# Tourism **Crisis** Management in **Geoparks** through **Geotourism** Development

NEDA T. FARSANI \* [ntorabi@ua.pt] CELESTE O. A. COELHO \*\* [coelho@ua.pt] CARLOS M. M. COSTA \*\*\* [ccosta@ua.pt]

**Abstract** | The recent global financial crisis has negatively affected the tourism marketing as well as all sectors of the global economy. However, the crisis can create an opportunity for innovation in management and the emergence of new tourism products in tourism marketing. This study has two major purposes: 1) to introduce geotourism as a new niche tourism product for development of the local economy and 2) to investigate innovative strategies in geoparks, as geotourism destinations, for attracting more tourists to these territories. To this end, twenty five geopark strategies were analysed (20 in Europe and 3 in Asia – Malaysia, Japan and Iran, 1 in Australia and 1 in South America – Brazil). The results indicate that the authorities of geoparks try – on a small scale – to minimize the negative impacts of the crisis and develop the local economy by promoting geotourism and innovative strategies.

Keywords Crisis, Geopark, Geotourism, Innovation.

**Resumo** | A recente crise financeira mundial afetou negativamente a atividade turística do turismo, bem como todos os setores da economia global. No entanto, esta crise pode representar uma oportunidade para a inovação ao nível da gestão e para o surgimento de novos produtos turísticos. Este estudo tem dois objetivos principais: 1) introduzir o geoturismo como um novo nicho de mercado contribuindo para o desenvolvimento da economia local e 2) identificar estratégias inovadoras implementadas em geoparques, como destinos de geoturismo, com o objetivo para atrair mais turistas a esses territórios. Para este fim, foram analisadas as estratégias de vinte e cinco geoparques (20 na Europa e 3 na Ásia - Malásia, Japão e Irã, 1 na Austrália e 1 na América do Sul - Brasil). Os resultados indicam que os responsáveis pela gestão destes geoparques tentarm – em pequena escala - minimizar os impatos negativos da crise e desenvolver a economia local, atraés promoção do geoturismo e de estratégias inovadoras.

Palavras-chave | Crise, Geoparque, Geoturismo, Inovação.

<sup>\*</sup> PhD student in Tourism Management at the University of Aveiro, Department of Economics, Management and Industrial Engineering, Master's degree (2006) in Physical Geography from Azad University, Iran.

<sup>\*\*</sup> PhD by the University of Aberdeen, U.K., PhD in Applied Environmental Sciences by the University of Aveiro, Portugal, Full Professor in Environmental Sciences, at the University of Aveiro, Department of Environment and Planning.

<sup>\*\*\*</sup> PhD in Tourism by the University of Surrey, U.K., Associate Professor at the University of Aveiro, Department of Economics, Management and Industrial Engineering.

#### 1. Introduction

Faulkner (2001) addressed an increasing number of crises and disasters which affect tourism marketing, ranging from natural to human influenced incidents. Indeed, global tourism marketing has experienced many crises and disasters including political instability, economic recession, terrorist attacks, security threats and natural disasters. Therefore, according to Consuegra *et al.* (2008) crises are not new to tourism marketing.

This paper emphasizes the effect of the global financial crisis on tourism. The global economic recession in 2008 gave rise to a significant decline in economic activity. It is noteworthy that the late-2000s financial crisis (often called the Credit Crunch or the Global Financial Crisis) is considered by many economists to be the worst financial crisis since the Great Depression (Pendery, 2009) (Figure 1).

It is evident that crises often have negative consequences, including rising costs, a decrease in tourist demand and revenues, failures in decisionmaking and communication activities, the disruption of normal operations, staff lay-offs, stressful living and working environments, the closure of organizations and the cancellation of investments (Kash and Darling 1998). Okumus and Karamustafa (2005) argued that at the same time, economic crisis may also offer opportunities to introduce new products, management programs, new markets, and ways to reduce costs. They also draw attention to the fact that in the case of unsustainable tourism plans the negative impacts of crisis seem greater.

In order to manage a crisis, 5 phases should follow, these being: (1) analysis of the current operating environment; (2) development of potential strategic directions and choices; (3) the selection of a particular strategic direction; (4) implementation and control of the strategy throughout the organization; and, finally, (5) evaluation and feedback of the strategic choice in order to learn how to improve current implementation and future choices (Richardson and Richardson, 1992; Viljoen, 1994).

Blackman and Ritchie (2008) proposed a new mental model for managing a crisis and willingness for DMOs (destination marketing organization) to open themselves up to dialogue and questioning from a range of stakeholders and the public. They noted that tourism researchers should consider incorporating knowledge management theory and concepts, such as organizational learning, into their tourism crisis research to examine how and why emergent knowledge is created and applied by tourism organizations.

According to Hall (2010), analysis of the CABI Leisure Tourism abstract database for publications on tourism crisis and different types of crises (financial, economic, environmental, ecological, biodiversity, energy, oil, political and water) illustrated that the majority of research in tourism on crises concentrates on economic and financial crises and a few papers that focus on environmental crisis.



Figure 1 Inbound tourism 1990-2010.

At the end of September 2011, with a view to doing literature review, the authors of this paper performed an in-depth review of Open Innovation (OI) papers published in quoted scientific journals (ISI Web of Knowledge) in the last eleven years. The authors used as a search equation keywords such as (tourism AND economic\* AND crisis) and (tourism AND environment\* AND crisis). The results provide support for the analysis of Hall (2010) in the CABI Leisure Tourism abstract database.

As illustrated in Figures 2 and 3 the number of scientific publications for tourism and economic crisis (No=109) is about 2.5 times of the number of

publications regarding tourism and environmental crisis (No= 49).

As mentioned before, an economic crisis may offer opportunities for the emergence of new tourism markets, products and new forms of management. The primary purpose of this study is to introduce geotourism as a sustainable tourism strategy which appeared and developed in the last decade for development of the local economy. This paper also presents a summary of work being carried out in geoparks – as pioneers in promotion of geotourism – for development of the local economy and minimization of the negative impacts of tourism on the environment.



Figure 2 The number of scientific publications for tourism and economic crisis.



Figure 3 The number of scientific publications for tourism and environmental crisis.

### 2. Emergence of Geotourism in Geoparks

In middle of 2000, the European Geopark Network was set up by four regions of different European Countries – France, Germany, Spain and Greece - with similar natural and socioeconomic characteristics. These four regions are rural areas, with particular geological heritage, natural beauty, and high cultural potential, all facing problems of slow economic development, unemployment, and a high level of emigration. Faced with these problems, the managing authorities of the geological parks and museums in these regions decided to strengthen their collaboration, and as a result the European Geoparks Network was established, although UNESCO gave no financial backing to the four countries (Zouros, 2004; Zouros, and Mckeever, 2009). Brilha (2011) also noted that involvement of young people and promotion of jobs creation are future challenges in geoconservation. In 2004, the UNESCO Global Geoparks Network was set up. At present there are 87 geoparks registered with UNESCO around the world. It is worth mentioning that the majority of geoparks are located in rural areas. Conservation of geological, natural and cultural heritage; education; introducing geo heritage sites - geological, geomorphological, geodiversity and geography – as tourist attractions; and promoting the local economy through geotourism are the main targets of the establishment of geoparks.

According to National Geographic's definition, "Geotourism is tourism that sustains, or even enhances, the geographical character of a place, such as its culture, environment, heritage, and the well-being of its residents" (Tourtellot, 2000: 2).

The most recent definition of geotourism which includes the wider aspects of tourist activity introduced "Geotourism as a form of natural area tourism that specifically focuses on geology and landscape. It promotes tourism to geosites and the conservation of geodiversity and an understanding of earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geo-trails and view points, guided tours, geo-activities and patronage of geosite visitor centres" (Newsome and Dowling, 2010).

According to definitions and the geopark activities, it can be said that geoparks try to promote a new niche that integrates different tourism products named geotourism. A geopark, by local products and holding national and regional festivals, tries for cultural sustainability and promoting cultural tourism and agritourism (e.g. traditional soup, cheese, olive oil, pottery, bread, and green bean festival in Naturtejo Geopark (Portugal); holding a Pumpkin Carving Competition during Halloween in Copper Coast Geopark (Ireland) and agriculture festival in Araripe Geopark (Brazil)). Meanwhile, some geoparks strive for development of adventure tourism in their territories (organizing an elephant ride tour in Langkawi Geopark (Malaysia); providing facilities for diving in the Persian Gulf in Qeshm Geopark (Iran); organizing geo-kayaking, mountain biking and rock climbing in Naturtejo and Arouca Geopark (Portugal) constitute good examples). In addition, geoparks emphasize the conservation of natural heritage sites and promoting ecotourism (organizing a flower show in Copper Coast Geopark (Ireland); establishing Mølen's flora Park: a site for discovering the diverse vegetation in Gea Norvegica Geopark (Norway); and planting autochthonous trees on the World Forest Day in Naturtejo Geopark (Portugal) are examples in this regards). Furthermore, recently, some geoparks organize programs for developing senior tourism market and accessible tourism market in geoparks (such as: preparing a Braille book of Naturtejo Geopark (Portugal) for blind children; designing wheelchair access for handicapped visitors into lava tunnels and tactile diorama of a volcano for blind people in Parque Natural Cabo de Gata- Nijar European Geopark (Spain)).

However, the emphasis of the geopark and geotourism is on geological heritage and its presentation as tourist attractions in addition to ecological, cultural, historical, and archaeological aspects (Hose, 2000; Stokes *et al.*, 2003; Newsome and Dowling, 2010; Farsani *et al.*, 2011). Regarding the presentation of geo-heritage to visitors and attracting them to learn geo-sciences, geoparks have applied some innovative strategies such as: organizing geo-sports – sports which are related to earth topography: geo-rafting, geo-biking, etc., as a few examples; establishing rural accommodations, geo-restaurants and geo-bakeries; providing georiums and geopark calendars; establishing geological gardens and stone forests; preparing print media (publications and books); organizing educational programs; and making geo-products – local products which are related to geopark activities or are the interpreted symbol of geological heritage of the geopark.

Lastly, we believe that these activities allow us to conclude that geotourism in geoparks under the umbrella of sustainable tourism, nature tourism and geographical tourism encompasses some tourism products. Hence, this tourism marketing – geotourism – has more potential as a tourism marketing tool.

The above-mentioned examples provide a support for the geotourism diagram drawn up by National Geographic Society (Figure 4).

It is worth mentioning that geotourism in geoparks includes wider aspects of tourism products than National Geographic's definition and diagram. It encompasses senior, accessible, and adventure tourism as well. Moreover, geotourism in geoparks strives to integrate tourism products and fun with geoscience educational programs for visitors, locals and schoolchildren.

Besides organizing educational programs and workshops, for the exchange of knowledge, the Global Geoparks Network (GGN) and European Geoparks Network (EGN) hold international conferences with geopark and geotourism themes. These conferences, by inviting many participants to visit geoparks and geo-heritage, can motivate development of the local economy during the conference dates.

Recently a conference titled "First International Conference on African and Arabian Geoparks: Aspiring Geoparks in Africa and the Arab World" organized by the African Association of Women in Geosciences (AAWG), the African Geoparks Network (AGN) and UNESCO, opened a gateway for development of the local economy in these areas.

The conference aimed at highlighting the role of women and youth in the conservation of geoheritage, and introducing the role of geopark and geotourism as a means for comprehensive conservation and use of heritage values for regional sustainable development.

According to some authors (Xun and Ting; 2003, Zouros, 2004; Rodrigues and Carvalho, 2009; Eckhardt, 2009; Farsani *et al.*, 2011) the establishment



Figure 4 Geotourism as a new niche market is an integrated tourism product.

of geoparks can promote the local economy through creating job opportunities for local communities and can increase the numbers and duration of tourists visits to the geoparks. Since the majority of Least Developed Countries (LDCs) are located in the African continent, the establishment of geoparks and promoting geotourism in these territories can be a contribution for local development.

## 3. Methodology

Since geoparks are examples of sustainable local development, and are pioneers in geotourism, this paper tries to introduce geotourism as a form of sustainable tourism which appeared and developed in the recent decade for development of the local economy. Moreover, the study aims to discover new strategies and innovation which are applied in geoparks to improve geotourism marketing.

By comparing twenty-five different geoparks as geotourism destinations in Europe, Asia, Australia and South America, we accessed various strategies for attracting more visitors to geoparks. This study has two major purposes as below:

- To introduce geoparks as new tourist destinations;
- To identify the strategies for promoting geotourism activities and local development in geoparks.

The research methodology includes both primary and secondary researches. The first phase consists of an extensive literature review of existing reports on geotourism and geoparks. The second phase is focused on the geoparks registered in UNESCO and the comprehensive collected information (Figure 5). As geoparks and geotourism are new concepts, there were not enough related references. An electronic questionnaire-based method was developed for evaluating geopark activities. Data for this study were collected from March 2009 to January 2010, and the effects of the worst financial crisis during the data gathering were assessed. As Table 1 illustrates, the majority of responses were from Europe (80%), and the others from Australia, Iran, Malaysia, Japan, and Brazil.



Figure 5 Stages of the research process.

Pursuant to geopark activities and literature review, it is evident that geoparks play an important role in the development of the local economy of their territories by increasing the numbers of visitors, promoting geotourism, and educational activities. Regarding this, we designed some questions which reflect geopark activities for attracting visitors and organizing educational activities.

The first question is an initial attempt to investigate the relationship between geoparks and the tourism sector. The second one evaluates the role of the geopark in development of the local economy in the tourism sector. The third question assesses demand indicators for tourists in geoparks, and the fourth and fifth questions inquire whether the local communities are stakeholders in geopark activities in the form of geotourism or not.

The sixth question evaluates whether geotourism marketing take advantage of geopark brands. Questions seven to the last one ask whether organizing workshops in geopark territories promotes the local economy (Table 3). Therefore, the following hypotheses will be tested in this paper:

- H1: Using geotourism could be a useful example for developing tourism;
- H2: Can geotourism as a new tourism product play a role in minimizing the negative impacts of economic crisis on tourism.

Electronic questionnaires were sent to all geoparks around the world registered by UNESCO (N=64). Twenty-five questionnaire responses were received (39%). Thus, twenty-five geoparks (Table 1) were selected for this investigation. The majority of responses were collected in Europe (80%) and the others were from Australia, Iran, Malaysia, Japan, and Brazil. The data handling tool used in this research is SPSS.

We draw attention to the fact that all countries except China filled in the questionnaires. Thus, if from a statistical point of view we exclude the Chinese geoparks (22) from the population (N= 64), we end up with 42 geoparks registered in UNESCO. Bearing in mind that 25 questionnaires were sent back to us, it means, therefore, that the final response rate is increased to 59.5%.

No.	Country	Geopark
1	France	Réserve Géologique de Haute-Provence
2	Portuga	Naturtejo Geopark
3	Portugal	Arouca Geopark
4	Germany	Vulkaneifel Geopark
5	Germany	Geo and Nature park TERRA vita
6	Germany	Geopark Harz. Braunschweiger Land Ostfalen
7	Germaný	Swabian Alb Geopark
8	Greece	Psiloritis Natural Park
9	Spain	Sobrarbe Geopark
10	Spain	Parque Cultural del Maestrazgo
11	Norway	Gea Norvegica Geopark
12	Northern Ireland	Marble Arch Caves European Geopark
13	Ireland	Copper Coast Geopark
14	Scotland	Lochaber Geopark
15	Romania	Hateg Country Dinosaurs Geopark
16	Czech Republic	Bohemian Paradise
17	Austria	Nature Park Eisenwurzen
18	Croatia	Papuk Geopark
19	Italy	Geological, Mining Park of Sardinia
20	ltaly	Parco Naturale Adamello Brenta
21	Australia	Kanawinka geopark
22	Iran	Qeshm Geopark
23	Malaysia	Langkawi Geopark
24	Japan	l toigawa
25	Brazi	Araripe

 Table 1
 Countries that replied to the questionnaires

Source: authors' elaboration.

#### 4. Results

#### 4.1. Findings of the Empirical Study

The number of tourist arrivals can directly and indirectly improve the local economy of a tourism destination (Tribe, 1995; Vanhove, 2005; Eusébio and Lima, 2012).

Geoparks are still in an early stage of tourism development and the result of the descriptive analysis demonstrates that just 40% of geoparks have comprehensive information about the visitor numbers and tourism demographics – among the geoparks only 13 replied to the question (Do you count the visitors?) – the samples also indicate that annually an average of 7.8 million geotourists visit geoparks around the world<sup>1</sup>; this number of geotourists in European geoparks is about an average of 4.3 million per year. Moreover, the maximum stay duration of geotourists is estimated at 4 days in geoparks<sup>2</sup>; the number of overnight stays is one measure for the economic importance of tourism for a region (Table 2).

Table 2 illustrates that geoparks have been known as the geotourist destinations in the recent decade.

Regarding tourism asset-attractions, each geopark applies a method to promote local business by attracting visitors (Table 3). Some geoparks generate direct income by selling entrance tickets (44%); some of them try to involve visitors in geopark tours (80%), and some encourage tourists to buy souvenirs (80%). Furthermore, 48% of geoparks strive to engage the visitors in workshops and conferences; these educational activities represent the key elements for a successful implementation of geopark conservation and geopark strategy at the local community level. Lastly, 20% of responders selected the option "others" and they mentioned museums, geopark museums, geological gardens, educational

<sup>1</sup> Chinese geoparks not included.

<sup>2</sup> Chinese geoparks not included.

Geopark	<b>Visitors</b> (per year)	Foreign visitors (per year)	Domestic visitors (per year)	Maximum duration of stay	
Araripe geopark	19920	504	19416	3	
Arouca Geopark	20000	2000	18000	2	
Bohemian Paradise	-	-	-	-	
Copper Coast Geopark	-	-	-	14	
Gea Norvegica Geopark	-	-	-	-	
Geo and Nature park TERRA.vita	-	-	-	-	
Geological, Mining Park of Sardinia	-	-	-	-	
Geopark Harz. Braunschweiger Land Ostfalen	-	-	-	-	
Hateg Country Dinosaurs Geopark	30000	6000	24000	7	
Itoigawa	1400000	0	1400000	1	
Kanawinka geopark	-	-	-	-	
Langkawi Geopark	2000000	600000	1400000	7	
Lochaber Geopark	1000000	90000	910000	-	
Marble Arch Caves European Geopark	65000	0	65000	-	
Naturtejo Geopark	350000	70000	280000	1	
Nature Park Eisenwurzen	120000	12000	108000	3	
Papuk Geopark	7000	140	6860	1	
Parque Cultural del Maestrazgo	-			-	
Parco Naturale Adamello Brenta	925771	138865	786906	7	
Psiloritis Natural Park	-	-	-	-	
Qeshm	-	-	-	-	
Réserve Géologique de Haute-Provence	35000	3500	31500	6	
Sobrarbe Geopark	-	-	-	-	
Swabian Alb Geopark	-	-	-	2	
Vulkaneitel Geopark	1800000	630000	1170000	4	
Sum	///2691	1553009	6219682	58	
Mean			-	4.5	
SD	/39023.0/0	224323.816	566943.550	3./18	
European Geopark	4352771	952505	3400266	4./	

 Table 2
 Annual visitor arrivals in geoparks (by the end of 2009)

Source: questionnaires filled in by authorities of geoparks.

field trips, local restaurants, geo-restaurants, geobakeries, geo-products, local accommodation, family guest houses, shops, pubs, food, coffee shops, bars, and outdoor activities as tourism activities which can improve the local economy in geoparks.

Furthermore, 88% of geoparks engage locals as guides, park guards, or other posts related to the tourism sector. The respondents believe that geoparks employ an average of 27 (SD= 45.387) persons as guides or park guards. It is noteworthy that, by the end of 2009, 84% of geopark authorities declared that the locals are stakeholders in the tourism sector of geoparks.

The last but not the smallest strategy is applying the geopark brand (84%) in geotourism marketing (in festivals, publications, research projects, common marketing, higher prestige, accommodation, restaurants, educational programs, and local businesses) (Table 3).

Among the geoparks, Eisenwurzen Geopark (Austria) – common marketing under the *Geo Line* brand; Naturtejo Geopark (Portugal); Psiloritis Natural Park (Greece); Adamello Brenta Geopark (Italy) – *Qualità Parco* brand; Geo and Naturepark TERRA. vita – *Viabono* brand; Vulkaneifel Geopark – *EIFEL* brand – more than other geoparks emphasize using the geopark logo for promoting local businesses, products and geotourism marketing. (Mase and Maestranzi, 2011; Farsani *et al.*, 2012).

# 4.2. Integrating fun and geosciences through geotourism in geoparks as a strategy to attract more visitors

In fact, since long ago people have come to visit "geological wonders" like mountains, caves, and canyons. However, only in recent times has there been a real challenge in this sector and geological heritage has been developing a market (geotourism) with very specific and novel characteristics which tries to promote the sustainable local economy.

The first strategy applied in geoparks for attracting more tourists is holding geoscience exhibitions. Holding a Palaeozoic-era exposition 2010 in Arouca Geopark (Portugal) and dinosaur exposition 2010 in Naturtejo Geopark (Portugal) are good examples. The dinosaur exhibition received 22041 visitors over 7 months, in many educational programs (Naturtejo Geopark Authorities, 2010). The second strategy which indirectly develops the local economy is organizing thematic competitions – holding a geoart competition for local artists in order to popularize the geological sciences in Arouca Geopark (Portugal), for example. Establishing geological gardens in geoparks is another innovative strategy for promoting geotourism - for instance a geological garden in Copper Coast Geopark (Ireland) presents large samples of all the rocks forming the foundation of the Copper Coast territory (Figure 6).

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Table 3	l Descri	ntive an	alvsis	∩†	tourism	activities	duestions	In	deonarl	K
Tuble 3		puive un	ury 515	01	tourisin	activities	questions		geopun	

Questions	Yes	No	No answer	Missing		
Questions	Percent					
Geopark has close collaboration with tourism sector The visitors benefit the local businesses in geoparks through:	96.0	4.0	-	_		
- Buying entrance tickets	44.0	56.0	_	_		
<ul> <li>Participating in geopark tours</li> </ul>	80.0	20.0	_	_		
- Buying souvenirs	80.0	20.0	_	_		
<ul> <li>Participating in workshops and conferences</li> </ul>	48.0	52.0	_	_		
- Others	20.0	80.0	_	_		
Do you count the visitors?	40.0	60.0	_	_		
Geopark engages locals as guides and park guards	88.0	12.0	_	_		
Local people are stakeholders in tourism sector	84.0	16.0	_	_		
Geotourism markets take advantage of the geopark brand	84.0	16.0	_	-		
Geoparks have workshop facilities	72.0	28.0	0	0		
Workshops are managed by local communities	68.0	28.0	4	1		
Workshops improve the local economy	56.0	36.0	8	2		

Source: own construction.



Figure 6 Panel describing the rhyolite, which formed during underwater volcanic activity, 450 million years ago in the geological garden of Copper Coast Geopark (Ireland).

Organizing comics about geology for children is the fourth innovation for joining fun and education in geopark territories (e.g. a comic about geology for kids in Parque Cultural del Maestrazgo (Spain)). In addition, establishing a geology room to hear and see an erupting neon volcano and a walking tour on the glass floor cave in Kanawinka Geopark (Australia) are innovative tourist facilities for visitors (The Lady Nelson Centre, 2009).

Integrating sports with geosciences (geo-sports) is a further initiative in geopark territories. Organizing rock climbing, geo-kayaking, geo-biking etc. in Arouca and Naturtejo Geopark (Portugal) constitute good examples.

Moreover, providing facilities for geo-therapy in geoparks is one more solution for attracting tourists, especially senior tourists to these areas. Some geoparks such as Swabian Alb Geopark (Germany) prepared facilities for mud therapy, peat therapy and spa therapy in the geopark.

Establishing Shops of the Earth – *Loja da Terra* – (Figure 7), geo-restaurants and geo-bakeries to supply the local products, foods, geo-products, geo-menu, that on one hand promote the local economy and create job opportunities and on the other hand

popularize the geological and natural sciences and present the geological heritage of the territory, are other geopark innovation activities.

Making geo-products is an additional innovative activity in geoparks; geo-products as pedagogic tools are sustainable and earth friendly products which can integrate geoheritage (geological, geomorphological and geographical) with cultural components. Thus, making geo-products is an innovative strategy to identify geoheritage as a new tourist attraction. Promoting geo-products can be a way to develop the local economy (Farsani et al., 2011; and Farsani et al., 2012).



Figure 7 Shop of the Earth in Porto Santo Geopark as an aspiring Geopark (Portugal).

The promotion of networking and cooperation is a management innovation in geoparks which can support the local businesses and develop the local economy (Novelli *et al.* 2006; Breda *et al.*, 2006; Farsani *et al.*, 2012).

The last but not the least innovation is applying new technology, multimedia, and renewable energies for equipping and facilitating tourist services. Regarding using new energies, the Nature Park TERRA.vita (Germany) used e-bikes equipped with electric motors to ease biking in hilly areas. The recharging stations are equipped with a solar panel to provide carbon free energy for the bike batteries (Escher, 2010). It is noteworthy that development of using sustainable energies can be a way for minimizing the negative impacts of the oil crisis and environmental crisis on tourism marketing.

# 5. Conclusion

Although financial and economic crises are always destructive, these crises can create some opportunities such as an emergence of new management, new products and marketing. Moreover, the crisis moves the authorities and managers to find the solutions for crisis management.

When an economic crisis occurs, prices will increase and thus a family may remove travel as a luxury good from their shopping baskets. Meanwhile, the managers who are involved in tourism sectors should try to create innovation, new tourism products, new tourists' facilities, tourists' services, management, etc. to stimulate and attract people to travel.

The authorities should try to develop the local economy with an emphasis on geotourism as a new niche market and a new tourism product and innovative strategies.

In spite of the economic crisis and owing to targets of geoparks – education, conservation and promoting geotourism – at present the numbers of geoparks are increasing. Activities to achieve one

purpose act, as a complementary factor in developing other purposes. For instance, educational programs in geoparks such as conferences, workshops, field trips etc. on one hand can attract visitors to geopark territories and stimulate geotourism marketing, and on the other hand can popularize the geosciences.

Furthermore, a new vision of geotourism and geoparks, through innovation and some strategies, attempt to develop the local economy: 44% of geoparks generate direct income by selling entrance tickets; some of them try to involve visitors in geopark tours (80%); and 80% of geoparks authorities encourage tourists to buy souvenirs. In addition, 48% of geoparks strive to engage visitors in workshops and conferences.

On the basis of the results of this research, an annual average of 7.8 million geotourists visit geoparks around the world; the number of geotourists in European geoparks is about an average of 4.3 million per year, and it can be concluded that geotourism as a new tourism product is still in an early stage of commercial development, but we hope that in the near future geoparks will be known as geotourism destinations. Moreover, in geopark territories, special attention to financial slack, policy and management, innovation, competition marketing and open marketing opportunities such as network activities and niche marketing are key issues for future tourism management in geoparks.

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#### References

Blackman, D., and Ritchie, B.W., 2008, Tourism Crisis Management and Organizational Learning, *Journal of Travel & Tourism Marketing*, Vol. 23(2-4), pp. 45-57.

- Breda, Z, Costa, R., and Costa, C., 2006, Do Clusters and Networks Make Small Places Beautiful? The Case of Caramulo (Portugal) (Chapter 5), in Lazzeretti, L. and Petrillo, C. S., (eds), *Tourism local systems and networking*, Elsevier, The Boulevard, Langford Lane, Kidlington.Oxford, UK, pp. 67-82.
- Brilha, J., 2011, Geoconservation: International Advancements and Future Challenges, in Blieck, A., Auguste, P., and Derycke, C., (ed.), Proceedings of *Forum GeoReg*, October 23-27, Villeneuve d'Ascq, France, p.101.
- Consuegra, D. M., Esteban, Á., and Molina, A., 2008, The Role of Market Orientation in Managing Crises During the Post-Crisis Phase, *Journal of Travel & Tourism Marketing*, Vol. 23(2-4), pp. 59-71.
- Copper Coast Geopark, 2012, *Homepage*, [http://www.copperc oastgeopark.com/Everyone.htm], (Site accessed 27 February 2012).
- Eckhardt, C., 2009, Geopark-on site-Local ambassadors for a global network residents' commitment in geopark development, in Carvalho, N., and Rodrigues, J. (ed), Proceedings of 8<sup>th</sup> European Geoparks Conference, September 14-16, Idanha--a-Nova, Portugal, p. 98.
- Escher, H., 2010, Enjoying Geopark by E-bike, a new infrastructure for TERRA.vita, in Zouros, N. (ed), Proceeding of 9th European geoparks conference, October 1-5, Lesvos Island - Greece, p. 91.
- Eusébio, C., and Lima, J., 2012, Economic Benefits of Geotourism: Theoretical Reflections and Management Implications, in Farsani, N. T., Coelho, C., Costa, C., and Carvalho, C., (eds) Geoparks and Geotourism: New Approaches to Sustainability for the 21st Century, Brownwalker Press Publisher, Florida, USA, pp. 137-149.
- Farsani, N. T., Coelho. C., and Costa, C., 2011, Geotourism and geoparks as novel strategies for socio-economic development in rural areas, *International Journal of Tourism Research*, Vol. 13 (1), pp. 68-81.
- Farsani, N. T., Coelho, C., Costa, C., and Carvalho, C., 2012, Geoparks and Geotourism: Concepts, Theories and Paradigms, in, Farsani, N. T., Coelho, C., Costa, C., and Carvalho, C., (eds.) Geoparks and Geotourism: New Approaches to Sustainability for the 21st Century, Brownwalker Press Publisher, Florida, USA, pp. 5-57.
- Faulkner, B., 2001, Towards a framework for tourism disaster management, *Tourism Management*, Vol. 22(2), pp. 135-147.
- Hall, C. M, 2010, Crisis events in tourism: subjects of crisis in tourism, *Current Issues in Tourism*, Vol.13 (5), pp. 401-417.
- Hose, T.A., 2000, European 'Geotourism' geological interpretation and geoconservation promotion for tourists, in, Barettino, D., Wimbledon, W. A. P., and Gallego, E. (eds.), *Geological Heritage: its conservation and management*, Madrid, Spain, pp. 127-146.
- Kash, T., and J. Darling, 1998, Crisis Management: Prevention, Diagnosis and Intervention, *Leadership and Organization Development Journal*, Vol. 19(4), pp. 179-186.
- Mase, V., and Maestranzi, V., 2011, An environmental education project in Adamello Brenta Geopark: "Park Quality", in Rangnes, K., (ed.), Proceeding of 10th European geoparks conference, September 16-20, Langesund, Norway, pp. 90-91.
- Naturtejo Geopark Authorities, 2010, 30-31<sup>st</sup> October Dinosaurs invade the Geopark and Travelling Dinos come to an end,

Geopark Naturtejo da Meseta Meridional-European and Global Geopark Monthly Report, Vol.50, p. 8.

- Newsome, D., and Dowling, R., 2010, Setting an agenda for geotourism, in Newsome, D., and Dowling, R. (eds.), Geotourism: The tourism of geology and landscape, Good fellow publishers, Oxford, UK, pp. 4-8.
- Novelli, M., Schmitz, B., and Spencer, T., 2006, Networks, Clusters and innovation in tourism: A UK experience, Tourism Management, Vol. 27, pp. 1141-1152.
- Okumus, F., and Karamustafa, K., 2005, Impact of an Economic Crisis Evidence from Turkey, *Annals of Tourism Research*, Vol. 32(4), pp. 942-961.
- Pendery, D., 2009, Three top economists agree 2009 worst financial crisis since great depression; risks increase if right steps are not taken, *Business Wire News database*, [http:// www.reuters.com/article/2009/02/27/idUS193520+27-Feb-2009+BW20090227], (Site accessed 03 October 2011).
- Porto Santo Geopark, 2011, Porto Santo Geopark Page in Facebook, [https://www.facebook.com/photo.php?fbid=25 6638854372971&set=a.256638754372981.55396.21016 1535687370&type=1&theatre], (Site accessed 27 February 2012).
- Richardson, B., and Richardson, R., 1992, Business planning: An approach to strategic management, 2<sup>nd</sup> ed., Pitman, London, UK.
- Rodrigues, J. C., and Carvalho, C. N., 2009, Geoproducts in Geopark Naturtejo, in Carvalho, N., and Rodrigues, J. (ed.), Proceedings of 8<sup>th</sup> European Geoparks Conference, September 14-16, Idanha-a-Nova, Portugal, pp. 82-86.
- Stokes, A., Cook, S., and Drew, D., 2003, Geotourism: The New Trend in Travel, Travel Industry Association of America (TIA) and National Geographic Traveler, USA.
- The Lady Nelson Centre, 2009, City of Craters, Lakes, Caves and Sinkholes Mount Gambier, City of Mount Gambier, Mount Gambier, [www.mountgambiertourism.com.au], (Site accessed 03 November 2009), p. 19.
- Tourtellot, J. B., 2000, *Geotourism for your community*, National Geographic Drafts, Washington DC, USA, p. 2.
- Tribe, J., 1995, *The Economics of Leisure and Tourism*, Butterworth Heinemann, Oxford, UK.
- Vanhove, N., 2005, *The economics of tourism destinations*, Elsevier, Oxford, UK.
- Viljoen, J., 1994, Strategic management: Planning and implementing successful corporate strategies, 2<sup>nd</sup> ed., Longman, Melbourne.
- Xun Z., and Ting, Z., 2003, *The socio-economic benefits of establishing National Geoparks in China*, Episodes, Vol. 26 (4), pp. 302-309.
- Zouros, N., 2004, The European Geoparks Network Geological heritage protection and local development, Episodes, Vol. 27 (3), pp. 165-171.
- Zouros, N., and Mckeever, P., 2009, Tools for Earth Heritage Protection and Sustainable Local Development, European Geoparks, in Zouros, N., Ramsay, T., Mckeever, P., and Patzak, M. (eds.), European Geoparks, earth heritage protection and sustainable local development, The Natural History Museum of the Lesvos Petrified on behalf of the European Geoparks Network, SIGRI LESVOS, Greece, pp. 15-30.