



“DEVELOPING AND SUBMITTING A PROPOSAL FOR THE INTEGRATION OF THE ASTEROUSIA MOUNTAIN REGION INTO THE UNESCO/MaB NETWORK OF SITES”



Informative day on the application of incorporation of Asterousia in the UNESCO MAB program (Man and Biosphere)

15 October 2018

Table of contents

Definition of biosphere reserves.....	3
How an area integrates to the MaB Program.....	5
Why Asterousia	6
• Cultural importance	
• Sustainable Development	
• Sustainable Development	
• Support of researching projects, environmental education and training	
Stakeholders of the Asterousia integration in the MaB – UNESCO network	9
Commitments to integration in the MaB network	10
Expected benefits of the integration in the MaB network	11
Sources.....	12
Zoning proposals.....	12
Management scheme	13

Definition of biosphere reserves

The biosphere reserves (BR) are designated by the National Governments and remain under the jurisdiction of the states they belong, but they are internationally recognized by UNESCO. This recognition is governed by two important documents: from the Regulatory Framework of Biosphere reserves and from the Action Plan of Seville for the Biosphere reserves (UNESCO 1996).

This network facilitates the information and experience exchange among the areas. So far, there are 669 Biosphere reserves in 120 countries, including 16 cross-border areas. Since 1981, there are two Biosphere reserves, Mount Olympus and Samaria Gorge, in Greece.



UNESCO sees the Biosphere reserves as a giant natural workshop worldwide, where the protection of the natural environment is combined with research, education, demonstration, local participation and sustainable development.



The Biosphere reserves have three interlinked functions:

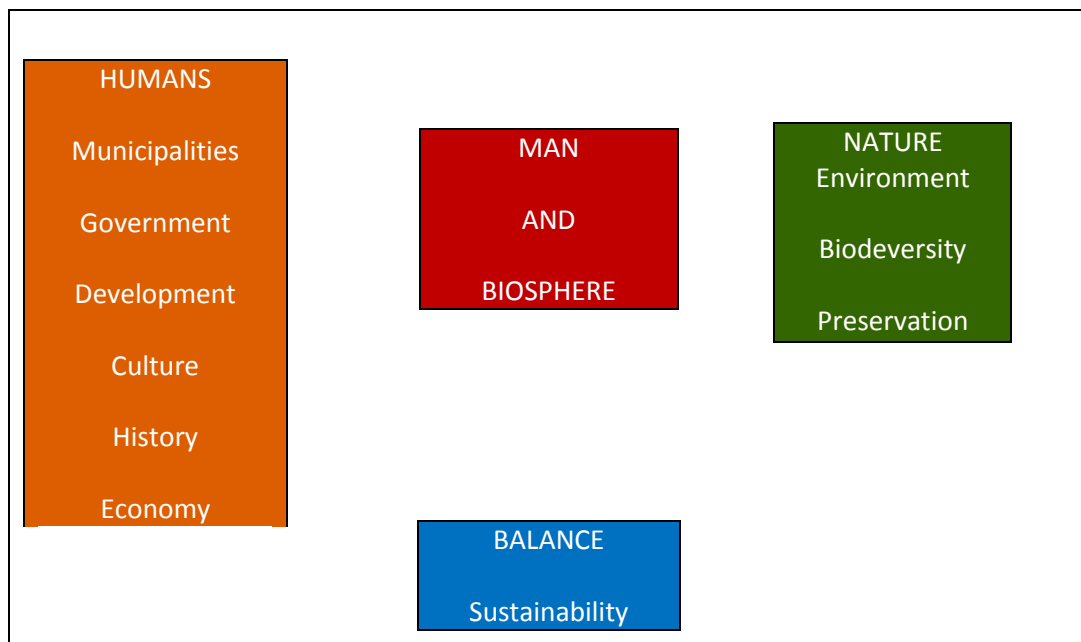
- Conservation: Contribution on the preservation of landscape, ecosystem, species and the biodiversity in general.
- Development: Promotion of the economy and social development within the context of sustainable and culturally adapted development.
- Support: Support of programs, environmental education, research and monitoring of environment issues and sustainable development.

Each Biosphere reserve is following a zoning system depending on the local land use and protection status. Three different zones are provided: a) **the core zone** where the ecosystem is preserved with the minimum inconvenience, b) **the buffer zone** around the zone of the core and c) **the transition zone** where the majority of social-economic and productive uses of the ecosystem take place, under the condition that a sustainable and developing orientation is being preserved.

How an area integrates to the MaB Program

The “Man and Biosphere” program, is an interdisciplinary research and capacity building program aiming at the improvement of human relationship with the environment in a global level. This program was launched in the early 1970. The principal objectives are:

- Contribution to minimization of biodiversity loss of via the use of ecological and biodiversity science in the policy and decision making.
- Promotion of environmental sustainability via Global Biosphere reverse network.
- Enhancement links between cultural and biological diversity.

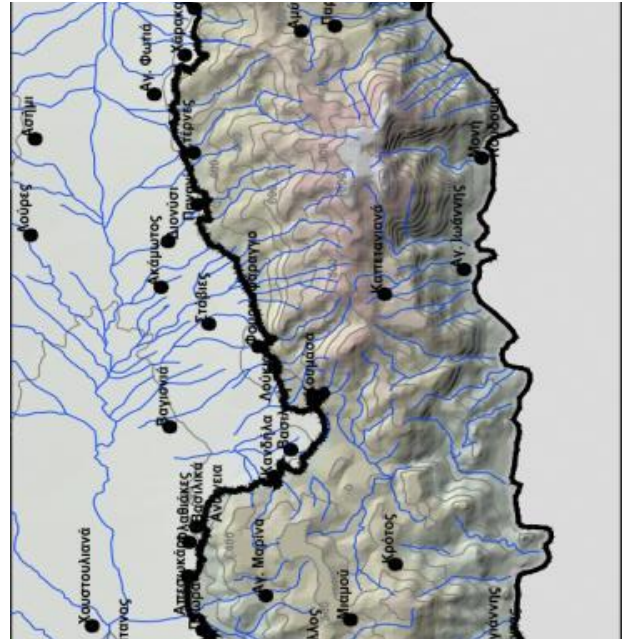


Regarding the integration of an area in the MaB network, a folder is submitted to the responsible committee of UNESCO. The folder includes the application for the committee, accompanied by supporting study where all those elements of natural and cultural environment of the potential area that make it appropriate for the integration in the Global MaB network, are recorded.

Specifically, in the context of the supporting study, information are collected and presented from older researches, programs and projects but also elements from areal researches and interviews with local authorities, residents and visitors of the area concerning the community, the economy, the cultural customs and practices and the significant archeological sites, as well as the important elements (ecosystems, plant and animal species, geological formations, that compose the natural environment.

The study which is practically establishing that the potential area qualifying the conditions of integration in the network MaB, is approved and supported by the local authorities (Municipality, Region, Forestry) and the Greek National committee of UNESCO.

The role of the National committee of UNESCO is very important, as after the long experience, provides the necessary advisory support for the good preparation of the supporting folder.



Why Asterousia

The proposed area for the integration in the Network, Asterousia is located in the south part of the region of Heraklion, in the central part of Crete. It is a semi-mountainous zone of a width from 5-15 km and a length bigger than 55 km. Altitude varies from 0 km at the sea surface in the coastal areas to 1,231 km at the highest peak of mountain range, Kofinas.

The Asterousia area satisfies the criteria of their integration in the MaB network and serve the three functions (preservation, development, support) as required and as follows:

- **Significance of the potential area for the biodiversity reserve**

Crete is one of the most important areas not only of Greece but also of the Mediterranean Region in terms of biodiversity. About 1800 species of plants have been recorded in Crete, of which 180 are steno-endemic to Crete and are found only in the region and nowhere else in the world. In addition, the Asterousia candidate region is located at the southernmost tip of Europe and includes many important types of habitat which are representative of the Mediterranean biogeographic zone where Crete belongs. At the same time, the distinctive geomorphological features of the area, pronounced human presence over time as well as (agricultural and livestock) production activities in the area that have shaped today's unique landscape and ecosystem.

Significant areas in terms of biodiversity and conservation of the natural environment are included in the proposed Biosphere Reserve. Specifically, the greater part of the area is included in protected Natura 2000 sites:

- 1 SPA (code GR4310013) – the Asterousia Mountains
- 2 SACs (code GR4310005) - Asterousia and part of SAC (code GR4310004) - Western Asterousia.
- Also 3 Wildlife Refuges have been recorded in the area: K706 – Asterousia, Municipality of Asterousia and Kofinas, K587 Vigla-Kryo Nero (Antiskari), K806 West Asterousia - Agiofarago of the Municipality of Moires.

- In the region 18 different types of habitats of community importance have been recorded, three of which are priority habitats, like the Palm grooves with *Phoenix theophrasti* while only few have been recorded in two areas (Agios Antonios Axentria and Agios Nikitas) on the island
- In brief, 30 endemic plants, 8 endemic invertebrates, and several important vertebrate species have been identified: 3 amphibians, 9 reptiles, 12 mammals. These include the Cretan wildcat for which there are evidence of its presence in the Asterousia area, 4 species of bats protected by national and international legislation and the well-known loggerhead sea turtle *Caretta caretta* and the Mediterranean monk seal *Monachus monachus* for which there are accounts by the local residents and the scientific community for occasional presence on the sandy beaches and in the marine caves of the area, although there are no systematic records by the scientific community.

Special mention should be made of the area's birdlife. A total of 192 species of birds, which are important and protected by national or international legislation, have been recorded by experts from the Crete National History Museum.

- **Cultural Significance**

In short, we could say that Asterousia are characterized by three components: the time, the space and the man:

But what differentiates the Asterousian Mountain from all the other Cretan mountain ranges is the long and uninterrupted human presence, which has been confirmed since the Neolithic period. For more than 4,000 years, man and nature together have shaped the mountainous landscape of the rather friendly mountain. The continuous habitation and the uninterrupted use of its natural resources provide to our day an inheritance of successive, palimpsest areas showing traces and a variety of tangibles but also intangible remains. Many areas that are now uninhabited or sparsely populated, used to be densely populated and pulsed with life.

Significant archaeological sites from all the historical periods of the island, are scattered throughout the mountainous areas. Neolithic housing, Minoan settlements, holly summit, holy caves, healing shrines, infrastructure and mostly cemeteries with the famous burial vaults are at the coastal but at the semi-mountainous area as well. Above or close to the archaic holy site is a number of Christian religion holy sites, that they keep the holy memory of the mountain range alive. Residential residues of Neolithic, Minoan, archaic, roman, Byzantine, Venetian, ottoman and newer period combined with the mountainous natural environment compose the today's familiar view of the site. Matala, Kaloi Limenes, Lentas, Tripiti, Kofinas, Agios Ioannis, Treis Ekklisies Tsoutsouros are only few of the archaeological sites that confirm the uninterrupted human existence in Asterousia.

The monastic movement in Greece and Balkan was born and revered in the hermitages and monasteries. The existence of important religious centers in the area like Agioi Eutuxianoï, Monastery of Odigitria, Apezanes, Koudoumas, Agios Ioannis of Kapetaniana, Lousoudi, Treis Ekklisies, Agios Nikitas, Agios Antonios, Panagia Martsaliani, played catalytic role not only in the residents' everyday life but in the difficult, for the local communities of Crete, historical periods. The language, the religious tradition, the culture, the traditional knowledge and wisdom of Asterousia was preserved till now in these areas.

The sanctity of the place, the continuous human activities, the rich natural environment, the relative isolation of the communities combined with the mountain's thread pattern, contributed in the creation of a special cultural reserve with a big number of traditions, culture and customs. Many of them have primitive roots or they are a survival of the Minoan and Pre-Christian religion.

- **Sustainable development**

In Crete, the coastal tourism phenomenon is widespread, especially during the summer months, a trend that is becoming more and more pronounced over the years. In the Asterousia region, the tourism phenomenon is particularly intense on the south coast. Even though tourists visit the mountainous and semi-mountainous areas of the island, there is no infrastructure or activities that might encourage them to stay there. So it appears that in the Asterousia region, the candidate site for inclusion in the MaB network, there is potential for developing a sustainable tourism model that would harness resources in both the coastal, semi-mountainous and mountainous areas, combining the value of the natural environment and not just the coasts of the region, with visits to the cultural and archaeological sites that are to be found there and to experience traditional activities, local customs involving music, local cuisine, folklore and the agricultural and livestock products of the area.

Potential already exists to develop such a model of tourism by means of the activities that have so far been organized sporadically by the Municipalities. For example, in some municipalities, pioneers being the Municipality of Archanes - Asterousia and of Gortynas, they have organized paths for hiking and cycling routes, for climbing and descending into caves, as well as some infrastructure for bird-watching and gastronomic- and wine- tourism. The proposed Biosphere Reserve aims at promoting, strengthening and coordinating these activities and linking ecotourism activities to the cultural events of the region (music festivals, religious festivals) as well as to the historical monuments of the region. In view of the above and in conjunction with the mild climate and relatively low altitudes of the area, the new model for development will aim to expand tourist activity and tours to interesting sights of the region all year round.

Regarding guest accommodation facilities, the maintenance of existing infrastructure must be advanced and the development of ecotourism units by restoring abandoned buildings and entire villages scattered in Asterousia should be promoted while preserving the traditional character of dwellings in the region's rural villages. Kapetaniana settlement is an example of this and can be extended to other settlements.

In addition, the proposed Biosphere Reserve will provide opportunities for the development of the agro-livestock activity of the region from a viable perspective, enhancing organic practices and excellent local products. In this respect, Biosphere Reserve, through the use of the brand name of the MaB network, will develop a detailed regional marketing plan that will relate to products and services produced in the region with sustainable practices.

- **Support on the researching programs, environmental education and training**

The proposed Biosphere Reserve is quite close to educational institutions (University of Crete and Technological Educational Institute of Crete) which have already implemented several research

projects and studies on sustainable development and the study of the natural environment of the area.

Furthermore, the presence of the Natural History Museum of Crete in the wider region ensures the research of the natural environment of the area, its protection and conservation through a variety of research and educational activities, which are not exclusively related to the natural environment, but usually include the social, the cultural and economic dimensions of the region.

The National Agricultural Research Foundation (ETHIAGE) and the Hellenic Agricultural Organization (ELGO) Demetra with two institutes: IALHI Institute of Vineyards, Horticulture and Floriculture and Heraklion Institute for Plant Protection (IPHFI) are active in the areas of research, education and practice. Under the responsibility of ELGO-Demetra, the Agricultural School of Mesara operates two branches: Agricultural Practice School and Vocational School (specializing in greenhouse construction and cultivations) which operate at a short distance from the proposed BR.

At the same time, the local cultural associations that belong to each municipality, making use of the many years of Asterousia history and the existence of many archaeological and cultural monuments in the area, organize celebrations that promote its distinctiveness, both in terms of cultural and folklore identity and musical or nutritional habits of local residents over the years.

Finally, the Environmental Education Centers of the region, which in recent years have been merged into one, the Archanes-Rouvas-Gouves CCI, which organizes educational programs and training activities for students and teachers on issues concerning Sustainability Education.

Stakeholders of the Asterousia integration in the MaB – UNESCO network

From the very first moment that the effort to integrate the Asterousia area into the MaB UNESCO network as a BR was announced, the support of local authorities was outstanding. In particular, the municipal units included within the proposed BR have shown their support and availability since the first informative meetings for this project, while the Regional Administration of Crete has been leading the way in informing and organizing meetings with the competent authorities for the launch of the procedures for submitting this application and study.

More specifically, the main players with whom the MAB candidate contacted for involvement in the process of joining the BR network are:

- Regional Administration of Crete
- Municipalities of Viannos, Minoa-Pediadas, Archanes-Asterousia, Gortynas and Phaestos
- Decentralized Administration of Crete
- Heraklion Forestry Service
- Heraklion Inspectorate of Antiquities
- Museum of Natural History of Crete

- Center for Environmental Education of Archanes-Rouvas-Gouves
- Friends of the Asterousians Cultural Association
- Mesara Cultural Associations Network
- Climbing Mountaineering Club of South Crete

All the above stakeholders have participated and will continue to participate in the information meetings and workshops to be organized up to the application for inclusion of the Asterousians in the MaB network and their comments and observations on the data and results of the study will be taken into account for drafting the structure of the application. Public and private bodies are welcome to participate in the meetings and workshops organized and to express their views on the formulation of the candidate Asterousia region site for inclusion in the MaB – UNESCO network. Stakeholders can also help shape the proposal by leaving their comments on the Facebook page created for that purpose:

<https://www.facebook.com/AsterousiaMabUnesco/>

Commitments to integration in the MaB network

- **Contribution of the potential BR in the Global Network of BRs, in Region and Thematic Networks**

The proposed BR, through the unique features that shape its identity, along with its natural, environmental, local and cultural values, will contribute dynamically and effectively to the Biosphere Reserve Global Network.

In line with the recommendations of the MAB national committee, the proposed BR will be involved in the following areas:

- (a) Participation or support of expert missions either to BR outside Greece or to international missions to domestic BRs: Dissemination of knowledge on the integration and management of BR in the BR network and support for the concept of sustainable development.
- b) Partnerships and synergies with other BRs: They can become permanent or individual thematic collaborations. There is already communication between the Region or Municipalities participating in the proposed BR with other domestic and international BRs.
- c) Participation in regional and thematic BR networks: Organize local meetings and events for both the national and international BR networks.

More specifically, the proposed BR is able to contribute to the following topics included in the MAB - UNESCO program:

- Climate change (with particular emphasis on desertification).
- Use of the mineral resource "water" as a source of drinking water and irrigation resource in specific island and climatic environments, as well as the continuation

of the implementation of Directive 2000/60 EC on the quality of aquatic and river ecosystems.

- Cooperation between traditional land use (agriculture and livestock) and production chains (market).
- Conservation of community culture and customs, and practices for the recovery and enhancement of the identity of the community.
- Managing sustainable forms of tourism with particular emphasis on island regions.
- Management of landslides and flood risks.
- Combination of traditional know-how and modern scientific knowledge.
- Structure, organization and management of the biosphere reserve.

In addition, the BR aspires to be able to cooperate and possibly play a role in both the UNESCO Center for Mediterranean Biosphere Reserves and the World Network of Island and the World Network of Islands and Coastal Biosphere Reserves - WNICBR), offering valuable contributions to a logical exchange of experiences and best practices.

- **Periodic View**

The periodic view that is provided, is really important for the continuation of the BR operation as well as the review is allowed every decade of the BR operation and zoning and the participation of the population that live in the area. According to the article 9 of the regime for the Global Network of protected Biosphere Reserve (WNBR), «the regime for each BR must be subject to periodic review every ten years, based on a report that is established by the competent authority, based on the article's 4 criteria, which is transmitted to the State Secretariat and in the continue is being examined from the Advisory Committee for the BR and is being promoted to the International Coordinating Council.

Expected benefits of the integration in the MaB network

Sharing knowledge experiences and good practices and working with other countries is always mutually beneficial.

In particular, the proposed BR expects benefits from international cooperation:

- **Touristic and economic cooperation**

The development of sustainable tourism that respects the natural environment and traditions is one of the main advantages expected as well as the ability to exploit after interacting with the other BRs, the brand name of MaB network to use the goods and services it offers and reflects the balance between man and environment. Other expectations relate to the exchange of know-how (technology and knowledge transfer) in terms of harmonization between producers and the model of sustainable tourism, between tourism business and the protection of the natural environment and the intangible cultural heritage required to preserve the identity of the local communities as well as employment opportunities.

- **Exchange of experience on BR research management**

The proposed BR not only transfers experiences about its own sustainable management but can also learn from other examples. Reflection and evaluation by third parties are important elements for optimizing internal management processes.

- **Increased appreciation of the region and acquaintance with other regions**

Linking the local communities of the area allows the reflection of its own values and rules, as well as the appreciation of BR's landscape diversity. Only by comparing with the others can problems, challenges and expectations be standardized and qualified.

- **International understanding**

The appreciation and understanding of other cultures and values increases the willingness of cooperation with others and enhances world peace. In the light of rising globalization, this is an increasingly important duty that can benefit all people.

Sources

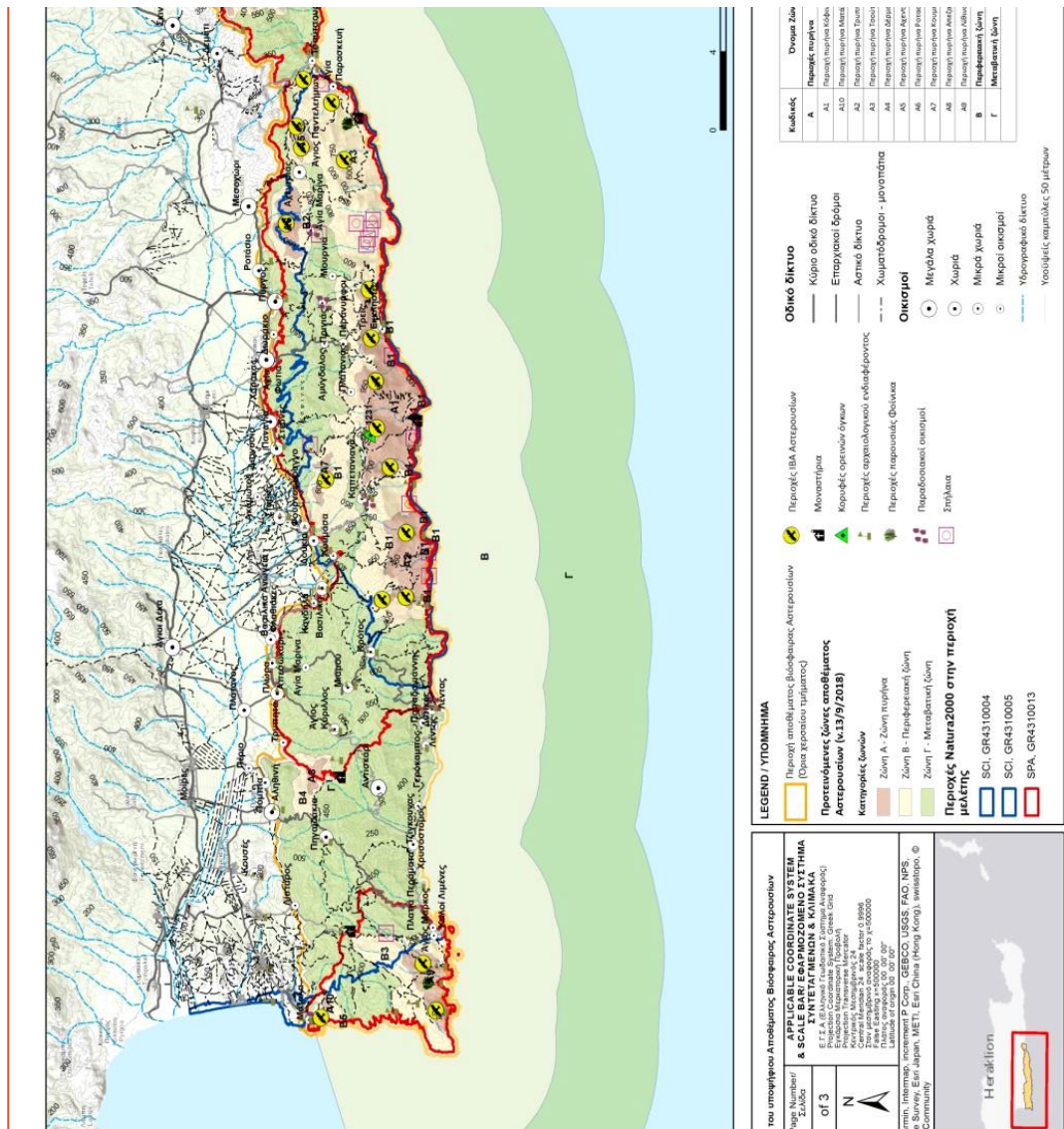
The integration of the proposed area on the UNESCO-MaB network, does not lead to direct activation of funding in the area but can be the driving force of own-initiative and action plan that concerns the area. Therefore, the BR funding will come from relevant funds of the Crete region for developing activities, but regarding the material and human operating resources of BR, the management Authority of Central and East Crete will play a significant role having the responsibility of the protected area management.

Zoning proposals

Based on the program instructions, in the proposed BR must exist the three following zones as has already been mentioned:

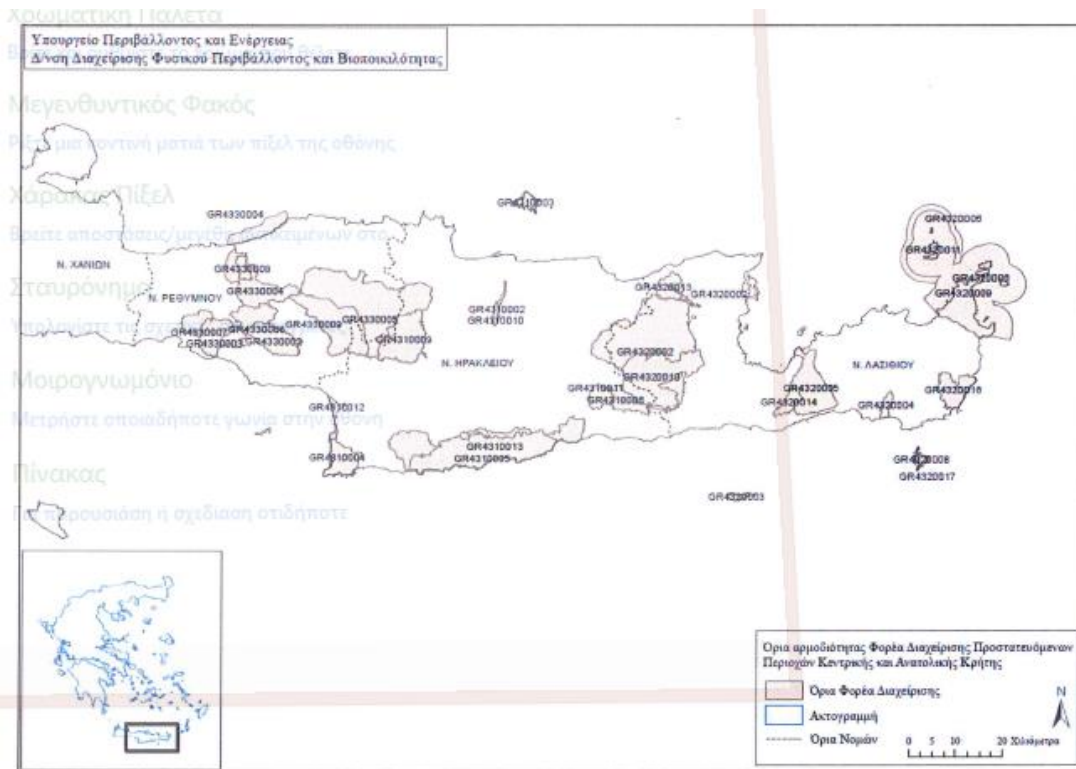
1. **Core (core zone)** sufficient size, which will aim at the ecosystem, the landscape but also biodiversity.
2. **Regional zone (buffer zone)** that surrounds the cores with compatible activities harmonized with the aim of the physical and cultural environment and landscape preservation.
3. **Transition zone (transition area)** where sustainable management practices and exploitation of physical resources are developed. In this zone, the main activities and settlements are supported and developed.

For the determination and documentation of zone delimitation, the following have been considered: the important elements of natural environment (critical habitats – priority habitat – already existed protected zones) and the important cultural units (important archeological, cultural and landscape, “developing” characteristics, but because the AB meets the sea in the south, is recommended as a transition zone to the sea.



Management scheme

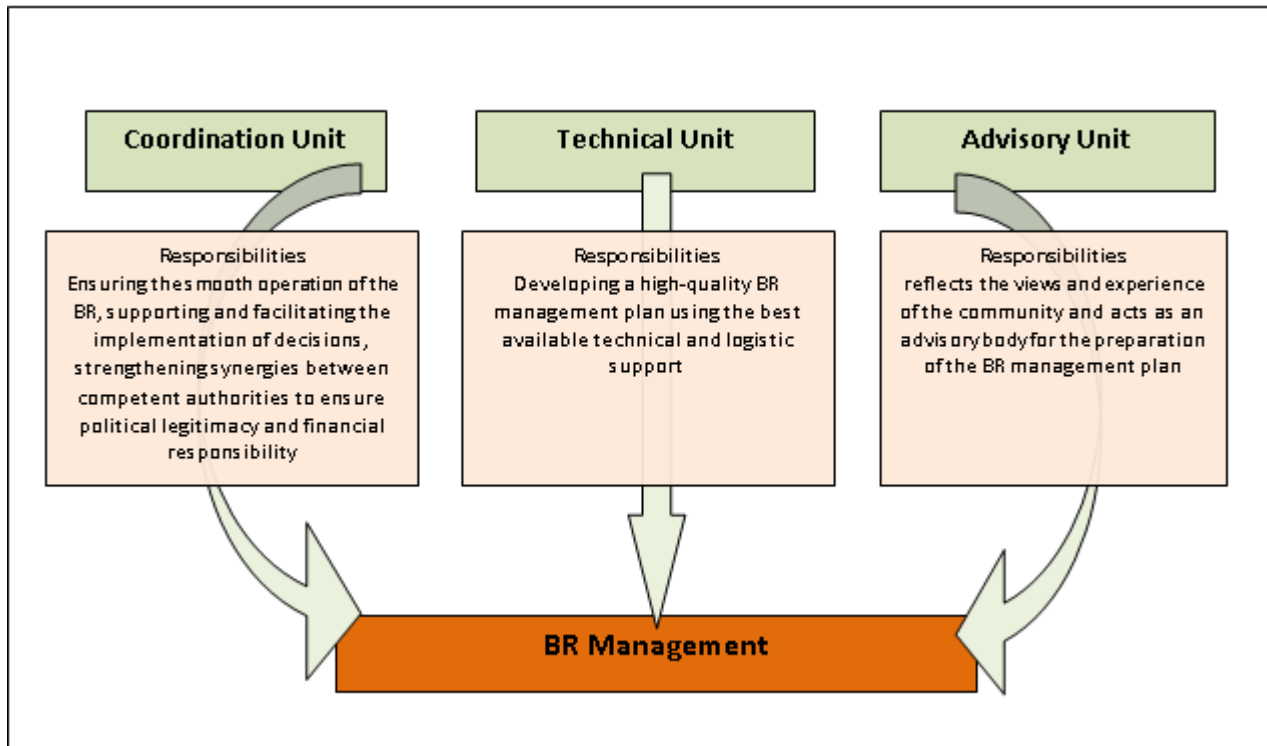
According to the recent Law 4519/2018 for the management body of protected areas, the biggest part of the BR (protected areas) will be under the responsibility of Eastern Crete (Official Government Gazette 25/A/20.02.2018)



The proposed management plan is in line with the new law on the establishment and operation of Management Authorities (L. 4519/2018) according to which an unremunerated Advisory Committee may be established, which will basically manage the proposed BR as a single region and taking into account both the natural and cultural environment of the area, will consist of representatives of stakeholders already involved in the management of the protected regions (natural and cultural-archeological).

Therefore, there are three important and very distinct BR objectives, which should be taken into account in setting up the proposed management plan:

1. Ensuring the civilian and social legitimacy of the BR
2. Providing science-based and high quality solutions for protection and conservation
3. Living up to the expectations by taking into account the views and experiences of the community as shown in the following figure



Based on the above, the Management Plan (Advisory Committee) proposed of the BR, will include representatives of the authorities in charge of the management of the area namely representatives from the Ministry of the environment and energy, the Regional Administration of Crete, the Decentralized Administration of Crete, the Heraklion Forestry Directorate, the Ephorate of Antiquities of Heraklion and the municipalities involved. This is required to ensure the political endorsement and orderly functioning of the plan. Furthermore, the logistics support from the relevant research institutes and bodies having substantial know-how and familiar with the natural and cultural environment of the region, the challenges and the representation of the local society by interest groups and grass roots movement of the productive groups within the proposed BR will ensure the development of management practices appropriate for the requirements of the region.

The development of the proposed management plan is presented schematically below:

