

**Overcoming Organizational and Operational Problems  
of Management Authorities of Protected Areas  
in Greece**

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## **EXECUTIVE SUMMARY**

The research reports the today status of the organization and operation of Management Authorities of Protected Areas in Greece. It focuses on the several problems those bodies face, using primary data from the internal organization (Management Authorities) and external (other environmental protection bodies).

The research objectives are: i) to report the today organizational and operational level of the Management Authorities of Protected Areas in Greece, ii) to underline their main problems and the factors that affect them, iii) to examine how their member composition relates the problems and iv) to propose means and policies to address the problems and assist in Management Authorities improvement.

The research contained multi method strategies. Data collected from the Management Authorities of Protected Areas by the use of questionnaires, from people working on other Greek environmental protection bodies using structured interviews and from the responsible service for the management of Nation Parks in Bavaria, Germany.

The main findings show that there is the political will for the Management Authorities improvement. There have been made favorable changes on the top of hierarchy of the Management Authorities. Nevertheless more improvements need been done. Problems exist regarding Management Authorities objective and mission that should be clearly defined and focused on the scientific aspect. Moreover jurisdiction problems should been solved. The collaboration framework needs some empowerment. The rest problems can be solve by better financing.

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# 1 INTRODUCTION

## 1.1 PROJECT BACKGROUND

The fact that the environment faces a crisis it is a common consideration. Natural resources (natural environment) have been downgraded and in some cases have been destroyed for ever. In addition, recent years the climate change makes the environmental problem more intense and crucial for the existence of the life in the planet earth. Nevertheless, chances for environmental improvements have been on nature protection and restoration.

Facing this reality the whole world is worrying, activating and trying to solve environmental problems by international initiations (Copenhagen 2009, Kioto convention 1997 etc.), and by employing European and national strategies, policies and actions. In that frame of worries and actions are counted a lot of community (EU) and national political measures, with the most important those of natural environment protection (Natura 2000 network), emission adjustments and carbon cycle. Moreover the current year 2010 has been announced as “International Year of Biodiversity”.

In Greece, the first steps for natural conservation started in 1937 with the establishment of the first two national parks, that in 1974 went up to ten ([Dimopoulos et al, 2006](#)). In 1986 had been established five new categories of protected areas (PA) by the Greek law 1650/86, which was more natural environment oriented ([Papageorgiou and Vogiatzakis, 2006](#)). Some years later, in 1992, European Union policies (habitats directive 92/43/EEC) led in the creation of the Natura 2000 network. The former directive have been implementing in Greece since 1994 ([Kalapodis, 2007](#)) and in 2006 the network accounted 359 regions (national catalogue) allocated in the entire country ([Papageorgiou and Vogiatzakis, 2006](#)).

Although the continuous increasing number of PA in the country, which considered a positive progress, does not happen the same regarding the



successful protection and administration of those areas and their protected objectives. Beyond the recognition of the importance of PA's role in nature protection and its maintenance, are also needed good plan, organization and effective administration and management of them.

Initially, when PA established in the country, their administer role belonged exclusively in the Forest Service (1983-1986) that were part of the Ministry of Agriculture at that time (Papageorgiou *et al*, 2008). Afterwards, the development policy and planning of the new PA that established after the Greek law 1650/1986 were up to the responsibilities of Ministry of Environment, Planning and Public Works - MEPPW (Papageorgiou and Vogiatzakis, 2006). Finally, Management Authorities of Protected Areas (MA.PA) enacted by the Greek law 2742/1999 and entitled to administrate and manage PA, as well as to plan and implement measures and works for their development, success and recognition, actions that MA.PA develop until today.

Effective function of MA.PA considers beneficial not only for the environment but and for the society and the economy too. One of the main environmental benefits is the biodiversity conservation. That is an issue of special importance for Greece, a country abundant in flora and fauna and with a variety in rare species. Phitos *et al* (1995) mention in «The Red Data of Rare and Threatened Plants of Greece» 263 plant species and subspecies of Greek flora from which 75 are rare, 146 are endangered, 36 are threatened and 6 that have been extinct. Moreover, beyond of the biodiversity issues, nature resources have multi-functional value (environment adjustment, education, recreation and other).

Environmental benefits can be appraised as economical benefits among with the rest services and products with exchangeable value (e.g. food, water, wood products), and the activities that take place in the area of MA.PA responsibility (e.g. tourism, education), which bring important economical and social benefits. Moreover, effective MA.PA operation is able to produce considerable social benefits through the creation of new job openings, the increase in local occupation and the differentiation of local people concerning opportunities that lead in economical stability and their improvement of living (Dafis, 2004).

Nevertheless, ten years after the adoption of the law about MA.PA institution in Greece, experience gained so far, regarding their organization and operation, showed many problems and failures (Papageorgiou *et al*, 2008; Chiotelli *et al*, 2006; WWF Hellas, 2004). The problems that emerge were mainly organizational, functional, staff, financial, infrastructure, but also problems of political will and culture, and ultimately effectiveness problems. Consequently MA.PA organization and function was not effective, problem that needed to be faced immediately by conducting suitable researches, studies, and by achieving the favourable political will, financing and activation of all actors enabled.

This research was conducted in that direction. Firstly, it recorded the current status of MA.PA (level of organization and operation, effectiveness), the problems faced and the factors which affected those problems. Secondly, the research record opinions and attitudes of actors act in environmental protection field (ministry, NGO etc.). Thirdly, it outlined the situation of PA management in Europe (Germany). Finally, after the data analysis, it proposed suggestions about restructuring and effective functioning of those important bodies.

Research results estimated to have an important practical value and considerable implementation possibilities. Results contribute in MA.PA better and efficient management, help to improve their operations and eventually assist MA.PA to achieve their best and greatest effectiveness for the good of natural and general environment, and to achieve the maximum of social and economical benefits.

## **1.2 RESEARCH OBJECTIVES**

The research answered the following questions:

- At what level is the organization and operation of MA.PA in Greece today?
- What are the main problems of MA.PA and what factors affect them?
- How the composition of members (in the weighted representation of certain actors) relates and affects MA.PA problems?
- By what means and policies can MA.PA problems been addressed?

### **1.3 DISSERTATION STRUCTURE**

The dissertation is comprised from three parts. The first part contains definitions of PA, their worldwide classification, surface coverage, management and importance of establishment. Follows the review of the PA system that have been developed in Greece and the background of PA management and Management Authorities of Protected Areas (MA.PA).

The second part describes the methodology used in the frame of this research. Set out the details about the data that are required, the research design, the methods for the data collection and their analysis afterward.

Follows the third part where are presented the study results. Results emerged from the questionnaire analysis from MA.PA combined with the opinions gathered by the structured interviews. Moreover data from German experience are presented.

Finally, the last part contains discussion and conclusions about the organizational and operational issues of MA.PA in Greece. Suggestions for improvement and effective operation are made.

## 2 LITERATURE REVIEW

### 2.1 PROTECTED AREA DEFINITION

Biodiversity loss, that is the qualitative or quantitative reduction of earth's diversity of life or its ability to provide goods and services, is a global concern. It takes place locally but affects at national, regional and global level (Millennium Ecosystem Assessment, 2005). One of the most effective ways to reduce biodiversity loss is to conserve sites around the world (Eken *et al*, 2004 cited in Garcia-Frapolli *et al*, 2009). That is achieved through protected areas, which consider “essential for biodiversity conservation” (Dudley, 2008. p.2; Dudley and Phillips, 2006. p. 4).

People usually by the term PA consider national park, which is the most common protected area designed globally (Papageorgiou, 2001), and other designations like nature reserve, wilderness area, wildlife management area, landscape protected area or community conserved areas (Dudley 2008). But those concepts are not the same and vary considerably, especially regarding their management approach.

Protected area definition is given by the International Union for Conservation of Nature (IUCN) as “*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*” (<http://www.unep-wcmc.org>, accessed in 26.1.2010) and according the revised definition as “*a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values*”. (Dudley, 2008. p.8)

The Convention on Biological Diversity (CBD) defines PA as “A *geographically defined area that is designated or regulated and managed to achieve specific conservation objectives*” (Dudley and Phillips, 2006. p. 16).

In short, according Harrison and Drucker (1992), protected areas (PAs) are “legally established sites managed for conservation objectives” (Harrison and Drucker, 1992, cited in Brotherton, 1996. p. 369).

PAs are legally protected terrestrial or water areas, which characterized by special ecological or landscape features, and their major aim is to conserve their special area merit, for the present and the future, and simultaneously serve all the contemporary social needs (Kassioumis, 1995, cited in Tampakis, 2009).

Tampakis (2009) suggest that although all forests and forest land in Greece could theoretically considered as protected areas, since they are sustainable managed under the protection of forest legislation law, however in cases that there is need for more protection, either from citizens and social groups interest or from finance opportunities, new PAs should been established (Tampakis 2009). According Dudley and Phillips (2006. p. 12), since forest sustainable management is not enough to characterize a forest PA, some governments distinguish “Forest Protected Areas” and “protective forests” or “protected forest areas”.

## **2.2 PROTECTED AREAS IN THE WORLD**

Protected areas are established by a national or international need and legislation, and vary according their characteristics. Nevertheless, is important how much of the land surface is covered by PA, but most important is considered how PAs are classified and managed (Dudley and Phillips, 2006).

### **2.2.1 PROTECTED AREAS CLASSIFICATION**

Today, almost all the countries worldwide have established protected areas (PAs). Broadly speaking, PAs are classified into two general categories, those

who aim to *protect cultural elements* and those who aim to *protect natural features* (Brotherton, 1996). Cultural sites are evaluated by ICOMOS (International Council on Monuments and Sites) and natural sites by IUCN (International Union for Conservation of Nature) (Dudley, 2008).

PAs, regarding their establishment procedure, are divided to *nationally* and *internationally* designate. The first are designated within a countries' national territory by national legislation or agreement, and the second are designated by international treaty or convention, because of their significant value that is considered to be beyond national territories (WDPA website, accessed in 19.02.2010).

Nationally designated PAs, according their management objectives, are classified to some of the six IUCN Protected Area Management Categories (table 2.1). These PA categorizations are broadly accepted by international bodies and many national governments and provide a common PA language inside countries but and worldwide (Dudley, 2008. p.x).

Table 2.1: IUCN Protected Area Management Categories

Category I	Strict Nature Reserve / Wilderness Area: protected area managed mainly for science or wilderness protection
Category Ia	Strict Nature Reserve: PA managed mainly for science or wilderness protection
Category Ib	Wilderness Area: PA managed mainly for wilderness protection
Category II	National Park: PA managed mainly for ecosystem protection and recreation
Category III	Natural Monument: PA managed mainly for conservation of specific natural features
Category IV	Habitat/Species Management Area: PA managed mainly for conservation through management intervention
Category V	Protected Landscape / Seascape: PA managed mainly for landscape/seascape conservation and recreation
Category VI	Managed Resources PA: PA managed mainly for the sustainable use of natural ecosystems

Source: IUCN, Available from <URL: [http://www.unep-wcmc.org/protected\\_areas/categories](http://www.unep-wcmc.org/protected_areas/categories)>, [accessed in 26.01.2010]

As is clarified in the IUCN's Guidelines for Applying Protected Area Management Categories, the categories are not imply quality, importance or other hierarchy, but, at the same time, are not considered to be equally useful in every situation. Moreover is essential a well-balanced national PA system to contain all the management categories (Dudley, 2008). Also, the IUCN management categories are independent and valid beyond governance or ownership regimes. Nationally designed PAs are divided on terrestrial nationally designated protected areas and on marine nationally designated protected areas.

Internationally PAs are established by international conventions and agreements. The first international environmental conventions signed the decade 1970, some years later (1987) formulated the principle of sustainable development and after the environmental policy political maturity contracted new contemporary conventions (WWF Hellas, accessed in 27.11.2009). The most important international conventions and agreements are:

– ***Ramsar Convention.*** Is the Convention on Wetlands of International Importance. It is an international treaty about wetlands with international value for the dwelling of water birds (WWF Hellas *et al*, 2009). Wetlands are natural or technical marches, bogs and areas with turf or water, which can be flow or stagnant, fresh or brackish or salt, or seaside with ebb-tide less than six meters (Tampakis, 2009). The convention started negotiated in 1960s, signed in Iranian city of Ramsar in 1971 and came in force four years later (<http://www.ramsar.org>, accessed in 17/03/2010). It is the most spread environmental treaty, established in all geographic regions of earth. Among 159 countries which are contracting parties have been designed 1886 Ramsar sites covering a total surface of 185,156,612 hectares (28/01/2010, <http://www.ramsar.org>, accessed in 17/03/2010).

– ***United Nations Educational, Scientific and Cultural Organization (UNESCO), World Heritage Convention.*** This convention, signed on 1972, is about the protection and preservation of the global cultural (monuments, groups of buildings, sites) and natural (natural features, geological and physiographical

formations and natural sites) heritage (UNESCO Convention, 1972). The innovation in that convention is that combines the conservation of those two elements that used to maintain separately (McDonnell).

– **UNESCO, Man and the Biosphere Programme (MAB).** It was launched in 1970 aiming among others to develop the rationale use and maintenance regarding the biosphere resources (Tampakis, 2009). One of its outcomes is the World Network of Biosphere Reserves (WNBR) developed in 1974 and revised in 1995 (<http://www.wdpa.org/FAQ.aspx>, accessed in 19.2.2010). The network includes areas that are representative samples of natural ecosystem, unique entities (community or area) of unusual nature features with extraordinary interest, harmonious landscapes effect of traditional land use and altered or downgraded ecosystems able to recover (Tampakis, 2009). Tampakis (2009) also refers that globally have been set 482 Biosphere Reserves in 102 countries.

– **Convention on Biological Diversity (CBD).** It is the international convention on biological diversity. The history of that convention began in 1988 when the United Nations Environment Programme started to explore the need for such a convention. The convention text opened for signatures from 5 June 1992 to 4 June 1993 and entered in force the end of 1993 (<http://www.cbd.int/history/>, accessed in 1/10/2010). In 2004 the Convention on Biological Diversity (CBD) and the Millennium Development Goals (MDGs) have set a global target to save at least 10% of every ecological region of the world until 2010 for terrestrial and until 2012 for marine areas (Coad *et al*, 2009). By the term save is meant to establish ‘comprehensive, effectively managed and ecologically representative national and regional systems of protected areas’ (Dudley, 2008. p. 75). Target’s monitoring and assessment is made by the WDPA that records the biodiversity progress worldwide (Coad *et al*, 2009).

One PA can simultaneously belong to more than one PA types. In some cases can a nationally designated PA have and internationally or regional value, or an internationally PA comprised from more than one nationally PA from different



countries. Moreover a nationally designated area can contain more than one IUCN categories (when is about a) distinct PAs nested within larger PA; b) different zones, set by law, within PA; and c) in cases of transboundary PAs (Dudley, 2008).

### 2.2.2 PROTECTED AREAS COVERAGE

Some PAs characteristics, which differ among countries, are the total area designed as protected, how much landscape of that designed area proportionally is protected and the intense of protection. According Brotherton (1996), two variables affect a country's PA proportion its "population density" and its "degree of urbanization" (p.373).

Some evidences about the percentage of total protected areas coverage in relation to country's surface are 8.5% for Iceland (2006), 10% for Finland (2006), 11.5% for Sweden (2006), 14.3% for Norway (2007) (Hovik *et al*, 2009), 10% for Mexico (2008) (Garcia-Frapolli *et al*, 2009). Dudley (2008) state that "over the last 40 years the global PA estate has increased from an area the size of United Kingdom to an area the size of South America" (p. 2). According Coad *et al* (2009) PAs (both nationally and internationally designated) cover in the year 2009 the 13.4% of the earth's terrestrial surface.

The 11.3% of national territories are covered by nationally designed PA (Coad *et al*, 2009). The total growth in nationally designed PA is impressive, both in total number of PA and total area protected (figure 2.1). Comparing terrestrial and marine nationally PA separately, marine protection, although is increasing, follows a much slower rate (Coad *et al*, 2009).

The fact that the amount of PAs globally is continuously increase considers a good sign but just that is not enough to stop biodiversity loss. The way PA are organised and managed is a crucial issue.

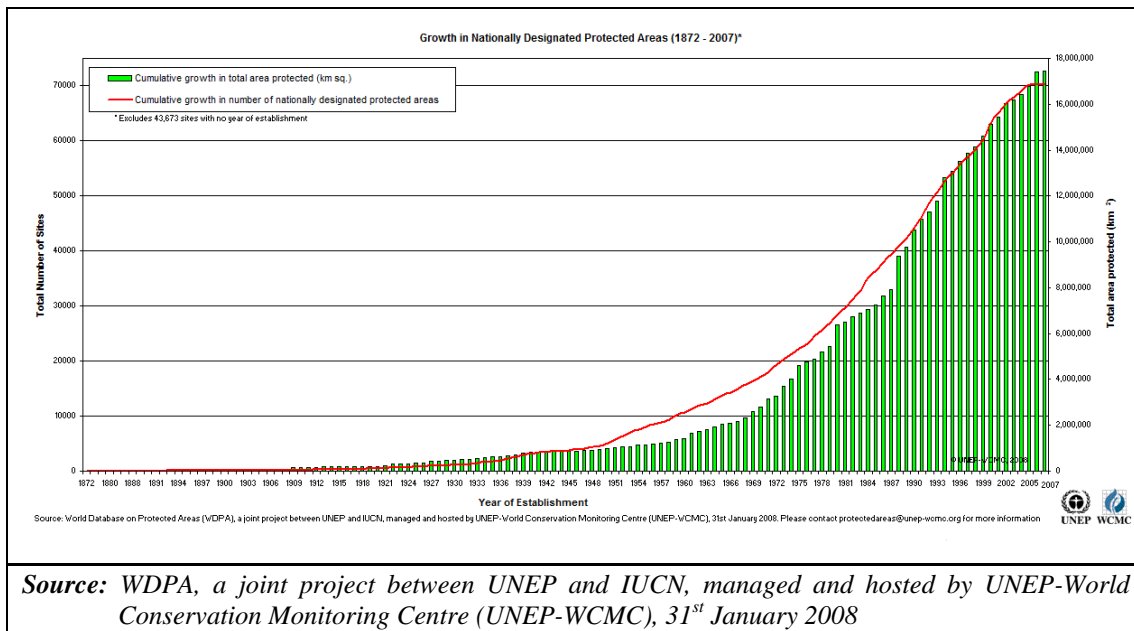


Figure 2.1: Growth in Nationally PA (1872-2007)

### 2.2.3 PROTECTED AREAS MANAGEMENT

Information about national and international PAs are kept in the World Database on Protected Areas (WDPA), the largest world database for terrestrial and marine PAs (Coad *et al*, 2009).

Management evolution over years was based on different theory approaches. According Lewis (2007), the classical management theorists, based on military and engineering thinking, concerned management as controlled activities that can be planned, organized, commanded, coordinated and controlled. Later the postmodern theorists, based on ‘chaos and complexity’ approach, suggest management more complex and less measurable (Lewis, 2007. p. 17).

Naylor (2004) give the following management definition:

*“Management is the process of achieving organizational objectives, within a changing environment, by balancing efficiency, effectiveness and equity, obtaining the most from limited resources, and working with and through other people” (Naylor, 2004. p. 6).*

In the case of Protected Areas the first thing that is needed to be clarified is who is responsible for the management. And here, like saw in PA categories, is detected a peace of variety. PA management in some cases is made by governments and in other cases by non governmental organizations like private individuals, companies, communities and faith groups (Dudley, 2008).

Management of PA is a crucial aspect. Worldwide are distinguished at least four broad governance types: i) Government managed, ii) Co-managed (i.e. multi-stakeholder management), iii) Privately managed, and iv) Community managed (community conserved areas) (Dudley and Phillips, 2006). Those governance types are recognized and by IUCN.

According Dudley (2008) the Government management concentrates the whole PA management (authority, responsibility and accountability, conservation objectives set, management plans) to the government through a government body. The co-management share management authority and responsibility among state and non state actors, through a body that is set by law and its institution is complex enough. Contain several forms (collaborative management, joint management), and serve better transboundary PAs management, where more than two governments and many local bodies are involved. The private management is employed in PA under individual, cooperative, NGO and or corporate ownership or/and control and can be managed for or not-for profit. All the control is up to landowner and accountability may be limited. The last governance type (community managed) rest the management up to indigenous people and local communities through institutions of various forms, not necessarily set by law.

MA.PA main strategic objectives are to conserve the biological diversity, to conserve the structure and the functions of ecosystems, to make known the environmental value and to contribute for the local sustainable development. According Papageorgiou (2001), a key objective for park management is to make wider known the environmental value of the park, as well as the need for its protection. Moreover MA.PA aim at to watch over the PA, to inform and

sensitize the public, to contribute in environmental education and to plan entrepreneurial environmental policy.

Management effectiveness of PAs is important to maintain a successful PA system. The most useful tools to increase management effectiveness are evaluation and assessment (Dudley, 2008). The effectiveness of the management is influenced by the quality of the governance employed (Dudley, 2008). Lockwood (2010) assumes that governance and management, which is the output of governance implementation, are totally interlinked. So, by assessing the government quality of a PA (individual, network, or national system), can someone estimate PA management effectiveness. According the former author (Lockwood, 2010) good PA governance is characterized by a set of seven principles that are 'legitimacy', 'transparency', 'accountability', 'inclusiveness', 'fairness', 'connectivity' and 'resilience'.

IUCN (Dudley, 2008. p.28) provide a similar set comprised of eleven principles that are: 'legitimacy and voice' (PA objectives and strategies up to social dialogue offering equal participation to everybody); 'subsidiarity' (give management authority & responsibility up to the closest institutions to PA); 'fairness' (share equally PA management pros and cons, provide conflict judgment solutions); 'do not harm' (safeguard that PA cons will not create or deteriorate poverty and vulnerability); 'direction' (the need for an inspiring PA vision); 'performance' (simultaneously conserve biodiversity effectively and serve stakeholders); 'accountability' (obtain from all stakeholders answerability for their achievement of responsibilities that need to be clearly defined); 'transparency' (safeguard that all stakeholders can access the relevant information); and 'human rights' (respect and secure human rights).

## 2.2.4 PROTECTED AREAS IMPORTANCE, COSTS AND BENEFITS

Protected Areas role and existence is very important for humanity. It is estimated that PA is the only hope to stop threatened or endemic species from extinction (Dudley, 2008). Biodiversity conservation is able to bring widespread benefits like is the carbon sequestration that has global value (Millennium Ecosystem Assessment, 2005). Moreover PAs offer historically information about the earth and its evolution, the human activity and the nature. Some of them are appropriate for ecological processes took place for future adaptation and restoration (Dudley, 2008). Moreover, PAs serve peoples' ethical need not to deprive next generations of cultural heritage and quality of living (Dudley, 2008).

Firstly, the biological diversity itself contributes to material welfare and livelihood. Ecosystems provide directly and indirectly important products and services, benefiting local (Coad *et al*, 2008) but and the humanity at large, which are:

- **Provisioning services:** food (crops, livestock, aquaculture, wild plant and animal); fiber (timber, cotton, hemp, silk, wood fuel); genetic resources; biochemicals, natural medicines and pharmaceuticals; ornamental resources; and fresh water,
- **Regulating services:** air quality regulation; regional and local climate regulation; water regulation; erosion regulation; water purification and waste treatment; disease regulation; pest regulation; pollination; and natural hazard regulation,
- **Cultural services:** cultural diversity; spiritual and religious values; knowledge systems; educational values; inspiration; aesthetic values; social relations; sense of peace; cultural heritage values; and recreation and ecotourism, and
- **Supporting services:** soil formation; photosynthesis; primary production; nutrient cycling; and water cycling (Millennium Ecosystem Assessment, 2005. p.33-37).

However, biodiversity conservation costs to people live near the PAs ([Millennium Ecosystem Assessment, 2005](#)). Protected areas' major costs to the local communities are displacement (the coercion of local to leave from their lands), changes in land tenure and community structures, restricted access to resources and human-wildlife conflicts and degradation of resources ([Coad \*et al\*, 2008](#)).

## 2.3 PROTECTED AREAS IN GREECE

Greece is a country with a Protected Area system comprised from nationally, regionally and internationally PA designated (table 2.2).

### 2.3.1. NATIONALLY PROTECTED AREAS

The Greek law sets 12 different types of national PA:

- **National (Forest) Parks**
- **National Parks**
- **Aesthetic Forests**
- **Preservable Monuments of Nature**
- **Wild Life Sanctuaries**
- **Controlled Hunting Areas**
- **Game Raisers**
- **Areas for Nature Protection**
- **Areas for Absolute Nature Protection**
- **Protective Forests**
- **Protected Natural Shaping, Protected Landscapes/Seascapes or Landscapes' Elements**
- **Eco-development Areas** (<http://www.ekby.gr>, accessed in 26.1.2010)

The first PAs created in Greece is national (forest) parks, at Olympus and Parnassus mountains, in 1938. The relevant Greek Law 'about Forest Code'

(86/1969, article 78) set the institution of the following tree different types of national protected areas:

- 1) **National Forest Park** is a large extremely important wood area composed of its core, which is strictly protected, and the rest area that is under special protection regime,
- 2) **Aesthetic Forests** are forest landscapes with special aesthetic and ecological interest/value that aim to protect nature and offer recreation,
- 3) **Preservable Monuments of Nature** assumed a) isolated trees or clump of trees with special value in botanical, ecological, aesthetic or historic and cultural standards or b) landscapes/seascapes with great ecological, palaeontological, geomorphological or other interest (Tampakis, 2009).

Later the national protected areas types were enriched with the institution of three new PA categories (177/1975 articles 3-4 about replacement and completion of 86/1969, articles 253-4):

- 1) **Game Raisers** object is to enrich the country's game diversity, by helping endemic games reproduction and importing alien games to enrich other areas,
- 2) **Game Sanctuaries** as areas designed to offer the basics for game living, such as peacefulness, forage and water. In those areas hunting is not permitted. So the term 'game' estimated not so successful and later on game sanctuaries renamed to wild life sanctuaries,
- 3) **Controlled Hunting Areas** are locations where hunting is allowed under special regulations, terms and additional fees (Tampakis, 2009).

The legislation framework for the environment (L. 1650/86, articles 18-19) introduced five new PAs categories are:

- 1) **Areas for Absolute Nature Protection** are sites with extremely sensitive ecosystems and biotopes of rare and threatened of extinction species of Greek flora and fauna, or sites crucial for the cycle of wild fauna life. Every activity is forbidden except scientific research and maintenance works.
- 2) **Areas for Nature Protection** are landscapes or seascapes with big ecological or biological value where nature protection is the main aim but are allowed to take place scientific research, works and other activities (especially traditional activities) that are compatible with the protection concept.

3) **National Parks** are vast terrestrial, water or mixed areas, unaffected or little affected by human activities, that maintain a quite number and variety of significant biological, ecological, geomorphological and aesthetic features. National parks are distinguished to national marine parks, which are or contain part of sea land, and national forest parks for woodlands. Moreover they can contain areas of the former two PA categories (Areas for Absolute Nature Protection and Areas for Nature Protection). It is permissible to make works, research and traditional activities, in respect with the restrictions and terms of each Park operation and management rules.

4) **Protected Natural Shaping** are functioning parts of nature with special importance (scientific, ecological or aesthetic), or contributing in nature process conservation and nature reserve protection. They may be trees, a clump of trees and bushes, protective/riverside/lakeside/coastal vegetation, hedgerows, waterfalls, springs, ravines, reefs, graves, rocks and other **Protected Landscapes/ Seascapes** are areas with such a value, able for recreation or/and protection of nature reserves. They usually have special names like rural/urban/industrial landscape or aesthetic forest and others, based on area's main characteristics. **Protected Landscapes' Elements** are landscapes' parts with such a value, like coppices, traditional farming, farmhouses, lanes, rails, stone hedges and other.

5) **Areas for eco-development** are vast areas having quality natural and cultural characteristics and simultaneously offer opportunities for development compatible with nature and landscape protection ([Tampakis, 2009](#)).

### 2.3.2. INTERNATIONALLY PROTECTED AREAS

Greece has signed the international conventions of Ramsar (1971, about wetlands protection), Bonn (1979, about migratory wild animal species maintenance), Bern (1979, about wild fauna and nature protection in Europe), Rio de Janeiro (1992, about biological diversity) and Barcelona (1982, about Mediterranean sea protection from pollution), which confirmed by Greece in 1974, 1999, 1985, 1994 and 1986 respectively ([Tampakis, 2009](#)). Moreover Greece has signed the UNESCO convention since 1981 ([Tampakis, 2009](#)).



Also Greece participates in international organizations like the European Council and UNESCO (<http://www.ekby.gr>, accessed in 26.1.2010). As a consequence of the former six more protected area categories have designed in Greece:

- ***Wetlands of International Importance*** (Ramsar Convention)
- ***Monuments of Universal Heritage*** (UNESCO)
- ***Biosphere Reserves*** (UNESCO, MAB8)
- ***Special Protected Areas*** (Barcelona Convention)
- ***Biogenetic Reserves*** (European Council)
- ***Areas with Euro diploma*** (European Council) (<http://www.ekby.gr>, accessed in 26.1.2010).

***Ramsar wetlands*** instituted in Greece after the enforcement of Ramsar convention, which referred earlier (2.2.1). Ramsar wetlands that face significant disturbing ecological changes are listed in Modre catalogue (Ramsar black list), until their improvement (WWF Hellas *et al*, 2009). In 1990 all Greek Ramsar wetlands were listed in Modre catalogue, now days are listed the seven out of ten wetlands (WWF Hellas *et al*, 2009).

***Monuments of Universal Heritage*** are sites designated based on the World Heritage Convention adopted by UNESCO in 1972 (referred earlier 2.2.1).

***Biosphere Reserves*** (UNESCO, MAB8) instituted in 1970 within the framework of UNESCO program ‘Man and the Biosphere’-MAB (referred earlier 2.2.1). In Greece two areas characterized as Biosphere Reserves in Olympus and Samaria (Tampakis, 2009).

***Special Protected Areas*** are based on Barcelona convention about the maintenance of important natural and cultural sea lands in Mediterranean.

***Biogenetic Reserves*** are designed by the European Network of Biogenetic Reserves for the maintenance of flora, fauna and nature European representative samples (Tampakis, 2009).

***Euro diploma*** is a European Council institution formally instituted in 1973 (revised later, in 1991 and 1998) conferred in areas recognized as natural heritage at European level and protected proportionally. National Forest Park of Samaria is the only Greek PA having Euro diploma (Tampakis, 2009).

Table 2.2: Categories of Protected Areas in Greece

Greek PA of National Level		Greek PA of International/Regional Level	
Type/category	Number	Type/category	Number
1 National Parks (Law 1650/86)	12	1 Wetlands of International Importance (Ramsar)	11
2 National Marine Parks (Law 1650/86)	2	2 Special Protected Areas (Barcelona Convention)	9
3 Areas for Nature Protection (Law 1650/86)	1	3 Biogenetic Reserves	16
4 Areas Under Protection Measures (Law 1650/86)	1	4 Biosphere Reserves (UNESCO, MAB8)	2
5 National Forest Parks (Law 996/71)	10	5 Monuments of Universal Heritage	2
6 Aesthetic Forests (Law 996/71)	19	6 Areas with Euro diploma	1
7 Preservable Monuments of Nature	15	7 Natura 2000 Network * (European Directive 79/409/EEC)	163
8 Isolated Preservable Nature Monuments Elements	36	Natura 2000 Network * (European Directive 92/43/EEC)	239
9 Wild Life Sanctuaries	700		

Source: a) M.E.P.P.W., June 2009, b) (Tampakis, 2009), c) M.E.E.C.C

\*Natura network includes all the PAs established by the national legislation and the Ramsar wetlands too

### 2.3.3. PROTECTED AREAS IN EUROPEAN LEVEL

Natura 2000 Network is the European Ecological Network of areas with nature habitats types and types of habitats species value important in European level. The Network comprised of two area categories:

- a) the *Special Protection Areas (SPA)*, about birds protection based on the Directive 79/409/EEC (confirmed in Greece in 1985), and
- b) the *Sites of Community Importance (SCI)*, about nature habitats and wilderness fauna and flora conservation, based on the Directive 92/43/EEC (confirmed in Greece in 1998).

Greece today has 163 SPA and 239 SCI, with some areas cover each other. 31 areas are defined simultaneously as SPA and SCI. Natura 2000 Network in

Greece covers approximately 3,407,000 hectares, without account twice the areas that cover each other ([M.E.E.C.C., October 2009](#)).

Designed PA covering often one another. The most of Ramsar wetlands have been characterized as National Parks. Moreover wetlands can contain areas protected and as Wild Life Sanctuaries ([WWF Hellas, 2009](#)). Natura 2000 network contains all national forest parks, Ramsar wetlands and other protected areas such as aesthetic forests and preservable monuments of nature (<http://www.ekby.gr>, accessed in 26.1.2010).

The European Union, in a try to contribute in biodiversity conservation among its members' territories, instituted in 21<sup>st</sup> of May 1992 the directive 92/43/EEC called 'Habitats Directive' or Natura 2000 network. The implementation of that directive in Greece started 2 years later ([Kalapodis, 2007](#)).

#### **2.3.4. MANAGEMENT OF PROTECTED AREAS IN GREECE**

In Greece, according to the Law 1650/1986, an area is declared as protected only after a Special Environmental Study (SES) has been conducted. SESs are made by scientists and researchers ([Papageorgiou \*et al\*, 2008](#)), report natural, social, economical and other conditions of the area of interest and propose Legislation Plans with the protected area zones and the general conditions and restrictions regarding the activities that will developed in the protected area (M.E.E.C.C.). SES finally is approved from Ministry of Environment, Energy and Climate Change (M.E.E.C.C.), but before that to happen, SES is presented to the local authorities and the public for public dialogue and those opinions submitted accompanied SES to the ministry for approval ([Papageorgiou \*et al\*, 2008](#)). According M.E.E.C.C. information about 84 SES has been approved.

The first two PAs in Greece was the national parks of Olympus and Parnassus mountains, both established in 1938. Their management was exclusively responsibility of the state, the planning was made by a few foresters working in the forest services and aim to a strict protection regime ([Papageorgiou \*et al\*](#),

2008; Papageorgiou and Vogiatzakis, 2006). Protected areas were designed each one separate in isolation and managed as an “island” from a group of scientists of few specialists (Tampakis, 2009).

Public participation in PA decision making were absent until 1986, where it was gained some public participation by the institution of two studies related with PAs issues (Environmental Impact Assessment (EIA) and Special Environmental Study (SES), law 1650/86) (Papageorgiou *et al*, 2008). The last decade, with the establishment of Management Authorities (MA) (law 2742/99), the management process of PAs has been more participatory allowing the involvement in decision making of state (representatives from the relevant Ministries) and not state actors (local interest groups, NGOs, scientists). Moreover today PAs are designed as “networks” of PAs (Tampakis, 2009).

It is understandable that the PAs governance regime in Greece has been changed over the years, moved to a more participatory approach. The same have been happen and in other countries. The reasons why that happen are:

*“greater scientific understanding of the role of humans in shaping environments and landscapes; cultural and social awareness of local and indigenous communities; acknowledgment of human rights....., recognition of the rights of people to have a say in decisions that affect them; democratization and devolution of central government power; and political economic forces leading to more business-like approaches” (Lockwood, 2010. p.762 ).*

This new PA governance regime has some pros and cons. The more the actors participate in decision making the more the justice attributed to the PA system (Lockwood, 2010). However, is meaningless to participate as many interest groups as possible in decision-making (not practical, cause delays); instead that is needed to been achieved a good and balanced representation of parts (Papageorgiou *et al*, 2008). Also locals’ and indigenous’ involvement lead to a more effective PA management (Lockwood, 2010). Bergseng and Vatn (2009)

suggest that broader participation is needed in order to reduce conflicts in decision-making procedure. [Papageorgiou et al \(2008\)](#) research confirms that statement, adding that the public participation contribute also to develop good working relations among MA members. According [Lockwood \(2010\)](#) effective landscape conservation needs state and private actors' participation. However, participation experience among members, like and every other experience, is achieved while years pass ([Papageorgiou et al, 2008](#)). But on the other hand decentralization (when authority passes from those in the top level of hierarchy to those in the lower levels, [Naylor, 2004](#)) can lead to public good weaken and bring actors through into confusion regarding the government authorities in which they are accountable.

The management of PAs, according to the Law 2742/1999, is up to Management Authorities of PAs (MA.PA) that are legal entities of private law, with social character, are located in or near to the Protected Area (PA) and supervised by the Ministry of Environment, Energy and Climate Change (M.E.E.C.C.) (until 2009 was supervised by the Ministry of Environment, Planning and Public Works – M.E.P.P.W.). In cases where MA.PA are not exist or operate yet, the management of PA is taken over from public services that already exist to the region, or special services and legal entities of public law, or authorities that set up with management contracts for that purpose. MA.PA can manage more than one PAs of a geographical or governmental region ([Greek Law 2742/1999](#)).

Greece today has 28 protected areas with MA, from which 23 referred to National Parks with MA, 4 referred to eco-development areas with MA and one referred to an Area for nature protection with MA. The first two PA with MA established by the Greek Laws 1650/1986 (Zakynthos National Marine Park) and 2742/1999 (Schinias National Park) and the rest 25 established with the law 3044/2002 (M.E.E.C.C.). The newest PA with MA is the National Park of Tzoumerka, established in 2009. The total area that is managed by MA is approximately 1.7 million hectares ([M.E.E.C.C., October 2009](#)).

Local management authorities contribute in nature protection, but all European partners still have areas designed as PA that are unprotected at a local level (Petrosillo *et al*, 2009). Dimopoulos *et al* (2006) marked states that in 2006 in Greece from the 359 Natura 2000 sites established until then, only 21.7% (i.e. 78 sites) were in competence of MA. Now days that percentage is 27% but is still pending some areas to be characterized as PA by law (M.E.E.C.C., October 2009).

PAs management tools are:

- Rules for administration and operation;
- Five years duration PA management plans;
- Special land-planning plans;
- Forest management plans;
- Several agricultural and environmental measures.

The first two management tools are implementing in a PA from the MA.PA. The implementation of the rest is supervised by special services like the Forest Service (Forest Headquarters and Forest District Offices).

### **2.3.5. PROTECTED AREAS MANAGEMENT & MANAGEMENT AUTHORITIES BACKGROUND**

MA.PA establishment in Greece gave rise to the interest about their effectiveness in practice. The WWF Hellas, just one year after the creation of the 25 MA.PA and two years since the first 2 MA.PA establishment, evaluated the national system of protected areas in Greece. The aim was to capture the most important gaps that appeared and to highlight any positive steps that had been made until then. The assessment was based on the experiences of WWF Hellas people involved in the protection and management of PA (participation in long-term field projects, participation in MA.PA, etc.), and although was not considered to be scientific enough, was able to show the situation formed in the country regarding MA.PA.

According that assessment in 2004 MA.PA operation seemed disappointing. Despite the fact that the local authorities acknowledge the MA.PAs' role, by asking for their opinions in relevant cases, MA.PA dominant elements was deficiencies (in personnel, management plans, equipment and funding) and the inability to achieve their objectives (to draw up plans, to collect environmental data and to create databases, to perform national and European projects, [WWF Hellas, 2004](#)).

In 2006, [Chiotelli \*et al\*](#) made an evaluation of the situation (level of organization and operation) and the work had been carried out by MA.PA so far. The aim of their attempt was to pinpoint gaps, weaknesses, difficulties and failures of MA.PA in order to contribute in MA.PA proper and efficient operation. Their research methodology was to conduct an experimental research using questionnaires and telephone contact with MA.PA.

Nevertheless, their research faced two major problems: a) communication difficulties with some of the MA.PA, due to their functioning problems (lack of personnel, offices and telephone connections), and b) personnel unable to give answers because ignored the problems and weaknesses MA.PA faced due to their recent assumption of duties ([Chiotelli \*et al\*, 2006](#)).

[Chiotelli \*et al\*](#) research find out almost the same gaps and weaknesses with WWF Hellas previous research, which briefly are:

1. Organizational (lack of personnel);
2. Operating (78% MA.PA without statutory boundaries of protected area, 30% boards exist typically, approved Special Environmental Studies 37%, management plans 11%, regulations of a) board 89%, b) services and staff 26%, c) project-study-supply 63% and d) financial management 70%);
3. Infrastructure (24% without offices and equipment);
4. Financing (funding absorption failure, only 33% took extra funding from other programs); and
5. Effectiveness (database has only one MA.PA, totally lack of forming studies and biotopes and species observation system).

The low percent (11%) of development and enforcement of management plans is a disappointing operating issue. WWF report in 2006 refers that although Greece has design sufficient management plan methodologies and distributed them to MA.PA “no management plans have been actually developed or funded in Greece” (WWF, 2006. p. 29).

Four years after Chiotelli *et al* research conducted, MA.PAs operating in a greater extent, with improvements that must be reported. This assumption was enforced by a) the fact that in 2009 was completed and the second board tenure of office, which is for three years, consequently double time have lapse for work been carried out, and b) evidence from Ministry of Environment, Energy and Climate Change (M.E.E.C.C., October 2009), that showed progress in operating issues. The statutory boundaries of protected areas increased over the last 3 years, from 22% (i.e. the 6 out of 27) in 2006, to 68% (i.e. the 19 out of 28) in 2009. Additionally, all MA.PAs have signed all of their operating regulations (as can be seen in Appendix I).

In 2008, Papageorgiou *et al* (2008), appraised the administration and management of PAs in Greece, emphasizing on the way new governance affected policy outcomes. By the term new governance meant the new more transparent and decentralized national policy, achieved with greater participation of interest groups in decision-making. Their research focused on analyzing to what extent that new policy was able to produce an integral and sustainable outcome.

Experimental data collected, using structured interviews, from people that form policy, decide and manage in national and regional/local level. Research outcomes showed that, on the one hand, the recent administration and judicial changes enabled more actors to act in planning and administration of protected areas, but on the other hand, in practice, that was often merely rhetorical. Itself the prevailing administration political style influenced negatively the participation in decision making. The involvement in the decision making of several different interest groups and stakeholders produced private-collective dichotomy (or economical-environmental dichotomy). Concerning the state



sector itself, things were not better. Public authorities' corporation suffered since ministers and institutions competencies generated internal departmental conflicts that led on sectoral isolation (Papageorgiou *et al*, 2008).

Participation in MA.PA in practice faced some problems. Calls for participation in decision-making were occasionally absent, resulting on certain interest groups absenteeism of the procedure (Papageorgiou *et al*, 2008). Moreover, the power among participants was not considered being equal, since those participants with stronger interest were better prepared and able to direct the decisions taken for their benefit (Papageorgiou *et al*, 2008). Last, but not least, the negotiation game became hard and can even be at the expense of the environment because the interests between national/regional and local participants differ. The firsts' have essentially environmental interests in nature conservation, but the seconds' have more socio-economic interests (Papageorgiou *et al*, 2008). The forms of public participation in the governance process contain active participation (like participation on open public hearings with feedbacks submissions afterwards), taking place mainly at the first planning stages (i.e. goal formulation/management plans approval), and inactive participation (hear but not intervene), as a means for transparency (Papageorgiou *et al*, 2008).

## **2.4 ORGANIZATIONAL AND OPERATIONAL MANAGEMENT CONTEXT**

The concept of management is applied to a variety of organizations (commercial, non for profit, governmental, NGO etc.). Operations management is the same important for all organizations (Slack *et al*, 2004).

Organizing has to do with the way that all parts of an organization are arranged in order the organization achieve its strategic objectives. The arrangement of the fixed elements (i.e. hierarchy, buildings, IT and culture) compose organizations'

structure, while the arrangement of fluid features comprise organizations' process (flows of goods, cash and information) (Naylor, 2004).

Slack *et al* (2004) argue that the activities, decisions and responsibilities of the staff responsible mainly to manage the resources (called 'inputs') in order to allocate them in the production process and transform them to products/services (called 'outputs'), comprise operations management.

Inputs to the operations process are the transformed resources (materials, information, customers), as well as the transforming resources (facilities, staff) (Slack *et al*, 2004). As MA of PA resources (inputs) considered:

- The available human resources (Board members, staff, personal skills)
- The financial resources (public sector allowances, national and European revenues appropriated for projects, revenues from MA assets, donations, MA products/services selling)
- The technical resources (technological, scientific and other equipment, know how related with operations process).

Outputs from the operational process can be products (tangible elements, able to be stored) or /and services (intangible short life elements) (Slack *et al*, 2004).

As MA of PA products/services (outputs) considered:

- Regulations forming and implementation
- Local environmental data listing (data bases)
- Management plans
- Research, studies
- Projects
- Public information/awareness
- Ecotourism actions
- PA protection

## 2.5 SUMMARY

Protected Areas are the mean to save the quality and quantity of the life in our planet. It has to do with legally protected locations due to their environmental, cultural or similar importance. They are designed and managed for protection and conservation purposes.

PAs have been established all over the world. They are classified between cultural and natural one and can be designated under national or international legislation. National PAs are classified among the six PA Management Categories that was proposed by IUCN and today are globally accepted. International PAs are established after international conventions and agreements enforcement.

In order to save the biodiversity is not enough to increase the PA coverage worldwide. Good and proper PA planning and management is needed. For that reason has been created the World Database on Protected Areas (WDPA). Moreover worldwide have been distinguished four different PA management types (government management, co-managed, privately managed and community managed). Independent the management type the management effectiveness can be increased through evaluation and assessment. Also management effectiveness is affected by governance quality.

The PA system of Greece contains 12 types of nationally PA, six internationally PA and the European Ecological Network (Natura 2000). The initial PA management was totally responsibility of the state, was made only by a particular service (Forest Service) with specific scientists (Foresters) and contained strictly protection purposes. Today PAs' management has moved from government management to co-management. The last decade in Greece have been established 28 Management Authorities of Protected Areas (MA.PA) by law. To that body, which is supervised by the Ministry of Environment, Energy and Climate Change, participate more actors (Local authorities, Productive bodies, NGOs, Universities and others), more specialties are

involved (biologists, chemists, topographers, agronomists and others) and the management is more complex.

From the review of the work made so far by MA.PA in Greece, it seemed that those bodies are weak and facing organizational and operational problems. That makes MA.PA ineffective and as a consequence Greek PAs unable to achieve their mission.

### 3 METHODOLOGY

#### 3.1 DATA REQUIREMENT

The data was tightly related with the research questions set to be explored through this research, which was:

- At what level is the organization and operation of MA.PA in Greece today?
- What are the main problems of MA.PA and what factors affect them?
- How the composition of members (in the weighted representation of certain actors) relates and affects MA.PA problems?
- By what means and policies can MA.PA problems be addressed?

Every organization knows its operational and organizational structure, as well as the relevant problems it faces, as a consequence can report them. Accordingly the first two research questions needed revised primary data from the MA.PA operate in Greece (internal organizational data). Those data were based on official organization information and personal opinions based on the experience had been reached so far (substantially MA.PA have been operated for more than 7 years).

For a more spherical and integrated view of the research questions additional data collected from MA.PA operating environment. Those data were based on opinions of people act in environmental protection area and work in bodies that are not MA.PA but act in the same fields, work together and know MA.PA mission and general status. Primary data contained opinions relative MA.PA role and contribution, organizational and operational status, weaknesses and suggestions for improvement.

Moreover data from other European countries contributed getting near to research outcomes. Exploring similar conditions associated with bodies responsible for management of PA could provide useful information for the

research outcomes. Since all European experience were difficult to reported, the research focused on German (Bavarian) experience only.

## **3.2 RESEARCH DESIGN**

Each research oscillates between positivism and phenomenology philosophy and deductive and inductive approaches. There are six research strategies (experiment, survey, case study, grounded theory, ethnography and action research) that can be used and combined (Saunders *et al*, 2000).

This research employed multi-method strategies, which Saunders *et al* (2000) consider often to be more beneficial than the single methods (experiment, survey, case study etc), since they can be used for multi purposes in a study and provide a “triangulation” (Saunders *et al*, 2000. p. 99) confirmation between the collected data and their interpretation.

The research was developed in four stages (Stage A-D) that set out in Methods for Data Collection part that follows.

## **3.3 METHODS FOR DATA COLLECTION**

Some factors that should be considered in order to choose the best method for data collection is the ability to control the sample, to access the data sources and to communicate with the source (Yang *et al*, 2006).

One of the most popular data collection techniques is the use of questionnaire (Yang *et al*, 2006; Saunders *et al*, 2000). Yang *et al* (2006) suggest that the use of questionnaire is the most common technique in the survey method, but Saunders *et al* (2000) consider questionnaire to be appropriate for experiment and case study research strategy too. Some advantages of questionnaire are the ability to collect data from a large sample efficiently (Saunders *et al*, 2000), ensure high quality and usable data that contain more honest information (when

anonymity is provided) and less bias, and moreover achieve good respond rates (Marshall, 2005). But the former advantages could convert to disadvantages if questionnaire design and administration is not proper. Marshall (2005) mentions that wrong planed questionnaires can restrict the respond rates and recruit bias.

The issue is how to generate an appropriate questionnaire, which Saunders *et al* consider to be “harder than you think” (Saunders *et al*, 2000. p.279). The questionnaire design is related with the way of contact and fill. There are self-administered questionnaires (on-line, postal or mail and delivery and collection questionnaires) and, on the other hand, interviewer administered questionnaires (telephone questionnaires and structured interviews, Saunders *et al*, 2000). Questions that should be short and focused, can be open (answered in words), closed (alternative replies to choose from), quantity (require a number for response), list (more than one responses), ranking/scales (likert scale, choosing a ranked option to express degree of agreement) or grid, measuring more than one dimensions (Marshall, 2005). Closed questions help respondents consider all the possible answers that in other cases could lapse their minds at the time of questionnaire filling, eliminate useless answers and make the analysis easier later (Sinclair, 1975).

The necessary data to address the research objectives set above collected from three different sources with several means, as figure 3.1 depicts.

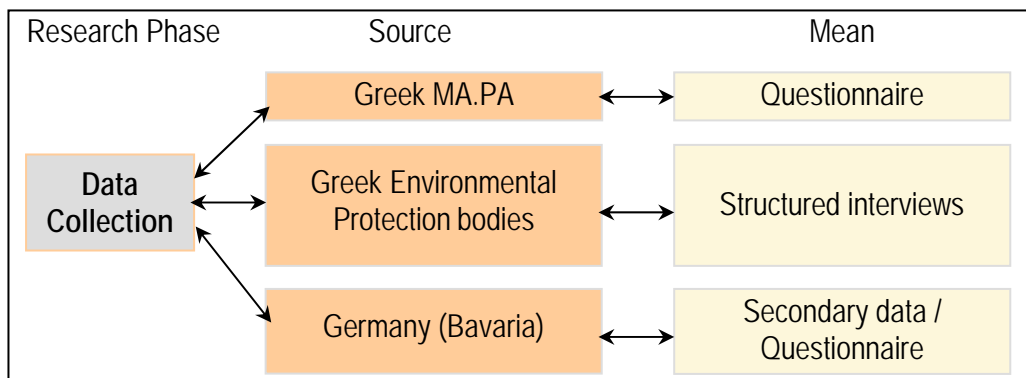


Figure 3.1: Research Data collection methods used

The stage A of the research explored the same research topic with Chiotelli *et al* research. For that reason data collected following the same data collection

method that was the use of questionnaire sent to the MA.PA operate in Greece. Experience reported from all Greek MA.PA (see Appendix I). Sampling was not necessary since the amount of data collection and elaboration could easily be handled.

A suitable structured questionnaire was designed, based on the research objectives, the Greek Law 2742/1999, and former researches. Before its distribution the questionnaire tested from people working to MA.PA (1 MA president, 1 MA head/coordinator and two representatives of WWF Hellas responsible for MA.PA), in order to be ensured that it is understandable, easy to filled in and proper for the research topic.

From the research questionnaire test feedback arose some important improvements. Firstly was needed to be defined exactly the persons who would address the questions, in order the collected data being comparable and bring out rational conclusions. Those persons decided to be the Presidents of each MA.PA that, in one hand, were undertake their duties recently (on December, 2009) but, on the other hand, could access valued information for questions reported past experience from their subordinates.

Moreover some question improvements and changes made. Some questions from open-end became closed-end, in order to facilitate afterwards the data analysis. For the same reason, some multiple choices answers of closed-end questions enriched. Some other questions leaved out, since on the one hand their data could be collected by other means (secondary data) and on the other hand needed reduce questionnaire length and time needed for questionnaire completion. Finally, in some parts of the questionnaire entered new questions. After all questionnaire modifications, the final questionnaire form was created.

The questionnaire comprised of 6 units (a. MA Administration; b. MA Staff; c. MA Infrastructure; d. MA Operation-Administration; e. Governance Issues and d. MA/President Data) and 40 questions in total (questionnaire form is available in Appendix II).



The first unit contained 9 questions about the Board of the Management Authority. It structured such as to report the working experience and specialty of the head of MA (President and Head or Program Manager, questions 1-3), the composition of the Board (quest. 4-7) and its dynamic (quest. 8-9). The second unit reported the MA staff status (quest. 1-2) and problems (quest. 3-5) and the third unit similarly reported the MA infrastructure status (quest. 1-2) and problems (quest. 3-5).

The fourth unit reported MA operation and administration information regarding management plans and regulations (quest. 1), financial sources (quest. 2-3), activities (quest. 4-5) and co-operation (quest. 6-7). The fifth unit contained questions about governance issues such as the law and its implementation (quest. 1-7), the political will (quest. 8), the possibility of MA centralization (quest. 9) and transparency (quest. 10) and accountability issues (quest. 11-14). The last unit referred to MA and president information.

The final version of questionnaire distributed to 25 out of 28 MA.PA operate in Greece. It sent by e-mail to the official electronic address of each MA on March 2010 and was asked to be filled in from the President. Followed a reminder e-mail, sent one month later to those MA.PA that had not respond yet. Also in some cases telephone contact took place.

From the research intentionally excluded the 'MA of National Park of Tzoumerka, Peristeri and Arachthos Ravine' which is the newest MA in Greece (created in 2009, PD: GG 49/Δ/12-2-09, [M.E.E.C.C., Oct. 2009](#)) and, as such, its contribution to the research would be negligible due to its organizational and operational absence. On the other hand, the contact with two of the MA.PA was not feasible and this is the reason why they did not include in the research. Those MA were the 'MA of National Park of Schinia - Marathon' and the 'MA of Ecodevelopment area of Karla - Mavrovouni - Kefalovriso Velestino'.

Returned to the researcher 17 out of 25 questionnaires send, having a respond rate of 68%. [Saunders et al \(2000\)](#) suggest 30-50% respond rate for self administration questionnaires.

The second research stage (stage B), contained structured interviews (questions are available in Appendix IV) with carefully selected persons which work in Greek institutions that act on environment protection field. Initially was needed to choose the suitable bodies to address. That decided based on the bodies' role and relativity with the research topic.

More specific, data decided to been collected from people (see interviewees data in Appendix V) that work in:

1. Ministry of Environment, Energy and Climate Change (M.E.E.C.C.)
2. Ministry of Rural Development and Food (M.R.D.F.)
3. Hellenic Biotopes and Wetland Center
4. Environmental NGO WWF Hellas.

All persons except the person of the second body respond to the call. Finally tree interviews made.

At this research stage was important to ensure that the person responded the questions set was the appropriate one, for this reason the use of structure interviews preferred instead of the use of postal questionnaire. [Saunders et al \(2000\)](#) assume postal questionnaires lack in controlling if the responder is the same person as the one to whom questionnaire is send to. However, they suggest that e-mail send questionnaires and interviewer administered questionnaires contribute data been collected from the right person. But here, although there were specific questions to been asked, at the same time was favorable to ask more questions based on the conservation developed, so structured interviews preferred instead of questionnaires.

Face to face contact let the sense of trust to develop between the interviewing parts but it costs. On the other hand the telephone interviews consider cheaper and immediate ([Healey and Rawlinson, 1993](#)). For that reasons telephone interviews preferred to been used in this research. Initially the interviews arranged by a before interview telephone arrangement contact with each one of the bodies, in order a) to find the most competent person to address the interview's issues and b) to give its assent for the interview process. After that

the date of telephone contact arranged and the interviewees received by e-mail the interview questions in order to be prepared.

At the third stage (stage C), data was collected from Germany and Bavaria federal state. Germany is a European country with long tradition and experience in environmental protection care. Since a lot of years, (approximately 70 years), it has recognized the need for nature ecosystems maintenance, for that reason established a wide network of Natural Forest Reserves. That network, along with National Parks and Natura sites, compose today a well planed and distributed network of protected areas in the country.

Though PA organization and management plans differ among the German land, pioneer and experienced PA have been established in Bavaria, Baden-Württemberg and Lower Saxony. Research chose to focus on Bavaria case since it has set high standards on environmental protection. It was the first state in Germany that set its own conservation law and the first state in Europe that established ministry for the environment. Moreover it is known that the Greek Forestry and its relevant service (Forest Service) were planned based on the Bavarian model.

At this research stage was aimed to collect secondary data, which [Yang \*et al\* \(2006\)](#) consider able to reduce reliability and validity problems in international business research. Secondary data was enriched with primary data collected by the use of questionnaire send by e-mail to Bavarians National Parks (Bavarian Forest National Park and Alpine National Park of Berchtesgaden). The response came from Mr. Helmut Lunding, the head for protection on Natura cites of Bavaria. That questionnaire (available in Appendix VI) consisted only of open end questions, which [Marshall \(2005\)](#) suggests that give the respondent a point of flexibility and the chance to present their own aspect.

Eventually, at the final research stage (stage D) all data were analyzed, the outcomes evaluated and discussed in order finally suggest plan and policies for MA.PA improvement and effective operation.

### 3.4 METHODS FOR DATA ANALYSIS

The research contained both quantitative data (numerical or quantifiable data) and qualitative data (expressed in words, sentences), that need to analyzed and interpreted in order to meet the research objectives.

The research stage A include quantitative data came from 28 closed-end questions and qualitative data arise from the rest 12 open-end questions of the questionnaire. Quantitative are easily analyzed with the use of personal computer software ('Excel', 'Lotus 123', 'SuperCalc') or with more advanced software packages ('Minitab', 'SAS', 'SPSS for Windows', 'Stratview') (Saunders *et al*, 2000). In this research the quantitative data analyzed with 'SPSS 8.0 for Windows'.

Initially the data entered to the software in a table matrix form where variables set and data recoded in numerical codes. The variables used to SPSS were numerical type, some of them with ordinal measurement and some other with scale. See the questionnaire coding in Appendix III. The matrix after checked for errors and finally data explored and presented using tables and diagrams. Further analysis with the use of statistics explored data relationships and trends.

Concerning the qualitative analysis, this contained classification and conceptualization of the data collected. Initially the data were categorized in appropriate categories set by the researcher, after were unitized and next relationships of data categories were explored, new categories were generated and data were re-allocated to them.

### 3.5 SUMMARY

The research combined multi-method strategies and developed in four stages:

- Stage A: Primary data from MA.PA of Greece obtained. A suitable questionnaire was used that touched several organizational, operational and governance issues. Both closed-end and open-end (limited)

questions were used. The majority of data was quantitative and analysed in SPSS for windows.

- Stage B: Oriented to people work on environmental protection bodies. Again primary data collected based on opinions regarding MA.PA role, status, weaknesses and suggestions for their improvement. Structured interviews made by telephone contact.
- Stage C: Secondary and primary data collected from Bavaria Germany. A short and simple questionnaire comprised exclusively from open-end questions was used. The head of Natura sites of Bavaria addressed the questions.
- Stage D: Data analysis and discussion. Conclusions.

## 4 STUDY RESULTS

### 4.1 ORGANIZATION AND OPERATION LEVEL OF MA.PA

#### **Administration (President, Head and Board of Directors)**

President position is set in all of the MA.PA as prescribed by the law 2742/1999. Moreover the law constitutes one head position to MA.PA. For economic reasons MA.PA do not have proclaim/hire administrative head position. Those kinds of duties are made by the coordinators of the founded programs (European programs). In the frame of this research as head position is meant the head of founded programs (coordinator).

The research shows that the 8 out of 10 MA.PA (82.4%) have head position available (table 4.1). In one case head duties are made by MA.PA's president.

Table 4.1: Head position available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	56,0	82,4	82,4
	No	3	12,0	17,6	100,0
	Total	17	68,0	100,0	
Missing	System	8	32,0		
Total		25	100,0		

Results show that the presidents more often have the specialty of forester (41.2%) and follow biologist (23.5%) and rarer other specialties (table 4.2). Regarding presidents' previous experience the law imposes to be '*a person with scientific knowledge and experience about natural environment protection*' ([Greek Law 2742/99. p.25](#)).

A big percentage of today presidents (47.1%) works as educational staff in higher education institutions, position that is interweave with a lot of scientific and research work. It follows the 23.5% which works in high posts of Forest Service, 11.8% that works as researchers and other (table 4.3).

Table 4.2: MA President's specialty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agronomist	1	4,0	5,9	5,9
	Biologist	4	16,0	23,5	29,4
	Chemist	2	8,0	11,8	41,2
	Forester	7	28,0	41,2	82,4
	Planning Engineer	1	4,0	5,9	88,3
	Professor	1	4,0	5,9	94,2
	Sea Biologist	1	4,0	5,9	100,0
	Total	17	68,0	100,0	
Missing	System	8	32,0		
Total		25	100,0		

Table 4.3: Previous MA President's working experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Educational Staff	8	32,0	47,1	47,1
	Forest Service	4	16,0	23,5	70,6
	MA.PA Staff	1	4,0	5,9	76,5
	Ministry Staff	1	4,0	5,9	82,4
	Private individual	1	4,0	5,9	88,3
	Researcher	2	8,0	11,8	100,0
	Total	17	68,0	100,0	
Missing	System	8	32,0		
Total		25	100,0		

The head position is covered in a percent of 28.6% by foresters and in 21.4% by biologists. Other specialists appeared with fewer percentages (table 4.4). In all the cases the head has previous working experience. Often heads have experience in European environmental and research programs, working experience in MA.PA (in the same or other post), biodiversity issues and other (table 4.5).

Table 4.4: Head's specialty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Biologist	3	12,0	21,4	21,4
	Economist	1	4,0	7,1	28,5
	Environm. Argo ecologist	1	4,0	7,1	35,6
	Environmental Engineer	2	8,0	14,3	49,9
	Environmentalist	1	4,0	7,1	57,0
	Forester	4	16,0	28,6	85,6
	Ichthyologist	1	4,0	7,1	92,7
	Planning Engineer &	1	4,0	7,1	100,0
Total	14	56,0	100,0		
Missing	System	11	44,0		
Total		25	100,0		

Table 4.5: Head's previous working experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3years Head of MA.PA, Forest Policy	1	4,0	9,1	9,1
	5 years IC MAPA, 4 years EU programs	1	4,0	9,1	18,2
	Biodiversity study, Greek Fauna	1	4,0	9,1	27,3
	Environmental programs & LA	1	4,0	9,1	36,4
	EU programs	1	4,0	9,1	45,5
	Fishing issues	1	4,0	9,1	54,6
	Head of Forest General Directorate	1	4,0	9,1	63,7
	Research experience at Agricultural Un. Athens	1	4,0	9,1	72,8
	Research programs, strategic plans, LA, head of I.C. MA	1	4,0	9,1	81,9
	Scientific coordinator Uioa, teaching TEI Hpeirou	1	4,0	9,1	91,0
	Studier PA, working Ornithology G.A.	1	4,0	9,1	100,0
	Total	11	44,0	100,0	
Missing	System	14	56,0		
Total		25	100,0		

MA.PA are administered by Board of Directors (BD) that composed from several actors representatives. From the research analysis is seen that the majority of MA.PA considers their BD composition and effectiveness as satisfactory (figure 4.1). BD composition is appreciated a) as for the representation of several actors satisfactory at 64.7%; b) as for members' relativity with MA.PA objectives satisfactory at 52.9%; c) as for members' previous working experience satisfactory at 58.8%; and d) as for decision making satisfactory at 47,1% and very satisfactory at 35.3% (table 4.6).

Table 4.6: Board of Directors Composition

	BD as for actors' representation	BD as for members' relativity	BD as for members' previous experience	BD as for decision making
Very satisfactory	17,6%	17,6%	11,8%	35,3%
Satisfactory	64,7%	52,9%	58,8%	47,1%
Moderately satisfactory	11,8%	17,6%	29,4%	17,6%
Not satisfactory	5,9%	11,8%	-	-
Total	100,0%	100,0%	100,0%	100,0%



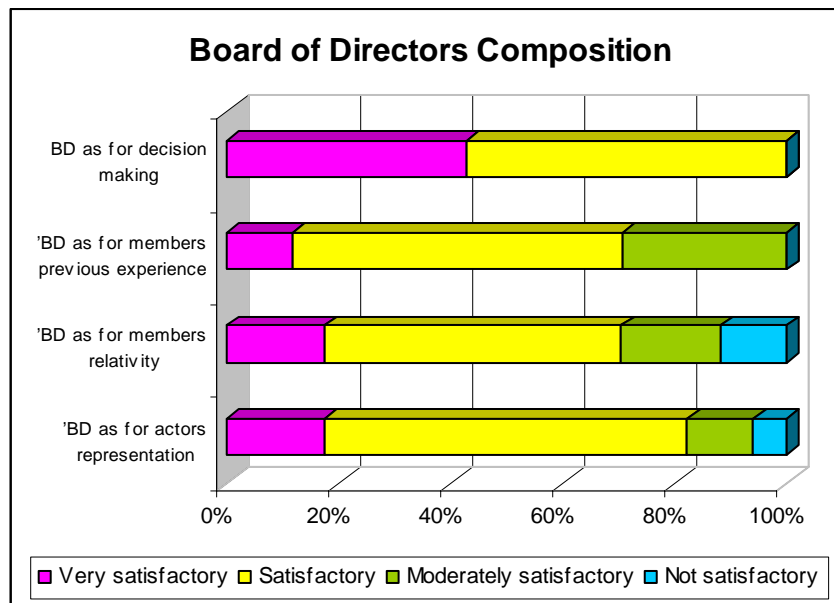


Figure 4.1: Board of Directors Composition

Regarding BD composition as for actors' representation two MA.PA are moderately satisfactory. To the one BD there is no representation from the local Higher Education Institute, Research Institution and Chamber of Geotechnical. To the other BD absents some local productive actors (i.e. loggers), actors from the field of tourism and representation from the local Higher Education Institute.

In one case that BD composition as for actors' representation appears not at all satisfactory. The reason why has not necessarily to do with the actors representation itself, as they explain, but with what organization part will represent the actor and with which employees (almost in all services staff relative with PA management is lacking). Moreover some actors' representation is not necessary (Ministry for Rural Development and Food is referred as such).

BD meetings took place regularly once a month in a percentage of 68.8% (table 4.7). It is interesting to see if any organizational factor influences BD meetings frequency. For that reason crosstabulation process used (chi square test). As dependent variable analyzed the frequency of BD meetings (Question A9 of the questionnaire) and as independent variables the i) head position available (Q:A2), ii) BD composition as for actors' representation (Q:A4), iii) BD composition as

for members' relativity (Q:A5), iv) BD composition as for members' previous experience (Q:A6), and v) BD as for decision making (Q:A8). The analysis showed that there is no statistical significance (data are homogeneous distributed). Only the BD actors' representation appears a marginal statistical significance (table 4.8).

Table 4.7: Broad meetings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 time/month	11	44,0	68,8	68,8
	1 time/3months	2	8,0	12,5	81,3
	other	3	12,0	18,8	100,0
	Total	16	64,0	100,0	
Missing	System	9	36,0		
Total		25	100,0		

Table 4.8: Crosstab and Chi-Square Tests

		Broad composition & actors representation				Total
		Very satisfactory	Satisfactory	Moderately satisfactory	Not satisfactory	
Broad meetings	1 time/month	1	9	1		11
	1 time/3months	1			1	2
	other		2	1		3
Total		2	11	2	1	16

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,771	6	,047
Likelihood Ratio	10,629	6	,101
Linear-by-Linear	,622	1	,430
N of Valid Cases	16		

The above are confirmed by interviews' evidences that show improvement done regarding the new BD composition. BD's new president and members seemed to be more suitable to ask their duties than the previous one, since they are relevant scientists. In different case (as happened on past, where even contractors were on the president position) could take place on PA actions against the law (interviewee 1).

### **Observations:**

- President positions are possessed by persons suitable both regarding their specialty and working experience and their relevance with PA objectives.
- Head posts are available for the 8 out of ten MA.PA and are satisfactory as for specialty and working experience.
- The specialty that more often appear in president and head posts is that of forester and biologist.
- MA.PA majority is satisfied from its BD as for its actors' representation, its members' relativity, its members' experience and its decision making effectiveness.
- BD meetings take place regularly (once a month) for the majority (68.8%). Its actors' representation can affect in some way BD meetings frequency.

### **Staff**

Regarding the staff, the law provides up to 20 positions for scientific staff and up to 10 for administration-technical staff. This means up to 30 people in total (but if is needed the number of staff can be changed with Common Ministerial Decision). Findings show that the total number of MA.PA staff is ranged from 4 to 31 people. The 52.9% of MA.PA occupies less than ten people, 35.3% occupies 10-20 people and only 11.8% occupies more than 20 people in total (table 4.9, figure 4.2).

Table 4.9: Number of MA staff

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10	9	36,0	52,9	52,9
	10-20	6	24,0	35,3	88,2
	>20	2	8,0	11,8	100,0
	Total	17	68,0	100,0	
Missing	System	8	32,0		
Total		25	100,0		

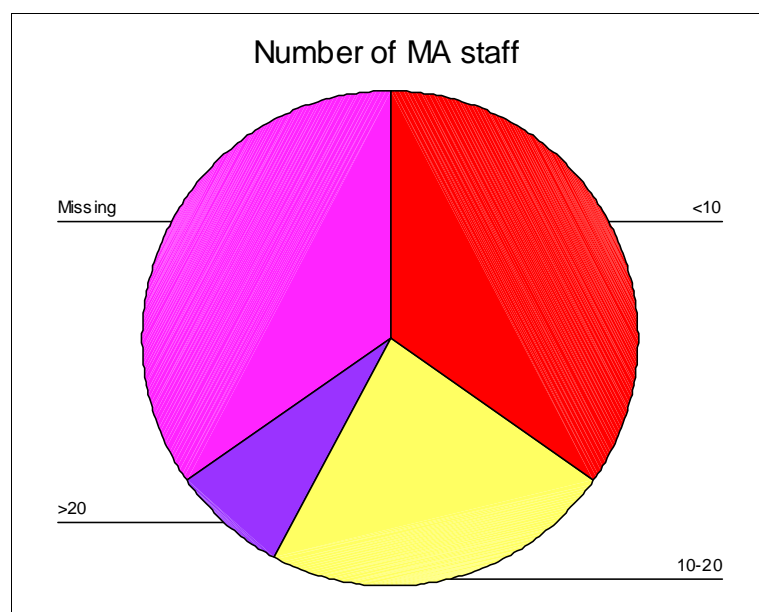


Figure 4.2: Number of MA staff

Analysing the staff status, only a small percentage of it works to MA.PA for less than a year (13.3%), the last two years works the 25.8%, the last three years the 19.5%, while the most percentage (41.4%) of the staff works for more than three years to MA.PA (table 4.10, figure 4.3).

Table 4.10: Number of staff working in MA.PA per years of employment

	0-1 year	1-2 years	2-3 years	> than 3 years	Total
Total number of staff	17	33	25	53	128
Percent	13,3%	25,8%	19,5%	41,4%	100%

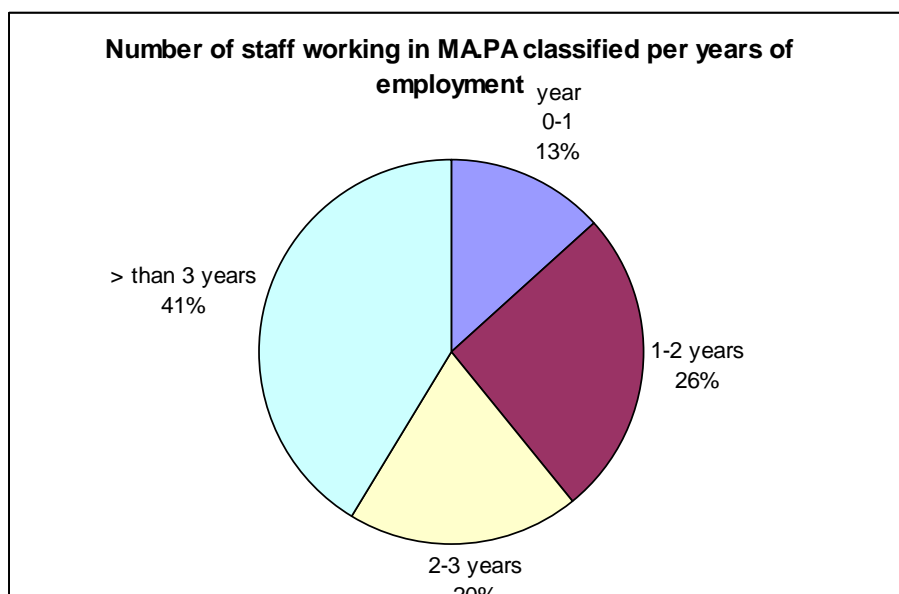


Figure 4.3: Number of staff per years of employment

The suitable proportion of the staff according to the law, as referred before, is 20/30 (67%) for scientific staff and 10/30 (33%) for administration and technical staff. As results from table 4.11, only in three out of 17 cases (17.6%) that proportion is kept up.

Table 4.11: Ratio of the staff

	Scientific	Administration – technical	Total	Scientific Percentage (%)	Administration – technical Percentage (%)
	[1]	[2]	[3]=[1]+[2]	[4]=[1]/[3]	[5]=[2]/[3]
1	9	22	31	29	71
2	5	2	7	71	29
3	4	2	6	67	33
4	9	9	18	50	50
5	6	12	18	33	66
6	2	2	4	50	50
7	6	9	15	40	60
8	8	4	12	67	33
9	2	3	5	40	60
10	4	9	12	33	66
11	3	4	7	43	57
12	3	8	11	27	73
13	2	2	4	50	50
14	4	3	7	57	43
15	1	7	8	12,5	87,5
16	3	4	7	43	57
17	11	17	28	39	61

Nearly all MA.PA (94.1%) occupy guards (4.94 persons in mean). The majority (58.8%) employs also administrative staff (1.4 persons in mean). The 47.1% has

in its staff team foresters (1.88 persons in mean) and environmentalists (1.5 persons in mean), the 41.2% economists (1.14 in mean), the 35.3% biologists and guides (1.5 and 2 in means each), the 23.5% agronomists, technologist foresters, environmental engineers and management and economics (in mean 1.25, 1.75, 1 and 1 each). In a less extent there are and other staff specialties as table 4.12 shows.

Table 4.12: Descriptive Statistics of staff specialties

	N	Minimum	Maximum	Sum	Mean
Rural and Topographer Engineer	2	1	2	3	1,50
Biologist	6	1	3	9	1,50
Geologist	2	1	1	2	1,00
Agronomist	4	1	2	5	1,25
Forester	8	1	4	15	1,88
Technologist Forester	4	1	4	7	1,75
Environmental Engineer	4	1	1	4	1,00
Legal	1	1	1	1	1,00
Environmentalist	8	1	2	12	1,50
Management & Economics	4	1	1	4	1,00
Economist	7	1	2	8	1,14
Administrative Staff	10	1	2	14	1,40
Guard staff	16	1	20	79	4,94
Guides	6	1	5	12	2,00
Accountant	2	1	1	2	1,00
Chemical Engineer	2	1	2	3	1,50
Computer Scientist	2	1	1	2	1,00
General duties	1	1	1	1	1,00
Ichthyologist	2	1	1	2	1,00
Technologist Ichthyologist	1	1	1	1	1,00
Journalist	1	1	1	1	1,00
Cleaner	1	1	1	1	1,00
Provider	1	1	1	1	1,00
Planning Engineer & Regional	1	1	1	1	1,00
Political Sciences	1	1	1	1	1,00
Science of sea	1	1	1	1	1,00
Workers	1	1	5	5	5,00
Valid N (listwise)	0				

### **Staff Problems**

The 8 out of 10 considers as the most important problem the shortage of regular staff (table 4.13). Other staff problems that considered from modest to extremely important are the insufficient in the number of staff (77%) and the lack of specialized knowledge among staff (66.6%).

The most important factors for the staff problems are the lack of economic means (73.3% marked with 5, table 4.14) and the existing legal regime (57.1%). Other factors that the majority appreciates from moderate to extremely important are low career opportunities of the posts (88.8%), hiring delays due to bureaucracy (84.7% marked 3-5), and candidates' lack of sufficient education (61.6%).

Table 4.13: Staff problems and their importance

Problem	Relative importance					Total
	5	4	3	2	1	
Staff insufficiency	15,4%	30,8%	30,8%	15,4%	7,7%	100%
Shortage of regular staff	80,0%	20,0%	0,0%	0,0%	0,0%	100%
Staff specialty inadequacy	20,0%	13,3%	33,3%	20,0%	13,3%	100%
Staff Inexperience	8,3%	8,3%	33,3%	41,7%	8,3%	100%
Lack of staff's interesting for	0,0%	16,7%	16,7%	16,7%	50,0%	100%
Make staff productive	0,0%	18,2%	18,2%	9,1%	54,5%	100%

Table 4.14: Factors for staff problems

Problem	Relative importance					Total
	5	4	3	2	1	
Economic means are lacking	73,3%	13,3%	13,3%	0,0%	0,0%	100%
Existing legal regime	57,1%	14,3%	28,6%	0,0%	0,0%	100%
Lack of candidate's sufficient education, grounding	7,7%	30,8%	23,1%	15,4%	23,1%	100%
Low pay/lack of incentives	18,2%	0,0%	45,5%	27,3%	9,1%	100%
There are no opportunities for advancement/career	33,3%	22,2%	33,3%	0,0%	11,1%	100%
Hiring delays due to bureaucracy	38,5%	30,8%	15,4%	7,7%	7,7%	100%
Lack of co-ordination	9,1%	9,1%	18,2%	45,5%	18,2%	100%

Staff problems could be solved through a) MA.PA regular staff obtainment (the 87.6% raised that solution between first and second rank), b) sufficient financing (the 75.1% placed it between first and second rank) and c) the reassessment of the existing legal regime (the 56.3% suggest it as first or second solution, table 4.15).

Table 4.15: List of solutions to staff problems

	Rank of importance					Total
	1	2	3	4	5	
Sufficient financing of MA	56,3%	18,8%	25,0%	0,0%	0,0%	100%
Reassessment of the legal regime	25,0%	31,3%	37,5%	6,3%	0,0%	100%
Regular staff obtainment	56,3%	31,3%	12,5%	0,0%	0,0%	100%
Staff training/seminars	13,3%	6,7%	6,7%	66,7%	6,7%	100%
Providing staff motivations	0,0%	0,0%	7,7%	7,7%	84,6%	100%

### **Observations:**

- The majority of MA.PA operates with fewer staff than it should. The half has 1/3 and fewer staff than the staff prescribed by the law.
- A big percentage of the staff work to MA.PA form more than 3 years.
- The analogy between scientific and administration-technical staff is not harmonious for the 8 out of ten MA.PA.
- Nearly all MA.PA. (94.1%) occupy guards.
- More than half (58.8%) employ and administrative staff.
- A big percent (47.1%) employ foresters and/or environmentalists.
- The minimum number of staff is 1 person of the specialty of geologist, environmental engineer, legal, management and economics, accountant, computer scientist, general duties, ichthyologist, technologist ichthyologist, journalist, cleaner, provider, planning engineer and regional development, political science and/or science of sea.
- The maximum number of staff comes up to 20 persons of guard staff.
- Staff problems mainly are related with the existing occupational regime (not regular staff), the number of staff that is fewer than the needed and its specialization sufficiency.
- The lack of economic means and the existing legal regime are the most important factors cause staff problems.
- MA.PA suggest that if they employ regular staff, achieve sufficient financing and change the existing legal regime they would not have staff problems.

### **Infrastructure & equipment**

Evidence show that the majority of MA.PA do not have a building of their ownership for offices (table 4.16). Most of them are hosted to a building of another organization (47.1%). The 35.3% rents a building and only 17.6% has a building of its ownership (figure 4.1.4).

The majority (58.8%) has information centre. Other existing facilities are guardhouse and plant nursery (both at 5.9%). Regarding the communication



means the situation is better. All MA.PA have telephone connection, fax and e-mail. The 8 out of 10 have web page. As about transport means all (94.1%) have car/s, 23.5% have fire vehicles, 23.5% boats and one MA.PA has a motorbike.

Table 4.16: MA.PA infrastructure

Building of MA's ownership	17,6%	Car/s	94,1%
Rent building	35,3%	Fire vehicle/s	23,5%
Building offer hospitality to MA	47,1%	Web page	82,4%
Information centre	58,8%	e-mail	100%
Telephone connection	100%	PC	100%
Fax	100%		

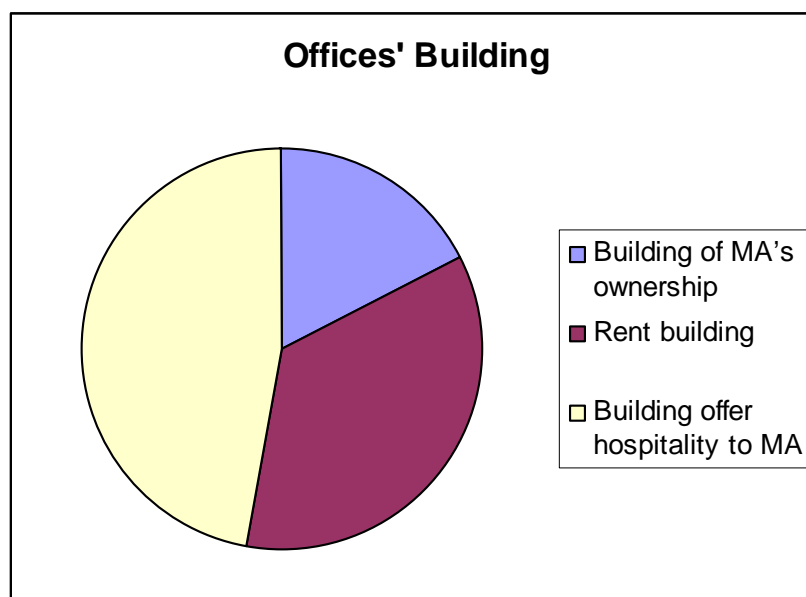


Figure 4.4: MA.PA offices' building

Moreover, MA.PA major equipment contains a) technological equipment (PC at 100%, GIS software at 29.4%, plotter at 11.8% and data bases, info kiosk, projector, copying machine and camera at 5.9% each one), b) scientific equipment (monitoring, sensors, microscopes, stereoscopes at 35.3%, c) controlling and guarding monitoring equipment (telescopes, field glasses, at 11.8%) and d) library infrastructure (11.8%).

### **Infrastructure & equipment Problems**

Problems there are regarding the buildings ownership and adequacy. The 41.2% needs its owned building offices, 23.5% need an information centre, 11.8% are not satisfied with their today buildings, 5.9% faces legalization problem

(arbitrary information centre), 5.9% need a new building to store up their equipment and 5.9% need a place for deer take care.

Regarding the transport means 35.3% need cars in order to control and guard the PA better and 11.8% need boat for guard and research things. The 5.9% need a bus for visitors' transportation.

Moreover, regarding the equipment, there is need for a) controlling and guarding equipment (telescopes, field glasses, wireless communication and other at 41.2%) b) scientific equipment (samplers, automotive registers, microscopes at 41.2%) and c) technological equipment (PC and suitable software at 35.3%). In less extent are needed a) office equipment (desks, air condition at 11.8%), b) library equipment (5.9%) and c) information centre equipment (5.9%).

The former problems exist due to the shortage of budgeting and the limited financial sources (at 52.9%). Also there is enough bureaucracy (procurements), delays to founding programs, wrong former planning, lack of experienced staff to organize the needed procedures and the fact that today is a transitional period for the European founding programs.

The basic way (suggested by the 64.7%) to overcome infrastructure problems is to change the founding by providing MA.PA sufficient money that will come from the regular state budgeting (M.E.E.C.C.). Nevertheless, 17.6% aim to overcome the problems through the new European programs funding. The 11.8% recommends the empowerment of MA.PA with regular staff, lifting the bureaucracy and/or better planning. Moreover is referred that should empower financing and staffing the co-responsible services.

### **Observations:**

- There is problem related with the bulging facilities. Mainly missing sufficient owned offices (41.2%) and secondly information centres (23.5%).

- The existing transport means are not sufficient. The 35.3% needs cars and 11.8% boats.
- Significant shortage there is regarding mainly guarding, scientific and technological equipment.
- The reasons why infrastructure problems exist are financial (limited founding, process obstacles/failure to absorb EU founding).
- The majority feels that a state regular funding could solve the problems.

### **Operation-Administration**

Referring to the today legal framework (table 4.17) under which MA.PA operate, evidence show that the majority (57,1%) do not have statutory boundary for the protected area set by a Presidential Decree (PD). Only the 28.6% has PA boundaries set by PD. The 71.4% have Common Ministerial Decision (CMD) for protected area statutory boundary while a small percentage (14.3%) does have neither PD nor CMD. It is wrong to establish MA.PA in areas that do not have statutory boundaries (interviewee 1).

The majority (88.2%) has Special Environmental Study approved from M.E.E.C.C., the 58.8% published on Greek Gazette and the rest not published yet. In relation with management plans, a great percentage (73.3%) does not have any, 20% has a management plan under approval from M.E.E.C.C. while 6.7% has a management plan approved from M.E.E.C.C. but still not published in Greek Gazette.

MA.PA should not miss their mission that is the observation of the maintenance condition of types of ecotypes and species and the drawing up management plans. For an effective management it is important MA.PA to distinguish their protected objectives (interviewee 3).

With regard to MA.PA regulations, the majority has all the necessary regulations approved from M.E.E.C.C. and published on Gazette. More specific approved regulation for Board of Director operation has 94.1%, regulation for MA

operation 68.8%, regulation for personnel service hours' operation 100%, regulation for economic management 100% and regulation for project-study-supply procurement 92.9%.

Table 4.17: MA.PA. today legal framework

	Approved from MEECC/ Gazette	Approved from MEECC/ not Gazette	Under approval form MEECC	Revised for the 2nd 5year MA period function	Under revision for the 2nd 5year MA period function	Not have
Statutory boundary of PA with Presidential Decree	28,6%	0,0%	7,1%	0,0%	7,1%	57,1%
Statutory boundary of PA with Joint Ministerial Decision	71,4%	0,0%	7,1%	0,0%	7,1%	14,3%
Special Environmental Study	58,8%	29,4%	5,9%	0,0%	5,9%	0,0%
Management Plan	0,0%	6,7%	20,0%	0,0%	0,0%	73,3%
Regulation for Board of Director Operation	94,1%	0,0%	0,0%	0,0%	0,0%	5,9%
Regulation for MA Operation	68,8%	0,0%	6,3%	0,0%	0,0%	25,0%
Regulation for Personnel Service Hours Operation	100%	0,0%	0,0%	0,0%	0,0%	0,0%
Regulation for Economic Management	100%	0,0%	0,0%	0,0%	0,0%	0,0%
Regulation for Project-Study-Supply Procurement	92,9%	0,0%	0,0%	0,0%	0,0%	7,1%

Last years the financial sources, as figure 4.5 shows, came in a great percentage (47.9%) from allowances from M.E.P.P.W. (now M.E.E.C.C.), other ministries, organizations and companies of wider public sector. From that percent the 46.7% of MA.PA had that financial source as exclusively finance and the 6.7% as to the greater extent finance (figure 4.6). It follows at 28.7% finance from MA.PA participation in European community programs (from that percent the 11.1% was the only finance and the 88.9% was to the greater extent >50% finance). The evidence show that the main financial sources will be about the same and for the next years.

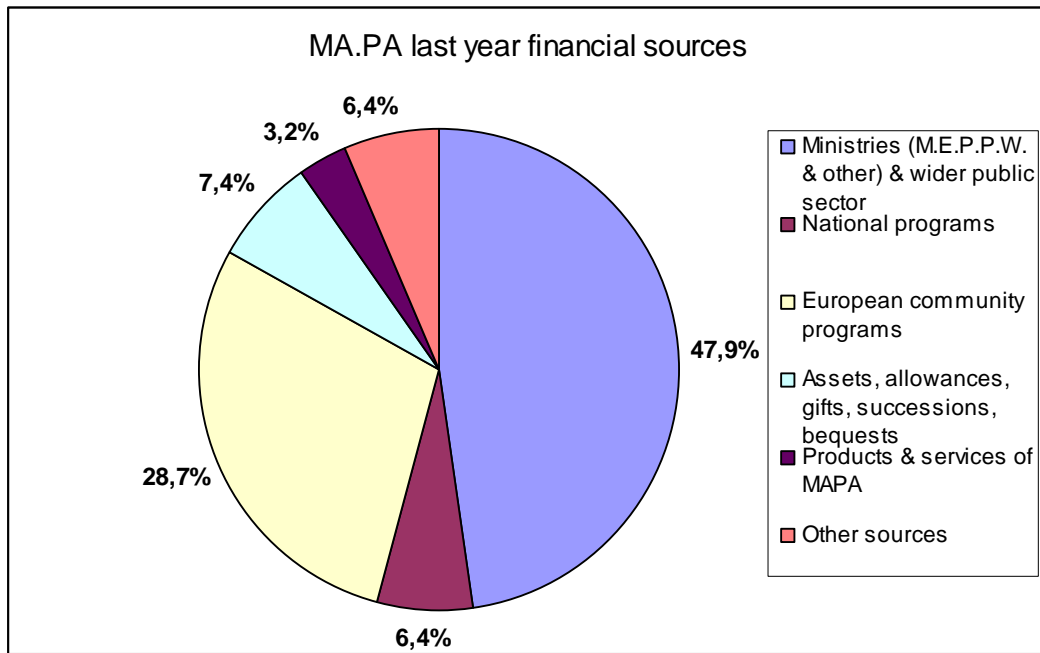


Figure 4.5: MA.PA last year financial sources

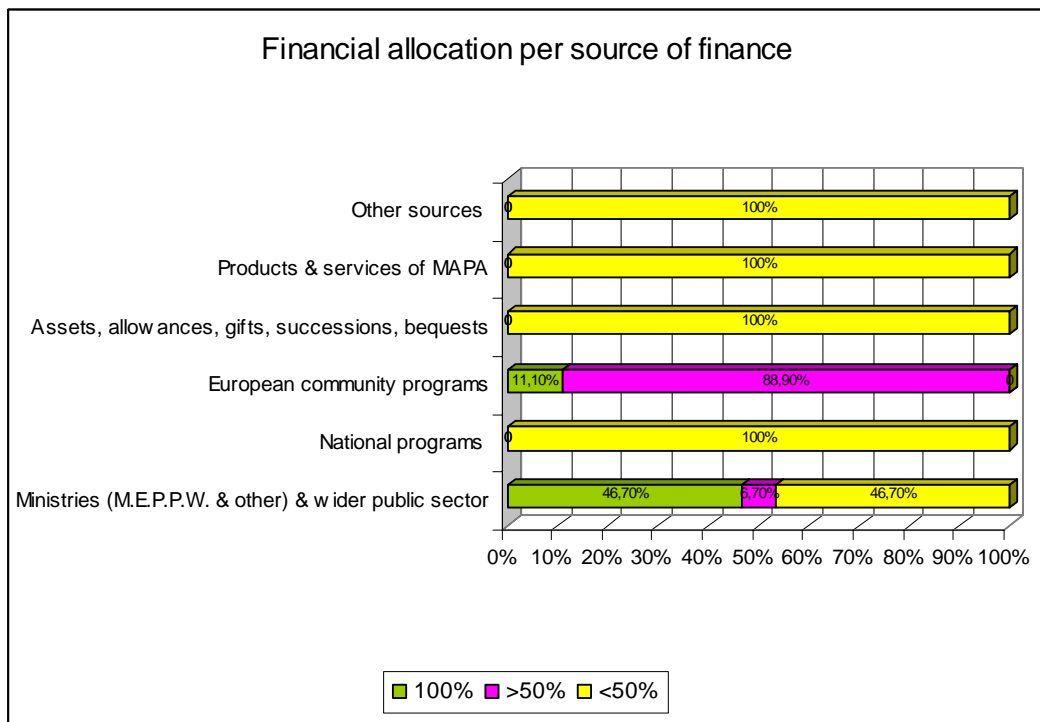


Figure 4.6: Financial allocation per source of finance

The law allows MA.PA to ask several activities, which they are able to make by their own or by assignment to others. It is interesting to see what activities are totally exercised (figure 4.7), as well as, to look separately into the percentage of activities made by MA.PA and those made by others (figure 4.8). Research

outcomes show that MA.PA more often enabled with data collection, data analysis and data bases (15.6%). That activity is made at 68.4% by MA.PA and by 31.3% by others.

It follows the activity of publications (14.8%) that is made at 77.8% by MA.PA and at 22.2% by others. At 13.1% MA.PA give consultative responses, activity made exclusively by them. At the same percentage (13.1%) are exercised studies/researches and protection of the area. Studies and research are made at 56.2% by MA.PA and at 43.8% by others while the protection of the area at 93.7% by MA.PA and just at 6.3% by others.

Rarer MA.PA enabled with programs of ecotourism (8.2%), guiding issues (5.7%) and quality/good cooperation labels to enterprises (4.1%). Ecotourism programs are made at 70.1% by MA.PA and at 29.9% by others. Issuing guiding permissions and provisioning quality labels to enterprises are made totally by MA.PA.

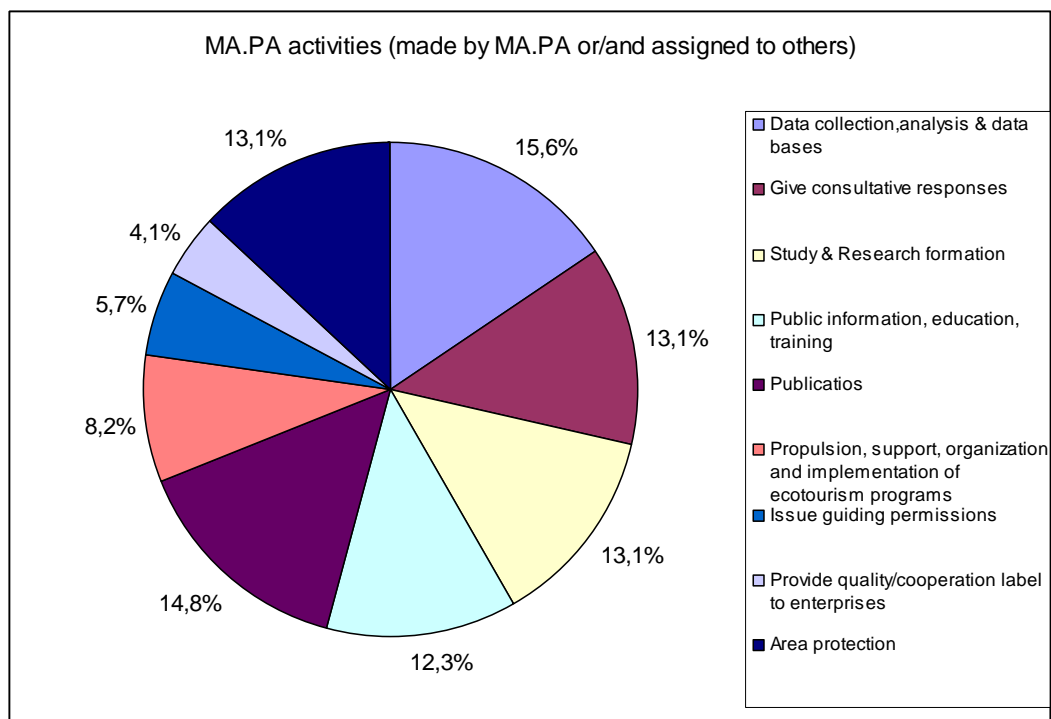


Figure 4.7: MA.PA activities totally exercised

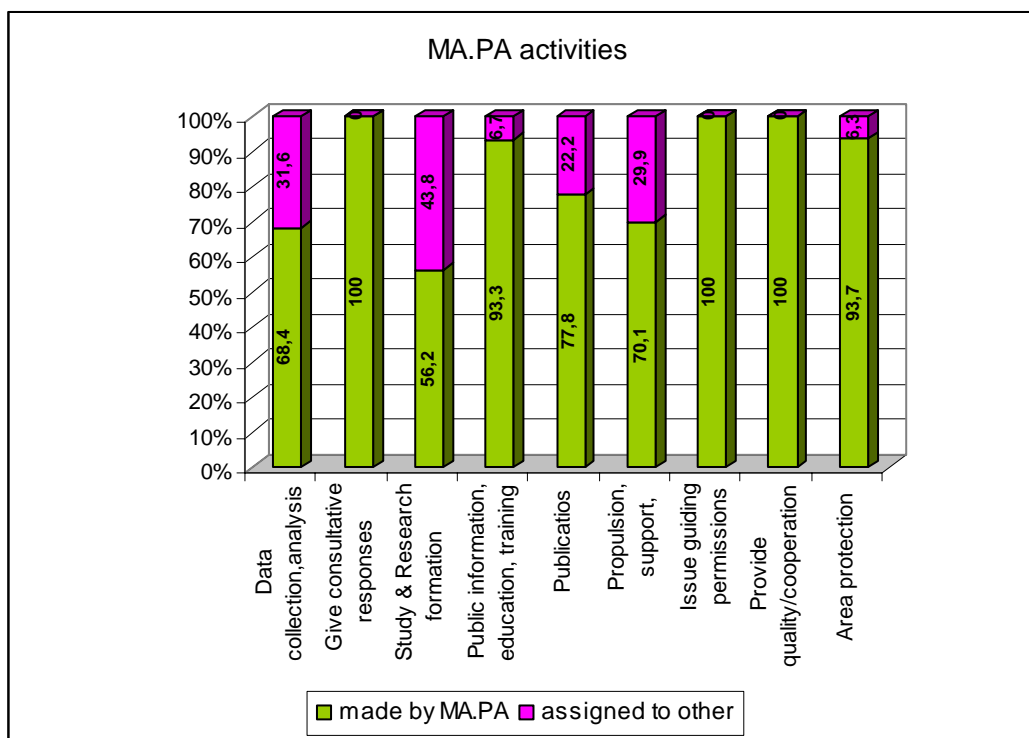


Figure 4.8: MA.PA activities

In order MA.PA made the former activities they collaborate with other bodies. Almost all MA.PA (94.1%) have developed collaboration with M.E.E.C.C. (figure 4.9), that is and the supervised state body. Follows the collaboration with local and regional public services (88.2%); Greek NGO (88.2%); Ministry of Rural Development and Food (70.6%); Greek higher level Education Institutions (64.7%); Greek Research Centres & Institutions (41.2%) and Ministry of Culture and Tourism (41.2%). Collaboration with foreign bodies has been developed but more limited (with alien NGO 11.8%, with alien Universities 5.9% and with alien Research Centres 5.9%).

Exploring the quality aspect for the former collaborations it is seen that excellent collaboration has been developed between MA.PA and foreign Universities and Research Institutions (100% marked as best, figure 4.10). It follows the collaboration with foreign NGO (50% marked as best & 50% as good).

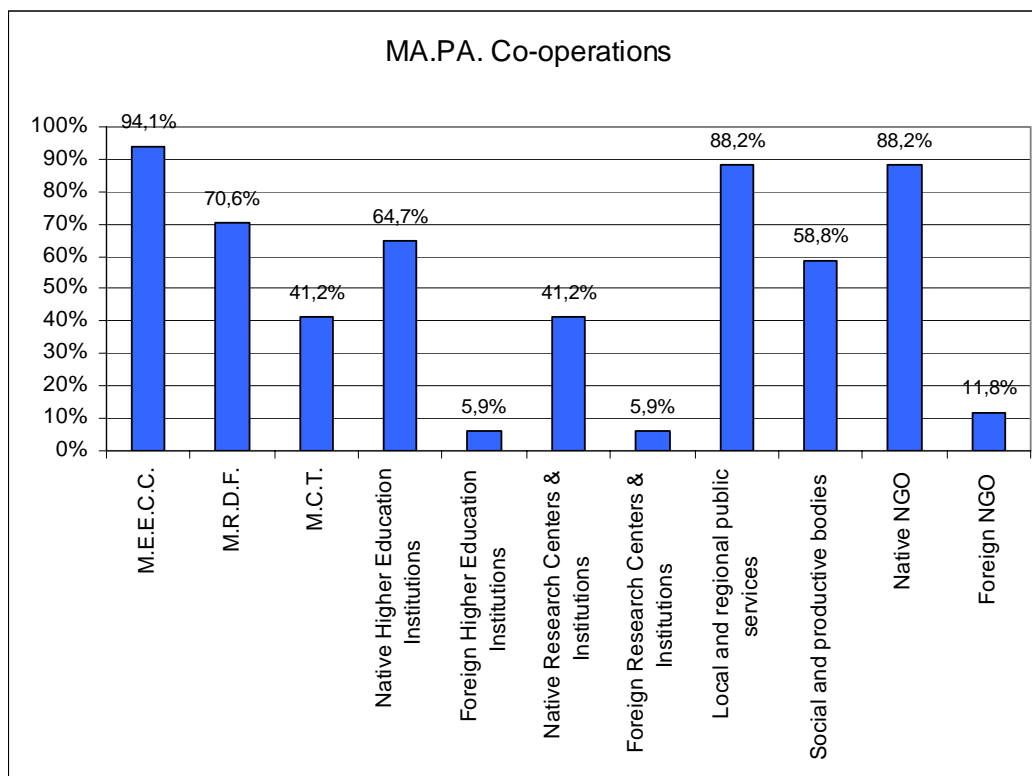


Figure 4.9: MA.PA Co-operations

The collaboration with M.E.E.C.C. is considered as good for the majority of MA.PA (56.3%). From the ministry side the general appreciation is that at operators' level there is not a good corporation. Good collaboration developed only in cases where existed personal connections among ministry persons and president or/and BD members (interviewee 1).

The half MA.PA considers the collaboration with ministry of Rural Development and Food as good (figure 4.10). Dichotomy exists regarding the collaboration with Ministry of Culture and Tourism. High percentage (42.9%) considers that as good and simultaneously the same percentage as bad. The collaboration with Greek Higher Education Institutes is considered for the majority (54.5%) as excellent. Moreover, a big percentage (71.4%) works well with Greek Research Institutions and the rest of it excellent. Finally, the half MA.PA works well with social and productive bodies.



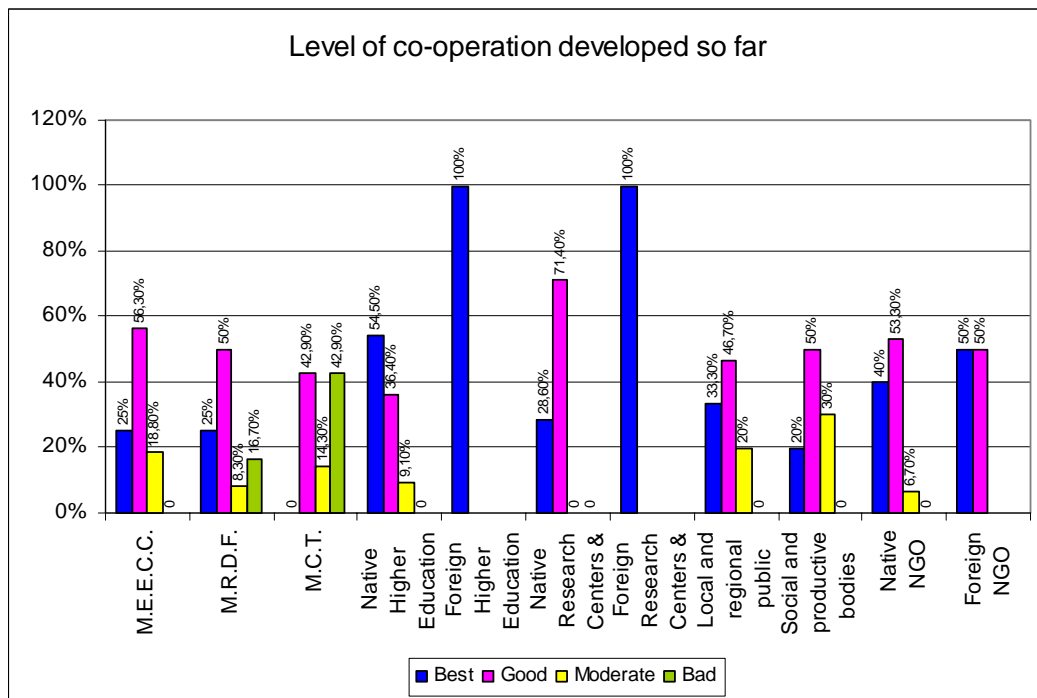


Figure 4.10: Level of co-operations

From the interviews is seen that the relationship between MA.PA and Greek NGOs are very tight and vital. MA.PA seek for that collaboration and NGOs (WWF Hellas in this case) assist them to decision making (through BD representation) and otherwise (by organizing seminars, training the staff, producing management plan handbook). The general estimation is that without NGOs the MA.PA would produce the half work than they made today (interviewee 4).

### **Observations:**

- The statutory boundary of the PA, based on the existing legal framework is weak. Only the 28.6% has PD that is the most powered enactment, the 57.1% has CMD while 14.3% has nothing (not PD or CMD).
- The majority has approved from M.E.E.C.C. and published on Greek Gazette a Special Environmental Study (58.8%).
- Problem exists with Management Plans, for which the most MA.PA (73.3%) have not.

- The majority has all the necessary regulations approved from M.E.E.C.C. and published on Gazette.
- The main financial sources become from the ministry (M.E.E.C.C.) and the wider public sector (at 47.9%) and the European community (at 28.7%). Some MA.PA are financed only from one of that sources exclusively.
- The main MA.PA activities made are data collection, analysis and data bases, publications, consultative things, studies and researches and protection of the area.
- Activities such as giving consultative responses, issuing guiding permissions, provide quality or corporation labels to enterprises are totally made by MA.PA means.
- No MA.PA activity is totally assigned to others.
- The main bodies that MA.PA co-operates with are M.E.E.C.C., local and regional public services, Greek NGOs, Ministry of Rural Development and Food, native universities and technological educational institutes and social and productive bodies.
- The best collaboration framework has been developed between MA.PA and foreign Universities and Research Institutions too. Bad level of collaboration exists between MA.PA and Ministry of Culture and tourism and Ministry of Rural Development and Food.

## **4.2 MA.PA GOVERNANCE ISSUES**

Research shows that the majority (62.5%) of MA.PA believes that the existing Greek law does not give them the needed legalization in order to operate, administrate and manage PA. Also the majority (64.7%) believes that the wider existing legislation that governs the area of their responsibility is harmonized with the environmental legislation. The same percentage (64.7%) feels that the competences and authority that they have in the area of their responsibility are not clearly defined.

Specifically the MA.PA have not clearly jurisdiction over the PA guard (interviewee 4). They can not take legal proceedings against grass, hunting etc., and they can not practically protect the area (interviewee 3). Also, they are not allowed to arrest someone that go against the law in the area of their responsibility. They refer the happenings to the local and regional services (Police, Forest Service, Port Police Corps) waiting for their contribution. And here are raised competencies, priority and other problems (interviewee 4).

Regarding autonomy issues the majority of MA.PA (66.7%) considers that does not have as autonomy is needed in order to achieve MA.PA's goals smoothly. Particularly to the guard issue legislatively nothing can be changed. Ministries should take the initiative in directing public services and local authorities regarding collaboration with MA.PA (interviewee 4).

MA.PA majority (62.5%) believes that there is the political will for their problems solutions. Ministry evidence confirmed that, since the last seeks ways to empower MA.PA. That can happen by maintaining fewer MA.PA. It is examined to classify the PAs by national and regional parks (related their importance) and then to set the national parks under the responsibility of the minister of E.E.C.C. and the regional parks under the district commissioner (interviewee 1). Regarding the establishment of one central MA.PA per region, the greater percentage of MA.PA (87.5%) is negative.

As about transparency issues, the majority (64.7%) of MA.PA believes that there is enough transparency in governing MA.PA in Greece.

MA.PA are obligated to accountability. Most of them (76.5%) regularly (every year) send in M.E.E.C.C. and Ministry of Economic yearly report to account for their financial management. The reverse happen relative the yearly MA.PA assessment for their implementation of management, operational regulations and management plans. Only 20% of MA.PA account regularly every year to M.E.E.C.C. The rest whether are not account at all or account partially. The

reason why that happen is related with the fact that most MA.PA. do not have management plans or/and operational regulation to account for.

Relative with downward accountability the 8 out of 10 account about their work to citizens, productive bodies, NGO, local societies and others. Nevertheless downward accountability is not made in a sense of a written defence report but is made mainly throughout the actor's involvement (representation and discussion) to MA.PA Board of Directors. Moreover all BD's meetings are open, so to attend them anyone who wants to be informed, and BD decisions are published (to MA.PA webpages).

### **Observations:**

- The law that set MA.PA operation, administration and PA management is insufficient.
- The wider existing legislation is harmonized with the environmental legislation.
- The competences and authority of MA.PA in the area of their responsibility need to be better defined.
- MA.PA need more autonomy.
- There is political will for MA.PA improvement.
- There is enough transparency in governing MA.PA in Greece.
- MA.PA regularly account upward for their financial management.
- Problem exists with the upward accountability regarding the regulations and management plans implementation.
- Downward accountability is achieved through MA.PA decision making process.

## **4.3 GERMAN EXPERIENCE**

The first evidence showed some useful information. In some of the confederate states the management is up to nature protection services (Forest Service). Local and regional actors' participation is surely important, which are in every case informed about the management plans regularly (every 6 months). The national

level coordination is achieved through meetings and conferences where opinions and experiences are exchanged.

The major mean to achieve nature protection and biodiversity maintenance in Germany considered being the proper management of PA. The management was not restricted to management plan production and to suitable measures planning, but also included wide actors' participation (forest land owners, forest users, associations and citizens) that was important too for the effective and efficient implementation of management. Additionally, management embodied the foundation of management plans and its appraisal of effectiveness.

Briefly, the German national report of 2007 informed as the following ([German Federal Agency for Nature Conservation, 2009](#)):

- Management plans usually are independent for each protected area,
- In the half confederate states has been planted the participation of responsible natural protection care services (Forest Service) in PA,
- In the most states the whole management is referred to the total surface of a Natura site, but in some states management plans are in a more focused level (plots),
- The management cost estimation is part of the management plan,
- Public actors' participation and management plans publicity take place regularly, in almost all the German states. The kind and the level of that participation is an issue that differs considerably among the states and vary from just informational meetings to discussions and half a year appraisals.

Evidences show that the Natura protected areas in Bavaria belong to Bavarian Forest Service and Bavarian Service for Nature Protection. More specifically the Bavarian Service for Nature Protection is the responsible body for reports and monitoring regarding Natura 2000 sites to Germany state. The formation and implementation of Management Plans is equal distributed between the two services (Bavarian Forest Service & Bavarian Service for Nature Protection). Protected forest biotopes and specific protected fauna and flora species of Bavarian Legislation, as well as all the directives for birds' protection, belong to Bavarian's Forest Service. This division into two requires continuous and well

planned scientific opinions exchange and agreements between the two parts (services).

From the Bavarian Service for Nature Protection co-operate the three levels of hierarchy in the management of Natura sites. On top the Bavarian Ministry of Environment, responsible for environment & health, second the high-ranking officials for environment protection of the 7 regions of Bavaria's tiny state (Regional Heads), and third the low-ranking officials for environment protection of the 7 regions of Bavaria's tiny state.

From the Bavarian's Forest Service are involved from the first level of hierarchy the Bavarian Ministry of Food, Agriculture and Forests and the subordinate (under the ministry of FAF) Bavarian Headquarter responsible for forests and forestry, and from the second level the local and regional services for agriculture.

## **5 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS**

From the four types of governance of protected areas recognized worldwide, in Greece is carried out that of co-management (collaborative management). The body that is responsible for exercising the management of a particular protected area is the Management Authority of the Protected Area (MA.PA). Its institution is set by law, multi-stakeholders are involved to the decision making and the outcomes (management plans and regulations) submitted for approval to the Ministry of Environment, Energy and Climate Change (M.E.E.C.C.). In the hierarchy of the body is the Board of Directors that takes decisions.

The today composition of BD seems to be quite satisfactory. President and members are relevant scientists, with knowledge and interesting that do not go against protected area objectives. The presidents estimate that the BD function will be smooth and effective. All that combined with the regular BD meeting initially promise a good outcome.

Things are not the same good regarding the staff that MA.PA employ. Here appears a piece of weakness for MA.PA. They occupy fewer staff than that prescribed by the legislation. Moreover they have failed to keep a good balance between scientific and technical-administration posts. MA.PA have missed their scientific mission. Instead that they have been reinforced with guards, in order to exercise an activity (guarding) which is not clearly up to their jurisdiction. Also they do not employ regular staff that makes the knowhow difficult to develop. New hiring of regular staff, that would be desirable for MA.PA, it seemed unfeasible for the present, while the country is on difficult economic conjuncture.

Building infrastructure need to be enriched with owned by MA.PA offices and information centres. Moreover, transportation means and equipment need to bolster up.

It is imperative the statutory boundaries of each protected area set by Presidential Decree. Moreover, every MA.PA should clearly define its conservation

objectives and develop management plans. Otherwise MA.PA will not have clear objectives and mission and as a consequence they will fail. Having objectives and mission is beneficial firstly for the organization itself, since they provide the sense of direction, are the inception for the development of good plans, motivate the personnel to achieve them and finally assist the control. Secondly assist the external environment to accept and support organization's function (Naylor, 2004). Moreover MA.PA should set priorities since they exercise many activities.

Financing is also a weakness of MA.PA. They mainly come from M.E.E.C.C. and the participation in European environmental programs. The staff and infrastructure problems could be solved with a better, regular and stable financing.

MA.PA effectiveness passes through the good and concerted collaboration with Ministries, local and regional services (Police, Forest Service, and Port Police Corps), and other organizations. Achieve clear objectives, good organization and function is of the same importance both for MA.PA and the co-operative with them relevant services. The collaboration regulations should be clearly defined and should be set from the top of hierarchy, described on a common collaboration agreement and signed from the collaborative parts. A similar tactic should be employed in order to define clearly the competences and authority for each public service in the PA.



## **6 GLOSSARY**

BD: Board of Directors

CBD: Convention on Biological Diversity

CMD: Common Ministerial Decision

EIA: Environmental Impact Assessment

ICOMOS: International Council on Monuments and Sites

IUCN: International Union for Conservation of Nature

M.E.E.C.C.: Ministry of Environment, Energy and Climate Change

M.E.P.P.W.: Ministry of Environment, Planning and Public Works

MA.PA: Management Authority of Protected Areas

MAB: Man and the Biosphere Programme

MDGs: Millennium Development Goals

NGO: Non Governmental Organization

PA: Protected Area

PD: Presidential Decree

SCI: Sites of Community Importance

SES: Special Environmental Study

SPA: Special Protection Areas

UNESCO: United Nations Educational, Scientific and Cultural Organization

WDPA: World Database on Protected Areas

WNBR: World Network of Biosphere Reserves

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## APPENDIX I: Management Authorities' (MA) Legal Framework (until October 2009)

No	Protected Area (PA)	Statutory Boundaries of PA	Operating Regulations <sup>2</sup>	MA set-up	MA Board Staff
1	National Park of <b>Evros River Delta</b>	CMD:4110/29-1-07, GG:102Δ/16-3-07	1. MD:51999, GG:1925/B/27-12-04 2. MD:18107, GG:843/B/22-6-05 3. MD:51996, GG:1890/B/21-12-04 4. MD:52001, GG:1924/B/27-12-04	CMD:125188/361, GG:126/B/17-2-03	MD:126440/2468, GG:894/B/3-7-03  MD:43716, GG:65(YOΔΔ) <sup>3</sup> /7-11-06
2	National Park of <b>Dadia-Lefkimi-Soufli Forest</b>	CMD:35633, GG: 911/Δ/13-10-06	1. MD:865, GG:72/B/24-1-05 2. MD:1006, GG:62/B/24-1-06 3. MD:861, GG:72/B/24-1-05 4. MD:864, GG:72/B/24-1-05	CMD:125187/360, GG:126/B/17-2-03	MD:126435/2463, GG:918/B/4-7-03  MD:43552, GG:63/7-11-2006
3	National Park of <b>East Macedonia and Thrace</b> ( <i>Delta of Nestos-Vistonida-Ismarida</i> )	CMD:44549/17-10-08, GG:497/Δ/17-10-08	1. MD:40556, GG:1528/B/13-10-04 2. MD:18185, GG:686/B/23-5-05 3. MD:18184, GG:694/B/24-5-05 4. MD:13702, GG:1528/B/13-10-04	CMD:125208/394, GG:140/B/11-2-03	MD:126431/2459, GG: 894/B/3-7-03 Amended by MD: 155318/485, GG:334/B/11-2-04  MD:48578, GG:1709/B/6-12-05  MD:2212, GG:391 YOΔΔ /4-9-09
4	National Park of <b>Rodopi Mountain Range</b>	CMD:40379/1-10-09, GG: 445/Δ/2-10-09	1. MD:875, GG:66/B/21-1-05 2. MD:18174, GG:707/B/26-5-05 3. MD:18169, GG:674/B/19-5-05 4. MD:18172, GG:674/B/19-5-05	CMD:125810/141 5, GG:566/B/9-5-03	MD:126442/2470, GG:894/B/3-7-03 Amended by MD: 128269/5293, GG:41/B/16-1-04  MD:48589, GG:1709/B/6-12-05  MD:2809, GG:417 YOΔΔ /17-9-09
5	National Park of <b>Kerkini Wetland</b>	CMD:42699, GG:98/ΤΑΑΠΘ <sup>4</sup> /8-9-06	1. MD:52771, GG:1934/B/28-12-04 2. MD:18104, GG:617/B/10-5-05 3. MD:52762, GG:1934/B/28-12-04 4. MD:52763, GG:1934/B/28-12-04	CMD:125564/994, GG:364/B/28-3-03	MD:126433/2461, GG:894/B/3-7-03 Amended by MD: 155318/485, GG:334/B/11-2-04  MD:23601, GG:758B/26-6-06
6	National Park of <b>Koronia &amp; Volvi Lakes</b>	CMD:6919, GG:248/Δ/5-3-04 Amended by CMD:39542/9.10.08 (GG:441/ΤΑΑΠΘ/9-10-08)	1. MD:50547, GG:1876/B/17-12-04 2. MD:49707, GG:2408/B/21-12-07 3. MD:50550, GG:1879/B/20-12-04 4. MD:50545, GG:1879B/20-12-04	CMD:125192/365, GG:126/B/7-2-03 MD:15564, GG:493/B/18-4-06	MD:126439/2467, GG:894/B/3-7-03  MD:20698, GG:659/B/25-5-06  MD:28504, GG:397 YOΔΔ /7-9-09

No <sup>1</sup>	Protected Area (PA)	Statutory Boundaries of PA	Operating Regulations <sup>2</sup>	MA set-up	MA Board Staff
7	National Park of <b>Axios-Loudias-Aliacmonas Rivers Delta</b>	CMD:12966, GG:220ΤΑΑΠΘ/14-5-09	1. MD:18093, GG:624/B/11-5-05 2. MD:11741, GG:392/B/31-3-06 3. MD:18092, GG:624/B/11-5-05 4. MD:18091, GG:624/B/11-5-05	CMD:125191/364, GG:126/B/7-2-03	MD:126441/2469, GG:918/B/4-7-03  MD:43685, GG: 65 YOΔΔ/7-11-2006
8	National Park of <b>Prespes</b>	CMD:28651/09, GG:302/Δ/23-7-09	1. MD:18194, GG:693/B/24-5-05 2. MD:27173, GG:965/B/12-7-05 3. MD:22112, GG:775/B/9-6-05 4. MD:18192, GG:673/B/19-5-05	CMD:125811/141 6, GG:566/B/9-5-03	MD:126445/2473, GG:918/B/4-7-03 Amended by MD: 128269/5293, GG:41/B/16-1-04  MD:20706, GG:659/B/25-5-06  MD:17515, GG: 397 YOΔΔ/7-9-2009
9	National Park of <b>N. Pindos</b> ( <i>National Forest Parks of Vikos-Aoos &amp; Pindos</i> )	CMD:23069, GG:639/Δ/14-6-05	1. MD:36427, GG:1401/B/13-9-04 2. MD:21732, GG:787/B/10-6-05 3. MD:34939, GG:1311B/19-9-05 4. MD:36431, GG:1401/B/13-9-04	CMD:125184/357, GG:126/B/7-2-03	MD:126438/2466, GG:894/B/3-7-03 Amended by MD: 155318/485, GG:334/B/11-2-04  MD:48591, GG:1709/B/6-12-05  MD:383/3-7-09, GG:303 YOΔΔ/14-7-09
10	National Park of <b>Tzoumerka</b> , Peristeri and Arachthos Ravine	PD: GG 49/Δ/12-2-09	1. MD:39808, GG:2152B/2-10-09 2. MD:39803, GG:2142B/2-10-09 3. MD:39809, GG:2152B/2-10-09 5. MD:39798, GG:2100B/29-9-09	PD: GG 49/Δ/12-2-09	GG:415 YOΔΔ/16-9-09
11	Ecodevelopment area of <b>Pamvotida Lake Ioannina</b>	PD under statutory process, after CMD:22943,GG:649/Δ/5-6-03 canceled	1. MD:50072, GG:1905B/22-12-03 2. MD:10579, GG:504B/5-3-04 3. MD:51724, GG:1879/B/20-12-04 4. MD:50075, GG1905/B/22-12-03	CMD:135074/519 3 GG:1531/B/9-12-02	MD:135389/5670 Was not published to GG.  MD:48607, GG:1709/B/6-12-05 Amended by MD: 16049, GG: 196 YOΔΔ/6-5-08
12	National Park of <b>Olympus National Forest Park</b>	SES under process.	1. MD:52909, GG:1965/B/31-12-04 2. MD:18122, GG:617/B/10-5-05 3. MD:18190, GG:694/B/24-5-05 4. YA 52907, GG:1965/B/31-12-04	CMD:125206/392, GG:140/B/11-2-03	MD:126519/2575, GG:907/B/4-7-03  MD:24515, GG:754/26-6-06  MD:30719, GG:374/1-9-09 (GG384/3-9-09 for mistake correction)

No <sup>1</sup>	Protected Area (PA)	Statutory Boundaries of PA	Operating Regulations <sup>2</sup>	MA set-up	MA Board Staff
13	Ecodevelopment area of <b>Karla – Mavrovouni – Kefalovriso Velestino</b>	CMD signed by the Minister of EPPW (September of 2009)	1. MD:53948, GG:1979/B/31-12-04 2. MD:24825, GG:802/3-7-06 3. MD:53950, GG:1979/B/31-12-04 4. MD:53949, GG:1979/B/31-12-04	CMD:126885/305 1, GG:1141/B/11-8-03	MD:127889/4560, GG:1604/B/30-10-03  MD:5857, GG:239/B/23-2-05  MD:7233/3-7-09, GG: 303 YOΔΔ/14-7-09
14	National Marine Park of <b>Alonissos – N. Sporades</b>	CMD:23537, GG:621/Δ/19-6-03	1. MD:53946, GG:1961/B/31-12-04 2. MD:38503, GG:1382/B/6-10-05 3. MD:53944, GG:1961/B/31-12-04 4. MD:53945, GG:1961/B/31-12-04	CMD:23537, GG:621/Δ/19-6-03	MD:126517/2773, GG:939/B/8-7-03 Amended by MD: 55318/485, GG:334/B/11-2-04  MD:25140, GG:775B/28-6-06
15	National Park of <b>Amvrakikos Wetlands</b>	CMD:11989/08, GG:123/Δ/21-3-08	1. MD:27044, GG:971/B/13-7-05 2. MD:27004, GG:950/B/11-7-05 3. MD:27045, GG:950/B/11-7-05 4. MD:27006, GG:950/B/11-7-05	CMD:125566/996, GG:364/B/28-3-03 Amended by CMD: 126866/3017, GG:1072/B/1-8-03	MD:127381/3793, GG:1419/B/1-10-03  MD:48602, GG:1709/B/6-12-05  MD:12679/11-7-08 GG: 317 YOΔΔ/24-7-08  MD:4129, GG: 310 YOΔΔ/20-7-09
16	Area for nature protection of narrows and mouths of <b>Acheroda and Kalama rivers</b>	CMD:36427/09, GG:396/Δ/17-9-09	1. MD:18130, GG:624/B/11-5-05 2. MD:27170, GG:1000/B/18-7-05 3. MD:18124, GG:624/B/11-5-05 4. MD:18129, GG:624/B/11-5-05	CMD:125185/358, GG:126/B/7-2-03	MD:126437/2465, GG:918/B/4-7-03  MD:48570, GG:1709/B/6-12-05  MD:2191, GG:434 YOΔΔ/1-10-09
17	National Park of <b>Messologi Lagoon</b>	CMD: 22306, GG:477/Δ/31-5-06	1. MD:52890, GG:1965/B/31-12-04 2. MD:18179, GG:695/B/ 24-5-05 3. MD:40681, GG:1442/B/19.10.05 4. MD:52893, GG:1965/B/31-12-04	CMD:125735/128 2, GG:473/B/18-4-03	MD:126432/2460, GG:918/B/4-7-03  MD:20700, GG:659/B/25-5-06  MD:6644/11-7-08, GG:317 YOΔΔ/24-7-08
18	National Park of <b>Enos National Forest Park</b>	SES approved. CMD under publish.	1. MD:866, GG:65/B/21-1-05 2. MD:27180, GG:975/B/13-7-05 3. MD:28004, GG:999/B/18-7-05 4. MD:27188, GG:999/B/18-7-05	CMD:125190/363, GG:26/B/7-2-03	MD:126436/2464/2 6-6-03, GG:918/B/4-7-03  MD:23602, GG:775B/28-6-06  MD:4024/11-7-08, GG:317 YOΔΔ/24-7-08



No <sup>1</sup>	Protected Area (PA)	Statutory Boundaries of PA	Operating Regulations <sup>2</sup>	MA set-up	MA Board Staff
19	National Marine Park of <b>Zakynthos</b>	PD: GG 906/A/22-12-99 Amended by GG:1272/Δ/27-11-03	1. MD:5475, GG:325B/11-2-04 2. MD:16075, GG:565B/27-4-05 3. MD:5473, GG:322B/11-2-04 4. MD:870, GG:65B/21-1-05	PD: GG 906/Δ/22-12-99 Amended: PD GG 1272/Δ/27-11-03	MD:66209/20-7-00 MD:45510/471/30-1-01 MD:28553/14-7-03  MD:166834/3732/28.9.05, GG:1400B/10.10.05 MD:166834/3732, GG:1400/B/10-10-05  MD: 6081, GG: 58 YOΔΔ/17-2-09
20	National Park of <b>Iiti National Forest Park</b>	SES under process.	1. MD:872, GG:78/B/25-1-05 2. MD:33751, GG:1717/B/29.8.07 3. MD:51924, GG:1890/B/21-12-04 4. MD:51925, GG:1926/B/27-12-04	CMD:125734/1281, GG:473/B/18-4-03	MD:126434/2462, GG:918/B/4-7-03 Amended by MD: 128269/5293, GG:41/B/16-1-04  MD:37515/13-9-06, GG:32 YOΔΔ /6-10-06 Amended by MD: 26534/28-11-08, GG:505 YOΔΔ/5-12-08
21	National Park of <b>Parnassus National Forest Park</b>	SES approved, make preparations for publish.	1. MD:47508, GG:1708/B/6-12-05 2. MD:47510, GG:1707/B/6-12-05 3. MD:47500, GG:1708/B/6-12-05 4. MD:47423, GG:1708/B/6-12-05	CMD:125913/1552, GG:566/B/9-5-03	MD:126443/2471, GG:894/B/3-7-03  MD:29977, GG:312/YOΔΔ/24-7-07  MD:14308/11-7-08, GG: 317 YOΔΔ/24-7-08
22	National Park of <b>Parnitha National Forest Park</b>	SES under process.	1. MD:52778, GG:1933/B/28-12-04 2. MD:27186, GG:966/B/12-7-05 3. MD:52817, GG:1933/B/28-12-04 4. MD:52774, GG:1933/B/28-12-04	CMD:125736/1283, GG:473/B/18-4-03	CD:126444/2472, GG:918/B/4-7-03 Amended by MD:128269/5293, GG:41/B/16-1-04  MD:167077/4226, GG:1649/B/29-11-05
23	National Park of <b>Schinia – Marathon</b>	PD: GG 395/Δ/3-7-00	1. MD:46795, GG:1755B/26-11-03 2. MD:46783, GG:1755B/26-11-03 3. MD:46789, GG:1755B/26-11-03 4. MD:868, GG:65B/21-1-02	GG 793/Δ/13-9-02	MD:646, GG:31/B/17-1-03  MD:8952/3-7-09, GG: 303 YOΔΔ/14-7-09

No <sup>1</sup>	Protected Area (PA)	Statutory Boundaries of PA	Operating Regulations <sup>2</sup>	MA set-up	MA Board Staff
24	National Park of <b>Chelmos-Vouraekos</b>	CMD:40390/1-10-09, GG:446/Δ/2-10-09	1. MD:45716, GG:1604/B/21.11.05 2. MD:45719, GG:1604/B/21.11.05 3. MD:45720, GG:1604/B/21.11.05 4. MD:45718, GG:1604/B/21.11.05	CMD:125207/393, GG:140/B/11-2-03  Amended by MD: CMD:126866/301 7, GG:1072/B/1-8-03	MD:127651/4197, GG:1538/B/17-10-03  MD:44748, GG:76/15-11-06  Amended by MD: 41925/11-12-07, GG:542 YOΔΔ/18-12-09
25	National Park of <b>Kotichi-Strofilia Wetlands</b>	CMD:12365, GG:159 Δ/29-4-09	1. MD:52900, GG:1942/B/29-12-04 2. MD:47421, GG:1681/B/1-12-05 3. MD:52895, GG:1942/B/29-12-04 4. MD:52897, GG:1942/B/29-12-04	CMD:125565/995, GG:364/B/28-3-03	MD:126518/2574, GG: 907/B/4-7-03 Amended by MD: 128269/5293, GG:41/B/16-1-04  MD:23600, GG:754/26-6-06
26	Ecodevelopment area of <b>Parnonas Mountain &amp; Moustou Wetland</b>	CMD: Have been signed from the Minister of EPPW, remaining to be signed from the rest ministers.	1. MD:51922, GG:1926/B/27-12-04 2. MD:21393, GG:/747/B/21-06-06 3. MD:51923, GG:1924/B/27-12-04 4. MD:51920, GG:1925/B/27-12-04	CMD:125186/359, GG:126/B/7-2-03	MD:126446/2474, GG:894/B/3-7-03 Amended by MD: 155318/485, GG:334/B/11-2-04  MD:167078/4227, GG:1649/B/29-11-05  MD: 3946/3-7-09, GG:303 YOΔΔ/14-7-09
27	Ecodevelopment area of <b>Olympus Karpathos-Sarias</b>	CMD: Have been signed from the Minister of EPPW, remaining to be signed from the rest ministers.	1. MD:52902, GG:1943/B/29-12-04 2. MD:18188, GG:673/B/19-5-05 3. MD:52901, GG:1943/B/29-12-04 4. MD:11737, GG:392/B/31-3-06	CMD:125914/155 3, GG:566/B/9-5-03	MD:126639/2640, GG:968/B/15-7-03  MD:23797 GG:775B/28-6-06 Amended by MD: 54926,GG: 545 YOΔΔ/31-12-08
28	National Park of <b>Samaria &amp; Lefka Ori National Forest Parks</b>	SES under process.	1. MD:16599, GG:717/B/8-5-07 2. MD:1273, GG:88/B/24-1-08 3. MD:23842, GG:923/B/8-6-07 4. MD:23841, GG:1018/B/22-6-07	CMD:125189/362, GG:126/B/7-2-03  Amended by CMD:126866/301 7, GG:1072/B/1-8-03	CD:155029/44, GG:41/B/16-1-04  CD:18070, GG:625B/18-5-06

Source: M.E.E.C.C., Oct. 2009 (Available from <URL: (<http://www.minenv.gr/1/12/121/12103/g1210300/g12103000000.html>)>, [accessed in 17-03-2010])

1	2	3	4	Abbreviations
<b>Geographical Classification</b>	<b>Regulations</b>	<b>YOΔΔ:</b> Issue of Employees of Special Positions and State Administration Bodies and Wider Public Sector.	<b>ΤΑΑΠΘ:</b> Issue of Coercive Receipts and Urban Affairs.	PD: Presidential Decree GG: Greek Gazette MD: Ministerial Decision CMD: Common Ministerial Decision
	1. Board of Director Operation 2. Personnel Service Hours Operation 3. Project-Study-Supply Procurement 4. Economic Management			

## APPENDIX II: Questionnaire for Greek MA.PA



Staffordshire University  
Business School



Technological Education Institute of Larissa  
School of Business Administration  
Department of Project Management

### **Research Responsibles Persons:**

Graduate MBA student: **Kavraki Athina**, Forester, Laboratory collaborator at the Department of Forestry & Natural Environment Management, Branch of Karditsa,

TEI of Larissa, mob. 6946633204, e-mail: [kavraki@teilar.gr](mailto:kavraki@teilar.gr)

Supervisor: **Sirakoulis Kleanthis**, Lecturer TEI of Larissa, Department of Administration and Project Management, tel: 2410 684 584, e-mail:

[sirakoul@teilar.gr](mailto:sirakoul@teilar.gr)

This questionnaire is the first part of the research conducted under the Master Program entitled Master of Business Administration to complete thesis entitled "**Overcoming Organizational and Operational Problems of Management Authorities of Protected Areas in Greece**" and is sent to the chairmen of all 27 Management Authorities of Protected Areas (MA.PA) of Greece.

This thesis is conducted by the graduate student Kavraki Athina, with the supervision of Prof. Sirakouli Kleanthis.

With recognized the important role of MA.PA for our country (Greece), to protect the environment and the fact that despite 7years function the Bodies still face serious problems, this research aims to record the current state of the MA (level of organization and operation) to focus on problems and to highlight the factors which affect them. In addition to the existing state of MA, the research will attempt to record opinions and attitudes of actors involved in general protection of the environment and do not belong to MA.PA (Second part of research), as well as experiences be reflected prevailing at the European level around the MA (German experience), so in the end to propose reorganization plan and policies and effective functioning of those important structures.

The results are estimated to have practical application, since they will help to improve the functioning of the existing MA, they will contribute to better and more efficient design of new MA that will be created in the future (i.e. MA of Lake Plastira in Karditsa region) and will assist in the efficiency of MA with respect to environmental, social and economic activities.

However, this research cannot be achieved without your contribution. Please complete the following questionnaire and send it to the e-mail address [kavraki@teilar.gr](mailto:kavraki@teilar.gr) or to the fax: 2441080811. Thank you in advance for your cooperation. Upon the completion of the investigation, we will disclose to you summary of results.

## QUESTIONNAIRE

(To be filled in from the *President of MA*, marking an *X* in the response that reflects you or using words where is required)

### A. MANAGEMENT AGENCY (MA) ADMINISTRATION

1. What was your last engagement-your experience before the assumption of duties as the President of the MA?

.....  
.....  
.....

2. Your MA has Head or Program Manager (Coordinator)?

Yes  No

3. If you answered *yes* to the previous question, indicate the specialty and prior experience of the Head of your organization.

.....  
.....  
.....

4. How do you consider the composition of the Board of your organization, in the representation of different actors?

Very satisfactory  Satisfactory  Moderately satisfactory  Not satisfactory

5. How do you consider the composition of the Board of your organization as to the relevance of the Board members with the subject of the Body?

Very satisfactory  Satisfactory  Moderately satisfactory  Not satisfactory

6. How do you consider the composition of the Board of your organization, on the previous experience of its members?

Very satisfactory  Satisfactory  Moderately satisfactory  Not satisfactory

7. If you answered *poor or unsatisfactory* in question 4, indicate what actor/s is/are absent from the Board of Directors and for what reason that happen.

.....  
.....  
.....

8. How do you estimate the Board of your organization will function in regard to take and implement important decisions?

Very satisfactory  Satisfactory  Moderately satisfactory  Not satisfactory

9. How regularly the Board of your organization have meetings?

- 1 time/month   
  1 time/3months   
  1 time/6months   
  else  
 .....  
 (*determine*)

**B. MANAGEMENT AGENCY (MA) STAFF**

1. Indicate the number of people employed in your MA (staff) by the year of employment:

- 0-1 year   
  1-2 years   
  2-3 years   
  > 3 years

2. Mention the skills of staff employed by your MA and give the number of people by specialty.

Scientific / Technical / Administrative / Support staff			
Specialty	People	Specialty	People
<input type="checkbox"/> Rural and Topographer Engineer		<input type="checkbox"/> Environmentalist	
<input type="checkbox"/> Biologist		<input type="checkbox"/> Management and Economics	
<input type="checkbox"/> Geologist		<input type="checkbox"/> Economist	
<input type="checkbox"/> Agronomist		<input type="checkbox"/> Administrative Staff	
<input type="checkbox"/> Forester		<input type="checkbox"/> Guard staff	
<input type="checkbox"/> Technologist Forester		<input type="checkbox"/> Guides	
<input type="checkbox"/> Environmental Engineer		Else ..... ( <i>determine</i> )	
<input type="checkbox"/> Legal		Else ..... ( <i>determine</i> )	

3. Does your MA face staffing problems? If does, identify the problems and their importance, putting a cross in the appropriate box, where 5 is for the most important and 0 equal with not important (*i.e. no problem*), **otherwise go to section C:**

Problem	Relative importance					
	5	4	3	2	1	0
Staff insufficiency						
Shortage of regular staff						
Staff specialty inadequacy						
Staff Inexperience						
Lack of staff's interesting for the job						
Make staff productive						
Else ( <i>determine</i> ) .....						

4. Refer the most important factors that lead to the former staff problems, pointing their importance (5 is for the most important and 0 equal with not important):

Problem	Relative importance					
	5	4	3	2	1	0
Economic means are lacking						
Existing legal regime						
Lack of candidate's sufficient education, grounding						
Low pay/lack of incentives						
There are no opportunities for advancement/career						
Hiring delays due to bureaucracy						
Lack of co-ordination						
Else ( <i>determine</i> ) .....						

5. By what ways your staff problems can be overcome (mark putting 1 to the most important)?

- Sufficient financing of MA
- Reassessment of the legal regime
- Regular staff obtainment
- Staff training/seminars
- Providing staff motivations
- Else (*determine*) .....

### C. MANAGEMENT AUTHORITY (MA) INFRASTRUCTURE

1. Mention your MA infrastructure and means.

- |                                  |                          |                                 |                          |
|----------------------------------|--------------------------|---------------------------------|--------------------------|
| Building of MA's own             | <input type="checkbox"/> | Car/s                           | <input type="checkbox"/> |
| Rent building                    | <input type="checkbox"/> | Fire vehicle/s                  | <input type="checkbox"/> |
| Building offer hospitality to MA | <input type="checkbox"/> | Web page                        | <input type="checkbox"/> |
| Information center               | <input type="checkbox"/> | e-mail                          | <input type="checkbox"/> |
| Telephone connection             | <input type="checkbox"/> | PC                              | <input type="checkbox"/> |
| Fax                              | <input type="checkbox"/> | Else ( <i>determine</i> ) ..... |                          |

2. Refer the most important equipment that your MA possesses.

.....  
 .....  
 .....

3. If your MA faces lack of infrastructure/equipment, report the 5 most important of those marking rate 1 the most important etc, otherwise move to unit D.

.....  
 .....  
 .....

4. What causes yours infrastructure/equipment deficiencies?

.....  
 .....  
 .....

5. By what ways can yours infrastructure/equipment problems been overcame?

.....  
 .....  
 .....

**D. OPERATION – ADMINISTRATION**

1. Mark with a *X* what ever from the following your MA has, mentioning simultaneously their status.

	Approved from MERSE / Gazette	Approved from MERSE / not Gazette	Under approvalform MERSE	Revised for the 2 <sup>nd</sup> 5year MA period function	Under revision for the 2 <sup>nd</sup> 5year MA period function	Not have
Statutory boundary of PA with Presidential Decree						
Statutory boundary of PA with Joint Ministerial Decision						
Special Environmental Study						
Management Plan						
Regulation for Board of Director Operation						
Regulation for MA Operation						
Regulation for Personnel Service Hours Operation						
Regulation for Economic Management						
Regulation for Project-Study-Supply Procurement						

2. Your financial sources the previous years came from:

	Exclusive (100%)	In great extent (>50%)	In less extent (<50%)	Not a bit (0%)
Allowances from M.E.P.P.W., other ministries, organizations and companies of wider public sector.				
Sources from participation in national programmes.				
Sources from participation in European community programmes.				
Revenues from exploitation of assets, allowances, gifts, successions, bequests and income from nature or legal entities.				

Income from products and services of MAPA (publications, data, entrance tickets, tours)				
Other sources ..... ..... (determine)				

3. Your financial sources for the next years will come from:

	Exclusive (100%)	In great extent (>50%)	In less extent (<50%)	Not a bit (0%)
Allowances from M.E.E.C.C., other ministries, organizations and companies of wider public sector.				
Sources from participation in national programs.				
Sources from participation in European community programs.				
Revenues from exploitation of assets, allowances, gifts, successions, bequests and income from nature or legal entities.				
Income from products and services of MAPA (publications, data, entrance tickets, tours)				
Other sources ..... ..... (determine)				

4. Which are the main activities that your MA have or assign to others? (Respond by marking an **X** or a **Y** –where **X=MA ask the activity**, **Y=MA assign the activity to others**– each time to the respective box. 5 is for the most important and 0 is equal with not exercise the specific activity)

Activities	Relative importance					
	5	4	3	2	1	0
Collection, classification and working out environmental data and facts. Formation and enrichment of data bases.						
Give consultative responses						
Study and research formation						
Information, education and training the public						
Publications (printed or electronic)						
Propulsion, support, organization and implementation of ecotourism programs						
Issue guiding permissions						
Provide quality label or/and good cooperation label to enterprises						
Protect area of responsibility from several risks (fires, outlaw interventions etc)						
Other (determine).....						



5. For the cases you appraise your activities with 0, 1 and 2, explain the reasons that obstacle or complicate those activities to take place.

.....  
 .....  
 .....

6. In order the former activities took place your MA collaborates with other bodies?

Ναι  Όχι

*If you answer in the negative in question 6, go to unit E.*

7. Mention the bodies with which you collaborate, defining simultaneously the effectiveness of each collaboration:

Name of body you collaborate with	Level of collaboration			
	Best	Good	Moderate	Bad
Ministry of Environment, Energy and Climate Change (former MEPPW)				
Ministry of Rural Development and Food				
Ministry of Culture and Tourism				
Native higher level Education Institutions ( <i>determine</i> ) .....				
Foreign higher level Education Institutions ( <i>determine</i> ) .....				
Native Research Centres & Institutions ( <i>determine</i> ) .....				
Foreign Research Centres & Institutions ( <i>determine</i> ) .....				
Local and regional public services ( <i>determine</i> ) .....				
Social and productive bodies ( <i>determine</i> ) .....				
Native NGO ( <i>determine</i> ) .....				
Foreign NGO ( <i>determine</i> ) .....				
Other ( <i>determine</i> ) .....				

**E. GOVERNANCE ISSUES**

1. Does the Greek law give the needed legalization and operation in order the MA.PA exercise the administration and management of protected areas?

- Yes  No

2. Does the existing general legal framework that governs the area of your MA.PA responsibility be harmonized with the environmental legal framework?

- Yes  No

3. If to the former two questions your responses were *no*, refer some ways to solve the problem.

.....  
.....

4. The competences and authority of the area of your responsibility are clearly defined?

- Yes  No

5. If to the former question your response was *no*, refer some ways to solve the problem.

.....  
.....

6. Have you enough autonomy in order to achieve your goals smoothly?

- Yes  No

7. If to the former question your response was *no*, specify what is needed to change in order your autonomy to increase.

.....  
.....

8. There is political will for overcoming the former problems?

- Yes  No

9. The establishment and operation of a central MA per region is something that could help?

- Yes  No

10. What is your opinion regarding the existing transparency in governing MA of PA in our country?

- There is enough transparency  More transparency is needed  Don't know/ don't answer

11. How often you account to M.E.E.C.C. (former M.E.P.P.W.) and Ministry of Economic regarding your financial and management report?

- regularly every year
- annual reports have been made only for some years (*determine eg. 2009 report about financial control of 2008*)  
.....
- other (*determine*)  
.....

12. How often you account about the implementation of management and operation regulations, as well as management plans, to M.E.E.C.C. (former M.E.P.P.W.) and other Ministries (i.e. Ministry of Rural Developments & Food), writing annual assessment report?

- regularly every year
- annual reports have been made only for some years (*determine eg. 2009 report work done during 2008*)  
.....
- other (*determine*)  
.....

13. There is downward accountability to citizens, productive bodies, NGO, local societies etc.?

- Yes
- No

14. If to the former question your response was **yes**, specify by what ways you account. If your response was **no**, explain why you do not account and indicate ways you consider the most suitable for accounting.

.....  
.....  
.....

**F. MANAGEMENT AUTHORITY – PRESIDENT INFO**

Management Authority name: .....  
President name: .....  
President status: .....  
Post address: .....  
Telephone number: .....  
Fax: .....  
Internet address: .....  
e-mail: .....

Date of Questionnaire Completion  
... / ... / 2010

### APPENDIX III: Questionnaire coding sheet for SPSS analysis

Questionnaire Unit	Questionnaire Number	Variable Type	Variable Measurement
A	2	Numeric	Ordinal
	4	Numeric	Ordinal
	5	Numeric	Ordinal
	6	Numeric	Ordinal
	8	Numeric	Ordinal
	9	Numeric	Ordinal
B	1	Numeric	Scale
	2	Numeric	Scale
	3	Numeric	Scale
	4	Numeric	Scale
	5	Numeric	Scale
C	1	Numeric	Ordinal
D	1	Numeric	Ordinal
	2	Numeric	Ordinal
	3	Numeric	Ordinal
	4	Numeric	Ordinal
	6	Numeric	Ordinal
	7	Numeric	Scale
E	1	Numeric	Ordinal
	2	Numeric	Ordinal
	4	Numeric	Ordinal
	6	Numeric	Ordinal
	8	Numeric	Ordinal
	9	Numeric	Ordinal
	10	Numeric	Ordinal
	11	Numeric	Ordinal
	12	Numeric	Ordinal
	13	Numeric	Ordinal

## **APPENDIX IV: Interview Questions**

### **A. Advisability of Management Authorities of Protected Areas establishment**

1. Do you believe that MA.PA (as legal entities of private law) was necessary to be established in our country for the administration and management of PA, considering that this in other countries (Germany) is a state responsibility?
2. Irrespective of the MA.PA establishment necessity, what is your opinion of MA.PA today level of organization and function in Greece?

### **B. Collaboration with MA.PA**

1. Are you satisfied with the collaboration with MA.PA so far?

### **C. Problems**

1. Have you see any kind of problems regarding MA.PA operation?
2. If the respond is yes, mention those problems.
3. How they could be faced?

### **D. Social character → Contribution to the people → Appreciation**

1. Do you believe that the results from MA.PA operation so far satisfy the social mass?
2. Can MA.PA make this contribution better and how?

### **E. European level**

1. The administration and management of PA in Greece is similar with this of others PA of Europe? If yes, define the countries and the level of their similarity.
2. There are any common problems?
3. Have in view any practice used in Europe that could be adapted from Greece and implemented relate in MA.PA?

## APPENDIX V: List of interviewees

	<b>Name</b>	<b>Affiliation</b>
1	Marmara Katia	Ministry of Environment, Energy and Climate Change (M.E.E.C.C.)
2		Ministry of Rural Development and Food
3	Dafis Spyros	President of the Education Committee of Hellenic Biotopes and Wetland Centre
4	Nantsou Theodota	Policy Coordinator of WWF Hellas

## **APPENDIX VI: Questionnaire for Bavarian Parks**

- 1.** In Greece for the administration and management of Protected Areas (PA) have been established Management Authorities (MA), that are legal entities of private law with social character and are supervised from the Ministry of Environment, Energy and Climate Change. In Bavaria who is responsible for the management of PA?
- 2.** Report the organizational structure of the body/ies that is/are responsible for PA's management.
- 3.** There is corporation with other bodies about PA management? If yes define with whom and by what means that corporation happens?