



**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks

# **2BPARKS NOTEBOOK ON SUSTAINABLE TOURISM**

## **PART 1**

### **EUROCHARTER & 2BPARKS TRANSNATIONAL SYMPOSIUM PROCEEDINGS**





National & Kapodistrian  
University of Athens



# Notebook on Sustainable Tourism

## Part 1

Eurocharter & 2Bparks Transnational Symposium Proceedings



financed by Euro  
ent Fund in the f

iversity of Athe



Project cofinanced by European Regional Development Fund  
in the framework of the MED PROGRAMME



2Bparks – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks

## PROJECT REF. 2G-ED09-03

# CREATIVE SUSTAINABLE MANAGEMENT, TERRITORIAL COMPATIBLE MARKETING AND ENVIRONMENTAL EDUCATION TO BE PARKS



<b>Component 4:</b>	Sustainable tourism and marketing joint strategy 2Bparks
<b>Phase 4.1:</b>	Sharing sustainable tourism patterns and a MED PA marketing joint strategy
<b>Deliverable 4.1.1</b>	<b>2Bparks Notebook on Sustainable Tourism – Part 1</b> <b>Eurocharter &amp; 2Bparks Transnational Symposium Proceedings</b>

<b>Version:</b>	1.1	<b>Date:</b>	
<b>Type:</b>	Report		
<b>Availability:</b>	Public		
<b>Responsible Partner:</b>	.....		
<b>Author:</b>	Evelpidou N.		
<b>Contributors:</b>	National and Kapodistrian University of Athens		

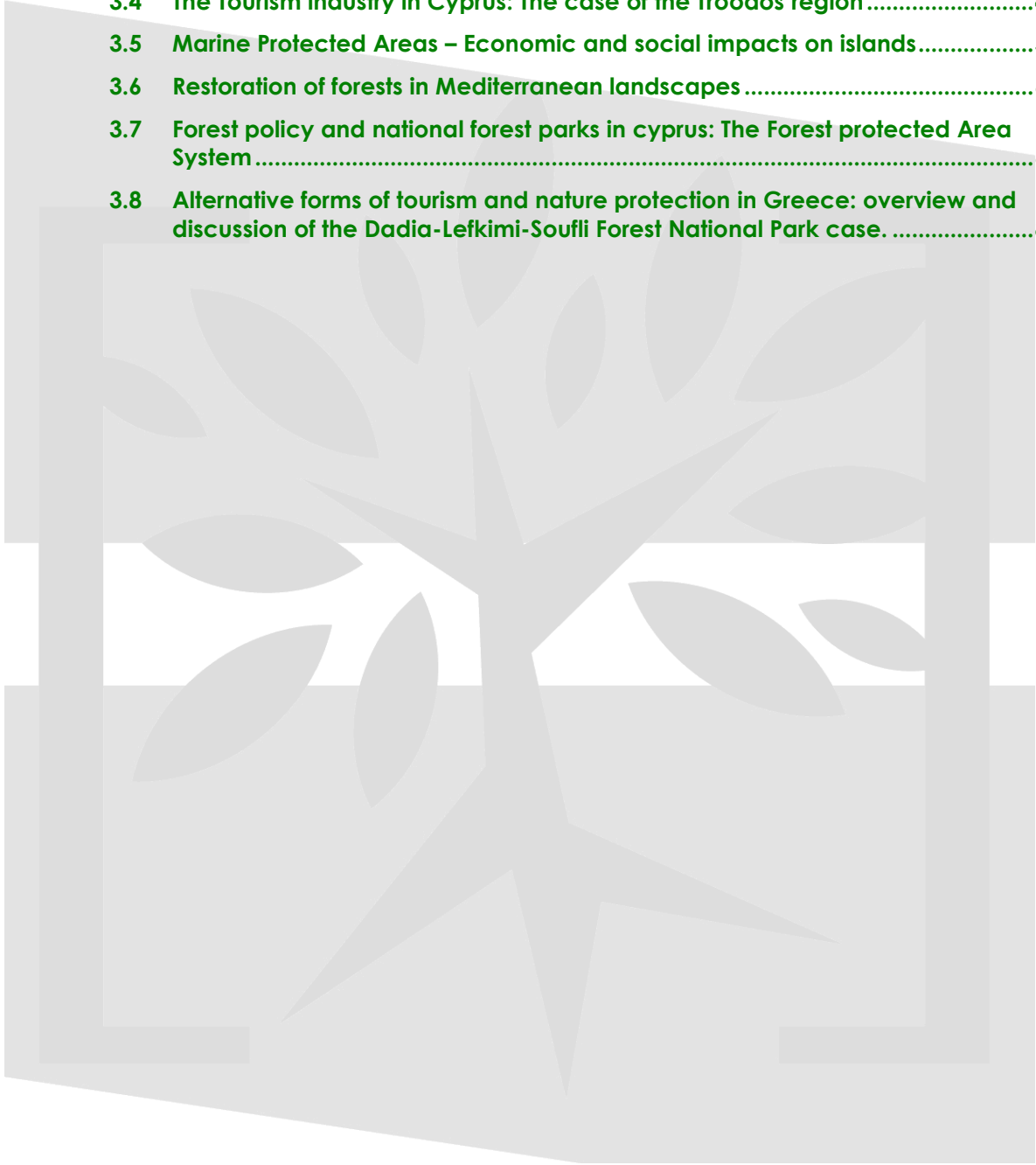


# CONTENTS – Part 1

IDENTIFICATION SHEET.....	6
<b>1 INTRODUCTION .....</b>	<b>8</b>
<b>1.1 Protected Areas .....</b>	<b>8</b>
<b>1.2 European Charter for Sustainable Tourism in Protected Areas .....</b>	<b>9</b>
<b>1.3 Identification of the Problem .....</b>	<b>11</b>
<b>1.4 Sustainable Tourism .....</b>	<b>12</b>
<b>1.5 Management Systems for developing Sustainable Tourism in Protected Areas in Europe .....</b>	<b>13</b>
<b>2 Structure of the European Charter .....</b>	<b>16</b>
<b>2.1 Structure of the Charter .....</b>	<b>16</b>
<b>2.2 Main objectives .....</b>	<b>16</b>
<b>2.3 The Charter Principles for Sustainable Tourism .....</b>	<b>17</b>
<b>2.4 Charter Part 1.....</b>	<b>19</b>
<b>2.5 Charter Part 2.....</b>	<b>20</b>
<b>2.6 Part 3: Tour operators.....</b>	<b>22</b>
<b>2.7 Compatibility-Synergies with EU conventions and directives .....</b>	<b>22</b>
2.7.1 International conventions for nature conservation .....	23
<b>2.8 Relation, Compatibility and Completion with other European efforts.....</b>	<b>23</b>
2.8.1 Project "NATREG - Managing Natural Assets and Protected Areas as Sustainable Regional Development Opportunities" Program: South East Europe Transnational Cooperation Program, Years: 04/2009-07/2011 .....	23
2.8.2 Project: "COAST TO COAST".....	23
2.8.3 Project: SLOW TOURISM.....	24
2.8.4 The Project "INVENTORY, EVALUATION AND MONITORING OF WETLANDS" (MW/SUDOE).....	24
2.8.5 Project "ARCHICHARTER" / Programme : ARCHIMED IIIB Years: 2006-2009 .....	24
<b>References .....</b>	<b>25</b>
<b>3 Sustainable Tourism symposium .....</b>	<b>27</b>
<b>3.1 The landscape Plan in Veneto Region and the contribution of 2Bparks project in designing new planning scenarios.....</b>	<b>27</b>
<b>3.2 GENERAL PRESENTATION OF THE 2BPARKS PROJECT: Tools and experiences to be parks: promoting the sustainable development of the MED protected areas</b>	<b>30</b>



- 3.3 Environmental awareness and information in the protected area of Mount Parnon and Moustos Wetland .....34**
- 3.4 The Tourism industry in Cyprus: The case of the Troodos region .....40**
- 3.5 Marine Protected Areas – Economic and social impacts on islands .....58**
- 3.6 Restoration of forests in Mediterranean landscapes .....62**
- 3.7 Forest policy and national forest parks in cyprus: The Forest protected Area System .....69**
- 3.8 Alternative forms of tourism and nature protection in Greece: overview and discussion of the Dadia-Lefkimi-Soufli Forest National Park case. ....80**





## IDENTIFICATION SHEET

<b>Agreement Ref. No</b>	<b>2G-ED09-03</b>
<b>Project Acronym</b>	<b>2BPARKS</b>
<b>Project Full Title</b>	<b>Creative sustainable management, territorial compatible marketing and environmental education To Be Parks</b>

<b>Keywords</b>	Sustainable Tourism, Nature Tourism, Natural Heritage, Protected Areas, Destination Marketing, Participatory Approach
<b>Abstract (for dissemination)</b>	<p>The 2BParks NOTEBOOK on Sustainable Tourism refers to the implementation of Phase 4.1 of the 2Bparks project. The document was organised in two Parts, including the following contents.</p> <p><b>Part 1 – Eurocharter &amp; 2Bparks Transnational Symposium Proceedings (Volume 1/2)</b>          The concepts relating to the European Charter for Sustainable Tourism in Protected Areas (Eurocharter) are summarised, providing an overview of this practical management tool for ensuring that tourism contributes to a balanced economic, social and environmental development of protected areas in Europe.</p> <p>The proceedings of 2BParks Transnational Symposium on Sustainable Tourism are also presented, disclosing its importance as a forum to share ideas and jointly discuss good practices for environmental sustainability and tourism management.</p> <p><b>Part 2 – 2BParks Joint Marketing Strategy (Volume 2/2)</b>          The 2BParks Joint Marketing Strategy is presented in Part 2, providing an overview of the common objectives and shared strategic guidelines, as well as the marketing mix envisaged to support the promotion of sustainable tourism in the 2BParks Protected Areas and surrounding territories.</p> <p>To illustrate the marketing approach envisaged, two experimental actions to jointly promote the 2BParks Protected Areas were included as appendixes to the common Marketing Strategy:</p>



	<ul style="list-style-type: none"><li>• Common 2BParks e-Calendar (Appendix 1) – This joint promotional tool refers to an electronic calendar of events, which gathers and presents environmental and cultural events promoted by the 2BParks Protected Areas or within their surrounding regions.</li><li>• 2BParks e-Catalogue of Environmental Clusters Members (Appendix 2) – This publication collects a brief profile of each economic operator that applied and was accepted as a Member of the 2BParks Environmental Clusters, on the basis of self-commitment to adopt a sustainable business strategy. This appendix illustrates how economic operators can be involved to support environmental protection and how they can benefit in terms of their own promotion, as a result of their commitment to sustainability.</li></ul>
--	--





# 1 INTRODUCTION

## 1.1 PROTECTED AREAS

In 1962, the World Conservation Union (IUCN) institutionalized protected areas by defining as a protected area: “an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means” (UNEP-WCMC, 2004). Nowadays the IUCN World Commission on Protected Areas estimates that there are approximately 100,000 protected areas that cover more than 12% of global land area (Chape et al., 2005).

Protected areas are the essential part of nature conservation policies and biodiversity. (Hoyt, 2004; Prato and Fagre, 2005). Although protected areas had been initially set aside from human exploitation, it has become increasingly recognized that they function not only as environmental centers but also as levers for touristic and economic growth.

However, doubts have been expressed inside the global conservation community concerning the local socioeconomic impacts of protected areas, especially in developing countries (Ezebilo and Mattsson, 2010; Vedeld et al., 2012.). Critics argue that protected areas restrict community development opportunities and can even increase poverty (Sims, 2010).

It is a fact that by definition, protected areas impose constraints on resource use and uncontrolled economical growth; however, protected areas can also:

- generate new income by attracting tourism, services, or by direct subsidies (payments)
- induce infrastructure development,
- increase the flows of economically significant environmental services,
- attract investments,
- offer researchers, educators and stakeholders a basis for fruitful collaboration.

Sustainable tourism and ecotourism are widely recognized as means of enhancing local development while, at the same time, preserving natural environment and traditional and cultural heritage (European Commission, 2000, 2006 ; Carta di Rimini, 2001; Castellani and Sala, 2010). Thus ecotourism, sustainable management and the protected area have a symbiotic relationship.

Consequently, various projects that link conservation, tourism and development have been implemented around protected areas in an effort to generate all these benefits for the local communities that otherwise would have been disenfranchised by strict protection policies (Wells and Brandon, 1992). In that manner, for the enhancement of the collaboration between environmental scientists, governments, tourist agencies, local communities and





stakeholders in the name of the sustainable management of each protected area, the European Charter for Sustainable Tourism in Protected Areas was established.

## 1.2 EUROPEAN CHARTER FOR SUSTAINABLE TOURISM IN PROTECTED AREAS

The Eurocharter for Sustainable Tourism reflects both the world-wide and the European priorities expressed in the recommendations of Agenda 21 adopted at the Earth Summit in Rio in 1992, and by the European Union in its 6th Environment Action Programme and Strategy for Sustainable Development. The Charter has originated from the EUROPARC Federation, the umbrella organisation of protected areas in Europe. Particularly, it was developed by a European group representing protected areas, the tourism industry and partners, under the EUROPARC framework in 1995 with a project funded by the EU's LIFE programme and led by the Fédération des Parcs Naturels Régionaux de France (<http://www.european-charter.org/home/>, Europarc Federation, 1995).

The European Charter connects environmental, cultural, social and economic principles as the basis for the design of strategic planning of local sustainable development. Furthermore, some of the multi-level benefits that the Charter offers to the following four categories (members, locals, visitors, tourism industry) are:

- i) its members (the protected areas), by providing
  - a set of practical tools for the implementation of sustainable development and preservation of natural and cultural heritage
  - integrated environmental management strategies
  - a reason for attracting ecotourists, stakeholders and investments
  - public-relations network and awareness-raising campaigns that attract visitors and media;
  - the chance to work with and learn from the experiences of other European Charter members

All these set guidelines and a direction for a new context of globalization, where in new tools would be used for managing these areas, including models of economic development and sustainability indicators (Izquierdo et al., 2008), these tools include not only environmental or economic tools but also social and political ones.

- ii) local communities, by contributing
  - to the protection, preservation and prominence of 'their' protected area
  - to the occupation of local employees in the tourism industry



- the chance to promote local products, local services, local events
- greater credibility amongst potential funding partners
- a good quality of life for local residents

Ecotourism contributes to the integration of the economy of the protected area's adjacent communities in the region from employment in tourism-related enterprises such as lodges, kiosks or guided tours. Moreover, it is a commonly held belief that if people can benefit financially from enterprises that depend on nearby forests, reefs, and other natural habitats then they would take action to conserve and sustainably use those habitats (Salafsky et al., 2001). As a result, these benefits are incentives for people to perceive environmental conservation positively (Bauer, 2003).

iii) visitors, by offering

- the chance to explore an area widely known for its natural and/or cultural beauty
- a higher and more credible profile regarding the protected area's quality of services and tourism companies

Visitors are likely to be highly satisfied when entering a protective area that has fulfilled certain requirements in order to join the European Charter and is subjected to multi-level evaluation or when travel companies are committed to follow strictly the relevant legislation.

iv) tourism industry, by supplying

- publicity, public relations
- tourist flows, even in off-season periods
- development of alternative forms of tourism whilst protecting the natural environment
- strong relationships with local tourism stakeholders and the wider tourism industry.

In the following chapter the experience of the 2bparks project 'Creative Sustainable Management, Territorial Compatible Marketing and Environmental Education' that was presented in the 2bparks Triplex Event during the Sustainable Tourism Symposium that took place in Athens, is discussed.

The aim of 2bparks notebook, in accordance with the European Charter for Sustainable Tourism in Protected Areas policies and principals, provides the condensed knowledge and the practical experiences from the 2bparks Project that incorporates environmental goals,



the use of natural, cultural and scenic heritage and socio-economic development through the integrated management of the protected areas in the framework of sustainable local and regional development plans.

## 1.3 IDENTIFICATION OF THE PROBLEM

A new approach towards the management of protected areas in the world has evolved. Protected areas are now being considered as strategic places for the conservation of biodiversity and natural resources, but at the same time, they are increasingly seen as natural valuable environments for developing tourism activities.

Managed in an appropriate way, tourism can be an important driver for local and regional development, as well as a significant tool for nature conservation and for increasing the awareness of the need to preserve those valuable areas.

Tourism can generate positive impacts for protected areas. On one hand, it is a development opportunity for local communities to raise their income and create more jobs for instance on the other hand, tourism can be an important source for generating funds for conservation programs, as well as for improving life quality of local communities.

Costa Rica in Central America is an example of how tourism based on nature can be a very good driver for conservation and regional development. Almost 25% of their territory is protected and nowadays is considered one of the best ecotourism destinations around the world. Ecotourism represents the major income generator in the country and therefore all the stakeholders involved in the chain are getting benefit from it.

On the other hand, if tourism is not appropriately planned, managed and developed, it can be seen as a significant threat for the environment and biodiversity, as well as for local identity and traditional cultures, by putting in risk the future existence of the protected areas.

Tourism is considered one of the largest and fastest growing industries in the world and therefore one of the activities that generate more negative impacts to cultural, social, economic and environmental values.

In protected areas, negative tourism impacts to the environment can be associated with the need of expanding tourism facilities (paths, buildings, roads, others), excess of people and overuse of natural resources mentioning some of the main factors, that causes direct impact to natural resources, vegetation, ecosystems, animal environment, biodiversity and cultural heritage and economic impact.

It is for instance the case of protected areas in Bahia, Brazil. Protected areas in this region of the country are considered significant attractive places for tourism, but they have been



suffering high levels of environmental damage due mainly for the increasingly number of visitors. By 1990, the number of animal species decreased in 12% mostly because of the great demand of tourists for skins of rare species, being this activity a source of income for local communities.

Tourism management in protected areas represents a challenge for protected area managers, as well as for governments, institutions, tourism entrepreneurs and important stakeholders that in some way are getting benefits and can influence the development of these areas. In order to reach the goal of making optimal use of environmental resources, respecting the cultural values of local communities, as well as generating an economic benefit for the region and for the protected area, significant efforts, planning, control and monitoring strategies is needed. To address these issues, several conventions, frameworks and guidelines have been developed by recognized organizations around the world, which can provide significant assistance to protected areas and the planning of tourism management.

## 1.4 SUSTAINABLE TOURISM

The World Tourism Organization (W.T.O.) defines Sustainable Tourism as: *Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunity for the future. It is envisaged as leading to management of all 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.*

The United Nations Environment Program (UNEP), propose some principles that have to be followed in order to make tourism a sustainable activity. Sustainable tourism should: Making optimal use of the environment requires a very high commitment from all the stakeholders involved in the tourism chain. Natural resources represent the main element to develop a tourism activity, as being the major source of attraction and enjoyment; then is a responsibility to guarantee that those resources are used in a sustainable way, not damaging and not overusing them and respecting as well their natural ecological processes preserving and conserving all forms of nature and biodiversity.

Moreover, local communities have an invaluable role in the whole tourism activity. They represent the authentically way of living in a determined region or place. Foreign visitors may have the opportunity to learn from their costumes and value their cultural heritage.

Furthermore, tourism is an important motor for economic and social development, and then should beneficiate all stakeholders involved in the tourism chain, beneficiating local communities, providing employment and more opportunities and contributing to poverty alleviation.



The challenge is from all the actors involved in the tourism chain including governments, non-governmental organizations, tourism entrepreneurs, local people and others. As pointed out by the W.T.O., achieving the goals of developing tourism in a sustainable way requires planning, continuous monitoring of impacts and formulation of the necessary measures whenever is necessary.



## 1.5 MANAGEMENT SYSTEMS FOR DEVELOPING SUSTAINABLE TOURISM IN PROTECTED AREAS IN EUROPE

At present in Europe there are two main management systems that establish the structure for protected areas to develop tourism activities in a sustainable way:

1. The European Charter for Sustainable Tourism
2. PAN Parks initiative

Both frameworks provide effective guidelines for developing a tourism strategy for protected areas as well as an action plan that supports it.

The European Charter for Sustainable Tourism in Protected Areas is an input to Agenda 21, the sustainable development program of the United Nations, approved in the UN Conference on Environment and Development known also as The Earth Summit, in Rio de





Janeiro, Brazil in 1992. The importance of Agenda 21 relies in the fact that it is the first time in the whole human history that “the link between conservation and development was placed on the agenda”.

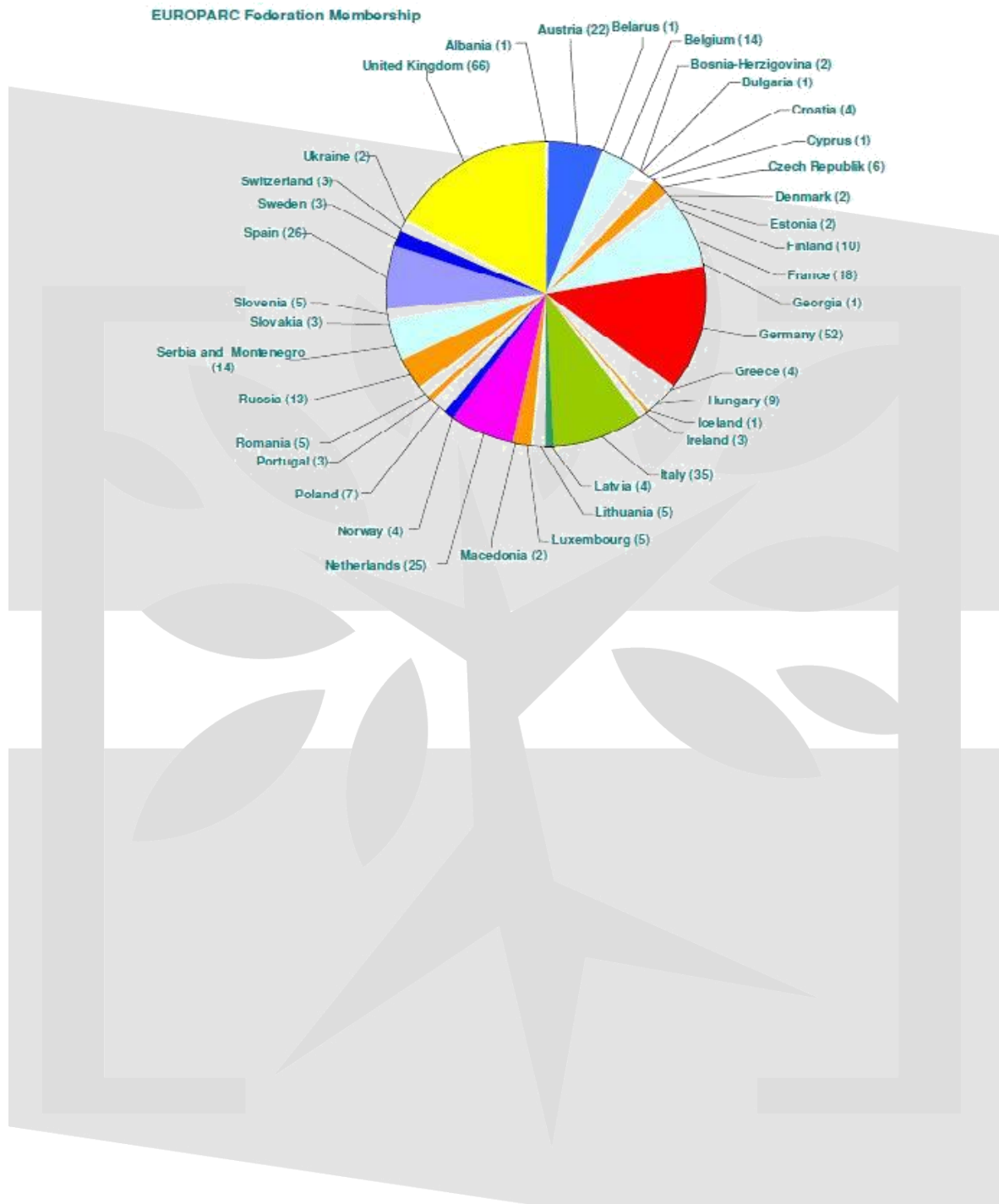
The Europarc Federation an independent, non-governmental organization in charge of administering the whole protected areas in Europe, took the initiative in year 1995 on creating the *European Charter for Sustainable Tourism in Protected Areas*, an initiative funded by the European Union (EU) LIFE program, and coordinated and led by the *Fédération des Parcs Naturels Régionaux de France* in behalf of the Europarc Federation.

Europarc Federation was founded in 1973 under the official title "Federation of Nature and National Parks of Europe", and has since grown to become the recognized, professional organization for European protected areas. Europarc Federation currently represents some 400 members. These include protected areas, governmental departments, NGO's and businesses in 35 countries, who themselves manage the green jewels of Europe's land, sea, mountains, forests, rivers and cultural heritage.





**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks





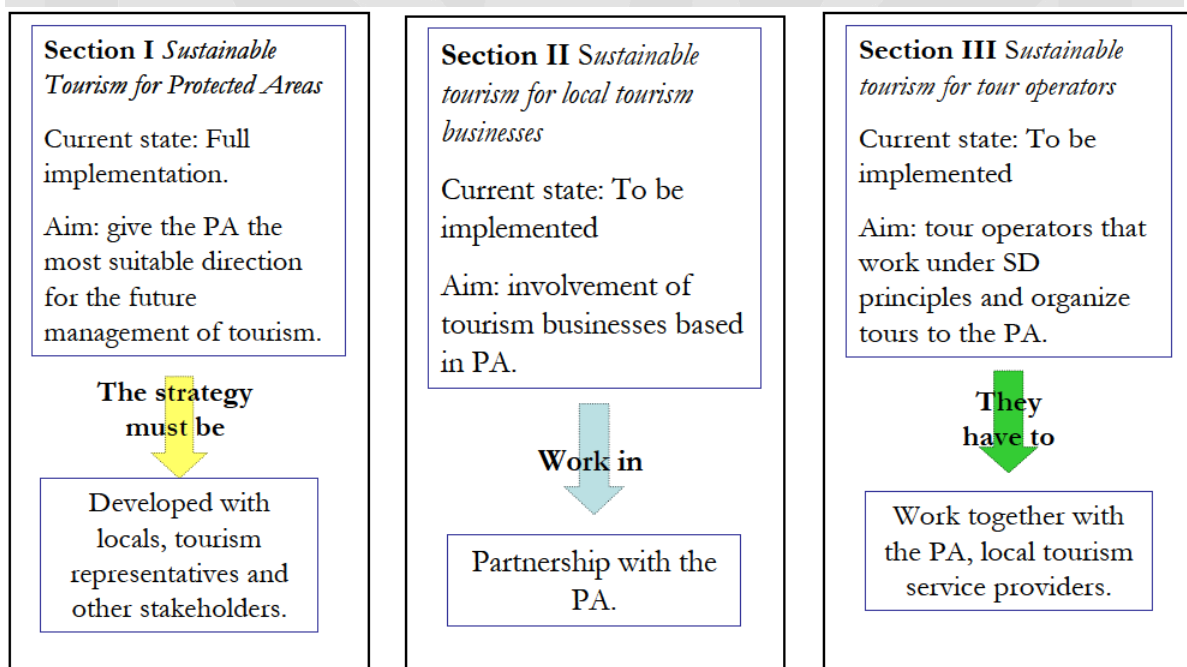


## 2 STRUCTURE OF THE EUROPEAN CHARTER

The European Charter for Sustainable Tourism in Protected Areas is a practical management tool for ensuring that tourism contributes to a balanced economic, social and environmental development of protected areas in Europe. The Charter is a voluntary agreement and aims to encourage good practice by recognizing protected areas, which are meeting agreed requirements for the sustainable development and management of tourism.

### 2.1 STRUCTURE OF THE CHARTER

The Charter has been envisioned in three main Sections as is summarized below:



### 2.2 MAIN OBJECTIVES

The Charter is a voluntary management system that aims to promote the development of sustainable tourism especially in national and nature parks around Europe. **The aims of the European Charter for Sustainable Tourism in Protected Areas** are to increase awareness of, and support for, Europe's protected areas as a fundamental part of our heritage, which should be preserved for, and enjoyed by, current and future generations and to improve the sustainable development and management of tourism in protected areas, which takes account of the needs of the environment, local residents, local businesses and visitors.



## 2.3 THE CHARTER PRINCIPLES FOR SUSTAINABLE TOURISM

The **first principle of the Charter** is the strengthening of Cooperation bonds, aims to involve all those implicated by tourism in and around the protected area in its development and management. A permanent forum, or equivalent arrangement, should be established between the protected area authority, local municipalities, conservation and community organizations and representatives of the tourism industry. Links with regional and national bodies should be developed and maintained.

The **next step** is the development and implementation of a sustainable tourism strategy and action plan for the protected area. The strategy should be based on careful consultation and be approved and understood by local stakeholders. It should contain:

1. A definition of the area to be influenced by the strategy, which may extend outside the protected area
2. An assessment of the area's natural, historic and cultural heritage, tourism, infrastructure, and economic and social circumstances, considering issues of capacity, need and potential opportunity
3. An assessment of current visitors and potential future markets
4. A set of strategic objectives for the development and management of tourism, covering:
  - ✓ Conservation and enhancement of the environment and heritage
  - ✓ Economic and Social development
  - ✓ Preservation and improvement of the quality of life of local residents
  - ✓ Visitor management and enhancement of the quality of tourism offered.
5. An action plan to meet these objectives
6. An indication of resources and partners to implement the strategy
7. Proposals for monitoring results

Each protected area is different. Strategic priorities and action programs should be determined locally, using the approach described above. However, the following key issues should be addressed:

**Key issue 1:** To protect and enhance the area's natural and cultural heritage, for and through tourism, and to protect it from excessive tourism development by monitoring impact on flora and fauna and controlling tourism in sensitive locations, encouraging activities,



including tourism uses, which support the maintenance of historic heritage, culture and traditions, controlling and reducing activities, including tourism impacts, which adversely affect the quality of landscapes, air and water, use non-renewable energy, create unnecessary waste and noise and encouraging visitors and tourism industry to contribute to conservation

**Key issue 2:** To provide all visitors with a high quality experience in all aspects of their visit, by researching the expectations and satisfaction of existing and potential visitors, meeting the special needs of disadvantaged visitors, supporting initiatives to check and improve the quality of facilities and services.

**Key issue 3:** To communicate effectively to visitors about the special qualities of the area, by ensuring that the promotion of the area is based on authentic images, and is sensitive to needs and capacity at different times and in different locations, providing readily available and good quality visitor information in and around the area, and assisting tourism enterprises to do so, providing educational facilities and services that interpret the area's environment and heritage to visitors and local people, including groups and schools

**Key issue 4:** To encourage specific tourism products which enable discovery and understanding of the area, by providing and supporting activities, events and packages involving the interpretation of nature and heritage.

**Key issue 5:** To increase knowledge of the protected area and sustainability issues amongst all those involved in tourism, by providing or supporting training programs for staff of the protected area, other organizations and tourism enterprises, based on assessing training need

**Key issue 6:** To ensure that tourism supports and does not reduce the quality of life of local residents, by involving local communities in the planning of tourism in the area, ensuring good communication between the protected area, local people and visitors and identifying and seeking to reduce any conflicts that may arise

**Key issue 7:** To increase benefits from tourism to the local economy, by promoting the purchase of local products (food, crafts, local services) by visitors and local tourism businesses and through encouraging the employment of local people in tourism

**Key issue 8:** To monitor and influence visitor flows to reduce negative impacts, by keeping a record of visitor numbers over time and space, including feedback from local tourism enterprises, creating and implementing a visitor management plan, promoting use of public transport, cycling and walking as an alternative to private cars and controlling the siting and style of any new tourism development



## 2.4 CHARTER PART 1

For individual protected areas of all kinds. Implementation by the protected-area authority entails carrying out a diagnosis describing the needs of the area (problems and opportunities) recognized and accepted by local partners, the creation of a permanent forum involving all relevant stakeholders in tourism in and around the protected area in its development and management, the development of a 5-year strategy and action plan for sustainable tourism addressing key sustainability issues, based on careful consultation with local stakeholders and the completion of the application documents to be sent to Europarc.

The aim of this approach is to find the most appropriate future direction for tourism throughout the whole area.

The European Charter for Sustainable Tourism in Protected Areas brings varied benefits to participating protected areas. Besides opportunities to strengthen relationships with tourism stakeholders and influence tourism development at the local level, these benefits include: a higher profile in the European arena as an area devoted to sustainable tourism, public relations and awareness-raising opportunities with visitors and local and national media, an opportunity to work with and learn from other European “Charter protected areas” in a network, helpful internal and external assessment leading to new ideas and improvements and greater credibility amongst potential funding partners.



Protected areas which are not already Europarc members will be requested to join the Federation upon registering as candidate parks.



## 2.5 CHARTER PART 2

The European Charter Partner Program, (Part 2), enables individual businesses in the tourism sector who work with protected area authorities, to become recognized as European Charter Partners under the umbrella of the Europarc Federation.

Finding an approach that works for all Charter protected areas located in different European countries with diverse national, regional and local background and realities was and is the major challenge.

Tourism businesses wanting to become a European Charter Partner therefore need to fulfill requirements on two levels: the European and the local level.

At the **European level** they need to fulfill the requirements of the European-wide standards set by Europarc and to comply with the principles of the European Charter.

Essential for the tourism businesses is participation in the Sustainable Tourism Forum established by the protected area, where all partners have the opportunity to meet and exchange ideas.

The activities of the tourism business should be compatible with the sustainable tourism strategy and the management plan of the protected area. With the support of the protected area the tourism business develops a three-year action plan listing specific activities to be implemented during the partnership, e.g. compiling visitor statistics, energy saving measures, development of interpretive guided nature tours in the protected area.

On the **local level**, Each Europarc Section or national or regional Charter network is encouraged to work on a methodology for implementing the European Charter Part 2 to be validated by Europarc.

At protected area level, the specific requirements for tourism business will be agreed by each protected area's Sustainable Tourism Forum.

Europarc therefore achieves a flexible partnership approach which reflects existing local quality marks and eco-labels (Green Tourism Business, Green Dragon, QIT, Marca Parque Natural, 'Q', Viabono for example), differing local needs and varying situations as well as the commitment of the individual tourism sector business to sustainability.

The European Charter Partnership Program gives tourism businesses the opportunity to distinguish themselves as fundamental partners of the protected area on the basis of defined requirements and activities.



Till now 143 local tourism businesses belonging to nine Charter areas in three European countries have so far been certified as Charter Partners in the framework of Charter Part 2. Ten Charter areas from five countries are preparing the start of Part 2 of the Charter or are already in the process of certification, involving around 150 local tourism businesses.

This growing network of tourism business that is integrated into Europarc's European Charter Network is on its way to be one of the biggest networks of tourism companies dedicated to running their business according to the principles of sustainable tourism development and in close cooperation with their relevant protected area.

The business plans to do environmental friendly actions during the Charter accreditation period falling under the following headings:

#### Innovation and organizational development (Vision)

- ✓ Protection of habitats and species
- ✓ Water management
- ✓ Waste management
- ✓ Energy management
- ✓ Carbon management
- ✓ Environmental education of staff (e.g. employment policies with regard to local people or disadvantaged people)
- ✓ Mobility services and logistics
- ✓ Accessibility for handicapped people
- ✓ Purchasing and Local / regional products / suppliers
- ✓ Information management and dissemination
- ✓ Security of services
- ✓ Budget and schedule for the activities
- ✓ Development of new, environmentally friendly tourism products based on authentic values of the territory.





## 2.6 PART 3: TOUR OPERATORS

The Part 3 methodology is still under development. It is supposed to focus on tour operators who incorporate the principles of sustainable development into their tourism product, and who are organizing tours to and within protected areas.

Tour operators working under this framework will agree to work in partnership with the authority responsible for the strategy in the protected area and the local tourist-service providers. This will involve analyzing the compatibility of its products with the objectives of the area. The visitor flow they attract to an area must not destroy the heritage resources that the tourists come to see.

## 2.7 COMPATIBILITY-SYNERGIES WITH EU CONVENTIONS AND DIRECTIVES

The Birds and Habitat Directives have potential to become the most efficient tool for biodiversity conservation in Europe, by establishing the framework for maintaining or achieving a good conservation status for Natura 2000 sites.

Nevertheless, greater resources are needed for effective implementation of these directives Europe wide.

The European Commission has proposed an ambitious strategy to protect more effectively the marine environment across Europe. The thematic Strategy on the protection and conservation of the marine environment aims to achieve good environmental status of the EU's marine waters by 2021 and to protect the resource base upon which marine related economic and social activities depend.

The need for a system of protected areas in the marine environment is increasingly urgent, especially in coastal areas where the connection with land is so important. In addition the EU is promoting Integrated Coastal Zone Management through its communication of 2002, a crucial process for making the connection, which all protected areas on the coast should be closely involved with and contribute to.

In addition to EU policies with a special focus on biodiversity, there are other priority areas identified within the 6th Environmental Program that are significant and will influence protected area management. These include: climate change; nature and biodiversity; health and environment; resources and waste.





## 2.7.1 International conventions for nature conservation

- Convention on Biological Diversity and the Program of Work on Protected Areas
- EU Habitats Directive
- EU Birds Directive
- EU Water Framework Directive
- European Landscape Convention
- Alpine Convention
- Carpathian Convention
- Ramsar Convention

## 2.8 RELATION, COMPATIBILITY AND COMPLETION WITH OTHER EUROPEAN EFFORTS

### 2.8.1 Project “NATREG - Managing Natural Assets and Protected Areas as Sustainable Regional Development Opportunities” Program: South East Europe Transnational Cooperation Program, Years: 04/2009-07/2011.

The NATREG Project is addressing the challenge that the potentials of the Protected Areas as an important instrument of biodiversity conservation and a great potential for social and economic development are still largely unrecognized.

Furthermore, the connection between nature conservation and development of Protected Areas is too weak. Therefore, the project's main aim is to acknowledge and promote the potentials of natural assets and PA as drivers of sustainable regional development and to increase the perception of preserved nature as a valuable asset”

### 2.8.2 Project: “COAST TO COAST”.

Coast to Coast is an integrated project which promoted and supported the socio-economic development of the area. It aimed at intensifying cooperation among Italian and Slovenian institutions and economic operators, by generating a tourist, cultural, environmental and educational flow exchange between the two shores of the Adriatic”.



### 2.8.3 Project: SLOW TOURISM

Project involves 30 partners coming from all the eligible areas of the program. The partnership is made of Local Development Agencies and Local Action Groups, institutional bodies as Provinces, Municipalities, Park bodies, the Sciences, Department of Trieste University and bodies specialized in tourist marketing sector.

The project aims at increasing and promoting slow tourist itineraries in parks and along river courses. Besides the interventions of marketing, training, communication, the project creates real “Slow” points. A guide in slow tourism is available

### 2.8.4 The Project “INVENTORY, EVALUATION AND MONITORING OF WETLANDS” (MW/SUDOE)

Was supported by the Community Initiative INTERREG III - B European Southwest, 2000-2006 Program and was undertaken by two countries of the SUDOE region: Portugal and Spain. The project was developed over a two years period. The MW/SUDOE main goal was the application of the MedWet Inventory methodologies to a network of wetlands, thus combining efforts to develop an essential ecosystem management tool. The network developed a set of case studies from protected areas that aim to represent the reality of the MW/SUDOE region, so that the obtained results can be applied in the management of other wetlands.(text adapted from information collected from the project website.)

### 2.8.5 Project “ARCHICARTER” / Programme : ARCHIMED IIIB Years: 2006-2009

The Archicharter project provides a strategy for a development of sustainable tourism has to follow the principles of the European Charter for Sustainable Tourism in protected areas, that means:

- To start from the needs of the territory;
- To work in partnership;
- To promote the participation and awareness of local interested parties;
- To involve the stakeholders in the strategy approval and implementation;
- To launch officially the strategy;
- To make a Plan for action coherent with the strategy;
- To establish target with long term benefits, but with short term ones;
- To find the needed resources.



## REFERENCES

- Bauer, H., 2003. Local perceptions of Waza National Park, northern Cameroon. *Environmental Conservation* 30, 175–181.
- Carta di Rimini per il turismo sostenibile, 2001. Rimini, Italy. <http://www.provincia.rimini.it/turismo/conferenza/testi/carta/copertina.htm>
- Castellani V. and Sala S., 2010. Sustainable performance index for tourism policy development. *Tourism management* 31, 871-880.
- Chape S., Harrison J., Spalding M., Lysenko I., 2005. Measuring the extent and effectiveness of protected areas as an indicator for meeting global biodiversity targets, *Philosophical Transactions of the Royal Society, Series B* 360, 443–455.
- Europarc Federation, 1995. European charter for sustainable tourism in protected areas. Grafenau, Germany: Europarc Federation.
- European Commission, 2000. Lisbon strategy. [http://europa.eu/lisbon\\_treaty/index\\_en.htm](http://europa.eu/lisbon_treaty/index_en.htm).
- European Commission. , 2006. A renewed EU tourism policy: Towards a stronger partnership for European tourism. COM (2006) 134 (final).
- Ezebilo E.E. and Mattsson L., 2010. Socio-economic benefits of protected areas as perceived by local people around Cross River National Park, Nigeria. *Forest Policy and Economics* 12, 189-193.
- Hoyt, E., 2004. Marine Protected Areas for Wales, Dolphins, and Porpoises: A World Handbook for Cetacean Habitat Conservation. Earthscan Publications, p. 492.
- Izquierdo, C.C., Carrion, C.H. and Gutierrez, S.S.M., 2008. Developing relationships within the framework of local economic development in Spain. *Entrepreneurship Regional Dev.* 20, 41–65.
- Prato, T. and Fagre, D., 2005. National Parks and Protected Areas: Approaches for Balancing Social, Economic, and Ecological Values. Wiley-Blackwell publications, p. 446.
- Salafsky, N., Cauley, H., Balachander, G., Cordes, B., Parks, J., Margoluis, C., Bhatt, S., Encarnacion, C., Russell, D., Margoluis, R., 2001. A systematic test of enterprise strategy for community-based biodiversity conservation. *Conservation Biology* 15, 1585–1595.
- Sims R.E.K., 2010. Conservation and development: Evidence from Thai protected areas. *Journal of Environmental Economics and Management* 60, 94-114.
- UNEP-WCMC (United Nations Environmental Programme World Conservation Monitoring Centre), 2004). Defining protected area management categories. Protected Areas and World Heritage Programme. Available from [://www.unep-wcmc.org/protected\\_areas/categories/~main](http://www.unep-wcmc.org/protected_areas/categories/~main).

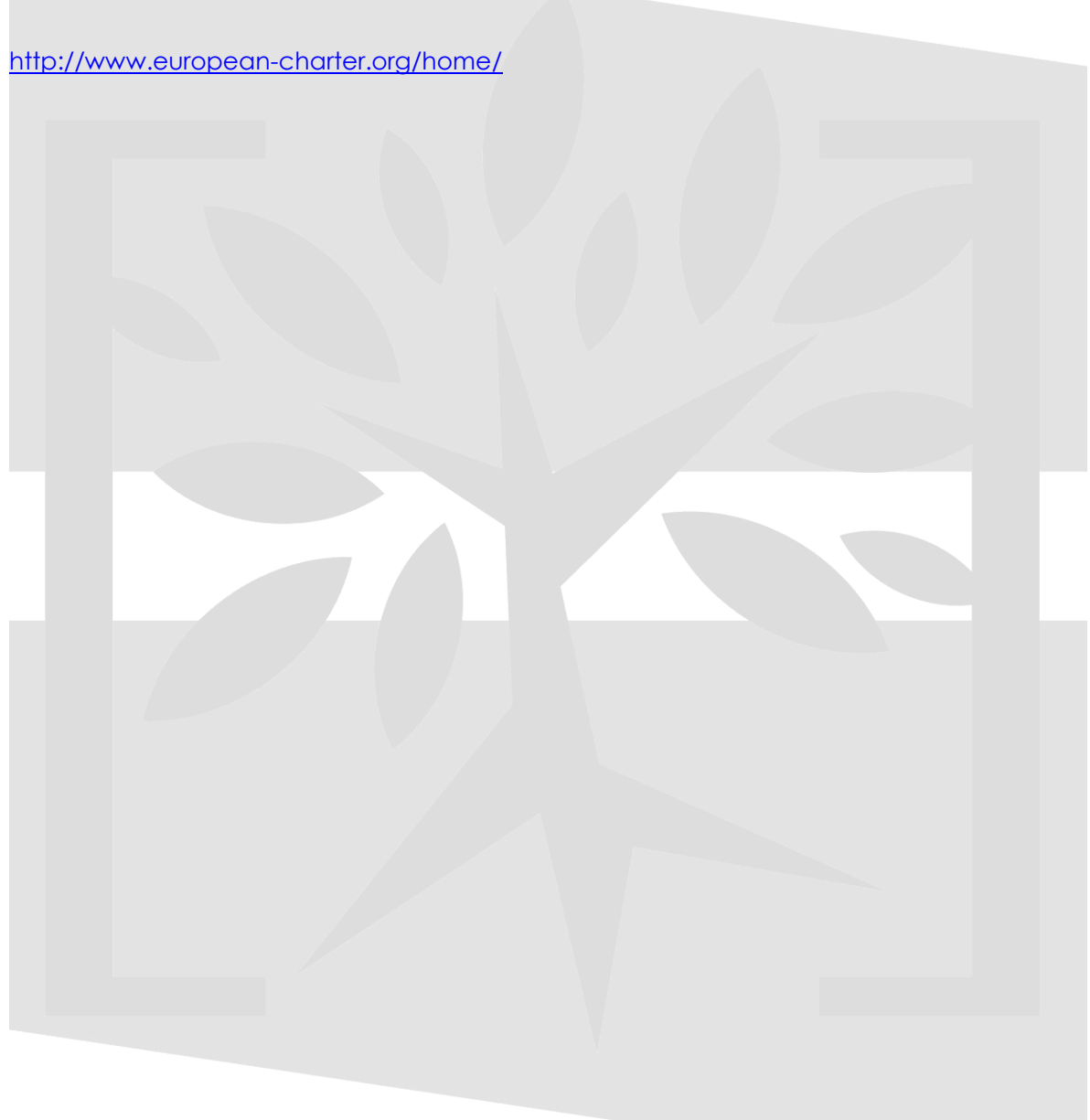


**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks

Vedeld P., Jumane A., Wapalila G., Songorwa A., 2012. Protected areas, poverty and conflicts: A livelihood case study of Mikumi National Park, Tanzania, *Forest Policy and Economics* 21, 20-31

Wells, M.P and Brandon, K.E. 1992. *People and parks: Linking protected areamanagement with local communities.* Washington D.C: World Bank / WWF / USAID: Xii+99 pp.

<http://www.european-charter.org/home/>





## 3 SUSTAINABLE TOURISM SYMPOSIUM

### 3.1 THE LANDSCAPE PLAN IN VENETO REGION AND THE CONTRIBUTION OF 2BPARKS PROJECT IN DESIGNING NEW PLANNING SCENARIOS

R. Toffano<sup>a\*</sup>, R. Lioce, R. Galli, S. Galli<sup>b</sup>, C. Quaglia, N. Boscolo<sup>c</sup>

<sup>a</sup> Office Director, Spatial and Strategic Planning DPT, Veneto Region, Italy (romeo.toffano@regione.veneto.it)

\*Corresponding author

<sup>b</sup> TEA Engineering s.r.l. Padova - Italy: Project authors, Project transnational manager, on behalf of Veneto Region- Spatial and strategic planning Dpt (info@teanet.it)

<sup>c</sup> Technical staff, Spatial and Strategic Planning DPT, Veneto Region, Italy (chiara.quaglia@regione.veneto.it; nicola.boscolo@regione.veneto.it)

#### Abstract

This paper would describe the status of implementation of the project 2Bparks in Veneto Region in relation with the landscape planning, according to the National Code of cultural and landscape heritage" (Legislative Decree n.42/2004) and the European Landscape Convention (Florence, 2000). We focus on the project "Places of Sense" as a tool to improve the role of the protected area of the Po Delta.

Keywords: Landscape, spatial planning, protected areas, Delta of the Po river.

#### 1. Introduction

In Italy, the normative references about Landscape are the following: the «European Landscape Convention»(ELC), signed in Florence in 2000 and entered into force in 2006, and the "National Code of cultural and landscape heritage", approved in 2004, but collecting several laws that regulated landscape since 1922 (Code).

Two different definitions of landscape are present in these references, indicating two different approaches to Landscape. In the ELC, landscape is "an area as perceived by people whose character is the result of the action and interaction of natural and/or human factors". In the Code, landscape is an "integral part of the territory whose characteristics are derived from nature, the history of humanity or from their reciprocal interrelationships". It has to be underlined that the first approach recognizes the strong role of people perceptions. The 2BParks contribution is focused on applying the ELC approach, taking into consideration the perceptions of people, in particular the local people, but also visitors, authorities, kids and children, stakeholders and local economic operators, artists (poets, filmmakers,



photographers, ...). The objective is creating new planning tools for landscape with a bottom-up and inclusive approach.

## 2. Landscape Planning in Veneto Region

According to the “National Code of cultural and landscape heritage” (Legislative Decree n.42/2004), two Public Administrations (State and Region) have to cooperate in the definitions of guidelines and criteria related to activities of protection, planning, reclamation, and enhancement of the landscape and the management of related works. In Veneto Region, the two public administrations involved in landscape planning are the Veneto Region Spatial and Strategic Planning Dpt and the Regional Direction for the Cultural and Landscape Heritage, with the Superintendencies as its peripheral organs. Since July 2009, when a specific agreement has been signed between National Government and Veneto Region (“Intesa MiBAC - Regione Veneto”), these institutions are co-operating for the elaboration of the Landscape Regional Plan, connected with the PTRC (regional spatial plan). A specific Committee (“Comitato Tecnico per il Paesaggio”) has been created to support this co-planning process, involving members of both institutions. One of the aims of the regional plan is to organize the territory in homogenous areas (called “Ambiti di Paesaggio”), and one of these first experimental areas is the Po Delta, which forms with the Venice Lagoon Area the ambit named “Coastal Adriatic Arch from Po to Piave ” (Arco Costiero Adriatico dal Po al Piave).

A specific Landscape Ambit Plan, as part of the Regional Landscape Plan, is now under elaboration for this area. Beyond the “National Code”, the plan must also be seen in the context of European Landscape Convention, which identifies the Landscape with “part of the land, as perceived by local people or visitors, which evolves through time as a result of being acted upon by natural forces and human beings”, and puts the people in the heart of landscape policies. For this reason, the Convention stresses on how important it is that the values given to the landscape by the experts takes into consideration local inhabitants, their social perceptions, their collective memories, their aspirations and everchanging natural, social and economic forces. The landscape plan shall define the policies for the protection of the landscape, also by determining the transformations which are compatible with landscape values, as well as measures for the enhancement of the landscape, in relation to objectives for sustainable development as well.

In particular the plan, after organizing the territory into homogeneous areas (“Ambiti di paesaggio”), shall analyze their historical and natural and aesthetic characteristic and their inter-relationship and assign corresponding “landscape quality objectives” regarding landscape environment values to each area.

According to the European Landscape Convention, the objectives are “the formulation by the competent public authorities of the aspirations of the public with regard to the landscape features of their surroundings”. The plan has also to contain descriptive and prescriptive content and include recommendations and proposals, with particular reference to the “landscape assets”, which are: buildings and areas of notable public interest (villas,





gardens, views of picturesque quality, ...) and areas protected by law (coastal territories, rivers, marshlands, parks and national or regional reserves - the Po Delta Park is one of them - ...).

### 3. The notebook for the Landscape Plan:

2Bparks is contributing to the elaboration of the Delta PO landscape plan by arranging a Local Development Pilot Plan concerning the landscape, and specifically its social and perceived value. The subject of the LDPP is the "Places of Sense of the Po Delta". What does a Place of Sense mean? Which are their opportunities for the development of the territory? How can they be an innovative tool in spatial planning? These are some of the questions the LDPP aims to answer to. In relation to the first question: it is hard to define what is a "Place of Sense", since it is a combination of material and non material components of perception. The material component must include not only the sight, but all the five senses. Non-material values are to be considered too: they can be memories, traditions, symbols, history. The non-material values can be detected in many ways: through the eye of artists (poetry, literature, photography, movies) and through the perception of local people, whether they are individuals or collective groups, ordinary people or experts. A first individuation of the Po Delta "Places of Sense" has already been done: the next step will try to answer to the other questions mentioned here above.

### 4. The educational laboratories:

Educating to nature, to environment and to landscape in order to build new generation aware of our natural and cultural values, represents a complex action that should start at school. Within the project component 5 dedicated to education, in order to close schools to the Landscape and to the Regional Parks, the External Technical Group (TEA) set up an educational process structured in different phases and tailored to Kids, to children and to their parents. Three primary schools, 6 classes, more than 120 children 8-10 years old, their parents took part at technical laboratories, titled "Perceiving landscapes – 2Bparks", started in January and closed in May 2012, with a school trip at the Delta Po Regional Park.

Three classes of a nursery school, more than 70 kids and their parents have been involved in the laboratory "listen and develop a tale " to know the Regional Park of the Delta Po.

Parents answered some questionnaires created to check the common knowledge of Regional Parks and the understanding of LANDSCAPE, contributing in this way to the elaboration of the Regional Landscape Plan and increasing their awareness. More than 300 people visited the Regional Park of the Delta PO entering in touch with a no limited landscape where the horizon seems the sky and sky part of the earth.

### References

European Landscape Convention (Florence, 2000)

Cultural heritage and landscape national code (Legislative Decree n.42/2004)





## 3.2 GENERAL PRESENTATION OF THE 2BPARKS PROJECT: TOOLS AND EXPERIENCES TO BE PARKS: PROMOTING THE SUSTAINABLE DEVELOPMENT OF THE MED PROTECTED AREAS

Raffaella Lioce<sup>a</sup>, Silvia Galli<sup>b\*</sup>, Roberta Galli<sup>c\*</sup>

<sup>a</sup>Member of TEA Engineering S.R.L. Via U Foscolo 10 35131 Padova IT (rlioce@teanet.it), in charge of the 2Bparks planning, development and general management, on behalf of the Lead Partner: Veneto Region- Spatial and strategic planning Dpt

<sup>b</sup>President of TEA Engineering S.R.L. Via U Foscolo 10 35131 Padova IT (sgalli@teanet.it)

<sup>c</sup>Member of TEA Engineering S.R.L. Via U Foscolo 10 35131 Padova IT (rgalli@teanet.it)

\*Corresponding author

### Abstract

Protected Areas (PA) play an important role for sustainable territorial policies. Often perceived as a limit to economic growth, PA have to face up anthropic pressures, reconciling economic interests with ecological requirements.

New integrated plans are fostered by the 2BParks project with the **scope** to improve PA sustainable growth, to increase awareness and diminishing economic and social impacts, reducing the risk of losing MEDiterranean ecological balance.

Keywords: Protected areas, Parks, Landscape, Sustainable Tourism, environmental education

### 1. Introduction

The 2BParks project has been co funded by the European Community under the framework of the MED programme: a territorial cooperation programme covering all the Mediterranean regions.

It involves a large partnership and presents a wide geographic coverage: 11 partners, 7 Countries (IT,GR,ES,P,SLO,F,CY), 11 Regions (Veneto, Calabria, Piemonte, Balears Island, Andalusia/Jaén, Languedoc-Roussillon, Thessalia, Attiki, Alentejo, Slovenia, Cyprus) and includes Protected Areas (PA) characterized by an high biological diversity and a complex of terrestrial and marine habitats of excellent representativity of Med environment: rivers and wetlands: Delta of PO River and the Sado Estuary; flat areas/wetland: Vercelli, Narbonesa and Ljubljana Marshes; mountain/med maquis: Serre, Sierra, Mount Pelion, Haut-Languedoc and Troodos; island: Son Real Park, Sporades and Evia; Lake: Karla; coastal zone: Vincent Coast; archeological sites: Son Real and Piperi.

Partners are:



- Lead Partner: Veneto Region Spatial and strategic planning Dpt (Italia)
- PP1: Natural Regional Park of Serre (Italia)
- PP2: Regional Ministry of Tourism of the Balearic Islands Government /Foundation for the Sustainable Development of the Balearic (Spagna) Non Active after withdrawal
- PP3: General Council of Hérault (Francia)
- PP4: Province of Vercelli (Italia)
- PP5: Region of Thessaly (Grecia)
- PP6: AEAL – Entrepreneurs Association of Coastal Alentejo (Portogallo) Non Active after withdrawal
- PP7: Municipality of Andújar (Spagna)
- PP8: Scientific Research Centre of the Slovenian Academy of Sciences and Arts, Anton Melik Geographical Institute (Slovenia)
- PP9: University of Athens (Grecia)
- PP10: The Troodos Regional Tourism Board (Cyprus)
- PP11: RDCI network for development and innovation (Portugal)

## 2. Scope and objectives

Protected Areas (PA) play an important role for sustainable territorial policies. Often perceived as a limit to economic growth, PA have to face up anthropic pressures, reconciling economic interests with ecological requirements.

New integrated plans are fostered by the 2BParks project with the scope to improve PA sustainable growth, to increase awareness and diminishing economic and social impacts, reducing the risk of losing MEDiterranean ecological balance.

Arose from common instances, that cross administrative borders, looking at natural heritage and protected areas as factors of responsible development, the project pursuits the following **objectives**:

- To evolve **institutional capacities and expert skills**, by providing tools for managers and by **easing access to Knowledge**;
- To improve PA resources allocation, by defining **Action Plans** based both on a MED common perspective and on a place based approach, designed to make practices more sustainable, integrated, proactive and opportunity-oriented and less bureaucratic;
- To boost **responsible behaviors** among economic operators by creating environmental clusters, sharing **joint marketing strategy** and fostering “biodiversity business”;
- To foster sustainable tourism as a tool for the conservation of PA values, territorial growth and for quality of life;
- To promote PA as tourist exemplary destination, where heritage could coexists with business and where new jobs opportunities could be created;
- To reduce the gap between research and decision makers, by promoting integrated networks between Universities, Institutes and public authorities;



- To Arouse PA awareness, adopting innovative **emotional approaches** designed for different target groups (schools, youth, families, elder and disabled people) and users (managers, policy makers, ec. operators), increasing social cohesion

### 3. Expected results and deliverables

2Bparks project assumes the above objectives, developing innovative PA governance patterns with the general scope of integrating environmental considerations into spatial plans, into investments choices and into core institutional thinking.

Project deliverables have been planned with an high degree of capitalization and transferability. The followings, in particular, ensure project continuity in the long run:

- The ROADMAP, which is not a further handbook, but an user friendly tool, designed to support PA managers in orienting themselves among the multitude of existing guidelines (Eurosité, Europarc, IUCN...) and selecting the most suitable ones;
- The NOTEBOOK for marketing, a practical tool for public and private operators, who agree in developing the sustainable tourism in the MED PA;
- The SOURCEBOOK and the Edu-platform, to ensure a continuous Knowledge system updating and to increase the employment potentiality of all people interesting in PA;
- The 2BPARKS CLUSTER to group enterprises, socio-economic operators and public bodies which are committed to adopt sustainable business strategies, therefore contributing to the enhancement of the MED Protected Areas and to environmental protection and conservation at large.

Other project deliverables have been planned with a place based perspective in order to reach general EU goals at local level giving sound and real answers to daily needs.

Among this kind of deliverables, we have the Actions Plans summarized in the table below, the Educational Laboratories and the Edu-Books, the School Contest award and some Experimental Actions of Promotion and marketing (participation at fairs and events).

Partner	LDPP /LSDP: place based approach
Veneto	Actions to improve the landscape regional plan and developing innovative marketing tools: "The Place of Sense in the Delta PO
Serre	Strategies for a common label for local firms and the protected area
Hearault	Schéma d'interprétation des aires protégées"/promenades inédites
Vercelli	Actions to make protected areas: a driving force of sustainable development
Thessaly	"Integrated Local Pilot Development Plan for Karla Lake" / "Strategic Plan for the Promotion of the Sustainable Tourism of the Karla Lake"
RDCI	Actions for the "Sustainable Tourism in Alentejo coast and the Lagoons of Santo André and Sancha".



**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks

<b>Andujar</b>	Actions for Regional Development and Economical Promotion: The regeneration of Del Val Gardens and the Honey Museum. / Tourism Promotion
<b>ZRC SAZU</b>	Actions to identify the most appropriate areas for the interpretation of PA trail along the Iška River and the interpretation centre Plan a sustainable tourist offer with a help of a natural tourist guide.
<b>UNIAT</b>	'Understanding Coastal Environment'/Educational Tourism: Understanding coastal environment Case study: National Park of Schinias
<b>Cyprus</b>	Troodos: The Green Heart of Cyprus – Nature and Cultural Park: New Gates for the Park, /Improving educational and the sport centers.

By the end of the project, after the implementation of project experimental actions and the setting up of shared tools, partners expect a **new MAINSTREAM to be parks (2Bparks) and to increase values and opportunities of the MED protected Areas.**

#### References

IUCN *Guide for "building biodiversity business"*  
 IUCN *Towards a better Governance of the Mediterranean*  
 Eurosite *"Management toolkit"*; *"EuroCharter of sustainable tourism"*,  
 UNEP *"Guide for Planning and Management Sustainable Tourism in Protected Areas"*,  
 ALPARC *"Best practices in environmental education"*,  
 Lioce R.-Galli S., Galli R-(TEA srl) on behalf of the Lead Partner: Veneto Region-Spatial and Strategic Planning DPT *"2 BPARKS Application Form"*; *"2BPARKS Progress Reports"*

#### CREDITS

LEAD PARTNER – VENETO REGION Spatial and strategic planning DPT  
 Project responsible: Romeo Toffano.  
 Administrative Office: Francesca Franzin, Federico Bossi  
 Technical staff: Chiara Quaglia Nicola Boscolo  
 External Experts: TEA srl Raffaella Lioce, Silvia Galli, Roberta Galli  
 TARGET AREA: Regional Park of Delta Po- President Geremia Gennari, Director Marco Gottardi



### 3.3 ENVIRONMENTAL AWARENESS AND INFORMATION IN THE PROTECTED AREA OF MOUNT PARNON AND MOUSTOS WETLAND

A. Dimitrakopoulou<sup>a</sup>, D. Arvanitis<sup>b</sup>

<sup>a</sup>Management Body of Mount Parnon and Moustos Wetland (info@fdparnonas.gr)

<sup>b</sup>Management Body of Mount Parnon and Moustos Wetland (arvanitis160679@yahoo.gr)

#### Abstract

All actions taking place over the past years in the protected area of Mount Parnon and Moustos Wetland to inform, educate and create an environmental conscious, are in accordance to the general effort the Management body of Mount Parnon and Moustos Wetland is implementing in order to familiarize the inhabitants and visitors with the:

1. General framework of the protected area of Mount Parnon and Moustos Wetland
2. Regulatory structure required in this area
3. Targets that are made in order to: a) protect and maintain the natural environment and cultural heritage, b) achieve a social and economic growth of the area, c) inform and educate the inhabitants and visitors of the importance to protect the area

These are the main reasons why the Department of Information, Education and Publicity are:

1. undertaking these courses and actions in order to promote and project why it is essential to manage and protect the area
2. informing the inhabitants and visitors of actions taken with regards to their duties and targets
3. promoting and supporting the current eco-touristic infrastructure

In order to achieve all these, the Management body of Mount Parnon and Moustos Wetland is running 3 information Centers (in Agios Petros, Kastanitsa and Astros) that organize:

- Education programs with the cooperation of other public and state Bodies
- Conferences and workshops
- Seminars and other educational events that project the targets and achievements from managing this area
- Publish electronically or in a printed form anything related to the protected area of Mount Parnon and Moustos Wetland

Apart than the tour guides, the staff of the Management Body of Mount Parnon and Moustos Wetland are involved in various environmental activities mainly in the areas Arcadia and Lakonia, such as:

- Voluntary cleaning of beaches, wetlands, underwater areas and natural areas





- Events on Global Environmental Awareness Days
- Environmental seminars and workshops at schools and universities
- Special environmental programs for the areas in or in close vicinity to the protected area of Mount Parnon and Moustos Wetland that were affected by forest fires
- Ongoing training and educating of our staff
- Participating in local festivals, like the Festival of the Chestnut in Kastanitsa, the festival of the Cherry in Kerasitsa
- Participating in cycling events – tours
- Organizing wild bird watching events

Being fully aware of the responsibility towards society and the next generations, the Management Body of Mount Parnon and Moustos Wetland aims to continue trying to support this hard task of sustaining a healthy and long relationship between the environment and human wellbeing.

Keywords: environmental awareness, Mount Parnon, Moustos Wetland.

## 1. Introduction

The Protected Area of Mount Parnonas and Wetland Moustos extends along the southeastern Peloponnese, occupying an area of a little more than 1,1 million acres. Four out of its five areas are not only included in the Scientific Catalog, but also members in the European Ecological Network "NATURA 2000". Areas included in "NATURA 2000" within the limits of the Management Area occupy a little less than 600 thousand acres.

In the region of mount Parnonas and Wetland Moustos there are more than **15 types of habitat**. Some of them are unique or particularly noteworthy for the Hellenic and the European region, such as the **extensive woodlands of Pinus nigra, the forests with Juniperous drupaceae in the Malevi monastery region, the chestnut trees in Kastanitsa, the coastal wetland of Moustos south of Astros, the ravine of Dafnonas** etc.

The most important areas of Mount Parnonas and Wetland Moustos include:

- A) wetland areas with high biodiversity
- B) areas with one of the most valuable forests of *Juniperus drupaceae* in the European region, or other valuable forest species
- C) bush areas with great importance for the flora and
- D) *grassland plateaus* on the peaks of Mount Parnonas which are also essential for the flora.

The most important element of the protected area is the rare endemic flora, which must be preserved and protected.

The Management Body of Mount Parnonas and Wetland Moustos was founded in 2002 and was established in 2003 in order to:

- Protect, Maintain, and Manage the area of Mount Parnonas & Wetland Moustos





- Improve the image of this natural landscape as a natural heritage and a valuable natural resource

Clearly, scientific knowledge alone is not enough to protect and manage a sensitive area. This is why the management body of Mount Parnon & Wetland Moustos emphasizes that the effective protection of the area is only achieved by the harmonious coexistence of environmental and human activities and therefore aims at the strengthening of environmental awareness of residents and visitors of the area through various events and activities.

For this purpose, the Department of Information, Education and Publicity of the Management Body:

- A) Undertakes programs and activities that highlight and promote the purposes of managing the protected area
- B) Informs, educates and trains the general public on matters relating to the functions and purposes of the management body and of methods to protect the area of responsibility
- C) Keep up and support the existing eco touristic infrastructure and provide assistance in the creation of new ones.

## **2. Materials and Methods**

The three existing visitor centers of the Management Body focus primarily at non-specialist audience and visitors of all ages, and aim to become hubs to inform, educate and awake the visitors on issues of the protected area of Mount Parnonas and Wetland Moustos.

The main objective deriving from the operation of these centers is to inform visitors about the importance biodiversity of the protected area, its cultural elements and values as well as the ancient and uninterrupted human presence in these areas.

The aim is that visitors can experience the protected area without harming the delicate natural ecosystems, and understand that nature is a part of life and therefore should be preserved for future generations.

There are Environmental Exhibition Halls which operate within the premises of these three Environmental Information Centers. These Halls use a combination of modern technology with classic media presentation, in order to show what is most remarkable in the region and to pass on the message of how essential it is to maintain the natural habitats of the endemic, endangered, rare and protected species of fauna and flora. The Hall rooms include presentations, which are configured in a unique style and combine short texts with various images.

The three information centers are designed to attract visitors in the mount Parnonas and Wetland Moustos, to inform them about the values and natural functions of the region and to give them information for sightseeing tours.

In these Information Centers visitors can:

- Experience the remarkable ecological and cultural features of the region



- Learn about the role of the Management Body in the protected area and wetland moustos
- Become aware of the rare beauty of Mount Parnonas and Wetland Moustos, that is, the rare and endemic plants and endangered species of fauna
- Find sites with historical, religious and archaeological interest
- Find out more about protected areas that were degraded, due to huge forest fires

Through these Environmental Information Centers of the Management Body visitors can arrange organized tours (simple visits or school visits) for sightseeing, with a simple telephone appointment, all year round. These tours take place at no cost and are formed according to the ages and interests of the group.

### 3. Results

The Management Body:

- Operates three Environmental Information Centers (in Kastanitsa, Agios Petros, and Astros)
- Organizes training and educational programs in cooperation with other appropriate public or private bodies
- Organizes conferences, workshops, seminars and other informative events to project:
  - the purpose of management of the protected area
  - the objectives and achievements of the management body
- Publishes relevant information in a printed or electronic form

There are three types of tours:

- A. Tour of the Information Centers**, for an overall presentation of the protected area, which is concluded by distributing brochures and maps.
- B. Tour of the protected area**, includes specially selected routes in order to become familiar with more than the 15 types of habitats, some of which are unique or particularly noteworthy for the Hellenic and the European Region. The Management Body regularly organizes hiking trips in the protected area for the observation of *Juniperus drupaceae*, *pinus nigra*, as well as visits to the wetland Moustos for observation of many rare, endangered and protected species of birds and aquatic birds
- C. Environmental Education Presentations** designed to familiarize the public with the fauna, flora and natural habitats of the region.

The staff of the Department of Information, Education and Publicity, in addition to tours, organizes and participates in a variety of environmental activities, such as:

- Volunteer cleanups of beaches, wetlands, natural areas *and seabeds*
- Festivals on the Global Environmental Awareness Days



- Environmental awareness programs targeting groups like: the local population, cultural associations, climbing clubs, students, etc
- Environmental awareness programs in the schools of the areas that were damaged by the fire in 2007, in order to inform them about the importance of black pine and the devastating damage of fires
- Participation in celebrations of local communities in protected areas, such as the Chestnut Festival in Kastanitsa and the Festival in Sitaina
- Participation in cycling tours and events
- Observation events of **many rare migratory bird species**

The Department of Information of the Management Body, through Media, on a continuous basis tries to create an environmental conscious on the general public by:

1. Sending informative press releases to local and regional media, and
2. Creating and distributing environmental leaflets.

The themes of these press releases and leaflets varies, as for example, they inform the public of various events or activities the Management Body organizes in the centers, visits to schools, etc.

The website of the Management Body, [www.fdparnonas.gr](http://www.fdparnonas.gr), is updated and monitored on a continuous basis, in order those interested can find updated information on all actions.

There is also a website page and group on Facebook, focusing on more younger ages, aiming to create a community that follows all actions of the Management Body, which is also updated and enriched continuously.

Finally, there is a channel on YouTube where you can find the actions of the Management on video.

#### 4. Discussion

All kinds of tours of the Management Body have been increasing dramatically every year. On an annual basis there are more and more people visiting the area from all over Greece and abroad.

From the beginning of 2011 until today, the tours at our Centers had 4,150 guests while tours in the protected area had 1,400 guests. During the same period, our tour guides visited 17 schools in and around the protected areas giving presentations to over 1100 students.

People who participating at all these tours and events (for example: volunteer cleanups, cycling tours), varying at age, sex and occupation.

We are very happy because we think we have contributed decisively to the following in light of the Protected Area

- **Awareness:** to help people to realize the environment and its related problems and to raise awareness on these issues overall.



- **Knowledge:** to help people to acquire a variety of experiences and basic knowledge on the environment and environmental problems.
- **Attitudes:** to help people to shape values and to develop interest in the environment and have active participation in improving and protecting the environment.
- **Capacities:** to help people to acquire the necessary skills to identify and resolve environmental problems.
- **Participation:** to provide people the opportunity to take action and active participation at all levels to prevent environmental problems.

## 5. Conclusions

In conclusion, all actions and measures taken over the past years to inform and create awareness are in accordance to the broader effort the Management Body is implementing in order to familiarise residents and visitors of Mount Parnonas and Wetland Moustos with the:

1. General idea of The Protected area of Mount Parnonas and Wetland Moustos
2. Regulatory structure required in this area
3. Targets that are made in order to:
  - protect and prevail the natural environment and cultural heritage
  - achieve sustainable social and economic development of the area
  - inform and educate the inhabitants and visitors of the importance to protect the area

Being fully aware of the responsibility towards society and the next generations, the Management body of Mount Parnonas and Wetland Moustos aims to continue trying to support this hard task of sustaining a healthy and long relationship between the environment and human wellbeing.



## 3.4 THE TOURISM INDUSTRY IN CYPRUS: THE CASE OF THE TROODOS REGION

K. E. Georgiou<sup>a</sup>, S. Christou<sup>b</sup>

<sup>a</sup>Cyprus Center for European and International Affairs – University of Nicosia – Cyprus (georgiou.k@unic.ac.cy)

<sup>b</sup>Cyprus Center for European and International Affairs – University of Nicosia – Cyprus (christou.st@unic.ac.cy)

### Abstract

The Republic of Cyprus is at the crossroads faced with a midlife crisis. It is chairing the Council of EU and has sought financial assistance from the Troika. It's economic and by extension social model on which it has based its success, since independence in 1960, looks out of date in the 21st Century and in desperate need for repair. The consensus is that brave and tough decisions are needed but leadership is lacking. Tourism has been, traditionally, a critical sector of the local economy providing up to 20% of the GDP and employing thousands of people. Since the turn of the Century, the revenues from tourism have remained constant, within a narrow range, but the contribution of tourism to the national economy, as a percentage of the GDP has declined and is now below 10% and declining. In this presentation a general overview of the local economy is given with emphasis on tourism and the national tourism strategy. Finally the work carried out by the Troodos Regional Tourism Board is presented in an effort to promote the region as a model of sustainable tourism, an alternative or complementary model to the established sun and sea model, upon which the country's once-thriving tourism sector was built but now appears outdated and unsustainable.

Keywords: Cyprus Economy, Tourism, Sustainable Tourism, Sustainable Development, Sustainable Tourism, Troodos.

### 1. Introduction

The Republic of Cyprus is at the crossroads faced with a midlife crisis. It is chairing the Council of EU and has sought financial assistance from the Troika. It's economic and by extension social model on which it has based its success since independence in 1960 looks out of date in the 21st Century and in desperate need for repair. The consensus is that brave and tough decisions are needed, a paradigm shift, but leadership is lacking.

Tourism has traditionally constituted an important sector of the Cypriot economy and employed a significant proportion of the workforce of the country. For the last ten years though the industry presents significant competitiveness problems, reduced visitors' numbers





and revenues. The Sun and Sea tourist model has delivered all it could deliver and a new model is needed.

The **strategy** of the Troodos Tourist Development Board is to promote Troodos as an authentic and unique destination in Cyprus: The Green Heart of Cyprus a nature and culture park. The Troodos experience encompasses environmental and cultural values sustainable tourism, economic activities that add value and employment in the local communities. The ultimate goal is to revive the region while protecting its unique culture and lifestyle.

## 2. The Cypriot Economy

As already pointed out the Republic of Cyprus is at the crossroads faced with midlife crisis. Its economic and by extension social model on which it has based its success since independence in 1960 looks out of date in the 21st Century and in desperate need for repair. A paradigm shift is needed difficult decisions have to be taken but leadership is lacking.

The local economy is rather small and therefore flexible but also sensitive in time of crisis. The main variables are listed below in **Table 1: Main Economic Parameters of the Cyprus Economy** for 2011 Actual, 2012 Expected and 2013 Estimated are drawn from data published by the Ministry of Finance of the Republic of Cyprus (2012) and the Central Bank of Cyprus (2012) on their respective websites. It is clear from the data presented that the state of the economy is at a critical but yet manageable level. What is needed is swift and coordinated action by the government, the political leaders and the social partners towards the direction of minimizing the budget deficit and introducing measures that will enable economic growth.

Cyprus a few years ago used to enjoy an annual high GDP growth between 3 - 4 %, low unemployment rates close to 3 – 3,5 %, low inflation around 3% but also low productivity between 1 - 2%. Unfortunately wages tended to rise beyond the rate of productivity and inflation and that had a detrimental effect on the overall competitiveness of the national economy. Along the same lines wages and benefits in the extended public sector tended to rise even higher that eventually led to ever bigger budget deficits.

The preferential salaries and other benefits in the public sector along with the reduced working hours and job security have made holding a government job a career choice for the best and the brightest. This of course is not a local phenomenon it is true for other mainland Europe countries including the Mediterranean countries: Greece, Italy, France, Spain and Portugal that are currently under varying financial pressures. The end result is that if the public sector is able to choose the best and the brightest then the private sector, which is the real added value producer in the economy has to rely on less qualified people.

This has a detrimental effect on innovation, productivity and therefore the competitiveness of the economy. The social culture is to seek a safe well paid job with in the wider public sector and avoid the risk and pressures of the private sector. On the other hand because of the small town mentality where everyone knows everybody else failure in a business project may lead to long term stigmatisation.





**Table1: Main Economic Parameters of the Cyprus Economy**

Parameters	2011 Actual	2012 Expected	2013 Estimated
GDP Million Euro	17.97	17,85	17,49
GDP per Capita Euro	21.440	21.275	20.840
GDP Growth %	0,5	-2,4	-3,5
GDP Primary Sector %	2,3	2,2	2,2
GDP Secondary Sector %	17,1	17,3	17,3
GDP Tertiary Sector %	80,6	80,5	80,5
Population (000s)	828,4	839,2	839,2
Unemployment %	7,9	12,1	13,8 – 14,2
Productivity %	0,9	0,7	0,7
Inflation %	3,5	3,4	2
Fiscal Deficit / GDP (%)	-6,11	-5,5	- 0,5
Public Debt / GDP (%)	69,7	85,8	82 <sup>1</sup>

Source: Central Bank of Cyprus (2012) and Ministry of Finance (2012), Speech of the Minister of Finance on the budget<sup>1</sup>: This does not include the funds required to refinance the banking sector. With those funds included the public debt will be around 130% of GDP.

In a nutshell the problems faced by the local economy are:

- (a) The growing budget deficit and public debt that have forced the government to withdraw from the international markets,
- (b) The demographic problem of a greying population and the subsequent pressures on the social system for pensions and rising health costs,
- (c) The structural problems of a not truly competitive economy with high staff costs and low productivity.

All in all the most critical issue for the Cypriot economy is that the government has lost the trust of the international community by being unable to manage the local economy and put its house in order.

On top of this, more recently, the two biggest local banks, namely, the Bank of Cyprus and the Laiki Bank had to declare huge losses stemming from their exposure to the Greek Market but also because of greed and imprudence. Both of them are expected to receive public financial support in order to recapitalise and remain solvent. The same may apply to



other banks and the cooperatives. The extent of the capital influx needed may approach 40 -60 % of GDP.

### 3. The Troodos Region Local Economy

The Troodos mountain range stretches across most of the southwest part of the island and rises about 2000 meters above the sea level, constituting the biggest mountain range of the island. It provides one of the most picturesque and beautiful places of Cyprus which offers a unique and all year long destination for tourists in Cyprus, differentiated from the sun and sea element. Therefore, it can provide an important source in national economy mainly in the terms of tourism and agriculture, due to the mild climate throughout the year.

The area is divided in five distinct regions : Pitsilia, Solea, Marathasa, Mountain Resorts, and wine region villages, that are formed by many small charming villages and where the population of the wider area of Troodos is distributed. The number of villages is about 100 and according to the census of 2011 their population is 22,937 out of 862,000, which is the total population of the island. This means that only 2.59% of the total population of Cyprus living in the villages of Troodos region ( Statistical Service of Cyprus, 2012).

The statistical data on the region as such is rather limited. Most data is available either at the level of the district or the island as a whole. The presentation that follows refers to the island as a whole. The Troodos Region overall is one of the poorest areas in Cyprus although there are differences among villages and regions and therefore one has to take this into consideration when assessing the economic situation of the area. It also worth mentioning that most villagers have additional income from agriculture but this is also in decline (Georgiou, 2012a, Department of Agriculture 2010, 2010a, 2010b).

The demographic data on the Troodos region is presented in **Table2: Demographic Data 2011**. It is clear that this is a small region with about 100 villages most of them small with an average number of 200 people per village. The biggest age group is the over 60 years of age.

Type	Table2: Demographic Data 2011				
	Total	0 -19	20 -39	40 - 59	60+
<b>Men</b>	12,050	1,985	2,577	2,851	4,637
<b>Women</b>	10,887	2,035	2,462	2,726	3,661
<b>Total</b>	22,937	4,020	5,039	5,577	8.,298

Source: Census 2011

The structure of the local economy is based mainly on agriculture and small cottage industrial family units, employing mostly members of the family and limited outside help, that process agricultural and animal products into traditional, foodstuffs such as marmalade, cheese, preserved meats, wine, sprits etc. There are about 4 -5 villages ( Platres, Kakopetria,



Agros, Prodromos and Pedoulas) that traditionally have been active in tourism. Most recently other communities got involved in agrotourism as outlined above.

Most cottage industries, tourism establishments as well as older farmers employ people from third countries for the most menial jobs as Cypriots would not accept jobs at that level despite the 15% unemployment rate. Cypriots are either employed locally or most often drive daily to the urban areas of Nicosia or Limassol for work. Most of them are educated at the secondary level and have low level jobs. Few people are well educated at the University level and have high level or career jobs. The average salary in Cyprus for men is 1750 euros and for women 1400 euros and the average 1600 Euros. (Statistical Service of Cyprus, 2013)

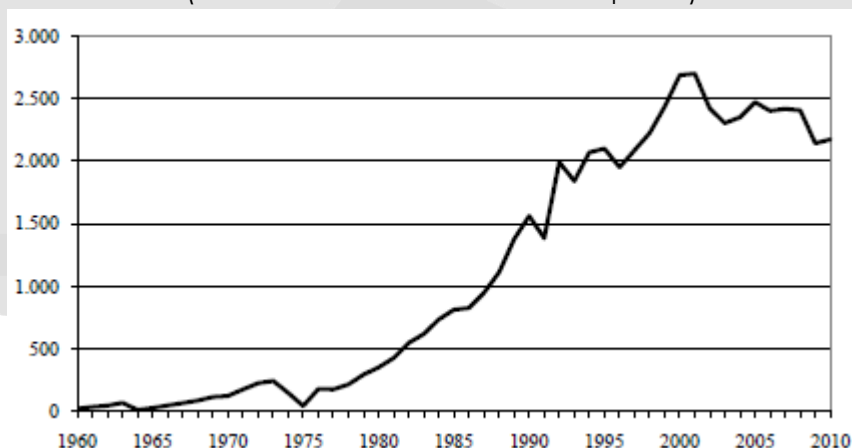
#### 4. Tourism

The local “tourist product” has followed the traditional growth model described in the marketing literature Creation (1960 – 1970) – Growth (1970 – 1995) Maturity ( 1995 -2001) – Decline (2001 – 2013). The following graph, **Graph 1: Tourist Arrivals from 1960 to 2010**, shows the tourist arrivals in thousands from 1960 to 2010. It is obvious that after a significant increase from 1975 to 2000 a downward trend began that still continues. The way to revive a product in decline is to rethink and redesign the concept, upgrade and of course rebrand and re-launch.

After 2001, when the visitors' number in Cyprus reached 2.7 million, the sector has presented significant competitiveness problems, affecting thus the tourists' number and the profitability of the sector (CTO, 2010; Georgiou and Christou, 2012). Certainly, tourism is sensitive to economic changes market and it is only natural that the economic crisis affecting Europe, which is the traditional area of origin of tourists, since 2008, to affect resources available for tourism.

**Graph 1: Tourist Arrivals from 1960 to 2010 in thousands**

(Source: Statistical Abstract 2010 p. 328)





But the tourism crisis for Cyprus has begun much earlier. The tourism model was based on the sun and sea without any perpetual and systematic investment in infrastructure, quality and new upgraded products and services. As a result, gradually, the competitiveness of the local market declined as neighbouring markets of Middle East, Turkey and North Africa began to compete with Cyprus with upgraded services and lower prices.

The contribution of tourism to GDP has declined significantly over the last thirteen years from 20% to 9%. This is a dramatic reduction which has clear implications on the profitability and employment in the sector. In recent years a replacement of Cypriot workers with people from the EU or from third countries has been observed, with a consequent increase in unemployment and reduction in quality of service. Also several redundant hotel units are being converted into residential units and office spaces.

**Table 3: Summary Data on tourism from 1999 to 2011** provides illuminating information on the state of tourism for the last thirteen years. Tourist arrivals as well as the number of overnights show a downward trend, which of course is reflected in revenue per year. **Graph 2: Tourist Arrivals and Revenue per year from 1999 to 2011** shows a graphic depiction of the situation.

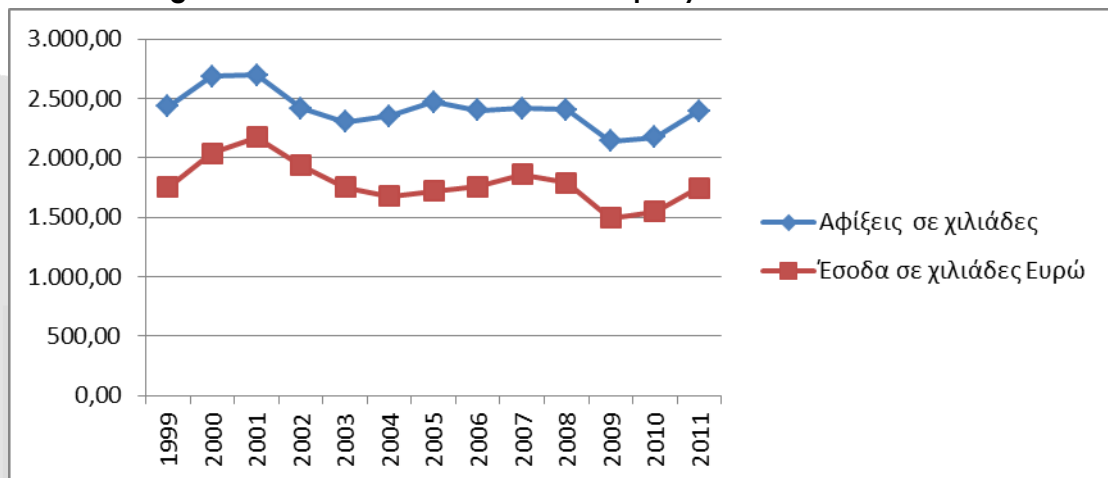
**Table 3: Summary data on tourism from 1999 to 2011**

Year	Arrivals in thousands	Revenue in thousands of Euro	Overnights	GDP revenue in thousands of Euro	GDP %
1999	2.434,30	1.751,30	10,30	9.007,60	19,44
2000	2.686,20	2040,10	10,40	9.756,00	20,91
2001	2.696,70	2.172,70	9,80	10.547,70	20,60
2002	2.418,20	1.934,60	10,30	10.892,30	17,76
2003	2.303,20	1.751,30	10,00	11.630,60	15,06
2004	2.349,00	1.678,40	10,00	12.522,30	13,40
2005	2.470,10	1.718,30	9,60	13.402,00	12,82
2006	2.400,90	1.755,30	9,50	14.432,50	12,16
2007	2.416,10	1.858,10	9,10	15.829,70	11,74
2008	2.403,80	1.792,80	9,10	17.157,10	10,45
2009	2.141,20	1.493,00	9,0	16.853,50	8,86
2010	2.173,00	1.549,80	9,10	17.333,60	8,94
2011	2.392,20	1.749,30	8,90	17.926,60	9,76

(Source: Tourism Statistics 2012 and Statistical Abstract 2010)



Figure 2: Tourist Arrivals and Revenue per year from 1999 to 2011



In 2010, tourism has shown a transient increase in arrivals to have increased 1.5% compared with a decrease of 10.9% in 2009. Additionally, an increase in revenue of 3.8% in 2010 after a 16.7% decline in 2009 is presented. These data confirm the instability of the industry and its sensitivity to external economic, political and social factors. Tourist arrivals in May 2012 rose by 3.5% compared with the same month of 2011.

Widely in the services sector, the turnover index in the first quarter of 2012 decreased by 0.6% in hotels and restaurants (9.3% decrease in hotels and a 2% increase in restaurants). The revenue from tourism in April of 2012 decreased by 16.1% compared to the same month of 2011. The total per capita expenditure in April 2012 decreased at 11.7% compared to the same month of 2011. Equivalent unemployment is affecting the industry.

Regarding the most recent data for 2012, based on the results of the Traveler's Survey, arrivals of tourists in May 2012 reached 276,781 compared to 267,487 in May 2011, recording in this way an increase of 3.5%. In May, an increase of 31.6% in tourist arrivals from Russia (from 40,772 in May 2011 to 53,671 in May 2012), 13.8% increase from Sweden (from 14,813 to 16,856) and 3.7% increase from Germany (from 14,445 to 14,985 this year). Contrary, a decrease of 5.4% was recorded in tourist arrivals from the United Kingdom (113,289 in May 2012 compared with 119,752 in May 2011) and 4.7% decrease from Greece (11,446 compared to 12,016 last year).

Based on the most recent data the number of tourists to Cyprus has increased to 2.410.136 for the period January – November 2012 compared to 2.326.889 for the corresponding period in 2011, an increase of 3,6%. Also the income for tourism for the period January – October 2012 is estimated at €1.823,2 million compared to €1.642,9 million for the corresponding period in 2011, an increase of 11,0% ( Statistical Service of Cyprus, 2012).

A closer analysis of the revenue per visitor per day confirms the negative trend in revenue per guest and day. **Table 4: Revenue per Visitor from 1999 to 2011** presents the picture of the period under review. The cost per visitor per day is between 70 and 84 Euro, and for most of



the years the increase does not include the corresponding increase in inflation. With these data, the emphasis among the operators in the industry is to reduce costs rather than to upgrade and improve the quality of existing products and services.

**Table 4: Revenue per Visitor from 1999 to 2011**

Year	Revenue per Visitor in Euros	Daily Cost per Visitor in Euros
1999	719,43	69,85
2000	759,47	73,03
2001	805,69	82,21
2002	800,02	77,67
2003	760,38	76,04
2004	714,52	71,45
2005	695,64	72,46
2006	731,10	76,96
2007	769,05	84,51
2008	745,82	81,96
2009	697,27	76,63
2010	713,21	78,37
2011	731,25	82,16

The negative image of tourism could be reversed with a coordinated and carefully formulated strategy which will extend the model of "sun and sea" to include the natural beauty, culture, tradition, cuisine and all other positive attributes that characterize the island. Improving the quality of services that identifies with the traditional hospitality should be a key objective. To this end there should be a systematic effort for training and retraining of inactive personnel to staff the effort.

The state's efforts to upgrade services into a category of more affluent visitors interested in nautical tourism and marinas where they can anchor their boats or play golf are in the right direction but there should be an acceleration of procedures so that all planning and good intentions are not undermined by bureaucracy and inertia. Furthermore, the function of the district companies for tourism development and promotion in which all stakeholders of the district participate is also positive.





## 5. The Troodos Region

### a. General Information

The Troodos mountain range stretches across most of the southwest part of the island and rises about 2000 meters above the sea level, constituting the biggest mountain range of the island. It provides one of the most picturesque and beautiful places of Cyprus which offers a unique and all year long destination for tourists in Cyprus, differentiated from the sun and sea element. Therefore, it can provide an important source in national economy mainly in the terms of tourism and agriculture, due to the mild climate throughout the year.

The area is divided in five large regions, which are constituted by many small charming villages and where the population of the wider area of Troodos is distributed. The villages with the higher altitude belong to the Lemesos Mountain Resorts, in the east slopes of Troodos is the Pitsilia area, northern is the Solea Valley which is also known as “valley of apples” (Cyprus Tourism Organization - CTO, 2013), while the Marathasa Valley, also known as “valley of cherries” (CTO, 2013) is located in the west side of the massif. Lastly, the picturesque renowned region of the wine villages and Koummandaria is located in the south slopes of the Troodos range. The number of villages is about 96 and according to the census of 2012 their population is 22,334 out of 862,000, which is the total population of the island. This means that only 2.59% of the total population of Cyprus living in the villages of Troodos region.

The Cypriot economy is built mainly on services including tourism and financial services and the construction industry, which is directly linked to tourism through the construction of residences for long term tourists and retirees from North Europe and the UK. The economic crisis and the decline in the tourism industry has resulted in the decline of other industries as well such as the construction and trading for goods consumed by the two industries. According to Adamou and Clerides (2010), countries should not be hugely dependent on tourism, because on the one hand, tourism can contribute to the economic growth but on the downside it can affect other industries as well. Also tourism is sensitive to external factors, economic crises, social and civil unrest war etc. Other economic activities can be supported to the economic growth and lead the economy forward when the tourism-related growth reaches its limits. The most promising and critical factors for the growth of an economy which seeks to be strong are Research, Development and Innovation. Cyprus, unfortunately invests less than 1% of GDP in R&D as opposed to about 3% for most highly developed and competitive countries (Georgiou, 2012b).

Indeed, the decline of the tourist product, its adhesion to past practices and the non-enrichment with innovative elements had an enormous impact on the economy of Cyprus. During 2000, 20% of the GDP of Cyprus was coming from the tourist sector, while during 2009 it offered only 10% of the GDP (CTO, 2010). The decline in tourist sector is an outcome of combination between endogenous and exogenous factors. Probably the most important cause of the decline is a combination between the economic crisis and the rise in the oil price affecting thus the transportation costs, the continuous intense political situation in the



region, the crucial competitive problems of the Cypriot tourist model with continuous loss of its competitiveness and the continuous growth of competing tourism destinations in the region (Clerides and Pashourtidou, 2007).

Countries such the United Kingdom, Germany, Scandinavian countries, Russia and Greece are the traditional places of origin of the tourists in Cyprus. Therefore, the economic depression which mainly affected European countries in combination with the rise in the transportation costs had a significant impact on the tourist product of the island. Also, it seems that the sun and the sea tourist dimension should be changed and enriched with other elements of the Cypriot beauty and be more competitive in order to be able to compete its Mediterranean competitors. Indeed, the tourism in all countries, except Italy, in the area of Mediterranean Sea and South-East Europe recorded an increase the last years. Notably, Turkey experienced over 100% increase in its arrivals between 2000 and 2005; Egypt 61.1%, Croatia 45.2% and Slovenia 42.7%, while Cyprus not only recorded significant decrease but also it was characterized as “worse” in terms of value for money than other rival destinations by one in four tourists during 2006 (Clerides and Pashour Cyprus Center for European and International Affairs – University of Nicosia – Cyprus tidou, 2007).

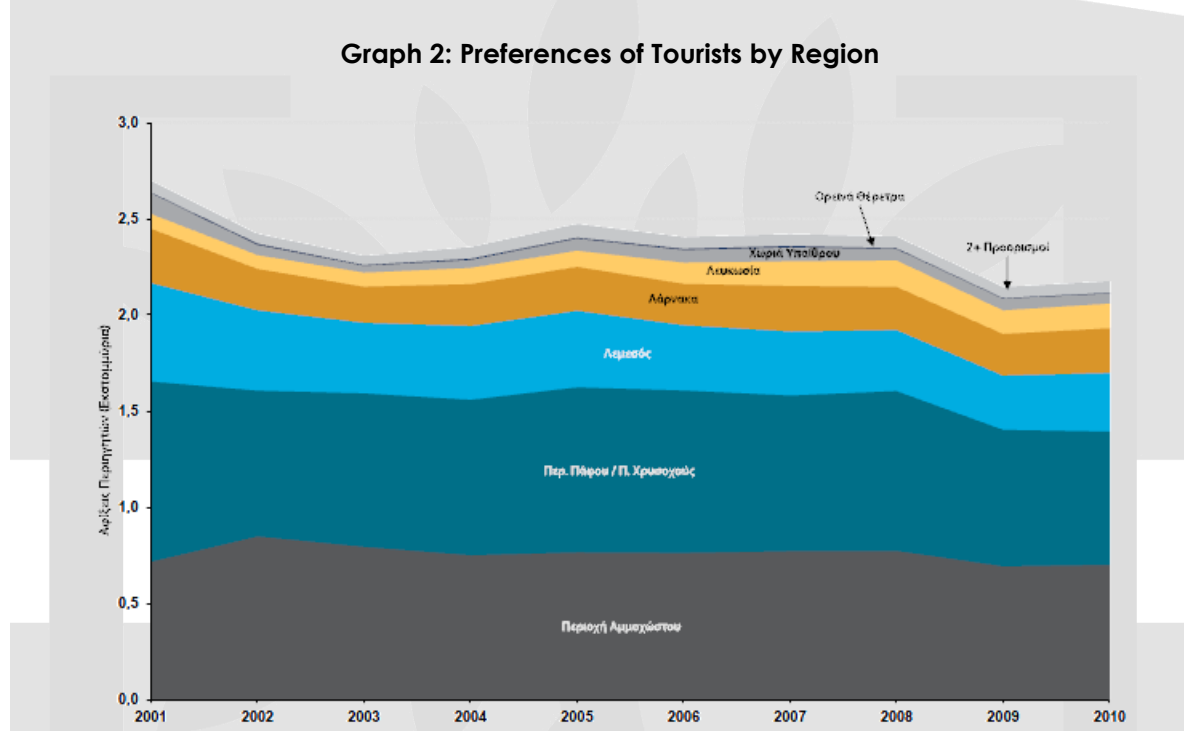
Indeed, trying to enrich and differentiate the tourist product of Cyprus, the Troodos region has been recently entered in the promotional program of the Cyprus Tourist Organization, as one of the six areas of the country which constitutes authentic and exceptional tourist destination (Troodos Regional Board of Tourism, 2013; CTO, 2010). A separated logos has been created promoting the region as the “green heart of Cyprus”, as well as a separate web page. The latter includes all the important information that tourists need for enjoying a visit and overnight stay.

Also, recently there is increased interest for renovation and upgrade of the Troodos region by many companies and organizations. For instance, besides the Troodos Regional Tourism Board and the sister organization the Troodos Development Company, other organizations such as the Board for Marathasa's Development or the initiative for the development of Pitsilia run a number of activities, events and projects to promote the region its distinctive culture and natural beauty of the villages and the surrounding area. Notably, they also support the conduct of academic research about the region in order to assist in the sustainable development of Troodos including of course tourism, agriculture and small scale manufacturing in the form of vegetable, fruit, milk and meat processing (e.g. Board for Development of Marathasa, 2007; Papastavros and Georgiou, 2009, Kordatos, 2011). Additionally, it seems that recently there are plans for investing in the upgrade of the region. For instance, the Department of Forests of the Ministry of Agriculture, Natural sources and Environment of Cyprus is working towards further developing the Troodos National Forest and the Amiantos mine (ALA Planning Partnership and Chrysis Loizides, 2012).

However, despite the promotion by the CTO, and all the effort and the fact that Troodos per se has a unique beauty, the proportion of tourists visiting the region is relatively small in comparison to the overall tourist number visiting the island. The popularity though of the region among the domestic tourists is high due to many reasons but mainly relaxing and escaping from the cities (Farmaki, 2012).



The Graph 2: Preferences of Tourists by Region shows indicatively that there is a significant problem of attracting foreign tourists to the mountainous resorts of Cyprus. For example, in 2010 approximately 120,000 tourists out of 2,172,998 visited and stayed in the countryside of Cyprus, which however includes other areas besides Troodos region. The mountainous resorts which are refer to Troodos region attracted during 2010 approximately about 60,000 tourists, meaning that only 2.76% of the tourists coming in Cyprus visited and stayed in the mountainous resorts.



Graph 2: Preferences of Tourists by Region (Adopted by CTO 2010, p. 81)  
(Source: CTO Tourism Strategy 2011 – 2015 p.79)

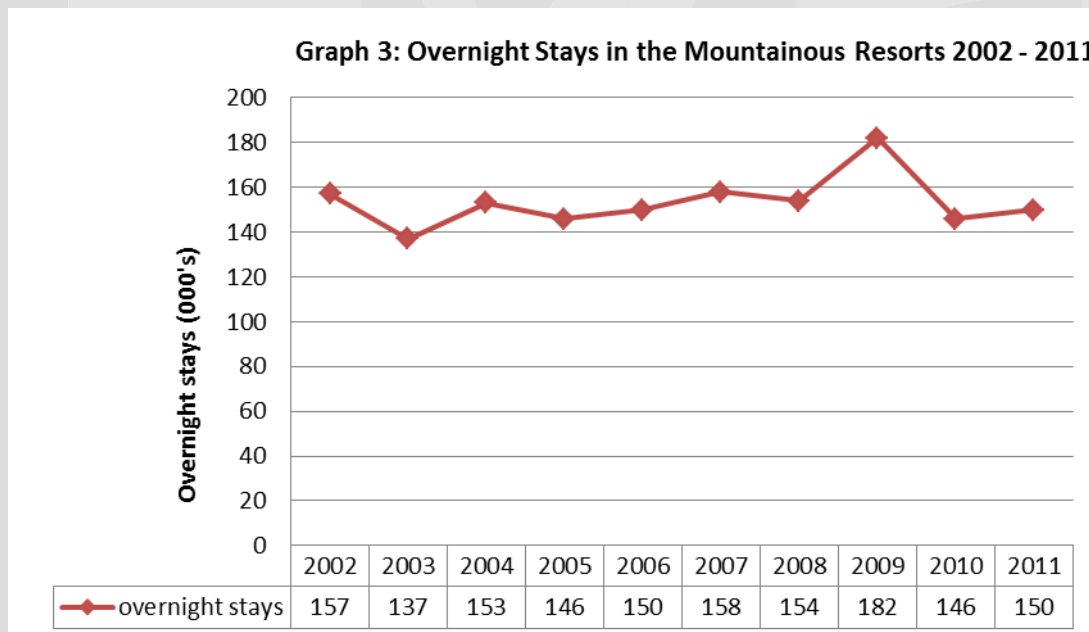
In addition to the small percentage of tourists visiting mountainous Cyprus, unfortunately, the level of tourists' satisfaction regarding the cleanliness and the protection of the natural environment is low (Clerides and Pashourtidou, 2007). This is probably due to the reason that after the domestic market, the main foreign markets for Cypriot rural tourism seem to be the UK and the German one (Farmaki, 2012), where the preservation and the protection of natural environment are among their national priorities.

Cyprus attracts both groups and individuals tourists, the average duration of staying is 9.8 days and the average spending per day is €74.7 (Statistical Service of Cyprus, 2012b). Both, duration of holidays and spending have decreased during the last years compared to previous years. This could be related with the trend for more trips per year of shorter duration (CTO, 2010). Specifically though for the Troodos region, there are no data for average spending and duration of holidays. However, it is worth noting that the area of Troodos is a



region of an exceptional beauty which is provided for different types of tourism throughout the year.

Troodos provides different types of accommodation with nearly 2000 available beds. It can be thus found a range of choices; from traditional village establishments and camping sites, ideal for agrotourism to 4\* star hotels (Troodos Regional Board of Tourism, 2013). According to Cyprus Statistical Service (2012c), there were 150,000 overnight stays in the mountainous resorts out of 14,285,000 which was the total number of overnight stays in the island during 2011. The Graph 3: Overnight Stays in Mountainous Resorts 2002- 2011 shows the fluctuation in the overnight stays between the years 2002 – 2011 in the mountainous resorts of Cyprus.



The accommodation establishments are distributed in the various villages of the region of Troodos. Per area, as it is described before, there are some villages having the majority of the accommodation establishments. For example in the area of Pitsilia, the base of the accommodation is at Agros village, while in Solea valley, the base is at Kakopetria. However, the visitor has a plethora of accommodation options in other villages in the area as well. The area which attracts the main interest of tourists seems to be the area around the villages of Platres, Fini, Mandria, Kakopetria, Omodos (Troodos Regional Board of Tourism, 2013; Troodos Regional Tourism Board, 2011, Troodos Regional Tourism Board, 2008).

## 6. National Strategy on Tourism 2011 – 2015

The negative image of tourism could be reversed with a coordinated and carefully formulated strategy which will extend the model of "sun and sea" to include the natural



beauty, culture, tradition, cuisine and all other positive attributes that characterize the island. Improving the quality of services that identifies with the traditional hospitality should be a key objective. To this end there should be a systematic effort for training and retraining of inactive personnel to staff the effort.

The state's efforts to upgrade services into a category of more affluent visitors interested in nautical tourism and marinas where they can anchor their boats or play golf are in the right direction but there should be an acceleration of procedures so that all planning and good intentions are not undermined by bureaucracy and inertia. The Cyprus Tourist Board in an effort to address the problems of the sector has put together a lengthy National Strategy on Tourism 2011 -2015 (CTO, 2010). The objectives of the strategy are:

- (a) Increase of the direct and indirect income from tourism.
- (b) Increase the number of arrivals / tourists
- (c) Increase the annual season period in to the winter season
- (d) Improve the sustainability of the tourist business
- (e) The upgrading of the tourist experience and tourist product with significant value added

This strategy has been formulated into Strategy Proposals that include:

- (a) Extension of the season into the winter months and optimization of the capacity of the hotels and other tourist businesses.
- (b) Improve the declining competitiveness of the local tourist industry in relation to competitors.
- (c) Upgrade the overall structured landscape of the main tourist areas with respect to the local environment and culture. Give special emphasis on the critical areas of cleanliness and respect of the environment.
- (d) Further promotion of professionalism among the providers of tourist services, though training for life and skill development of the people working for the industry.
- (e) In the cultivation and promotion of a tourist friendly culture among the people of Cyprus ( Need to rediscover the lost tradition of the warm hospitality and the respect for the visitor. Xenos – Filoxenia)

#### **7. Troodos the Green Heart of Cyprus Nature and Culture Park: Regional Tourism Strategy:**

In the effort to upgrade and further develop the tourist offer the Cyprus Tourist Organization has established six local tourist development companies for the main urban tourist areas and the Mountainous Troodos Region. The regional tourist strategy is the development of a marketing strategy that projects and promotes Troodos as an authentic and unique destination in Cyprus as a nature and culture park. The elements of the strategy include:

- (a) Encompass environmental and cultural values:** Troodos can't compete with the seaside areas that attract the great majority of tourists that come to Cyprus for the sea, the sun and the nightlife. Troodos has a lot to offer to the discerning





visitor who would like to explore the natural beauty and the culture of an area quite distinct from the noise and fast life of the seaside resorts. It offers a number of parks, nature trails, points of interest, old communities with a characteristic architecture and character, a number of monasteries, 10 medieval churches that are part of the UENSCO World Heritage and many other features.

**(b) Promote the unique traditional culture and lifestyle:** The communities and people of the Troodos area share a traditional, to some extent conservative, religious culture and lifestyle that is reflected in their daily lives. They used to live spartan lives, living out of the products of their land. They are hard-working, working on full time jobs but also their small lots on the back of the mountains. The local cuisine is very much the essence of the Mediterranean diet with lots of fruit, nuts, vegetables, pulses, some milk and cheese and only occasionally meat.

**(c) Promote sustainable tourism:** Following from the principles listed above, the tourism strategy for Troodos has to be part of a sustainable "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" as defined by the Brundtland Commission in 1987.

Such a strategy can offer a number of competitive advantages as it (a) lead to efficiencies and cost reductions, (b) it can contribute to the increase of business opportunities and therefore profits and (c) of course it promotes an environmentally friendly image that in itself it can add value.

**(d) Contribute to the local economy, business and employment:** The strategy aims to revive the local economy and use agriculture, small scale or cottage industry and tourism as the engines of growth for the local economy.

The area is well known for its fruit and vegetables and therefore both the agriculture and the local cottage industry of processing fruit, vegetables, milk and meat into the traditional products associated with the area will supply the tourist enterprises in the area and also the tourists, locals and foreigners who would like to purchase the products and take them home with them for their own use and that of their friends and family.

The development of the local economy will boost employment in the area and allow more people to remain in their communities instead of moving into the big cities.

**(f) Contribute to the upgrade, survival and viability of the surrounding Communities:** The main objective of the strategy is of course the sustainable development of the area and the long term survival of the local communities.

The three sister companies: (a) the Troodos Regional Tourism Board (b) the Troodos Development Company and (c) the Troodos Network work together to implement this strategy that is executed through a series of actions including the formation of specific tourist packages that are available to tourists in groups and in individual basis, the operation of a





number of thematic centres, Troodos shops and info-points and last but not least the design of the Troodos portal that will provide a comprehensive point of information on “Trooding” that is experiencing Troodos. The portal will be accessible on portable devices such as tablets and smart phones as well.

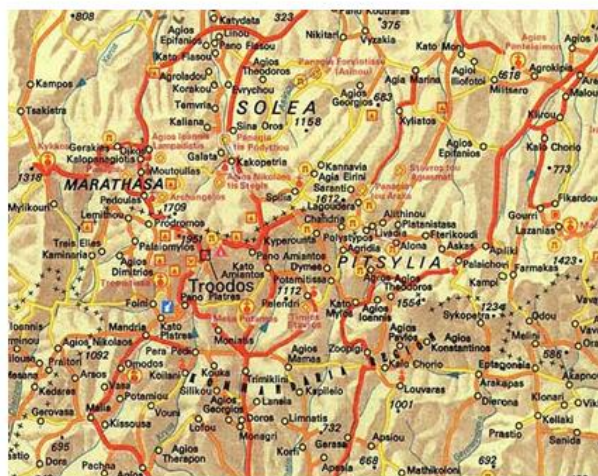
The Tourist packages are created in such a way as to provide within a short period of time of 3-5 days a different view of Cyprus based on the needs of the tourists along the lines of what Troodos has to offer in terms of natural beauty and sports, culture, religion, cuisine, herbal and mushrooms, wine making and other traditional products or a combination of the above.

The thematic centres, Troodos shops and Info points will cover the whole region and based on the needs of the area will serve as points of information, shops and or interactive thematic centres for promoting different aspects of the local culture such as art, byzantine art, traditional arts and crafts, wine making, bread and bakery products, etc. **Map 1: Map of Cyprus** provides a view of the whole island and **Map 2: The Troodos Region** provides an excerpt of the map of Cyprus showing the area of Troodos and **Graph 4: Theme Centres** provides a schematic representation of the various centres planned to start operation in early spring 2013 and also the main roads leading in the area with the arrows.

Map 1: A Visitor’s Map of Cyprus



Map 2: The Troodos Region





**Graph 4: Theme Centres**



## 8. Conclusions

Cyprus is faced with a midlife crisis. The current economic and social model is outdated and a paradigm shift is needed. Tourism contributes less than 10% to GDP compared to 20% at the turn of the century. The Sea and Sun model needs to be updated to include more of the rich culture and natural beauty of the island. There is a need to upgrade the infrastructure with respect to the local culture and environment but also pay more attention to keep areas clean and orderly. A shift to thematic value added offer as opposed to mass tourism.

The Troodos Region is a unique area that has a lot to offer to the discerning visitor: (a) a cool comfortable summer with close proximity to urban areas and the sea (b) a rich local culture and lots of points of interest (c) ten unique medieval / byzantine churches part of the UNESCO World Heritage (d) a stunning beauty with a variety of surroundings and (5) a unique healthy cuisine local delicacies wines and spirits. Unlike the coastal areas there is clearly room for improving the tourist product and attract more tourists that would like to find out what Cyprus can offer beyond the sun and the sea.

## References

- Adamou, A. and Clerides, S. (2010), "Prospects and Limits of Tourism-led Growth: The International Evidence" *Review of Economic Analysis* 3, pp. 287-303
- ALA Planning Partnership και Χρήστης Λοϊζίδης, (2012) «Γενικό Σχέδιο Αξιοποίησης για το Μεταλλείο Αμιάντου» Δημόσια Συζήτηση στις 24 Νοεμβρίου 2012. (ALA Planning Partnership and Chrysis Loizides, (2012), "Master Plan for Amiantos Mine" Public Discussion on 24<sup>th</sup> November 2012).
- Central Bank of Cyprus (2012). "Bulletin on the Cyprus Economy June 2012" <http://www.centralbank.gov.cy> accessed 09 Sep. 2012.



- Clerides, S. and Pashourtidou, N. (2007), "Tourism in Cyprus: Recent Trends and Lessons from the Tourist Satisfaction Survey", *Cyprus Economic Policy Review*, Vol. 1, No. 2, pp. 51-72.
- Cyprus Tourism Organization [CTO] (2010), "Tourism Strategy 2011-2015", Nicosia: Cyprus Tourism Organization (ISBN 978-9963-44-124-2)
- Cyprus Tourism Organization [CTO] (2013), "Rural and Nature" [Online] Available at: [www.visitcyprus.com](http://www.visitcyprus.com)
- Department of Agriculture (2010). "Cyprus National Strategy for Sustainable Operational Programs for the Producers Organizations for Fruit and Vegetables"
- Department of Agriculture (2010a). "Rural Development Programme 2007-2013 for Cyprus"
- Department of Agriculture (2010b). "Description of Rural Development Programme 2007-2013 for Cyprus" ( a summary in English)
- Εταιρεία Αναπτύξεως Μαραθάσας (2007) «Μελέτη προστασίας και αναβίωσης Μαραθάσας», Μελέτη από την αναγνωρισμένη ομάδα τοπικής δράσης. Board for Marathasa's Development, (2007) "Study for protection and revival of Marathasa" Study by Marathasa's recognized local group.
- Εταιρεία Τουριστικής Ανάπτυξης Τρόοδους (2008) "Στρατηγικό Σχέδιο Ανάπτυξης Τρόοδους: Β' φάση – Πρόταση Ολοκληρωμένου Αναπτυξιακού Προγράμματος". Μελέτη από Πανεπιστήμιο Θεσσαλίας και A.L.A. Planning Partnership LTD. pp 1 -433. (Troodos Regional Tourism Board (2008). "Strategic Plan for Troodos
- Farmaki, A., (2012), "An exploration of tourist motivation in rural settings: The case of Troodos, Cyprus" *Tourism Management Perspectives*, Vol. 2-3, April-July 2012, pp. 72-78.
- Georgiou, E. Kyriakos (2012a ). "Support for Farmers' Cooperatives; Country Report Cyprus". Wageningen: Wageningen UR
- Georgiou, E. Kyriakos (2012b). "The Republic of Cyprus and the Presidency of the European Union: Time to Lead or Time to be Led? The Case for Research and Innovation." European Alliance Innovation Academy  
<http://eai.eu/the-innovator/republic-cyprus-and-presidency-european-union-time-lead-or-time-be-led-case-research-a>.
- Georgiou, Kyriakos E. (2012c) "Cypriot Economy and Tourism" Antilogos
- Georgiou, Kyriakos E. and Christou, Stephanie (2012). 2BPARKS e-Paper on the Local Strategic Tourism Plan for Troodos". Paper presented in the context of the project 2BPARKS - Creative Sustainable Management, Territorial Compatible Marketing and Environmental Education to be Parks MED-2039-1 pp.1-5
- Kordatos Charalampos (2011). "Rural Development of the Solea Region of Cyprus" Dissertation Middlesex University.
- Republic of Cyprus, Ministry of Finance (2012). "Main Economic Indicators 2002 -2013" <http://www.mof.gov.cy/> accessed 10 Sep 2012.
- Troodos Regional Tourism Board (2012) "Troodos Regional Tourism Strategy"
- Troodos Regional Board of Tourism (2011), "Καλοκαιρινές Αποδράσεις στο Τρόοδος (Summer holidays in Troodos)" [Online] Available at: <http://www.mytroodos.com/uploads/promos/KATALOGOS%202011.pdf>



- Statistical Service of Cyprus (2011). "Statistical Abstract 2010" General Statistics, Series I, Report 56. <http://www.cystat.gov.cy/mof/cystat/>
- Statistical Service of Cyprus (2012) "Tourist Statistics 2012" <http://www.cystat.gov.cy/mof/cystat/>
- Statistical Service of Cyprus (2012a) "The Census 2011" <http://www.cystat.gov.cy/mof/cystat/>
- Statistical Service of Cyprus (2012b), "Per person and per day expenditure of tourists", [Online], Available at: [http://www.mof.gov.cy/mof/cystat/statistics.nsf/services\\_71main\\_en/services\\_71main\\_en?OpenForm&sub=1&sel=2](http://www.mof.gov.cy/mof/cystat/statistics.nsf/services_71main_en/services_71main_en?OpenForm&sub=1&sel=2)
- Statistical Service of Cyprus (2012c), "Accommodation and Overnight stays 2000-2011", [Online], Available at: [http://www.mof.gov.cy/mof/cystat/statistics.nsf/services\\_71main\\_en/services\\_71main\\_en?OpenForm&sub=1&sel=2](http://www.mof.gov.cy/mof/cystat/statistics.nsf/services_71main_en/services_71main_en?OpenForm&sub=1&sel=2)
- Statistical Service of Cyprus (2013), "Describing the Residents of Cyprus in a different way", [Online], Available at: <http://www.cystat.gov.cy/mof/cystat/statistics.nsf/All/C307CC429F5BBFDAC2257B13003A103A?OpenDocument&sub=1&sel=1&e=&print>
- Troodos Regional Board of Tourism (2013), "Troodos: The Green Heart of Cyprus" [Online] Available at: <http://www.mytroodos.com>
- Παπασταύρος, Κ. και Γεωργίου, Κ., (επ.) (2009), «Προς την αειφόρο ανάπτυξη: Βιώσιμη Ανάπτυξη Ορεινών Περιοχών και Agenda 21», Λευκωσία: Πανεπιστήμιο Λευκωσίας. (Papastavros, K., and Georgiou, K., "Towards the sustainable development: Sustainable development mountainous regions and Agenda 21" Nicosia: University of Nicosia)





## 3.5 MARINE PROTECTED AREAS – ECONOMIC AND SOCIAL IMPACTS ON ISLANDS

V.S.Tselentis<sup>a</sup>, S.M.Manologlou<sup>b</sup>

<sup>a</sup>University of Piraeus Marine department (tselenti@unipi.gr)

<sup>b</sup>PhD Candidate University of Piraeus, Marine department (smanolog@webmail.unipi.gr)

### Abstract

Coastal regions have numerous and contradictory activities directly affecting their environment and the sustainable development of these areas. The concentration of these activities in close spatial coastal zones creates significant problems and pressures on marine ecosystems. The international community is developing and implementing important measures for the sustainable development of island communities, including the creation of marine protected area (MPA) networks, whereby an ecosystem-based approach to the management of human activities sustains biodiversity and at the same time, supports viable economic activities such as ecotourism. The laboratory of Marine Sciences of the University of Piraeus has contributed to the creation and development of MPAs in Greece, with studies mainly focusing on scientific observations of the marine environment, participation and direct involvement stakeholders and evaluating the socioeconomic impacts on island communities. Economic benefits of marine protected areas include job creation in novel areas such as environmental services and products including non-consumptive activities such as tourism and recreation. The economic value of biological resources is difficult to express in monetary terms whereas others such as the direct financial benefit to local economies from recreational and other activities centered on MPAs, are easier to calculate. The study utilizes the basic methods for valuation of environmental goods and services, based on direct costs, capital costs and operating costs such as labour costs for monitoring and protecting the area. The study also addresses indirect costs, mainly through the assessment of potential damages to those harmed financially (short or long term) by establishing this region, such as fishermen. The study finally concludes that the socioeconomic benefits arising from a protected area depend on a complex set of interactions between biological, social, economic and institutional factors.

Keywords: Marine Protected Areas, Socioeconomic impacts, Island development, Environmental services.



## 1. Introduction

A "marine protected area" (MPA) is a term that encompasses a variety of conservation and management methods. In practice, MPAs according to the international definition are defined as "Any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection to part or all of the natural or cultural resources there in."

Of the total Mediterranean sea surface (2.510.000 km<sup>2</sup>) only 95.660 km<sup>2</sup> are protected (3,8%), whereas the percentage of coastal areas protected (9.910 km<sup>2</sup>) represents 0,4% of the total sea surface (Blue Plan, 2005 and Rashid et al. 2005). Considering the deviation from the target of 10% described in the Barcelona Convention (CBD) (UNEP/MAP/RAC/SPA, ACCOBAMS, IUCN, WWF MedPO, WWF MedPAN, 2008) and the EU habitats and water directives (European Commission, 2006), it is clear that serious steps have to be implemented in order to avert a serious deterioration of the Mediterranean marine ecosystem. In this respect there are now (2007 data) around a hundred MPAs in the Mediterranean, mainly situated on the Northern coast (Abdulla et al. 2008 and references therein). Already there is a move to establish new MPAs in order to supplement existing ones aiming at creating a geographically and ecologically balanced network targeting valuable habitats representing the different Mediterranean ecoregions.

Many MPAs have been established in Europe (Italy, Spain, France, Croatia) and also in United States and Australia. Marine protected areas are recognized in most regions of the world as an important way to conserve life sustaining ecosystems and specific habitat for marine animals. Also they are used to protect and preserve representative samples of marine biodiversity for the benefit of future generations.

Marine protected areas have been shown to have substantial benefits for:

- Renewing fish and other marine populations and especially heavily exploited populations. They provide a refuge where individuals can mature and populations evolve unaffected by harvesting and other human impacts.
- Attracting important economic interest from marine ecotourism that is compatible with zoned MPA's. Diversity and abundance of marine life attracts tourists generating business opportunities and sustaining coastal communities. At the same time, marine protected areas provide a tool for regulating the impacts of tourism on the marine environment and ensuring equitable access rights.
- Scientific and educational initiatives. The oceans and the biodiversity they contain, provide the raw materials for new sources of food, textiles, medicines and energy.
- Encouraging support of marine conservation from human activities.

## 2. Benefits to fisheries and tourism

As far as fisheries is concerned, several studies have indicated that the mean species richness, abundance and biomass of certain species of fish has increased several fold in protected areas. The Department of Environment and Heritage in Australia, reported that in





2006 the biomass of certain species of fish had been increased 7 times more than in nearby fishing grounds. The BIOMEX program indicated that fish biomass export from MPA to fished areas in the NW Mediterranean, for adults as well as for eggs and larvae of some species or groups of species, was a fact, proving the importance of the “secondary impact” or “spill over” effect in which biomass and the improvement in stocks diversity, strengthens fisheries in adjacent areas and also preserves the marine ecosystems.

Concerning the benefits to tourism, several examples exist in the literature especially in France, Spain and Italy. In the Spanish Medes islands, over 30.000 beds were added to the hotel capacity in the region, and over 1200 new jobs related to the diving industry linked to the Medes MPA were created. Also the revenues from the visitors to the MPA are estimated to 2.5 million Euro per year. Finally, due to MPA the local economy earns an additional net income of 3 million Euros per year from tourism and recreational activities. The Port-Cros park in France is also an interesting protected marine area located on the Mediterranean coast of France, 8 nautical miles from the coast and consisting of a cluster of 3 islands. The protected area gathers 2,000 visitors a day during summer and as far as the diving activities are concerned, 27 clubs exist in Port-Cros National Park serving 40,000 divers annually from May through to September, which is the period of increased demand, while 30,000 divers are served during the remaining months. For the administration of the MPA the Management body has recruited 80 people into new jobs and 200 are employed as seasonal workers during the summer months. Furthermore the revenue earned by the MPA from vessel tickets is estimated to be 1,500 Euros per day. In Italy, Lavezzi Corsica is a successful tourist destination, as underwater activities for just two months provide Corsica with revenues amounting to 6.5 million Euros a year. Also in Spain, the protected Balearic islands near Gabrera, with a population of 1,1 million, an area of 5014 km<sup>2</sup> and a coastline of 1238 km, have become a tourist hot spot visited by over 11 million tourists per year. In 2006 after the creation of the protected area, the yachts and recreational vessels reaching the islands increased by approximately 2,000, meanwhile, the number of berths in the local ports has increased by 18,3%. Indicatively, during the first 8 years of the MPA operation, visitors surpassed (25,000 of which 7,000 visited the area in first 2 years).

### 3. Conclusion

The above data indicate that Marine protected areas act in a beneficial manner to local communities and the respective areas in which the MPAs operate. The services provided, help maintain and protect marine biodiversity as well as support the sustainable development of coastal-island communities.

### References

- Abdulla A., Gomei M., Maison E. & Piante C. 2008. *Status of Marine Protected Areas in the Mediterranean Sea*. IUCN, Malaga and WWF, France. 152 pp.
- Bianchi, C.N. & Morri, C. 2000. Marine biodiversity of the Mediterranean Sea: situation, problems and prospects for future research. *Marine Pollution Bulletin*, **40**, 367–376.



- Badalamenti F, Ramos A.A, Voultziadou E, Sanchez Lizaso J.L, Pipitone C, Mas J, Ruiz Fernandez J.A, Whitmarsh D and Riggio S (2002). Cultural and socio-economic impacts of Mediterranean marine protected areas. *Environmental Conservation* 27(2):110-125
- BIOMEX Program. "Assessment of biomass export from marine protected areas & its impacts on fisheries in the western Mediterranean Sea", 2003-2005, BIOMEX, QLRT-2001-0891 / Final report.
- Blue Plan (2005) A Sustainable Future for the Mediterranean. The Blue Plan's Environment and Development Outlook. Edited by Guillaume Benoit and Aline Comeau Earthscan.
- Dulvy N.K., Sadovy Y. & Reynolds J.D. 2003. Extinction vulnerability in marine populations *Fish & Fisheries* 4(1): 25-64
- Boersma D.P, Parrish J.K, (1999). Limiting abuse: marine protected areas, a limited solution. *Ecological Economics* 31: 287-304.
- European Commission (2006) Guidelines for the establishment of the Natura 2000 network in the marine environment - Application of the Habitats and Birds Directives
- Klein C.J, Chan A., Kircher L, Cundiff A.J, Gardner N, Hrovat Y, Scholz A, Kendall B.E, Airame S, (2008). Striking a balance between biodiversity conservation and socioeconomic viability in the design of marine protected areas. *Conservation Biology* 22, 691-700.
- Milazzo M, Chemello R, Badalamenti F, Camarda R, Riggio S. (2002). The impact of Humman recreational activities in marine protected areas: What lessons should be learnt in the Mediterranean Sea? *Marine Ecology* 23(1): 280-290.
- Naidoo R, Balmford A, Ferraro P.J, Polasky & S. Ricketts T.H, Rouget M, (2006). Integrating economic costs into conservation planning. *Trends in Ecology & Evolution* 21, 681-687.
- RAC/SPA. 2005. Information report on the status of the monk seal in the Mediterranean. Seventh Meeting of National Focal Points for SPAs, Seville, 31 May – 3 June 2005. UNEP/MAP, UNEP(DEC)/MED WG.268/Inf.3: 1-45.
- Rashid H., Scholes R. and Ash N. Eds., 2005. Ecosystems and human well-being: current state and trends: findings of the Condition and Trends Working Group. <http://www.millenniumassessment.org/en/Global.aspx>
- Tselentis B.S., 2010. Une aire marine protégée pilote sur l'île de Milos en Grèce, MEDPAN Newsletter, <http://www.medpan.org/?arbo=lecture-actualites&sel=ID&val=515>
- Tselentis B.S. Kyriakopoulos K., Moghaddam-Gholipour K.S., Kavathas P., Kourkouli P., Preliminary Environmental Data from a Pilot Marine Protected Area on the Island of Milos, Greece. 10th Pan-Hellenic Symposium of Oceanography and Fisheries. Hellenic Centre for Marine Research. April 2012.
- UNEP/MAP/RAC/SPA, ACCOBAMS, IUCN, WWF MedPO, WWF MedPAN (2008). Supporting the development of a representative, effective network of MPAs in the Mediterranean Sea. 15th UNEP Conference of Parties to the Barcelona Convention Almería, 16 January 2008
- Weeks R, Russ G.R, Bucol A.A, Alcalá A.C, (2010). Shortcuts for marine conservation planning: The effectiveness of socio-economic data surrogates. *Biological Conservation* 143, 1236-1244.



## 3.6 RESTORATION OF FORESTS IN MEDITERRANEAN LANDSCAPES

A. Merino<sup>a</sup>

<sup>a</sup>Department of Soil Science and Agricultural Chemistry, University of Santiago de Compostela, 27002 Lugo, Spain (agustin.merino@usc.es)

### Abstract

Globalization, climate change and increased demand of forest products will represent main challenges for forest management in Europe. Under this scenario, future forest management should respond to the potential impacts on forests as a consequence of global change and overpopulation, and at the same time to the increased demand of forest products. In the Mediterranean area, one of the major threats of global warming and overpopulation is the increased frequency and intensity of fires (also insect pests and diseases). On the other hand, the surface of forest plantations managed in an intensively way is increasing dramatically, to meet the demand of wood and biomass as a source of energy. Forest management should strength the adaptive capacity of forests to maintain and enhance forest area, forest health and vitality in order to maintain the multiple services provided by forests (biodiversity, carbon,...). This presentation provides two examples of how forest can be managed to avoid the loss of their environmental functions.

Keywords: forest management; wildfire; tree harvesting; soil degradation; erosion

### 1. Introduction

Forest land is an essential component of European landscapes. Forest cover about a third of the land area in Europe (27% in central, 32% in southern and 50% in northern Europe, Eurostat, 2011). Trees and forests provide multiple benefits for the environment and society. Forest ecosystems supply high quality drinking water and also safeguard against both flooding and erosion. They are also a major provision of biodiversity.

However, these protective functions of Mediterranean forests are potentially at risk under the changing climate and intensification of land-management practices. Almost all forest land in Europe has been more or less intensively managed, and therefore strictly “natural forest” is scarce. Many of these forests are degraded due to mismanagement, and as a consequence, many of their functions are now reduced. In addition, the high demand for wood is leading to an increased area of intensively managed plantations. Although these systems provide opportunities for improving the water and carbon balance (biomass for energy, restoration of degraded areas, afforestation of marginal agricultural soils), knowledge-based management systems must be implemented to avoid soil degradation and other problems, such as decreased biodiversity. In addition, global warming affect the



frequency and intensity of fires, as well as insect pests and diseases, which makes up another cause of landscape degradation (FAO, 2012). The future forest landscape requires practical tools for decisions making in degraded forests, and rehabilitation tasks are required. This presentation is based on two major environmental problems associated with forestry in the European Mediterranean region: a) the transformation of natural forest to commercial forest plantations which are intensively managed and b) the degradation produced by wildfires. The general problems associated to these facts are discussed. Also, several strategies for the restoration of affected areas are shown. Some measures that may contribute to these objectives are discussed, in light of the results of different studies carried out in the region.

## 2. Managing forest plantations: the main aspects to prevent soil degradation in highly intensified managed systems

The use of low grade timber as a source of energy or raw material for the timber transformation industry is currently being considered in different regions of Europe. The conditions in the humid region of Southern Europe are optimal for intensively managed forest plantations and the generation of energy from forest biomass. The establishment of energy plantations is increasing dramatically and also the exploitation of the logging residues that remain in plantations after final cutting (whole-tree harvesting). With appropriate planning the use of biomass may provide an opportunity to improve the global C balance. This practice could also increase the profitability of forest land, and given that in many cases the presence of logging residues increases the risk of fire and spread of disease, it may also help in management of forest stands.

However, before logging residues are removed, their function in protecting the soil should be considered. Many tree stands are established on steep slopes, on nutrient-poor soil, and therefore the removal of biomass may favour erosion and deterioration of the nutritional status of the forest systems. Indiscriminate exploitation may affect the soil organic matter content. Information about the availability of the resource and data that will enable the elaboration of criteria to ensure sustainable exploitation of this resource is clearly required.

Logging residues together with the humus layer provide an effective buffer against the weight of heavy machinery used in felling operations and in the preparation of the land for the next rotation. Removal of the logging residues therefore exposes the soil directly to the weight of the machinery. Under such conditions the soils, especially fine-texture soils are easily compacted. In addition, the impact of raindrops on the unprotected soil favours the development of surface crusts on the soil (Mwendera and Reyen, 1994).

The data obtained in forest plantations show increases in the apparent density of up to  $1.5 \text{ g cm}^{-3}$  in highly mechanized soils where arboreal biomass has been extracted and heavy machinery used (Merino et al., 1998). The reduction in the pore space produced in these soils is sufficient to prevent root elongation (Skinner et al., 1989), thereby affecting growth of the next rotation and also delaying the establishment of scrub and herbaceous vegetation.





Soil erosion is the main threat in steeply sloping forest land, where shallow soils may be considered as a non-renewable resource. Erosion affects the forest system through loss of depth and fertility of the soil, which have repercussions on productivity. This process also affects aquatic systems linked to forest catchments, by reducing regulation of the water flow and increasing the turbidity and concentration of solutes in the water.

Although forest systems offer the best protection against soil erosion, in intensive forest exploitations, soil loss greatly depends on the practices carried out after felling. If the logging residues are left on site, the run-off will only increase slightly and the rate of erosion will be low. If, on the contrary, large amounts of the remains are removed from steeply sloping areas, the degree of erosion may be significant. In this respect, different studies carried out in Southern Europe show that the total removal of forest biomass causes large increases in run-off and erosion (Edeso et al. 1999; Fernández et al., 2006). The effect of the indiscriminate extraction of biomass on erosion is particularly important in clay soils, in which low infiltration rates favour run-off.

On the other hand, the tree fractions that are richest in nutrients are the fine branches, leaves and in the case of eucalyptus, the bark. This means that, despite the lower weight with respect to the total biomass, the logging residues accumulate a large portion of the nutrients that the stand has assimilated during the rotation (Merino et al., 2005). If this material is deposited on the soil, the nutrients released during its decomposition may be available to the next rotation. Removal of this material, on the other hand, implies the extraction of a substantial amount of nutrients from the system.

Logging residues accumulate 20-35 % of the carbon content of a tree, and therefore they can contribute to maintaining the levels of organic matter in the soil. This is especially significant because the soil organic matter is not only the most important short-term reserve of some nutrients, but it is also the soil component that is most involved in maintaining plant water reserves and in protection against soil erosion.

It must also be considered that increases in soil temperature following felling tend to favour soil microbial activity, although this effect also depends on soil moisture. In stands where the logging residues are removed, the lower inputs of plant remains along with the higher soil microbial activity will lead to a gradual loss of soil organic matter in the intermediate term. In fact, some studies have shown a reduction in the soil organic matter content in intensively managed plantations (Nave et al, 2010).

The application of wood ash or other clean organic waste products may partly mitigate the loss of soil organic matter, not only through the direct input of organic C (which in the case of ash is in the form of carbon and therefore much more resistant to decomposition) but also through the positive effects on plant production, thereby increasing the amounts of leaf litter and fine roots (Santalla et al., 2011).

### 3. Managing forest soils affected by wildfires

Although wildfire is a natural agent in certain fire-prone environments, it is also a major agent of erosion and land degradation. The climate and vegetation found in Mediterranean



type regions promote wildfires of special intensity and fast-spreading. These areas are characterized by mild wet winters and dry summer, which favours the accumulation of fuel load during autumn to spring, which became dry in summer.

Although wildfires have a long history in the Mediterranean and neighbouring Atlantic coastal regions, from the 60's a dramatic increase in fire activity has taken place. Human activity is a major driver of wildfires: afforestation schemes with flammable plantations, the encroachment of shrubs after rural depopulation and urbanization close to forests are identified as main causes (Shakesby and Doerr, 2006). In addition, there are evidences that the global warming, through a decrease in the rainfall and the increased warmth favour the occurrence of fires (FAO, 2012).

Wildfires affect soil properties which are important for soil conservation and subsequent rehabilitation (Certini et al., 2005; Vega et al., 2012). Burnt areas are prone to soil erosion. This is especially true in Mediterranean areas where most of the annual rainfalls occur after summer, from autumn to spring. Episodes of special rainfall intensities (50 mm in less than 1 hr) of special devastating effects on erosion are rather common in this season (e.g. Fernández et al., 2006). Fire reduces the soil organic matter content of the mineral soils (Martín et al. 2009), which leads to a decrease in the stability of the soil structure, producing a more easy eroded soil. In addition, certain characteristics of these environments favours the soil water repellency (Doerr et al. 2006), which has important effects on hydrological processes and erosion.

The partial or complete combustion of the vegetation and litter leads to a rapid response in terms of overland flow and runoff. This is due to the lower storage capacity of water, to the decrease of surfaces of transpiration and evaporation and also to the lower obstacles to overland flow. As a consequence, smaller lag time between rainfall event and flood peak is frequently observed after wildfire.

As a consequence of the higher soil erodibility and the hydrological processes, the erosion rates in these environments can be as high as 200 t ha<sup>-1</sup>. Although in most cases erosion reaches its maximum during the first year after wildfire and decline thereafter, in several studies highest erosion is delayed until later, even to the third year. This reflects the high variability in rainfall intensity and also the slow rate of vegetation recovery

### **Restoration techniques in areas affected by wildfires**

A high number of plant species can recover or regenerate after fire. Therophytes and post-fire resprouters, such as woody plants, benefit from the low competition. In addition, burnt soils as a consequence of the presence of soluble ash normally show enhanced nutrient supply, which favours the revegetation in many areas. However, when the severity of the fire is high, the natural regeneration can be difficult because of the high degree of soil degradation. In these conditions, the high erosion rates, the degradation of soil structure, the lack of soil organic matter and nitrogen limit the establishment of the plants (Robichaud, 2009). In severely burned areas, post-fire rehabilitation treatments must be implemented to prevent and reduce fire adverse effects. Different strategies can reduce erosion by





providing soil cover, trapping sediments or promoting infiltration. A detailed protocol can be found in handbook by Napper (2006). Here we expose a brief summary of the main techniques employed to avoid degradation of soils and waters.

Artificial mulching provides immediate ground cover and protects soils from erosion and nutrient capital loss. Mulching can reduce downstream peak flows by absorbing rainfall and allowing water repellency to breakdown. Mulch helps to secure seeds that are either stored in the soil or applied as an emergency treatment by maintaining a favorable moisture and temperature regime for seed germination and growth. Mulching methods include aerial and ground application using straw, woodchips, or fiber materials.

Slash spreading provides soil cover to moderate- and high-burn severity areas. The treatment is designed to reduce hillslope erosion by increasing ground cover with available onsite materials. Slash spreading involves felling, lopping, and scattering submerchantable trees and brush to provide soil cover.

Erosion barriers reduce the slope's length, slow overland runoff, trap sediment, and improve infiltration by installing logs, fiber rolls, or sandbags. Knowing storm type and erosion potential, trapping capacity of each structure, and implementation production rates are critical factors for selecting appropriate erosion barriers.

Log erosion barriers (LEBs) are used in timbered areas with moderate- and high-burn severity where hillslope erosion rates are increased significantly from the fire. LEBs (contour felled logs, log terraces, or terracettes) are logs placed in a shallow trench on the contour. LEBs trap sediment if laid in a bricklayer pattern on the hillslope. The potential volume of sediment stored is dependent on slope, size, and length of the felled trees, and proper implementation.

Fiber rolls are used in high-burn severity areas where soil erosion and water quality deterioration are at risk. Fiber rolls are used where LEBs are not practical. They are for intensive treatment of high values at risk including heritage sites. Fiber rolls, commonly called wattles, are prefabricated rolls manufactured from rice straw and wrapped in ultraviolet degradable plastic or jute netting.

Seeding provides a vegetative surface cover to minimize soil and wind erosion. Seeding methods include both aerial and hand application. Because seeding may be ineffective until the second year, teams may recommend applying mulch for first-year effectiveness. Previous effectiveness results of seeding alone showed poor results the first year and variable results in subsequent years. Seed mixes vary from region to region. Revegetation information available from the fire-effects information system helps assessment teams evaluate natural vegetation recovery rates for a particular species and area. Seeding alone has become less popular as a treatment due to its limited effectiveness.

#### **4. Conclusions**

Forests provide multiple benefits for the environment and society. However, these protective functions of Mediterranean forests are potentially at risk under the changing



climate and intensification of land-management practices. Two major threats for forest conservation in Mediterranean environment are the overexploitation of forest resources and the wildfires.

The continual extraction of biomass in forest systems may cause different types of soil degradation such as compaction, erosion, loss of nutrients and loss of organic matter. Most of these problems can be prevented or reduced by prior planning forest management according with the land limitations. In addition, prior assessment of the possible effects on soils and water are essential. If these aspects are considered carefully, biomass exploitation may also provide an opportunity to obtain a series of environmental benefits, such as the generation of renewable energy and the C sequestration in biomass and soils.

Wildfire promotes the reduction or elimination of vegetation and changes in soil properties, leading to increased soil erosion. The application of emergency post-fire rehabilitation treatments is generally necessary in severely burned areas. Treatments such as mulches and seeding are used to increase ground and vegetation cover. However, the effectiveness of these treatments in the field has been tested in the specific sites.

## References

- Certini G, 2005. Effects of fire on properties of forest soil: a review. *Oecologia*, 143, 1–10.
- Doerr, S. H.; Shakesby, R. A.; Dekker, L. W.; Ritsema, C. J., 2006. Occurrence, prediction and hydrological effects of water repellency amongst major soil and land-use types in a humid temperate climate. *European Journal of Soil Science*, 57, 741-754.
- Edeso, J. M.; Merino, A.; González, M. J.; Marauri, P., 1999. Soil erosion under different harvesting managements in steep forestlands from Northern Spain. *Land Degradation and Development*, 10, 79-88.
- Eurostat (2011). Forestry in the EU and the world. A statistical portrait. Office of the European Union. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-31-11-137/EN/KS-31-11-137-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-31-11-137/EN/KS-31-11-137-EN.PDF)
- FAO, 2012. Forest Management and Climate Change: a literature review. Forest and Climate Change. Working Paper 10. FAO, Roma.
- Fernández, C., Vega, J.A., Gras, J. M., Fonturbel, T., 2006. Changes in water yield after a sequence of perturbations and forest management practices in an *Eucalyptus globulus* Labill. watershed in Northern Spain. *Forest Ecology and Management*, 234, 275–281.
- Fernández, C., Vega, J.A., Jiménez, E., Fontúrbel, T., 2011. Effectiveness of three post-fire treatments at reducing soil erosion in Galicia (NW Spain). *International Journal of Wildland Fire*, 20, 104-114.
- Knicker H., González-Vila F.J., Polvillo O., González J.A., Almendros G., 2005. Fire-induced transformation of C- and N forms in different organic soil fractions from a dystric cambisol under a Mediterranean pine forest (*Pinus pinaster*). *Soil Biology and Biochemistry* 37, 701-718.
- Martín A., Diaz-Raviña M., Carballas T., 2009. Evolution of composition and content of soil carbohydrates following forest wildfires. *Biology and Fertility of Soils*, 45, 511-520.



- Merino, A.; Balboa, M.; Rodríguez-Soalleiro, R.; Álvarez González, J. G., 2005. Nutrient exports under different harvesting regimes in southern Europe. *Forest Ecology and Management*, 207, 325-339.
- Napper, C. 2006. Burned Area Emergency Response Treatments Catalog. USDA Forest Service.
- Nave, L.E.; Vance, E.D.; Swanston, C.W.; Curtis, P.S. 2010. Harvest impacts on soil carbon storage in temperate forests. *Forest Ecology and Management*, 259, 857-866.
- Robichaud P.R., 2009. Post-fire stabilization and rehabilitation. In Cerdá A., Robichaud P. R.(eds) *Fire Effects on Soils and Restoration Strategies*. Science Publishers: Enfield, NH, pp 299–320.
- Santalla, M.; Omil, B.; Rodríguez-Soalleiro, R.; Merino, A., 2011. Effectiveness of wood ash containing charcoal as a fertilizer for a forest plantation in a temperate region. *Plant and Soil*, 346: 63–78
- Shakesby, R.A., Doerr, S.H., 2006. Wildfire as a hydrological and geomorphological agent. *Earth-Science Review*, 74, 269-307.
- Vega, J.A., Fontúrbel, T., Merino, A., Fernández C. Ferreiro, A., Jiménez, E., 2012. Testing the ability of visual indicators of soil burn severity to reflect changes in soil chemical and microbial properties in pine stands and shrubland. *Plant and Soil* (in press, DOI 10.1007/s11104-012-1532-9).



## 3.7 FOREST POLICY AND NATIONAL FOREST PARKS IN CYPRUS: THE FOREST PROTECTED AREA SYSTEM

T. Tsintides<sup>a</sup>

<sup>a</sup>Acting Director Department of Forests, Ministry of Agriculture, Natural Resources & Environment, Cyprus (director@fd.moa.gov.cy, ttsintides@fd.moa.gov.cy and ttsintides@cytanet.com.cy)

### Abstract

In this presentation the state forest policy of Cyprus is outlined with emphasis on the forest protected area system. Cyprus, the third largest island of the Mediterranean and since 2004 a member of EU, was known in antiquity as the green island (*Dasoessa Nisos*). Today, forest cover is much reduced. State forests, 18 % of the island's territory, are systematically managed while private forests are mostly abandoned agricultural lands naturally forested with no management. Due to the dry and hot climate, wood productivity is low and state forest policy focuses on non-wood products, especially nature conservation, forest recreation, ecotourism, and other protective functions. The concept of protected areas in Cyprus was first introduced by the Forest Legislation in 1967. Relative provisions enabled designation of National Forest Parks (NFP) and Nature Reserves (NR). A recent major amendment to the Forest Law introduced new categories that are more in line with IUCN definitions. Up to date 10 NFP and 4 NR have been declared covering 20.000 ha or 16% of the total state forest area. In NFP and other suitable forest areas, recreational facilities have been developed and managed including Nature Trails, picnic and camping sites, visitor centres and botanical gardens. Troodos NFP is the most popular among NFPs with more than one million visitors annually but also a very fragile area. The DF is also very active in nature conservation and maintains its own herbarium and employs personnel that are specializing in flora and fauna. It is also the competent authority in management of state forest areas that are part of the Natura 2000 network.

Keywords: Cyprus forests, forest policy, forests classification system, forest management, Troodos.

### 1. Introduction

Cyprus with an area of 9251 Km<sup>2</sup>, is situated at the northeast corner of the Mediterranean basin. On 1 May 2004, it became a full member of the European Union. Since 1974, about 37% of the county's territory has been under Turkish occupation. The population in the area effectively controlled by the government was estimated in 2011 at 840.000. Cyprus economy is heavily dependent on tourism and services and to a lesser extent on agriculture. The objective of this paper is to present an outline of the work carried out by the Forest



Department in managing the National Forest Parks in Cyprus in line with national and European laws and regulations.

## 2. Ecological Features

The climate of Cyprus is typically Mediterranean, with short, rainy and mild to cold winters, and prolonged, dry and very hot summers (up to 42 °C or even higher), separated by short autumn and spring seasons subject to unstable weather systems. The mean annual precipitation is about 460 mm and ranges from 320 mm in the central plain, to 1000 mm on the highest peaks; rainfall is usually restricted between November and April.

In terms of geomorphology, Cyprus' land area is made up of four distinct zones: (a) The Troodos range, occupying the central part of the island and consisting of basic and ultra-basic plutonic rocks of the well-known ophiolite complex of Troodos. (b) The Pentadaktylos range in the northeast part of the island, about 80 km long, made up mainly of limestone and metamorphic rocks; its highest peak is 1024 m. (c) The central plain of Mesaoria, which lies between the two ranges. (d) The coastal belt, which is composed of rocky, gravelly and sandy shorelines; also includes a narrow zone of varying width, where there is intense building and tourism development.

## 3. Forest Resources

High forests cover about 19% of the land, which is increased to 33% if maquis forests are accounted for. Most of the high forest is on state forest land, the latter covering 18% of island's area. Conifers (Pines, Cedar, Cypress and Junipers) make the largest part of forest vegetation whilst broadleaves (Plane, Alder etc) are confined along the narrow stream valleys on the mountain ranges.

Cyprus forests have low wood productivity (mean annual volume increment of state pine forests is equal to 1m<sup>3</sup>/ha/year) and are chiefly managed for their non-wood services, such as recreation and tourism, conservation of biodiversity, soil and watershed protection, production of game and aromatic plants, etc. Forest fires and climate change together with the rapidly expanding building development on privately – owned land, are considered to be the major threats to Cyprus forests.

## 4. The Department of Forests

The Department of Forests (DF) comes under the Ministry of Agriculture, Natural Resources and Environment. It has a dual mission: it is the Forest Authority of the country and the Managing Authority of the state forest estate. As Forest Authority it implements the state Forest Policy and Forest Legislation all over the country, providing technical advice and incentives to the public, but also implementing actions promoting public awareness on forest conservation, nature conservation and forest expansion. It also exercises control over forestry matters, with emphasis on forest protection. As manager of the forest estate (18% of the country's total area) it is responsible for the protection, management, proper use and development of the various state forests areas.





It is engaged with forest education, applied forest research, management of forest protected areas including Natura 2000 sites, forest recreation including development and management of nature trails, picnic and camp sites, visitor centres and botanical gardens. It is also responsible for the establishment of roadside plantations along highways and the tending of green spaces in main government buildings. DF is extensively involved into the systematic study of Cyprus flora and fauna and especially into the conservation of endemic, rare and threatened plants. DF employs 34 professional foresters with degrees in forestry and related fields (i.e. forest research and planning, landscape architecture, management of forests, parks and nature conservation, protection and preservation of wildlife, forest botany, etc.) and more than 290 forest technicians.

## 5. Objectives of Forest Policy In Cyprus

The main objectives of state forest policy as outlined in the official policy statement are:

- Forest preservation and protection
- Forest improvement and expansion
- Biodiversity conservation and landscape protection
- Promotion of recreation and ecotourism
- Employment of rural population
- Improvement of the protective functions of the forests
- Forest production: wood and other products
- Promotion of public awareness, forest training and applied research.

## 6. The Protected Area System in Cyprus

The first provisions on protected areas in Cyprus were introduced by the Forest Law in 1967, which provided for the declaration of:

- (i) National Forest Parks: for the provision of recreation and amenities to the people of Cyprus (not for nature conservation)
- (ii) Nature Reserves: for the permanent protection of flora and fauna.

These provisions were not in line with international definitions of protected areas, e.g. IUCN definitions. They remained in power until March 2012 when radical amendments were brought about to Forest Law. The protected forest areas categories provided by the amended Law presently in power, are generally more aligned with IUCN definitions and they include a greater number of categories. These are:

- (i) *Nature Reserve*: a natural forest with one or more typical or representative forest ecosystem, plant community, fauna or other natural element with no significant human impact, managed for scientific study and monitoring and where human presence is limited to ensure that natural processes are evolving with no human influence.
- (ii) *National Forest Park*: forest that maintains its naturalness to a significant degree and contains important elements of biodiversity or genetic



resources or landscapes and/or geomorphological features and is managed for the protection of the natural processes and of its natural features and provides opportunities for spiritual, scientific, educational and recreational activities that are environmentally and culturally compatible.

- (iii) Protective Forest: a forest that due to its position and/or soil and geological features, and/or ground incline it attains special importance for the protection of water or soil resources and/or human properties and habitations found at lower altitudes.
- (iv) Forest Park: a forest that due to its geographical location in relation to urban centers it can be valuable for human health, environmental education, amenity and recreation.
- (v) Forest Monument: a small forest area that contains one or more natural, cultural or geomorphological elements of exceptional or unique value.
- (vi) Forest Monument: a small forest area that contains one or more natural, cultural or geomorphological elements of exceptional or unique value.
- (vii) Micro – Reserve: small forest area (generally up to 5 ha) hosting one or more rare plant or animal species or other natural element of national, regional or international importance.

Designated forest protected areas that exist today in Cyprus have been declared based on Forest Law of 1967. That is, only National Forest Parks and Nature Reserves have been so far declared: 10 National Forest Parks (NFPs) and 7 Nature Reserves (NRs) designated, with a total area of 20.000 ha or 16% of the total state forest area under Cyprus Government control. It is obvious that there is need to revise the present classification to conform to new legislative provisions. Some of the major changes that inevitably will be brought about are:

- (i) Man-made forests e.g. plantations cannot be NFPs but they could be just Forest Parks like Athalassa NFP.
- (ii) NRs must be smaller in area e.g. between 50 – 200 ha, and must be selected carefully – a serious obstacle is that hunting must be prohibited in NRs.

Other national laws providing for protected areas are:

- (i) Marine Law: Providing for the designation of marine or coastal regions as protected (introduced for the protection of turtles – only one site designated so far)
- (ii) Nature Protection and Management Law: (Habitats Directive) providing for the designation of Natura 2000 sites for the protection of habitats and species (SCIs)
- (iii) Wild Life Protection and Management Law: (Birds Directive) – providing for the designation of SPA – Natura 2000 sites for the protection of birds.



## 7. The Troodos National Forest Park

This National Forest Park was declared as such in 1992. It covers an area of 9.000 ha or 90 Km<sup>2</sup>, and an altitudinal zone of 600 -1951 m. It is all state property (i.e., state forest) and a Natura 2000 site (both SCI & SPA). It is the most important site in Cyprus in terms of biodiversity (number of endemics, habitats etc).

Administratively it falls within the Troodos Forest Division – HQrs at Platania Forest Station, with 4 Forest Stations / Offices. The staff numbers 20 forest officials and 100 laborers. The main projects/works in progress are fire protection, restoration of the Amiantos Asbestos Mine, recreation, nature conservation and a number of EU - funded projects. There is a Management Plan which covers only aspects of the Natura 2000 site.

Visitor facilities comprise 9 picnic sites, 3 campsites, 2 visitor centers (plus one of the Troodos Geopark currently under construction), a Botanical Garden, 12 nature trails, 3 organized view points, car parks, information office by Cyprus Tourism Organization, hotels and restaurants in the NFP and at nearby villages, bicycle routes by Cyprus Tourism Organization, etc.

As regards visitor use in Troodos Park it is worth mentioning that the site is the most popular mountain resort in Cyprus. Apart from its scenic beauty, in summer it is attractive because of its cool climate and in winter because of the presence of snow. Regrettably, there is no systematic monitoring of visitor numbers. A survey by Cyprus Tourism Organization estimated one million visitors per year but now it must be considerably larger. In the frame of a European funded project a visitor counter placed along Kalidonia trail showed use by 29.000 visitors in two summer months. Damage by visitor use is certain but it seems to be localized near heavily used facilities e.g. picnic sites, popular trails and on the higher altitudes during winter, by skiers.

Among the strong points of the Troodos NFP is the fact it is state property, its high degree of naturalness, the beautiful landscapes and rich biodiversity; also the sufficiency of staff numbers, the variety and adequacy in numbers of facilities, the good communication system and the free public access to the Park.

On the other hand, among the weak points we can mention the rather low level of interest in nature conservation among Cypriots even among forest staff, the inadequacies in management planning, including lack of participative procedures – low interest by local communities; the fact that personnel is not adequately trained in protected area management and the lack of visitor monitoring and impact assessment. Finally, the fragility of ecosystems to wild fires and climate change, the lack of a simple and operational management plan, the rather low quality levels of facilities and interpretation/ information system and the fact that hunting is permitted over most of the area even along nature trails!

### Concluding Remarks

Natural areas in Cyprus can play an important role in promoting ecotourism and offering unique outdoor experiences. Sustainable management of these areas must acquire practical meaning through more thoughtful and integrated management planning. This is necessary in order to improve their recreational value but also to preserve their valuable biodiversity. The



conflict between outdoor recreation and nature conservation needs enhanced attention. Facilities and interpretation approaches must be enriched and improved. Management of certain facilities by government departments seems unproductive like in the case of visitor centers; therefore new more efficient management approaches must be adopted to ensure viability and better achievement of objectives. Environmental education techniques must also be improved and become more creative and imaginative. More national funds for nature conservation are needed. Climate change is a severe threat to the values of Troodos NFP and prompt action seems to be necessary.

### References

Department of Forests, 1982-2011. Departmental Annual Reports, Government Print Office, Nicosia.

### Appendix: Photographs of the Troodos National Forest Park (Property of Takis Tsintides)



Photo1: After a disastrous fire in 2007.





**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks



Photo 2: *Quercus alnifolia* forests (priority habitat)



Photo 3: Riverine Forest





**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks



Photo 4 : *Acinos troodi*, an endangered endemic of Troodos Park



Photo 5: Peat Grassland at Troodos



**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks



Photo 6: The Precious Cedar Forest.



Photo 7: The Caledonia Water Falls in Troodos.





**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks



Photo 8: Troodos National Forest Park Visitor Center



Photo 9: Nature Trail at Troodos National Forest



**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks



Photo 10: Maquis forest at Akamas peninsula (extension of the Troodos area)



## 3.8 ALTERNATIVE FORMS OF TOURISM AND NATURE PROTECTION IN GREECE: OVERVIEW AND DISCUSSION OF THE DADIA-LEFKIMI-SOUFLI FOREST NATIONAL PARK CASE.

C. Liarikos<sup>a</sup>

<sup>a</sup>WWF Greece 21 Lembesi str. GR-11743 Athens, Greece (c.liarikos@wwf.gr)

### Abstract

The Dadia-Lefkimi-Soufli Forest National Park is an area of vast ecological importance at a national, Balkan and European level. All efforts for the conservation of this unique site, though, are underpinned, limited or promoted, by local development, demographic and social trajectories and circumstances. As is the case in most alike areas in Europe and Greece, our study case is faced with many economic dependancies, political interlinkages and exogenously driven pressures and urbanization and abandonment of age-long land use and production practices, all of which negatively impact upon the area's potential for capitalization on its natural capital and peculiarly favorable geographical particularities. Materialization of this promising potential may only be sought through productive diversification, utilization of wider public services offered and strict focus on local competitive advantages. Not surprisingly, all of these are related to the issue of nature conservation and the direct or indirect results it yields for the area.

This paper explores the development trajectories followed in the area in the past 3 decades, in which alternative forms of tourism have played a key role, analyzes why specific promising development initiatives have failed to yield long-term results and discusses lessons learned for the formulation of local development plans in protected sites.

Keywords: Protected areas, WWF, Dadia, Ecotourism, Local development

### 1. Introduction

Greece is a country with a series of political and social peculiarities that lead to the manifestation of a spectrum of problematic realities pertaining to citizen-government relations, attitudes against the use of common resource pools, dependency upon state bureaucracy and pertinent corporatism and corruption practices, etc. Alongside these, the country is also characterized by a polarization between rural and urban social experiences and development paths, triggered among others by a historical systematic promotion of urbanization and the relevant accentuation of dependency mechanisms towards rural economies that have been structured around a strong system of agricultural subsidies,





political interdependencies regarding land-use and land-ownership rights and a nexus of exogenously driven development activities.

Within this setting, and given the country's well developed tourism sector, alternative forms of tourism have been proposed as a means to promote development in rural areas, to foster the diversification of their productive basis and to strengthen economic linkages with urban centres. The Dadia-Lefkimi-Soufli Forest National Park area, (henceforth DNP) has been a pioneer site in this field, as efforts to develop ecotourism have started from the '80s, hand-in-hand with nature conservation activities (the DNP is home to a valuable biodiversity and one of the most important sites for birds of prey in Europe). This 30 year experience is particularly pedagogic for similar development efforts.

## 2. Regional Setting

The DNP is settled in the far NE edge of Greece, in close proximity with the Turkish and Bulgarian borders. It is comprised from one of the country's largest unfragmented forests – made up of mixed forests and some of the last low-altitude black pine forests in the country-intertwined with very valuable traditional agricultural and pasture landscapes. The emerging mosaic of habitats is of particular ecological importance, prominently because of the raptor and vulture populations it hosts. The area has been under protection since the early '80s and ever since continuous research and conservation activities have been taking place by competent authorities, WWF Greece and academic institutions. At the same time activities for the development of the area through the establishment and fostering of ecotourism activities have been continuous and have for a period rendered the site as the most important ecotourism destination of the country.

Demography-wise, the area has seen a stable decrease in population size in the whole of the post war period; until the mid-'70s in favour of out-migration to the major cities or emigration to other countries, and after that because of people moving to nearby urban centres. Today, the population is a fraction of what used to be in pre-war times, and in a sense the villages of the area act as suburbs of the capital of the prefecture (Alexandroupolis) in which many people are employed. Employment is shared between the primary and tertiary sectors, with the first seeing a rapid decrease in favour of the latter. Primary-sector employment is concentrated in agriculture (mainly annuals) and stock-breeding, while tertiary employment encompasses working for the public sector and tourism and hospitality services.

Availability of social infrastructures in the area is adequate, albeit not perfect. Transport, energy and communication infrastructures are at high levels as the area is positioned along the main northern communication axis of the country.

## 3. Materials and Methods

Information and results presented in this paper have been collected through the years to support WWF Greece work towards the integrated monitoring of the protected area, with the aim of supporting conservation planning. They have in times been assembled in



technical reports and scientific communications, but were further elaborated and discussed in a special chapter of the scientific volume *The Dadia-Lefiki-Soufli National Park, Greece: Biodiversity, Management and Conservation* (Liarikos 2010, Catsadorakis and Källander 2010). Data analyzed and discussed emerge from a number of secondary sources (papers and studies, statistical data), primary data collected from the monitoring of tourism and other economic activities and qualitative information sourced from discussions and interviews with stakeholders and site managers.

#### **4. Results**

Ecotourism in the DNP has been developed as an accompanying measure to nature conservation efforts, in order to both counterbalance restrictions imposed on primary production and to foster an integrated sustainable development vision for the area. Its development started in the early '80s, with the installation of some basic ecotourism infrastructures (signed paths, bird observation hide) and reached its peak during the late '90s and until 2003. At that time a number of infrastructures were already operational (information center, hostel, guided tours, etc), visitor numbers surpassed an impressive 50,000 per year and the area was widely considered as the country's most important ecotourism destination and an example for the development of similar schemes. It was during the same period that primary activities (esp. forestry) were seeing a rapid reduction in both size and importance and employment was making a steady turn towards services. In that sense, the increase in the importance of tourism and hospitality activities was seemingly moving in to redefine the development paradigm of the area.

Despite its impressive growth and obvious economic importance for the area, the ecotourism scheme developed was never actually embedded in the local economy, neither it managed to develop thematically and qualitatively. Throughout these two decades private tourism and hospitality operations developed in the area were less than few and the overall system remained based on the publicly-run infrastructures and services the quality of which was steadily becoming outdated. Notably, the linkages between provided hospitality services and local production also never became strong. At the same time, the theme of the ecotourism product (the visitor experience) remained confined to the originally designed visitor exhibition and small trip, with almost null efforts to thematically or spatially diversify and enrich it taking advantage of the numerous other ecological and historical values of the wider area. As a result, this scheme never actually developed into a diversified development paradigm for the area, and strictly remained an "add on" to existing (declining) productive activities and an accompaniment to nature conservation projects.

Following almost two decades of continuous development, the positive trend in ecotourism development was reversed after 2004, when the number of both visitors and overnight stays started to steadily fall. Within a few years these numbers have retrieved to much smaller numbers, while offered services were also deteriorating in terms of both quality and quantity. The operation of the visitor information centre was discontinued for long



periods, the hostel was soon to become effectively non-operational, guided tours were deteriorating in quality and infrastructures were left unmaintained. These negative developments were mirrored in social attitudes towards this “new” development path, and created a widespread disappointment with local prospects that were partly mirrored in a new out-migration trend and an evident quest for different types of employment. Of course, due to the small size of the population of the area, described changes are not sizable, albeit they are quite dramatic in their own scale.

Although, the last two years have seen a number of efforts to revitalize the ecotourism system, none of these has yet yielded any important results and one could still propose that the ecotourism scheme developed in the past remains collapsed. In the overall framework of the severe national economic crisis, but also in the face of important competition as ecotourism has meanwhile rapidly developed in other sites too, prospects for reversing this trend are not high and will certainly require important orchestrated efforts from a number of actors.

## 5. Discussion

Despite the mentioned shortcomings, the ecotourism scheme in the Dadia National Park has served the area for many years, attracting large numbers of visitors and providing alternative employment to local –especially young- people. After mid-2000 it becomes strikingly obvious that the scheme has reached certain limits that counter-affected the area's potential to draw tourism inflows, which in turn started to diminish. This negative trend can be obviously attributed to the shortcomings mentioned earlier, which were at the time – and still are- also reinforced by the national economic crisis that gradually set-in. Yet, restricting the discussion to these shortcomings, misses many vitally important factors that also come at play.

One of the very important factors that need to be observed in this framework, has to do with the administrative changes that have taken place in the last ten years: These include the designation of the area as a National Park, followed by the establishment of a management agency, and a series of changes in the structure and operation of local administration and connected development agencies. In a nutshell, these changes have greatly restricted the availability of resources to support the system (national park management agencies have management competences but insufficient funding to support them) and have also distanced authorities with experience in managing public operations. This is not to say that local administration in Greece is necessarily the proper –or most capable- actor to coordinate such operations, but on the other hand it does possess a certain accumulated experience that is important in times where swift and flexible decision-making is necessary.

A second important factor is related to what was identified earlier and has to do with the level of embedment of this “new local development paradigm” into the local society and economy. Or, actually, the lack of this embedment. This mirrors in a series of interrelated traits, encompassing the almost null development of private tourism and hospitality



operations, the lack of a shared understanding (a vision?) among local inhabitants of the role and needs of this scheme, the unwillingness of different neighbouring authorities to coordinate in the development of a common visitor experience, the lack of a coupling between tourism and local products' marketing, and so forth. As was already mentioned, all these traits are the different facets of the single fact that ecotourism was never conceived locally as a new alternative development path, but rather as an “add-on” that could provide some additional local income and a few new employment prospects to young people.

In a different reading, it was still perceived as a top-down intervention to offset the economic “impacts” of the nature protection measures, and one that would always be there and into which the local society did not need to channel effort and commitment. Thus, when the “top” exited the picture, through both the aforementioned administrative changes and because of WWF Greece's decision to disengage from ecotourism activities, it became all too obvious that existing social and economic structures were unable to support its continued operation.

Finally, a third very important factor has to do with the changing of the overall tourism model in the wider region. This change, among others driven by increased tourist inflows from neighbouring countries, was based on the concentration of tourists in the seafront resorts, from where short excursions to the various sites of the mainland were organised. In this new model, important destinations such as the DNP started to gradually assume the role of excursion stop-overs, with evident impacts on the quality of visitors, their consumption on-site and the number of overnight stays. Of course this change would not have been possible without the vast improvements in transport infrastructures in the last decade, and would not have been as severe in the absence of high-quality services and/or in the presence of a richer visitor experience.

## **6. Conclusions**

In 2011, in an effort to support the revitalization of the ecotourism scheme, WWF Greece commissioned a feasibility study for a number of the hospitality and tourism operations of the site, which demonstrated that these could not only be viable but also highly profitable. Yet in the years before that, these same operations were driven to bankruptcy, the overall ecotourism scheme was left to decay and no effective response from the side of either the public or the private sector was articulated to counter this development.

While the severe economic crisis obviously took its toll on the profitability of the system, previous management has not been as effective as needed and administrative changes challenged local capacities, these factors alone cannot fully explain this adverse development and its unlikely final outcome. Instead, one should rather focus on the fact that the developed scheme was never actually integrated in the operation of the local society and economy, and as a result it was vastly vulnerable to such adverse developments. Should social perceptions of the potential of this ecotourism scheme have been different,



and should these have driven a number of additional initiatives and interlinkages, then the resilience of the scheme would have been much larger.

This leads to the pedagogic recognition of the immense importance that the integration of such efforts into the local realm –in terms of both a shared understanding and a sense of common ownership- plays in their long term viability. These prerequisites in place, then efforts need to be directed into fostering the development of local links between different activities and tourism “products”, which can then develop into a local development nexus that is resilient to impacts on any of its parts, and can also be much more adaptable to required changes in form and function. Finally, a critical factor is found in the face of strong competent actors who can act as coordinators of these developments, yet through the facilitation of the processes and not through their “top-down” coordination.

### **Acknowledgments**

Information and insights presented in this short paper are the product of the work and experience of many people of the WWF Greece team working for the organization's local programme. Particularly Dora Skartsi, Eleni Svoronou and Giorgos Catsadorakis who has provided useful comments on this text and on a much more elaborate paper on the subject.

### **References**

- Catsadorakis, C., Kati, V., Liarikos C, Poirazidis, K., Skartsi, Th., Vasilakis, D. and Karavellas, D. 2010. Conservation and management issues for the Dadia-Lefkimi-Soufli National Park, in Catsadorakis, G. and Källander, H. (eds), *The Dadia-Lefiki-Soufli Forest National Park, Greece: Biodiversity, Management and Conservation*, WWF Greece, Athens, pp. 265-280.
- Liarikos, C. 2010. Development trajectories and prospects in the Dadia-Lefkimi-Soufli National Park, in Catsadorakis, G. and Källander, H. (eds), *The Dadia-Lefiki-Soufli National Park, Greece: Biodiversity, Management and Conservation*, WWF Greece, Athens, pp.47-62.
- Maloutas, Th. 2000. *Cities: Social and Economic Atlas of Greece*. – National Centre for Social Research and University Publishers of the University of Thessaly, Volos and Athens. (In Greek.)
- NSSG. 1922. *Survey of the Population of Greece of the Year 1920*. –National Statistical Service of Greece, Athens. (In Greek.)
- NSSG. 1942. *Survey of the Population of Greece of the year 1942*. –National Statistical Service of Greece, Athens. (In Greek.)
- NSSG. 1973. *Survey of the Population of Greece of the year 1971*. –National Statistical Service of Greece, Athens. (In Greek.)
- NSSG. 2003a. *Survey of the Population of Greece of the year 2001*. –National Statistical Service of Greece, Athens. (In Greek.)
- NSSG. 2003b. *Agricultural Structural Survey of Greece for the year 2000*. –National Statistical Service of Greece, Athens. (In Greek.)
- Svoronou, E. and Holden, A. 2005. Ecotourism as a tool for nature conservation: the role of WWF Greece in the Dadia-Lefkimi-Soufli Forest Reserve in Greece. – *J. Sust. Tour.* 13: 456-





**2Bparks** – Creative sustainable management, territorial compatible marketing and environmental education To Be Parks

467.

