‘What is your order of preference of tourists?’

<table>
<thead>
<tr>
<th></th>
<th>Mykonos</th>
<th>Naxos</th>
<th>Kalymnos</th>
<th>Leros</th>
<th>Paros</th>
<th>Santorini</th>
<th>Kythira</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greeks</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Foreigners</td>
<td>4.6</td>
<td>7.9</td>
<td>30.0</td>
<td>21.7</td>
<td>46.0</td>
<td>31.3</td>
<td>6.0</td>
</tr>
<tr>
<td>Makes no difference</td>
<td>13.6</td>
<td>21.0</td>
<td>–</td>
<td>29.0</td>
<td>4.8</td>
<td>2.6</td>
<td>8.0</td>
</tr>
<tr>
<td>Both Greeks and foreigners</td>
<td>18.2</td>
<td>14.5</td>
<td>23.3</td>
<td>14.5</td>
<td>4.8</td>
<td>47.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Note: The research on Mykonos and Naxos was carried out in 1979, in Kalymnos and Leros in 1980, and in Santorini, Paros and Kythira in 1986. ‘1’ refers to answers given by professionals (in their shops), while ‘2’ refers to answers given by the general public (in their households).

Sources: Stavrou (1979), p. 5 (Naxos), p. 3 (Mykonos); Stavrou (1980), Table VII (Kalymnos), Table VIII (Leros); Stavrou (1986) pp. 15, 35, 59.
that they had become friends with foreign tourists and had visited their countries) (Haralambopoulos & Pizam, 1996; Tsartas et al., 1995).

The new economic structure in coastal and insular areas resulting from tourism development

The holistic presence of tourism in the local production structure constitutes a key feature in most cases under review. Indeed, the tourism sector tends directly or indirectly to become the main source of income for almost all social strata, irrespective of their main occupation. This process starts with the gradual abandonment of all other employment sectors, especially agriculture, which traditionally constituted the basic source of income in these areas. This has consolidated tourism as a basic source of income, while occupations in the primary (e.g. agriculture) and secondary sectors (e.g. handicrafts) are on the decline. At this point, it is informative to note Labiri-Dimaki’s (1972: 89) description of Mykonos, where ‘the number of persons who are exclusively farmers or manual workers is decreasing, and the number of persons who are “partly farmers” and employed in small tourist businesses is increasing’. This transition phase, from an agricultural economy to a ‘touristified’ productive structure was identified at the beginning of the 1970s, but has gradually been consolidated in subsequent years. In this way, tourism has contributed, directly or indirectly, to the transformation of the local economy and the dominance of the tertiary sector. The research carried out in Corfu and Lasithi (Tsartas et al., 1995: 63–84) showed that the following occupational groups stated that they received income from tourism (at a rate of 25% to 100%). These were traders (82.6% in Corfu and 55.4% in Lasithi), farmers (55.7% in Corfu and 11.7% in Lasithi), builders (69.6% in Corfu and 17.9% in Lasithi), manual workers (48.3% in Corfu and 38% in Lasithi), scientists and

Table 4 Preferences for tourists of specific nationalities (in percentages)

<table>
<thead>
<tr>
<th>Question: ‘Which tourists do you prefer?’</th>
<th>Serifos</th>
<th>Ios</th>
<th>Corfu</th>
<th>Lasithi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greeks</td>
<td>22.2</td>
<td>8.8</td>
<td>27.7</td>
<td>32.4</td>
</tr>
<tr>
<td>Foreigners</td>
<td>20.6</td>
<td>58.8</td>
<td>30.8</td>
<td>25.9</td>
</tr>
<tr>
<td>Makes no difference</td>
<td>57.1</td>
<td>32.4</td>
<td>40.4</td>
<td>41.6</td>
</tr>
</tbody>
</table>

Preferred nationalities

(Serifos and Ios combined)
- Germans 21
- Italians 21
- British 14
- French, Dutch, Belgians, Americans, Japanese, Swiss, Austrians 10
- Scandinavians 9
- No difference 24

(Germans 19
- Scandinavians 18
- British 16
- French, Dutch, Belgians, Americans, Japanese, Swiss, Austrians 14
- Italians 4
- No difference 29

self-employed (30.4% in Corfu and 19.4% in Lasithi), and employed persons (40% in Corfu and 19.2% in Lasithi). This situation results from the increasing importance of tourism as a source of income, but also because it is a prestigious employment sector in the local economy.

A consequence of tourism’s pervading presence is the high incidence of people employed in two or three different occupations, one of which is related to tourism. This multi-employment concerns both sexes, and it is either of an individual nature or it results from family strategies. An example of the first case is the Sithonia peninsula in Halkidiki, which is mentioned by Bidgianis (1979: 28–9). Here a farmer usually: (1) cultivates his own land, (2) is employed in construction or in the Carras enterprise (involved in agricultural products and hotels), and (3) works in the tertiary sector (rooms to let, or commerce). In the second case, Loukissas (1975: 10) notes that on Mykonos:

a local, claiming that he is a farmer, may also rent rooms to tourists, or fish, or rent his boat for the recreation of tourists. His wife may work as a cleaning lady, or take care of the rooms-to-let, while at the same time she may sell her handicraft to local shops. Her children may fish with their father, or work in restaurants as waiters.

This multi-employment strategy has also been noted by other researchers examining Greek insular areas, e.g. in Crete (Kousis, 1998), Samos (Galani-Moutafi, 1994; Haralambopoulos & Pizam, 1996), Corfu and Lasithi (Tsartas et al., 1995), and in Rhodes (Kasimati et al., 1995). It is characteristic that of all people employed in different sectors, 60% in Corfu and 35% in Lasithi declared a certain professional relationship with tourism (shop owners, or employees in rooms to let or hotels) (Tsartas et al., 1995: 77–80). This multi-employment constitutes a characteristic feature of the insular tourist areas of Greece, and the research on Corfu and Lasithi suggests it often related to the black economy. Furthermore, especially in areas with a significant farming tradition, employment in the farming sector is being seriously downgraded, since the dynamism of the sector has been lost. The key source of income in multi-employment is tourism. People residing in Agios Matthaios village in Corfu commented that those having tourism as their main occupation and agriculture as their secondary occupation maintained this second occupation for ‘tradition’, for ‘preserving the family property’ and as a ‘hobby’ (Tsartas, 1991: 128–32).

The social, cultural and economic changes that have been discussed came about very quickly in these insular and coastal regions, and they have had important results. There has been a two-way relationship between these changes and the tourism-related policy exercised in these regions over the past three decades (as explained in the second part of this paper). In this analysis it is assumed that a large share of the problems in the social and cultural field is attributable to the state’s decision to promote mass tourism in these regions. The problems are also due to the acceptance of this model by the locals, as they have believed it was the best answer to their regions’ low level of development. This situation has changed over recent years, as people started to recognise the associated problems. The influences on this change in people’s views include: (1) the shaping of a new institutional framework which allows for participation by locals in the planning process, (2) the upgrading of scientific dialogue on tourism development,
and (3) a growing sensitivity to the need to protect the environment. Changes in the basic priorities for tourist policies have also contributed to this direction, as they emphasise development models drawing on local characteristics. In recent years there has been a search for development models designed on the principle of sustainability and that upgrade the tourist product offered in the insular and coastal regions.

The Search for Locally Integrated Development Models and the Protection of the Environment and Sustainable Development

The organised mass tourism model as the dominant model of growth: Questions and challenges

The 1980s were crucial for the country’s national tourist policy, since new development models began to be sought. The coastal and insular areas of Greece have been developed on the basis of the mass tourism model. Starting with the economic success of the islands, where this model was developed in the 1960s and 1970s (in Rhodes, Corfu, Mykonos etc.), mass tourism has sprung up in most regions of the country. The basic arguments behind this decision were that it produced important economic gains for Greece in terms of foreign exchange, that it increased incomes in the tourist regions, and the tourist resources of the country could keep pace with the demand for this type of tourism (Bouhalis, 1998; Tsartas, 1998a; Varvaressos, 1987). It was also pointed out by the Greek Tourism Organisation (1985: 23–4) that Greece adopted this basic model following the suggestion of international organisations, with a view to increasing its foreign exchange reserves. However, investment was not evenly or rationally distributed among the regions, and the same applied to planning controls. As a result, there are many important problems related to land-use planning and the evolution of this model.

The first problem is the intense seasonality of demand for this type of tourism (Arthur Andersen, 2002; SETE, 2002). In the 1970–2000 period most tourists (35–40%) arrive in Greece in July or August. Hence the infrastructure is not used to its full capacity and it is difficult to achieve full returns on the investment when in most regions the tourist season does not last more than 2–3 months.

A second problem is the progressive reduction of the economic benefits of this model. After a first historical phase when important increases in incomes were observed at the local level (EKKE, GNTO), there followed a phase of stagnation or diminishing incomes. This is clearly related to the life cycles of the products in many regions, which were progressively being downgraded (Andersen, 2002; Patsouratis, 2002; Tsartas, 1998a). It is also related to the intense competition among enterprises and among different areas in the same region (e.g. on the same island), among different regions of the country, or between countries.

A third problem is connected with the frequent disregard for land-use planning and urban planning provisions in most regions with a developed and organised infrastructure (Konsolas & Zaharatos, 2001; Spilanis, 2000; Zacharatos, 1989; Zacharatos, 2000a). This fact is connected with the intense pressures that tourism development has created in many areas in terms of the continuing construction of buildings in coastal and island regions. It is also related to the
state’s failure to set up the mechanisms needed to implement the agreed tourism policies.

Finally, the downgrading of the natural and built environment constitutes a further significant problem for all the regions that have adopted the mass tourism model. The economic dimension of tourist growth is jeopardised by this when the quality of the environment constitutes a key attraction of Greece for Europeans, who constituted the large majority of foreign visitors in the period 1970–2000 (Tsartas, 1998).

From the beginning of the 1980s, these problems contributed to the wider questioning of this type of tourism and led to the search for different development models or to the search for policies to help upgrade this particular model. This questioning came from people living in tourist regions who were directly or indirectly involved in the process of planning tourism development, as well as from many researchers who were involved in the tourist sector. The criticism was initially focused on the inability of the tourist policies to set limits and to manage the growth of organised mass tourism (Buhalis, 1998; Konsolas and Zacharatos, 2001; Tsartas, 1998b).

In the 1980s and 1990s, there were the first studies of the social, economic and political impacts of this type of tourist growth, with these being discussed in the first part of this analysis. These studies demonstrated that many problems exist at the local level and they also identified the intense scepticism of the locals about this development model. Another side of this criticism is that mass tourism was the only type of tourism offered by the country for many decades. This itself has contributed to the downgrading of the Greek tourism product, especially at a time of intense international competition (Arthur Andersen, 2002; Patsouratis, 2002) when many countries have enriched their tourism product with new products and services (mainly related to special interest and alternative forms of tourism). One common denominator in these criticisms, on one side, was the need to find new models of growth in the coastal and insular regions which would be integrated into the local socioeconomic and environmental realities; and, on the other side, the need for this particular model to be upgraded with concrete measures and interventions.

**The progressive shift towards locally integrated tourism development models**

Again from the 1980s, tourism development has increasingly tried to promote ‘locality’ (Tsartas, 1998a; Varvaressos, 1999). Measures, interventions and policies have sought to achieve a softer integration of tourism at the local level, aimed at a more balanced tourism development which combines mass tourism with the development of special interest and alternative forms of tourism. Clearly this was not a concrete and coordinated policy. It was made up more of individual policies (national, regional and local), which together contributed to the promotion of models of balanced local development, particularly in islands and coastal regions. In many cases the policies led to the adoption of new methods and the realisation of development projects, while in other cases the policies were only partly implemented, mainly due to a lack of coordination. Initially, the shift towards ‘locality’ is located in the planning and management of development, where emphasis is given to programmes of soft
tourism development, mainly aimed at the promotion of the local environmental and cultural resources of the region. Thus, the type of holiday is combined with infrastructure and activities originating from the specific special interest, such as cultural tourism, rural tourism, marine tourism, conference tourism, golf tourism, health tourism, agrotourism, adventure tourism, ecotourism, and sports tourism (Anthopoulou et al., 1998; Athanasiou, 2002; Installations for Naval Tourism, 2000; Spathi, 2000; Tsekouras, 1991; WWF, 2000). Considerable amounts of public and private sector funds have been invested in these forms of tourism over the past 20 years. A key aspect of this planning, which is recorded in almost all the studies of tourism development carried out in the last 20 years, is that planners have adopted the special interest and alternative forms of tourism as a basic tool for local tourism development. The argument is related to the specialised demand for these products as well as to the need to promote local tourist resources – an integral part of the local tourism product. In reality, it is a shifting perception of holiday tourism in a country where such resources were previously ignored or downgraded, often considered as a secondary element of a tourism product consisting of only the sea and the sun. A more systematic effort to develop these forms, especially in coastal and insular areas, is best located at the local level (through local development programmes) or at the regional level (prefectures or tourist areas).

From the 1990s, all insular prefectures and prefectures with coastal regions in Greece have offered a significant amount of infrastructure, services and organised activities related to special interest and alternative tourism. The variety and the large increase of this infrastructure is evidenced in the two tourist fairs (Panorama and Philoxenia) organised in Greece each year, which mainly address the domestic tourist market.

A second element that has enhanced local tourism development has been the progressive decentralisation of competencies to the local level (to the local authorities, prefectures and regions) that has allowed for the direct involvement of representatives of local interests in decision-making processes (Hatzinikolaou, 1995; Varvaressos, 1999). Institutionally, the upgrading of the role of local authorities has facilitated this process. The municipalities and prefectures now have more competencies in planning, programme development and the management and promotion of local tourism product.

As a result, the number of representatives of professional and institutional bodies involved in local tourism development has increased considerably in the 1990s. Another feature of that decade has been the large increase in the number of institutions dealing with the protection of the environment or the promotion of the cultural heritage in tourist regions all over Greece. These institutions have been established through the activities of locals – mainly young representatives of the local authorities and scientists – who are interested in upgrading the tourism product offered by their region, or they represent the supra-local organisations that deal with the protection of flora, fauna and the cultural heritage, such as WWF, MOM and ICOMOS. In both cases, the presence and interventions of these institutions constitute a new feature of the Greek reality, particularly in regions with ‘sensitive’ environmental resources.

A third axis for interventions and policies that have strengthened local tourism development has come from the European Union (Sotiriadis, 1994; Tsartas,
Since 1985 there have been a considerable number of initiatives, funding schemes and development programmes financed by the European Union that have focused on local tourism development or on facilitating the completion of infrastructure and activities required for special interest and alternative tourism, such as ecotourism, agrotourism and cultural tourism. Different institutions and organisations have promoted these policies from the European Union, and a large number of different institutions have implemented them at national and regional levels in Greece, and this makes their complete and systematic assessment a very difficult task. It is suggested that their contribution has been very positive for many sectors and activities, and that they have been directly or indirectly related to local tourism development.

A first advantage of these developments has been the transfer of know-how in planning and the realising of local development programmes in the countryside. Much progress has been made through collaborations and the completion of programmes for the upgrading of the countryside, such as through Leader, Life, Envireg and Interreg. Another positive effect was the implementation of training and education activities for employed and unemployed people in occupations related to tourism (and particularly with alternative forms of tourism). In many tourist regions of the country the beneficiaries of these programmes have been primarily young people and women. Such activities were financed by the European Social Fund or by specialised programmes (e.g. Leonardo) and initiatives (NOW, Youthstart, etc.). A third advantage has been the financing of completed local development projects that emphasised the protection of the cultural heritage and the environment, maintaining employment, developing the countryside and promoting balanced tourism development. These projects were undertaken by ministries involved in development and planning issues and by local authorities (municipalities and prefectures). As a result of the above, new infrastructure were created and new services were offered, thus shaping ‘new’ tourist products, such as ecotourism, health tourism, rural tourism, marine tourism and sports tourism.

All of these policies and actions that have contributed to the emergence of a new type of tourism development in coastal and insular regions of the country have made people realise that new models of viable and integrated tourism development should be sought. These models should play a part in the protection of the natural, the built and the cultural environment of these regions.

From the protection of the environment to sustainable development

Among all of the different consequences of tourism in insular and coastal areas, the most important for the quality of the tourist product offered is the environment (both natural and man-made). This is primarily explained by the special characteristics of the traditional development model adopted by these areas: tourism both takes up space and downgrades the environment as it consumes resources and it involves large numbers of visitors. As a result, many problems of pollution and aesthetic degradation become apparent in many insular and coastal areas of the country (Briassoulis, 1993; Chiotis and Coccossis, 2000; Kousis, 2000; Loukissas, 1975). This development has caused many problems in Greece because research on the motives of foreign tourists visiting the country suggests that a key parameter for their choice is the environment (see Tsartas,
Furthermore, the negative effects on the environment have been one of the basic reasons for the forming of organised movements in tourist areas (analysed in the case of Crete by Kousis, 2000). These negative consequences of tourism development, and the policies adopted for the protection of the environment, have pointed to two significant issues for tourism development policy at the local level. The first is the need to protect the environment through specific actions and policies undertaken by both the private and the public sectors. The second is the need to promote soft and environment-friendly tourism infrastructure and activities, such as those of alternative tourism.

As regards the protection of the environment, we should note that there has been substantial investment in the construction of waste treatment networks in Greece’s coastal and insular areas, while their use has now been extended to the hotel sector. At the same time, the number of enterprises using quality management standards has increased, and these standards are also related to environmental management and protection. A characteristic example is the Grecotel chain (Middleton & Hawkins, 1998: 155–60) which uses a structured programme of environmental management and protection in its hotels. Apart from the implementation of environmental quality standards, this chain also promotes the training of both its employees and tourists, together with the promotion of local cultural heritage.

Alternative tourism has been considered the opponent of the dominant mass tourism model and, at the same time, a kind of energetic protection of the environment. Its demand, from both foreigners and Greeks (Tsartas et al., 2001), has increased over the years, as stressed previously here, and it is not by chance that it is proposed as a development model in areas with special environmental resources that need to be protected. Skopelos and Naxos offer two characteristic examples. After studies have been completed, it was proposed that different infrastructure and activities of alternative tourism should be developed based on ecotourism, such as trekking trails, birdwatching, ecotourism information centres, environmental training seminars and programmes for the management of specific areas (Vlami & Zogaris, 1997; Zogaris et al., 1996).

From the 1990s, the crucial issue for tourism policy in Greece – directly linked to the need to protect the environment – was the effort to promote policies and actions aiming at sustainable tourism development (Andriotis, 2001; Coccossis & Tsartas, 2001; Pridham, 1999). During this period, the international scientific debate has been centred on sustainability (Bramwell & Lane, 1999; Hunter, 1997), and this issue has become a constant parameter of tourism development policies suggested by such organisations as the WTO and EU (Ruzza, 2001; WTO, 1993). In the same period, the insular and coastal areas in Greece have been a constant reference point in research and analyses carried out on the issue of sustainable development. The most important policy issues that arise concern the selection of appropriate scientific tools and methods in order to control the course of tourism development and to form a framework for its management, so that it could be sustainable. In this context, the carrying capacity of islands and coastal areas with different features and different levels of development has constituted a field for important scientific research in Greece (Coccossis & Parpairs, 1993, 1996, 2000). On the basis of specific examples, the limits of tourism development...
were assessed and actions and policies necessary to achieve its sustainability were pointed out. A second issue is related to the promotion of appropriate policy measures (for the private sector, the public sector and local authorities) at the local level, so that a tourist area could gradually acquire and maintain sustainable characteristics. Many studies have been carried out in this context, mainly in insular areas (Buhalis, 1999; Butler & Stiakaki, 2000; Spilanis, 2000; Stott 1996) with considerable tourism development. These studies have demonstrated the problems and also suggested solutions, especially in relation to planning, education, the institutional framework, and appropriate policy measures. The basic parameters in these analyses in the context of sustainable tourism development is the protection of the environment (through a specific institutional framework), the promotion of local culture, the local dimension in planning, and finally, the linkage of tourism development with other production sectors of the economy.

Conclusions

The considerable cultural, social and environmental impact of tourism in insular and coastal areas has led to changes in two key areas: changes of a social nature (social changes in tourist regions) and changes of an institutional nature (priorities and choices of tourism policies). The 1980s were a crucial decade for Greece because it was then that a stable and dynamic questioning of the dominant tourism development model was registered. Tourism policy now searches for softer and locally integrated models of tourism development. The need to protect the environment, the gradual expansion of alternative tourism and the promotion of ‘locality’ in planning constitute basic priorities of tourism policy. At a social level, these policies, in combination with the scientific dialogue concerning the repercussions of tourism, have helped the local people to realise that they should promote new models of tourism development. However, the powerful presence of mass organised tourism often functions as an obstacle to these efforts at the local level. The increase in the number of successful local examples of sustainable tourism development in insular and coastal areas constitutes a positive development, and is attributable to the combined effect of institutional changes, scientific debate and social changes at the local level in tourist regions. Two crucial tourism policy issues will arise in the years to come: (1) the ability of a sustainable development model to survive, constituting a basic element of the local tourist product; and (2) the operational linkage between this model and the classic model of mass tourism found in many areas.

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Notes

1. EKKE: the National Centre of Social Research.
2. ‘A kamaki is a harpoon for spearing fish, but the word is also used metaphorically in Greece. It describes the act of a Greek man pursuing a foreign woman with the intention of having sex’ (see Zinovieff, 1991: 203).
References


Tsartas, P., Theodoropoulos, K., Kalokardou-Krantonelli, R., Manologlou, E., Maroudas,
Crete: Endowed by Nature, Privileged by Geography, Threatened by Tourism?

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Crete, the fifth largest island in the Mediterranean and the largest Greek island, is a highly heterogeneous region which has experienced rapid tourism development since the mid- to late 1960s when the growth in international tourism and broader socioeconomic changes disturbed past equilibrium patterns. Tourism has become a leading economic sector but has also caused several unwanted economic, environmental and sociocultural impacts and, currently, it appears to threaten the island’s sustainability. The principal goal of official development plans is the achievement of sustainable development and the promotion of tourism in the island. To make realistic suggestions for the transition to sustainability it is essential, however, to identify the two-way relationship between tourism and the context within which it develops. The paper offers a broad-brush, integrated analysis of tourism and local development in Crete in three time periods since the late 1960s. It presents its impacts, evaluates them with a consistent set of sustainability criteria and probes into the essential requirements for securing the sustainability of development of the island and of its tourist sector. It concludes with a brief account of theoretical issues related to tourism development in heterogeneous destinations.

Introduction

Crete, the fifth largest island in the Mediterranean and the largest Greek island, has experienced rapid tourism development since the mid- to late-1960s. Tourism has become a leading economic sector and its promotion features prominently in recent official development plans for the island whose overarching goal is the achievement of sustainable development (Regional Operational Plan (ROP), 2001). At the same time, tourism is blamed as one of the culprits of the recent serious environmental and socioeconomic problems that threaten the island’s sustainability. Advocates of tourism development in Crete do not usually question whether this is congruent with the goal of sustainability, perceiving tourism as a development option that is easy to achieve (while this is not always the case) and assuming that development will occur as conceived. Frequently, particular interest groups promote such claims that are rarely (if at all) based on integrated analyses of local/regional and tourism development or employ a comprehensive set of sustainability criteria to evaluate future development options.

Crete represents an interesting case of a large, heterogeneous island tourist destination, located at the periphery of a country that is at an intermediate level of development. It has a historically strong and regionally diverse economic base, a strategic position, abundant natural and cultural resources, a spatio-temporally differentiated pattern of tourism development and a unique value system. The highs of tourism growth between mid-1980s and mid-1990s coincided with
broader socioeconomic developments that boosted its economy and tourism – migration and the influx of European Union (EU) funds to the island being central among them. The challenge in the analysis of tourism development in Crete is to single out, from among a myriad of other factors, the influence of tourism on the island’s past, present and future development as well as to assess the influence of these other factors on tourism; in other words, to identify the two-way relationship between tourism and the context within which it develops. Towards this purpose, it is necessary to adopt an integrated methodological framework and to employ a comprehensive set of sustainability criteria. The present paper makes a modest attempt towards this aim as well as suggesting some essential requirements for securing the sustainability of development of the island and its tourist sector.

The next section briefly reviews the literature, while the third outlines the methodological framework adopted. The fourth section presents tourism development in Crete, its impacts and an appraisal of the sustainability of local and tourism development in three time periods. The fifth section suggests critical requirements to secure the sustainable development of the island and its tourist sector. A brief account of the theoretical issues related to tourism development in heterogeneous destinations concludes the paper.

Brief Review of the Literature

Several theoretical models of tourism development exist, most of which employ the notion of stages in the lifecycle of destinations (Butler, 1980; Forster, 1964; Greenwood, 1972; Miossec, 1977; Noronha, 1979). Butler’s (1980) remains the most influential and universal descriptive conceptual device among them, although its applications have revealed several limitations. Reviews of lifecycle models, in general, and Butler’s model, in particular, suggest that, although most areas develop in a cyclic and stage-related manner (van den Berg, 1987; van der Borg, 1991), a general lifecycle theory cannot apply to all areas and spatial scales (Loukissas, 1982; Nash, 1977). Tourism development may skip certain stages in some areas (de Kadt, 1979), while elements of several stages may exist at a destination in any given period of time (Hovinen, 2002). More generally, instead of being linear, ordered and deterministic, tourism development is a non-linear, complex and non-deterministic process (McKercher, 1999; Russell & Faulkner, 1999). Because the tourist product is ‘an amalgam of different activities’ (Lundtrop & Wanhill, 2001: 962), most destinations have multidimensional products each exhibiting their own lifecycle (Agarwal, 1994, cited in Hovinen, 2002); particularly, heterogeneous and special destinations such as heritage cities (Russo, 2002). Moreover, planning regulations, public investment, partnerships and financial incentives are important influences on local and tourism development (Stough & Feldman, 1982, cited in Lundtrop & Wanhill, 2001: 949).

Lifecycle models are supply-oriented, focusing on the tourist product, whereas tourist demand is also critical particularly because it is not uniform and fixed (Lundtrop & Wanhill, 2001). Demand fluctuates with changes in tourist profiles, market evolution, political and business decisions, the interests of international oligopolies and tourism entrepreneurs, competition from other destinations and in the spatial organisation of production (Debbage, 1990;

The identification of lifecycle stages and their turning points using the number of tourists and available infrastructure only is not unambiguous especially in heterogeneous destinations. The broader geographical context, unit of analysis, tourism policy of the host country, local socioeconomic structure, quantity and quality of environmental and cultural resources, informal activities, migration and long-term structural change also influence the balance between tourist demand and supply and, consequently, the turning points between stages (Agarwal, 1997, 2002; Cooper & Jackson; 1989; McKercher, 1999; Russell & Faulkner, 1999; Tsartas et al., 1995). Because most of these internal and external factors remain unspecified and are revealed *post facto* (Agarwal, 2002; Lundtorp & Wanhill, 2001), the usefulness of lifecycle models for analysis, explanation and forecasting in real world situations is limited (Hovinen, 2002).

Finally, most such models are tourism-centric, focusing on tourism and disregarding the possibility that other development options and functional shifts away from tourism are not necessarily bad; instead, they may be more suitable for the sustainable development of a destination (Agarwal, 2002: 27; Collins, 1999; Hunter, 1995). In fact, the quest for sustainable tourism development, that has become a dominant theme in the tourism literature since the early 1990s necessitates a holistic view of a destination within its broader socioeconomic, political and cultural context.

The discourse on sustainable tourism development has moved gradually from a narrow focus on tourism to a broader view of a destination’s state of development, where tourism is one of the sectors making up its economic structure. Despite diverse conceptions and interpretations by different stakeholder groups, a general consensus seems to exist on what constitutes sustainable tourism development and what are the essential requirements to achieve it. These include the economic welfare of host communities, conservative use of natural and human resources, intra- and intergenerational equity, local self-reliance (low dependence on external inputs and assistance), local control and participation in development and tourism decision-making, sectoral coordination and integration, tourist satisfaction and balanced achievement of social, economic and environmental goals (Ahn et al., 2002; Bramwell & Lane, 1993; Butler, 1991; Eber, 1992; Hunter, 1995, 1997; Collins, 1999; Ko, 2001; Mowforth & Munt, 1998; WTO, 1996). These features should characterise all but the stagnation stage of tourism development; however, their achievement and maintenance is most critical for mature destinations.

**The Methodological Framework of the Study**

This study adopts a ‘stages of development’ framework to examine tourism in an integrated and holistic fashion within an area’s particular and unique socioeconomic development trajectory (Massey, 1984; cf. Agarwal, 2002). It focuses on strategic issues related to sustainable development; namely, the interaction between demand and supply, internal and external factors impinging on development, the role of foreign and local, tourist and other, formal and informal actors, and the state, and the use of local natural and cultural resources.
Crete comprises the local system to be studied, and this is embedded within a broader spatial hierarchy – the external system, which includes Greece, the European Union and other countries. The study period – late 1960s to the present – is divided into time segments. Within each segment, the local and the external system and their interactions are analysed using the scheme shown in Figure 1, with the impacts being identified and the sustainability of the local system being evaluated using selected criteria.

Figure 1 is a simplified representation of the interaction between tourist demand and supply within the broader socio-spatial system, and it depicts only those components on which the present analysis focuses. The local system comprises tourist supply, the economy, the environment, institutions, and agents who are vectors of its sociocultural traits. Tourist supply intersects with the local economy and the environment because it comprises, in addition to tourist facilities, local facilities, infrastructure and the natural and manmade resources of host areas. The local economy comprises all economic sectors and activities. The environment comprises the natural, manmade and socio-cultural resources of the destination that provide inputs and sink services to tourism and the economy. The agents are individuals and public or private collective bodies engaging in tourist and non-tourist activities. Their decisions concerning the use of resources (capital, labour, land, natural resources), are influenced by formal and informal
local \textit{institutions} (land tenure and ownership being particularly important), and they determine tourist supply, local economic structure and their relationships.

The \textit{external system} comprises tourist demand, and the prevailing supra-local economic, technological, social and political conditions, institutions and agents. \textit{Tourist demand} is influenced by all the other three components and it interacts with tourist supply. The \textit{prevailing conditions} (nationally and internationally), with competition from other destinations figuring importantly among them, are influenced by national and international, and formal and informal \textit{institutions} and they influence tourist demand, the local system and various types of \textit{agents}. The latter are national and international, public and private, individual or collective entities – national and foreign investors and tour operators, national policy-makers, etc. – that control resources and, thus, influence the functioning of the local and external economic system as well as tourist supply and demand. The strength of the relationships within and between the components of the local

\begin{table}
\centering
\begin{tabular}{|l|l|}
\hline
\textbf{Criterion} & \textbf{Operational measure} \\
\hline
Economic welfare & Economic conditions – GDP, employment, unemployment rate (total, by sector, tourism) \\
Sectoral coordination and integration & Integration among sectors, Complementarities between sectors \\
Economic diversification & Relative shares of primary, secondary and tertiary sectors, Economic monocultures \\
State of natural and human resources (conservative use) & Environmental conditions and impacts (pollution and resource shortages), Social and cultural conditions and impacts, Infrastructure – availability and conditions \\
Intra- and intergenerational equity & Regional inequalities, Changes in inequalities over time \\
Local self-reliance & Dependence on external inputs and assistance, Local and non-local investment, Public and private investment \\
Local control and participation in development and tourism decision making & Participation of local and foreign capital, Participation of locals in decision making \\
Balance between tourism demand and supply – total and spatial & Degree to which tourism supply (accommodation) meets tourism demand (arrivals), Degree of spatial concentration \\
Tourist satisfaction & Assessment of tourist satisfaction (personal/subjective, survey results, interviews) \\
Balanced achievement of economic, social and environmental objectives & Comparative and combined assessment of relative valuation of economic, social and environmental conditions \\
\hline
\end{tabular}
\caption{Criteria of sustainable local (and tourism) development}
\end{table}
and the external systems varies by period and it influences accordingly the sustainability of local (including tourism) development.

Several of the variables use to describe the local and the external system and the impacts of development serve also as operational expressions of the (aggregate) sustainability criteria adopted (Table 1). These draw on the features of sustainable local (and tourism) development presented previously.

The present application of the methodological framework was constrained by data availability, especially for past time periods. Official, published data were used where possible (Katochianou et al., 1997; (National Statistical Service of Greece (NSSG)), 2001; Regional Institute on Tourism, 1998; Regional Operational Plan, 2001; Tourism and Economy, 2001, 2002). However, the most crucial information needed for a thorough, informed analysis was obtained from interviews with key informants, participant observation and the author’s personal knowledge and experience.

Tourism Development in Crete Since the Late 1960s

Crete, the southernmost island of Greece, has an area of 8335 km$^2$. It is predominantly mountainous, three-fifths of its area lying 200m above sea level. A mountain range extends from east to west with peaks above 2000m. Crete is divided into four administrative departments (prefectures) (Figure 2). Its population grew by 31.65% between 1971 and 2001. The prefectures of Irakleion and Rethymnon exhibited the highest growth rates, 40.36% and 34.12% respectively. Population change resulted from natural increase and the reversal of outmigration trends that occurred in the 1950s and 1960s. Internal migration contributed to urbanisation of its major towns. Migrants from the Middle East, Balkan and Eastern European countries have also settled in the island.

The urban–rural composition of its population changed from 55.76% rural and 44.24% semi-urban and urban in 1971 to 46.2% rural and 53.8% semi-urban and urban in 1991. The prefecture of Rethymnon remained the most rural of all four prefectures throughout the period (70.23% in 1971, 52.17% in 1991). By the end of the 1990s, inequalities in the urban–rural composition among the four prefectures had diminished.

Crete is renowned for its fabulous natural beauty, diversity of landscape, 1040km-long coastline, mild climate and numerous cultural resources (Minoan palaces and other archaeological and historical monuments and sites) that constitute its principal tourist resources.

The study period is divided into three time segments: (a) mid/late-1960s to mid-1970s, (b) mid-1970s to mid-1980s and (c) mid-1980s to late 1990s/2002 (present) for the following reasons. Tourism development proper started in the mid- to late-1960s in Crete, while the mid-1970s mark a period of accelerating tourism growth and, at the same time, a period of important political changes in Greece. In the mid-1980s, as a result of Greece’s accession to the European Union in 1981, significant amounts of funds started flowing to the island that pushed its economy forward. The late 1990s to the present mark a period of mounting problems in tourism (and more generally) and the generation of several initiatives to check the negative repercussions of these trends. The following sections analyse
local and tourism development in Crete at an aggregate and selective level of detail due to space and data limitations.

**Mid/late-1960s to mid-1970s period**

**Tourist demand and the external system**

This first period coincides with a period of dictatorship (1967–74) in Greece and the gradual emergence of the country as a popular tourist destination, mostly for upper-income tourists. Tourists were attracted to Greek destinations renowned for their natural and cultural attractions (Athens, Delphi, Kerkysra, Rhodes) that possessed adequate and developed tourist facilities, with Greek tourism policy mostly targeting traditional destinations and providing strong economic incentives for private investment. In 1972, international tourist arrivals by charter to Crete were only 4.1% of the national total. In 1975, overnight stays were 7.95% of the national total, 81.1% of which were in the prefectures of Irakleion and Lassithi that possessed developed tourist accommodation and infrastructure. Upper- to middle-income tourists prevailed.

**Tourism development and the local system**

Tourism development in Crete started from the east, as reflected in the 1971 distribution of hotel beds and hotel beds per 1000 inhabitants among the four prefectures. It was based on local capital that took advantage of state-provided economic incentives and was invested in large, luxury hotels in Agios Nikolaos and Irakleion, the capitals of the respective prefectures (Papadaki-Tzedaki, 1999). These localities were basically at the involvement stage and they formed the nuclei of future, mostly mass, tourism development along the northern coast. The rest of the island was entering the involvement stage.

In 1970, Crete’s Gross Domestic Product (GDP) was 10.550 million Drs (1970 prices), 4.09% of the national GDP and unemployment was only 1.86% (3.135% in Greece). Most of the 182,644 persons employed in 1971 were concentrated in the primary sector, especially in the prefectures of Rethymnon and Lassithi. The main agricultural products of the island were olive oil, grapes and dairy products. In the 1970s, greenhouse cultivation was introduced in southeast Crete (Ierapetra), and this gradually became very competitive. Trade was well developed and large, locally owned shipping and sea transport companies controlled a large share of the market. The hinterland was relatively undeveloped.

Direct employment in tourism totalled 4206 persons in 1971, 5% of the national total and 10.7% of Crete’s tertiary sector employment (national average 8.2%). The island’s development was based on local (and national) capital. The most important economic actors of this period were hotel, trade and shipping company owners.

In this first period, Crete did not experience serious environmental problems such as pollution and resource shortages. Culturally, it remained, overall, a traditional society. In sum, economic welfare was high and the economy was relatively well integrated and diverse. Social and environmental conditions were satisfactory and below their critical thresholds. Available infrastructure needed improvement. Regional inequalities did exist, with most development concentrated in the three urban centres of the island. Self-reliance and local control of development were significant and satisfactory. Tourism development was low,
highly concentrated spatially and supply was meeting demand satisfactorily. Overall, development was on a sustainable trajectory as economic, social and environmental conditions were in relative balance.

**Mid-1970s to mid-1980s period**

**Tourist demand and the external system**

In 1974 democracy was restored and in 1981 Greece acceded to the EU. A period of significant financial flows for development purposes commenced. In the meantime, Greece had become a popular tourist destination in the Mediterranean. Although tourism continued to develop in traditional destinations, new ones emerged including Crete. Foreign tour operators substantially influenced tourist demand. In 1981, 452,375 international tourists arrived by charter in Crete, representing 20.7% of the national total. Their average annual growth rate was 32.5% between 1972 and 1982. Total tourist arrivals reached 953,898. Overnight stays in 1981 increased three-fold over 1975 reaching 6,042,583, 14.72% of the country’s total. Their highest concentrations were still in Irakleion and Lassithi but their growth was highest in Rethymnon (517.3% between 1975 and 1981!). Middle- to lower-income tourists prevailed.

**Tourism development and the local system**

Tourist accommodation units attained their highest growth during this period. By 1981 the number of hotel beds and hotel beds per 1000 inhabitants had almost tripled in the island. Tourism development spread to the west. The most dramatic increase occurred in the prefecture of Rethymnon, based significantly on local capital (Papadaki-Tzedaki, 1999), where hotel beds increased more than six-fold and hotel beds per 1000 inhabitants grew ten-fold. In the prefecture of Irakleion hotel beds more than tripled and hotel beds per 1000 inhabitants grew five-fold. The number of unregistered rented rooms also increased considerably. Mass tourism prevailed – mainly along the northern axis and spreading around the major towns of the island – and this was operated primarily by small- and medium-sized family enterprises. Miscellaneous tourist services also developed markedly (car rentals, travel agencies, etc.). Overall, eastern Crete was at the development stage, while western Crete was at the involvement and development stages.

The Cretan economy kept growing. In 1981 the island’s GDP was 17,510 million Drs (1970 prices), 4.30% of the national GDP, and unemployment 2.389% (4.382% national average). Employment grew by 3.23% over 1971 to 188,560 persons. Primary sector employment decreased while tertiary sector employment increased. The island retained its rural character, however, especially in the prefectures of Rethymnon and Lassithi, continuing to produce its traditional agricultural products. Greenhouse cultivation spread further, becoming an important export sector. Agriculture benefited from EU subsidies but these were frequently diverted to other uses, such as the construction of tourist facilities and purchase of urban apartments. Trade continued to grow and local shipping and sea transport companies continued to control a large share of the market. The integration of tourism with other economic sectors was very weak and place-dependent.
Direct employment in tourism totalled 9607 persons in 1981 – 7.67% of the national total and 16.1% of Crete’s tertiary sector employment (9.2% national average). The tourist product amounted to 8844 million Drs (current prices). The employment opportunities in tourism contributed to the reversal of outmigration trends, especially from the rural hinterland, and to the repatriation of locals. New economic and political migrants augmented the informal labour pool, and they were employed primarily in tourism, agriculture and construction.

In 1980 gross fixed private and public capital investment in the island were 4.47% and 3.61% of the national total respectively. Generous EU funding contributed crucially to the provision of physical and social infrastructure (ports, marinas, highways, health centres, business support, training, etc.).

In the 1980s the University of Crete (in Irakleion and Rethymnon), the Technical University of Chania and research centres of national and international standing were established. Together with tourism, they induced residential development to meet the housing needs of students and new employees. Informally, student housing was rented to tourists in the summer, thereby securing year-round revenues for the owners.

In addition to EU funding, national urban, regional and tourism policy developments – from the early 1980s onwards – greatly influenced the distribution, quantity and quality of local and tourism development. Regional development laws, especially Law 1262/82, provided economic incentives for the establishment of businesses, prioritising peripheral and underdeveloped regions of the country. New tourist units were created very fast. Crete received 21.8% of tourism-related investment and this generated 30,499 beds (23.2% of the national total).

To control haphazard urban and ex-urban development, Law 1337/83, was passed that required master plans for all urban areas. Its special land-use planning instrument – Zones of Residential Control – was used to draft tourism development plans (Kalokardou-Krantonelli, 1995). However, local resistance and reaction postponed and blocked the ratification of most master plans and, in consequence, haphazard urban and tourism growth continued together with their negative side effects.

The combination of development laws, EU-funding, abuse, violation and lack of enforcement and implementation of land-use planning and environmental legislation opened many areas to (frequently illegal) unbridled urban, ex-urban, tourism and tourism-induced development. A host of negative impacts resulted, concentrated on the most developed northern axis. Environmental and physical impacts included sea, coastal and water pollution; water shortages during peak seasons; water conflicts for domestic, agricultural and tourist uses; electricity shortages; uncontrolled solid waste disposal; ecosystem destruction; urban and rural landscape degradation; congestion; noise; land fragmentation; development of the rural–urban fringe; high building densities; congestion and overuse of infrastructure; and proliferation of small tourist units.

Socioeconomic impacts included the development of illegal hotellerie; the loss of high productivity agricultural land, the growth of a tourism monoculture (and, consequently, an increasing dependence on volatile tourist markets) and the ineffectiveness of official, rational development efforts. Tourism intensified regional inequalities, notably those between north and south, coast and
hinterland, urban centres and the rest of the island, because tourism was concentrated in places where it developed strong complementarities with agriculture, universities and infrastructure. Serious changes in traditional values and attitudes also made their way into local society, in particular, the unquestioning acceptance of tourism and development as panaceas for economic ills.

In summary, in this second period, there was further growth in economic welfare. Although the island’s economy remained relatively well integrated and sectoral complementarities developed, tourism was weakly integrated in the local economy. The environmental condition of coastal areas deteriorated and the sociocultural situation generally changed for the worse. The availability of infrastructure and its conditions improved. Regional inequalities diminished, although not considerably. Tourism and non-tourism development depended significantly on non-local resources and influences, and this weakened self-reliance and local control of development. While tourism development intensified, its degree of spatial concentration diminished but it was still significant. A rising tourist demand was being met satisfactorily by a rapidly growing supply. Tourist satisfaction dropped. Overall, development started to deviate from its sustainable trajectory as there was an emerging relative imbalance between the improved economic conditions, and the deteriorating environmental and sociocultural conditions.

Mid-1980s to late 1990s/2002 (present) period

Tourist demand and the external system

After the mid-1980s, Crete had become an established tourist destination. Foreign tour operators controlled the largest part of tourist demand. Competition from other Mediterranean destinations frequently threatened tourist flows to Greece and to Crete. Tourism in Greece spread over more destinations. Between 1981 and 2001, international tourist arrivals by charter to Crete grew by 9.08% annually, reaching 2,575,010 in 2001, this being about 30% of the national total. By 1994 total tourist arrivals were 50% above their 1981 levels, reaching 1,423,987. Overnight stays by 1990 had increased almost five-fold over 1975, reaching 9,709,937, which was 19.86% of the country’s total. In 2001 they rose by 30% to 12,579,897. In Irakleion they equalled the sum of stays in the other three prefectures. However, the highest growth between 1981 and 2001 occurred in the prefectures of Chania and Rethymnon. The occupancy rate of the registered tourist accommodation units in late 1990s/2002 was 75–80 % (Tourism and Economy 2001, 2002), a high figure as many tourists stayed in unregistered units.

Tourism development and the local system

The supply of tourist accommodation units kept growing, although at a slower rate. By the late 1990s, the number of hotel beds and hotel beds per 1000 inhabitants had almost doubled over 1981. Tourism development intensified in the west with the prefectures of Rethymnon and Chania experiencing the most dramatic increase as hotel beds and hotel beds per 1000 inhabitants grew three-fold. In the prefecture of Irakleion the corresponding magnitudes doubled. Mass tourism still prevailed, although alternative and more diverse types and quality classes of accommodation units were being offered to satisfy shifting tourist preferences toward individual and/or family-based holidays.
Greek and foreign entrepreneurs erected luxurious tourist complexes and now control significant proportions of the tourist accommodation and services. The behaviour of local tourism-related capital has become more variegated. In terms of number of firms, family-based businesses dominate but some of them have been transformed into corporate-based businesses that have extended their operations beyond the island. Several others have succumbed to globalisation and competition and have transferred their management to foreign multinationals. It is unofficially estimated that foreign tour operators control 70% of the available tourist beds through various arrangements. Unregistered tourist accommodation has increased considerably. Diverse recreation facilities, such as golf courses, marinas, ports, water parks and miscellaneous tourist services are now available.

The island as a whole is approaching the consolidation stage but individual localities are at different stages of development. The northern axis is in the growth (west) and consolidation (east) stages, with pockets at the stagnation stage in the overdeveloped areas. The northern axis is congested, concentrating four-fifths of total tourist activity and most hotel and transport infrastructure, producing 79% of the island’s tourism-related GDP and serving 74% of the population of the region (ROP, 2001). By contrast, the southern axis is in the involvement and development stages, with the acceleration of tourism development there being facilitated by the construction of new infrastructure. The hinterland remains largely undeveloped touristically.

The Cretan economy has kept growing. The 1991 GDP was 3.48% up from 1981 at 23,610 million Drs (1970 prices), 4.77% of the national GDP and unemployment was 5.545% (8.085% national average). In 1997 unemployment dropped to 4.6%, well below the national average (10.3%). In 1996 Crete produced 5.7% of the national GDP, with 31% in the primary sector (15% country), 13% in the secondary sector (25% country) and 56% in the tertiary sector (60% country). Irakleion produced 51.1% of the island’s GDP, Chania 23.4%, Lassithi 13.7% and Rethymno 11.8% (ROP, 2001).

Employment grew by 5.79% to 199,475 persons between 1981 and 1991. Primary sector employment decreased. Lassithi and Rethymnon retained the highest shares of agricultural sector employment. Tertiary sector employment increased dramatically due to tourism and public sector growth (local and regional administration, universities, army, etc.) and the sector took the lead in the economy (50% of total employment).

Direct (official) employment in tourism totalled 17,068 persons in 1991 – 9.49% of the national total. Its contribution to the island’s tertiary sector employment in 1990 further improved (17.1%) while the national average remained at its 1981 level (9.2%). The 1991 tourist product was 13,863 million Drs, rising to 15,933 million Drs in 1994 (ROP, 2001). Economic and political migrants continued to flow to the island, thus augmenting the informal labour pool. Informal labour is conservatively estimated at 50% of the officially reported employment.

The primary sector continued to receive EU financial support, contributing significantly to the island’s GDP despite structural problems hindering its full development. In addition to traditional products, Crete is a leader in the dynamic sector of greenhouse cultivation, possessing around 50% of the country’s greenhouses. Strong complementarities between tourism and agriculture
have developed in several places. Farmers are involved as owners or workers in tourist enterprises (Tsartas et al., 1995). Informal complementarities have also developed as in the previous period. However, tourism still remains weakly integrated in the local economy.

The physical and social infrastructure improved further through generous EU funding (IMP, Regional Development Programs and other EU initiatives) and national funding. In the 1994–99 period, investment in infrastructure amounted to 56 billion Drs on the northern axis, 13 billion Drs on North–South roads, and 2.8 bill. Drs on the southern axis. Funds for tourism are allocated under EU programmes for ‘competitiveness’ and ‘culture’.

Business activity increased due to considerable private investment and financing provided through development Laws. Cooperation between businesses and local universities and research institutes intensified and helped to boost the economy further. Tourism has benefited from the use of innovative, tourist product-enhancing technologies, such as electronic commerce, advertising, tele-working, medical tourism and sea parks. Local shipping and transport companies maintain their strong position in the economy, producing 7.6% of the island’s GDP as well as investing in tourist facilities. Various business associations have been formed together with public–private sector partnerships related to local and tourism development, banking and shipping. However, public sector bodies, and notably the Local Government Organisations, are frequently captive of local interests (Regional Institute on Tourism, 1998), thus blocking the achievement of more equitable, long-term local development.

The mounting problems of environmental degradation caused by unplanned and haphazard tourism and tourism-induced development have led to the reorientation of national tourism policy towards discouraging or even barring further development of ‘congested’ tourist destinations (Kalokardou-Krantonelli, 1995). Urban and regional development legislation of the 1980s was used for this purpose, in combination with economic instruments. Special Regional Plans – a new instrument emphasising environmental protection – were and are prepared for many municipalities and regions in Crete. However, political pressures by both formal groups (such as local development corporations) and informal groups (such as the ‘Union of small landowners and small investors’) have blocked the completion of these plans and also their practical implementation (Vogiatzakis, 1995).

The mode of, mostly unplanned, haphazard, and frequently illegal, development of the previous period has intensified in the current period causing similar or more serious negative impacts. Environmental protection and management has progressed but has succeeded in practice in only a few sectors (biological sewage treatment and solid waste disposal). The problems exhibit a strong regional differentiation, with most of them occurring on the northern coast. Spatial and aesthetic conflicts are frequent in the most highly developed areas. Incompatible land uses are mixed together, thus generating economic and environmental externalities (mixtures of greenhouses, hotels, bars, industrial installations, university premises, airport, landfills, biological treatment plants, quarries, fuel storage tanks, monasteries, army fields, etc.). Pockets where there are serious degradations of the tourist resources face problems with their image. In the south, the construction of roads and other infrastructure has led to the invasion,
fragmentation and alteration of ecologically sensitive areas by agriculture and tourism. In the hinterland, fires, overgrazing and rural abandonment degrade the natural environment (ROP, 2001). The level of cultural and architectural heritage preservation is generally moderate.

Despite the significant contribution of local capital to vital economic sectors, foreign capital (private and EU) now plays an important role in the island’s development. Foreign control of tourist flows, accommodation and services has intensified the unequal distribution of tourism benefits and the loss of self-reliance. This is more serious in areas where tourism is the only viable development alternative. Where tourism develops complementarities with other activities, then the related economic diversification offers brighter prospects, although this still exacerbates regional inequalities. Land value appreciation in tourist areas frequently prohibits the locals from acquiring land for development. Lastly, cultural alteration, such as the loss of traditional values and authenticity, the commercialisation of culture, and attitudes that are pro-development whatever the costs, has become deeper and widespread.

In this most recent period, economic welfare in Crete has remained high, with particular improvements in the rural hinterland, and with a growing economic convergence within the country. Although its economy is still diverse and there are significant sectoral complementarities, economic simplification seems to have set in as the island relies heavily on tourism and it specialises in agricultural products subsidised by the EU. There is growing environmental degradation and simplification, as well as spatial conflicts and cultural alterations. Infrastructure is adequate and keeps improving. Regional inequalities have diminished further. Dependence on external sources of funds is higher than in the past and local participation in decision-making is problematic. Tourist supply may also be exceeding demand. Territorial specialisation in tourism is observed, although the degree of tourism’s spatial concentration has dropped. Tourist satisfaction is generally high but fluctuating. The imbalance among the objectives of sustainable development that started in the previous period has grown further and this trend will continue if Crete’s limits to development are not respected.

The Role of Tourism in a Sustainable Future for Crete

Crete is currently in a high growth period, its growth frequently occurring outside of the formal system owing to a tradition of informal sector activity. Its development trajectory exhibits a departure from sustainability as a booming economy coexists with serious environmental and sociocultural problems, dependence on external sources and weakening self-reliance. If the forces underlying this imbalance are left unchecked and those that may counteract it are not encouraged to intervene, then the time may be approaching when Crete’s sustainability will be seriously threatened and its irreplaceable natural and cultural resources and valuable tourist resources will be irreversibly damaged.

Regional authorities and business circles are deeply concerned about the sustainability prospects of the island and about the particular role of tourism in this. It is generally agreed that the period of extensive tourism development is over and that little space has been left for development to accommodate the 3.5–4.5 million tourists that are projected for 2010 (ROP, 2001). To secure a
sustainable income from tourism and Crete’s niche in the tourist market, product transformation and product reorganisation (see Agarwal, 2002) are proposed in order to reduce seasonality and to increase the length of the tourist season, the length of stay and tourist spending by 40%. Proposals include: the development of new facilities; new poles of tourist attraction (e.g. mountainous areas); integrated tourist packages and alternative forms of tourism; alliances among tourist and non-tourist businesses, local government bodies, corporations and associations; the modernisation and improvement of tourist facilities and businesses; improved education and training of personnel; the provision of consulting services for small- and medium-sized tourist enterprises; infrastructure improvement; the protection and enhancement of natural and cultural resources; and a focused promotion of the island for particular types of tourists (ROP, 2001; Tourism and Economy, 2001).

These are supply-side solutions, however, that disregard the critical role of tourist demand and of the broader socioeconomic context. Moreover, they mostly address the supply-side symptoms of unsustainability rather than the essential causes and mechanisms at work (cf. Agarwal, 2002). Drawing on the preceding analysis, two groups of essential requirements to secure sustainability in the development of the island and of its tourist sector are outlined here: (a) decoupling development from the factors causing its current imbalance; and (b) capitalising on factors favouring long-term sustainable development. Both external and internal factors are involved here that, on the one hand, shape demand for the island’s products, services and resources and, on the other, provide the necessary financial, human and other resources for development. Internal factors obtain a particular, deeper importance as sustainability is determined crucially by local choices about the preferred development patterns and courses of action.

Development should be decoupled from external factors that are uncertain, volatile or beyond effective local control, although these always remain critical for the viability of any development option. These include EU and national funding, foreign private investment, in-migration, tourist demand, tour operators and other tourism intermediaries. Development should be decoupled also from internal factors that hamper the enforcement and implementation of urban, regional and environmental planning and legislation. These include strong political pressures associated with particular local cultural traits, the unquestioning adoption of short-term, high-revenue (e.g. tourism) development opportunities, weak or non-existent environmental awareness, a diffuse perception of powerlessness (e.g. against tour operators) and risk aversion. Under such conditions, the prescription of the sustainable development literature for formal local participation in decision-making should be viewed with scepticism.

Instead, development should capitalise on such external factors as Crete’s mild climate and strategic position and, more selectively, on EU and national funding, foreign private investment, in-migration and favourable future socio-economic developments. It should also capitalise on internal factors that have been instrumental in its past and recent growth. Its inherent potential, due to its physiographic and economic diversity and heterogeneity, for forms of development other than tourism should be protected against current overexploitation. Development should be managed so as to integrate the economy and the tourist
sector and to differentiate the tourist product, thereby providing long-term safety valves against the uncertainty of such external factors as competition from other destinations and unfavourable future socioeconomic developments.

Entrepreneurship, local capital and extant collaborations and partnerships – especially between businesses and educational institutes – are crucial, locally controlled assets that should be oriented towards long-run development options in order to increase the island’s self-reliance, bargaining power and resilience to future stress. Finally, the tradition of informality, if handled properly, could be turned into a valuable tourist resource and a promising mechanism for flexibility and adaptation to changing socioeconomic circumstances.

The aggregate level of the analysis in this paper permits only broad suggestions how to satisfy these requirements. An absolute priority is the activation – implementation and enforcement – of integrated spatial planning to guide and orchestrate the rational and effective use of Crete’s natural and human resources and to provide for foreseeable contingencies; with fluctuations in tourism demand being important among them. Ideally, spatial development plans should be adapted to the island’s environmental and sociocultural traits and should involve local actors in the development process. Institutionalising informal tourist and other arrangements and developments is a parallel action to contain the current ‘tyranny of small decisions’ (Khan, 1966) and to ensure minimum implementation. Lastly, education remains always the longer-term mechanism for the value change needed to support sustainable development choices where tourism develops harmoniously with the other sectors of the Cretan economy.

Concluding Remarks

The case of Crete demonstrates that the particular model of tourism development of large and heterogeneous destinations results from the historic coincidence of combinations of diverse factors rather than from changes in the balance between tourism demand and supply only. Lifecycle models do apply in this case, in general, but description and explanation of a destination’s lifecycle cannot be dissociated from its inherent diversity and broader context. Scale (relative size of the area analysed) and degree of heterogeneity influence the relative contribution of internal and external, tourism-related and other socioeconomic and cultural factors that determine the particular features of each stage, rate of tourism development and timing of the lifecycle turning points (Agarwal, 1997, 2002; Cooper & Jackson, 1989).

When a heterogeneous destination enters the involvement stage, the degree of spatial concentration of tourism is high. Development starts in those localities where capital (local in the case of Crete) chooses to invest in tourism for place-, time- and person-dependent reasons. The rest of the destination is essentially intact. As tourism spreads to other localities, again where capital finds it profitable to invest, the destination as a whole moves to the development and subsequent stages and the degree of spatial concentration diminishes. But, within any destination-wide stage, different localities are at various stages of development as the case of Crete illustrates. At more advanced destination-wide
stages (e.g. development, consolidation) the diversity of stages of development of individual localities seems to increase.

Crete entered the development stage when growth in international tourist demand coincided with the decline of older, traditional destinations in Greece, the accession of Greece to the EU, the influx of generous development funds – that reinforced its economic structure – and place-specific developments. Moreover, this development would not have occurred in the absence of a valuable stock of active local financial and social capital (entrepreneurship) and this was mobilised to invest in tourism while developing complementarities with agriculture, trade and local educational institutions. The combination of available local capital and favourable national tourism and regional policy shaped the island’s tourism supply and stimulated foreign investment and international tourism demand.

At the consolidation stage, heterogeneous destinations exhibit more complex patterns of development than less heterogeneous ones (Hovinen, 2002). The causes and impacts of this development are similarly complex and the role of tourism becomes less clear unless thorough and informed analyses throw light on its complex interactions with other sectors as well as the internal and external factors at work. In Crete, tourism supply keeps on growing – frequently autonomously, without consideration of active demand (and its fluctuations), haphazardly and mostly informally (not officially planned). The behaviour of local tourism-related capital is more variable. In comparison to earlier periods, local capital has less power but still remains instrumental for future tourism development.

The island’s self-reliance has weakened overall, pressures from tour operators and competition from other destinations have increased, and national and EU policy developments may become more stringent in the near future. Its overall spatial development pattern follows no formal plan. These and many other socioeconomic developments raise the question as to whether tourism, from a development motor, will become a source of unsustainability if it continues developing unchecked in such a broader context. The complexity of the consolidation stage hinders the specification of solutions that will assist the area to avoid the stagnation stage and to stay on the sustainable development path.

The broader theoretical issues that emerge from the present analysis are the path dependent and contingent nature of tourism development in heterogeneous destinations and the importance of external factors in this process (Agarwal, 2002; McKercher, 1999). From the perspective of integrated analysis there is a need to couple destination lifecycle models with more holistic accounts of the destination’s complex development history in order to provide a more meaningful and useful basis for tourism planning and decision-making.

Acknowledgements

The author acknowledges the assistance of George Chamakos, Association of Greek Tourist Enterprises (SETE), and Aris Stratakis, Directorate of Tourism, Region of Crete (Irkleion), who provided relevant information, and of Panagiotis Stratakis, researcher, Department of Geography, University of the Aegean, who prepared the map.
Correspondence

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Notes

1. The case of Rethymnon is particularly interesting because, in a period of local economic crisis, local businessmen invested in large hotel facilities in the area, extended their activities to the rest of the country, and have become supra-local tourism entrepreneurs.
2. The first EU Integrated Mediterranean Programme (IMP) was that of Crete. It commenced officially in 1985.
3. The non-cooperation of locals in formal plan preparation, their non-compliance with regulations and implementation and, consequently, their reliance on informal social networks results from the dominance of individualism, familism and political clientelism and the consequent mistrust in government. This has been termed the ‘Mediterranean syndrome’ (La Spina and Sciortino, 1993).
4. National legislation exists but remains inactive for the reasons mentioned above.

References


Abstract

The topic of the present research is the pilot estimation of sustainable tourism indicators for the Municipality of Hersonissos in Crete. Indicators definition is based on the principles of sustainable development. Data sources, their format and functionality as well as limitations imposed by them regarding indicators estimation, are elements of this research. Moreover, indicators were examined in terms of their functionality, resulting in certain cases, in the definition of surrogate indicators in order to compensate the lack of data and complement their meaning respecting the needs of the application area.
1. Introduction

In the last ten years after the publication of “Our common future” (W.C.E.D., 1987) sustainability has become a prominent concern in the development literature and has been applied in all fields of economic activity. In tourism, the concept of sustainability has been initially established as a notion that there is a need to account for the interrelationships between tourism and the environment, that there must be a compromise between the various conflicts and that planning must be exercised in such a way so that the long term viability of the industry is safeguarded. Since then, academic debate has grown and different considerations on what the term implies as well as the means of implementation have been developed. However, the interpretation of the term remains vague not to mention the implementation methods.

One of the problems that arise when applying the concept of sustainability to tourism is that there is not any exact and accepted methodology for measuring it. One way of accomplishing this is through the use of indicators. Although several indicators for sustainable tourism have been proposed no effort has been made to propose or estimate indicators for existing destinations. The focus so far has been on proposing and estimating indicators for new destinations, that is tourist resorts in the early phases of their development, rather than existing ones.

In a previous work Farsari and Prastacos (1999) have proposed a set of sustainable tourism indicators based on the principles of sustainable. The aim of the present research is to perform a pilot study and attempt to estimate these indicators for the Municipality of Hersonissos in Crete, Greece. This application has an explorative role on the existence of a framework for indicators estimation, as well as, to explore the applicability and functionality of the proposed indicators on the pilot area.

More specifically, the goal is to identify potential data sources, their format and their adequacy in order to determine which indicators can be easily estimated and are meaningful for planning. The next goal is to investigate whether the proposed indicators are functional, in other words whether they could serve on a local application scale or there is a need for complementary or surrogate indicators. The
overall objective of this research effort is to develop a framework for tourism development evaluation that follows the sustainable development prerequisites.

2. Sustainable Tourism Indicators

Indicators have been used for many years to provide with brevity and clarity parameters which might be of interest. Although they have been used for many years, particularly in describing the state of the economy, their use has mushroomed recently because of the need to compare and monitor changes through time.

On their advantages could be included the immediacy on the presentation and evaluation of different parameters, the guideline on matters which are considered to be important and therefore should be taken under consideration in planning and the developmental process, and the comparableness of the results. Their functions are several and include description of a situation, identification of potential problems, support to decision making, and monitoring and evaluation of actions taken (U.N., 1998; World Bank, 1997).

However, their use is not without problems; too often lack of data affect their selection and can result in indicators which are rather general and not very meaningful for planning purposes. Their use can be also considered subjective both in respect their choice and their evaluation once they have been estimated. As Meadows (1998) points out this subjectivity is stronger with the qualitative ones rather than the quantitative ones.

Sustainable tourism indicators are a tool which could be used for sustainable tourism development. Resulting from the expansion of the notion of sustainability and the need to implement it in practice, indicators are being developed for evaluating choices which are being made during the developmental process and impacts made upon the natural and socio-economic environment. They provide a framework for evaluating existing situation, as well as, future developmental activities in the field of tourist services production.
Indicators for existing destinations

The development of sustainable tourism indicators for existing destinations necessitates special approach. This is because they are to be applied in areas where tourism development is at an advanced stage, and usually tourism is associated with mass tourism. These areas have developed most of the necessary infrastructure and networks and have specific problems, which are the result of many years of tourism development. Overcrowding, poor planning and saturation phenomena are typical problems in most Mediterranean resorts which have been developed for several years. Of course the particularities of each country, region or resort should not be underestimated and should be taken into account when defining the appropriate indicators.

Existing literature on sustainable tourism indicators (WTO, 1993; 1995) has focused on the definition / estimation of indicators for newly developed destinations. In these places sustainable tourism planning has been an issue since the very early stages of their development and the proposed indicators are defined and monitored continuously. The early definition and continuous evaluation result to better organized available data that permit the monitoring and comparison of various parameters before, after and during the developmental actions, as well as, to a differentiation of the parameters to be measured which would be of interest. Additionally, these indicators focus on destinations located in developing countries where there are substantial differences on their natural and socio-cultural environment, on organizational and infrastructural matters compared to developed Mediterranean destinations.

Hence, although there is definitely common ground between existing and new destinations when considering sustainability there is a need for research efforts focusing on identifying indicators for existing destinations. In this research the effort is to identify such indicators for Mediterranean destinations.
3. Application in the Municipality of Hersonissos

**Short description of Hersonissos**

The municipality of Hersonissos is located on the north coast of Crete, about 25 km from Herakleion, the capital and largest city of Crete (Figure 1). It is highly accessible through the main entrance gates of the island: the port and the airport of Herakleion, and is also very close to the archeological site of Knossos and other points of interest. The municipality consists of five communities, namely Limenas Hersonissou, Hersonissos, Potamies, Abdou, Gonies and Kera. Limenas is the coastal part of the municipality and is the area where tourism is concentrated. Part of Hersonissos is also on the coast, while the other three areas are located inland and have a strong agricultural profile.

Until the mid sixties the economic activity was almost completely in agriculture. However, since then, the situation has changed dramatically. There is an enormous shift to the service sector and tourism is nowadays the predominant activity (YPESDDA, 2000).

Hersonissos is one of the most popular destinations in Crete. In 1999 there were almost 20,000 hotel beds, representing about 18% of all hotel beds in Crete and 3% of the total of Greece. Thus, it is quite clear the importance of tourism in the area as both an economic activity and a factor of environmental and socio-cultural changes. Hersonissos was selected for the pilot estimation of sustainable tourism indicators because it is representative of existing destinations in Greece and in the Mediterranean region broadly speaking. Moreover, the local government is well organized and it was anticipated that datasets would be available for indicators estimation.

It should be stressed that each country—or even each region—has its own features concerning the administration and the characteristics of its tourist product, its environmental and socio-cultural settings. However, it is believed that the present
case study could contribute to an integrated approach on sustainable tourism development in general and on the needs of indicators development and application.

**Methodology followed for the definition of indicators**

The *Pressure-State-Response System (PSR)* proposed by OECD (1994) is the best known framework for the definition of sustainable development indicators and the one which was later adopted –slightly differentiated in some cases- by different international organizations. This system proposes three kind of indicators: a) *pressure indicators* which refer to activities having an impact on the environment (UN, 1998); b) *state indicators* which describe the current situation of the issue (pressure) to be measured (WTO, 1996); and c) *response indicators* which measure action and policies taken to changes in the state of sustainable development (UN, 1998).

The approach chosen in the present research for defining the indicators for sustainable tourism is to relate them to the principles of sustainable tourism (Farsari and Prastacos, 1999). According to this methodology indicators are proposed for each principle. The set of principles proposed by WWF & Tourism Concern (1992) was chosen to guideline the definition of indicators. The result was a set of indicators for each principle representative enough to cover the different parameters which each principle may include. The set of indicators defined on the basis of this approach are focused on the needs of existing destinations in the Mediterranean region. Although, some of the indicators proposed are similar to those identified in the three categories mentioned above, it is believed that the methodology followed assures that the indicators are persistent to the notion of sustainable development while there is an emphasis on the response actions for sustainable tourism management.

The later is of major importance in existing destinations as they have an established situation resulting from an era when holistic approach and responsible management were not considered. Therefore, for existing destinations the actions and policies taken towards a more sustainable form of development is the key to overcome the accumulated undesirable conditions of the past. Finally, tourism is examined as an integral part of the interrelations that take place between different sectors of the
economy and the society, as a result although considering tourism indicators, tourism would not be examined in isolation to the rest of the activities.

From the list of proposed set of indicators a selection was made for this pilot study based on their representativeness and suitability for application in Hersonissos. Potential data availability was another factor that influenced indicators choice. Several indicators could not be estimated since there no data were available. In these cases, as well as in situations where it was considered that some parameters were not taken fully into account, new indicators where proposed in order to replace or supplement the ones suggested in the original study.

The spatial level, local, regional or national, was another factor considered during the definition and the selection of indicators. This was addressed because some impacts of tourism are localized, while some other affect the whole region and not just the municipality examined. Some of the indicators proposed can be applied on both local and regional level while others address only one of the two. Regarding the Municipality of Hersonissos, although it is perceived as a local application, the broad area which it covers –rising from the unification of the former communities- suggests the use of indicators suitable for measuring sustainability at the regional level.

Data sources

Identifying the appropriate datasets was a serious problem since no organized databases were available on the Municipality or the contacted organizations. The main sources of information were:

- The finance, public works, environment offices of the Municipality and the development company of the Municipality,
- Private companies responsible for garbage collection and the management of the wastewater treatment plant,
- Regional Energy Agency of Crete,
- National Statistical Office of Greece,
- Ministry for the Environment, Physical Planning and Public Works, Water Quality Department,
- National Tourism Organization,
Information on the demographics of the area and the training seminars were obtained from the “Athena 91” (Prastacos and Kogxlakis, 1998) and “Antheia” (Loulakis & Manioudakis, 1999) databases respectively. Both of these databases were developed by the Regional Analysis Division of FORTH.

Other potential data sources could be the Employment Office for Hotel employees, Agricultural Cooperatives, the Ministry of Agriculture and other professional associations.

4. Proposed indicators and their estimation

One major problem that was encountered was related to the lack of times series on most available datasets. It would have been preferable if all indicators were estimated for the same year and also for several years in order to measure the changes through time. However, this was not feasible as data were available for different time periods, resulting to indicators estimated for different time.

The results of the indicators estimation are shown in Table 1. Indicators are grouped according to the guiding principle in order to clearly present the definition methodology, as well as, the thematic field on which each one refers. Undoubtedly, some of the indicators refer to more than one thematic field and therefore they can be found in more than one principles. Likewise, there is a notional overlapping in some of the principles resulting in some cases in a joint examination.

Table 1 includes information on the results of the estimation, the data available and some comments on the functionality and the characteristics of each indicator. For the sake of completeness indicators which could be not be estimated because of the lack of data, but which were considered significant are included as well. It is hoped that in the future data will become available so that they could be also estimated. Although, data availability was considered when choosing indicators and thus influenced their
selection to some degree, of major importance was the persistency on the notion of sustainable development. Therefore, despite the possible need for “better” indicators, it is believed that the present methodology and the approach followed are contributing to the establishment of a framework for the definition of sustainable tourism indicators.

One issue that must be stressed is that choice and evaluation of indicators is closely tied to the criteria used for defining sustainable development. That is indicators have a meaning for planning purposes only after what constitutes sustainable development has been defined. This becomes more clear if one was to consider the issue of the extension of the tourist season.

The extension of the tourist season was one of the issues which came into question during the definition and estimation of indicators –an issue often discussed in every tourist destination in Greece. According to the Mayor of Hersonissos the effort of prolonging the season during the winter months did not succeed in Hersonissos during the two years this initiative was undertaken by local entrepreneurs, merchants and the local authorities. The reason appears to be the intensity of work during the season –7-9 months in Crete while most of the tourist businesses are small to medium family character entrepreneurships- which results to an unwillingness to work with small if any profits for a couple of “winter seasons” until the market becomes established. Moreover, it could be argued that these 3-5 “winter” months offer the chance to locals and their families to rest and strengthen their family, friend and social relationships, contributing in this way to the conservation of the social and the cultural nets and thus, to sustainability.

Another issue related to the length of the tourist season is the seasonality of employment. Seasonal employment with all the economic and social implications is considered to be a negative aspect. However, it should be examined in combination to the total annual income of the residents and the possible complementary occupation during the winter months. Although no income data are available there is a perception that incomes in Hersonissos exceed the regional average. Most residents in the area during the “summer” months are employed in tourism related jobs, while in the winter months most are involved with agriculture in their own farms (olive trees mainly). In
this way, it could be argued, that traditional activities as well as the diversification of local economic activities are supported.

Thereupon the need for the determination of the parameters considered to be essential for implementing sustainable tourism development should be clarified. Case studies at a local scale could have a significant contribution on this direction as they are focused on specific issues which generalization misses.
<table>
<thead>
<tr>
<th>Aρχές</th>
<th>Indicator</th>
<th>Estimation</th>
<th>Comments</th>
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<tbody>
<tr>
<td></td>
<td>The term “resources” includes natural resources (water, energy, landscape, biodiversity etc), as well as, socio-cultural resources. For natural resources, water and energy are the key concerns for sustainability since both are extensively used by the tourism industry in the host areas. Additionally, in the Mediterranean area these two resources are in scarcity. Biodiversity is examined on the third principle “Maintaining Diversity”.</td>
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<td></td>
<td><strong>Renewable resources (solar, wind, etc.) used in tourist accommodations as a percentage of total fuels used</strong></td>
<td>No available data</td>
<td>It is an indication of measures taken to protect the natural resources and the impacts from the use of non-renewable resources of energy.</td>
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<tr>
<td></td>
<td>A surrogate for this is the following indicator</td>
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<tr>
<td></td>
<td><strong>Number of tourist businesses in the area which have renewable energy sources compared to all tourism businesses in Crete</strong></td>
<td>$9/30 = 0.3$ (1996-2000) Compared to the ratio of beds in Hersonissos / beds in Crete which is 0.18 indicates a good proportion for Hersonissos</td>
<td>Similar to the previous one. Additionally, offers an indication of responsible management of the tourist businesses compared to other economic activities.</td>
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<tr>
<td></td>
<td><strong>Amount of water recycled as a percentage of total water that could be potentially recycled</strong></td>
<td>N/A data</td>
<td>Offers an indication for sustainable resources management</td>
</tr>
<tr>
<td></td>
<td><strong>Water consumption per tourist (or bed or night)</strong></td>
<td>N/A data</td>
<td>More meaningful when compared to: a) some standard norms of consumption b) the relative redundancy of the resource in the region c) the consumption before and after the implementation of reduction policies d) As the following indicator</td>
</tr>
<tr>
<td></td>
<td><strong>Energy consumption per tourist (or bed or night)</strong></td>
<td>N/A data</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Ratio of water consumption for domestic, tourist and agricultural use</strong></td>
<td>The available data do not permit to distinguish the consumption between the different uses</td>
<td>It indicates the competitiveness over the resource from different activities</td>
</tr>
<tr>
<td></td>
<td><strong>Existence of procedures for continuous monitoring of the quality of water supply</strong></td>
<td>A computerized system has been installed from the University of Patras which detects the concentration of chlorides in the water and consequently intercepts the water pumping from certain drill when it is raised. This is the only monitoring taking place while no systematic measurement of various parameters is contacted.</td>
<td>This is an indicator of the dominant perception concerning the value of the resource as well as of the existence of procedures for monitoring it (action taken)</td>
</tr>
<tr>
<td>Existence of procedures for continuous monitoring and measuring of the quality of the swimming water</td>
<td>Sea water quality is sampled in 10 of the 55 beaches, that is about 1/5 Timing of samplings follows EU regulations (two samplings per month during the swimming period and one sampling before the start of the swimming season)</td>
<td>Similar to the previous one</td>
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<tr>
<td><strong>Number of samplings of swimming waters exceeding safe limits, as these are defined by the EU</strong></td>
<td>In 1999 results obtained were good</td>
<td>It is a measurement of the quality of the swimming water related to EU standards and time</td>
<td></td>
</tr>
<tr>
<td>Ratio of beaches with Blue Flag awards</td>
<td>$5/55 \rightarrow 1/10$ (approximately)</td>
<td>It is an indication of the quality of swimming water (more general than the previous one) and of the beach management as well as rising environmental awareness of the visitors</td>
<td></td>
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<tr>
<td>Square meters of beach (park or other site) per tourist (average and peak)</td>
<td>N/A data</td>
<td>Indicates the dominant perception on landscape as a natural resource as well as the quality of tourist experience</td>
<td></td>
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<tr>
<td>“Open” space as percentage to that built for tourism infrastructure</td>
<td>N/A data</td>
<td>Indicates the dominant perception on landscape as a natural resource as well as the quality of tourist experience</td>
<td></td>
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<tr>
<td>Ratio of “winter” to “summer” population</td>
<td>$6620/49720 = 1/7.5$ “Summer population”=peak season. Source: Municipality</td>
<td>It is an indicator of the pressure on the environment and the society</td>
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<tr>
<td>Number of bars/discos per population</td>
<td>1 bar per 350 residents (population = peak season)</td>
<td>It is an indicator of the pressure on the environment and the society</td>
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<tr>
<td>Number of employed females per 100 of employed males</td>
<td>30 In Limenas the indicator is just 24 Source: Census Data 1991. There is a need for more recent data as well for different periods than one every ten years or even better for different periods within the same year. Comparing this indicator to the corresponding for the Region of Crete as well as to each community of the Municipality on its own appears to be very low</td>
<td>It is an indicator of the pressure on the environment and the society</td>
<td></td>
</tr>
<tr>
<td>Rate of population growth</td>
<td>$1961-1971 = -15.7%$ $1971-1981 = +56.6%$ $1981-1991 = +42.7%$ $1961-1991 = +88.4%$ Limenas has a substantially greater growth rate than the other communities; some communities have negative growth rate. Since Limenas is the main tourist attraction in the area it could be argued that the retaining—in a period of abandonment of the Greek countryside— and even raising of the population in the area is the result of tourism development.</td>
<td>Measures population retention</td>
<td></td>
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<tr>
<td><strong>Unemployment rate in the off-season periods</strong></td>
<td><strong>N/A data</strong></td>
<td><strong>This is an indicator of both social and economic well-being</strong></td>
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<tr>
<td>A surrogate for this is the following indicator</td>
<td>Municipality’s unemployment = 3.36% Region’s unemployment= 5.54% MU / RU = 0.6</td>
<td>Source: Census Data 1991. Once more there is a need for more recent data as well for different periods than one every ten years or even better for different periods within the same year. However Limena’s unemployment is one of the lowest among the municipality’s different communities.</td>
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</table>

**Municipality’s unemployment compared to Region’s unemployment**

| **MU / RU = 0.6** |

| **This is an indicator of both social and economic well-being** |

| **2. Reducing over-consumption and waste** | **This principle has a two-fold dimension: a) saving the resources from over-consumption and b) reducing the pressure on the environment resulting from the waste disposal and treatment. Focus is given on sustainable practices used and responsible behavior** |

| **Summer / winter waste generation** | **Limenas (1997-1999)** March – May= 25-30 tn/day June– Sept.= 40 th/day Oct.– Nov.= 25-30 tn/day Dec.– Febr.= 6 tn/day Hersonissos 1.5 tn/day in “winter” time 10-12 tn/day in “summer” time Abdou-Gonies-Potamies-Kera 2 tn/day all year around Municipality of Hersonissos (2000) July– Sept.= 60 tn/day * *except August = 80 tn/day |

| **Winter /summer waste production = 1/7 approximately (peak season) proportional to population raising Meaningful when compared to other tourist areas or to measure the success of waste reduction policies.** |

| **% of materials which can be recycled and receive this kind of treatment** | Recycling took place just in Limenas during the period 1997-1998 1/6/97 – 31/12/97 = 10,05% 1/1/98 – 31/8/98 = 11,64% |

| **This an indicator of action taken towards reduction of the waste generated (⇒ less impacts on the environment)** |

| **% of water recycled** | As in the previous principle |

| **Same indicator as on the first principle** |
| Number of hotels, restaurants and other places offering tourist services which have enacted environmental sound systems for eliminating over-consumption of resources and waste generation as a percentage of all establishments | N/A data | Indicates action taken by the tourism businesses for reducing pressure on natural resources |
| % generated solid waste treated with the landfill method | 0 | These two indicators reflect the two extremes (positive and negative) of solid waste management. The Municipality of Hersonissos can be found somewhere in-between. |
| % generated solid waste in dump | 0 | |
| % of wastewater receiving treatment | N/A data | It is a measurement for responsible and sustainable wastewater management |
| **3. Maintaining diversity** | Diversity is a multifaceted aspect and includes biodiversity, socio-cultural diversity as well as, diversity in terms of products offered to the tourists. The later is examined on the next principle. Focus is given on protection actions and research taken. | |
| Number of special interest natural sites under protection Vs to those without any protection | “Koumarodasos” has been identified by the Ministry of the Environment as area of nesting of wild animals but no action has been undertaken in this direction | It is an indication for action taken |
| Number of special interest cultural sites under protection Vs to those without any protection | N/A data | It is an indication for action taken |
| Number of endangered/threatened species on the region | No one known The occurrence of harrier eagles in Rosa’s gorge is speculated without any further exploration | This is a measurement for the pressure posed and the need for action |
| Number of research projects concerning the area’s natural environment | 12 natural interest sites have been identified in the area. Studies were prepared by the Forestry Department for 4 of them and there is one more study currently under preparation. These 4 studies were at the Mayor’s request in order to act as the basis for their recreational development rather than a mean of protecting them in itself. No study has been carried out by an established educational or research institute. | This is an indicator for the interest for the natural environment |
| **4. Integrating tourism into planning & Marketing tourism responsibly** | On this section are examined jointly two principles – “Integrating tourism into planning” and “Marketing tourism responsibly”- as marketing is a part of integrated tourism planning. | |
| Tourists perception for the place they are visiting – questionnaire based | N/A data | This indicator reflects the existence of planning and responsible tourism marketing |
| | There is a research (SETE, 1995) which included a few relevant questions but with a small sampling and no extended questionnaire related to this subject. | |
| **Number of different products/activities supplied locally** (historic-cultural tourism, sports based, conference, explorative tourism etc as well as recreational opportunities)  
The 4 following indicators can be considered surrogates | There are no specific data concerning this indicator but the common observation of the recreational activities offered such as water sports. No data available from some organization on new forms of tourism developed in the area. | It is a measurement of the diversification on the product offered |
<table>
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<tbody>
<tr>
<td>% of beds operating during winter</td>
<td>0</td>
<td>It is a measure of the diversification on the product offered as well as of the extension of the tourist season</td>
</tr>
</tbody>
</table>
| **Number of beds in accommodation with conference facilities as a percentage of the municipality’s bed capacity** | I1 = 29,6%  
I2 = 20,9%  
I3 = 21,3%  
I1 = as a percentage of all MAIN tourist accommodation offered in Municipality of Hersonissos  
I2 = as a percentage of ALL types of tourist accommodation offered in Municipality of Hersonissos.  
There is a problem in I2 as available data concerning tourist accommodation have some inconsistency (rental rooms data are available for the year 1997 while conference facilities and main accommodation data for 1999)  
I3 = as a percentage of all MAIN tourist accommodation in Crete | It is a measure of the capacity of the accommodations offering conference facilities |
| % of municipality’s conference capacity to that of the Region | 20,9% | This is a measure of the capacity of conference facilities offered on the area |
| % of short term courses in new forms of tourism compared to the short term courses offered in tourism in general | N/A data in a local scale  
32 / 97 = 0,33  
(1990-1999)  
Data for the Region of Crete | This indicator is more meaningful on a regional – or even on a national scale- since it is not easy to differentiate between the area where training took place and the area of work  
It is an indication of policy for future development |
| % of tourists having booked in four major T.O. | N/A data in a local scale  
According the Chairman of the Hotel Association of Crete it is about 50-60% | This indicator is more meaningful on a regional scale  
It measures the dependence of the market on promoting and selling tourism |
| Existence of legislation or zoning regulations determining the land use and the impregnated tourist areas | There are some studies but nothing has been enacted yet | It is an indication of planning for development and environmental protection |
| **Existence of research concerning the area’s sustainable development** | A study was prepared in 2000 by the University of Cincinnati | This indicator reflects the awareness on developmental issues however, it does not provide that action is taken |

5. **Supporting local**  
Supporting local economy is believed to be essential in any economic activity. Issues such as over-dependence on tourism and revenues for the locals should be under consideration.
<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
<th>Data Source</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td><strong>Employment in tourism as a percentage of total employment</strong></td>
<td>65.23% in the service sector&lt;br&gt;30.34% in hotels, restaurants and commerce&lt;br&gt;In Limenas the corresponding percentages are as follow:&lt;br&gt;76.33% in the service sector&lt;br&gt;35.11% in hotels, restaurants and commerce</td>
<td>Source: Census Data 1991</td>
<td>This indicator illustrates the local economy’s profile and its dependence or not on tourism. It would be of interest to measure its alteration through the time if data were available for time series.</td>
</tr>
<tr>
<td><strong>Number of “locals” employed in tourism as a percentage of total employment in tourism</strong></td>
<td>N/A data&lt;br&gt;The Mayor estimates that employees and owners (apart from a couple of large establishments) in tourist accommodation, restaurants, café-bars and stores are mainly residents while the rest live in the broader area.</td>
<td></td>
<td>It indicates the local retention of tourism related income</td>
</tr>
<tr>
<td><strong>Revenues generated by tourism as a percentage of total revenues generated in the area</strong></td>
<td>N/A data</td>
<td></td>
<td>This indicator reflects the relative weight of tourism compared to other economic activities on the area</td>
</tr>
<tr>
<td><strong>Hotel and restaurant taxes</strong></td>
<td>Since 1999 municipality taxes are 2% of the gross revenues practically of all kind of businesses related to tourism. Total tax revenues for the Municipality (mostly from Limenas) were 800 million drs in 1999. This implies that total revenues were about 40 billion drs.</td>
<td></td>
<td>Compared to overnight staying (if data were available) it would be a good indication of the economic effectiveness of tourism</td>
</tr>
<tr>
<td><strong>Business establishments offering tourist services and owned by locals as a percentage of all business establishments</strong></td>
<td>N/A data&lt;br&gt;The Mayor estimates that the majority of the tourist businesses belong to locals</td>
<td></td>
<td>It indicates the local retention of tourism related income</td>
</tr>
<tr>
<td><strong>% of self employed or family businesses in tourism</strong></td>
<td>22.8%&lt;br&gt;Source: Census Data 1991&lt;br&gt;Employment was examined in commerce, hotels and restaurants</td>
<td></td>
<td>It measures local SME’s participation</td>
</tr>
<tr>
<td><strong>Change in Gross Regional (Local) Product by sector</strong></td>
<td>N/A data at the local level</td>
<td></td>
<td>It indicates the change of local economy through time</td>
</tr>
</tbody>
</table>

### 6. Involving local communities & Consulting stakeholders and the public

“Involving local communities” is examined along with the principle “Consulting stakeholders and the public” as they are actually expressions of the need for communication, information and experience exchange. Applying this kind of methods, it is believed to better succeed in implementing sustainable development, rising awareness and spreading of information.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Data</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existence of educational/informational programs for the public</td>
<td>No</td>
<td>This indicator reflects implementation of procedures for involving, advising and informing the public</td>
</tr>
<tr>
<td>Number of local meetings to discuss issues before policies are implemented</td>
<td>No</td>
<td>This indicator reflects implementation of procedures for involving, advising and informing the public</td>
</tr>
</tbody>
</table>
| and the public | Public-private partnerships/investments | 1) Golf  
2) Expansion of tourist season  
3) Extreme sports (paraglading) (some substructure by the Municipality)  
4) Hotel and restaurant owners are currently financing the planning for the coast road management which later on the local authority will enact. | It is an indication of awareness and joint problem solving |
<table>
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<tbody>
<tr>
<td>7. Training staff</td>
<td>Training staff ensures better performance contributing this way to sustainability. Indicators representing this principle are more meaningful on a regional or even on a national scale since it is not an easy task to differentiate between the place of training and the place of work. Moreover there are no data available on tourism education and training on a local scale. The data used to estimate the indicators in this principle refer to the whole region of Crete.</td>
<td>% of employees that are graduates of tourist schools</td>
</tr>
</tbody>
</table>
| | | % of hours of short term training courses in tourism to those of all available short term courses in the Region of Crete | 12%  
(1990-1999) | More meaningful on a broader scale  
It reflects the emphasis given on tourism regarding training |
| | | Change of short term training courses hours in tourism | 536,7% | More meaningful on a broader scale  
It shows the alteration through time and therefore the intensity or not of actions taken |
| | | Number of short term courses realized in the Municipality concerning tourism | 0 | |
| 8. Undertaking research | Undertaking research is essential to help solve problems, create new products, make efficient use of the resources and after all, better implement sustainable development in practice. | Number of surveys made concerning tourist preferences and perceptions | In a survey contacted in 1995 by SETE there were a few questions concerning tourist preferences and perceptions | It indicates some provision for responsible management and marketing of tourism  
The same as in a previous principle |
| | | Number of surveys made concerning locals perceptions for tourism | No official survey concerning local perceptions | It is an indication of inclusion of local’s input in planning decisions |
| | | Number of research studies on the profitability of the industry / number of research studies on the impacts of tourism | University of Cincinatti has undertaken research on the area’s prospect on sustainable development | Same as the previous principle |
| | | Conferences and other activities attracting interest in tourism and sustainable development research organized locally | 0 | This indicator reflects relative weight given on a integrated approach for sustainable development. |
5. Conclusions

One of the most striking problems estimating the indicators was the lack of proper data. This is relatively common in Greece since no special provision is taken regarding the availability and quality of necessary data other than those resulting from certain official surveys. Although tourism is one of the major economic activities in the country, lack of data, especially at a local scale, is striking. Moreover, since sustainable development indicators necessitate data other than those gathered for classical statistics, the problem is even worse. The need of identification and systematization of data for sustainable tourism development appears to be imperative.

In order to compensate the lack of data, surrogate indicators were introduced where possible. Undoubtedly, when an integrated evaluation of an area’s tourism development is the target, there should indicators representative for each parameter related to sustainable development. It is believed that the evolution of research on the field of sustainable tourism indicators will contribute to the improvement of the quality and the quantity of data available.

Another problem concerning data relates to the time of their collection and therefore to the time on which the evaluation is referring. Although the right thing to do would be the indicators estimation for the same period of time, this didn’t happen as available data were segmented in different years. Nevertheless, all estimated indicators do not refer strictly to a given period of time.

Finally, another problem encountered relates to the vagueness the concept of sustainable development implies as long as its prerequisites, parameters and criteria are concerned. This is even more apparent when dealing with a local scale of application where specific measures are necessary. Inevitably, this vagueness is projected to the indicators as well. However, it is believed that further research on defining the criteria of sustainability would result in better-formed indicators. Conversely, because of the interrelation between indicators and criteria, further research on the topic of sustainable tourism indicators would have a positive impact on this definition.
In any case, as long as a local scale of application is considered, the need for a thorough analysis over the parameters which define sustainable practices, becomes apparent.
6. Bibliography


OECD (1994) Environmental Indicators – OECD Core Set, Paris, OECD.


U.N. (1998) Indicators of Sustainable Development


Enjoy a Greek Island Holiday in

ITHACA, GREECE

Perched on a hillside with spectacular sea views, the organic-olive-oil-producing Levendi’s Estate includes four guest houses, each featuring its own native-flora garden terrace, as well as a swimming pool and outdoor cooking area. Beyond the pool, paths meander into the forest where hammocks and benches provide peaceful seclusion. Guests can swim or snorkel in the coves below the forest and cycling is permitted on mountain paths.

In addition, the estate includes organic vegetable and herb gardens and a farm that houses six sheep and several chickens. Visitors can help themselves to the produce in the gardens and orchards and choose from foods prepared using homegrown ingredients. Several preserves and herbal products are made from organic produce for guests to enjoy or take home as gifts. The estate is a member of the national organization for organic producers and supports the idea that vacation destinations offering high-quality accommodations and services can be in harmony with the natural environment.

Another guiding principle of the estate is that tourism dollars always should benefit the local economy, so the estate is operated by local people. The owners also only recommend services conducted by local families, including taxis, cars and boats, as well as restaurants, supermarkets and cafés that source local foods.