Exploring Sustainable Future Tourist Development Paths for Zakynthos Island-Greece: A Methodological Framework

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Abstract

The present paper focuses on the development of a methodological framework for guiding decision making towards the sustainable tourist development of the island of Zakynthos-Greece. In this respect, potential future developments (scenarios) of the tourist sector are structured and evaluated in order to conclude with the most prevalent perspective. The scenario building process takes into consideration developments of both the: internal environment of Zakynthos island, where the mass tourism as a dominant tourist development model has resulted in environmental deterioration, increasing pressure on local resources, land use conflicts, etc.; and external environment, delineated by the strategic objectives set for the development of the tourist sector at the national level, global trends in tourist demand and supply side, alternative tourist development paths, etc. Both the internal and the external environment define the decision environment, within which policy guidelines, serving sustainability objectives, are set. Scenarios and respective policy interventions take also into account that sustainable futures of the tourist sector in every single region have to be explored as a combination of both the: macro-level, where the development of an environmentally responsible, spatially balanced sector is sought; and the micro-level, where of crucial importance is an environmentally responsible low-carbon tourist infrastructure deployment. Finally some conclusions are drawn based on the experience gained from the application of the proposed methodological framework on the specific study region.

Keywords: *sustainable tourist development; spatial planning; tourist firm; scenarios; evaluation; policy*

1. Introduction

While tourism is considered as one of the most important productive sectors in many regions of the world, tourist development can place a heavy burden on the environmental, cultural as well as social assets of the regions involved (Stratigea, Giaoutzi, & Nijkamp, 2006; Stratigea, Papakonstantinou, & Giaoutzi, 2008). Coping with the negative impacts of tourist development, calls for a comprehensive destination management, focusing on a sustainable tourist development pattern that leads to the management of resources in such a way that economic, social and aesthetic needs can be fulfilled, while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems. This implies a process, which aims at meeting the needs of present tourists and host communities, whilst protecting and enhancing the future generation options (WTO, 2001). It also calls for an *active participation* of all stakeholders involved in tourist destinations, namely hotels and resorts, local communities, municipalities and the tourists themselves (Stratigea, Papakonstantinou, & Giaoutzi, 2008).

The goal of *sustainable tourist development* has nowadays largely affected tourist production and consumption patterns. Preserving world's tourist assets for future generations has become an imperative not only for travel and tourism but also for all economic sectors, which are consuming the earth's natural resources (UNEP, 2002). According to the Agenda's 21 recommendations for travel and tourist industry – *the supply side* – environmental protection and rational use of resources, both natural and cultural, should constitute an *integral part* of the tourist development process (Leidner, 2003). For travel and tourist businesses, the main aim is to establish systems and procedures that can incorporate sustainability objectives in the core management function and identify measures for their implementation (WTTC, 1995).

Tourist clients on the other hand – the *demand side* – exhibit a steadily increasing choice preference towards environmentally committed tourist destinations (WTTC, 1995). This preference is gradually forming an expanding movement, expressed by an escalating interest in purchasing environmentally friendly tourist products and services. Environmentally responsible tourist firms and destinations seem to be options of high priority in the demand side, affecting positively both the *tourist firms* (micro-level) and the *tourist destination* (macro-level).

The focus of the present paper is upon the development of a *methodological framework* that can support *policy making* for serving the goal of sustainable tourist development. This is applied on a worldwide known Greek tourist destination, the island of Zakynthos. Located in the Ionian Sea, Zakynthos has traditionally been developed as a mass tourist destination, based on the exploitation of its exceptional natural and cultural resources. The tourist sector possesses a prevalent role in the local economic structure, supporting labour market and income opportunities. The mass tourist model though has already exhibited remarkable unfavorable impacts on the environmental profile of the region, while it exerts a considerable pressure on the social and cultural resources, as well as on the local economic structure, where sectors other than tourism are stagnating to the detriment, in the long run, of the local economy and the tourist sector per se. At present, there is a certain *concern* among all actors involved (local authorities, tourist businesses and local population) as to the future of the tourist sector in the island, while it is already fully realized the need for paving a more responsible and of low ecological footprint tourist development perspective, sustaining the future of the sector and the health of the local social, natural and cultural capital.

In this respect, the present study elaborates on a *methodological framework* that aims at sketching policy guidelines in support of the integrated sustainable tourist development of Zakynthos island. The structure of the paper has as follows: in the first section is presented the proposed methodological approach; next are discussed the goal and objectives that are set for the study region, while are also shortly described the key attributes of the region together with the current state of the tourist sector at the *macro-level* (spatial pattern, tourist supply and demand, etc.) and the *micro-level* (adoption/use of environmentally responsible management schemes at the tourist business level); based on the above information, are built and evaluated scenarios serving sustainable future development paths for the region at hand, while key policy directions are also discussed, aiming at the successful implementation of the preferred scenario; finally, some conclusions are drawn as to the experience gained from the application of the proposed methodological framework on the specific case study.

2. The Methodological Approach

The proposed methodological approach is displayed in Figure 1, where:
- *Step 1*: presents the goal of sustainable tourist development of Zakynthos island, which is further analyzed into a set of objectives;
- *Step 2*: describes the current state of the study region, while developments of the tourist sector, both at the macro- (spatial development of the sector) and the micro-level (environmentally responsible tourist business developments), are also considered;
- *Step 3*: aims at the structuring of *scenarios* for the spatial development of the tourist sector, taking into consideration the need for: the protection and preservation of the valuable ecosystems that are present in the study region; and the promotion of a more balanced spatial development of the sector, better integrated into the natural but also the economic and social environment.
- *Step 4*: proceeds with the evaluation of the previously structured scenarios in support of the final decision that better serves sustainability objectives. A two-step evaluation of the proposed scenarios is carried out in this respect, based upon: a) a qualitative evaluation by use of a SWOT analysis; and b) a qualitative evaluation by use of a multicriteria evaluation tool – the REGIME method.
- *Step 5*: focuses on the policy guidelines for the implementation of the desired future with respect to the tourist perspective.

Figure 1. The proposed methodological framework
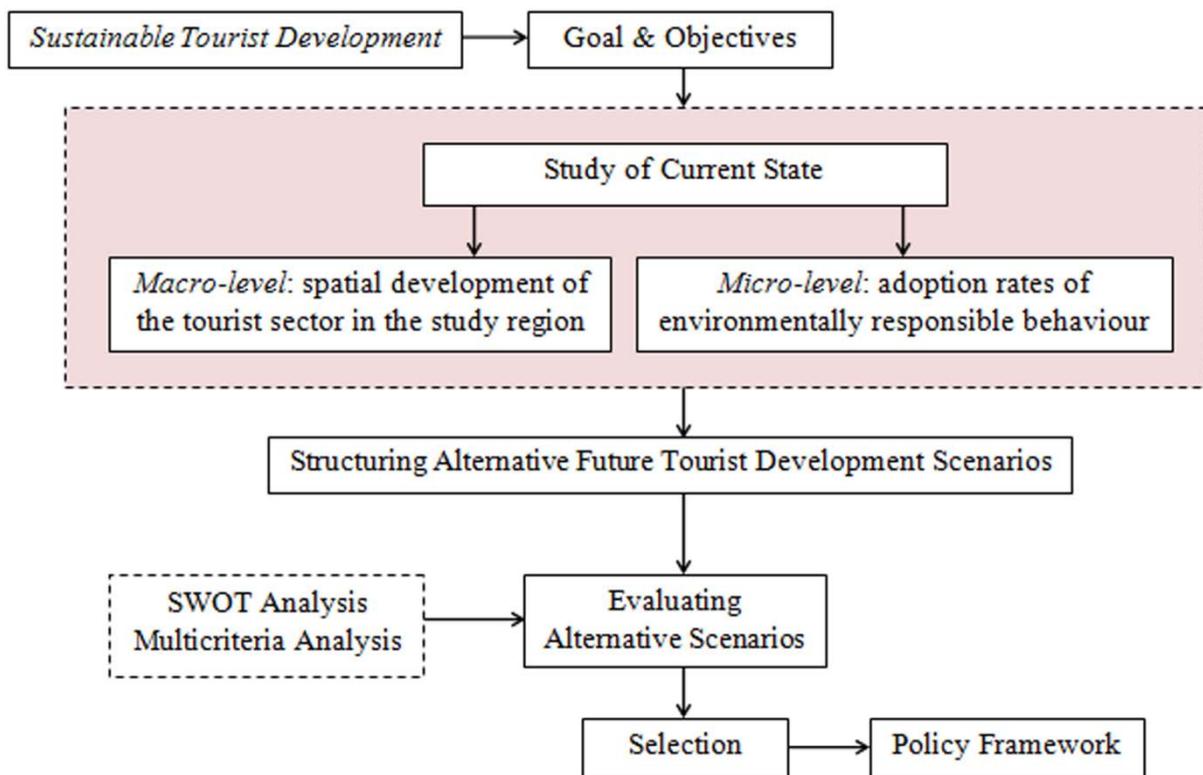
3. Goal and Objectives in the Study Region

The sustainable future tourist development of Zakynthos island has been set as the *goal* of the present empirical study. In this respect, a future image of the tourist sector is sought that is environmentally responsible, socially cohesive, economically competitive and spatially balanced, smoothly integrated into the local economic structure. The goal has been further analyzed into the following *objectives*:

- *restraint of population decline* in various local settlements: it is worth noting the trend of abandoning small-scale settlements in the island, which hampers their local development perspectives;
- promotion of a *de-concentrated pattern* of development of the tourist activity: it is pursued a shift from a concentrated pattern of mass tourist development to a de-concentrated pattern, rating first alternative tourist activities that contribute to the sustainable exploitation of local resources, support tourist product diversification, cope with seasonality, while they also promote a more spatially balanced tourist development pattern;
- strengthening of *interaction* among the tourist and the rest of the local economic sectors: the valuable primary and manufactured local production can satisfy tourist 'needs and wants', reinforcing thus the bonds among tourism on the one hand and the rest of the economic sectors on the other;
- upgrading of *transport and telecommunications infrastructure*: these are considered of crucial importance for providing unimpeded access of tourist flows to the study region; while they can also increase the perspective of local population and businesses to get access to opportunities and better services (Stratigea, 2011);
- exploitation of *renewable energy*: in Zakynthos region there is a considerable potential for renewable energy exploitation (solar energy, biomass etc.), which can support sustainability objectives at the tourist business level (Giaoutzi, Dionelis, & Stratigea, 2008);
- improvement of *tourist accommodation infrastructure*: as this infrastructure relates to a range of very resource-consuming uses (heating and cooling, lighting, etc.), mostly concentrating in specific peak periods of time, the promotion of an environmentally responsible pattern of tourist infrastructure deployment is of outmost importance for decreasing the ecological footprint of tourist businesses (Giaoutzi, Dionelis, & Stratigea, 2008);
- upgrading of *human resources*: regards labour resources involved in all kinds of activities, with emphasis on those employed in the tourist sector.

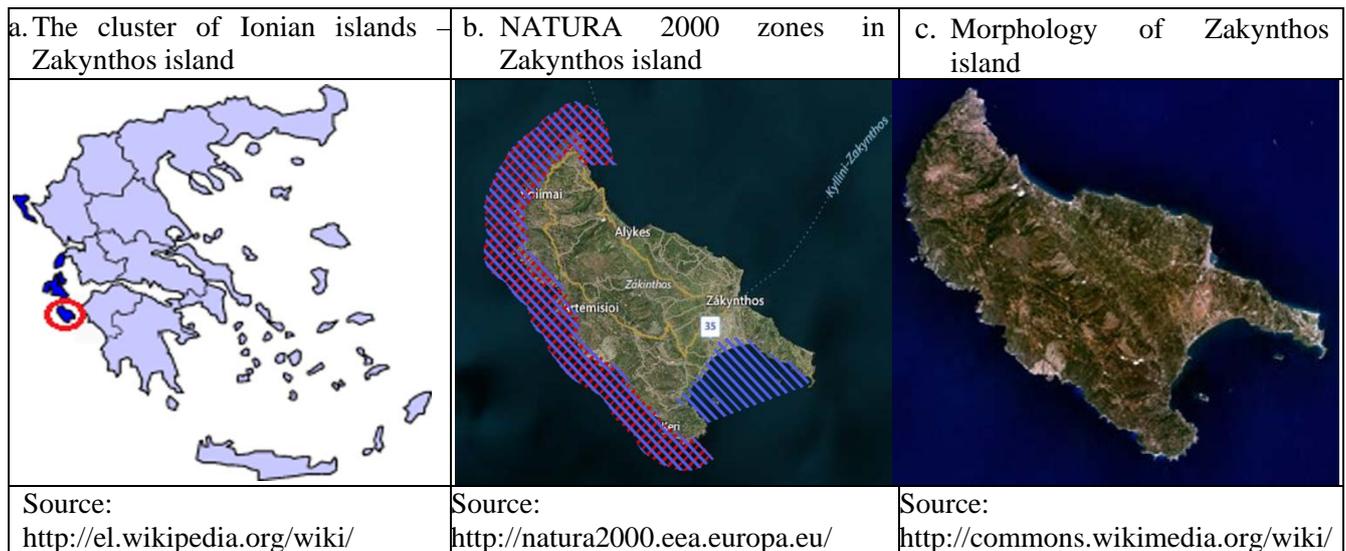## 4. Current State of the Tourist Sector in the Study Region

This section concentrates upon the delineation of the current state of the tourist sector in conjunction with a brief discussion on the natural and cultural resources, upon which tourist development of the study area is based. In searching for the fulfillment of sustainability goal and objectives set for the region at hand, the study of the tourist sector is considered at both the macro- and the micro-level. At the *macro-level* is shortly presented the current state of the tourist sector in the region in terms of tourist supply and demand, spatial structure, etc. At the *micro-level*, emphasis is placed on the exploration of environmentally responsible behaviour of local tourist businesses, i.e. how these businesses accommodate sustainability objectives in their management policy.

The study region

Zakynthos belongs to the cluster of Ionian islands (Figure 2a) and is endowed with valuable natural resources, characterized by unique kinds of flora and fauna. Certain parts of the study area are placed among the protected areas of NATURA 2000 (Figure 2b). Moreover a wide variety of cultural resources are contributing to the formation of the specific *'place identity'* of the island (Padgett & Allen, 1997), such as important archaeological and historical sites, local traditions, local architecture, traditional music, traditional settlements, etc. Of considerable importance is also the marine park located in Laganas gulf, a significant biotope for the sea turtle Caretta-Caretta (Figure 2c) and the Mediterranean seal Monachus-Monachus, but also a very significant mass tourism pole of the island.

The Region of Ionian islands in general and Zakynthos island in particular, are exhibiting low unemployment rates, mostly due to the development of the tourist sector, which absorbs a large number of employees, especially in the peak summer period. In Zakynthos island, the tourist sector prevails in the local economy, mainly characterized by a mass pattern exerting considerable pressure on local environmental, cultural and social resources (Kapsaski, 2014). In the local economic structure, first rates the tertiary sector, mainly due to the prevalence of the tourist sector but also the tertiarization of the local economy in general. Next rates the primary sector, exhibiting a continuously declining trajectory, while the secondary sector is steadily holding the third position, with a more or less stabilized trajectory.

Figure 1. The study region

a. The cluster of Ionian islands – Zakynthos island	b. NATURA 2000 zones in Zakynthos island	c. Morphology of Zakynthos island
Source: http://el.wikipedia.org/wiki/	Source: http://natura2000.eea.europa.eu/	Source: http://commons.wikimedia.org/wiki/

During the last few decades, the rapid development of the tourist sector has had numerous negative impacts, relating to the weathering of the built and natural environment, the irrational use of natural resources, the extensive use of energy, etc., driving towards a certain deterioration of environmental resources, land use conflicts as well as a considerable pressure on the social context.

The tourist sector at the macro-level

The *tourist supply* in Zakynthos island is largely determined by the prevalence of the tourist region of Laganas, where the main body of the hotel infrastructure is located (see Table 1). More specifically, in Laganas region is concentrated 50% of hotel infrastructure and almost 45% of rooms to let. From Table 1 is also evident the low-class level of the majority of hotel infrastructure, reflecting somehow the low-budget tourist flows attracted in the area.

Table 1. Hotel infrastructure
Source: Elaboration of data from the National Statistical Service of Greece (2009)

Number of hotels per category	MC* of Zakynthion	MC of Alykon	MC of Arkadion	MC of Artemision	MC of Elatia	MC of Laganas	Total
Hotel class D'-E'	-	-	-	-	-	-	-
Hotel class C'	29	19	30	-	2	102	182
Hotel class B'	22	5	13	-	1	25	66

Hotel class A'	5	2	6	-	-	7	20
Hotel class Lux	-	-	2	-	1	1	4

Arrivals Area	2009	2010	2009	2010	2009		2010
	Domestic	Domestic	Foreign	Foreign	Total		Total
Greece	7.352.183	6.876.371	8.542.307	8.964.224	15.894.490		15.840.595
Ionian islands	342.716	345.088	778.526	795.059	1.121.242		1.140.147
Zakynthos	70.893	66.183	284.031	275.576	354.924		341.759
Total	56	26	51	-	4	135	272

*MC – Municipal Compartment

In Table 2 are displayed domestic and foreign tourist flows – the *demand side* – for the years 2009 and 2010. According to these data, it can be noticed a slight decrease of both the domestic and the foreign tourist flows between 2009 and 2010 in the island of Zakynthos and a small increase of both domestic and foreign flows in the Ionian islands in general.

Table 2. Domestic and foreign tourist flows in 2009 and 2010
Source: Elaboration of data from the National Statistical Service of Greece (2009 and 2010)

One also very important issue for the future tourist development of the island constitutes the *land use conflicts*, especially between the agricultural and the tourist sector, which lead to the gradual reduction of cultivated land and the expansion of scattered building of tourist infrastructure. Such a scattered tourist infrastructure deployment pattern exerts considerable pressure on the natural, cultural but also societal resources and can in perspective hamper the tourist activity per se. Crucial in this respect is spatial planning, which will set the rules for supporting a more sustainable spatial pattern of tourist development in the island.

The micro-level – environmentally responsible behaviour

The concept of environmentally responsible tourism is, during the last decades, gaining much importance (UN, 1992; WTO, 2001). This is largely relating to both: the *supply side*, through actions undertaken by tourist businesses in support of a more rational use of resources, implying a respectful attitude of tourist firms against the local environments in which these activate as well as a reduction of maintenance costs; and the *demand side*, i.e. the visitors of a tourist destination, who, apart from the unique and distinctive characteristics (Kavoura & Katsoni, 2013), they also seek more environmentally committed hosting infrastructures and tourist services (Stratigea & Hatzichristos, 2011; Stratigea & Papadopoulou, 2012).

As to the supply side, environmentally friendly behaviour can be supported by a range of environmental management practices, which are gradually diffusing into the tourist business world, and strengthen efforts to commit to sustainability objectives. These imply the compliance with a range of qualitative prerequisites that can characterize the business behaviour and its attitude towards critical environmental objectives.
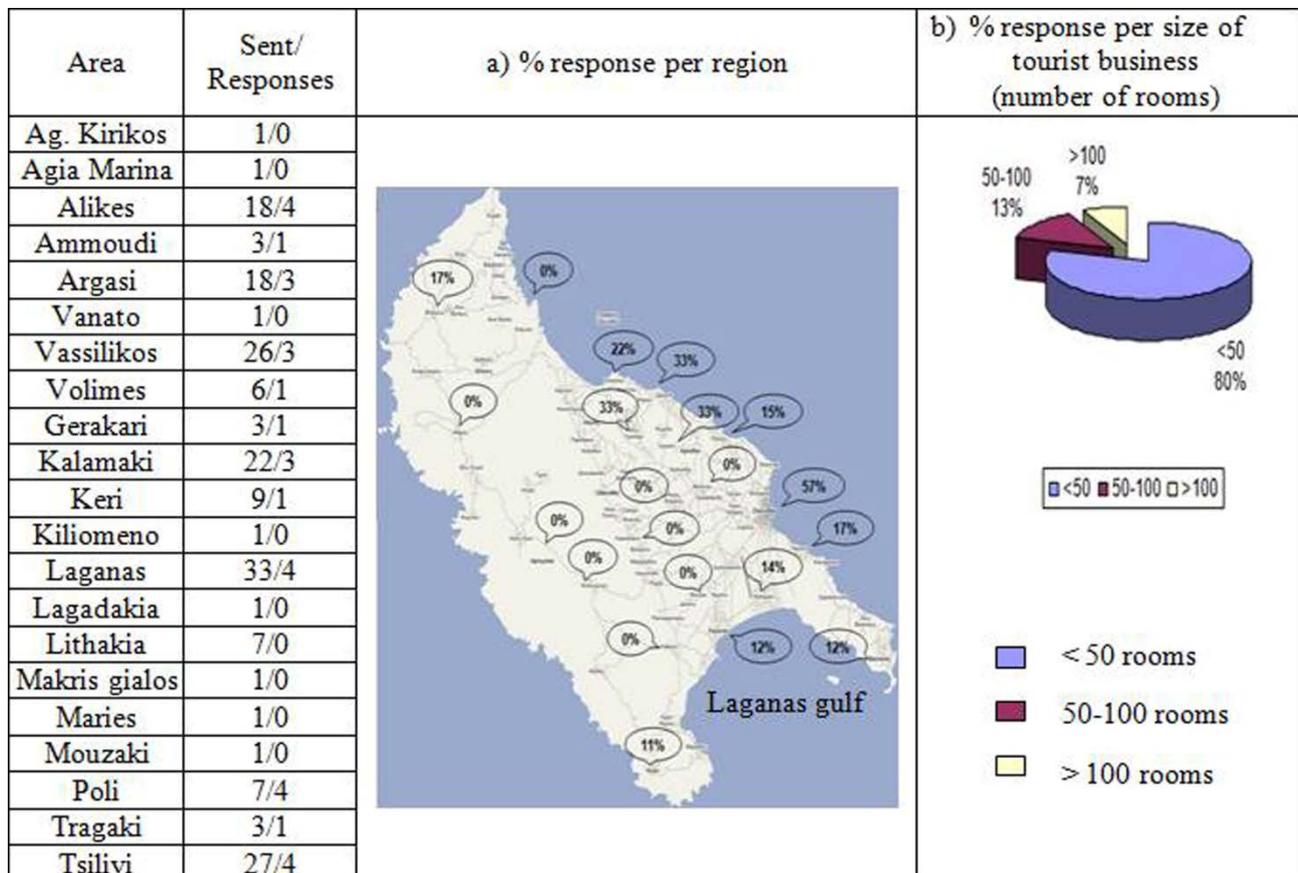
In seeking an environmentally responsible tourist development of Zakynthos island, it is not sufficient to pursue a more spatially balanced and of alternative nature tourist development pattern. Of importance is also the study of the *adoption rates* of specific environmentally responsible management systems or measures by the local tourist entrepreneurial community (EREC, 2005). Towards this end, the attitude of the local tourist accommodation businesses as to a range of measures that support a low environmental footprint of their functioning is explored. In this respect, a range of issues are addressed to a number of tourist businesses in the study region through a questionnaire that keeps in track with the main elements of environmentally responsible tourist management systems. More specifically, the questionnaire addresses issues relating to critical environmental concerns, such as energy- and water-saving, recycling, etc.; and the way (measures) these are treated by tourist businesses in the island. Questions raised are focusing on: technical attributes of

the building infrastructure (insulation, double glazing, etc.), energy-saving pattern (measures reducing energy demand), renewable energy utilization (e.g. photovoltaic and solar systems), recycling efforts, etc.

The questionnaire was addressed to a total of *190 tourist accommodation businesses*, evenly distributed throughout the tourist areas of the island. Different types of tourist accommodation businesses were considered, ranging from large luxurious hotels of more than 100 rooms to small family-run tourist accommodation businesses of less than 10 rooms. The whole research took place from February to May 2013. There was a rather limited interest in responding to the questionnaire, as the total number of responding businesses was only 30 out of 190 tourist firms (almost 16%). This is partly justified by: a) the pattern of tourist development that the island has followed for several decades now (being a mass pattern, attracting low-budget tourist flows), which has shown little concern on environmental issues in general; and b) the lack of knowledge on potential environmentally friendly applications at the tourist accommodation level and the gains that can be earned by their use.

Responses from the area of Laganas gulf (Figure 3a), the most crowded tourist node in Zakynthos, were also rather limited, although this is one of the most important regions of the island in respect of its environmental value (NATURA 2000 region) (Figure 2b). On the other hand, a higher response was noticed from tourist accommodation businesses in the eastern coast, where are located the less crowded tourist development nodes (Figure 3a). Of importance is also the fact that large hotel installations had shown no interest in responding, in contrast to small tourist businesses, which were more willing to engage in this research and join efforts towards more environmentally responsible business management schemes. More specifically, there were 2 responses (6%) from hotel businesses of more than 100 rooms, 4 responses (14%) from hotel businesses with 50-100 rooms, and 26 responses (80%) from small hotels or rented rooms (Figure 3b).

Figure 2. Geographical distribution of responses to the questionnaire
Source: Elaboration of primary data from questionnaires, Kapsaski 2014

Area	Sent/ Responses	a) % response per region	b) % response per size of tourist business (number of rooms)
Ag. Kirikos	1/0		
Agia Marina	1/0		
Alikes	18/4		
Ammoudi	3/1		
Argasi	18/3		
Vanato	1/0		
Vassilikos	26/3		
Volimes	6/1		
Gerakari	3/1		
Kalamaki	22/3		
Keri	9/1		
Kiliomeno	1/0		
Laganas	33/4		
Lagadakia	1/0		
Lithakia	7/0		
Makris gialos	1/0		
Maries	1/0		
Mouzaki	1/0		
Poli	7/4		
Tragaki	3/1		
Tsilivi	27/4		

Although the number of respondents was rather low, certain rough inferences can be made as to the way the local tourist accommodation businesses deal with sustainability objectives. Moreover, the low level of environmental awareness exhibited in the study region, but also the unwillingness to participate may raise a number of issues for policy concern towards diffusing a new, more environmentally responsible, tourist business culture in the region. *Key findings* of the empirical research at the micro-level have as follows:

✓ *attributes* of the tourist accommodation businesses reached by the questionnaire:
- the majority of hotels/rooms infrastructure (70%) was built between 1980-2000, while 7% was built before 1980 and 23% after 2000;
- the more mature buildings perform less well as to their energy consumption in comparison with more modern building infrastructure, fulfilling certain energy-saving specifications;
- certain upgrading of old buildings infrastructure is already taking place;

✓ *status* of the hotel infrastructure as to certain structural elements (Figure 4):
- only 3% of the responding hotels has some sort of building insulation;
- 73% disposes double glazing for rooms insulation purposes;
- 90% takes full advantage of natural light through large windows;
- only 43% disposes a ventilation system;

✓ environmentally responsible *actions* carried out by tourist accommodation businesses:
- introduction of energy-saving key cards for reducing energy consumption pattern (78% of businesses);
- use of energy-saving appliances for further reduction of energy consumption (in more recently established businesses);
- switching off of the stand by equipment (60% of businesses);
- energy-saving lamps (99% of businesses);
- air conditioning system with sort of control for shutting off when necessary (73% of businesses);
- adoption of certain water-saving measures by the majority of businesses;
- proper maintenance of hydraulic and heating systems by the majority of businesses;

✓ from the tourist businesses responded to the questionnaire:
- only 20% is equipped with an energy management system;
- only 8% makes use of the rainfall for various auxiliary water uses;
- recycling is not within businesses' priorities, as there is no recycling system in the municipality of Zakynthos.

Figure 3. Structural elements of hotel infrastructure
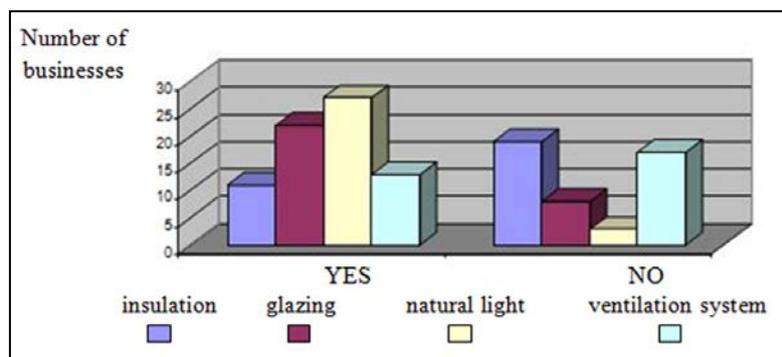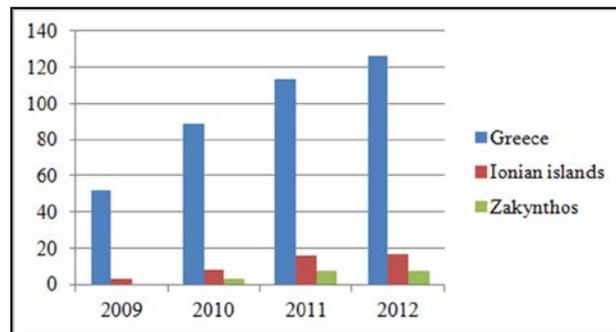Source: Elaboration of data from questionnaires, Kapsaski 2014

Figure 4. Number of tourist businesses adopting the 'green key'
Source: Data elaboration from www.eepf.gr/thegreenkey

Finally, it has to be noted that there is a very low rate of adoption of distinct environmentally responsible tourist management systems, such as the *'green key'*, the Eco-Management and Audit Scheme – *EMAS*, and the European Ecological Label – *'ecolabel'* by the local tourist business community. In fact, in 2012 only 7 large hotels in the island of Zakynthos had adopted the 'green key' management system (Figure 5).

5. Structuring and Evaluating Scenarios for the Sustainable Future Tourist Development of Zakynthos Island

The sustainable management of natural and cultural resources for the development of the tourist sector in a particular region is undoubtedly a complex planning issue, mainly due to the conflicting objectives that need to be served. In this respect, although the tourist sector is capable of contributing to the economic development, serving also social cohesion objectives, especially in peripheral and lagging behind regions (Stratigea, Giaoutzi, & Nijkamp, 2006; Stratigea & Giaoutzi, 2006; Panagiotopoulou & Stratigea, 2014), it also places a noticeable burden on the natural and cultural resources. A certain compromise needs to be made in this respect that is a really difficult planning exercise, searching for a region-specific balance among different stakes (Stratigea, Papakonstantinou, & Giaoutzi, 2008; Stratigea & Papadopoulou, 2013). Such a balance is sought in the following, in the context of structuring and evaluating alternative scenarios for the sustainable tourist development of Zakynthos island.

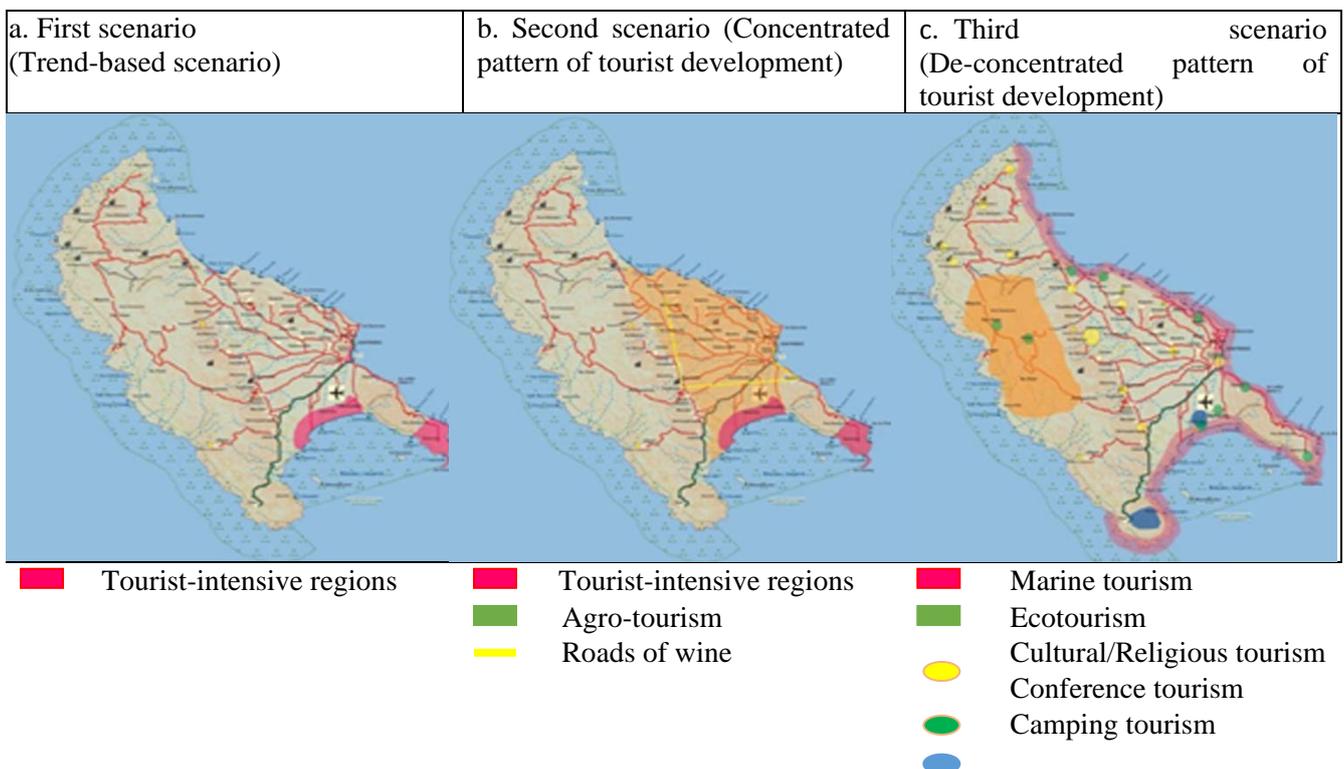*Alternative scenarios for the sustainable tourist development of the study region*

In seeking the sustainable development of Zakynthos island, three discrete future scenarios are structured, which are diversified as to the: level of exploitation of local resources for the development of alternative tourist activities and their spatial distribution as well as the environmental attitude of local tourist businesses. These have as follows:
- The *first scenario* is a *trend-based scenario*, built upon past and present trends, which is used to describe the future of the specific area in case that no planning interventions occur. In this respect, the scenario is representing a *mass tourist development pattern* (Figure 6a), which also exhibits a concentrated spatial structure, expanding in the southern eastern part of the island, along Laganas gulf. By considering the location of a NATURA 2000 region and the marine park in this area (see Figure 2b above), being the shelters for protected species, it is evident that the tourist sector is placing a considerable risk relating to the tourist overload of a very sensitive region of the island, which in turn reflects somehow the low level of *environmentally responsible culture* pertaining to the local tourist businesses. Moreover, the present pattern of tourist development of this part of the island has already had certain negative impacts, among others, on the social pattern; it promotes an irrational exploitation of local resources, high seasonality of the tourist product, and attraction of low-budget tourist flows; it finally exhibits a low rate of diffusion of any positive economic outcome in the rest of the island regions, negatively influencing social and economic cohesion.
- The *second scenario* is built upon a *concentrated pattern of tourist development* of the region at hand, taking into consideration the existing pattern of tourist infrastructure deployment (Figure 6b). The mass

tourist model is partially complemented with certain alternative tourist activities, keeping always in track with existing infrastructure and pursuing a shift to more qualitative and all year round tourist flows, while a *moderate* rate of diffusion of environmentally responsible behaviour in tourist businesses is considered. In this context, apart from Laganas region, a number of other, of milder nature, mass tourist poles are developed, such as the settlements of Vasilikos, Tsilivi and Argasi, where the largely upgraded accommodation infrastructure calls for the attraction of more qualitative and high-income tourist flows. Moreover, alternative tourist development is taking place in the surroundings of these poles, based on agro-tourism and wine tourism in the exceptional wine fields of the area, resulting thus in the increase of interaction between the primary and the tourist sector in the area. Finally, emphasis is placed on the renewable energy dimension, where solar energy exploitation is taking place at the tourist business level.

- In the *third scenario*, the mass tourist pattern is restrained to selected poles, while a considerable effort is devoted to promote alternative tourism in lagging behind and mountainous regions of the island. In this respect, a more *de-concentrated spatial pattern of tourist development* is pursued (Figure 6c), stressing the importance of the sustainable exploitation of natural and cultural resources, and the better interaction of the tourist with the rest of the sectors. Based on that, emphasis is placed on the diffusion of tourist development in the whole coastal part of the island through the development of certain poles, while these are complemented with a range of alternative tourism activities, such as conference tourism, wine tourism, agro-tourism, ecotourism, cultural and religious tourism, marine tourism etc. In this respect, the region is creating a rich, *experience-based* (Pine & Gilmore, 1998; Petkus, 2002; Stratigea & Hatzichristos, 2011; Panagiotopoulou & Stratigea, 2014), more environmentally responsible tourist product, supporting a certain shift to the attraction of more qualitative, all year round, tourist flows. These developments are combined with a *wide spread culture of environmental values in the tourist sector*, motoring environmental responsibility at the tourist business level. Based on that, a wide range of environmentally friendly actions are undertaken at this level, such as exploitation of solar energy covering part of the tourist business energy consumption, use of low energy footprint appliances, application of various building insulation technologies, use of water-saving technologies, etc.

Figure 5. The proposed scenarios for Zakynthos region

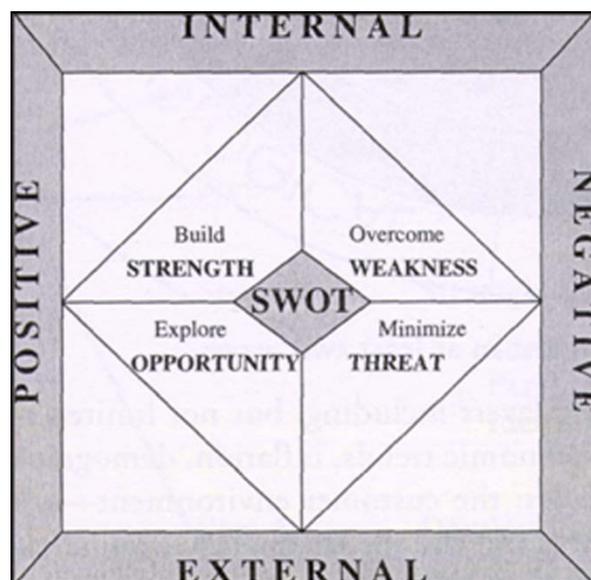| a. First scenario (Trend-based scenario)	b. Second scenario (Concentrated pattern of tourist development)	c. Third scenario (De-concentrated pattern of tourist development)

Evaluation of alternative scenarios

In the following, the three alternative scenarios are evaluated in respect of the objectives set for the sustainable tourist development of the island of Zakynthos. In order to strengthen the validity of the final outcome – i.e. the *policy decision* – a two step evaluation of the proposed scenarios is carried out, by use of the: a) SWOT analysis; and b) multicriteria analysis method REGIME. A short description together with the outcome of their application on the specific evaluation problem is provided below.

a)   SWOT analysis - strengths, weaknesses, opportunities and threats

The SWOT analysis method is used at a first step for the qualitative evaluation of the proposed scenarios. The method applies on a variety of evaluation problems as it constitutes a flexible and of low-cost qualitative evaluation method, which can be easily combined with other evaluation tools. The key attributes of the method are displayed in Figure 7.

Figure 6. Context of the SWOT analysis qualitative evaluation method
Source: http://pm-blog.com/2007/05/24/swot-analyse-im-projektmanagement/

The SWOT analysis carried out for each of the proposed scenarios is presented in Tables 3, 4, and 5.

Table 3. SWOT analysis of the first scenario – 'Trend-based scenario'

INTERNAL ENVIRONMENT	
Strengths	Weaknesses
- Upgrading of tourist infrastructure in Laganas, Vasiliko, etc. regions - Upgrading of the transport network in the above regions - Upgrading of coastal regions - Direct access to tourist segments - Management of mass tourism coastal areas	- Long term unsustainable tourist development pattern - Lack of interaction of the tourist with the rest economic sectors - Lack of skilled human resources - Lack of a spatially balanced tourist infrastructure deployment - Considerable pressure on natural, cultural and human resources - Seasonality of tourist activity - Further deterioration of marine and coastal environment
EXTERNAL ENVIRONMENT	
Opportunities	Threats
- Exploitation of state and EU funding for tourist development - Global demand for environmentally responsible tourism	- Strong competition from environmentally responsible tourist destinations - Dependence on the policy of large tour operators worldwide - Impacts of economic recession on the consumption pattern of low-budget tourists

Table 4. SWOT analysis of the second scenario – 'Concentrated pattern of tourist development'

INTERNAL ENVIRONMENT	
Strengths	Weaknesses
- Attraction of investments for building new tourist infrastructure - Partial enrichment of the local tourist product - Upgrading of tourist accommodation - Upgrading of the region's road network – improvement of intraregional flows - Creation of new marine and air connections with the main land of Greece - Support of new employment - Development of agro-tourism activities – diffusion of tourist activity in the hinterland of the island - Renewable energy exploitation (wind, solar etc.) strengthening competitiveness of tourist firms - Partial removal of seasonality due to agro-tourism	- Spatial concentration of tourist activity – Weakening of other areas of the island - Lack of an integrated exploitation of natural and cultural resources - Irrational exploitation of local resources due to the spatially imbalanced development of the tourist sector - Increasing pressure on specific regions of mass tourist development - Lack of skilled labour - Low quality of intraregional road infrastructure

development - Partial interaction of the tourist with the rest of economic sectors - Removal of isolation of rural regions - Support of rural income - Restraint of rural population in the hinterland	
EXTERNAL ENVIRONMENT	
Opportunities	Threats
- Trend towards the development of tourist activities in close contact with nature, agri-sector etc. - Trend towards the consumption of qualitative, certified local products - Funding opportunities for the development of alternative tourist activities	- Strong competition – New tourist destinations entering the tourist market - Shift towards tourist destinations offering a richer and environmentally responsible tourist experience/product

The SWOT analysis of the proposed scenarios reveals that scenario 3 (de-concentrated pattern of tourist development) prevails in terms of strengths it exhibits as well as its potential to exploit opportunities and cope with threats appearing from the external environment, while it exhibits much less weaknesses than the rest two scenarios. Prevalence of scenario 3 is further validated by means of a multicriteria evaluation analysis, using the REGIME qualitative evaluation method (Voogd, 1983; Hinloopen & Nijkamp, 1986; Nijkamp, Rietveld & Voogd, 1990).

b) The REGIME multicriteria evaluation

The REGIME analysis is a discrete multicriteria method, used to evaluate both projects and policies (Voogd, 1983; Nijkamp, Rietveld & Voogd, 1990; Vreeker, Nijkamp & Ter Welle, 2001). The advantage of the method lies on its capacity to deal with mixed (quantitative and qualitative) data as to the effects and criteria priorities considered in the evaluation problem at hand (Voogd, 1983).

The application of the method is based upon two kinds of input data: the evaluation (impact) matrix and a set of political weights. The evaluation matrix is composed of elements that measure the effect of each alternative i, i=1,2,…,I in respect of each judgment criterion j, j=1,2,…,J (see Table 7). The set of political weights provides information on the relative importance of criteria to be considered in the evaluation context (Nijkamp & Torrieri, 2000).

Each value e_{ij} with i= 1,2,..I (set of alternatives) and j= 1,2, ..., J (set of evaluation criteria) (see Table 7), represents the score of alternative i as to the criterion j, but also a short of rank order of alternative i with respect to the criterion j. It could then be assumed that if $e_{ij} > e_{i'j}$, the choice option i is more preferred than i' for the evaluation criterion j (Nijkamp, 1987).

Table 5. SWOT analysis of the third scenario – 'De-concentrated pattern of tourist development'

INTERNAL ENVIRONMENT	
Strengths	Weaknesses
- Spatial diffusion of tourist activity - Attraction of new investments in the tourist sector - Enrichment of the local tourist product, better balanced in spatial terms - Rational exploitation of local natural and cultural resources - Shift towards more qualitative tourist flows – Development of alternative tourism - Creation of new employment	- Insufficient transport infrastructure for serving intraregional transportation demand - Lack of skilled labour in the tourist sector

- Environmental protection / preservation - Strengthening of tourist flows - Better coping with seasonality aspects - Upgrading of local public infrastructure throughout the island - Development of other economic sectors – Strengthening of interaction with the tourist sector - Upgrading of intra- and inter-regional transport network (road, sea and air transport) - Upgrading of the social and educational level of local labour - Establishment of environmentally responsible tourist business awards - Exploitation of renewable energy (wind, solar etc.) at the tourist business level, supporting competitiveness and environmentally friendly tourist business management - Support of an environmentally responsible culture of habitants and visitors of the island - Promotion of the tourist product by modern communication means - Potential for attracting high quality tourist flows	
EXTERNAL ENVIRONMENT	
Opportunities	Threats
- State or EU funding opportunities regarding alternative tourist development - Trend towards a richer, experience-based tourist product, largely relating to local natural and cultural assets - Trend towards the development of alternative tourist paths - Increasing interest for public and private investments in the tourist sector	- Strong competition with new destinations in a global context - Climate change impacts on island regions - Economic recession affecting tourist demand pattern

The REGIME method is based on a pairwise comparison of all alternatives, where the comparison of each specific set of alternatives is not influenced by the presence and effects of other alternatives, while the potential rank order of a certain alternative is conditioned by the remaining alternatives (Hinloopen and Nijkamp, 1986).

The *evaluation criteria* used in this specific evaluation study are presented in Table 6. Moreover, for the definition of the evaluation problem the impact matrix (Table 7) is structured, presenting the performance (impact) of each proposed alternative scenario with respect to the range of key domains (Tables 6 and 7) and the relating evaluation criteria, linked to sustainability objectives at the specific case study. The above data was used as input to the REGIME multicriteria analysis model, together with some information on weights of criteria, i.e. the priorities of criteria in the specific evaluation process (Hinloopen & Nijkamp, 1986). The weights applied in this context emanate from the goal and objectives of the study where, based on the authors' view, first are rating criteria of the environmental domain, followed by the criteria of the social domain, then criteria of the local economy domain, while in the last position are rating criteria relating to the spatial pattern and renewable energy domains.

a/a	Domain	Evaluation Criteria
K1	Environment	Level of sustainable exploitation of natural and cultural resources
K2		Level of vulnerable ecosystems' protection
K3	Local economy	Level of promotion of an extraverted image of the region as a whole
K4		Rate of new entrepreneurship creation
K5		Level of new employment expected
K6		Promotion of local products – level of interaction of the tourist sector with the rest of the local economic sectors
K7		Development of alternative tourism
K8	Society	Level of social and economic cohesion
K9		Level of population restraint
K10		Level of awareness raising (business and societal level)
K11	Spatial pattern	Level of integrated exploitation of natural and cultural resources
K12		Level of spatially balanced development of the tourist sector
K13	Renewable energy (at business level)	Level of energy saving actions
K14		Level of energy production actions

Table 6. Evaluation criteria

The results of the REGIME multicriteria evaluation are graphically presented in Figure 8, where the three scenarios are rating as follows: first rates scenario 3 – 'de-concentrated pattern of tourist development' of Zakynthos island – exhibiting the most environmentally friendly and spatially balanced view of the future sustainable development of the tourist sector in the region; second rates scenario 2 – 'concentrated pattern of tourist development'; while the last position holds scenario 3 – 'trend-based scenario' – constituting the worst case scenario among the three presented.

Policy guidelines for the implementation of the preferred scenario

The final part of the proposed methodological approach relates to the provision of policy guidelines that need to be enforced for the implementation of the preferred, according to the results of the evaluation process, scenario. In this respect, policy measures that could promote the implementation of scenario 3 can be classified into the policy measures applying at the macro-level and policy measures applying at the micro-level.

At the *macro-level* are proposed policy measures relating to the:
- *enrichment of the tourist product* by means of promoting a range of alternative tourist activities, while restraining the mass tourist model;
- improvement of *accessibility*, targeting the upgrading of both the internal transportation network and the 'gates' of the island to the outer world, i.e. the port and airport infrastructure and facilities as well as marines' network;
- specific *infrastructure development* e.g. walking paths in the mountainous part or hostel infrastructure in rural areas;
- *upgrading of human resources* with particular emphasis on those involved in the tourist sector, which will contribute to the bettering of the *quality of tourist services* offered;
- development of the *primary and secondary* sector;
- *land use pattern* in the island, setting the rules for the development of the various sectors; etc.

Concerning the *micro-level* could be considered policy measures relating to the:

- promotion of *entrepreneurship* in the tourist sector, with emphasis on the development of small tourist businesses in the less crowded regions of the island, taking advantage of the rural and mountainous natural and cultural resources;
- increasing of *awareness* on environmental objectives and relating actions that can be carried out at the tourist business level;
- *diffusion of information* in environmentally responsible management schemes that can be used in the tourist business sector; and

Domain	Criteria	Scenario 1 'Business as Usual'	Scenario 2 'Concentrated pattern'	Scenario 3 'De-concentrated pattern'
Environment	K1	no	yes	yes
	K2	5	3	1
Local economy	K3	5	3	1
	K4	+	++	+++
	K5	5	3	1
	K6	5	3	1
	K7	0	+	+++
Society	K8	0	++	+++
	K9	-	+	+++
	K10	no	yes	yes
Spatial pattern	K11	no	yes	yes
	K12	---	+	+++
Renewable energy (at business level)	K13	--	+	+++
	K14	--	+	+++
1: very good, 3: good, 5: neutral, 7: bad, 9: very bad ---: very bad negative impact, --: bad negative impact, -: small negative impact +++: very big positive impact, --: big positive impact, -: small positive impact				

- support of the local tourist entrepreneurs to *join available environmentally responsible tourist management schemes* i.e. upgrade tourist business infrastructure, train employees, etc.

Table 7. Impact matrix

Figure 7. Results of the REGIME multicriteria evaluation
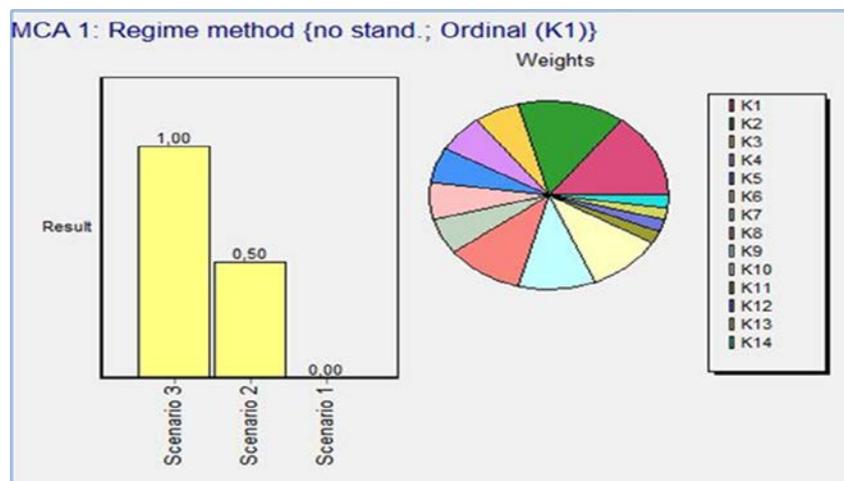
6. Conclusions

Tourism is nowadays largely recognized as a key sector for boosting economic development in various regions of the world. Based on this potential, it has been at the core of development policies at various spatial levels global wide (local, national etc.). Its importance has been recently sketched at the European scale as well, where a renewed tourism policy has been set with the main objective to contribute to the improvement of the competitiveness of the European tourism industry and the creation of more and better jobs through the sustainable growth of tourism in Europe [COM(2007) 621]. The European Commission, with its latest Communication [COM(2010)352], stresses also the potential negative impacts of tourist development on the environmental and the social context of tourist destinations, and the need to place emphasis upon a sustainable tourist development perspective of European tourist destinations that keeps track with all economic, social and environmental sustainability objectives.

In alignment with the above discussion, the focus of the present paper is on the development of a *methodological framework* for guiding policy decisions towards the sustainable tourist development of island, mass tourism-dominated, peripheral regions; and its application on a globally known mass-tourism Greek island destination, the island of Zakynthos. At the core of this framework lie sustainability objectives of the tourist sector that need to be served at both the macro-level and the micro-level. More specifically:

-   At the *macro-level* (tourist destination), the focus is on the spatial aspect of the tourist sector, i.e. a spatial pattern of the sector that rationally exploits all available resources and integrates the tourist with the rest of the sectors of the local economic structure. Of importance in this respect is the structuring and evaluation of future development scenarios, which by providing an indication of the impacts of these scenarios on the specific study region, support more knowledgeable policy decisions.
-   At the *micro-level* (tourist business), the focus is on the promotion of an environmentally friendly tourist business development perspective, in support of competitiveness and environmental commitment of tourist businesses in a certain tourist destination. Such a perspective is served by the adoption of environmentally responsible tourist management schemes, which are gaining importance when seeking sustainability objectives in a tourist destination (Preslmair, 2012; Schibler, 2012).

The results obtained from the application of the proposed methodological framework on the island of Zakynthos show that there is a strong need to build a more *spatially balanced and environmentally responsible profile* of the tourist sector in the region, in order to preserve local resources and identity for a lasting tourist development that copes successfully with sustainability objectives i.e. environmental, economic and social dimensions of tourist development. Moreover, the study of the attitude of local tourism entrepreneurs towards an environmentally responsible behaviour shows a strong need to support policy decisions for the diffusion of an environmentally responsible culture in the tourism business level and a more active involvement of local tourist businesses towards a low-carbon development of the tourist sector in the island of Zakynthos. Policy action at both levels – macro and micro – seems to be a necessity for managing risks and opportunities of the tourist sector in the island, as the first signs of fatigue of the environmental but also the social state of the region are already quite visible, while the future of the tourist sector by maintaining the current mass model seems rather questionable.

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