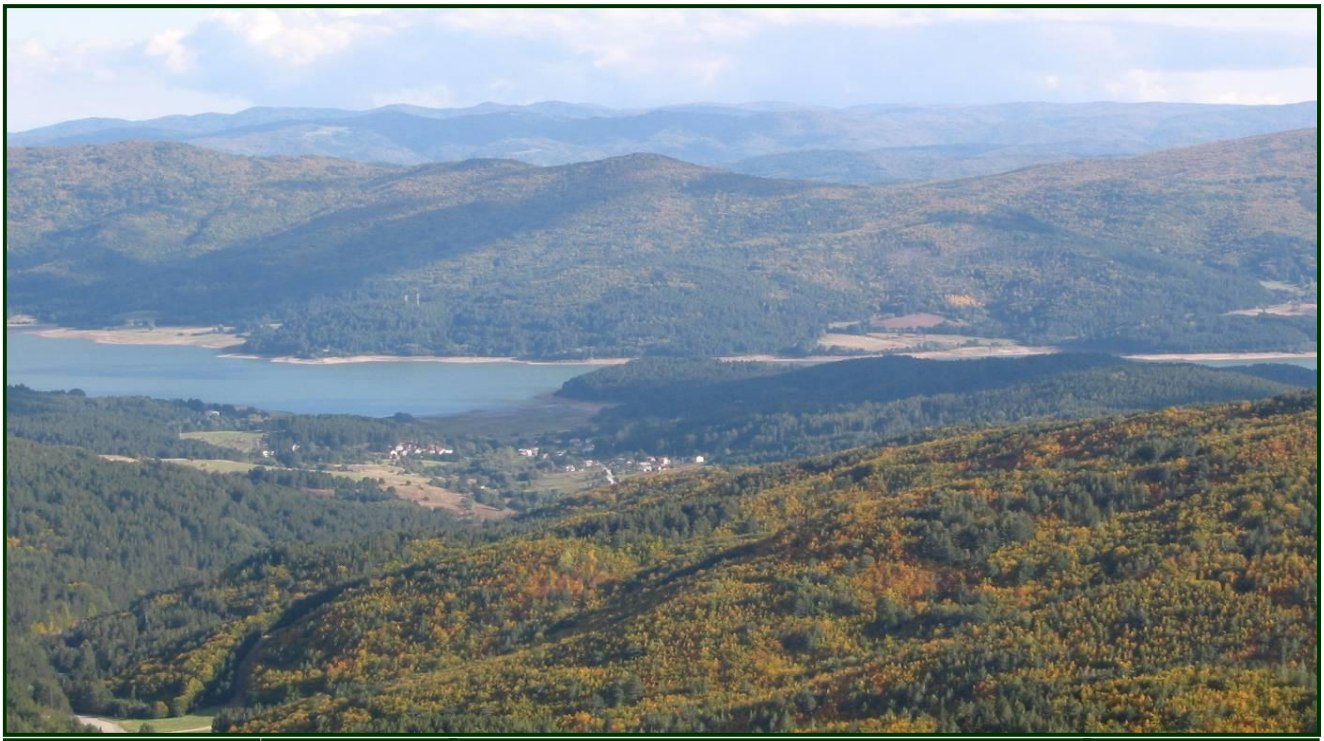
Biosphere Reserve Nomination for

Sila Biosphere Reserve

UNESCO - Man and Biosphere Programme



Foreword: Sila nomination process to the World Network of Biosphere Reserves

Sila National Park was set up by Presidential Decree 14/11/2002 and includes the territory already coming within the previously existing Calabria National Park (1968). With regard to the UNESCO system for the protection and improvement of the protected areas, the Park Agency took the first steps in 2009, making contact with the Ministry of the Environment. In collaboration with the Calabria Region, Provinces of Cosenza, Crotone and Catanzaro and the interested municipalities of the area, the Park Agency later started up research activity to achieve the inclusion of the Sila area in the UNESCO classifications, conducting an initial survey of the natural resources to be brought to International attention and producing reports on details of the features surveyed.

After the completion of this activity, in December 2011 the Park Agency sent a final report to the Ministry of the Environment and the Italian National Commission for UNESCO. The comparative analyses conducted in loco on the reference regional and world cases, the survey of the local productive traditions and the identification of the ecosystem resources of the "Great Forest of Italy" led to the nomination of the Park and the Sila area for inclusion in the Global Network of Biosphere Reserves.

The preliminary analysis of the Park's characteristics has confirmed that the Sila area can successfully start the process for recognition in the Global Network of Biosphere Reserves, since it includes ecological systems that are representative of the Mediterranean, as well as being a significant area for the conservation of biological diversity. The Sila area is also a site with various levels of human intervention over millennia, developed over time in the traditional and sustainable use of the land, the forestry resources and the related ecosystem services. The sustainable activities indicate the potential for the development and the logistic support for the entire Reserve.

After the decision of 25th ICC MAB, Sila National Park and the involved local authorities and municiapilities worked hard to fully implement all the reccomandations. The size of the area now appears to be adequate with respect to the other "Biospheres", and in case of designation, would become one of the largest Biosphere Reserves in the Mediterranean basin, at least in relation to the core and buffer areas which are included in the perimeter of the protected area and to the territory of the bordering towns where are located sustainable development plans.

The numerous initiatives undertaken in the recent months, the presence of the Park Agency as coordinator and the existence of planning instruments shared by all the communities involved, all ensure the involvement and participation of a wide range of public authorities, civil society, local associations and different stakeholders, and a strong management framework for the future of the Biosphere Reserve.

This process for the "internationalization" of the Sila area aims at capitalizing the work done in previous years and at favouring:

- ✓ The growth and coordination of a network of quality territories – which can be considered as environmental districts – as learning laboratories aimed at maintaining and developing ecological and cultural diversity, and guaranteeing the ecosystem services for human wellbeing;
- ✓ The development and integration of knowledge, also in the scientific and cultural sphere, for a better understanding of the interaction between man and nature;
- ✓ The enhancement of the capacity to manage complex socio-ecological systems, the constant dialogue between science and politics, environmental and multimedia educations, with an active participation of the local community.

PART I – SUMMARY

1. PROPOSED NAME OF THE BIOSPHERE RESERVE:
Sila Biosphere Reserve

2. COUNTRY:
Italy

3. FULFILLMENT OF THE THREE FUNCTIONS OF BIOSPHERE RESERVES:

3.1 Conservation function – to contribute to the conservation of landscapes, ecological systems, species and genetic variation

Sila Biosphere Reserve, located in the South of Italy, in Calabria Region, in the heart of the Mediterranean, is a suggestive area, result of highly favourable ecological conditions as well as of intensive activity that, over the centuries, has shaped the landscape. Thanks to its morphological and geographical characteristics, theproposed Biosphere Reserve hosts a wide variety of natural environments, with different microclimates, according to the altitudes and directions. For this reason Sila mountains include a wide variety of habitats and provide a biodiversity reserve of enormous importance in the Biogeographical region of the Mediterranean, rich in rare species, local and endemic.

Sila Biosphere Reserve is the only one "hotspot" area in Southern Europe (Apennines and Apuan Alps), included in the 234 *Centres of plant diversity* in the world, selected by IUCN and WWF. Sila was also identified by WWF as one of the priority areas for the conservation of the biodiversity of the central Mediterranean eco-region, especially for mammals, amphibians, reptiles and vascular flora, with different species included in the IUCN Red List or important for the protection of biodiversity in Network Natura 2000, included in Attachment IV to the Directive and in other international conventions regarding conservation (Berne, Bonn, CITES).

In particular, the proposed Biosphere Reserve is undoubtedly the area of the Italian peninsula with the most hotspots of genetic diversity within the Mediterranean regions, since fauna has a level of genetic differentiation higher than European average. The proposed Biosphere Reserve hosts approximately:

- ✓ 1,000 types of vascular plants, of which 81 endemic;
- ✓ over 210 species of vertebrates of which 113 birds (82 nesting), 65 mammals, 16 reptiles, 12 amphibians, 6 fish;
- ✓ a rich biodiversity of arthropods with 2,632 known taxa and an estimated number of over 15,000, with considerable local and regional endemic distribution.

The nominated area includes partially Sila National Park (Calabria National Park in 1968 and Sila National Park in 2002), one of the fundamental elements of the Italian National system for protected areas. Within the proposed Biosphere Reserve, various areas are already recognised of having international importance, deserving inclusion in the Natura 2000[1] European network for protection and safeguarding. These include 25 SCI[2] areas , 3 SPA and 1 Important Birds Area (IBA), classified in accordance with the "Habitat" Directive 92/43/EEC and "Birds" 79/409/EEC.

[1] The ecological network spread throughout EU territory and set up under Directive 92/43/EEC ("Habitat").
[2] Sites of Community interest.

The nominated area also includes 9 State Natural Biogenetic Reserves: *Coturelle - Piccione, Gallopane, Gariglione Pisarello, Golia Corvo, I Giganti della Sila, Macchia della Giumenta - S. Salvatore, Poverella Villaggio Mancuso, Tasso - Camigliatello, Trenta Coste*.

All the protected areas coming within the proposed Biosphere Reserve feature a mainly forest ecosystem for their 83.9%. The most distinctive feature of these forests is the endemic Laricio Pine, or Calabrian Pine subspecies (*Pinus laricio ssp. Calabrica*), a species which is the most widespread in this area as well as forming almost the total world population with approximately 34,000 ha.

3.2 "Development – to foster economic and human development which is socio-culturally and ecologically sustainable"

The proposed Biosphere Reserve includes areas that have been hosting traditional activities for centuries. The candidacy of this area for the World Biosphere Reserves Network attempts to undertake two fundamental actions for the benefit of the whole Sila area:

(1) strengthen research and monitoring activities of preserving and protecting the natural resources of the Sila area within a sustainable development system, and
(2) promoting the adoption of suitable instruments for the rationalization of the existing programmes in the territory, fostering ecologically compatible development.

While agriculture represents the historic activity with a longstanding tradition (the cultivation of the "Sila potato" and soft wheat are the two main crops on the Sila uplands, citrus and olive trees and vineyards on the other cultivated lands), livestock raising is based on the traditional transhumance (with the production of Certified Origin Products such as the caciocavallo cheese), development of the lumber sector and sustainable tourism. In particular, these last two ones are the development areas in which the proposed Biosphere Reserve acts as a driving force for the Sila district.

In particular, nature tourism in Sila National Park plays a basic role in the local economy, providing opportunities for employment and development for the local communities. In 2011, the Sila National Park receveid the recognition of the European Charter for Sustainable Tourism, a project by the Pan-European Organization Protected Areas EUROPARC[3] (among the world and European priorities expressed by the Agenda 21 recommendations, adopted at the Rio Earth Summit in 1992 and the 6th Community action programme for sustainable development), aimed at favouring the application of lasting development, i.e., fair economic and social development conserving and protecting the resources also for the coming generations. Membership of the Charter guarantees the protected area a number of benefits including:

- ✓ Recognition on the European level as a territory dedicated to sustainable tourism;
- ✓ Strengthening of relationships with tourist enterprises;
- ✓ An increase in the degree of influence on local tourist development;
- ✓ Greater activity for enhancing awareness;
- ✓ An exchange of experiences with the network of European areas designated in the Charter.

Also through the Park Agency and the involvement of all the local communities' stakeholders, the proposed Biosphere Reserve aims at developing a strategy of alliances for the management of the territory and for the development of programmes and projects. The unique collaboration between local authorities, universities, research centres, cultural institutions, individual and associated farm and forestry enterprises, small and medium size firms, producer associations and Chambers of Commerce in creating and managing these programmes represents the key to create a widespread network of institutional agreements and project-oriented partnerships ensuring the development of

[3] Pan-European Organization of Protected Areas.

projects for conservation (research and monitoring) and for socio-economic and infrastructure development in the area.

The proposed Biosphere Reserve covers an area capable of successfully implementing projects funded by the European Union for mobility, the improvement of the environment and rural areas, the development of competitiveness and diversification in the forestry and tourist sectors, with immediate socio-economic benefits accruing to the communities in the Sila district and in the whole Calabria.

The proposed Biosphere Reserve can thus act as a pilot site for the promotion of sustainable development in the eco-region, for regional development policies, for territorial planning and for guaranteeing the sustainable use of biological resources in Calabria Region. All the importants activities that have been carried out in the nominated area within some local projects, like SilaLavoro Local Work Plan or the other Local Development Plans, represent all a solid basis to be continued.

The management policies for the proposed Biosphere Reserve are structured along the main development axes emerged in the various public preparatory meetings with the key stakeholders, over all the Sila National Park, that will be the strongest promoter and coordinator of various activities for the implementation of these policies.

3.3 Logistic support – support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.

The proposed Biosphere Reserve is highly concerned with education and training. For about 5 years this area has been involved in local, national and international projects for conducting educational and scientific research activities, promoted by Sila National Park especially in collaboration with the Calabria University and the "Mediterranea" University in Reggio Calabria, the Italian Academy for Forestry Science, Legambiente and the State Forestry Corps. Sila National Park has also increased synergy with schools, following up its focus on communication and interaction in this sector. In the last year Sila National Park promoted for scolar and the wider public some initiatives about the MaB-UNESCO Biosphere Reserve Network aimed at raising awareness in relation to the importance of preserving the natural environments and promoting the sustainable use of their resources.

The proposed Biosphere Reserve can count on the collaboration of various bodies and research institutes providing support to activities for research and monitoring. These include:

- ✓ University of Calabria;
- ✓ "*Mediterranea*" University of Reggio Calabria;
- ✓ University of Molise;
- ✓ Federico II University of Naples;
- ✓ University of Tuscia;
- ✓ National Academy of Forestry Sciences;
- ✓ Calabria Observatory;
- ✓ State Forestry Corps (CFS);
- ✓ Regional Agency for the Protection of the Environment – Calabria (ARPACAL);
- ✓ Operational Unit of the Institute for Agricultural and Forestry Systems of the Mediterranean – National Research Centre (CNR).

The creation of the Biosphere Reserve intends also to reinforce the coordination of the existing and future research and environmental awareness activities by including them into the innovative framework of the United Nations Decade of Education for Sustainable Development.

In the proposed Biosphere Reserve facilities for the sustainable tourism have been already implemented. In the buffer zone, Sila National Park currently has two Visitor Centres (Spezzano della Sila - CS, Taverna - CZ). A third visitor centre, located in Cotronei (KR), will be opened soon. Every year, these Centres, among the most important and complete in Italy, are visited by hundreds of tourists, mostly school children from Central and Southern Italy involved in the activities of environmental, nature and forestry education offered by these environments. Specifically, the centres aim at educating and informing the public about the respect of natural, environmental, social and economic resources in the Sila district, with facilities and spaces set up for this purpose by the Forestry Corps.

Other logistic support facilities are present in the proposed Reserve as: natural and thematic museums, centres for nature, forestry and environmental education, libraries, theatres and green classrooms, botanical gardens and geological gardens, gardens/nurseries for local biodiversity, fauna enclosures, planetariums, didactic laboratories, centres for the adjustment and release of wild fauna, conference rooms.

The proposed Biosphere Reserve is also provided with a sufficient level of support infrastructures for supporting tourist activities and large excursion networks, which can be enjoyed on foot, on horseback or by mountain bike. Field education is also provided by the Park's trail network, organized in 66 trails with their secondary branches, and 6 stretches of the Sentiero Italia (SI or Italy Trail, corresponding to 123 stretches in the territory of the Provinces of Cosenza, Catanzaro and Crotone, with a total length of 725.36 km. The trails were laid out by the Italian Alpine Club, the three Provinces, Mountain Communities, Municipal authorities, the State Forestry Corps and the local environmental associations. The Sila National Park, since the signature of the Convention with the Italian Alpine Club, has refurbished the network of trails in the area.

4. CRITERIA FOR DESIGNATION AS A BIOSPHERE RESERVE:

4.1 Encompass a mosaic of ecological systems representative of major biogeographic region, including a gradation of human interventions

The proposed Biosphere Reserve is located in Calabria Region, in the south of Italy, in the centre of the Mediterranean Sea, and includes Sila National Park and its contiguos territories and municipalities. The dominant morphology shows soft contoured mountains giving rise to a number of streams such as the Cecita, Arvo, Lese, Crati, Mucone, Neto, Trionto, Tacina, Soleo, Simeri, Alli and Ampollino, sometimes torrents that flow over small waterfalls and wide, flat valleys, with various seasonal or artificial lakes (Arvo, Cecita, Ampollino, Ariamacina).

The territory is mainly mountainous and forested, with broad uplands at an altitude between 1,200 and 1,500 m, and numerous mountains exceeding 1,600 – 1,700 m (Mount Botte Donato, the highest peak, at 1,929 m) and shows evidence of millennia of interaction between man and nature. Despite this, harmony has been maintained over time between the various human activities (mainly involving agriculture, livestock raising and the use of the forests) and between the particular physical and natural environment and urban settlements.

The proposed Biosphere Reserve encompasses a rich mosaic of significant and characteristic ecological systems with major biogeographical and ecological significance for the Mediterranean Biogeographical Region. In particular, we can observe five types of forests according to the dominant habitats:

1. Mediterranean and Mediterranean Gold pine woods
2. Beech woods with Abies, Taxus and Ilex
3. Alpine herbaceous vegetation and shrubs
4. Mediterranean oak groves
5. Hygrophylous woods.

The ecological systems most representative of vegetation in the proposed Biosphere Reserve are:

- ✓ Beech woods
- ✓ Mixed woods, mainly beech
- ✓ Mixed beech-fir woods
- ✓ Laricio pine woods
- ✓ Mixed woods, mainly Laricio pine
- ✓ Deciduous oak woods
- ✓ Chestnut woods
- ✓ Evergreen sclerophyll woods
- ✓ Meadows - pastures
- ✓ Shrubs
- ✓ Transition areas from shrubs to woods
- ✓ Agricultural areas
- ✓ Urban areas
- ✓ Lakes
- ✓ Coastline

There are likewise various others habitats of EU interest, including some of the most typical ones of the Central European zone; although in some cases they occupy very small areas, playing an highly important ecological role (in particular: grassy areas; moors and shrubs; peat beds).

4.2 Be of significance for biological diversity conservation

Sila territory has numerous habitats definable as "Forests of temperate mountain conifers" and the habitats of "Mediterranean deciduous forests". These Southern Apennine forests types in Sila mountains are the ones that are most widespread and representative with regard to the state of conservation. It should be stressed that the area contains almost the entire Laricio pine population in the world. 42.7 % of the SIC areas is occupied by Laricio pine woods (9,530* woods with (sub) Mediterranean endemic black pines), followed by 30.2% beech woods (9,220* Apennine Beech woods with *Abies alba* and beech woods with *Abies nebrodensis* - 30.0% and 9,210* Apennine Beech woods with *Taxus* and *Ilex* – 0.2 %), stream shore woods (92A0 tunnel forests with *Salix alba* and *Populus alba*) on 6.8% and ilex woods (9,340 woods with *Quercus ilex* and *Quercus rotundifolia*) on 4.2%.

There are also various other habitats of interest; in some cases these are types more typical of the Central European temperate areas, and are valuable as highly valuable residues. They include 6,230* grassy formations with Nardus, -4.1%), 4,090 Moors with endemic Mediterranean gold and gorse – 0.9%, 5,330 Mediterranean and pre-desert type shrub areas - 0.2%, 7,140 transitions and instable peat beds - 0.1%).

As mentioned above (in point 3.1), and further clarified in the subsequent section on conservation, from the ecological and conservation viewpoint the Sila area can also be considered as an important reserve for genetic and species biodiversity.

The property hosts about 1,000 vascular plant taxa, 200 vertebrates, 2.632 known arthropods and more than 15,000 estimated, with a lot of endemism, namely plants and arthropods, 180 vertebrates, 31 of which within in the "Habitat" Directive, and more than 3,000 invertebrates (more than 12,000 estimated), 9 of which in Habitat D., with several local and regional endemics, and the best conserved saproxylic fauna of the Mediterranean mountains. Moreover, the area represents for at least 18 vertebrate species an outstanding genetic hotspot due to past isolation.

4.3 Provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale

From the administrative point of view, the territory of the proposed Biosphere Reserve is subdivided into 66 Municipalities (in the three Provinces of Cosenza, Catanzaro and Crotone), with a resident population of almost 230.000 (2012). Of these, only about 6,500 permanently live inside the Buffer Zone. Human pressure on this territory is quite limited, and this facilitates the approach to activities for conservation.

On the local level, the area offers numerous concrete examples of undertaking sustainable activities. These include:

- ✓ Traditional agriculture with agro-food products representing the Sila mountains (Sila Potato and Certified Origin caciocavallo cheese, salami, chestnuts, citrus, licorice, wine, olive oil);
- ✓ Wood industry;
- ✓ Artisan activities with local crafts products (fabrics, sculptures, baskets);
- ✓ Gathering of forest floor products (mushrooms);
- ✓ Tourist industry (ecotourism – winter sports).

The strategic position of the proposed Biosphere Reserve and, in particular, the inclusion of one of the most important calabrian city as Cosenza and the close distance from the other major cities of Calabria (Catanzaro and Crotone) is a further important development factor for the area. The proposed Biosphere Reserve thus has evident potential for sustainable development on the regional

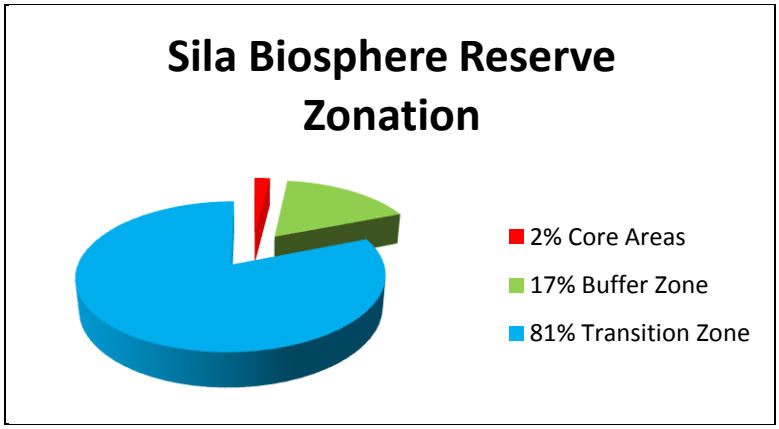
scale, since it is not only able to create and promote the activities for sustainable development in line with the objectives and criteria of the MAB Programme, but also to export them externally thanks the considerable participation and the involvement of local communities, stakeholders and local authorities. In this respect Sila Partnership with the coordination of Sila National Park has promoted initiatives in various areas.

- It involved the communities to create a shared candidacy and to reach the institutional objectives, stimulating synergies among the different local authorities;
- It started a series of measures for the protection and the sustainable development of the whole territory, ecologically compatible tourist development, contacts with the public and private stakeholders;
- It developed tools for the territorial management including the Partnership Agreement between municipalities and other local communities and stakeholders, that have been approved and signed by everyone, and prepared a shared plan of policies for the future of the nominated area, the Sila Biosphere Reserve Coordination Plan.

4.4 Have an appropriate size to serve the three functions of biosphere riserves

The size of the proposed Biosphere Reserve, where zonation is proceeding gradually in relation to the conservation priorities in the core areas and the sustainable initiatives undertaken in buffer and transition zones (sustainable tourism, traditional agriculture, environmental education, wood industry, monitoring, research etc.), seems to be adequate both to ensure the long term protection objectives in the Core and Buffer Areas and to provide the reference platform in the regional context for the continuation and further development of sustainable practices for natural resources in the transition areas.

The nominated territory includes almost all the territories of Sila National Park, one of Italy's largest National Parks. The Sila area could be one of the largest Biosphere Reserves among those identified in the Mediterranean Biogeographical Region where it is located.



Specifically, the Core Area, covering approximately 2% of the entire area of the proposed Biosphere Reserve, has a size suited to the activities for monitoring and conservation of the ample mosaic of ecological systems, habitats and species characterizing the Sila area, as stated and regulated in the MAB Programme.

The Buffer Zone, covering approximately 17%, fully responds to the objective of total protection of the Core Area, while at the same time allowing traditional activities regarding farming, forestry and livestock raising, as well as tourist and leisure activities, compatible with conservation objectives. It corresponds to the Sila National Park territories included in the proposal.

The Transition Zone, covering approximately 81% of the entire area concerned, guarantees an ample territorial base for undertaking activities for sustainable development and logistic support, as stated by MAB. The Transition Zone, strategically located in the middle of the Calabria Region, includes 66 Municipalities in hill, mountain and coastal areas, thus favouring the promotion of a wide range of sustainable activities thanks to the possibility of working in synergy with various economic and social sectors.

4.5 Through appropriate zonation

a – a legally constituted core area or areas devoted to long term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives

The core area constitutes of six components, corresponding to the integral reserve zones of protection defined in Sila National Park Plan, identified as "A Zone" of integral protection. On the basis of the conservation objectives set forth in national Law 394/91, the identification of the core area was conducted through a multidisciplinary approach taking into account the natural features of the territory, combined with the value of its ecological systems and existing risk factors.

The core area is subdivided into various areas scattered over the entire Reserve. The division has been based above all on the forest areas representing the most mature stage of the vegetation series, seeking to represent the different types in the territory of the Sila National Park. Sections of forest vegetation were chosen where the flora structure and composition was well preserved, taking into account the sites already coming under the State protected areas.

The size of the core area is of 6,803.22 Ha. The Park Plan and the Park Regulations implement the conservations purposes of National Law 394/91, legally framing these territories and explicitily establishing all the protections regimes and related acceptable management practices.

The limited territorial extension of the core area has a great importance to guarantee the long lasting protection regime in place. Considering that other legally protected areas are present in the territories identified as buffer zone and transition zone, an appropriate total surface devoted to the primary conservation objective is present inside the proposed Biosphere Reserve.

The table below report the list of the protected areas included. Some of these areas are not included in the core area because of their conservation objectives are compatible with the tools developed for the identified buffer and transition zones.

SCI Name	*Ha*	*Code*	*Zonation BR*
Monte Gariglione	604	IT9330114	*Core Area*
Bosco di Gallopane	159	IT9310070	
Vallone Freddo	70	IT9310071	
Pineta del Cupone	703	IT9310083	
Monte Femminamorta	658	IT9320115	*Core Area and Buffer Zone*
Pianori di Macchialonga	300	IT9310084	
Arnocampo	324	IT9310081	
Cozzo del Principe	61	IT9310079	*Buffer Zone*
Juri Vetere Soprano	35	IT9310126	
Carlomagno	25	IT9310130	
Nocelleto	88	IT9310127	
S. Salvatore	506	IT9310082	
Macchia Sacra	27	IT9310073	
Palude del Lago Ariamacina	98	IT9310072	*Buffer and Transition Zones*
Fiume Tacina	1,075	IT9320129	

Torrente Soleo	380	IT9330125	
Capo Rizzuto	12	IT9320103	*Transition zone*
Monte Curcio	2.87	IT9310075	
Pineta di Camigliatello	76	IT9310076	
Timpone della Carcara	166	IT9310074	
Bosco Fallistro	3.51	IT9310080	
Colle Poverella	179	IT9330116	
Acqua di Faggio	88	IT9310077	
Serra Stella	302	IT9310085	*Core Area, Buffer and Transition Zone*
Pinete del Roncino	1508	IT9330117	
Colle del Telegrafo	203	IT9330128	
SPZ Name	***Ha***	***Code***	***Zonation BR***
Sila Grande	31,032	IT9310301	*Core Area, Buffer and Transition Zone*
Parco Nazionale della Calabria (Sila Piccola)	16,027	IT9310069	
Marchesato e Fiume Neto	70,205	IT9320302	
IBA Name	***Ha***	***Code***	***Zonation BR***
Sila grande	31,318	IBA148	*Core Area, Buffer and Transition Zone*

b - a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place

The buffer zone corresponds partially to the extension of Sila National Park. The extension of this zone is of 59,557.92 ha, including territories of 18 municipalities. There's in force a Park Plan which links all the 18 municipalities in a common planning framework and is sovra-ordinated to the individual municipalities' plans. The legal tools of park regulation help to foster the conservation objectives, guaranteeing only the possibility of the presence of activities compatible.

This reflects a solid and long lasting cooperation tradition among those territories that are called to safeguard the integrity of the core areas themselves and being a laboratory for proving sustainable development research activities to be spread in all the territories of the proposed Biosphere Reserve.

Within this framework of cooperation, the role of the Sila National Park is very well recognised as a leading one and the fact that it is going to steer the process of Biosphere Reserve candidature is very well taken.

c - an outer transition area where sustainable resource management practices are promoted and developed

The large area of 290,933.02 ha that has been identified as Transition zone is composed by 66 municipalities that share a long lasting cooperation tradition, in relation to local development promotion. Indicators of these high level of cooperation that is in place at that scale are all the different projects developed in the last years. In relation to the proposed Biosphere Reserve development and logistic functions, it is interesting to mention the specific projects that have been carried out within, as for example, the SilaLavoro Local Work Plan (PLL) and the Local Development Plans (PISL), in the recent past and that constitute an excellent background for the future activities to be promoted within the designated site. All these municipalities have expressed their will to participate in a long lasting cooperation project of sustainable development represented by Sila Biosphere Reserve proposal.

In addition to the nature conservation objective, it has to be mentioned that also the cultural heritage benefits from the designation and protections of various areas. The coordination plan that is envisaged at the scale of the proposed Biosphere Reserve is designed on the principles of integrated management of natural, social and cultural heritage.

d - Please provide some additional information about the interaction between the three areas

The boundaries of the proposed Biosphere Reserve were definied through the wider stakeholders consultation, involving in the last years local communities in the activites related to the candidancy. The zonation of Sila Biosphere Reserve identifies homogenous territories by function, following the specific objectives established by MAB Programme of protection, improvement and use of resources combined with the sustainable development of the territories.

Sila National Park has got a key role in the management of the Sila Biosphere Reserve proposal, having been in these years the main promoter of the candidancy with the local communities and the national and local authorities, being the focal point of the area for its relation with local and national authorities as Calabria Region and MAB National Committe.

4.6 Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and the carrying out of the functions of a biosphere reserve

4.6.1 Describe arrangements in place or foreseen.

In addition to the traditional forms of stakeholders involvement that are regularly promoted by the Park, through meetings and web activities, and the system of its related municipalities, the MaB candidature preparatory phase has been characterised by an intensification of public debates.

The methodological approach was that of the participatory planning: various types of meeting were organised, designed around the needs of the specific groups of participants. A significant attention was always posed to the information and communication initiatives used to properly and largely promote each event. Namely:

- ✓ periodic large scale public meeting in the three Province involved (Cosenza, Catanzaro, Crotone) to present the concept of the Biosphere Reserve, its role in the given territories, the importance of the concerted actions and to introduce and discuss the opportunities offered by the Biosphere Reserve functions;
- ✓ educational meetings for young scholar to explain the peculiarities of a Biosphere Resserve and the importance of the International Network;
- ✓ public meetings for the constitution of an Observatory for the identification of new activities of development in the Biosphere Reserve, to elaborate indicators for monitoring the area and coordinate research initiatives;
- ✓ workshop with the local stakeholders to inform them about the potential opportunities offered by the Biosphere Reserve for the territory;
- ✓ communication champaign, press conference and meetings specifically devoted to involve the media in order to have them well informed and involved in the entire process.

All the activities have been widely promoted by properly using the media and the e-means of communication. In the Sila National Park website is hosted a particular section devoted to all the activities related to the MaB candidature, like newsletter or database.

4.6.2 Have any cultural and social impact assessments been conducted, or similar tools and guidelines been used?

The involvement of local authorities, universities, research centres, cultural institutions, individual and associated farm and forestry enterprises, small and medium size firms, producer associations and Chambers of Commerce and so on is the centre of the significant network of institutional agreements and project partnerships ensuring the undertaking of programme and projects for conservation and for socio-economic and infrastructure development indicated in the coordination

plan of shared policies for the proposed Biosphere Reserve, elaborated with the support of the Sila National Park.

National Park had also conduct a socio-economical assessment in the nominated area, to support the policies reported in the Coordination Plan and in the Park Long Term Economic and Social Plan of Sila National Park and contiguous area (PPES). PPES is based on an analysis conducted to gain information on the territory (social-demographic and economic survey; the resources of Sila National Park in terms of natural, historical, artistic, cultural and museum resources of local productions and traditional knowledge, local services, the tourist system and hotel accommodation). It was decided that a shared and participated nomination process of the proposed Biosphere Reserve, involving also the contiguous area outside the Park, can avoid any kind of conflict and be suitable for a long lasting planning for sustainable development activities.

The coordination plan previews also a monitoring body, the MaB-Sila Observatory, that with its technical and scientific competences will manage all the available information about the nominated area to implement possible action to promote a sustainable development in the proposed Biosphere Reserve. This body will be able to analyze all the territories included in all its perspective, including cultural and social impact.

The public meeting of these last years had a wide participation of the local communities. Park agency and all the other public and private local stakeholders shared some policies of actions for the future, giving their free, prior and informed consent for the procedure of nomination of Sila area as Biosphere Reserve. All these set of public activities and participation approaches are going to be further reinforced in the period to come, in order to foster the Biosphere Reserve concept in the most efficient way possible.

The Partnership begun also a reflection for constituting a Fundation for better monitoring the proposed Biosphere Reserve for the future.

4.7 Mechanisms for implementation

a) Mechanisms to manage human use and activities in the Buffer zone or zones

The existing legal and operational frameworks that are present at the various scales of government (local, regional and national) are intended to be given a new sense in relation to the coming into existence of the Biosphere Reserve and its governance system.

In particular the already existing Park Plan, Park Regulation and its Long Term Economic and Social Plan, and obviously the coordination plan of the Biosphere Reserve, identify the categories of intervention allowable in the Core and Buffer zone of the proposed Biosphere Reserve, coinciding with Sila National Park.

National Law 394/91 is another fundamental instrument for achieving the aims of the Biosphere Reserve. It contains the guidelines that can orient and coordinate the actions of parties operating locally in various ways, exploiting the synergies arising from the interlinking of resources, opportunities and skills, taking into account the economic, social and environmental aspects concerned, as well as their interdependence and possible long term effects on the actions proposed.

The Park Plan in particular regulates the uses of the territory, the activities and measures for recovery, improvement transformation, in such a way as to prevent them from harming the protected sites and resources or adversely affecting the overall ecosystem. This instrument also provides the reference framework for the information and assessment system. It thus provides an

explicit and transparent basis to the decisions on protection and intervention, and orients the choices to be made in other contexts by stakeholders.

The Park Plan and the Park Regulations govern the procedures for undertaking the activities allowed in the territory of the Park for pursuing the aims of protecting natural resources while respecting the local natural, landscape, anthropological, historical and cultural characteristics. The Regulations of the Sila National Park, pursuant to Art. 11 of Law n. 394/91, govern the criteria, forms and ways for undertaking the activities and for executing the works and other interventions allowed in the area in order to:

- ✓ Guarantee its protection and promote integrated development, compatible with the conservation of the values and the natural, landscape, anthropological, historical and cultural characteristics of the Sila area;
- ✓ Favour the maintenance of traditional farming, forestry and livestock raising and their integration with related and complementary activities, as well as with cultural and environmental resources contained in the Park;
- ✓ Guarantee, in relation with the projects of the Park Plan and the Long Term Economic and Social Plan, and the policies of the Sila Biosphere Reserve Coordination Plan and the sustainable use of resources, conditions for the promotion of economic, cultural, educational, social, leisure and tourist activities, in accordance with the primary objectives of the protection of nature;
- ✓ Promote the Park as an element of local identity, with tangible and intangible measures to affirm, in a participatory manner, the distinctiveness, quality and cultural value.

The enhancement of the ecosystem functions and the conservation of cultural and landscape resources takes place in the Buffer Zone, also through the reduction of the disturbance factors. In particular, there are prohibitions in this zone on: the construction of new buildings, the enlargement of existing buildings, the undertaking of works for the transformation of the territory, and executing earthworks or making changes in land use except when these measures are for purposes of conservation, maintenance and return to the original state; changes of land use involving substantial building and plant changes are likewise prohibited. Measures for management by the Park Agency are, however, allowed.

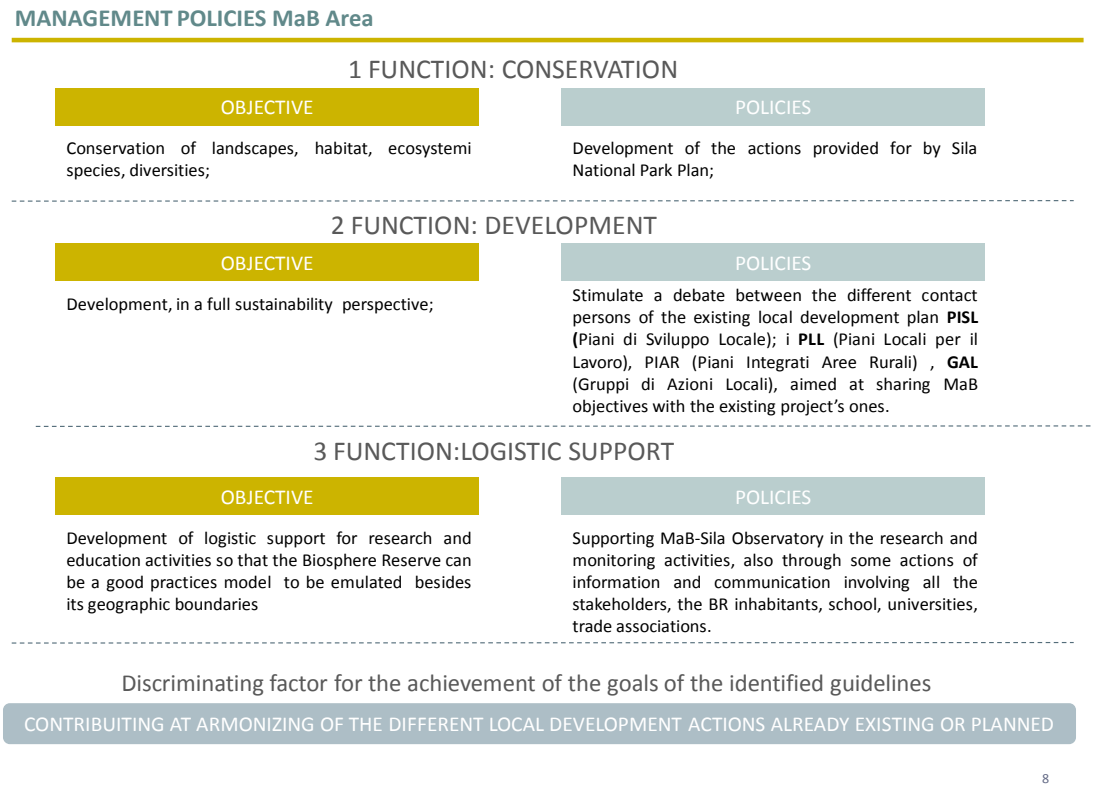
For forestry management, the guidelines set forth in the Park Plan and Park Regulations apply. In particular, the park area favours sustainable forest management conducted according to systemic forestry criteria, since a National Park must take into account the need to encourage forestry to adopt innovative forms that can preserve, conserve, improve the forestry resources and biodiversity, and at the same time, protect the landscape, take care of the territory and the environment, as well as highlighting “local skills”, while being aware that all this takes place in a rapidly changing economic and social situation.

All these legal tools will represent useful mechanisms to foster the Biosphere Reserve concept and objectives at the scale of the buffer zone. Additional financial resources are in process to be raised at the purpose of coordinating the new activities foreseen at the Biosphere Reserve scale. Human resources and other facilities are guaranteed by Sila National Park.

b) A management policy or plan for the area as a biosphere reserve

The Biosphere Reserve Coordination Plan, signed by all the stakeholders involved in the planning fo the activities of the proposed area, part of the MaB Sila Partnership, identifies objectives and activities in order to guarantee the implementing of the three biosphere functions: conservation, development, logistic support. The main aim of the integrated actions is to create a sustainable development for the future generation. In particular, at this stage, the partnership have identified

some policies for each biosphere reserve function, as guidelines for the implementation of specific project and programmes to achieve countable results in each field.



Another planning instrument related to the proposed Biosphere Reserve is the Multi-Annual Economic Social Plan of Sila National Park and contiguous area (PPES), aimed at the promotion of compatible activities, at developing the system of institutional relations already started up or to be started up with the local public and private stakeholders (through specific programme agreements). Coherently structurally inserted in the objectives set forth in the Park Plan and other planning instruments, the PPES also outlines policy involving not only the Park, but also the entire Sila area associated with the proposed Biosphere Reserve (active protection of biodiversity, communication, territorial marketing, environmental education and training, institutional agreements and alliances, accessibility, environmental sustainability) while also identifying funding channels and planning priorities.

Further mechanisms for the implementation of local planning are offered by:

- ✓ The Provisional Regulations on forestry use, drawn up by the Park Management with the support of the relevant technical departments on the "Sustainable management of forestry resources in the Sila National Park".
- ✓ The 2011 – 2015 plan against forest fires drawn up by the Italian Academy for Forestry Sciences;
- ✓ "Identification, characterization and drawing up of management guidelines for old forests in the Sila National Park and the production of suitable mapping" undertaken by the Italian Academy for Forestry Sciences;
- ✓ The Park Territorial Information System and management plan for mountain pastures: the project presented by the Italian Academy for Forestry Sciences is aimed at setting up the Territorial Information System (SIT) and management plan for mountain pastures in the Sila National Park;
- ✓ The survey of the hydrographic system, designed by the Department for Soil Protection of the University of Calabria. The project involved the "Water supply survey of the hydrographic system in the Sila National Park area and the supply sources and branches of

the main works for storage and regulation in the aforesaid area in order to define the critical areas". The first three study phases have been completed.

- ✓ SilaLavoro Work local Plan (PLL), a plan of sustainable development that involves all the communities of the proposed Biosphere Reserve in a mid term perspective, made up by Park Agency and local authorities;
- ✓ PISL, Local Development Plans aimed at fostering the development opportunities of the territories though specific actions.

c) A designated authority or mechanism to implement this policy or plan

The existing Sila MaB Partnership identifies Sila National Park as the body in charge of the coordination of the management of the Biosphere Reserve, playing the role of Biosphere Reserve Cordinator.

The Park is in charge for the implementation of these policies as project leader, collaborating in the management of the territories with a wide range of public and private stakeholders on the local, regional and national level. Additional human and financial resources have been budgeted already and will be provided by the pool of stakeholders which are supporting the candidature, both public (e.g. Calabria Region) and private sector.

d) Programmes for research, monitoring, education and training

MaB-Sila Observatory, that with its technical and scientific competences, will manage all the future research and monitoring activities in the proposed Biosphere Reserve. The Sila Biosphere Reserve Coordination Plan identifies five different fields of interest: agriculture; craftsmanship; tourism development; nature conservation; socio-demographic analysis.

The most recent research and monitoring programmes have covered above all the extension and updating of ecological knowledge about the area, and the response to the conservation objectives of the Habitat Directive. Among the most recent research and monitoring activities, numerous projects have been conducted by research institutes and universities (e.g. University of Calabria, University of Molise, Italian Academy for Forestry Sciences, ARPA etc.) as well as projects funded by the EU and the Park Agency.

Study and monitoring for fauna research will continue regarding: wildcats, deer and mountain goats, as well as studies on the flora and fauna check list of the Biogenetic Reserves. The usual periodical monitoring, already described, is continuing for biotic, abiotic and socioeconomic factors including the ones stated for the drawing up of the "Report on the state of the environment in the Calabria Region", and climate studies.

The proposed Biosphere Reserve is greatly concerned with education and training, and for approximately five years has been involved in local, national and international projects for the implementation of educational and scientific research activities, in collaboration, in particular, with Legambiente and the State Forestry Corps. Given its special interest in the topic of communication and interaction with the schools, the Park has intensified collaboration in the past year.

5. ENDORSEMENTS:

PART II – DESCRIPTION

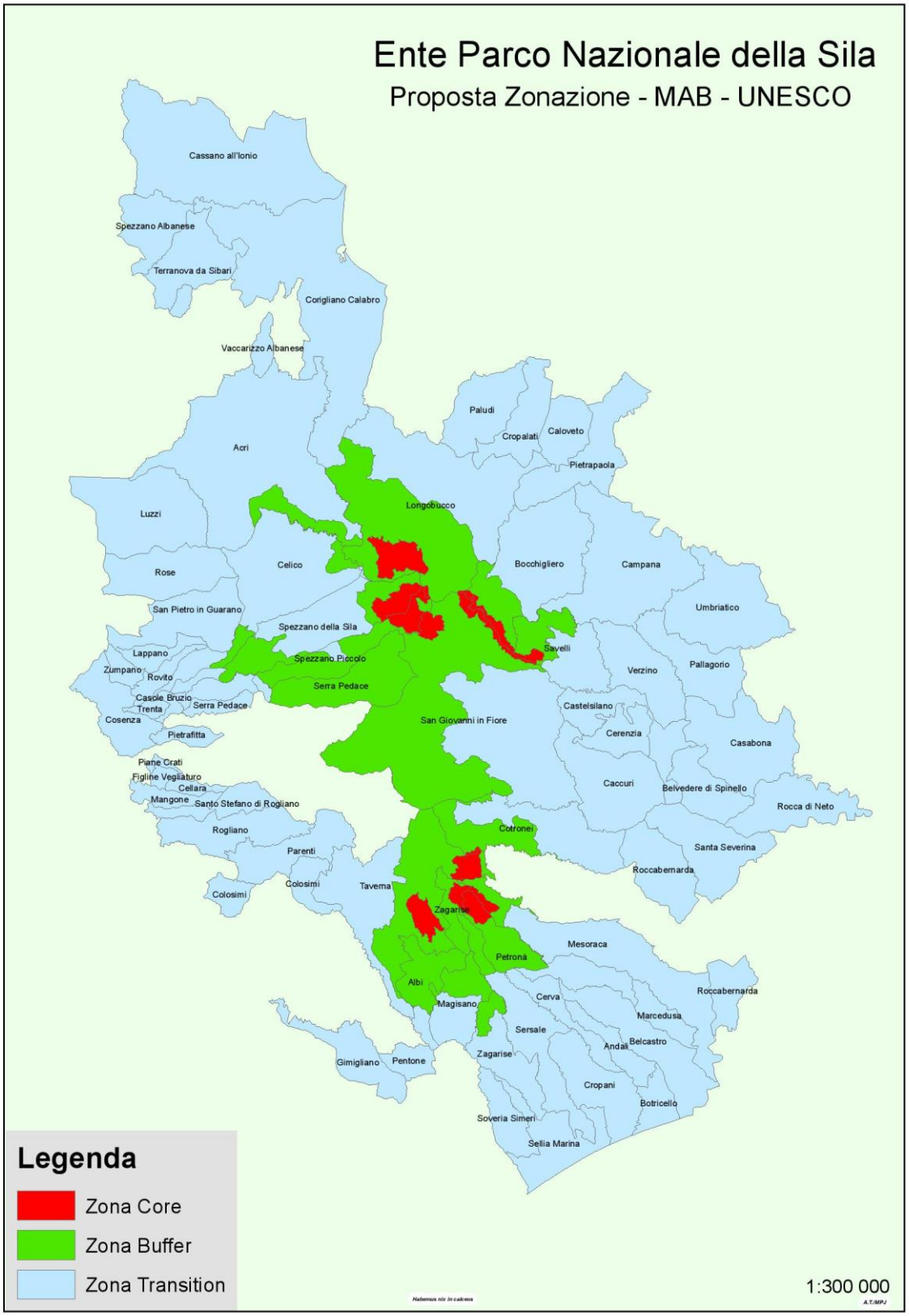
6. LOCATION (COORDINATES AND MAP):

6.1 Provide the biosphere reserve's standard geographical coordinates (all projected under WGS 84):

Cardinal points:	Latitude	Longitude
Most central point:	39° 20′ 26″ N	16° 26′ 30″ E
Northernmost point:	39° 47′ 2″ N	16° 19′ 8″ E
Southernmost point:	38°58′0″N	16°32′0″E
Westernmost point:	39° 18′ 0″ N	16° 15′ 0″ E
Easternmost point:	39°11′18″N	17°0′15″E

6.2 Provide a map(s) on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve (Map(s) shall be provided in both paper and electronic copies). Shapefiles (also in WGS 84 projection system) used to produce the map must be attached to the electronic copy of the form.

http://www.parcosila.it/en/carte-geografiche



7. AREA

The detailed surfaces, given by individual component, are reported below.

Total: (ha) **357,294**

7.1 Size of terrestrial Core Area(s): **6,803.22** ha.

7.2 Size of terrestrial Buffer Zone(s): **59,557.92** ha;

7.3 Approx. size of terrestrial Transition Area(s): **290,933.02** ha.

7.4 Brief rationale of this zonation in terms of the respective functions of the biosphere reserve. If a different type of zonation also exists indicate how it can coexist with the requirements of the biosphere reserve zonation.

The proposed Biosphere Reserve zoning reflects the rationale that drove the process of preparation of the candidature. The proposed zoning has been developed in close cooperation with the local communities and stakeholdersabd authorities, including all the municiapilities of the area that expressed their will and formal consensus to participate in the nomination procedure, signing the Partnership Agreement.

The identified core zones intend to reinforce the existing protection regimes in place (namely the existing protected areas in the Sila National Park), aiming to strengthen the safeguarding of the Sila area and seminatural related ecosystems. This intention is further obtained by fostering the initiatives carried on at the scale of the proposed buffer zone. The already existing activities promoted by the Sila National Park and the local municipalities will have a better context and more solid coherence framework, to avoid the proliferation of local activities that would negatively impact the fragile territories. The larger transition zone is rooted in the existing group of muncipalities that in the past years joined some local plan for the developmente of the Sila Area (like Local Development Plans, Work Local Plan or Provisional Regulations on forestry use), involving all the municipalities that in the public meeting represented their interest to join the future programmes identified by the Sila Biosphere Reserve Coordination Plan and have been since than promoted joint projects to promote the local development.

The final ratio between the 3 areas (as reported below) well reflects the above mentioned rationale and is in line with the major recent trends in Biosphere Reserve worldwide. The relatively small core area is well protected by an appropriate buffer; ultimately, the vast transition area represent the large territory needed to implement at full scale the actvities related to the sustainable development of the entire Biosphere Reserve

The core area constitutes of six single components, corresponding to the integral reserve zones “A Zone” of protection defined in Sila National Park Plan. The buffer zone corresponds partially to the extension of the Sila National Park, including terrtitories of 18 municipalities protected by Park Plan. The transition zone is composed by 66 municipalities, contiguous to the procted area, that share a long lasting cooperation tradition, in relation to local development promotion planning.

The definition of the zonation of the proposed Biosphere Reserve, and thus of the different levels of protection to be adopted in Sila National Park, and consequently, in the proposed Reserve, has considered national legislation, and specifically:

1. Framework law on Protected areas: Law 394 of 6-12-1991 with subsequent additions in laws and decrees issued subsequently on the same topic;
2. The Ministry of the Environment Manual for the zonation of National Parks;
3. The Guidelines for the sustainable management of forestry and grazing resources in National Parks issued by the Ministry of the Environment, in collaboration with the Italian Academy for Forestry Sciences.

The Sila National Park Plan, recently approved by the Council of the Park on 15 July 2012 and by the Community of the Park on 17 December 2012, in compliance with the above mentioned *Framework Law on protected areas* (art 12, 2 paragraph), and according to the conservation measures for Natura 2000 sites, organizes the whole territory of the National Park as follows:

- ✓ **A Zone**: Integral Reserve zones;
- ✓ **B Zone**: General Oriented Reserve zones;
- ✓ **C Zone**: Protection areas for traditional uses;
- ✓ **D Zone**: areas for sustainable development.

Transition zone areas, right outside, are equally subjected to Regional regulations with particular reference to fishing, hunting and mining activities carried out inside their territory, as laid down in art 32[4] of the *Framework Law on protected areas* no. 394/1991.

In the context of the strict conservation of natural resources as set forth in Law 394/91, an attempt has been made to conserve the special aspects of the Sila uplands created over centuries of history and related to customs and traditions that have made this territory unique. There has been particular emphasis on the presence of large areas used, today and in the past, for the grazing from May to November, which helps maintain the tradition of transhumance and agriculture with the coastal areas of the Ionian coastline of the Provinces of Cosenza and Crotone. Specifically:

- ✓ The Core Area is subdivided into various areas scattered over the entire poposed Reserve. The division has been based above all on the forest areas representing the most mature stage of the vegetation series, seeking to represent the different types in the territory of the Park. Sections of forest vegetation were chosen where the flora structure and composition was well preserved, taking into account the sites already coming under the protected areas. They correspond to "A Zone" of the park, territories of integral protection;

- ✓ The Buffer Zone of the proposed Sila Bioshpere Reserve features valuable forests not included in the Core Areas, as well as other types highly significant environmental features such as humid meadows, arid meadows and mountain shrubs for which the presence of grazing is a major control on growth. In some cases the Buffer Zone includes SIC sites and natural reserves, systems quite similar to the ones included in the integral reserves (Core Areas). These Areas are similar to integral reserves with regard to some protection rules, but in these sites some kind of human activity in order to preserve natural values are allowed.

[4] Framework Law on Protected Areas no.394/1991 – **art. 32: Contiguous Areas**

a. Regions, in agreement with the management bodies of the natural protected areas and with the local authorities concerned, draw up plans and programs, and any measures regulating hunting, fishing, mining and environmental protection, as for the contiguous areas of the natural protected areas, where action is needed to ensure the conservation values of the protected areas themselves;
b. The boundaries of contiguous areas referred to in paragraph 1 shall be determined by the Regions on whose territory is the natural protected area, in agreement with the managing body of the protected area;
c. Within the contiguous areas, Regions may regulate the exercise of hunting, in derogation of the third subparagraph of Article 15 of the Law of 27 December 1977, no. 968, only in the form of controlled hunting, reserved only to residents of the municipalities of the natural protected area and of the contiguous area, managed according to the second paragraph of Article 15 of that law.
d. The management body of the natural protected area, for reasons related to the conservation of the wildlife within the area itself, may, for particular species of animals, set prohibitions regarding hunting modalities and timing.
e. In case of interregional contiguous areas, each region provides for matters within its competence for the part related to its territory, in agreement with the other regions under Articles 8 and 66, last paragraph of the Decree of the President of the Republic July 24 1977, no. 616. The agreement is promoted by the Region in which there is the greatest part of the natural protected area.

The correspond to “B Zone”, “C Zone” and “D Zone” of the Sila National Park, areas aimed at protecting the integral reserve nucleus with specific tools;

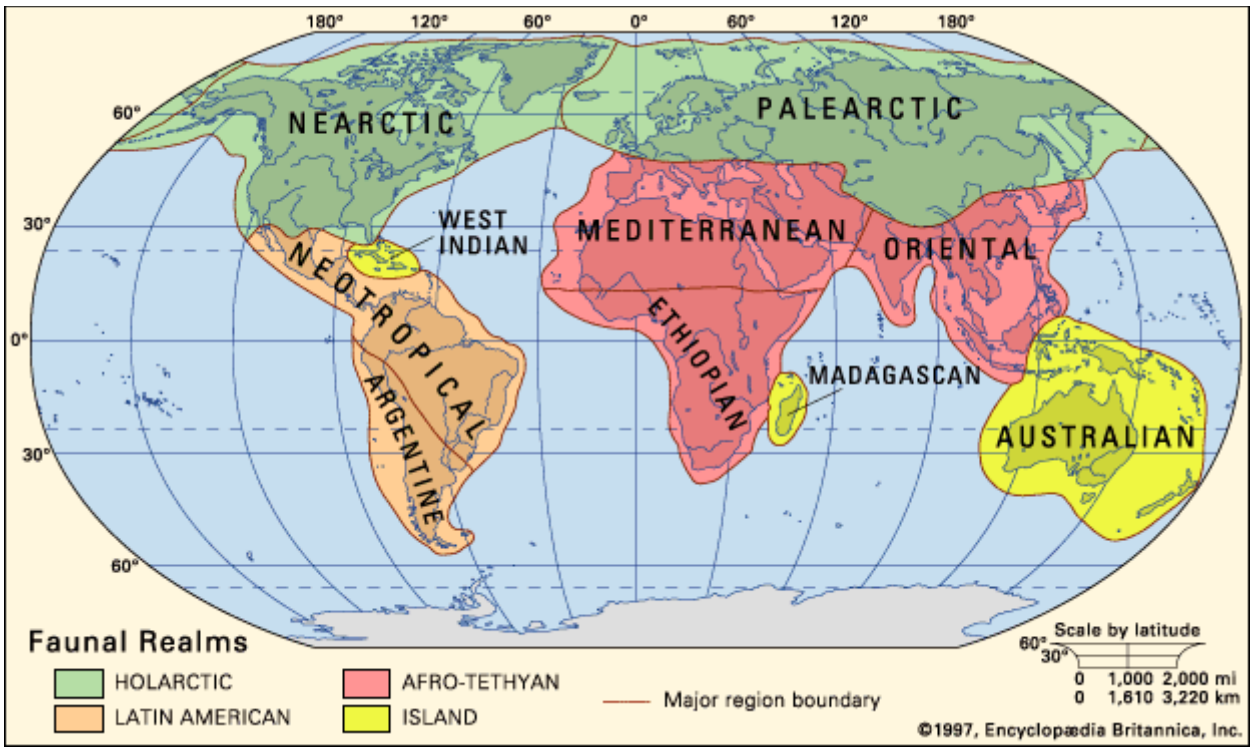
- ✓ For the creation of the Transition Zone, the contiguous municipalities that hosts areas most dedicated to farming, forestry and livestock raising have been identified, as well as sites sharing sustainable development activities set forth in the various development plans, projects and programmes in the past and in the present.

8. BIOGEOGRAPHICAL REGION:

Sila Biosphere Reserve is included in the Mediterranean Biogeographical Region.

The Mediterranean region is the winter rainfall zone of the Holarctic kingdom. It is characterized by sclerophyllous plants mainly of the scrubland type known as maquis. It is difficult to define, however, because many of its characteristic plants (about 250 genera) are centred around but not confined to this region.

The region extends entirely around the Mediterranean, from Portugal to Syria. Some classifications place the Canary Islands, which contain a subtropical rainforest biome, in this region, but Good categorizes these islands with the other eastern Atlantic island groups in a separate Macaronesian region, which contains about 30 endemic genera.



9. LAND USE:

9.1 Historical

Origins and early settlements
The Sila uplands are a very ancient area and were dry land when most of Italy was covered by the Mediterranean Sea. The first examples of the human presence in the Sila area date back to *Homo erectus* (approximately 700,000 years ago), on the shores of Lake Arvo, and Neanderthal Man, also on Lakes Arvo and Cecita. Between the end of the Neolithic and the beginning of the Copper Age (3,800-3,300 BC), the entire Sila area was occupied by settlements of farmers and fishermen who exploited these lakes, using nets for fishing. There are further remains dating from the Early Bronze Age (Ampollino and Cecita).

The first community settled in the Sila area was probably the Vituli, or Itali, an Italic tribe of cattle breeders who worshipped a totemic animal, the calf, the source of their sustenance. Vitulia or Vitalia was the first name of the Sila region, and was later Hellenized to become Italia and extended to the entire peninsula. The name Sila, on the other hand, derives from the Latin *Silva*, forest, the name given by the Romans to the forest par excellence, the last virgin forest in Europe.

From the settlement of the Bruti to the Roman Empire
The Romans took over the Sila area after the surrender of the Bruti, an ancient Italic people who probably separated from the Lucani; after defeating the Sybarites in the struggle to dominate the uplands, they settled in the mountains, raising livestock and exploiting the forests and building the city of Cosenza as the "capital" of the surrounding territory. The Roman victory thus turned the Sila area into "public lands" for cutting valuable wood (fir, pine, oak and beech from which beams over 30 metres long were obtained) for building houses and ships, and pine pitch for various uses including medicinal use. Under the Roman Empire the Sila area was protected and with Lucania was called the "Third Regio".

Although every year Rome extracted great wealth from the largest Italian forest, the prosperity of the Bruti was not affected, since the resources of the Sila mountains were truly great. After the fall of the Western Roman Empire and the arrival of the Lombards, the Bruti were forced to pay a third of their resources in tribute. After the Lombards, the Normans began to make land grants on a feudal basis. The greatest beneficiary was the Cistercian Order (founded in Dijon in 1098 and based on the Benedictine Rule), and Joachim da Fiore founded one of the first monasteries.

From the Middle Ages to the Modern Age
Joachim da Fiore was one of the most important mystics of the 12th century, and in 1189 founded the Florense Congregation. After arriving in the Sila area where the Arvo and Neto rivers meet, at a place called Fiore, he built a small hospice and after gaining a larger number of followers, started to build what would become the Mother Abbey of the Florense Order.

The Abbey was dedicated to St. John the Evangelist, the Virgin Mary and the Holy Spirit. The homes of shepherds, hunters, pitch gatherers and all those who settled in the Sila area to exploit its natural resources were built around the Abbey. A village was soon created which was named after the saint to whom the church was dedicated and the site of the church. San Giovanni in Fiore, the largest human settlement on the Sila uplands, was thus created.

The history of the Sila area and the historical use of this land is closely linked with that of this important town, the largest settlement in the heart of the Sila virgin forest. The construction of the Flora Abbey and the occupation of the surrounding lands for the requirements of the new monastery

created considerable trouble with the neighbours, especially the Basilian monks of the ancient Monastery of the Three Children located in the site "A-Patia" near Caccuri. Joachim appealed to the Norman King Tancred, and the generous monarch issued an edict by ordering the Flora monks to be left in peach, as well as making them a large annual grant of 500 "some" of wheat taken from the tithe. This favour towards the new religious order is due to the fact that this countered the Byzantine penetration in the region. During the Norman dynasty other Sila lands were granted to the Patiron Monastery in Rossano.

Starting from the Normans, the Sila area was thus divided into great estates (Cistercian lands and large estates illegitimately occupied, the “difese”) and lands occupied by farmers and shepherds induced by poverty to carve arable plots out of the forest (they burned the trees after extracting the sap turpentine, but after a couple of years they had to leave the place because farming on mountain slopes is always difficult). The Normans were succeeded by the Swabians (the splendid castle towering over the city of Cosenza was the residence of the great Frederick II) and then the Anjou dynasty, which went so far as to apply a tax to every plough owned.

Thanks to Robert of Anjou, the Sila mountains were divided into three demesnes to avoid disputes: royal, feudal and public lands. The wealth of the area was then exploited up to the time of Philip II, successor to Charles V (16th century).The Spanish prohibited the cutting of trees for any reason and threatened to sell the lands to foreign lords. This did not take place because the local population, that would have suffered serious harm, made a successful protest. After the Spanish, the Sila area came first under Austria and then under the Bourbons.

In about 1120, the Sila area was divided into two zones: Royal Sila and Abbey Sila. It was under this administrative and fiscal framework that the village of San Giovanni in Fiore grew, governed by the Flora abbots. In 1470, Ludovico di S. Angelo was the first of the series of Commandery Abbots, while a Prior was designated for the Abbey itself.

Modern age

The modern age is a historical period characterized by an endless series of struggles and conflicts between the Crown, the monasteries and the feudal lords for the possession and exploitation of the Sila lands. In 1525 there was a large migration of peasants from Casali di Cosenza, fleeing excessive taxes. The Cosenza families settled near the Florense Abbey at San Giovanni in Fiore; given their number, they transformed the life of the village and left an indelible mark on the history of the Sila uplands.

In the same year, Salvatore Rota was appointed as Commandery Abbot, and under him the town enjoyed significant development. A few years later, Abbot Rota received an official act by Charles V dated 12 April 1530 by which the monarch set up the Civic University of San Giovanni In Fiore. The town later declined as a religious centre and became a Commandery; the fief was granted to the Rocci family who kept it up to 1725, when it passed to the Caracciolo di Martina.

Over the years, the great distance between Sila and Naples and the difficulties involved in the administration resulted in a considerable number of occupations and invasions of Sila land, events known as the “difese" (defended lands), mainly by feudal lords. It was hard to counter thus usurpation given the indulgence of the law courts towards the local potentates, as well as due to the lack of adequate mapping of the Sila area to allow proper checking. Finally, at the end of 1613, following the order by Philip III of Spain to the Viceroy in Naples, the engineer Michele Cartaro was appointed to draw up the map. On this basis it was easier to undertake lawsuits against the usurpers and to define the privileges granted to the Ministries, certain barons and the Municipalities. This was an important step, although the problem was not solved completely.

The worst abuses were usually due to powerful persons and feudal lords. In 1662, 267 trials were still pending, and the accused included the Prince of Bisignano, Baron Ferrari di Cosenza, the Count of Policastro and Baron di Zagarise. Finally, in any case, the interests of the occupants prevailed; 1687-88 the proposed to the Court of Naples a sort of administrative armistice, which today would be called an amnesty, to definitively end the dispute. The financial return for the Crown was slight, also because in most cases payment was in instalments over very long periods. For ridiculously low amounts, the occupiers became undisputed owners of the Sila “difese". When in 1790 Giuseppe Zurlo was appointed to make an inquiry on the state of the demesne of Royal Sila, the situation was already compromised.

Under French occupation, Calabria underwent extensive changes. The feudal system was abolished, Crown lands were divided, various religious orders were suppressed and many monasteries were closed and their property confiscated. Feudal Sila became the property of the State and land was assigned to anyone needing it for agriculture, grazing or industry. In 1805 the Florense Abbey was suppressed and the Cistercian monks left the Abbey. The powerful Christian monasteries had had great importance in the history of the Sila area, not only from a religious but also from a social and cultural point of view; they had often been the only obstacle to the claims of the feudal lords.

The Kingdom of Italy

The episode of the Bandiera brothers was not the only event in the Risorgimento, which emerged early on in the Sila area. Twenty years after the conflict at Stragola, the Sila area became one of the battlefields where “brigands” clashed with the Piedmontese army in a desperate attempt to restore Bourbon rule. After Garibaldi’s campaign and the subsequent annexation of the Kingdom of the Two Sicilies to Piedmont, there followed disillusionment and severe disappointments. Agrarian reform and the distribution of land to those who farmed it was not enacted as Garibaldi had promised during his campaign. Taxes were increased and weighed heavily on the few possessions of the peasants. Traditional grazing and woodcutting rights on the former Bourbon Crown lands were abolished. Ecclesiastical land confiscated by the government was sold to bourgeois families who already owned large estates, and who were the only people who could pay for it.

Military service became obligatory and the Piedmontese government undertook what could be construed as a colonial policy, producing discontent and anger throughout Southern Italy. The results soon came, and in the interior areas of Campania, Basilicata and Calabria armed bands formed, and started what would now be called guerrilla activities, with the aim of restoring Bourbon rule in the South. There ensured a severe and fierce civil war against the Piedmontese, seen as invaders, and the bands became known all over Europe. In this war, improperly called the fight against “banditry”, the Piedmontese forces treated the southern regions severely, thus creating a profound division between North and South, which persisted in history. The Piedmontese government deployed 120,000 men in the South, half of the Italian Army, with 57 infantry regiments, 19 Bersaglieri battalions and 10 cavalry regiments. Martial law was proclaimed and there were cruel reprisals with the burning of villages and executions. By way of reaction, the brigands got the support of most of the population. The hopeless war of the brigands lasted for five years and ended in 1865 when in the burned and semi-destroyed countryside there were only a few dozen rebels left compared to the thousands of real or presumed bandits, and they were killed or imprisoned. But perhaps banditry collapsed definitively also thanks to the new opportunities for young people to emigrate.

The first public works

In 1914 work started on the construction of the Sila Railway, with the purpose of connecting Cosenza, already served by the national line, with Catanzaro, going through Rogliano, Soveria Mannelli, Decollatura, Crotone and S. Giovanni in Fiore. Work on the narrow gauge railway line continued slowly over the subsequent years, above all for the Crotone branch. The railway arrived in the city of Catanzaro on 18 June 1933, and in 1948 work started on the Camigliatello-S. Giovanni in Fiore stretch, approximately 28 kilometres long; it was opened to trains in May 1956. The construction of the railway favoured the lumber trade by reducing transport costs. The work by the Fascist regime in the Sila area communication infrastructures was not limited to the railway.

There were many other investments in road works, such as the construction of the road between S. Giovanni in Fiore and Trepidò, as well as la construction, along the same road, of the bridge over the Arvo River. In 1925, work started on a major project called "Sila Plants" involving the optimal exploitation of the hydroelectric resources in the Sila uplands. The plan involved the construction of large reservoirs with a volume of over 170 million cubic metres of water, dozens of kilometres of tunnels, forced conduits and hydroelectric plants. The entire system was to have supplied 800 million Kwh per year and provide power to the cities of Crotone, Reggio and Cosenza. Other lines brought power to Puglia and Salerno.

Under this project, the dam on Lake Ampollino was completed in 1926 to collect the water of the Ampollino River. The dam is approximately 30 metres high and 129 metres wide, located at an altitude of 1,271 metres; the water is conveyed in a tunnel 4 km long to the first power station at an altitude of 800m. The water flows out of the power station into the Neto and Arvo Rivers at the locality of Junture di San Giovanni in Fiore, into a compensation tank. From here, the water is conveyed in a forced conduit for approximately 4 km to the Timpagrande power station, exploiting an altitude difference of 539m. The tunnels and dams at Junture were completed in 1927 while the Timpagrande power station was completed in 1931.

In 1931, work was also completed on the dam to store the water of the Arvo River. It is located at an altitude of 1278.5 metres, is approximately 35 metres high the reservoir contains 60 million cubic metres of water. A tunnel 6,250 metres long was also built under Mount Nero, connecting Lake Arvo with Lake Ampollino. Besides the small Lake Ariamacina, another reservoir for 4 million cubic metres was planned at Torre Garga; the water was to have first been channelled to a power plant at Jure Vetere, and then to the Junture plant. This small reservoir was never built. During the Fascist period work was conducted not only for the hydroelectric exploitation of the Sila uplands, but the forests were also exploited. In 1926, the company called SO.FO.ME (Società Foreste Meridionali) was awarded the contract to cut the woods in the Mount Gariglione area, and it built a cable car and steam railway to transport lumber and wood-coal. The narrow-gauge railway, a

steam Decauville, wound around the Gariglione forest on a route over 20 kilometres long. The material was transported by the cable car line 15 kilometres long to a station at an altitude of 310 metres at Bivio della Foresta. The company employed a large number of people including workmen, technicians and wood-coal makers. Every day, 350 cars travelled along the railway line. The construction of the narrow-gauge railway and cable cars undoubtedly facilitated the deforestation of vast areas of the Sila mountains.

The Agrarian Reform in 1950

After the end of war and the return of the veterans, the end of the great public works and the drastic reduction of forestry activities, the dramatic longstanding problem of employment again appeared. In order to avoid starvation, farm workers, tenant farmers and farmers occupied many lands of the large estates. In 1949, these struggles, which were very sharp in the Sila and Marchesato area, culminated in the massacre of protesters by the special police at Melissa, under the orders of Interior Minister Scelba.

The Agrarian Reform law was promulgated in May 1950, and provided for the expropriation of thousands of hectares of land to be distributed free of charge to farm workers without land and financial resources. The ancient dream of the Sila peasants came true, though a couple of centuries late, and without the hoped-for results. The Land Reform was undertaken by the O.V.S. (Opera Valorizzazione Sila), a body set up in 1947 which expropriated 75,000 hectares of land and purchased more, reaching a total of 86,000 ha. As a result, 11,557 farms and 6,705 plots were created and were each assigned to heads of households. The size of the farms, seldom exceeding 10 hectares in the mountains and 5 ha in flat areas, proved quite insufficient to ensure an adequate standard of living to a family. Nevertheless, everyone was satisfied. The Government managed to quell the revolts by dividing up the land and making a large number of families happy. The Communists were pleased with the elimination of the large estates and the farm workers were happy with the small amounts of land obtained free of charge.

The problem of emigration

After the failure of the Reform, in the late 1950s and in the 1960s, the children of the farmers who had challenged the machineguns of Scelba's police had to face an equally difficult challenge: emigration. Just in the decade from 1952 to 1961, there was an exodus of 350,000 people from Calabria, mostly farmers, and with a heavy impact on the artisan sector as well. The internal areas were those most affected, but emigrants came from the entire region including major cities like Reggio and Catanzaro. The Calabrian workers were swallowed up by the industries in Northern Italy and Northern Europe (above all Switzerland and West Germany) in the midst of the economic boom.

The Sila towns paid a heavy price, and the core of the Sila area, though with a population of under 20,000, recorded 7,000 emigrants who went to find work. In particular, San Giovanni in Fiore was literally emptied and lost most of its active population, becoming a town of old people, women and children. In 1969, San Giovanni recorded 583 births of which only 257 took place in the town and 326 in the rest of Italy and abroad. Starting from the mid 19th century, the feudal laws and the liberalization of the grain market had caused serious problems leading to the reduction of the wooded areas and the alteration of their structure. In the absence of any coherent forestry policy, the exploitation of the forests increased between the two world wars and in the years just after World

War II. An extraordinary example is the Gariglione forest in Sila Piccola where over 90% of the woods were eliminated all at once.

9.2 Who are the main users of the biosphere reserve? (for each zone, and main resources used). If applicable, describe the level of involvement of indigenous people taking into account the "United Nations Declaration on the Rights of Indigenous Peoples".

Zone	*Main users*	*Main resources*
Core Area	-	-
Buffer zone	Loggers Artisans Farmers Breeders Tourist Local communities	Forestry Agriculture Pasture Nature Water
Transition zone	Loggers Artisans Farmers Breeders Tourist Local communities	Forestry Agriculture Pasture Nature Water

9.3 What are the rules (including customary or traditional) of land use in and access to each zone of the biosphere reserve?

Land use and access to core and buffer zone of the proposed Biosphere Reserve is strictly regulated by Sila National Park legal tools and related, namely:

- ✓ The **National Law of 6 December 1991 no. 394**, known as the *Framework Law on protected areas* (art 12), and subsequent integrations;
- ✓ The **Manual for National Park zoning**, by the Ministry of the Environment (1997);
- ✓ The **Guidelines for the sustainable management of forestry and grazing resources within the National Parks**, by the Ministry of the Environment, in collaboration with the Italian Academy for Forestry Sciences (2002);
- ✓ Regional Law "Rules on protected areas" of 14 July 2003 no. 10.

The *Framework Law on protected areas* (**art. 12 – paragraph 1**) establishes that each National Park has to adopt a Plan for the Park in order to better protect the natural, environmental as well as the traditional historical, cultural and anthropological values of the area involved.

In particular, according to **art. 12 paragraph 2**, the Plan for the Park has to organize and distribute the territory within the National Park, according to the different level of protection, as follows:

a) Integral reserves, in which the natural environment is preserved in its integrity;
b) General oriented reserves, where is severally prohibited to build new constructions, extend those already existent, and carry out any transformation of the territory.
c) Protection areas, in which agro-forestry-pastoral activities, as well as fishing and collection of natural products can be carried out, within the limits set by the Park Agency and according to the methods of the organic agriculture. Quality crafts production is highly encouraged.
d) Areas of sustainable economic and social promotion, more affected and modified by human activities, where more activities and actions compatible with the purposes of the Park, and aimed at favouring and increasing the sustainable economic, cultural and social development of the local communities and the benefit for tourists.

Transition zone areas, right outside of Sila National Park's boundaries, are equally subjected to Regional regulations with particular reference to fishing, hunting and mining activities carried out inside their territory, as laid down in par. 32 of the *Framework Law on protected areas* no. 394/1991.

9.4 Describe women's and men's different levels of access to and control over resources.

As established by Italian Constitution, par. 3, it is not legally allowed any kind of difference between women and men for accessing and controlling over resources of the territories.

10. HUMAN POPULATION OF PROPOSED BIOSPHERE RESERVE:

Reserve Zones	Permanent population	Seasonal population
10.1 Core Area	0	0
10.2 Buffer area	6.500	+ 88.328 visitors
10.3 Transition zone	222.953	+ 492.700 visitors
Total	229.453 inhabitants	+ 501.328 visitors

10.4 Brief description of local communities living within or near the proposed biosphere reserve

The population living in the MAB Reserve totals about 230,000, confirming the continuing negative demographic trends (-1,5%). The following table shows details of ISTAT 2012 on the population in the Municipalities.

Table of date for the total population in the proposed area[5]

MAB Municipalities	Area (km^2)	BR Zonation	Total population 2012	Total population 2011	Total population 2010
Cosenza Province					
Cosenza	37,86	T	69.065	69.396	69.484
Bocchigliero	98,82	B,T	1.436	1.548	1.594
Piane Crati	2,33	T	1.421	1.416	1.414
Pietrafitta	9,24	T	1.356	1.377	1.377
Colosimi	25,58	T	1.284	1.313	1.303
Caloveto	24,96	T	1.269	1.283	1.288
Vaccarizzo Albanese	8,53	T	1.172	1.182	1.184
Figline Vegliaturo	4,16	T	1.127	1.096	1.097
Cropalati	33,70	T	1.079	1.097	1.099
Serra Pedace	59,27	B, T	1.000	1.006	1.032
Rogliano	41,68	T	5.728	5.697	5.765
Lappano	12,21	T	975	986	986
Cellara	5,86	T	505	511	512
Luzzi	77,60	T	9.478	9.557	9.568
Corigliano Calabro	195,64	B, T	39.093	40548	40493
Spezzano Albanese	32,26	T	7.091	7133	7157
Terranova da Sibari	43,46	T	5.167	5200	5204

5 Source: ISTAT

Spezzano della Sila	80,29	C, B, T	4.485	4688	4692
Rose	47,49	T	4.332	4324	4316
San Pietro in Guarano	48,35	T	3.679	3655	3673
Longobucco	212,26	C, B, T	3.407	3618	3714
Rovito	10,68	T	3.198	3272	3280
Acri	200,63	B, T	21.303	21228	21298
Celico	99,75	B, T	2.833	3046	3048
Trenta	4,65	T	2.713	3.327	3.372
Casole Bruzio	3,94	T	2.534	2.574	2.578
Zumpano	8,08	T	2.517	2568	2588
Parenti	37,62	T	2.242	2246	2249
Spezzano Piccolo	49,22	C, B, T	2.099	2160	2170
Campana	104,65	T	1.916	1.962	2.021
Cassano all'Ionio	159,07	T	17.368	17.481	17.496
Mangone	12,27	T	1.836	1843	1848
Santo Stefano di Rodigliano	19,56	T	1.657	1.660	1.684
Paludi	41,74	T	1.124	1.137	1.205
Pietrapaola	52,81	T	1.182	1.192	1.199
San Giovanni in Fiore	282,53	C, B, T	17.750	18049	18085
Crotone province					
Rocca di Neto	44,93	T	5.662	5.594	5.602
Mesoraca	94,79	C, B, T	6.640	6787	6804
Cotronei	79,20	C, B, T	5.422	5490	5472
Roccabernarda	64,89	T	3.439	3.467	3.475
Cerenzia	21,97	T	1.179	1.215	1.231
Castelsilano	40,06	T	1.020	1.034	1.045
Caccuri	61,38	T	1.677	1.695	1.720
Verzino	45,63	T	1.943	1.979	1.985
Santa Severina	52,31	T	2.196	2.262	2.257
Belvedere di Spinello	30,31	T	2.315	2.327	2.334
Casabona	67,67	T	2.805	2.812	2.811
Umbriatico	73,35	T	894	902	905
Pallagorio	44,48	T	1.295	1.298	1.297
Savelli	48,92	C, B, T	1.315	1334	1393
Catanzaro province					
Albi	29,64	B, T	984	1027	1024
Sersale	53,30	B, T	4.772	4827	4852
Cerva	21,37	T	1.258	1.269	1.275

Magisano	31,94	B, T	1.277	1285	1285
Belcastro	53,56	T	1.396	1.400	1.452
Sellia Marina	41,46	T	7.139	6.987	7.002
Petronà	45,79	B, T	2.691	2.685	2.723
Cropani	44,81	T	4.393	4.406	4.442
Andali	17,86	T	788	791	795
Botricello	15,47	T	5.023	5.028	5.033
Marcedusa	15,68	T	442	442	447
Taverna	132,31	C, B, T	2.711	2712	2697
Zagarise	49,33	B, T	1.711	1760	1761
Pentone	12	T	2.209	2.2218	2.220
Gimigliano	32,5	T	3.408	3.410	3.409

The population distribution in the various Municipalities clearly is highly variable in terms of the resident population, ranging from mountain towns with a population of just over 1,000, such as Serra Pedace, Albi and Magisano, to larger towns like Corigliano Calabro (about 39,000), Acri (about 21,400) and San Giovanni in Fiore (about 18,200). The most populated town is Cosenza, with 69,065 of inhabitants. The towns with the smallest population density are Serra Pedace (1,006) and Albi (1,027).

After the sharp growth recorded in the 1950s and 1960s, due to the economic boom in that period, population trends were mostly stable up to the 1980s, with the gradual and apparently inexorable depopulation of the area, still under way. With regard to 2001, the year of the last available census, and the ISTAT data for 2008 (recording a population level of 387,917) the population of the proposed Biosphere Reserve Municipalities has undergone a considerable fall (about 1.35%, a percentage much higher than regional (-0.10%). Among the main factors in the general fall of the population we can consider the lower birth rate, national and international emigration and the low rate of the foreign population in terms of immigration. The communities are thus mainly characterized by an elderly population. Another reason is the fact that young people leave to seek employment, so that approximately half of the residents belong to the age group theoretically not concerned with the labour market.

The data analyzed show that in the zones studies the educational level of the population is slightly lower than on the regional level. In particular, we can see that the percentage of university graduates (= 6.4 %) is lower compared both to the regional level and to the figure for the Provinces of Cosenza and Catanzaro, while it is higher than for the Province of Crotone. On the whole, the Municipalities in the Park show a medium to low work quality level with an unemployment rate of 12% (almost double the unemployment rate in Italy). With regard to the production structure, the impact of the primary sector on the local economy is considerably lower.

- Agriculture is a historic and traditional activity that has always provided a major source of support to the population. The farm enterprises in the area are specialized in the cultivation of the “Sila potato” and soft wheat, the two main crops in the Sila uplands, and citrus, olive and wine in the other territories.
- Animal raising features the Podolic cattle, and the traditional transhumance still continues, with transfers between the hills and mountain areas in summer and winter. The milk produced is used for making Certified Origin caciocavallo cheese.

With regard to the secondary sector, there are a certain number of artisan activities, especially in processing wood and iron, as well as goldsmiths and enterprises in the mechanical and construction sectors. The services sector is most developed in the main towns; 52.3% of the employees, apart from the artisan sector, work in commercial and the civil service.

PRODUCTION STRUCTURE[6]				
Description		Municipalities	TOT Biosphere Reserve	Italy
*N. Enterprises**		6,929	181,465	4,631,974
	% Enterprises secondary sector*	26.2	24.3	26.8
	% Enterprises services sector**	73.8	75.7	73.2
*N. Employees**		15,103	524,033	16,917,850
	% Employees secondary sector*	35.5	36.7	39.6
	% Employees services sector**	64.5	63.3	60.4
Activity rate	Total active/working age population	39.4	44.1	49.3
Unemployment rate		12.1	9	6.7
** The secondary sector includes the sections: mining & quarrying; manufacturing activities; production and distribution of electric power, gas and water; construction.*				
*** The services sector includes the categories: wholesale and retail commerce, auto, motorcycle and personal goods repair, home repair; hotels and restaurants; transport, storage and communication; financial business; real estate business, rentals, computer, research, corporate services; civil service; education; other public, social and personal services.*				

We can therefore observe the concentration of productive structures in commerce, with over 4,000 local units on total of 6,929, equivalent to 64.5% of the total units. The other economic sectors are not so numerous. The industrial sector absorbs 35% of the local units. The local enterprise system shows marked fragmentation of production units that does not enable business initiatives to achieve adequate economies of scale. The detailed analysis of the single production sectors shows the following:

a. In the primary sector the overwhelming majority of local units belongs to the agricultural sector (89%) while the other local units (11%) regard fishing. The Municipalities are mainly in the interior, except for Corigliano Calabro, Rossano, cassano allo Ionio and Sellia Marina.
b. In the secondary sector, most of the local units work in the construction (50.6%) and manufacturing sector (47.9%), while there are very few enterprises in mining (0.03%) and energy (1.1%);
c. In the services sector most of the local units work in commerce (53.8%), followed by the hotel business (10.6%).

It must be underlined that in the proposed Biosphere Reserve we can note the presence of a relevant minoritiy ethnic, the Arbëreshë. They settled in Southern Italy in the 15th to 18th centuries AD in several waves of migrations, following the death of the Albanian national hero George Kastrioti Skanderbeg and the gradual conquest of Albania and throughout the Byzantine Empire by the Ottoman Turks. The Arbëreshë have their own distinct culture and have been able to preserve the original Albanian identity. Their culture is determined by the main features that are found in language, religion, traditions, customs, art and gastronomy, still jealously preserved, with the

[6] *Source: CTS processing of ISTAT ASIA 2007 data (for enterprises and employees) and Istat IV SLL 2008 data (for activity rate and unemployment rate)*

awareness of belonging to a specific ethnic group. Over the centuries, the Arbëreshë have managed to maintain and develop their identities, thanks to their stubbornness and cultural value exercised mainly by the two religious communities of the Eastern Rite Greek-Byzantine, based in Calabria, the "Collegio Corsini" (1732) and then "Corsini-Sant'Adriano" in 1794.

The Arbëreshë speak Arbërisht, an old variant of Albanian spoken in southern Albania. The Arbëresh language is of particular interest to students of the modern Albanian language as it represents the sounds, grammar, and vocabulary of pre-Ottoman Albania. In Italy the Arbëreshë language is protected by the law n. 482 concerning the protection of ethnic minorities and linguistic history. In the nominated area the Arbëreshë community is concentreted in the north, in the towns of Vaccarizzo Albanese, Spezzano Albanese, Marcedusa, Andali and Corigliano Calabro. It is estimated in 19,475 people in the proposed Biosphere Reserve.

10.5 Name(s) of the major settlement(s) within and near the proposed biosphere reserve with reference to the map (section 6.2):

Name of city	*Position compared to the Reserve (km)*
Cosenza	Transition zone
Catanzaro	14 km
Crotone	19 km

10.6 Cultural significance

The system of cultural resources in the Sila area can count on an equally rich panorama with three specific key points:

1. A rich cultural heritage in the various town centres in the local communities, all of which tell about and provide physical evidence of the history of the settlements and the relationship with the surrounding environment and with regional and national history;
2. The birthplace of various illustrious personalities of the Catholic Church who have affected the place and their times, such as Joachim da Fiore and the Blessed Angelo di Acri;
3. A vast rural architectural heritage in the area, such as old windmills, farmhouses and other structures typical of the rural world. In particular:
    - The artisan village of Longobucco, now known for the textile industry, has a decisively Medieval character, highlighted by the 12th century bell tower.
    - Beyond the border of the Buffer Zone we can visit the town of S. Giovanni in Fiore, with the parish church and the Florense Abbey;
    - Spezzano della Sila, with the Palazzo Monaco, the church of S. Biagio, the Monastery of the Padri Minimi and the church of Santa Maria delle Grazie;
    - Rossano, with evident remains of Greco-Byzantine culture in the churches of San Marco and Santa Maria del Patire, and in the Codex Purpureus, the 6th century illuminated manuscript conserved in the local Diocesan Museum;
    - The archaeological museum and the ruins of Sibari, one of the most important greek city of Magna Grecia, explorated in the last quarter of the 19th century, found under four meters of alluvial sediment from the Crati delta.

The old towns in the area also have a significant and not yet sufficiently highlighted heritage consisting of ecclesiastical buildings.

a. The town of Acri, besides the museum dedicated to Beato Angelo, we can fin the Silvio Vigliaturo Civic Museum of Contemporary Art, and the Museum of Peasant Civilization;
b. The church near the Hermitage of San Martino di Canale and above all the place itself, apparently corresponding to the site of Pietralata (in the town of Pietrafitta), where Joachim da Fiore lived various times and finally died, has considerable historical, architectural and stylistic importance;
c. The Municipality of San Giovanni in Fiore: the impressive and ancient Florense Abbey dedicated to dedicated to St. John the Evangelist, the Virgin Mary and the Holy Spirit, founded in about 1200 in the town of San Giovanni in Fiore;
d. The Monastery of the Capuchin Minor Friars.
e. In the town of Bocchigliero we can visit the Modern Art Picture Gallery, and Museum of Peasant Civilization. The Museum of Religious Art is being set up. The town also has an interesting bell tower dating from the 15th century;
f. The town of San Giovanni in Fiore hosts the Demological Museum of the Economy, Labour and Sila social history.

With regard to the highlighting of the local cultural heritage, there are numerous cultural associations, as well as the Norman Douglas Literary Park, which reflects the explorations of the famous travel writer through research and cultural activities. There is also a busy calendar of events involving the traditional and religious festivals held throughout the year, and the culinary traditions, concentrated above all in the summer and autumn, with festivals and fairs designed to enhance awareness of the local and historically significant products.

The 66 Municipalities, 5 Mountain Communities and 3 provinces directly involved provide the proposed Biosphere Reserve with a considerable stock of artistic and socio-cultural resources, ranging from the old villages and castles to the churches, abbeys, monasteries and historic palaces, as well as countless crafts traditions, typical foods and wine, local customs, folklore and various types of events.

These sites developed around the ancient towns offering characteristic and suggestive landscapes. They are built like many mountain towns, with the houses close to one another and long, narrow often winding lanes. Near the long rows of houses we find many lanes and pathways. In or near the towns there is a range of castles, palaces, towers, churches and monasteries, sometimes well-preserved and sometimes in poor condition, reflecting local history. Inside the numerous churches built over the centuries, richly decorated and suggestive but simple, there are fine religious items and interesting paintings and sculptures. The following table shows a list of the main architectural and artistic resources in the towns in the nominated area.

Table Artistic/architectural heritage

Buffer Zone		
Municipality	***Buildings of cultural interest***	***Churches***
Acri	Palazzo Gencarelli (sede del Municipio) Palazzo Padula, in via San Francesco Palazzo Sanseverino Santuario del Beato Angelo	Chiesa di Santa Maria Maggiore Chiesa di San Francesco Chiesetta del Rinfresco Chiesa di San Nicola di Mira Chiesa di Santa Chiara Aprigliano Chiesa di Santo Stefano Chiesa di Santa Maria (in frazione Vico) Chiesa di San Demetrio (in frazione Grupa)

Bocchigliero	Palazzo Clausi Palazzo Bossio Palazzo Barrese, in via San Francesco Torre Campanaria Convento dei Padri Riformati del 1400 Resti Necropoli Bruzia and i Ruderi di Strada Romana	Chiesa matrice di Santa Maria dell'Assunta Chiesa di San Rocco Chiesa di San Leonardo Chiesa della Madonna de Jesu (o Madonna delle Nevi) Chiesa di San Francesco di Paola
Celico		Chiesa Parrocchiale San Michele Arcangelo (XV century) Chiesa di San Nicola Chiesa dell'Assunta Chiesa della Catena Chiesa del Carmine
Corigliano Calabro	Castello Ducale	Chiesa di Santa Maria Maggiore o Della Platea (X century) Chiesa di Santa Maria di Costantinopoli Chiesa di Santa Chiara o delle Monachelle (1762) Chiesa di San Pietro Convento di San Francesco di Paola Chiesa del Carmine (XV century) Chiesa di Sant'Antonio Chiesa di Sant'Anna o Santa Maria di Loreto (1582)
Longobucco	Torre campanaria romanico-normanna	Chiesa Matrice Chiesa cinquecentesca di S. Maria Maddalena Chiesa di S. Domenico Chiesa degli Angeli Custodi (XVII century)
Magisano		Chiesa Parrocchiale di Santa Maria della Luce
San Giovanni In Fiore		Chiesa Matrice di Santa Maria delle Grazie Chiesa di Sant'Antonio Chiesa del S.S. Crocefisso Abbazia Florense Chiesa di Santa Maria di Costantinopoli (o "della Cona")
Serra Pedace	The Palazzo Campagna, in via Contea Palazzo Mollo – Adami, in piazza Vittorio Veneto	Chiesetta di San Giovanni Chiesa di Sant'Alessandro (Silvana Mansio) Chiesa di San Donato Vescovo and Martire (XIV century) Chiesa dell'Immacolata (Gothic style)
Spezzano Della Sila	Convento di San Francesco di Paola	Chiesa parrocchiale di San Biagio
Spezzano Piccolo	Palazzo Barracco Palazzo Barrese-Tricarico (in frazione Macchia) Palazzo Benvenuto Palazzo Cinnante Palazzo Gullo Palazzo Spina	Chiesa di Sant'Andrea (in frazione Macchia) Chiesa di Cristo, già Chiesa di Santa Filomena Chiesa dello Spirito Santo (in rione Macchisi) Chiesa dell'Immacolata, in the past dedicated to Saint Catherine Chiesa dell'Assunta Chiesa della Madonna delle Grazie (in frazione Macchia)
Albi	Palazzo Parrotta Palazzo Coschi Palazzo Garcea (nel rione Dardanise) Palazzo Curia Ruderi dell'Abbazia di Pesaca	Chiesa di Santa Caterina (in frazione San Giovanni d'Albi) Chiesa della Madonna Assunta in Cielo Chiesetta di Santa Maria delle Grazie detta dell'Oliveto Chiesa dei SS. Apostoli Filippo and Giacomo Chiesa dei Santi Pietro and Paolo, in largo Giovanni XXIII
Petronà	Palazzo Colosimo Ex Seminario Arcivescovile	Chiesa Parrocchiale di San Pietro Apostolo
Sersale	Palazzo Gentile, in Via Indipendenza Palazzo Talarico Palazzo Colosimo (sede del Municipio)	Chiesa di Sant'Anna Chiesa di San Pasquale, in Piazza Borelli Chiesa dell'Immacolata

		Chiesa della Madonna del Carmine Chiesa del Monte Crozze
Taverna		Chiesa di Santa Barbara Chiesa di San Domenico
Zagarise	Castello Normanno	Chiesa di Santa Maria dell'Assunta
Cotronei		Chiesa Parrocchiale di San Nicola Chiesa del Carmine
Mesoraca	Palazzo Alessio Palazzo De Gratia Palazzo Stranges Palazzo Grisolia Palazzo Rossi Santuario dell'Ecce Homo	Chiesa del Ritiro Chiesa dell'Immacolata Chiesa della Candelora Arcipretura dell'Annunziata Chiesa di San Michele Arcangelo (a Filippa)
Savelli	Palazzo Brisinda	Chiesetta del Divino Amore Chiesa di Santa Maria delle Grazie, also known as Jiesulella Chiesa di San Pietro e San Paolo
Transition Zone		
Cosenza	Castello Svevo Palazzo Arnone Palazzo Gervasi Palazzo Giannuzzi Savelli Palazzo Sambiase degli Archi di Vaccaro Palazzo Martirano Palazzo Sersale o Palazzo Telesio Palazzo Tarsia, quattrocentesco Villa Rendano Palazzo Passalacqua Teatro Morelli Teatro dell'Acquario Teatro Comunale Alfonso Rendano	Chiesa di Santa Teresa del Bambin Gesù Duomo Chiesetta del SS. Salvatore Chiesa di Sant'Agostino Chiesa di Santa Maria di Gerusalemme, Chiesa di San Gaetano Chiesa di San Francesco di Paola Chiesa di San Domenico Chiesa dello Spirito Santo Chiesa della Madonna del Carmine Chiesa e Convento di San Francesco d'Assisi
Piane Crati	Palazzo Sisca Palazzo Quintieri Palazzo Cozza Palazzo Serra Palazzo Abenante Palazzo Barracco Palazzo Ciacco	Chiesa della Madonna del Monte Carmelo Chiesa di Santa Barbara
Pietrafitta	Convento Sant'Antonio dei Frati Minori	Chiesa Parrocchiale di San Nicola di Bari
Colosimi		Chiesa Madonna delle Grazie Chiesa di SS. Maria dell'Assunta Chiesa dell'Immacolata Chiesa della Madonna di Loreto (località: Ischi)
Caloveto		Chiesa del Carmine (detta di "donna Aurora")
Vaccarizzo Albanese	Museo del Costume e degli Ori Arbëreshë Palazzo Cumano	Chiesa della Santa Maria di Costantinopoli (XVII secolo) Chiesa della Madonna del Rosario Chiesa della Confraternita
Figline Vegliaturo	Palazzo Crocco Palazzo De Maio Fontana Impera	Chiesa di Santa Liberata Chiesa di San Rocco Chiesa di San Giovanni Battista
Cropalati	Palazzo Capristo Palazzo Spina	Chiesa di Sant'Antonio Abate Chiesa di Santa Maira Assunta Chiesa del Rosario Abbazia Santa Maria ad Gruttam
Lappano		Chiesa di Santa Maria delle Grazie Chiesa di Santa Maria dell'Assunta (in frazione Altavilla) Chiesa di Santa Maria della Neve (in frazione

		Altavilla) Chiesa di San Giovanni Battista (XV secolo)
Cellara		Chiesa di San Sebastiano Chiesa di San Pietro Apostolo
Luzzi		Chiesa di Sant'Angelo Chiesa di San Giuseppe Chiesa dell'Immacolata Abbazia della Sambucina
Spezzano Albanese		Chiesa di SS. Pietro e Paolo Chiesa di Santa Maria delle Grazie Chiesetta di San Salvatore
Rogliano	Museo di Arte Sacra San Giuseppe	Chiesa Matrice di San Pietro Chiesa Madonna del Carmine Chiesa di Sant'Ippolito Chiesa di Santa Maria delle Grazie Chiesa di Santa Maria dell'Assunta Chiesa di San Giorgio Martire Chiesa di San Domenico e San Nico
Terranova da Sibari		Chiesa di San Nicola Chiesa del Convento di Sant'Antonio Chiesa di San Francesco di Paola
Rose	Castello Feudale	Chiesa Matrice Chiesa della SS. Annunziata
San Pietro in Guarano	Palazzo Collice (sede Municipio) Fontana Pietro Giugno	Santuario di Santa Maria della Consolazione (o Madonna della Cintura) Chiesa di Sant'Andrea Chiesa di Santa Maria in Gerusalemme Chiesa di San Pietro Apostolo Chiesa di Maria SS. di Costantinopoli (in frazione Redipiano) Chiesa della Madonnina delle Grazie
Rovito		Chiesa della Riforma Chiesa di Santa Maria de Nives (XVI secolo, in frazione Flavetto) Chiesa di Santa Barbara (XVI secolo
Trenta	Palazzo Perris (in frazione Feruci) Palazzo Ricci (in frazione Cribari)	Chiesa della Madonna della Febbre (in frazione Magli) Santuario di Santa Maria del Soccorso Chiesa di Sant'Elia (in frazione Magli) Chiesa di Santa Maria Assunta Chiesa di San Pietro Apostolo (in località Feruci) Chiesa di San Nicola (in frazione Cribari) Chiesa dell'Immacolata (in frazione Magli) Chiesa della Madonna della Catena Cappella di Santa Rita (in frazione Cribari) Chiesa di San Francesco
Casole Bruzio	Villa Amato Villa Luigi Prato Villa Lupinacci Palazzo Magliari Palazzo Casole Palazzo Ponte	Chiesa di San Leonardo Abate (in località Verticelli) Chiesa di San Pietro (in località Scalzati) Chiesa dell'Annunziata Chiesa di Santa Maria Vergine
Zumpano	Palazzo Valentini Palazzo Ritacco	Chiesa di San Nicola di Bari (in frazione Rovella) Chiesa di San Giorgio Chiesa della Madonna del Carmine (in frazione Rovella)
Parenti		Chiesa Santa Maria del Carmine Cappella di San Pasquale
Campana	Palazzo Rizzo Palazzo Santoro	Chiesa Maria SS. di Costantinopoli Chiesa di Sant'Antonio Chiesa di Santa Maria Assunta Chiesa di San Domenico

		Santuario Madonna delle Grazie
Cassano all'Ionio	Museo Archeologico Nazionale della Sibaritide Museo Diocesano Sito archeologico di Sibari	Santuario Santa Maria della Catena Cattedrale o Chiesa della Beata Vergine del Lauro
Mangone	Palazzo Mauro Palazzo Montemurro	Santuario della Madonna dell'Arco Chiesa di San Giovanni Evangelista
Santo Stefano di Rogliano		Chiesa di San Rocco Santuario di Santa Liberata Chiesa Matrice Chiesa di Santa Maria del Soccorso
Verzino	Palazzo Municipale (o del Duca Nicolò Cortese o del Campo) Palazzo Riolo, in Piazza San Basilio	Chiesa di Santa Maria Assunta Chiesa di Santa Chiara (in frazione Vigne) Chiesa di San Francesco Chiesa di San Biagio
Roccabernarda		Chiesa di Santa Maria Assunta
Santa Severina	Museo Diocesano di Arte Sacra Museo Archeologico - Centro Documentazione e Studi sui Castelli e le Fortificazioni in Calabria Castello dei Carafa Battistero Bizantino	Cattedrale di Santa Anastasia Chiesa di Santa Filomena Chiesa di Santa Maria del Pozzo
Caccuri		Santuario di San Rocco Chiesa di Santa. Maria del Soccorso (o della Riforma) Chiesa di Santa Maria delle Grazie
Belvedere Spinello		Santuario Santa Maria della Pietà Chiesa SS. Trinità Chiesa del San Salvatore (a Spinello
Rocca Di Neto	Palazzo Marrajeni Scordo Palazzo Ape Palazzo Arcuri Palazzo Barracco Palazzo Gallo	Santuario Madonna della Pietà Chiesa di Santa Filomena Chiesa di San Martino Vescovo Chiesa della Madonna di Setteporte (1662)
Belcastro	Castello dei Conti d'Aquino Palazzo Poerio (detto anche palazzo Cirillo), costruito dalla famiglia dei duchi Sersale	Chiesa di San Michele Arcangelo Chiesa della Pietà
Cerva	Museo della Castagna	Chiesa dell'Immacolata Chiesa del Rosario
Cropani		Chiesetta di Santa Lucia Chiesa di San Giovanni Duomo
Sellia Marina	Palazzo De Seta (in località Feudo De Seta) Villa De' Nobili (in frazione La Petrizia)	Chiesa del SS. Rosario Chiesetta del Santissimo Rosario (in frazione Calabricata) Chiesa della Madonna del Carmine (in frazione Uria) Cappella di Santa Rita (in contrada Frasso) Cappella De Seta (in località Feudo De Seta) Chiesa Stella Maris (in località Chyubica)

Gimigliano		Santuario della Madonna di Porto Chiesa Maria SS. Assunta Chiesa di San Giovanni Battista Chiesa di San Biagio Chiesa dell'Immacolata Chiesa della Madonna delle Grazie Chiesa della Consolazione Chiesa del SS. Salvatore
Pentone	Palazzo Capilupi Palazzo Marini	Santuario Madonna delle Grazie di Termine Chiesa di San Nicola di Bari

10.7 Specify the number of spoken and written languages (including ethnic, minority and endangered languages) in the biosphere reserve.

The primary languages spoken in the proposed Biosphere Reserve are Standard Italian and some regional varieties of the Italo-Dalmatian dialect group collectively known as Calabrian (Italian: calabrese). In addition, there is a significant Calabrian pocket of Arbëresh,a dialect of Albanian language.

Calabrian (it: Calabrese) is the name given to a number of dialects spoken in the area. The various dialects of Calabria Region are part of a strong continuum that are generally recognizable as Calabrian, but that are usually divided into two different language groups. In the northern two-third of the nominated area, the Calabrian dialects are often classified typologically with Neapolitan language (it: Napoletano-Calabrese) and are called Northern Calabrian or just Cosentino. In the southern one-thirds of the area, the Calabrian dialects are more closely related to Sicilian, grouped as Central and Southern Calabrian or simply Calabro, and are usually classified as part of Extreme Southern Italian (Italiano meridionale-estremo) language group.

Arbëreshë, also known as Arbërisht, is an ethnolect spoken by the Arbëreshë, the group of Albanian-speaking minorities in Italy. Arbëresh derives from the Arvanitika dialect of the Albanian language and ultimately from the Tosk dialect spoken in southern Albania. In the proposed Biosphere Reserve Arberesh is spoken in Spezzano Albanese, Marcedusa, Andali and Vaccarizzo Albanese. All dialects are closely related to each other but are not entirely mutually intelligible. The Arbëresh language retains many archaisms of medieval Albanian from the pre-Ottoman invasion of Albania in the 15th century. It also retains many Greek elements, including vocabulary and pronunciation, most of which it shares with his relative Arvanitika.

Arbërisht was commonly called 'Albanese' (Albanian in the Italian language) in Italy until the 1990s. Until recently, Arbërisht speakers had only very imprecise notions about how related or

unrelated their language was to Albanian. Until the 1980s Arbërisht was exclusively a spoken language, except for its written form used in the Italo-Albanian Catholic Church, and Arbëreshë people had no practical affiliation with the Standard Albanian language used in Albania, as they did not use this form in writing or in media. When a large number of immigrants from Albania began to enter Italy in the 1990s and came into contact with local Arbëreshë communities, the differences and similarities were for the first time made known. There are mixed feelings towards the "new Albanians". Since the 1980s, some efforts have been organized to preserve the cultural and linguistic heritage of the language. Nowadays a project of the University of Calabria, named ALECAL, is trying to mapping different dialects and languages spoken in the whole Calabrian Region.

11. BIOPHYSICAL CHARACTERISTICS:

11.1 General description of site characteristics and topography of area

The proposed Sila Biosphere Reserve is located in Calabria, a region of Southern Italy in the centre of the Mediterranean, including the territory of Sila National Park. Its territory is located in three of the five provinces of Calabria: Cosenza, Catanzaro and Crotone. The Sila area is a large rectangular upland, with N-S orientation, located in the central part of the Calabria Region, and covering approximately 1,700 square kilometres. It is defined morphologically by the Sibari Plain and the final part of the Crati River to the north; the valleys of the Crati and Savuto Rivers to the west; the Lamezia Terme Plain, the Amato River, the Sella di Marcellinara and the Catanzaro Ionian coast to the south; the Marchesato and the Crotone and Consenza Ionian coast to the east.

The uplands form a magnificent and mature erosion surface with soft-contoured mountains, scattered with higher mountain chains and peaks, from which the main rivers of the region descend (Crati, Tacina, Neto, Trionto, Savuto, Corace etc.). There are glacial moraines between the altitudes of 1,600 m and 1,750 m on Mount Botte Donato, and there are various springs, lakes and seasonal lakes; the largest ones are the Cecita, Arvo and Ampollino reservoirs. The territory of the Reserve contains the main mountains of the Sila uplands.

The perimeter of the Biosphere Reserve includes all three of the geographical areas into which the Sila region has traditionally been subdivided (Sila Greca, Sila Grande, Sila Piccola). The areas mainly involved are the Sila Grande and Sila Piccola areas, while only the parts of Sila Greca with greatest natural interest are included.

The northerly part of the Reserve forms part of Sila Greca and includes the district with Mount Paleparto (1,481 m), Mount Altare (1,653 m) and Mount Sordillo (1,551 m) and Lake Cecita. The central aree is Sila Grande, the largest area including the highest peaks and all the main lakes and the various SICs and ZPSs. The main peaks forming part of this area are Mount Botte Donato (1,929 m) the highest mountain in the Sila range, Mount Nero (1,881 m), the Porcina Mountains (1,826 m), Mount Curcio (1,768 m), Mount Volpintesta (1,729 m), Mount Carlomagno (1,669 m) and Mount Scuro (1,621 m) The lakes coming in this area are Lakes Arvo and Ariamacina; this geographical area ending with Lake Ampollino on the edge of the Sila region also includes the large Macchiasacra and Macchialonga valleys, and numerous smaller valleys.

The Sila Piccola area starts from Lake Ampollino and extends to the tourist villages near Catanzaro; this Reserve area includes Mount Scorciavuoi (1,745 m), with the peaks of Timpone della Guardiola (1,667 m) and Timpone della Monaca (1,598 m), separated by the Tacina valley from the area of Mount Gariglione (1,765 m), with the peaks of Petto di Mandra (1,681 m), Cozzo del Telegrafo (1,679 m) and Timpone Morello (1,665 m); this is in turn separated by the Vallone del Soleo from the last mountain area of Sila Piccola and the Reserve. It includes Mount Femminamorta (1,730 m), with the peaks of Timpone Vecchio (1,648 m) and Timpa del Cucco (1,507 m). The Sila Piccola area has numerous valleys, the main one being the Savuto valley.

11.2 Altitude and depth

11.2.1 Highest elevation above sea level: **1,929 m** metres at **Botte Donato Mount**.

11.2.2 Lowest elevation above sea level: **0 m** metres at **Cassano all'Ionio**

11.3 Climate:

The climate in central Calabria, according to the Köppen classification, comes within the warm temperate Mediterranean climate with summer drought (Csa). However, the Sila area shows diversification by altitude so that there is also an Apennine mountain climate (cold continental) with cold and snowy winters and warm summers, and an average annual temperature of approximately 11.2 C°. The drought period is short, and particularly heavy rains are recorded from October to March, while frost can occur in the period from September to May. The average and the annual temperatures shown in the table refer to those recorded at an altitude of 1,000 metres above sea level.

Sila Biosphere Reserve - (Köppen Classification)	
11.3.1 Average temperature in the warmest month	20.4 °C
11.3.2 Average temperature in the coldest month	2,6 °C

11.3.3 Mean annual precipitation: **1,440 mm**, recorded at an **elevation of 1,633 metres**.

11.3.4 Is there a meteorological station in or near the proposed biosphere reserve? If so, what is its name and location and how long has it been operating?

The territory of the Sila Biosphere Reserve covers the basins of the Crati, Neto, Trionto and Tacina rivers, and these basis have a large number of hydro-meteorological and temperature measurement station, collecting a significant number of observations, with a data series extending for over 10 years; the main Meteorological Station for these stations is the Air Force station of Monte Oscuro.

11.3.4 Meteorological Station		
Name of Station/number identification	Monte Scuro - Codice WMO: 16344 Codice ICAO: LIBQ	
Position in the Reserve	Municipality: Spezzano della Sila (CS)	
Date of start-up of weather observations	1961	
Type of data recording	manual	Yes
	automatic	Yes

11.4 Geology, geomorphology, soils

The Sila uplands are part of the crystalline granite mountain range in the Calabrian-Peloritani axis, i.e. the oldest Palaeozoic features currently found in the Tyrrhenian basin, and also including Corsica and Sardinia. It was formed starting about 300 million years ago in an area of the Mediterranean where enormous layers of sediments accumulated. Later, these sedimentary rock layers were subjected to intrusions of granitic magma and were involved in the formation of mountains, causing intensive deformation and moving enormous masses over great distances during the Herecian mountain formation. Approximately 180 million years ago, these masses started to be involved in a process of deformation on the regional scale, known as the Alpine mountain formation, followed by the formation of the Apennines, still under way, that has led to widespread

lifting that is still active. The lifting process is due to the descent of the Ionian tectonic plate and the resulting opening of the Tyrrhenian Sea. The high seismic rate in Calabria is due to these processes.

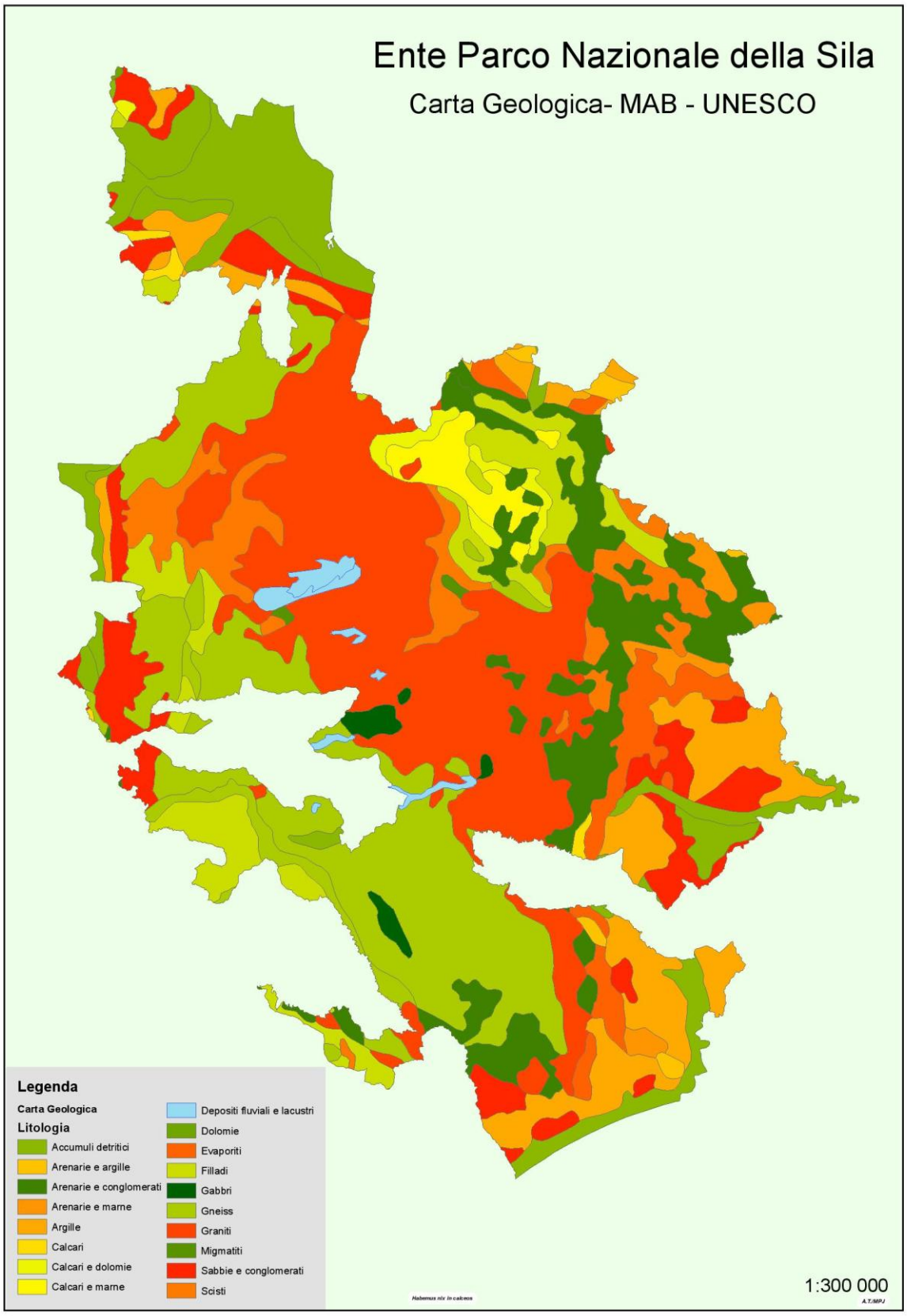
The Sila area forms a large rectangular upland located in the middle of the Calabria Region, extending over approximately 1,700 square kilometres. The Sila area still shows considerable traces of the climatic changes in its history. The climates ascertained up to now have been: tropical, temperate, glacial, periglacial, cold temperate and warm temperate. The long, complex tectonic evolution of the Sila area is shown by the rugged topography with steep slopes, sharply excavated valleys, the narrow gorges with streams and the extensive landslides blocking them, forming temporary lakes. In some points the morphology of the valleys is marked by wide, flat features, the result of glacial activity up to approximately 10000 years ago, for example on the north west slope of Mount Botte Donato where there are glacial moraines emerging between the altitudes of 1,600 m and 1,750 m, as well as traces consisting of characteristic scraped rock faces. On the other hand, the geomorphological conditions on the edges of the uplands have features typical of an active area still rising rapidly, with mountains showing steep slopes, sharply excavated valleys, long, narrow gorges and extensive landslides.

Numerous rivers flow in the valleys, with the most important one being the Neto, Tacina, Crati, Trionto, Mucone, Arvo, Ampollino and the Savuto rivers. The rich water resources in the Sila area are also confirmed by the many springs throughout the territory and the lakes. The three largest lakes are the artificial reservoirs of Cecità, Arvo and Ampollino. According to the geodynamic reconstructions of the regional geology, the emersion of the Sila uplands dates to about 7 million years ago (But), with a lifting rate of approximately 0.2-0.4 mm/year; since then, the Sila mountains have been exposed to rainfall and mechanical erosion due to precipitation and the rivers, which have softened the peaks and created broad landscapes and plains. This occurred in particular during the tropical climate characterizing Calabria in the Tertiary era.

The tectonic system is controlled by two major transversal structural formations dividing the crystalline rock from the Southern Apennines chain (Sangineto lines) and Maghreb chain (Taormina line), containing the Calabrian-Peloritani area characterized by structures with covering layers activated in the Lower Miocene (25 BUT) during the formation of the Alps, and mostly formed by Palaeozoic crystalline rock (over 250 BUT), defined by Ognibene (1969) as the Calabride Complex, and by Amodio Morelli et al. (1976) as the Calabrian-Peloritani area. These layers, consisting of granite and of metamorphic and ophiolite rock, both high and low degree, overlap the sedimentary rock of the Apennine chain, going as far as Sicily, and forming the backbone of the Peloritani mountains. The structure of the region is further segmented by a major fault system related to the opening of the lower Tyrrhenian, and structured in longitudinal systems, parallel to the structural lines of the chain and the transversal systems interrupting it. These two different tectonic systems are mainly responsible for the opening of major sedimentary areas, both continental and marine, longitudinal (the Crati, Mesima, Crotone-Capo Spartivento and Paola-Gioia basins) and transversal (lower Crati-Sibari trench, Catanzaro trench, Siderno trench) to the axis of the Calabrian chain.

With regard to the types of geological sites found, it should be pointed out that there are two main rock types in the Sila mountains: magmatic types and metamorphic types, and to a lesser extent, sedimentary rocks. The magmatic rocks emerge in particular in the Province of Cosenza (mountains such as Volpintesta, Cozza del Brigante, M Carlomagno, Montenero etc.) and consist of granites, i.e. granodiorite, monzonite, tonalite, aplite, diorite and traces of pegmatite, and to a lesser extent of gabbrodiorite and porphyrite. The metamorphic rocks consist of gneiss, migmatite, marble, metabasite and ophiocalcite; gneiss and migmatites emerge extensively in the Botte Donato area, while there are spectacular marble and granulite formations on Mount Gariglione. Metabasite and ophiocalcite emerge between Mounts Reventino and Gimigliano, while phyllogranite and schists are seen mainly around the towns of Longobucco and Bocchigliero. Sedimentary rock, appearing in

a smaller percentage, appears in the areas of Sersale, Bocchigliero and Caloveto, and date from between the Jurassic (210 BUT) and the Eocene (55MA), consisting of conglomerates, sandstone, grey limestone and red ammonite marne limestone. The latter are characterised by the presence of fossil ammonites that lived in the oceans at the time of the dinosaurs.



There are basically three main types of soils in the Sila area: Entisols, Inceptisols and Alfisols (according to the Soil Taxonomy -U.S. Soil Survey Staff 1990- classification). Among the elements

of scientific interest on the international, regional or local level, there are some especially interesting aspects regarding the geological characteristics identified. The geological features of the Sila uplands are undoubtedly part of the geological history of the Calabria Region, which is the one of the most complex in the entire Mediterranean. The Calabria territory has abnormal features compared to almost the whole of Italy and differs from the general geological situation of Southern Italy; the granite and metamorphic rocks that almost entirely form the Sila mountains, emerge significantly with respect to the sedimentary rocks (limestone and soil sediments) composing most of the Southern Apennines and Sicily. All these geomorphological elements can be easily observed in the Sila National Park and indicate the intense geological activity still under way. The typical mountain environment and the similarities between the types of rock found in the Sila mountains and in the Alps have led some famous geologists to coin the term "Calabrian Alps" for the Sila mountains.

11.5 Bioclimatic zone:

Areas	Average annual rainfall/mm	Aridity index		Core area(s)	Buffer zone(s)	Transition area(s)
		Penman	(UNEP index)			
Hyper-arid	P<100	<0.05	<0.05			
Arid	100-400	0.05-0.28	0.05-0.20			
Semi-arid	400-600	0.28-0.43	0.21-0.50			
Dry Sub-humid	600-800	0.43-0.60	0.51-0.65			X
Moist Sub-humid	800-1200	0.60-0.90	>0.65		X	X

Per-humid	P>1200	>0.90		X	X	X

Table 1: Aridity index resulting from the use of P/ETP
*Mean annual precipitation (**P**)/mean annual potential evapotranspiration (**ETP**)*

11.6 Biological characteristics:

The proposed Biosphere Reserve is a protected territory covered mainly by forests. Among all the Italian national parks, it has the highest percentage of woodland surface area.

In the Sila, the South-Apennine forestry species cover the largest area, are represented in the greatest number and have an excellent conservation status. More specifically, the habitat of the "Sub-mediterranean pine forests with endemic black pines" is formed by the endemic arboreal subspecies *Pinus laricio ssp. Calabrica* (sometimes known in English as the Corsican pine). These forests are undoubtedly the most characteristic element and the most significant from a biogeographical and ecological point of view for the Sila ecosystem. They represent a very particular vegetation that is linked to the complicated geological history of this territory, to its current lithological and climatic characteristics and to the thousands of years of human activity which have influenced its dynamic tendencies.

The current layout of the forest vegetation, typical of the Mediterranean area, is directly affected by the varying climates and the marked pedoclimatic variability and by a series of historically contrasting events: highly intense destruction and felling up until the years immediately after the second world war, reconstruction of a part of what had been destroyed and subsequent improvement in structural terms of the remaining woodlands.

In the proposed Biosphere Reserve five main reference types have been identified in relation to the dominance of habitats:

1. "Coniferous forests of the Mediterranean and Macaronesian mountains", including the "Sub-mediterranean pine forests with endemic black pines": These are formations dominated by the *Pinus laricio*, the *Pinus nigra ssp. Calabrica*, a very frugal species which allows it to adapt to living in extreme environments where fertile land is only present in rocky pockets and on particularly steep slopes. Sub-Steppe or dry grasslands are also frequently found together with the pine forests. The forest coverage is on average 70% of the surface area of sites and in some cases it is the result of reforestation activities.

2. "Deciduous Mediterranean forests", including: "Apennine beech forests with *Abies alba* and beech forests with *Abies nebrodensis*" and "Apennine beech forests with *Taxus* and *Ilex*": These are characterised by a series of similar habitats in which the presence of species which can be interpreted as tertiary relicts is quite common *(Taxus baccata, Ilex aquifolium, Daphne laureola).* The physiognomy of these formations is usually determined by the beech or spruce (in the recent past, these populations were subjected to highly intense felling activities, but this did not stop the cenospheres from proliferating and surviving in excellent

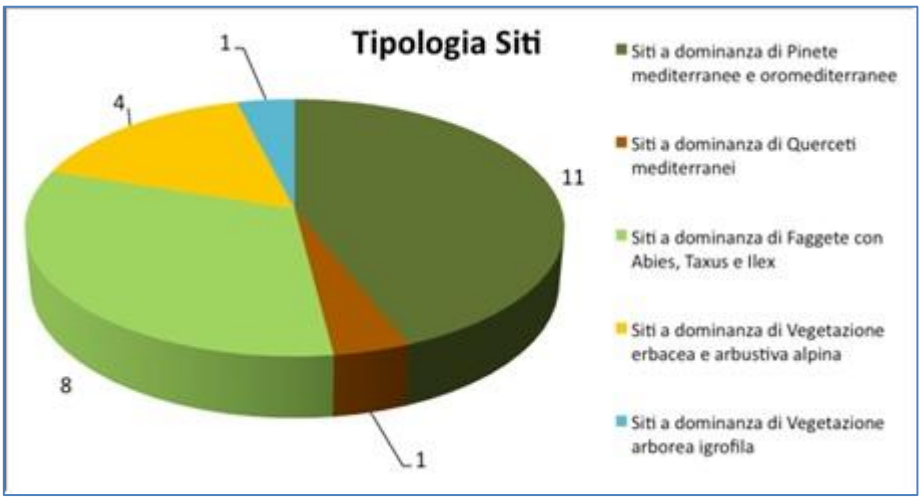
vegetation conditions). There is also a numerous group of species endemic to southern Italy and species which are significant from a phytogeographical viewpoint: *Acer lobelii, Adenostyles australis, Alnus cordata, Arisarum proboscideum, Geranium versicolor, Heptaptera angustifolia and Luzula sieberi subsp. sicula.* The condition of health and the coverage of the *Abies, Taxus* and *Ilex* populations tell us that the forestry systems are in excellent condition. The existence of typically Apennine-forest avian communities, particularly the subendemic species of Pici, shows a good quality of health overall, together with the presence of large and medium-sized carnivores which indicate the existence of well-conserved forestry environments (martens, wildcats). The existence of communities of birds of prey, such as the Black Kite, the Red Kite, the Eurasian Sparrowhawk and the Peregrine Falcon on rocky cliffs is also an important indicator.

3. Herbaceous and alpine shrub vegetation: the areas with this type of vegetation are strongly characterised by the presence of grassy formations of *Nardus stricta* (matgrass), a priority habitat consisting of rough grazing pastures. The Nardus-dominant pastures originate from extensive grazing on flora-rich natural grasslands. The *Nardus stricta* species is trample-resistant and not often grazed upon by cattle. At lower altitudes there are replacement cenospheres, which originate from grazing, in fire-cleared areas and in areas that have undergone deforestation with the destruction of coniferous forests in the mountain area or beech forests in the sub-Atlantic mountain area.

4. Mediterranean Oak Forests: these are mesomediterranean and super-mediterranean formations with variable physiognomy. Reference can be made to a typical high forest structure in some cases only and so, as a result, therophyte grasslands and Mediterranean maquis are also included in addition to the forest formations. In most cases, these forests are dominated by the Holm Oak *(Quercus ilex),* which generally merge with riparian forests or Downy Oak forests.

5. Hygrophilous arboreal vegetation: the habitats in this type of vegetation are mainly characterised by the presence of riparian arboreal communities and lakes or running water bodies. One of the indicators of a poor conservation status is the high percentage of nitrophyte species distribution and the lack of serial and chain elements that are typical of these areas. The size of the river habitats, which are also present in the alluvial wetlands closest to the water, has been drastically reduced due to cultivation practices at riverbed areas and other alluvial plains near rivers.

Many habitats of EU interest can be found throughout this territory, including some that are more typical of the temperate Central European zone which acquire a very valuable relict meaning here; despite covering relatively small areas in some cases, these habitats play a very important role in ecology. These habitats specifically include: grassy formations, moors, shrubland and bogs.



The current land use coverage in the proposed Biosphere Reserve is the result of various causes; some are directly related to the nature and quantity of territorial resources and others derive from cultural, social and economic conditions of the past and from the evolution of their historical contexts.

Table: Surface area in hectares of classes of use and land coverage.

Classes of use and land coverage			Shape_Area in Ha	%
Forests and semi-natural environment	Wooded areas	Deciduous forests	74.344,38	20,00%
Agricultural areas	Arable	Arable in non-irrigated areas	62.420,10	16,79%
Forests and semi-natural environment	Wooded areas	Coniferous forests	55.034,06	14,80%
Forests and semi-natural environment	Wooded areas	Mixed forests	46.794,52	12,59%

Agricultural areas	Permanent crops	Olive groves	33.640,48	9,05%
Agricultural areas	Heterogeneous agricultural areas	Annual crops associated with permanent crops	20.999,89	5,65%
Agricultural areas	Heterogeneous agricultural areas	Agricultural areas in natural areas	18.174,36	4,89%
Agricultural areas	Permanent crops	Orchards	15.293,07	4,11%
Forests and semi-natural environment	Areas with shrubs and / or herbaceous	Areas of natural pasture and high altitude grasslands	12.297,64	3,31%
Forests and semi-natural environment	Areas with shrubs and / or herbaceous	Areas of evolving forest vegetation and shrub	8.123,03	2,18%
Agricultural areas	Heterogeneous agricultural areas	Permanent particle cropping system	6.548,53	1,76%
Territori modellati artificialmente	Urbanized areas	Discontinuous urban fabric	4.977,04	1,34%
Forests and semi-natural environment	Zone aperte con vegetazione rada o assente	Beaches, dunes, sands	2.747,89	0,74%
Forests and semi-natural environment	Areas with shrubs and / or herbaceous	Heath and scrub	2.139,61	0,58%
Forests and semi-natural environment	Areas with shrubs and / or herbaceous	Areas of sclerofilia vegetation	1.997,08	0,54%
Water	Continental waters	Water basins	1.918,37	0,52%
Forests and semi-natural environment	Open areas with little or no vegetation	Areas with little vegetation	1.230,35	0,33%
Agricultural areas	Pasture	Pasture	847,20	0,23%
Artificial areas	Industrial and trade areas and communication networks	Industrial or commercial areas	600,68	0,16%
Artificial areas	Urbanized areas	Tessuto urbano continuo	505,07	0,14%
Artificial areas	Mining areas, landfills and construction sites	Mining areas	311,38	0,08%
Artificial areas	Green artificial non-agricultural areas	Sports and recreational areas	310,83	0,08%
Artificial areas	Mining areas, landfills and construction sites	Shipyards	233,74	0,06%
Artificial areas	Industrial and trade areas and communication networks	Port basins	173,64	0,05%
Artificial areas	Industrial and trade areas and communication networks	Road and rail networks and ancillary spaces	71,63	0,02%
Agricultural areas	Arable	Arable crops in irigue areas	40,17	0,01%

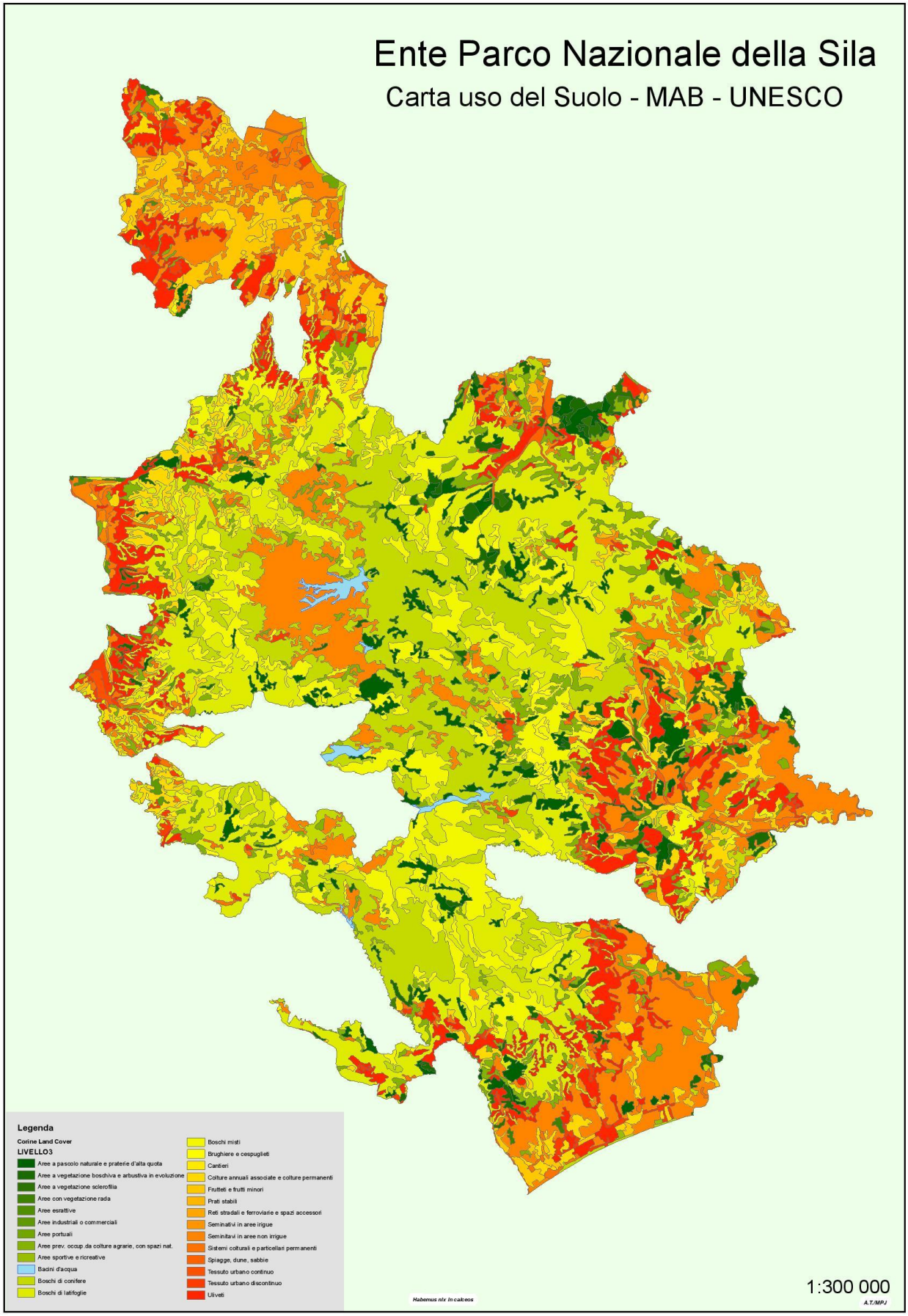

Ente Parco Nazionale della Sila
Carta uso del Suolo - MAB - UNESCO
Legenda
Corine Land Cover
LIVELLO3
Aree a pascolo naturale e praterie d'alta quota
Aree a vegetazione boschiva e arbustiva in evoluzione
Aree a vegetazione sclerofilla
Aree con vegetazione rada
Aree estrattive
Aree industriali o commerciali
Aree portuali
Aree prev. occup.da colture agrarie, con spazi nat.
Aree sportive e ricreative
Bacini d'acqua
Boschi di conifere
Boschi di latifoglie
Boschi misti
Brughiere e cespuglieti
Cantieri
Colture annuali associate e colture permanenti
Frutteti e frutti minori
Prati stabili
Reti stradali e ferroviarie e spazi accessori
Seminativi in aree irrigue
Seminativi in aree non irrigue
Sistemi colturali e particellari permanenti
Spiagge, dune, sabbie
Tessuto urbano continuo
Tessuto urbano discontinuo
Uliveti
Habemus nix in calceos
1:300 000
A.T./MPJ

Table: Main habitat types of the Sila BR

CONIFEROUS FORESTS OF MEDITERRANEAN AND MACARONESIAN MOUNTAINS	***Regional or local distribution***	*Regional*
	Typical species	• Vascular plants*: Pinus nigra ssp. calabrica, Rosa viscosa, Epipactis gr. elleborine; Limodorum brulloi,* • *Arthropods: Cucujus haematodes, Cucujus cinnaberinus;* • Invertebrates: *Cucujus haematodes, Cucujus cinnaberinus, Osmoderma italica;* • Reptiles: *Lacerta bilineata, Elaphe quatuorlineata;* • Birds: *Dryocopus martius, Lululla arborea,* • Mammals: *Canis lupus, Barbastrella barbastrellus, Hypsugo savii Eptesicus serotinus, Muscardinus avellanarius, Sciurus vulgaris meridionalis.*
	Significant natural processes	• The sites of this type are characterised by the presence of *Pinus laricio*-dominated formations: *P. nigra subsp. laricio*. The Mediterranean mountain pines are extremely frugal, which allows them to adapt to living in extreme environments where fertile land is only present in rocky pockets and on particularly steep slopes. The Black pine spreads rapidly from these types of areas to open areas with degraded soils and topsoils and lives as a pioneer species. • Of note are the numerous saproxylic species due to the abundance of the food chains of the mature forest consortia, such as the beetles from the *Cucujus* genus. • Natural reforestation: the intense past exploitation of the territory (deforestation, pastoral and agricultural use) has led to extremely degraded soil which was subsequently easily colonised by the *Pinus laricio*.
	Human impact	• The traditional management of the forests in the past has led to the impoverishment of forestry habitats, encouraging the coeval formation of forests and often removing dead plants, litter and other elements that diversify the habitat. • Leisure activities (tourism, etc.). • Opening of new roads or tracks. • Commercial or hobby collecting of flora/fungi. • Soil erosion due to water way channelling and landslides. • Fires. • Genetic pollution due to reforestation with similar species and races.
	Main management procedures	• All forest populations that are located within the Core Area are left to evolve freely and no cultivation practices are permitted. Only monitoring activities are permitted. • The application of suitable treatment forms which encourage and maintain structures of different ages and

		complex-structured populations, possibly mixed. • Conservation of grasslands and open areas within the forest (even medium and small sized), of pastures and agricultural areas located within the forest and in neighbouring areas, without disturbing or damaging the grassy perimeter. • Maintenance of forest formations of any size (rows, groves, etc.) and any species along roads (national, provincial, municipal, farm trails, etc.), located between various properties, in impluvia and near natural and artificial water basins. • Conservation of the undergrowth, of any species under cover and in areas adjacent to the forest. • Maintenance of an appropriate quantity of dead plant matter.
habitat type *BEECH-DOMINATED SITES WITH ABIES, TAXUS AND ILEX*	***Regional or local distribution***	Regional
	Typical species	• Vascular plants: *Abies alba subsp. apennina Taxus tabaccata, Ilex aquifolium; Acer obtusatum, Fagus silvatica, Castanea sativa, Campanula trichoclycina, calamitha grandiflora, Galium odoratum, Oxalis acetosella, Soldanella calabrella; Acer lobelii, Adenostyles australis, Alnus cordata, Arisarum proboscideum, Geranium versicolor, Heptaptera angustifolia* and *Luzula sieberi* subsp. *sicula, Anemone apennina, Anemone trifolia, Doronicum columnae,Daphne laureola, Doronicum columnae, Doronicum orientale, Geranium versicolor, Lathyrus venetus, Lilium croceum, Physospermum verticillatum, Potentilla micrantha, Ranunculus brutius and Viola alba subsp. dehnhardtii.* • Arthropods: *Cucujus cinnaberinus, Sinodendron cylindricum, Acanthocinus xanthoneures,* • Amphibians: *Hyla intermedia, Salamandra salamandra, Salmandrina terdigitata;* • Reptiles: *Lacerta bilineata; Elaphe quatuorlineata;* • Mammals: *Canis lupus, Muscardinus avellanarius, Sciurus vulgaris meridionalis, Felis silvestris, Martes martes*
	Significant natural processes	• These forests are the result of a mixture of typical Central European elements which come into contact with typically oromediterranean elements at the southern tip of their range. • In some areas, erosion has caused water stagnations which stop the beech forest from renewing itself. • The conservation of the habitats of this group present across the site is related to the oceanic characteristics of the climate. When these characteristics are not present in the regional climate, they can be compensated by occult precipitation or deep soil with a good water retention capacity. • Forest sites characterised by the presence of species that can be interpreted as tertiary relicts. • Localised episodes of soil erosion due to water way channelling and landslides.

		• Localised phenomena of soil degradation due to compacting in damp areas (bogs).
	Human impact	• The traditional management of the forests has led to the impoverishment of forestry habitats, encouraging the coeval formation of forests and often removing dead plants, litter and other elements that diversify the habitat and the introduction of exotic forest species • Fire hazard. • Leisure activities (tourism, etc.). • Commercial or hobby collecting of flora/fungi. • Grazing and water captation • Soil degradation due to compacting in damp areas (bogs) caused by treading.
	Main management procedures	• All forest populations that are located within the Core Area are left to evolve freely and no cultivation practices are permitted. Only monitoring activities are permitted. • Renaturalisation of the forest and undergrowth, natural forestry and creation of *in situ* nurseries to grow and distribute species of interest (*Abies alba, Taxus baccata).* • Prohibition of mushroom, plant and fauna collecting • Maintenance of water network. • Regulation of tourist use and mushroom collecting.
III habitat type *HERBACEOUS AND ALPINE SHRUB VEGETATION DOMINATED SITES*	***Regional or local distribution***	Regional
	Typical species	• Vascular plants: *Nardus stricta, Narcissus poeticus, Astragalus calabrus. Asphodelus albus, Cirsium vallis-demoni, Armeria brutia, Anthemis cretica ssp. calabrica, Potentilla calabra, Carex stellulata,* • *Potamogeton polygonifolius, Veronica scutellata, Potentilla erecta* • Arthropods: *Carabus cychroides, Eresus niger* • Amphibians: *Rana italica* • Reptiles: *Anguis fragilis* • Birds: *Alectoris graeca saxatilis, A.g.graeca, Alchemilla fissa, Anthoxanthum alpinum, Gentiana punctata, G. kochiana, Geum montanum* • Mammals*: Nyctalus lasiopterus, Canis lupus*
	Significant natural processes	• These type of sites are characterised by habitats and formations which are typical of alpine and subalpine areas which, in Italy, are becoming more and more rare the further south you go. • The Nardus-dominant pastures at higher altitudes are the result of extensive grazing on flora-rich natural grasslands.

		• In the central-southern Apennine, conservational interest for this formation is mainly due to its limited distribution and its phytogeographical marginalisation. Given the particular geomorphological conditions of the sites of this type, soil erosion and landslides are more common here than elsewhere. • In these environments, characterised by rather aggressive climatic factors, the vegetation plays a fundamental role in soil conservation.
	Human impact	• Human interference. • Winter tourism. • Modification and transformation of habitats. • Excessive development along the road network and infrastructures. • Overgrazing by domestic species, which subsequently impoverishes and deteriorates the topsoil can pose a problem for deer and may also lead to a possible contagion of diseases. • Soil degradation due to compacting in damp areas caused by treading.
	Main management procedures	• Avoiding any activities which may trigger soil erosion and landslides, such as opening new roads, overgrazing, fires. • Planning the use of pastures ("strip grazing", for example, appropriately distributing drinking troughs, positioning suitable fencing, etc.) to avoid the gradual reduction of grazing pastures, thus leading to a gradual alteration in flora. • Maintaining the diversity of the grassy perimeters and the associated entomofauna. • Limiting the distribution of beech forests or undertaking reforestation activities.
IV type of habitat *MEDITERRANEAN OAK FOREST DOMINATED SITES*	***Regional or local distribution***	Regional
	Typical species	Vascular plants: *Quercus ilex, Quercus suber* Insects: *Lucanus cervus and Cerambyx cerdo.* Reptiles: Four-lined snake *Elaphe quatuorlineata*, Italian Aesculapian Snake *Zamenis lineatus*, Slow worm *Anguis fragilis*, Western green lizard *Lacerta bilineata*. Birds: Red kite and black kite, Eurasian sparrowhawk, Short-toed snake eagle, Woodlark *Lullula arborea*, Red-backed shrike *Lanius collurio*, Whinchat *Saxicola rubetra* Mammals: *Canis lupus, Capreolus capreolus, Cervus elaphus*
	Significant natural processes	• The physiognomy of the oak forests in this group is of sparse and fragmented undergrowth or pastures with trees. The more open condition found here is generally the result of a historical process of degradation

		attributable to three typical factors, which are excessive coppicing, forest grazing and the paths of fires. • Localised episodes of soil erosion.
	Human impact	• Localised episodes of soil erosion (water way channelling). • Soil degradation due to compacting caused by treading. • Fire hazard. • Excessive grazing.
	Main management procedures	• Fire prevention planning with permanent surveillance during critical periods (summery aridity) and setting up a system of access points and forest viability. • Regulation of forest grazing. • In the case of degraded habitats, transformation into a high forest. • Thickening vegetation and adopting techniques to improve the copse topsoil. • In the areas affected by erosion, avoiding any activities which may trigger erosion such as opening new roads, overgrazing, etc.
V habitat type *HYGROPHILOUS TREE VEGETATION DOMINATED SITES*	***Regional or local distribution***	Regional
	Typical species	Flora: *Salix alba* and *Populus alba, Alnus glutinosa, Artemisia variabilis, Astragalus calabrus, Ephedra dystachia, Genista anglica, Soldanella calabrella.* Amphibians: Yellow-bellied toad, Spectacled salamander, Common toad, European green toad, Agile frog, Italian stream frog, Fire salamander, Italian newt, Italian tree frog. Reptiles: *Elaphe quatuorlineata, Emys orbicularis,Testudo hermanni, Triturus carnifex, Anguis fragilis, Elaphe longissima.* Fish: *Cobitis taenia, Rutilus rubilio.* Birds: *Pernis apivorus, Anthus campestris, Caprimulgus europaeus, Dendrocopos medius, Emberiza hortulana, Ficedula albicollis, Lanius collurio, Lullula arborea, Pernis Apivorus, Ardea purpurea, Aythya nyroca.* Mammals: *Canis lupus, Arvicola terrestris, Dryomys nitedula, Felis silvestris, Martes martes, Muscardinus avellanarius, Myotis nattereri, Nyctalus lasiopterus, Pipistrellus savii.*
	Significant natural processes	• Periods of drought which can lead to drainage
	Human impact	• Danger of structural changes and alterations in the water balance of basins due to urbanisation, artificialisation of

		the river bed, water capitation. • Disposal of an excessive quantity of nitrogen and phosphorous from urban waste water and agricultural farming sites. • Distribution of invading non-native species within habitats.
	Main management procedures	• Regulation of access points and tourist use. • Forest/water system measures for banks and river beds. • Incentivisation of organic and low environmental impact agricultural practices. • Interventions of habitat structural diversification and extension. • Reduction of foreign fish species.

12. ECOSYSTEM SERVICES:

12.1 If possible, identify the ecosystem services provided by each ecosystem of the biosphere reserve and the beneficiaries of these services.

The table below shows the relevan t contribute of Sila forests and the strictly linked social interest. Forests were definied as the most important source of ecosystem services (FAO, 2010). The Global forest Resources Assessment, through the analysis of 90 indicators in 233 countries and territories, has recognized the decisive role of trees and forestsin containing the greenhouse effect, the fight against desertification, the loss of buiodiversity. The results contributes in identifying and evaluating all the ecosystem services that woods and trees offer in support of local economies. The forest cover contributes to the reduction of landslides and erosion, playing a fundamental role in the prevention of the warming phenomena, fixing the carbon dioxide, with a decisive influence on biogeochemical cycles, such as carbon and nitrogen and water cycle. The forests characterize significantly landscape, contributing in the determination of its cultural identitiy. The recognition of the multifunctional character of the forest ecosystems derives from the joint production of goods (renewable wood and non-wood products) and from the provision of services and externalities. Therefore, they constitute a major infrastructure environment of global concern and it seems rather simplistic to bring their value only to the wood economy subordinating the other modes management.

Ecosystem services			
Provisioning services	***Regulating services***	***Cultural services***	***Supporting services***
➢ Food ➢ Fresh water ➢ Fuel wood ➢ Genetic resources	➢ Air quality mainteneance ➢ Erosion control ➢ Climate regulation ➢ Disease regulation ➢ Water regulation ➢ Storm protection	➢ Spiritual and religious ➢ Recreation and ecotourism ➢ Aesthetic ➢ Educational ➢ Senso of place ➢ Cultural heritage ➢ Knowledge system	➢ Soil formation ➢ Nutrient cycling ➢ Primary production

12.2 Specify whether indicators of ecosystem services are used to evaluate the three functions (conservation, development and logistic) of biosphere reserves. If yes, which ones and give details.

For this brief analysis have been used previous studies by Calabria University and Sila National Park. At this stage indicators of ecosystem services are not in use to evaluate the three functions of biosphere reserve. At this aim the Italian Ministry of Environment is providing a research to identify possible indicators for monitoring protected areas'resources and services.

12.3 Describe biodiversity involved in the provision of ecosystems services in the biosphere reserve (e.g. species or groups of species involved).

Biodiversity involved in the provision of ecosystem services is available in § 14.3.

12.4 Specify whether any ecosystem services assessment has been done for the proposed biosphere reserve. If yes, is this assessment used to develop the management plan?

No ecosystem services assessment has been done for the proposed biosphere.

The strategies of forest management have their theoretical foundation in the key concept of sustainable development, as set out in the resolution of Helsinki (MCPFE, 2011), in the perspective of the Ecosystem Approach (introduced by the CBD for promoting the conservation of habitats - Objective 5 of the COP 10 of the CBD), and of the sustainable use of natural resources. Sustainable forest management (SFM), thanks also to its multidisciplinary approach, is the main tool for the conservation of forest systems for the welfare of society and for coping with its demands of wood and non-wood renewable resources, energy, food and natural spaces. The SFM is the principle on which has been built the last national legislation for the forestry sector (Legislative Decree no. 227/2001), that founds its adresses for the implementation in the National Guidelines for Planning the forestry sector (issued by the Ministry of Environment , G.U. 2.11.2005 n. 255) and in the Framework Programme for the Forest Sector. These documents recognize the concept of wood as a complex biologic system, so that SFM can be adopted in coherence with international and European addresses.

In this context the ecosystem service perspective could be good to answer efficiently to sustainability objectives. In order to maintain the functionality of biological ecosystems, and to ensure, at the same time, the production of goods and services, the priorities of the future forest policies must be based on the following principles:
- Use an silvicultural approach based on adaptive management, in compliance with the specific conditions of the forest, to define coltural forms appropriate to the complexity of the natural systems, refusing management approaches defined by rigid measures that are ill-adapted to the dynamism of forest ecosystems;
- Adopt permanently monitoring of the forest ecosystems as a tool to understand the causes and dynamics that change the environmental conditions, to analyze the effects caused by the cultivation. This also entails the necessity of improve monitoring systems, linking the dynamics and interactions with other land uses. Monitoring should use appropriate indicators to obtain information in reliable time and adequate spatial scale, for harmonizing as far as possible methodologies, especially in presence of ecosystems of particular environmental value;
- Plan the management of forest ecosystems, following logical interdisciplinary and transdisciplinary with conservation policies related to protected areas and ecological network, in a perspective of maintenance and increase of biodiversity;
- Combine public and private interest, making sure that the first not prevail on the second to determine processes of structural simplification and degradation, while maintaining the possibility of a convenience financial and economic silviculture activity. In this sense, the forest is an asset of merit, for the benefits that provides to the community, but also demerit for the degradation processes that can derive either both from the exploitation exasperated and crop abandonment;
- Involve stakeholders, putting in practice adequate governance models of forest resources;
- Integrating the participatory process with the use indicators of SFM, including Network Analysis;
- Develop systems for evaluating ecosystem services and assets, as much as possible unique and integrated in order to obtain concrete values useful in planning and management forestry;
- Facilitate the introduction and implementation of tools suitable for the remuneration, direct or indirect, of goods and services through markets, certifications, voluntary agreements and other instruments.

All these suggestions have been taked into account for developing the coordination plan.

13. MAIN OBJECTIVES FOR THE BIOSPHERE RESERVE'S DESIGNATION:

13.1 Describe the main objectives of the proposed biosphere reserve, integrating the three functions (conservation, development and logistic), presented below (sections 14 to 16), including components of biological and cultural diversity. Please specify the indirect pressures and/or organizational issues.

The vision of the proposed Biosphere Reserve is to create a Mediterranean relevant area for enhancing the traditional activities carried out for centuries (e.g. agriculture, wood crafting), tourism sector and research, and to finally offering new opportunities into a revitalized local sustainable development context.

The Sila Biosphere Reserve Coordination Plan, signed by all the communities and stakeholders involved in the area, will be structured along those development axes, with the main purpose to offer new chances for the local traditional activities to have a sustainable future. The series of public debates organized within the preparatory phase offered the chance to the various stakeholders to manifest their intentions and indications in relation to the desired future ways of fostering the local sustainable development.

In particular, 3 main 'axes' emerged as being the preferred drivers for the future Biosphere Reserve development function – also by using European funds in an Italian Region (Calabria) considered as primary for European budget target – and namely:

- ✓ conservation of landscapes, habitat, ecosystems, species and biological diversities, through the actions and activities identified by the Sila National Park;
- ✓ developing the territories in a full sustainable perspective, fostering forestry sustainable exploitations and research, compatible and responsible ecotourisms activities and local quality productions (also by organic farming and labeling policies);
- ✓ guaranteeing a full logistic support for research and education activities, also through the Sila-MaaB Observatory, so that the Sila Biosphere Reserve can be a good practices' model to be emulated besides its geographic boundaries.

The mission is to address main forest and natural values as a driving force not only for the National Park perimeters, that represents the heart of the proposed Biosphere Reserve, but for the entire Sila tableland comprising almost 150,000 ha of prevalent mountain territory whose 80% is covered by forests of relevant importance and rich with biodiversity in the Mediterranean Ecoregion. The mission therefore is to create a district including natural park areas and contiguous areas to enlarge the potential of the proposed MAB designation.

Matter of fact, since the very first meeting held in 2009 about the designation process, MAB international dimension is stimulating and awakening institutional and private stakeholders by arising a new interest on the sustainable development opportunities for the whole area, by generating new opportunities and also by renewing regulatory and planning tools. The whole nomination is therefore a process of increasing relevance for an area that from a National Park can spread out sustainable development best practice and opportunities for the collectivity.

13.2 Describe the sustainable development objectives of the biosphere reserve.

(If appropriate, please refer to Agenda 21, Rio+20 and SDG post 2015).

The aim of sustainable development is to balance our economic, environmental and social needs, allowing prosperity for now and future generations. Sustainable development in the proposed

Biosphere Reserve planned policies consists of a long-term, integrated approach to developing and achieving a healthy community by jointly addressing economic, environmental and social issues, whilst avoiding the over consumption of key natural resources.

The Rio+20 Conference itself highlighted the notion of "green economy" (i.e. how economies can achieve "green growth") and poverty eradication in the context of sustainable development. While the assessment of reaching the MDGs by 2015 is still outstanding and as the precise shaping of the SDGs is still work in progress, a Biosphere Reserve ensure environmental sustainability and green economy.

The Sila Biosphere Rserve Coordination Plan has identified four objectives related to Sustainable Development. These include social progress and equality, environmental protection, conservation of natural resources and stable economic growth. A healthy, clean and safe environment can be achieved by reducing pollution, poverty, poor housing and unemployment. Global environmental threats, such as climate change and poor air quality can be reduced to protect human and environmental health. In this action the ecosystem services provided by Sila National Park are fundamental. The use of renewable resources must be efficient and the development of these alternatives should be encouraged. the socio-economical measures previewed aimed at ensuring the right to a good standard of living, with better job opportunities for all the population of Sila Area and in particular for the young generation. For this, we need the younger generation and a future workforce equipped with suitable skills and education within a framework to support them.

Sustainable forest management, thanks also to its multidisciplinary approach, is the main tool of conservation of forest systems for the welfare of society and to cope with its demands of of wood and non-wood renewable resources, energy, food and natural spaces.The strategies of forest management have their theoretical foundation in the key concept of sustainable development, as set out in the Helsinki resolution (MCPFE, 2011), with the Ecosystem Approach (introduced by the Convention of UN Biological Diversity for promoting conservation of habitats in the Objective 5 of the COP 10 of the CBD to halve loss by 2020) and the principle of sustainable use of natural resources.

Thus, in 2011, the Sila National Park receveid the recognition of the European Charter for Sustainable Tourism, a project by the Pan-European Organization Protected Areas EUROPARC[7] (among the world and European priorities expressed by the Agenda 21 recommendations, adopted at the Rio Earth Summit in 1992 and the 6th Community action programme for sustainable development), aimed at favouring the application of lasting development, i.e., fair economic and social development conserving and protecting the resources also for the coming generations.

Further, the vision is also to establish a main international area in Mediterranean Region. Sila regional contribution on a European scale and for EuroMAB network addresses a growing potential for natural areas in the whole Region thanks to Sila richness in term of ecosystem and biodiversity. Within current negotiation in EU institutions in order to create a European framework for the application of the CBD Nagoya Protocol for access and benefit sharing of genetic resources (ABS) and traditional knowledge associated, the draft Regulation proposed by European Commission on October 2012 aims at establishing a unique Union Register for collection in order to spread out cooperation both in research and sustainable uses activities. Since many years Sila already developed cooperation in this field with a germoplasma bank whose seeds and genetic materials have been shared with European countries in order to facilitate reforestation processes.

The creation of the Biosphere Reserve intends also to reinforce the coordination of the existing and future research and environmental awareness activities by including them into the innovative

[7] Pan-European Organization of Protected Areas.

framework of the United Nations Decade of Education for Sustainable Development. As biosphere reserves are characterized through their multiple functions in the fields of environmental conservation and sustainable development based on scientific studies and cooperation, they could well respond to any emerging concepts which aim to make our planet a safe place for the harmonious coexistence of people and nature, but also among people by establishing an enabling environment for promoting a culture of peace with regard to the use of and benefit from shared natural resources, especially at the transboundary level. In this context, education and learning should be given a high profile for biosphere reserves as many biosphere reserves have established environmental education schemes for school children and the general public making them truly learning sites for education for sustainable development. The closing conference of the UN Decade on Education for Sustainable Development (2005-2014) will be hosted by Japan in late 2014 and could serve as a showcase on how biosphere reserves implement on the ground sustainable development with and for people.

13.3 Indicate the main stakeholders involved in the management of the biosphere reserve.

All the communities of the nominated Area has been involved in the process of candidature as they will be involved in the management of the proposed Biosphere Reserve. Namely, some specific cathegories of stakeholders are been identified to be directly involved with one representative, participating in the governing body:

- ✓ Sila National Park;
- ✓ Calabria Region;
- ✓ Cosenza Province;
- ✓ Crotone Province;
- ✓ Catanzaro Province;
- ✓ All the 66 municipalities that expressed their consensus for the Biosphere Reserve proposal;
- ✓ 5 Mountain Communities;
- ✓ 3 LAG;
- ✓ Trade association;
- ✓ Trade unions;
- ✓ Research institutes.

All these different stakeholders will be involved with different tools and invited to participate in the management body of the Biosphere Reserve as stated by the coordination plan and the partnership established between them.

STAKEHOLDERS		RELATIONSHIP					
		PLANNING	ECONOMIC SUPPORT	MANAGEMENT	CONSULTATION	FRUITION	INFORMATION
Public entities	Ministry of Environment – National MAB Committee	MONITORING OF LOCAL INITIATIVES, PLANS AND GUIDE LINES	ORDINARY AND STRAORDINARY FUNDS	LEGITIMACY EXAMINATION OF THE RESOLUTIONS	LAW INTERPRATIONS	PROGRAMME WITH OTHER BR	INFORMATION ABOUT NATIONAL BR NETWORK
	Calabria Region	PARTICIPATE IN THE DEFINITION OF POLICIES	FUNDS FOR SPECIFIC PROJECTS (FAS, POR, PSR, PISL ETC.)	MEMBER OF MANAGEMENT COMMITTEE		PROGRAMME WITH REGION'S ENTITIES	
	Provinces		STRAORDINARY FUND FOR SPECIFIC PROJECTS	MEMBER OF MANAGEMENT COMMITTEE			
	Municipalities	AGREEMENT FOR LOCAL RULES FOR BR OBJECTIVES	STRAORDINARY FUND FOR SPECIFIC PROJECTS	MEMBER OF MANAGEMENT COMMITTEE			

	Universities			INVOLVED IN PLANNING ACTIVITES AND MONITORING			SCHOLARSHIP
	Corps of forest rangers			CHECKING PENALTIES MANAGEMENT OF VISIT CENTRE		TERRITORY MONITORING MONITORING OF BIODIVERSITY	TORUSISTS REGULATIONS ENVIRONMENTAL EDUCATION
	government department responsible for the environment and historical buildings			CULTURAL PROJECTS			
	School district office			ENVIRONMENTAL EDUCATION IN THE SCHOOL			ENVIRONMENTAL EDUCATION IN THE SCHOOL
	A.Fo.R. Forestry Agency of Calabria region					CONSERVATION OF GREEN SPACES	
	LAG and Mountain communities			SUSTAINABLE DEVELOPMENT PROJECTS			
	Other BR				MODIFIYING REGULATIONS AND MANAGEMENT PROGRAMME		INFORMATION PROJECTS
Communities	Residents				STRATEGIC CHOOSE FOR MANAGEMENT		PRESS RELEASE; MEETINGS; WEB SITE
	Schools			TERRITORIAL ACTIONS			MEETINGS AND WEB SITE
	Associations						
	Tourists				CUSTOMER SATISFACTION		
Local economy	Tourism operators		BENEFITS		STRATEGIC CHOOSE FOR MANAGEMENT		PRESS RELEASE; MEETINGS; WEB SITE
	Farmers						
	Professionists and trade unions						
	Craftsmanships						

13.4 What consultation procedure was used for designing the biosphere reserve?

In addition to the traditional forms of stakeholders involvement that are regularly promoted by the Park, through meetings and web activities, and the system of its related municipalities, the MaB candidature preparatory phase has been characterised by an intensification of public meetings and debates.

The methodological approach was that of the participatory planning: various types of meeting were organised, designed around the needs of the specific groups of participants. A significant attention was always posed to the information and communication initiatives used to properly and largely promote each event. Namely:

- ✓ periodic large scale public meeting in the three Province involved (Cosenza, Catanzaro, Crotone) to present the concept of the Biosphere Reserve, its role in the given territories, the importance of the concerted actions and to introduce and discuss the opportunities offered by the Biosphere Reserve functions;
- ✓ educational meetings for young scholar to explain the peculiarities of a Biosphere Resserve and the importance of the International Network;
- ✓ public meeting for the constitution of an Observatory for the identification of new activities of development in the Biosphere Reserve, to elaborate indicators for monitoring the proposed Biosphere Reserve and coordinate research initiatives;
- ✓ workshop with the local stakeholders to inform them about the potential opportunities offered by the Biosphere Reserve for the territory;

- ✓ Communication champaign, press conference and meetings specifically devoted to involve the media in order to have them well informed and involved in the entire process.

All the activities have been widely promoted by properly using the media and the e-means of communication. In the Sila National Park website is hosted a particular section devoted to all the activities related to the MaB candidature, like newsletter or database.

Informing	Audit	Consultation	Involving	Collaborating
Web site Sustainability Report Press releases Newsletter Press conferences Technical publications dissemination Museums Visitor Centers Conferences Presstour Workshop	Customer satisfaction Claim management	Work station with stakeholder	Stakeholder Engagement	Worktable Educational projects Agreements

13.5 How will stakeholder involvement in implementing and managing the biosphere reserve be fostered?

All the stakeholders present in the territories of the proposed Biosphere Reserve will be involved in the mangament of the area participating in the governing body of Sila Bioshpere Reserve, as stated by cooperation plan and partnership.

The Sila Biosphere Reserve Partnership stated between the different stakeholders, establishes three different bodies for managing the whole nominated area:

1. Partnership's Assembly;
2. BR Coordinator;
3. Management committee.

In these three bodies will be assured the presence of rapresentetives of all stakeholder to better achieve the goals of the coordination plan, except for the coordinator of the partnership that has been already identified as Sila National Park.

13.6 What are the expected main sources of resources (financial, material and human) to implement the objectives of the biosphere reserve and projects within it?

The main sources of resources to implement the objectives of the proposed Biosphere Reserve and projects will be identified by its governing body.

In addition to resources derived from the participation in *ad hoc* project activities (funded with ordinary and extraordinary contributions from the State; contributions of the Regions and public bodies; funding granted by the European Union; bequests, donations and cash donations; any property income; fees from the concessions provided for by law, the proceeds of the rights of entry and franchise, and other income from services rendered; proceeds from commercial and promotional activities; proceeds from penalties due to non-compliance with regulations; any other

proceeds acquired in relation to the activities of the Park Authority) Sila National Park, as coordinator of the Partnership, will guarantee financial, material and human resources and all the other facilities needed, also through the main funding of the Park Authority assigned by the Ministry of the Environment (art. 5, paragraph 13 of Presidential Decree n.97/2003).

The budget of Sila National Park must fulfil the fundamental requirement of equilibrium, which does not allow for provisions; like the annual budget, the long-term (three-year) budget must also be balanced. The grand total for 2012, incoming and outgoing for the equilibrium requirement, amounts to euros 2,811,671.

Table Multi-Annual Budget 2012/2014

Year 2012	***Year 2013***	***Year 2014***
Residual assets, surplus and current expenditure forecast	Current expenditure forecast	Current expenditure forecast
€ 2,811,671	€ 2,518,183	€ 2,567,864

In relation to staffing approved by Presidential Resolution no. 45 of 22/11/2010, the Sila National Park Authority has a staffing level of 24 units.

Employees	***Economic level***
1	C2
11	C1
9	B1
3	A1
24	

On this basis of human resources, in full-time and permanent employment there are 19 professionals distributed according to the following table. All these human resources will dedicate a part of their working time to the management issue for the coordination of Sila Biosphere Reserve activities.

Professional Profile	***Area***[8]	***Functions***
Technical Associate	*C-C1*	*Head of Planning*
Technical Associate	*C-C1*	*Head of Technical Department*
Technical Associate	*C-C1*	*Head of Conservation and Naturalistic management*
Technical Associate	*C-C1*	*Head of Authorisations Office*
Technical Associate	*C-C1*	*Head of Socio-Economic Planning*
Technical Assistant	*B-B1*	*Planning Service Officer*
Executor	*A-A1*	*Conservation and Naturalistic Management Office Clerk*
Administrative worker	*C-C1*	*Head of Administrative Accounting Promotion Marketing*
Administrative worker	*C-C1*	*Head of Human Resources*
Administrative-Accounting Associate	*C-C1*	*Head of Accounting*
Technical Associate	*C-C1*	*Head of Promotion and Marketing*
Administrative-Accounting	*B-B1*	*Accounting Office Clerk*

8 And corresponding economic level.

Assistant		
Administrative-Accounting Assistant	*B-B1*	*Accounting Office Clerk*
Technical Associate	*C-C1*	*Head of Secretarial Service-Environmental Education-Communication-Information*
Technical Associate	*C-C1*	*Head of Secretarial Office*
Technical Assistant	*B-B1*	*Secretarial Service-Environmental Education-Communication-Information Office Clerk*
Operator	*B-B1*	*Secretarial Office Clerk*
Administrative worker	*B-B1*	*Secretarial Office Clerk*

Finally, in accordance with the regulatory provision in art. 1, c. 3, Legislative Decree no. 138/2011 converted into Law 148/2011, by resolution of the Board of Directors no. 10 of 04/04/2012, the staffing level of the Authority was redetermined at 22 units, which is currently in the approval process by the competent ministries. Pursuant to Laws 68/1999 and 113/1985, one unit of staff is being recruited, Area A, Econ. level A1, belonging to protected categories.

With regard to the participation of local communities in resource management, in addition to the above mentioned tools and the initiatives pursued, a special mention is reserved for the set of collaborations undertaken under the POR 2007/2013 programme. As part of the 2007-2013 Planning, a new strategic course has been launched for the Territorial Planning and the Integrated Planning aimed at supporting and strengthening the processes of institutional cooperation and of partnership between the players in local development.

14. CONSERVATION FUNCTION:

14.1. At the level of landscapes and ecosystems (including soils, water and climate):

14.1.1 Describe and give the location of ecosystems and/or land cover types of the biosphere reserve.

The proposed Biosphere Reserve covers the territory of the Sila National Park which is a predominantly woodland and mountainous area. The Sila landscape has witnessed interactions between humans and nature for over a thousand years and despite this, harmony has always been maintained between human activities (mainly agricultural, animal breeding and the use of the forests) and the special physical and natural environment and the urban settlements that have been harmoniously built up within its natural context. The biggest problems of landscape degradation have taken place over the last century with the excessive felling of forests which came to a halt when the Park was established.

Due to its morphological and geographical characteristics, the area in question hosts extremely varied natural environments with microclimates that vary based on the altitudes and slopes. This results in a wide variety of habitats and species as a result, including rare, localised and endemic species. The plateau thus consists of many different landscapes, which stretch across more than 70,000 hectares of alluvial plains and valleys, with hilly terraced terrain alternating with extensively flat areas and peaks that can reach up to nearly 2,000 m, where the forest is the most predominant and particular element.

The main types of landscape that can be seen are:

- the imposing forest landscape, covering a large surface area and characterised by a high degree of biodiversity, which includes species that are typical of this part of the Apennine. In fact, the forest area can be divided into two altimetric/climatic sections which have different flora. The first section is the *Pinus laricio* forest including areas such as La Fossiata, Gallopane, Colle del Lupo, Cozzo del Principe, Macchia della Giumenta and Fallistro, where 50 superb centenarian specimens of *Pinus laricio* and 12 of sycamore maples can be found. In this first section, the *Pinus laricio* is in its prime environment and is the unchallenged dominant species. Towards the lower boundary it mixes with the Turkey oak or Chestnut trees and towards the upper boundary it mixes with Beech trees where the pine tends to occupy the slopes facing south and the beech occupies the slopes facing north. The second section is dominated by the beech which mixes together with the European silver fir in large areas such as Monte Gariglione, Macchia dell'Orso and Vallone Cecita.
- the historical/agronomical traditions have significantly marked the territory of the Sila plateau. The agricultural landscape is still of the "traditional" type as the orography does not facilitate the use of mechanical machinery and technology suited for extensive cultivation. The Reserve's agricultural landscape consists, therefore, of cereal cultivation, mostly grain and oats, orchards and terraced olive groves and vineyards and large fields of potatoes. For centuries, the transhumance routes have fed the peoples of the plateau and the old trails are still used while many cattle, sheep and goats graze in the extensive Sila pastures.

The natural value of the different types of environments was the main criteria considered in identifying the areas with the most natural value to be included in the highest protection areas of the proposed Reserve’s zoning plan, whilst also taking into account the inevitable obstacles posed by residential areas and infrastructures (especially roads) present in the area.

The proposed Sila Biosphere Reserve is located in Calabria, in the centre of the Mediterranean region. It includes Sila National Park, one of the fundamental elements of the Italian national

system of protected areas. Within the boundaries of the proposed Biosphere Reserve, many areas worthy of becoming part of the European protection and safeguarding "Natura 2000" network have been identified, including: 25 SCIs and 3 SPAs, classified under the "Habitat" Directive 92/43/EEC and "Birds" Directive 79/409/EEC and one Important Birds Area (IBA). The management of the SCIs and SPAs is entrusted to the Sila National Park Authority.

All the protected areas that fall within the territory are characterised by a prevalent forestry ecosystem which occupies 83.9% of the total surface area of the SCIs located in the Sila National Park.

In this context, the most important natural habitats are those in the "Coniferous forests of the Mediterranean and Macaronesian mountains", including: the "Sub-mediterranean pine forests with endemic black pines" and those in the "Deciduous Mediterranean Forests", including: the "Apennine beech forests with *Abies alba* and beech forest with *Abies nebrodensis*" and the "Apennine beech forests with *Taxus* and *Ilex*". In the Sila, these South-Apennine forest species cover the greatest area, are represented in the greatest number and have an excellent conservation status. The element that sets these forests apart is the endemic arboreal subspecies *Pinus laricio ssp. Calabrica*, most prevalently distributed over the Sila plateau, home to nearly the entire worldwide population, covering around 33,400 ha in total.

This subspecies is a very particular form of vegetation that is linked to the complicated geological history of this territory, to its current lithological, climatic and edaphic characteristics and to over a thousand years of human activity which have all influenced its dynamic tendencies and created a very specific landscape in this part of the Apennines, a mountain chain which is usually dominated by broad-leaved trees and where large spontaneous coniferous forests do not normally grow. On the Sila plateau, the *Pinus laricio* forms tightly knit forests with specimens that reach considerable sizes both in terms of height and diameter, with column-like trunks.

Many habitats of EU interest can be found in this territory[9], including some that are more typical of the temperate Central European area which acquire a very valuable relict meaning here; despite covering relatively small areas in some cases, these habitats play a very important role in ecology. The habitats specifically include: grassy formations, moors, shrubland and bogs. With regard to ecology, the Sila can be considered an important biodiversity reserve with many of its species listed on the IUCN Red List.

The land located within the SCIs of the proposed Biosphere Reserve is occupied by the most common habitats, 42.7% of *Pinus laricio* (9530* Sub-mediterranean pine forests with endemic black pines), followed by 30.2% of beech forest (9220* Apennine beech forests with *Abies alba* and beech forests with *Abies nebrodensis* - 30.0% and 9210* Apennine beech forests with *Taxus* and *Ilex* - 0.2%), more than 6.8% riparian formations (92A0 Gallery forests of *Salix alba* and *Populus alba*) and 4.2% oak forests (9340 Forests of *Quercus ilex* and *Quercus rotundifolia*).

Amongst the other types, we have grassy formations (6230* Species-rich Nardus grasslands on siliceous substrates in mountain areas and submountain areas in Continental Europe - 4.1%), moors and shrubland (4090 Endemic oromediterranean moors with thorny brooms - 0.9%), shrubland (5330 thermo-mediterranean and pre-desert shrubland - 0.2%). A particular feature of the Sila plateau are the bogs (7140 Transition mires and quaking bogs - 0.1%), which play an extremely important ecological role and act as a reserve for biodiversity, despite covering only small surface areas.

9The habitats listed preceded by a code (Natura 2000) correspond to the habitats of EU interest listed in Annex I to the Directive 92/43/EEC. The '' denotes priority habitats.*

SCIs divided by main type of habitat
ORO-MEDITERRANEAN PINE FOREST DOMINATED SITES
• IT9310070 Bosco di Gallonane
• IT9310072 Palude del Lago Ariamacina
• IT9310076 Pineta di Camigliatello
• IT9310081 Arnocampo
• IT9310080 Bosco Fallistro
• IT9310082 S. Salvatore
• IT9310083 Pineta del Cupone
• IT9310126 Juri Vetere Soprano
• IT9310127 Nocelleto
• IT9330116 Colle Poverella
• IT9330117 Pinete del Roncino
BEECH-DOMINATED SITES WITH ABIES, TAXUS AND ILEX
• IT9310074 Timpone della Carcara
• IT9310077 Acqua di Faggio
• IT9310079 Cozzo del Principe
• IT9310085 Serra Stella
• IT9320115 Monte Femminamorta
• IT9330114 Monte Gariglione
• IT9330125 Torrente Soleo
• IT9330128 Colle del Telegrafo
MEDITERRANEAN OAK FOREST DOMINATED SITES
• IT9320129 Fiume Tacina
HYGROPHILOUS TREE VEGETATION DOMINATED SITES
• IT9310071 Vallone Freddo
MOUTAINOUS PASTURE AND WETLAND DOMINATED SITES
• IT9310073 Macchia Sacra
• IT9310075 Monte Curcio
• IT9310084 Pianori di Macchialonga
• IT9310130 Carlomagno

Below is the full list of Habitats from Annex I to the Directive 79/409/EEC which have been identified in the SCIs and in the SPAs located within the Sila area:

- 3130 Oligotrophic to mesotrophic stagnant waters with vegetation consisting of *Littorelletea uniflorae* and *Isoëto-Nanojuncetea*
- 3260 Plain and mountain rivers with vegetation consisting of *Ranunculion fluitantis* and *Callitricho-Batrachion*
- 4090 Endemic oro-mediterranean moors with thorny brooms
- 5330 Thermo-mediterranean and pre-desert shrubland
- 6230* Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)
- 6430 Plain, mountain and alpine borders of hydrophilous megaphorbs
- 7140 Transition mires and quaking bogs
- 91E0* Alluvial forests of Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*)
- 91M0 Pannonian-Balkan forests of Turkey oak and Sessile oak
- 9210* Apennine beech forests with *Taxus* and *Ilex*
- 9220* Apennine beech forests with *Abies alba* and beech forests with *Abies nebrodensis*

- 92A0 Gallery forests of *Salix alba* and *Populus alba*
- 9340 Forests of *Quercus ilex* and *Quercus rotundifolia*
- 9530* (Sub-) Mediterranean pine forests with endemic black pines

Table: Position of habitats in relation to zonation

Name of Habitat	Reference code pursuant to Directive 92/43/EEC	Location in the Reserve (zonation)
Habitat 1	9530* (Sub-) Mediterranean pine forests with endemic black pines	Core, Buffer and Transition
Habitat 2	9220*Apennine beech forests with *Abies alba* and beech forests with *Abies nebrodensis*	Core, Buffer and Transition
Habitat 3	9210* Apennine beech forests with Taxus and Ilex	Buffer and Transition
Habitat 4	91E0* Alluvial forests of *Alnus glutinosa and Fraxinus excelsior* (Alno-Padion, *Alnion incanae, Salicion albae*)	Core, Buffer and Transition
Habitat 5	6230* Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)	Core, Buffer and Transition
Habitat 6	92A0 Gallery forests of *Salix alba* and *Populus alba*	Buffer and Transition
Habitat 7	9340 Forests of *Quercus ilex* and *Quercus rotundifolia*	Buffer and Transition
Habitat 8	4090 Endemic oromediterranean moors with thorny brooms	Buffer
Habitat 9	5330 Thermo-mediterranean and pre-desert shrubland	Buffer and Transition
Habitat 10	7140 Transition mires and quaking bogs	Transition
Habitat 11	3130 Oligotrophic to mesotrophic stagnant waters with vegetation consisting of Littorelletea uniflorae and *Isoëto-Nanojuncetea*	Core, Buffer and Transition
Habitat 12	3260 Plain and mountain rivers with vegetation consisting of Ranunculion fluitantis and Callitricho-Batrachion	Core, Buffer and Transition
Habitat 13	6430 Plain, mountain and alpine borders of hydrophilous megaphorbs	Core, Buffer and Transition
Habitat 14	91M0 Pannonian-Balkan forests of Turkey oak and Sessile oak	Core and Buffer

In conclusion, the contribution to landscape conservation and ecosystem biodiversity that the proposed Biosphere Reserve can bring to the MAB Reserves network can be summarised by the list of existing priority Habitats and Habitats of conservational interest and their surface area coverage within the territory.

HABITAT CODE											
ZONING	*Hectares*	*4090*	*5330*	*6230**	*7140*	*9210* C/B/T*	*9220**	*92A0*	*9340*	*9530**	*%*
Bosco di Gallopane	*159.2*	-	-	-	-	8.0	-	8.0	-	127.3	90
Vallone Freddo	*69.6*	-	-	-	-	-	20.9	34.8	-	7.0	90
Palude del Lago	*97.6*	-	-	9.8	4.9	-	-	-	-	9.8	25

Ariamacina											
Macchia Sacra	*27.0*	2.7	-	21.6	-	-	-	-	-	-	90
Timpone della Carcara	*165.7*	-	-	-	-	-	149.1	-	-	-	90
Monte Curcio	*2.9*	0.3	-	2.3	-	-	-	-	-	-	90
Pineta di Camigliatello	*76.4*	3.8	-	-	-	3.8	-	-	-	68.8	100
Acqua di Faggio	*87.6*	-	-	-	-	-	78.8	-	-	-	90
Cozzo del Principe	*61.4*	-	-	-	-	-	30.7	-	-	12.3	70
Bosco Fallistro	*3.5*	-	-	-	-	0.2	-	-	-	3.3	100
Arnocampo	*324.2*	-	-	-	-	-	-	16.2	-	291.8	95
S. Salvatore	*506.2*	-	-	-	-	-	-	50.6	-	455.6	100
Pineta del Cupone	*703.0*	-	-	-	-	-	-	35.2	-	597.6	90
Pianori di Macchialonga	*299.6*	59.9	-	179.8	-	-	-	-	-	-	80
Serra Stella	*302.3*	-	-	-	-	-	272.1	-	-	-	90
Juri Vetere Soprano	*34.9*	-	-	-	-	-	-	-	-	34.2	98
Nocelleto	*87.7*	-	-	-	-	-	-	-	-	85.9	98
Carlomagno	*25.0*	-	-	10.0	-	-	-	-	-	-	40
Monte Femminamorta	*658.2*	-	-	-	-	-	592.4	-	-	-	90
Fiume Tacina	*1075.1*	-	-	53.8	-	-	161.3	215.0	322.5	107.5	80
Monte Gariglione	*603.8*	-	-	-	-	-	543.4	-	-	30.2	95
Colle Poverella	*179.1*	-	-	-	-	-	-	9.0	-	152.2	90
Pinete del Roncino	*1508.0*	-	-	-	-	-	-	75.4	-	1281.8	90
Torrente Soleo	*379.8*	-	19.0	38.0	-	-	246.9	76.0	-	-	100
Colle del Telegrafo	*203.0*	-	-	-	-	-	192.8	-	-	-	95
% Habitat		0.9	0.2	4.1	0.1	0.2	30.0	6.8	4.2	42.7	89

14.1.2 Describe the state and trends of the ecosystems and/or land cover types described above and the natural and human drivers of the trends.

Habitats are affected by human activities. In particular habitats related to water resources are particularly vulnerable and potentially it can be assumed a gradual reduction especially for those who already have a meaning as the relict sfagnete. There are quantitative studies that quantify the possible reduction of this type of habitat. At present it is possible to assess how human activities affect the direct transformation of this habitat, compared to the effects of global climate change.

Even habitats that characterize the waterways, alnete and riparian herbaceous vegetation , heavily dependent on grazing pressure and the progressive reduction of the water flow of rivers .

Forest habitats are the most extensive and, compared to the last fifty years, their extension is very likely increased . However, in general the traditional forest management has resulted in a depletion of forest habitats , favoring forest formations peers and often removing decaying plants, bedding and other items that diversify the habitat and are an important component of the forest ecosystem.

Generally, we can indicate as main threats:

- ✓ Alteration of river environments: one of the major adverse effects resulting from these alterations are reminiscent of the drainage of wetlands, the decrease in groundwater recharge and modification of riparian vegetation;
- ✓ Agricultural transformations: this threat can be identified with the change of the settlement, the use of agricultural machinery, the extensive use of chemicals (pesticides and fertilizers) and water uptake for agricultural purposes;

- ✓ Silvicultural operations: cutting and skidding generates strong ecological changes that are reflected in the species that live in the undergrowth , especially on Reptiles, Amphibians but also many that during much of the year living in the forest areas and are closely linked to this type of habitat;
- ✓ Fires: the passage of fire can have negative effects of direct and indirect type on populations of amphibians and reptiles. The direct effects result in the death of individuals who fail to escape before the arrival of the flames, the indirect effects concern the modification of the vegetation, the morphology and the characteristics of the soil.

The Sila Area also appears to be subject to predominantly arson-instigated wildfires, albeit to a limited extent. It should be noted that July, August and September are the highest risk months both due to the climatic drought and hot conditions, natural fire triggering conditions, and due to the high level of tourism and related recreational activities. Fires lit in an improper way and prone areas for picnics and other recreational activities in particular are the main involuntary cause of fires in the Sila.

As demonstrated in the table below, the number and extent of fires that took place between 2004 and 2009 varies. In 2004, the fires affected around 106.68 ha while in 2005 they affected little over 76 ha and in 2006 around 50 ha (50.5). The wildfires in 2007, which affected 2,711 ha of mostly coniferous forests, were nearly all arson; the same in 2008 with around 125.34 ha of burnt earth (nearly all forest). Finally in 2009, the arson fires affected around 18.46 ha of land, also in this case mainly private and state-owned coniferous forests.

Forest fires are among the threats of greatest impact due mainly to the enormous flow of visitors to the Reserve. It is clear that the vast majority of fires are due to arson: out of a total of 9373 registered in the province of Cosenza from 1980 to 1997, for example 5345 of them (about 57%) were related to voluntary or arson origin. Among the environmental and economic damage during May, a survey shows a visible reduction, and even destruction of plant biomass. Among the preventive measures: monitoring the most affected and vulnerable forest areas; sighting from the air and from the ground, with CCTV and infra-red cameras; fire action plan, viability studies. An analysis of the available data indicates that within the Sila National Park, on the whole, the number of fires is not particularly high, as well as the same affected area affected was not particularly high if we exclude the year 2007 where there were some particularly serious incidents that affected only 88% of the area burned in the period 2004 ÷ 2009.

With reference to 2007, we can see that there were four fires that affected especially large surfaces - two fires in the municipality of Longobucco, raging through 500 and 600 hectares, one in the municipality of Albi on 1004 hectares and one in Magisano on 250 hectares, for a total of 2364 hectares. Without these unexpected events, the total area would only have been 347 hectares. This value is still higher than the average of other years, but with more contained differences. The months in which the risk of fire is greater are, in descending order, August, July and September. The origin of the fires was attributed almost entirely to arson, although there are some events related to recreation and protest.

Table Fires

Anno	n° incendi	Superficie annua percosa				Cause presunte	Tipologia boschiva
		boscata	non boscata	totale	media per evento		
2004	20	100,68	6,00	106,68	5,33		
2005	7	76,64		76,64	10,95		
2006	12	47,05	3,50	50,55	4,21		
2007	34	2583,44	127,94	2711,38	79,75		
2008	26	125,00	1,63	126,63	4,87		
2009	19	18,46		18,46	0,97		
	118	2951,27	139,07	3090,34			

Starting in 2009, the Sila National Park has begun a convention agreement with volunteer associations to work towards fighting forest fires. Collaboration includes fire prevention, by sighting from fixed and mobile positions, in agreement with the provisions of law 353/2000, the framework law on forest fires. It currently drafted the AIB (forest fire prevention) plan, valid to 2015 through the Italian Academy of Forest Sciences.

14.1.3 What kind of protection regimes (including customary and traditional) exist for the core area(s) and the buffer zone(s)?

The six core areas and the buffer zone are constituted by the zones of integral protection and the boundaries of Sila National Park, respectively. Established by Decree of the President of the Republic (DPR) November 14, 2002[10], the Sila National Park comprises the territories previously belonging to the "historic" National Park of Calabria (1968). Article 2 of the Decree identifies aims of the Park as the "protection and promotion of sustainable development" and aims to ensure:

a) conservation of animal and plant species, plant or forestry associations, geological formations of palaeontological singularities, biological communities, biotopes, natural processes, ecological balances;
b) protection of the landscape;
c) the application of land management methods, suitable to realize integration between man and the environment through the maintenance and development of agro-forestry-pastoral traditional activities;
d) the promotion and development of organic agriculture through appropriate incentives for the conversion of existing crops through the funding provided within the EU (European Union);
e) forest conservation and management of forest resources through interventions that do not alter the landscape and fundamental features of the ecosystem;
f) promoting education, training and scientific research, even interdisciplinary and compatible recreational activities;
g) protection and recovery of hydraulic and hydrogeological stability;
h) experimentation and development of compatible productive activities.

In Italy, the regulatory framework of protected areas is outlined by the national law of December 6, 1991 no. 394 - known as the framework law on protected areas - which sets out basic principles for the establishment and management of protected natural areas, identifies safeguard measures and incentives and regulations, in particular the establishment of national parks and related managing bodies (such as the Sila Park Authority[11]), covering in particular:

- management organs, which include all the institutional players in the territory;
- planning tools (Park plan, Park Regulation and its Long Term Economic and Social Plan), an organic and coordinated regulation and planning system of the area covered by the Park.

Table The Park organs

The President	Appointed by the Minister of Environment in agreement with the President of the Regions of such national park territory, the President is the legal representative of the Park, coordinating activities, carrying out the functions delegated by the governing council, and shall adopt urgent measures which will be submitted for ratification in the subsequent session of the governing council.

26 According to the national law 344/97, the Sila National Park is established by the Decree of the President of the Republic at the proposal of the Ministry of Environment, after hearing the regions concerned and after consultation with the municipalities and provinces concerned (art. 4)
11 According to national law 394/91, the Park Authority is a public body with registered and administrative offices in the territory of the park. Its activity is monitored by the Ministry of the Environment.

The Governing Council	The Governing Council consists of the President and twelve members, appointed by decree of the Minister for the Environment, after hearing the regions concerned, chosen from persons qualified for the activities in the field of nature conservation or among the representatives of the park community, as follows: - 5 upon designation by the park community; - 2 upon designation by identified environmental protection associations, law 349 of July 8, 1986, chosen from among experts in natural and environmental matters; - 2 upon designation by the National Academy of Lincei, the Italian Botanical Society, the Italian Zoological Union, the National Research Council and the Universities based in the provinces whose territories fall within the park; - 1 upon designation of the Minister of Agriculture and Forests; - 2 upon designation of the Minister of the Environment. The Governing Council shall act on all general matters - including budgets, approved by the Minister of Environment in agreement with the Minister of the Treasury - as well as regulations and the draft plan for the park, expressing a binding opinion on the long-term social and economic plan and evaluating the status of the park, which shall be adopted by decree of the Minister for the Environment, and in agreement with the region.
The Board of Auditors	The Board of Auditors shall audit the accounts in the deeds of the Park according to the accounting rules of the State and on the basis of the Park's accounting regulations, and is made up of 3 members selected from among the designated officials of the General Accounting Office: - 2 by the Minister of the Treasury, one of which as President of the Board; - 1 by the Region or, by agreement, from the regions concerned.
The Park Community	The Park Community is made up of the Presidents of the Regions and the Provinces, the Mayors of the municipalities and the Chairmen of the mountain communities whose territories include park areas. The Park Community is a consultation and advisory organ of the Park. In particular, its opinion is required on: a) the Park Regulations b) on the Park plan c) other matters, at the request of one third of the members of the Governing Council; d) the budget and end accounts. The Park Community shall deliberate, after the binding opinion of the Governing Council, the Long Term Economic and Social Plan and oversee its implementation; it shall also adopt its own rules. The Park Community shall elect a President and a Deputy President. It shall be summoned by the Preisdent at least twice a year, and when requested by the Park President or a third of its members.

In this context, after lengthy sharing with *institutional and environmental stakeholders* - and through the participation of local university institutions - on July 2012 the Board of Directors of the Park approved:

- the *Park Plan*, which guarantees the protection of natural and environmental values by disciplining the guidelines and criteria for interventions on the flora, fauna and the natural

environment in general;

- the *Park regulation* which regulates activities permitted within the territory of the park including the agro-forestry-pastoral ones;

During consultations with stakeholders at the local level, the Park has also prepared a Long Term Economic and Social Plan (PPES) for the promotion of compatible activities including traditional activities, handicrafts, agro-forestry-pastoral work and any other appropriate support for the development of tourism and connected local activities, while respecting the conservation needs of the park.

The Park Plan

The Park Plan - which, together with the Regulations and the PPES, constitutes an organic and coordinated regulation and planning system of the area covered by the Park - is a tool for territorial planning[12], and meets the aims of conservation and development of national law 394/91 and is the fundamental tool for achieving the Park Authority aims, as defined by the framework law and article 3 of the Park statute. The plan suggests ways to guide and coordinate the people working in the area for various reasons, making the most of the synergies deriving from resource interconnection, opportunities and skills, taking into account the economic, social and environmental context, their interdependencies and possible long-term effects of actions proposed.

The Plan also expresses the regulation of land use, activities and restoration, enhancement and transformation, so that harm to protected sites can be avoided or can adversely affect the ecosystem as a whole. This tool also provides the cognitive reference framework for the information and evaluation system. Therefore it motivates, in the most explicit and transparent forms, the choices for protection and intervention and directs the choices to be made elsewhere by the stakeholders.

More specifically, the plan sets directions, objectives, monitoring and actions for forest management (including preservation, conservation and use of forest resources and traditional related activities), meadows and pastures, water resources, fauna and flora patrimony. The plan also identifies the environmentally friendly forest management practices and the lines of forest management in relationship to the zonation of its borders.

In this context, the Plan is integrated with the "Measures for the Conservation of Natura 2000 sites". The management of sites of Community interest recognised in the Sila district provides an opportunity for the integration of objectives and strategies for preserving the Habitats and Birds Directives with the institutional system of protected areas in Italy. The Sila National Park has adopted the management plans of the sites belonging to the Natura 2000 network that will be included in the park plan in order to obtain an integrated plan, also provided for in the Decree of the Ministry of the Environment (DM 3 September 2002) and the Habitats Directive 92/43/EEC.

Park Regulations

As mentioned above, the regulations of the National Park - and the proposed Biosphere Reserve - foresees a series of general prohibitions - identified by art. 6 in accordance with the aforementioned national framework law on protected areas - and some more specific restrictions with respect to the zonation of the site provided for in the following articles and will be reproduced in the mirror core, buffer and transition areas of the following paragraphs.

28 As required by national law 394/91, the plan actually exceeds any other programming tool by local governments (municipalities and provinces) and is immediately binding towards the government and the private sector.

Table The general prohibitions throughout the perimeter of the reserve candidate under art. 6 of the Park regulations

- *collection and damage to the natural vegetation, except for agro-forestry-pastoral and civic uses permitted by the regulations (...); picking mushrooms is allowed (though within the terms and conditions specified in the regulations);*
- *the capture, killing, damage and disturbance of animal species, except as provided for in title II - chapter II of these regulations and the introduction of non-native animal species except for species in transhumance;*
- *the introduction into the natural environment of alien plant species or native species;*
- *the collection of materials of important geological and palaeontological interest for research and study purposes after prior authorization from the Park;*
- *the opening and operation of quarries, mines and dumps, removal of minerals; quarries and/or mines already approved will remain in operation until the period specified in the permits. Public and/or private entities already authorized for quarries, mines and dumps are required to submit their cultivation plan to the authority within 90 days of this regulation entering into force. In addition, the owners of the operations of the activities mentioned above are required also to submit to the authority their plans for the disposal, recovery and restoration of the area, on which the authority will give its opinion;*
- *private individuals introducing weapons, explosives and any means of destruction or capture, without prejudice to the provisions of art. 60 of this regulation and to the rules for the protection of homoeothermic wildlife and for hunting, under title II of chapter II of the Regulations;*
- *camping outside of designated and specially equipped areas, with the exception of authorized temporary camping (...);*
- *unauthorized overflights by the Organisation and by the competent authorities, as specifically defined by the law on flight discipline, with the exception of helicopters and other aircraft exclusively for rescue, fire fighting and monitoring;*
- *transit of motorized vehicles off the state, provincial, municipal and local roads with servitude, except for service vehicles, rescue, surveillance and ancillary facilities for agro-forestry-pastoral work;*
- *parking and stopping motor vehicles outside the specifically targeted areas;*
- *the use of outdoor fires, except as provided by art. 57;*
- *construction in agricultural areas of any type of fencing, except what is necessary for the security of housing, technological systems and for ancillary agro-forestry-pastoral activities and boundaries for temporary protection of livestock work, with the procedures set out in annex H of this regulation, article 10, last paragraph;*
- *drainage, catchments and the derivations of water if not strictly necessary for civilian use and resident populations, limited to areas A, B and C;*
- *cutting monumental or very old plants, according to the provisions of art. 24, paragraph 5 of this regulation.*
-

As will be seen within the limitations contemplated for the different areas of the Park - and the corresponding areas of the Reserve candidate - the uniformity of the legal and programmed discipline identified in the plan and the regulations is ensured authorisation (art. 9 of the regulations) by the Park director, with respect to monitoring for scientific purposes or in the core areas, relative collection of samples for scientific purposes (still prohibited in core areas) and sports activities not covered by the regulations.

Alongside these limitations or activities that are permitted with park authorisation, title III of the regulations also identifies compatible research and development work, able to give a balanced

relationship between man and the biosphere in the park, to ensure development and unitary programming. This will comprise:

- scientific research and environmental monitoring;
- agricultural and livestock activities (which include, for example, how to care for pastures and areas intended destined to them, controls, burning stubble, etc...).
- the safeguard and compatible use of water resources (for example, by protecting waters from pollution by nitrates from agricultural sources);
- recreation and sports, linked to traditions, customs and practices;
- crafts, trade and services.

Concerning logistics support, the following title IV of the regulations disciplines:

- accessibility, circulation and maintenance of roads and tracks of mountain or forest penetration, and where parking and stopping in the woods and pastures is forbidden;
- the construction, maintenance and use of trails;
- construction works, facilities and infrastructures in the C and D areas of the park and how to maintain and restore them, involving prior evaluation of such interventions;
- defence and restoration interventions of the hydraulic and hydrological balances;
- protection, restoration and environmental and landscape requalification.

Core areas

Within the plan acceptable actions are identified by category[13] throughout the Park and proposed Biosphere Reserve, as well as activities and compatible uses as described in par. 16. In the BR proposed core area, which corresponds to areas A (absolute nature reserve) of the Park, the natural environment is preserved as a whole, as required by art. 7 of the Park regulations (paragraph 1).

In those areas (areas A of the park) conservation is expected as a form of management. Preservation is a management choice that tends not to interfere with the ongoing processes. It is a form of passive conservation. In a strict sense, preservation recognises the intrinsic value of what needs to be protected in a strictly biocentric point of view. It excludes man's direct intervention, who remains an observer of natural processes.

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[29] *Acceptable interventions throughout the Biosphere Reserve are divided into the following five categories:*

- *Conservation: including the actions and interventions aimed primarily at the conservation of natural resources and biocenotic processes, resources and cultural relics, the identifying characteristics and landscape quality, with all maintenance and enjoyment closely related to conservation aims;*
- *Maintenance: including actions and interventions given priority to the maintenance of primary resources, maintenance to the fabric of agrarian landscape and cultural heritage, with light and widespread operations of recovery, re-use, refunctioning and marginal physical modification, strictly aimed at the management and balanced use of the existing resources and structures, and so as not to alter or change the situations of value and to encourage long-lasting development, even through a harmonic evolution process of the landscape forms;*
- *Return: includes the actions and interventions aimed primarily at restoration, recovery and rebalancing environmental conditions that were altered, degraded or compromised by pollution, the restoration of monuments and cultural history testimony, the recovery of abandoned patrimony, the organisational elements and matrices that shape the agricultural landscape, the restoration of natural conditions, the elimination or mitigation of degradation or alteration factors of the types or levels of use incompatible with the physical or functional modifications strictly necessary and compatible with such aims;*
- *Requalification: including the actions and interventions focussed on improving the existing conditions and the exploitation of resources, poor or underutilized, with physical or functional changes, even radically innovative interventions and landscape arrangement designed to guide and organise the processes of evolution, but that do not substantially increase the loads and environmental planning, to reduce or eliminate the conflict or impropriety of use in place, or to improve the landscape quality in situations of particular decay and deterioration;*
- *Transformation: including actions to introduce substantial innovations of use or structure for economic or social purposes in keeping with the purposes of the Park, including new commitments for the formation of new settlements or substitutions or radical changes of settlement or infrastructure fabrics, aimed at strengthening the structures and practices already in place, and the creation of new landscape establishments, in terms of improvement of pre-existing conditions and the recovery of degraded areas.*

In areas where conservation is required, management takes the form of system intangibility. It responds according to prescriptive regulations: *what is not permitted is prohibited*. The aim is not to modify, damage or block the processes under way. The system is left to free and undisturbed evolution. This is why it is necessary to check and, if possible, quantify the content and pace of evolutionary dynamics. In this case, the monitoring and analysis belong to management and are used to acquire new knowledge.

Planning is used to define and implement these standards; to monitor, verify and qualify the progress of reactions and feedbacks of the system; to analyse and quantify the ontogeny of the forest. Nothing else is allowed, and therefore is strictly forbidden: for example, the opening and maintenance of slopes; any types of cuts; farming operations and forest recovery, etc...

Table The specific prohibitions provided for the core area of the Reserve candidate by art. 7, paragraph 1 of the Park regulations

In the areas of integral reserve (A) the natural environment is preserved in its integrity, and any kind of activity is prohibited that results in alteration, with the exception of monitoring activities carried out by the Authority, with the assistance of public scientific institutions (universities, academies, public research, etc....), in order to control evolutionary dynamics.

Buffer zone

Buffer zone includes zone B, C and D of Sila National park, asindicated by Park Plan. In the buffer zone, which corresponds to zone B of the Sila National Park, strengthening of the eco-system functions is encouraged and the conservation of the landscape and cultural resources available through the reduction of noise factors. In these zones there is a special prohibition for: new construction works, expand existing buildings, shifting earth or change of land use, except for purposes of conservation, maintenance and restitution, make changes of use that require substantial changes in construction and engineering. Management works by the Park authority may however be allowed. For forestry management of the systems falling under zone B, conservation is in *systemic silviculture* in the presence of little altered forest ecosystems in their anthropic functions. It tends towards *renaturalisation* for those forest systems that are greatly simplified in composition and structure.

Actions and uses permitted in the B zones adapt to the addressed requirements and are governed by the Regulations: actions and uses not covered in this article are not permitted. Catchment of spring water, flowing or underground as identified is not allowed. Più in dettaglio, l'art. More in detail, art. 7 of the regulation (paragraph 2) provides that in the areas of generally oriented zone (B) - hence in the buffer area of the Reserve candidate - the prohibitions are listed in the table below.

Table The specific prohibitions provided for in the buffer area of the Reserve candidate by art. 7, paragraph 2 of the Park rules

In the general oriented zone (B), in addition to those referred to in art. 6 of the regulation the following prohibitions are in force: *a) use of pesticides, herbicides, and nitrogen fertilizers for agriculture as well as the prohibition of spraying livestock manure, both shovelled and not shovelled. In particular, those containing pesticides and antibiotics for animal husbandry should be treated as hazardous waste and removed from the area;* *b) the construction of new roads and new mobility works;* *c) construction of new buildings;* *d) placing advertising signs and artefacts of any nature and/or purpose, except for information signs for the park and what is provided for by the highway codes;* *e) sports activities with the use of motor vehicles, with the exception of electric ones.*

In the C zones agro-forestry-pastoral activities are encouraged according to traditional uses, or organic farming methods. Still forbidden are: new roads with a few exceptions; new buildings except those serving agriculture of a non-residential nature; interventions that change the water regime except when strictly necessary for local public interest.

For improvement of the rural environment the construction of parking, equipped rest areas and camping facilities are allowed if located close to residential areas, which are identified during the preparation of town development development plans. In rural units ordinary and special maintenance, restoration and preservation interventions are permitted, and after landscaping projects are approved, as established by the reference province and approved by the Park authority, building renovations can be made, specifying that the building restructuring is subject to a landscaping project that involves the demolition with reconstruction or expansion and/or super elevation.

In zone C, in relation to the characteristics of forest systems present, also in socio-economic considerations, in addition to systemic silviculture and renaturation, traditional or classic silviculture can be also provided for, albeit with appropriate corrections to be defined on a case by case basis and specified in the rules of the Park.

The framework law recalls the agro-forestry-pastoral activity as a form of traditional land use compatible with the objectives of the C zone, and part of the B zone. The legal framework also recognises the anthropological, historical and landscape value, as well as economic value, of the forms of traditional use.

Some aspects of traditional ecological knowledge are particularly relevant to the sustainable management of natural resources:

- management is performed using rules that have been defined locally and supported by the users;
- the use of resources tends to be flexible, based on methods of surfaces and species rotation, and on periodic restrictions for use, etc... (e.g., periods of cutting, hunting, fishing, etc....);
- resource management is based on the evaluation of feedback and changes in the ecosystem to determine the direction in which it should be aimed.

In D zones all the activities allowed are those compatible with the aims established in the park and aimed at improving the socio-cultural collectivity and Park enjoyment by visitors, within the limits and specifications contained in the NTA areas. D areas of economic and social promotion are intended for the social and cultural life of local communities as well as Park visitors.

These areas pursue the promotion and development of economic activities consistent with the purposes of the Park and re-settlement of the system infrastructure, especially in terms of compliance with the specific architectural characteristics of the area. The D areas of the Park plan and disciplined interventions in them are identified jointly by the Park authority and the municipalities concerned; the agreements reached commit the parties to their implementation in their territory management tools. Art. 8 of the Regulations identifies some limitations for the transition area in order to provide a reference basis to design sustainability throughout the perimeter of the park (and Biosphere Reserve candidate), as specified in the following table.

For forest systems falling in zone D the choice expands: the traditional or classical forestry and arboriculture for wood production are the context for rational application, but also the systemic silviculture and management-oriented renaturation can be implemented according to the type of

property and the availability of specific contributions.

Table The limitations identified in the buffer zone of the Reserve candidate in art. 8 of the park regulations

In the areas of protection for traditional uses (C) in addition to the general prohibitions in art. 6 of the Regulations, there are the following specific prohibitions:

a) opening new roads, except those with service functions for the activities allowed in these areas and with the approval of the organisation. For the streets strictly functional clearing operations as indicated in section II - chapter IV of the regulations;

b) circulation in the lakes of motorised units (except those with electric motors), except for the units used for supervision, assistance and support to the authorised sport activities of rowing and sailing;

c) creation of new mobility works, except lifts and slopes for alpine skiing, cross-country skiing and dog sledding, provided only within a ski basin plan;

d) construction of new buildings within the agricultural areas (...) with the exception of modest structures for the promotion and marketing of local tourism products and services and rural structures that are strictly necessary to run agro-forestry-pastoral businesses and also unpaved service roads which may be authorized (...);

e) promotion and/or advertising activities not permitted by the regulations.

14.1.4 Which indicators or data are used to assess the efficiency of the actions/strategy used?

With regards to indicators for assessing the conservation strategy, it could be useful to refer to §14.3.4.

There will be a continuation of research and monitoring activities as part of fauna research regarding: wildcat, deer and roedeer and regarding the flora and fauna check list for Biogenetic Reserves. Furthermore, the usual periodic monitoring previously described for the biotic, abiotic and socio-economic factors will continue.

Periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve required for drafting the "Rapporto sullo stato dell'ambiente (Calabria Region)". In particular the “nature and biodiversity” section includes:

- ✓ Threads for animal species
- ✓ Threads for vegetal species
- ✓ Diffusion of allocton species
- ✓ Hunting consistency
- ✓ Fishing consistency
- ✓ Human preassure
- ✓ Forestry surface
- ✓ Fires
- ✓ Polluting agents stress
- ✓ Farms and utilized agriculture area.

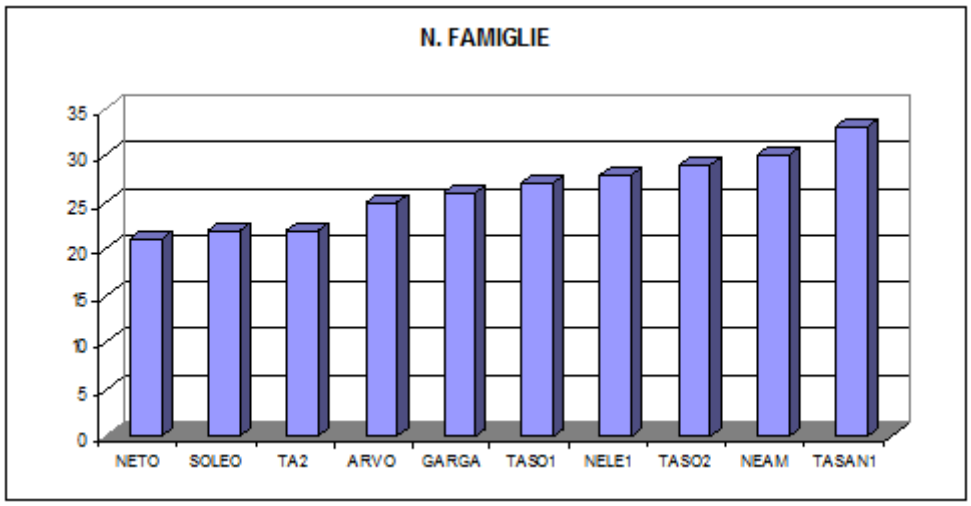
14.2 At the level of species and ecosystem diversity:

14.2.1 Identify main groups of species or species of particular interest for the conservation objectives, especially those that are endemic to this biosphere reserve, and provide a brief description of the communities in which they occur.

With regard to ecology, the Sila can be considered an important biodiversity reserve. To this end, it is worth mentioning that the Sila Biosphere Reserve is located in the only "hotspot" area of southern Europe (Apennines and the Apuan Alps) which is among the 234 worldwide Centres of plant diversity selected by the IUCN and WWF. Furthermore, the Sila has been identified by the WWF as one of the priority areas for the biodiversity conservation of the central Mediterranean eco-region, especially due to its mammals, amphibians, reptiles and vascular flora, with many of its species already being on the IUCN Red List or considered important for protecting the biodiversity of the Natura 2000 network and included in Annex IV to the Habitat Directive.

As already mentioned in the paragraphs above, the forest represents the dominant ecosystem in the territory. This, together with the hydrology and the surface water bodies of the area, with their rich hydro-hygrophilous vegetation, gives rise to an overall area that significantly contributes to enriching the biodiversity of the proposed Reserve, both from a botanical and fauna point of view.

Figure: Number of Families that form the macrobenthic communities in the Reserve rivers at 10 monitoring points.



The characteristic feature of the park is the Pinus laricio, present only in Calabria (Sila 43,000 ha, Aspromonte 3,000 ha), in Sicily (Etna 3,500 ha) and in Corsica. In the Sila area the Pinus laricio presents his most diffusion area, including almost all of the world's population, while in the Park will fall a total of approximately 34,000 ha.
This species is locally present with monumental specimens and centenarians (in Fallistro, Gallopane, Lake Blindness and Cozzo del Principe), of more than 300 years of age, with diameters exceeding 140 cm and more than 25 m in height, remains of the ancient, famous and evocative "Silva Brutia" symbolic expression of Calabria.

Within the area there are many other monumental trees, belonging to different species (fir twins, chestnut of the sky, the oak ceraso, etc..). In addition to the monumental plants, flora includes

numerous species of great botanical interest and conservation, including orchids, surveyed in nearly 40 entities.

Although very few plant species included in Annex II of the Habitats Directive in Calabria, there are entities in this area of natural beauty of European importance. An example is the Lereschia thomasii, species from a monospecific genus, taxonomically isolated, widely present in the mountains of Sila and other reliefs from Calabria. Recent surveys carried out for the preparation of theSila National Park Plan traced a new species not yet known in southern Italy, included in Annex IV of the Habitats Directive and considered vulnerable at the national level. this is the case of Lindernia procumbens, present in "Sila Grande."

Sila area contains about 3,000 species of invertebrates, but it is possible that the whole area hosts about 15,000. The available data are partial: they list 1,741 coleoptera species, grouped into 85 families. The most represented families are those of Curculionidae and Carabidae, with respectively 12% and 9% of species surveyed. An important "guild" of the forest environment is represented by the Beetles saproxilofagi, 35 of which are listed in a recent work by Mazzei (2011). These species are valuable elements in many cases, to be involved in the ecological balance of the demolition of woody necromasse or for their intrinsic rarity or because of they are listed in Directive 43/92 EEC ("Habitat").

Of particular interest are the species saproxiliche related to old mature forest trees and the beetle Osmoderma Italic cetoniide belonging to the same kind of Osmoderma hermit, the emblem of the conservation status of European forests, species of the Habitats Directive high conservation priority. Because of the rarity of environmental conditions favorable to its biological cycle, tied to trees at least 200 years of age and fitted with eye-catching cavitation in the stem, Osmoderma constitutes one of the most valuable of the old chestnut and oak woods residues. Among other species, is also significant the presence of Cucujus cinnaberinus, Beetle Cucujidae predator corticicolo, bound to mature forest consortiums and continuous and defined "umbrella species" of subcomunità saproxilica (Mazzei et al., 2011). The species is included in the Bern Convention, Annex A of CITES, in Annexes II and IV of the Habitats Directive and is considered threatened by the IUCN. Very important is also the presence of Rosalia alpina, included in Annex II of the Habitats Dir and in the Red Book (Groppali & Priano, 1992) as "threatened" (IUCN class.: LC).

The beetles of the genus Cucujus Fabricius are perhaps the most valuable forest habitat of the Sila area, as true "umbrella species" of the forest of Pinus laricius. The Cucujus living under the bark of pine trees felled by natural causes, shall adjust the density of the populations of saproxylic insects, species very numerous that attack the bark and wood of pine trees dead or decaying.

Accurate censuses carried out with the authorization of the Sila National Park shown how the forest is home for the most important Sila Italian population of Cucujus cinnaberinus (Scopoli, 1763). At the same time, the "Magna Silva" Sila hosts the second Italian species of this genus: Cucujus haematodes Erichson. This second entity shows a spread just as important as before, with the difference that for the population haematodes Sila seems to be the only viable throughout Europe. A young and well-established scholar of these insects, Dr. Jakub Horak Institute of Forestry Pruhonice (Czech Republic), who was visiting at the Department of Ecology dell'Unical, testified that the only significant populations of this species throughout the 'Eurasia live in the far east of Russia and in Calabria.

The International Union for Conservation of Nature (IUCN) in its new red list has reclassified C. haematodes as a species in danger ("critically endagered"), and that decision was sanctioned during an international workshop on the conservation of saproxylic beetles, held in Hyytiälä in Finland in

June of 2009. A research, promoted by the Sila National Park, led to the third great discovery, the most unexpected: Cucujus prope caucasicus Motschoulsky. This new entity was known only in Georgia, Armenia and adjacent to a small strip of Russia, the Republic of Adygea (Adygeya). C. caucasicus is much rarer than the other two forms, and seems to prefer the cooler parts of the Sila area. If this discovery will be confirmed, the Sila forest should be considered one of the most important refuge European-Mediterranean forest biodiversity and conservation value of the Sila area would rise to invaluable levels.

Among invertebrates, particularly insects, comprehensive data exists only for the order of Lepidoptera:
1) 739 species of macrolepidotteri (butterflies and moths) reported for the Sila (was 185-1990). One of these species is endemic: the Itame Messapiaria (Geometridae).
2) Many entities find the southern limit of their distribution in Sila.
3) Protected species are six: Callimorpha Quadripunctaria, Melanargia Arge, Maculinea Arion, Zerynthia Polyxena, Parnassius Mnemosyne, Parnassius Apollo.

At the conclusion of the considerations on invertebrates, we must remember that other taxa of conservation interest, although not included in lists of protection, are the 24 species with a geographical distribution of endemic or exclusive of Calabria. They may represent, from a biogeographical point of view, significant and interesting elements of the fauna of Calabria, and in general of the Italian Fauna. Among these we can find the Omottero leafhopper Adarrus calabricus, the Orthoptera Acridide Chrysochraon beybienkoi, the Plecoptera Protonemura Italic and Leuctra Sila, the beetle Idrofilide Enochrus calabricus, endemic species. They are part of a complex of 68 endemic Calabrian deducted from the distributions currently obtainable from "Checkmap", integrated with the most recent data of Calabroraphidia. Should be in addition to the six species stenoendemiche Agonum the first mentioned and Cucujus prope caucasicus, which almost certainly represents a new taxon at least at the level of subspecies. It also be stressed that the Sila hosts about 35% of the species endemic or restricted to Calabria, 24 species of 68.

The news on fish are mainly drawn from the study Agriconsulting (AA. various, 2008), which is also based on surveys conducted in previous decades, eg by Marconato (1988), but also on the most recent surveys, such Mazzei (2008). Among the species of importance are to report the Mediterranean trout, Salmo (trutta) macrostigma, roach Rutilus rubilio, and the loach Cobitis taenia.

Amphibians and Reptiles in the area account for 78% of the species throughout the region, numbering a total of 12 species of amphibians and 16 species of reptiles. Beyond the presence of the species in the Annexes to national and international guidelines, we have identified (based on the value zoogeographical, understood as the limit of the distribution range, the condition of endemism and degree of threat at the local level) species (3 belonging to the class of Amphibians and Reptiles of the Class 4) of high conservation value such as Bombina pachypus (Ululone Apennine), Triturus carnifex (Italian Crested Newt), Salamander terdigitata (spectacled salamander), Lacerta bilineata (western green lizard), Anguis fragilis (Slow-worm), Natrix tessellata (Natrice tessellated) and Zamenis lineatus (Saettone red eyes).

The variety of environments present, together with extensive forest formations, sometimes in a good state of preservation, also favor a bird community well-diversified, consisting of the current state of knowledge (2006-11 campaigns) by as many as 82 species nesting and 31 migratory or wintering (Mingozzi, pers. communication). Among the breeding species of conservation concern and / or bio-geographic the black woodpecker Dryocopus martius, is probably the most interesting species of the area. This picide has a disjunct distribution in Italy, with two populations: a mountain one and a southern Apennine. The mature woodlands, present in some areas of the proposed

Biosphere Reserve, are the ideal habitat for the reproduction of these species. Similarly, the cruises Loxia curvirostra, the siskin Carduelis spinus and the whinchat are species that here mark the southern limit of its range.

Sila is a territory also fundamental for the mammals. Of the 68 species known for the region, 41 (61%) are present. Among the many species of mammals, the most representative and characteristic is certainly the southern squirrel Sciurus vulgaris meridionalis. This subspecies, endemic of Calabria, is the only genetically differentiated from all other the entire range of the species (which, however, appear genetically homogeneous), and had to be considered an evolutionary independent (2009), result of a long isolation which continues to this day of these populations. Sila is for the future of this taxon a vital area, being in this area the larger population, thanks to the extension of the coniferous forests to which the species is closely related.

A similar phenomenon is found in Talpa romana, an endemic species of central-southern Italy. Contrary to what is found in all the world's peoples mole and other subterranean mammals, which exhibit genetic variability close to zero, in the central and southern Calabria values are much higher variability to be the highest ever reported in a mammal in the world (2010).

Numerous species of conservation concern, not only for the level of protection and vulnerability to them recognized, but also for reasons of biogeography type: we can mention the water shrew, Neomys fodiens and the blind mole, Talpa caeca, two species in southern Italy that have areal fragmented and extremely rare reports of which are known, which are in Sila their southern limit of distribution (Aloise and Cagnin, 2003; Aloise et al., 2005). No less interesting is the presence of driomio, Dryomys nitedula, especially for areal disjointed that Italy is only present on the eastern Alps and in the mountainous areas of Calabria, hare, Lepus corsicanus, an endemic species of Southern Italy, in the peninsula, presents areal fragmented and rarefaction, aquatic vole, Arvicola amphibius, especially in stenoecia strong regression throughout the area due to the alteration of the national waterways in which they live.

The wolf (Canis lupus) and the otter (Lutra lutra), after a drastic reduction of population and areal risking their disappearance from Calabria, is one of the last areas of refuge, with a significant and vital population. The data on the size of the current population are scarce, often fragmentary and limited to restricted areas of the Sila National Park.

Is still far from complete, however, the list of species of bats. Of the 24 species potentially present, are reported only 8 species. All species of bats are protected by several European Directives and, among these, the Italian populations of Rhinolophus hipposideros, Barbastella barbastellus, bechsteinii Myotis, Myotis capaccinii, Myotis emarginatus are considered Vulnerable.

14.2.2 What are the pressures on key species? In other words: what are the threats (example unsustainable management of forest), their immediate causes (drivers of change like forest change or habitat change), their underlying causes (example overgrazing, fire, pollution), and the main driving forces (example: economic, political, social, external, etc.) and the area(s) concerned?

In the area with the particular objective of conservation is in force a Park Plan which links all the 18 municipalities in a common planning framework and is sovra-ordinated to the individual municipalities' plans. The legal tools of park regulation help to foster the conservation objectives, guaranteeing only the possibility of the presence of activities compatible.

Flora

Apart from a few cases of shock due to the direct collection of plant species of interest ornamental or food, the species considered at risk are affected by direct or indirect impacts resulting from human activities related to environmental types in which the species belong.

Among the most endangered species, a rich contingent is linked to the marshes and wetlands in general: these environments are particularly abundant in the area and which are the most species-rich of phytogeographical interest, hosting many boreal species that are extremely localized populations isolated from the main areoles. This group of species (among which Viola palustris, Lindernia palustris, Schoenoplectus supinus, Limosella aquatica, Ludwigia palustris, etc.), although in some cases present with large populations , it is particularly vulnerable to interventions to the retention and use of surface water, in addition to other factors, such as grazing and trampling over.

Another group of species (Elephas Rhynchocoris, Lereschia thomasii, Chrysosplenium dubium, Soldanella calabrella, Adenostyles macrocephala, etc.) is related to wet environments nemoral, represented by numerous rivers that run through the beech woods and alnete. Although these environments, abundant in the area, may be threatened by hydraulic-forest fail to respect the delicate ecological balance.

A full contingent of endemic species, some unique to the territory of the Sila, is related to the dry grasslands and shrublands to the mountain, where grazing may be a factor of major transformation, which should be kept under control and in some cases limited.

For a more detailed assessment of threats and conservation status of each species should be effective to have quantitative data on the size of the populations and their demographic trends in a time interval significantly. However this type of data is almost always unavailable.

Invertebrates

The critical issues concerning the invertebrates are very evident in the forest. As for wet environments it underlines the urgent need for an in-depth knowledge of the fauna of riparian forests and sfagneti, on which the data are currently too poor for a clear conservation policy.

Amphibians and Reptiles

The potential threats to the herpetofauna are connected to any actions that lead to modification of the habitats where the species live. In a very general way are listed below the main threats to the Amphibians and Reptiles:

- ✓ Reclamation of wetlands: this threat is primarily concerned Amphibians and Reptiles attending pools, marshes, ponds and marshes;
- ✓ Invasion of non-native species : the threat is especially harmful in the case of release of other amphibians , fish , reptiles and birds . In all these cases the consequences are recorded both at the level of competition for resources , which , above all, in the phenomena of predation ;
- ✓ Withdrawal for commercial purposes or for collectors : the lack of appropriate laws makes, in some cases, the collection of amphibians and reptiles in nature by man a serious threat to the survival of populations.

Mammals

For Mammals, potential threats are all the actions that directly or indirectly alter habitats (fire, cutting and cleaning drastic undergrowth, overgrazing, stray dogs) by changing the availability of

food and animal shelters or who directly threaten the survival of the animals (poaching, the introduction of species and/or allochthonous taxa).

Keep in mind that each species has unique ecological requirements and thus can be threatened by very different factors. As an example we will describe two new species of bat signal for Calabria, found by Scaravelli and Priori in their research (2009, unpublished data). The pygmy bat (Pipistrellus pygmaeus) has been found in buildings in the valley while the common noctule (Nyctalus noctula) in mixed forest environments. For the conservation of the first species is therefore important to use in any restructuring all the technical details that allow the colonies to survive, choosing response time and facilities that minimize the impact on the species, while for the second species is important the preservation of old trees and death trees, temporary shelters or for reproductive colonies.

The overage grazing is another threat that affects more species of terrestrial mammals, both micro and macro, through direct disturbance caused by grazing animals, and the alteration of the substrate grassy due to excessive trampling (competition for food , destruction of dens) .

The most concrete direct threat to the wolf, and that unfortunately is evidenced by a constant series of events in the Sila, is that of poaching linked to the presence of stray dogs. The latter, which are a nationwide problem, causing damage to livestock often attributed to Lupo, fomenting negative image of this species that resolves to cause further poaching.

The recent discovery of the otter in the area, after decades of absence, makes it a priority to its preservation and control of specific threats related to the protection of aquatic habitats where the food is , therefore fundamental to the control of water quality and the limitation of any intervention that modifies drastically the time course and characteristics of the water .

In addition, the increase of various species of wild ungulates, recently introduced, could lead to significant risks to health arising from interactions with the dense population of domestic livestock breeding.

Birds

The variety of environments present, along with extensive forest formations in a good state of conservation, help a bird community well-diversified .

Any disturbance (including anthropogenic) which directly or indirectly result in the reduction or fragmentation of these habitats, represents a real threat to the survival of bird species associated with them. A major threat to the forest species is represented by forest cutting and/or the rejuvenation of the forest, with the removal of obsolete or decaying plants.

The overgrazing of cattle and the relative increase of trampling, resulting in degradation of the turf , represents a serious risk factor for species related to open environments, including agricultural origin.

In aquatic environments, one of the main problems during the nesting period is represented by the uncontrolled change of the water level , influencing negatively the trophic availability and integrity of the breeding sites .

14.2.3 What kind of measures and indicators are currently used, or planned to be used to assess both species groups and the pressures on them? Who undertakes this work, or will do so in the future?

Currently various studies and researches were made up by Calabria Univeristy and Sila National Park to assess preassures and threaten. They use indicators for monitoring the area taking into account different perspective of analysis:

- ✓ Social and economic parameters;
- ✓ The meaning of threads;
- ✓ The reason why of threads;
- ✓ Possible consequences;
- ✓ Possible measures to be implemented.

Threats should not be underestimated and require an adequate and constant monitoring, as already stated in the "Plan of the Park". this monitoring process concern the rate of increase of populations of wild boar and locally may become problematic, as well as for damage to crops, even for the wildlife of the soil.

Sila National Park, as stated by Park Plan, will guarantee the monitoring of the populations of bird species protected under Directive 79/409/EEC and in particular those of Annex I to that Directive or otherwise conservation priorities; monitoring plans of the habitats and populations of species protected under Directive 79/409/EEC or otherwise conservation priorities by reference to what is stated for each SIC in this document and the methodology sheets attached.

On the other hand, will be promoted and encouraged research activities in the whole area of the park on species and habitats protected under Directive 79/409/EEC , Directive 79/409/EEC or otherwise conservation priorities and information and education of the local population and the biggest recipient of the territory on the Natura 2000 network.

In the future this activities will be coordinated by Sila MB Observatory with the essential support of Sila National Park, universities and other local centre of research.

14.2.4 What actions are currently undertaken to reduce these pressures?

The measures undertaken to reduce these pressures in Park Plan are organized by areas:

- farming and animal husbandry
- fishing and hunting
- industrial activities and infrastructure
- forestry
- hydraulic management and wetlands
- research and dissemination

For each area are shown respectively prohibitions, obligations or activities to encourage and facilitate.

Agricultural And Livestock

Prohibitions and obligations

A) Prohibited burning of stubble and straw, as well as the vegetation at the end of the production cycles of natural meadows or sown on the area specified in the following points:

1) arable land pursuant to art. 2, Section 1 of Regulation (EC) No. 796/2004, including growing crops permitted in paragraphs a) and b) of art. 55 of Regulation (EC) No. 1782/2003 excluding areas referred to in paragraph 2 below;
2) arable land subject to set-aside and not cultivated throughout the year and other areas set aside eligible for direct payments, maintained in good agricultural and environmental condition in accordance with Article 5 of Regulation (EC) No. 1782/2003.
They are subject to burn-related interventions to plant health emergencies prescribed by the competent authority and unless otherwise required by the competent authority of management.
B) it is forbidden to convert the area under permanent pasture pursuant to art. 2, paragraph 2 of Regulation (EC) No. 796/2004 for other uses;
C) prohibition of removal of natural and semi-natural characteristic of the agricultural landscape with high ecological value identified by the regions and the autonomous provinces with appropriate measures;
D) prohibition of removal of existing terraces, bounded downstream by a dry stone wall or a cliff turf, except in the case are duly authorized remodeling of terraces carried out in order to ensure an economically sustainable management;
E) prohibition on implementation leveling is not authorized by the manager, are subject to the ordinary leveling for the preparation of the seed bed.
F) on arable land subject to set-aside and not cultivated throughout the year and other areas set aside eligible for direct payments, maintained in good agricultural and environmental condition pursuant to art. 5 of Regulation (EC) N. 1782/2003, is required to ensure the presence of a vegetation cover, and implement agricultural practices exclusively consists of mowing, mulching of herbaceous vegetation, or grazing on set-aside land on which they are invoked titles of withdrawal, pursuant to Regulation (EC) No. 1782/2003.
G) Obligations to mowing and/or working the land for the construction of fire bands, in accordance with the regulations in force.
Notwithstanding the obligation of the presence of a vegetation cover, are allowed machining on land set aside in the following cases:
1) practice of green manure, green manure species in the presence of plants or biocides;
2) land affected by restoration or renaturation of habitats and biotopes;
3) to lose crops to wildlife, pursuant to art. 1 , letter c) of the Decree of the Ministry of Agriculture and Forestry of 7 March 2002;
4) in the case where the processes are functional execution of land improvement;
5) on arable land set aside for a single year or, only the vintage before the entry into agricultural production , in the case of arable land withdrawn for two or more years , working the soil in order to obtain an agricultural production in the next crop year, however, be made no earlier than July 15 prior to the entry into production of the agricultural year.
Regulation of use and limitation in the use of sewage sludge, subject to the requirements and prohibitions went by the legislative decree of 27 January 1992, n. 99 implementing Directive 86/278/EEC.

Fishing And Hunting

A) prohibition of fishing activities on the whole territory of the Natura 2000 network of the park.
B) prohibition of the operation of the hunt throughout the Natura 2000 network of the park.
C) prohibition on carrying out of the training of hunting dogs in all SCI and SPA included in the Park
D) prohibition of establishment of designated areas for training and the training of dogs and racing dogs, including expansion of existing ones;
E) prohibition of destruction or willful damage to nests and shelters birds.
F) promote and encourage the suppression of poaching.

Industrial Activity And Infrastructure

Ban on:
A) construction of new landfills or new waste treatment and disposal of sludge and waste as well as expansion of existing ones in terms of area covered, subject to the landfills for inert;
B) construction of new wind farms;
C) development of new photovoltaic plants, without prejudice to the plants using existing structures (roofs and roofs of buildings).
D) construction of new lifts and new rope to the ski slopes, are subject to replacement surgery and also technological modernization and modest extensions of the skiable area that does not increase the impact on the site in relation to the conservation objectives;
E) opening of new quarries and expansion of existing ones ;
F) carry out activities of motorized circulation outside of the roads, except for agricultural and forestry vehicles , for emergency vehicle , control and surveillance, as well as for access to the fund and the company from the rights holders, as owners, managers and workers. The SCI is also prohibited from organizing events that provide the concentration of a large number of motorized vehicles (motorcycle rallies , rally, etc.) Also on provincial and municipal roads.
G) prohibited the opening of new roads and forest tracks in SCIs and SPAs. You may be allowed to open forest trails to natural background to supplement the existing road system , aimed at better management and conservation and to promote a more proper use for scientific purposes and tourism.
H) Obligation for: safety measures, compared to the risk of electrocution and bird impact, power lines and overhead lines at high and medium voltage new construction or maintenance or renovation; and regulatory intervention of mechanical weed control in the hydraulic network artificial , such as irrigation canals and collector channels, so that they are carried out outside of the breeding season of birds, and in particular in periods from April to August.

Forestry

A) Prohibition to carry out silvicultural operations in the nesting characteristics of the habitats of animal species during the nesting period in order not to disturb or damage their reproduction;
B) in the case of high forest uses in compliance with the minimal values of the commission, the mode and the intensity of the intervention, and monitoring of the effects of silvicultural operations on the structure of forest systems;
1) for the conversion of coppice adoption of the method of intensive release of students and monitoring of development trends as a basis for the definition of the various interventions;
2) for the adoption of the form of government coppice containment of the surface of cut (maximum 2/3 acres) , interval of at least four years between adjacent cut , and release of saplings of all species sporadic or secondary, the release on the falling of prunings minute;
3) for artificial populations adoption of interventions aimed at their naturalization (cautious interventions , and continuous capillaries, based on the characteristics of each company in the case of non-native species adoption of measures to encourage the process of naturalization, but preventing it can spread in populations neighbors.
C) in all cases obligation not to use the plants dry up and those that have fallen to the ground and release the larger business entities (over 80 cm in diameter) in aging indefinite; issuing sporadic and rare plants in order to encourage their retransmission .
Reforestation of exotic species will have to be adopted for thinning operations in order to ensure the establishment and success of juveniles under cover of native species and to set the basis for the replacement of these species. The following interventions will facilitate the growth of the juvenile and promote the full statement.
C) It is forbidden to use or destruction of the undergrowth; it is forbidden to litterfall. Along the streets most frequented areas where more intense is the presence of picnickers, in close proximity to

areas for picnics and in areas where fires are recurrent, it is necessary to perform cleanup in order to reduce the risk of fire.

Hydraulic Management And Wetlands

Obligations and prohibitions :
A) ban on hydraulic reclamation of natural wetlands;
B) obligation to monitor the water levels of wetlands, particularly during the breeding season of the bird species present, in order to avoid differences of the same.

Regulation of:
• treatment of waste water basins of intensive or semi-intensive fish farming;
• activities involving sudden and large changes in water level or reduction of the surface areas of islands or outcrops.
• construction of dams and interventions artificiality of river beds and banks including rectifications, tombamenti , channeling, embankments , reduction of the surface outcropping of islands or areas;
• periods and methods of the control interventions or the management of natural vegetation tree, shrub and herbaceous wetlands within so that it is avoided cutting, mowing, mulching, fire, chemical weed control, surface treatments of the ground, during the reproductive period of bird, without prejudice to special measures of management prior authorization by the operator, in order not to disturb or damage to the reproduction of wildlife;
• use of herbicides and pyroweeding for vegetation control of the hydraulic network artificial (irrigation canals, ditches and canals collectors).

14.2.5 What actions do you intend to take to reduce these pressures?

Agricultural And Livestock

Activities to promote:
• maintaining or restoring items of ecological and landscape interest including hedges, windbreaks, shrubs, woods, agricultural residues accommodations, old orchards and vineyards, waste paper, ponds and fountains;
• maintenance or creation of margins or edges of fields, as widely as possible, left uncultivated, maintained lawn, or with species of trees and shrubs not treated with chemical principles and mowed out of the period between 1 March and 31 August;
• adoption of the cultivation of organic farming and integrated with reference to the Rural Development Programmes;
• adoption of production systems that provide for the exclusion of the use of synthetic chemicals and pesticides and methods of crop management that exclude direct or indirect damage to the areas of greatest interest to the wild (ecotones, edges of fields, areas of semi-natural vegetation, etc.), or adoption of solutions based on biofumigation or equivalent.
• maintaining as long as possible of stubble or crop residues before tillage; their possible alignment mode raking /windrowing to favor the solarization natural soils exposed to desiccation in arable;
• adoption of detailed grassland management (mowing , andanature, ranghinature), collection of cereals and other field crops (mietitrebbiature) in order to reduce impacts on wildlife;
• reduction and control of pollution of agricultural origin.
• Adoption of forms of traditional extensive farming and agriculture;
• the restoration of natural habitats such as wetlands, temporary and permanent , meadows and through the set-aside of arable land;

• the maintenance of stubble and straw , as well as the vegetation at the end of the production cycles of the fields sown until the beginning of the new cycle.

Activity And Industrial Infrastructure

Promote and encourage removal of suspended cables of lifts, ropeways and electric resigned.

Measures For The Forestry

Activities to promote:
• the presence of populations in complex structure, possibly mixed, by an application of appropriate forms of treatment to promote and maintain structures disetanee;
• conservation of meadows and open areas within the forest of medium and small size, pasture and agricultural areas, inside the forest and surrounding areas avoiding disruption or damage to the sward;
• maintenance of forest, of any extension (rows , thickets, etc.) and any species along the roads (national, provincial, municipal , interpoderali , etc.) , interposed between the different properties, in watersheds and basins near water natural and artificial;
• conservation of the forest, of any kind under cover and in areas adjacent to the forest;
• maintenance of an adequate presence of dead plants, or decaying long-standing, useful for nesting or feeding of birds.

More specifically Park proposed the following management measures based on the zoning of the park and the types of forest formations.
1. Zone A - Integral Reserve
- All forest stands that will fall, in any condition they may be, must be left to the free evolution and they can not be executed any work culture. It is only allowed monitoring activities.
2 . Zone B and Zone C - General Reserve Oriented Protection Areas
Plantations of larch pine and beech
- Should be adopted by a systemic silviculture in order to facilitate the formation of composite structures, multilayered, possibly mixed.
- The silvicultural operations should aim for growth of plants and groups of juveniles of any species already present and the retransmission of those sporadic.
- Particular attention should be paid to the restoration of forests mixed Fagus - Abies Track Schmid.
Natural pine forests of larch in which are not yet in place processes of naturalization
- In order to maintain the landscape of the black pine trees and, consequently, the typical landscape silane to be adopted based management cutting choice to small cuts or modular, so as to favor the formation of multilayered structures.
- In groups of black pine trees, thinning should be limited to what is strictly necessary, as that will encourage the re-naturalization of these formations and this leads to the gradual disappearance of the pure larch pine forest typical of the Sila.
Pine forests are characterized by the presence of juvenile hardwood (beech, oak, sycamore) or coniferous (spruce)
-The management should be based on the modular system cuts in order to encourage the process of naturalization in place and form mixed stands disetanei.
- The plants of greater dimensions (more than 80 cm in diameter) must be issued to aging indefinite, as well as those dried, crashed, decaying, etc. . since they are favorable habitats for birds. The plants fell to the ground, especially if the medium-large, must be left in the condition in which they find themselves . All of these subjects will be marked and returned by the relevant map .
Coppice beech and oak mesic

- Actions that must be taken in the medium and long term, lead to the conversion to high forest. The conversion method is that of the intensive release of students.
- At the time of minor species will be issued and/or sporadic, in any vegetative state they are, the old plants or large in scale .
- Must be issued on the falling material of small dimensions, suitably distributed on the surface, in addition to any suckers dried in feet, especially if medium-sized or large .

Reforestation of black pine trees or pine trees

- Should be adopted by a management that is conducive to successful re-naturalization . This process in some cases (populations of more than 30-40 years of age, in which they were made for thinning or damage has occurred of meteoric origin that have reduced the density of the population) has already begun and is , therefore , favored , while in other cases has yet to be triggered .
- They will have to be performed interventions weak degree and kind of low , repeated at short intervals of time so as to facilitate first the insertion of juveniles of indigenous species and , subsequently, the development and growth of the young seedlings .

The pruning - the petite and small material will be released on the falling .

Coppice chestnut and oak, pure or mixed with cork oak and other hardwoods heliophilous thermophilic .

- Kept the form of government coppice, observing shifts traditionally used, which , however, should never be lower than the minimum requirements laid down by Max and Forestry Police currently in force in the Calabria region .

The surface of the single - cut should not be more than one hectare and, in addition , the time interval between contiguous cut must be at least three years.

- Need the release of saplings in accordance with the requirements of Max and Forestry Police currently in force in the Calabria region .
- In addition, in the vicinity of watercourses , can not be made coppicing on a range of ten meters wide as not to alter the special conditions of this habitat.

-In the area of forest to be implemented all appropriate cultural practices to maintain optimal plant communities in vegetative conditions , compatible with the presence and protection of plant and animal component present.

- If the density of coppice (number of stumps and suckers) does not correspond to the optimal setting and / or are no gaps or clearings , it is necessary to perform thickening of the same species or even introducing different species , consistent with the type of forest that currently characterizes the SCI .
- In the event that the coppice manifest signs of soil erosion, or there is concern over problems regarding the renewal asexual (number of suckers and vigor of the same) , it is necessary to lengthen the rounds and give the opportunity to gain new vigor of coppice .
- During the production cycle, when there has already been a social differentiation of the suckers , you should proceed to an operation of displacement by removing the small ones, dominated , with plagiarism tropic behavior .

-All this biomass must be issued on the ground , which is distributed fairly evenly , so as to contribute to the reduction of erosion. For precautionary reasons , in the vicinity of roads and areas easily accessible by the public, it is appropriate to reduce the amount of fuel , removing this material , in order to avoid the onset of fire.

- In the glades and clearings inside the forest, not explicitly intended for grazing , it is necessary to avoid any intervention (breaking of turf , for working the soil, etc. .) Because , indirectly , it promotes regeneration of forest species and , however, trigger the evolutionary phenomena that lead to the disappearance of these habitats.

Hydraulic Management And Wetlands

Activities to promote:

• reduction of nitrates into surface waters in the context of agricultural activities conducted outside the limits of the protected areas;
• long-term set-aside of arable land, conservation of grasslands, creation of wetlands and expansion of biotopes wrecks and managed for environmental purposes in the areas adjacent to the valleys, bogs and lakes;
• creating and maintaining buffer strips with herbaceous vegetation (spontaneous or sown) or arboreal - shrubby of a certain width between the cultivated areas and wetlands;
• creation of zones at different depths of water with banks and banks with reduced slope;
• maintenance or restoration of the irregular profile (with creeks and ravines) of the contours of the wetland;
• maintenance or recovery of submerged vegetation , vessel and emerged and land surrounding the wetland;
• along the waterways carry out any use of riparian vegetation alternately in time (interval of at least four years between adjacent uses) and space (in sections not exceeding 20 meters) , only performed on one of the two banks, the ensure the permanence of suitable habitat to plant and animal species;
• Implementation of systems for phytoremediation;
• Periodic management areas of reeds, to be carried out exclusively outside of the breeding season of birds, with cuttings aimed at diversifying structural rejuvenation, maintenance of ponds free, favoring cuts in rotation for land and avoiding flush cutting;
• restoration of meadows, wetlands temporary or permanent expansion of biotopes wrecks managed exclusively for environmental purposes, particularly in areas adjacent to the valleys, bogs, lakes via the set-aside of arable land.

Other measures

Activities to promote:
• creating and maintaining buffer strips with herbaceous vegetation (spontaneous or sown) or arboreal - shrubby of a certain width between the cultivated areas and wetlands;
• renaturation of watercourses;
• interventions cutting of vegetation, waterways river bed with a width greater than 5 meters , only performed on one of the two sides alternately in time and space, in order to ensure continuity of suitable habitats and plant species in animals;
• reduction of the load and grazing periods in the canal area.

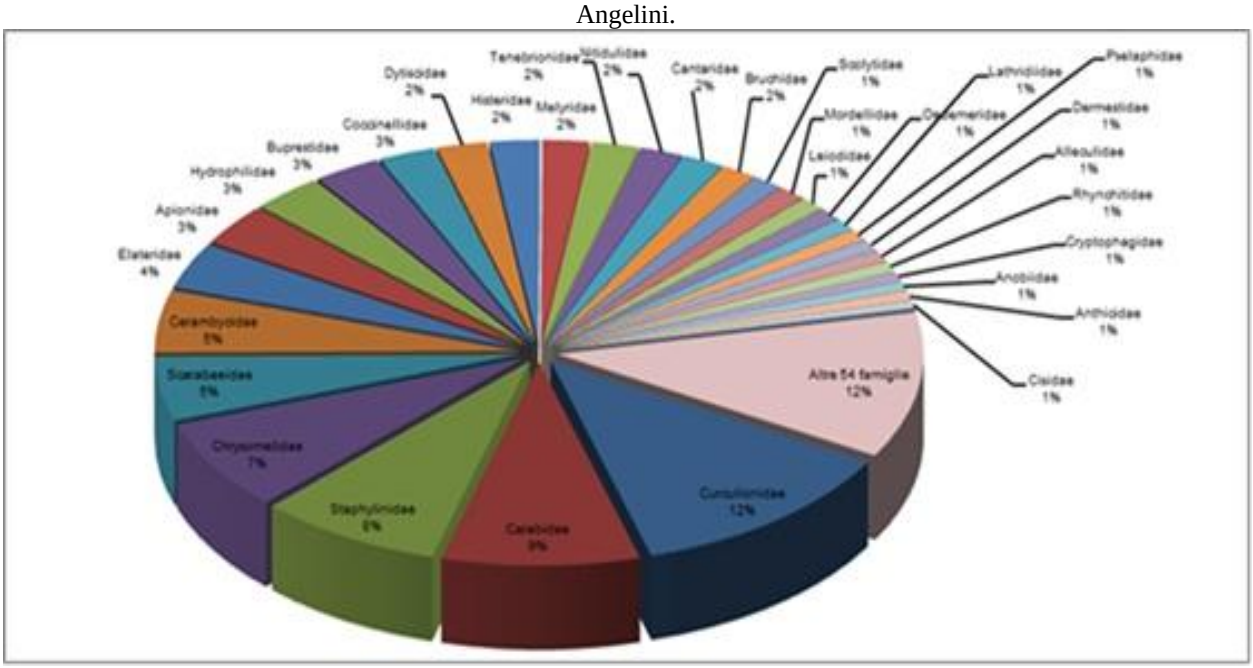
14.3. At the level of genetic diversity:

14.3.1 Indicate species or varieties that are of importance (e.g. for conservation, medicine, food production, agrobiodiversity, cultural practices etc).

The flora in the Sila includes more than one-third of Calabria's known species, which still today remains one of the Italian regions in which the flora is still relatively lesser known. The Reserve is home to around 1,000 vascular plants with a discrete number of endemic Italian and local species (81). The past climatic events of the Quarternary Period has resulted in the presence of a rich group of species which are at the southern tip of their range, or whose populations within the Sila are markedly different from their main range.

Of much significance is the biodiversity of arthropods, with 2,632 known taxa and a total of 15,000 estimated taxa, with numerous local and regional endemic species. The most highly represented families are the Curculionidae and the Carabidae.

Figure: Division of families of the 1,741 species of Beetles surveyed in 1991 on the Sila plateau. Data processing by Angelini.



The fish segment (6 species) is certainly the less rich among all fauna and this appears to have occurred primarily due to the repeated introduction of unsuitable species. The Amphibians and Reptiles present in the Sila National Park, on the other hand, represent 78% of the species present in the entire region, with 16 reptiles and 12 amphibian species.

The variety of the environments also favour a very diverse bird community, consisting of 113 species surveyed, of which 82 are nesting species. The Sila Reserve is also a very important area for a significant number of mammal species (65) as it is home to nearly all the species found in Calabria.

The information on biodiversity in the area in question is still not complete and the number of species present is almost certainly an underestimate; the flora and fauna identification campaigns will probably continue to increase the number of species present in the Sila National Park/BR checklist in the future. In this regard, it is well worth mentioning the recent description of a species new to science: the Carabide *Agonum n. sp.*, or, from examining the case of the macrolepidoptera, it has been found that over the last 19 years, 554 new species were found in the Park, 300% more than those known up until 1990. Furthermore, two specimens of the rare *Quercus crenata* have also been found.

Touching on the most significant insect species, it should be noted that accurate surveys have led to the confirmation that the Sila *Pinus laricio* forest is one of the two sites worldwide that enables the survival of constant populations of *Cucujus haematodes* - the far east of Russia and the Sila - (Jakub Horak Istituto Forestale di Pruhonice), and the most important Italian population of *Cucujus cinnaberinus*.

Literature also points to important populations of the beetle *Osmoderma italica*, a Cetoniidae belonging to the same genus as *Osmoderma eremita*, an emblem of the conservation status of European forests, a priority species of the Habitat Directive with a high conservation priority due to the rarity of the environmental conditions that favour

its biological cycle, or the 14 species of Calabrian endemic geographic distribution (taxa steno - Calabrian endemics) which, from a biogeographical point of view, are significant and interesting elements, and the discovery of the *Cucujus caucasicus* Motschoulsky, a new taxa for western Europe (known only in Georgia, Armenia and in a small bordering territory of Russia).

As it is a rare species, the identification and consistency of the *C. caucasicus* population is undergoing verification and comparison, but if this latest discover is confirmed, the Sila *Pinus laricio* forest may be considered the most important European refuge of forestry biodiversity and the conservational value of the Sila National Park would rise to inestimable levels (Pietro Brandmayr et al.).

Over the last decade, there has been more and more significant scientific evidence of the importance of Calabria as an area in which the fauna has a higher level of genetic differentiation than the national, and even European, average. This phenomenon appears to be due to the fact that the ancient Calabrian peninsula has suffered a turbulent history, not only due to the climatic turbulence of the ice ages, but also due to glacial eustatism which has transformed Calabria many times into a string of large islands, subsequently isolating it from European strain populations and/or populations from other origins from the continent and the Italian peninsula.

In summary, Calabria, especially in its central and southern areas, is perhaps the area of the Italian peninsula with the highest priority for biodiversity conservation, not just because of the presence of a high number of species of conservational interest, but first and foremost due to the high level of genetic variability of the Calabrian populations with regard to the majority of species researched to date (it is certainly the area of the Italian peninsula which has the highest number of genetic diversity hotspots).

Furthermore, the proposed Reserve represents a fundamental area and genetic hotspot for at least 19 species of vertebrates, such as the *Talpa romana* (Roman mole), which presents the highest genetic variability observed to date in mammal species worldwide.

There is no doubt that the conservation of the populations of these genetic hotspots is of paramount importance. In conclusion, the variety and diversification of the habitat and organism biodiversity of the Sila National Park forms a unique specimen within the Mediterranean regions and it is important to emphasise how anthropic and socio-economic factors have contributed to maintaining this heritage. The list of species of EU of conservational interest are provided in the annexes to the application form.

The proposed Biosphere Reserve also welcomes many species of importance which are cultivated, collected or bred for direct consumption, sale or transformation into products for the wood industry or to create typical gastronomical products which are very important for the traditional economy of the territory.

Some examples include: forestry species of wood; undergrowth products, such as the famous Sila porcini mushrooms, which are marketed across the whole national territory and wild fruits; medicinal plants; the "Sila potato"; soft wheat; the "podolica" bovine race; and the Calabrian black pig.

Table: Species of economic significance

Family	***Species***	***Common name or variety***	***Intended use***
Pinaceae	*Pinus nigra ssp.*	*Pinus laricio*	Wood industry

	calabrica		
Pinaceae	*Abies alba*	*European fir*	Wood industry
Fagaceae	*Fagus sylvatica*	*Beech*	Wood industry
Fagaceae	*Castanea sativa*	*Chestnut tree*	Wood industry and food
Fagaceae	*Quercus cerris*	*Turkey Oak*	Wood industry
Fagaceae	*Quercus frainetto*	*Italian Oak*	Wood industry
Betulaceae	*Alnus cordata*	*Italian Alder*	Wood industry
Betulaceae	*Alnus glutinosa*	*Black Alder*	Wood industry
Boletaceae	*Boletus ssp.*	*porcino*	Food
Amanitaceae	*Amanita cesarea*	*Caesar's Mushroom*	Food
Agaricaceae	*Macrolepiota procera*	*Parasol mushroom*	Food
Cantharellaceae	*Cantharellus cibarius*	*Chanterelle*	Food
Solanaceae	*Solanum tuberosum*	*Silan potato*	Food
Malvaceae	*Malva ssp.*	*Malva*	Medicinal use
Valerianaceae	*Valeriana officinalis*	*Valerian*	Medicinal use
Rosaceae	*Fragaria vesca*	*Wild strawberries*	Food
Rosaceae	*Rubus ulmifolius*	*Wild blackberry*	Food
Rosaceae	*Rubus idæus*	*Raspberry*	Food
Apidae	*Apis mellifera*	*Western honey bee*	Food and medicinal use
Bovidae	*Ovis aries*	*Sheep*	Food
Bovidae	*Capra hircus*	*Goat*	Food
Bovidae	*Bos taurus*	*Cattle*	Food
Suidae	*Sus scrofa domesticu*	*Black Calabrian pig*	Food

Since many years Sila already developed international cooperation in this field with a germoplasma bank whose seeds and genetic materials have been shared with European countries in order to facilitate reforestation processes.

14.3.2 What ecological, economic or social pressures or changes may threaten these species or varieties?

Generally, we can indicate as main threats:

- ✓ Alteration of river environments: one of the major adverse effects resulting from these alterations are reminiscent of the drainage of wetlands, the decrease in groundwater recharge and modification of riparian vegetation;
- ✓ Agricultural transformations: this threat can be identified with the change of the settlement, the use of agricultural machinery, the extensive use of chemicals (pesticides and fertilizers) and water uptake for agricultural purposes;
- ✓ Silvicultural operations: cutting and skidding generates strong ecological changes that are reflected in the species that live in the undergrowth , especially on Reptiles, Amphibians but also many that during much of the year living in the forest areas and are closely linked to this type of habitat;

- ✓ Fires: the passage of fire can have negative effects of direct and indirect type on populations of amphibians and reptiles. The direct effects result in the death of individuals who fail to escape before the arrival of the flames, the indirect effects concern the modification of the vegetation , the morphology and the characteristics of the soil.

The table below shows the main threats in Transition Zone.

Activities and/or uses in transition	*Negative effects*
Urbanisation Tourism/ecotourism Migration flows Education	• Illegal construction • Anthropic/traffic load • Surface water and groundwater pollution/soil sealing • Exploitation of natural resources (water) • Forest fires
Presence of quarries/dumps	• Possible reopening
Agricultural and/or industrial practices: • Intensive agriculture; • Monoculture; • Factories; • Agribusiness • Use of pesticides • Forestry/energy production line	• Surface water and groundwater pollution/soil sealing • Eutrophication • Regression of biodiversity • Air pollution • Reduction of forest cover
Fishing and hunting	• Exploitation of natural resources • Loss of biodiversity;

14.3.3 What indicators, at the level of the species, are used, or will be used, to assess the evolution of population status and associated use?

At the national level an agency of the Ministry of Environment (namely ISPRA) developed a coherent strategy foe monitoring biodiversity in the protected areas. ISPRA idenotify a series of indicators specifically to study this perspective, and publish each year the result of its survey in a yearbook published in its official web site and available for the public (also in English). The Annuary is a large collection of environmental official data, based on a set of selected indicators coming from public institution and different scientific bodies.

ISPRA identify some indicators aimed at monitoring to assess the evolution lf population status and associated use. They are been selected through some criteria: rapresentativity, able to representing trends; available data and their quality, geographic completeness, metholodologic reliability, complexity, indicators present in European report. Biodiversity is focused in “Biosphere” section, but important data are available in “Production: Agriculture and Forestry” and “Planification Tools” sections. “Biosphere” section includes 15 indicators, divided in 4 themes:

- ✓ Biodiversity: trends and changes (6 indicators);
- ✓ Protected areas (3 indicators);
- ✓ Umid zone (2 indicators);
- ✓ Forest (4 indicators).

“Production: Agriculture and Forestry” section includes 16 indicators:

- ✓ Agriculture (13 indicators);
- ✓ Forestry (3 indicators).

"Planification Tools" section concerns of 2 indicators, related to National Park and Ecologic Network are of interest.

In particular, these indicators are shown in the table below.

Section	*Theme*	*Indicator*
Biosphere	Biodiversity: trends and changes	Threads for animal species
		Threads for vegetal species
		Diffusion of allocton species
		Hunting consistency
		Fishing consistency
		Distribution of ecologic value according Nature Chart
	Protected areas	Terrestral protected areas
		Sea protected areas
		Nature 2000 Network
	Umid zone	Umid areas of international importance
		Human preassure
	Forest	Forestry surface
		Fires
		Polluting agents stress
		Deleafing
Production: Agriculture and Forestry	Agriculture	Farms and utilized agriculture area
		Distribution of fertilizers for agricultural use
		Distribution for agricultural use of plant protection products
		Management of agricultural soils
		Management of water resources
		Quality of water pollution by pesticides
		Farms that adhere to environmentally friendly measures and practicing organic farming
		Cattle-breeding
		Eco-efficiency in agriculture
		Ammonia emissions
		Greenhouse gas emissions
		Farmland concerned by the deliberate, for experimental purposes, of genetically modified plants
	Forestry	Timber and non-woody production
		Certification of sustainable forest management
		Contribution of national forests to the global carbon cycle
Planification Tools	National Park	Implementation of park plan
	Ecologic Network	Implementation in ordinary plan

RECAL Consortium with the other researchinstitutes awith the support of local authorities (Sila National Park and Calabria Eegion) proposed to establish a specific Biodiversity Observatory to monitoring and promote educational activities in the territory.

About Sila Area we can find some studies investigating about biodiversity. With regard to the abiotic parameters:

- Periodic monitoring scheduled in the "Piano di Tutela delle Acque (Regione Calabria)" on the quality of water in the areas located within the Sila BR.
- Climate monitoring and research. Monitoring Station of the Aereonautica Militare di Monte Scuro; Ciancio.
- Periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve required for drafting the "Rapporto sullo stato dell'ambiente (Regione Calabria)". For the abiotic section: atmosphere, geosphere, physical agents, hydrosphere, natural and anthropogenic risks, landscape, etc.
- Monitoring of the hydrological balance in basins and water processes in *Pinus laricio* populations. "Bonis bacino" sampling point of the Istituto per i Sistemi Agricoli e Forestali del Mediterraneo (CNR).

Biotic parameters:

- Periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve required for drafting the "Rapporto sullo stato dell'ambiente (Regione Calabria)". For the biotic section: nature and biodiversity.
- Multiyear social and economic plan for the Sila National Park.

There will be a continuation of research and monitoring activities as part of fauna research regarding: wildcat, deer and roedeer and regarding the flora and fauna check list for Biogenetic Reserves. Furthermore, the usual periodic monitoring previously described for the biotic, abiotic and socio-economic factors will continue.

14.3.4 What measures will be used to conserve genetic diversity and practices associated with their conservation?

In addition to the measures already mentioned at § 14.2.3, in the proposed Biosphere Reserve, with the focus on conservation of genetic diversity,there are also 9 National Biogenetic Nature Reserves of which 7 are among the Natura 2000 sites, (*Coturelle - Piccione, Gallopane, Gariglione Pisarello, Golia Corvo, I Giganti della Sila*[14]*, Macchia della Giumenta - S. Salvatore, Poverella Villaggio Mancuso, Tasso - Camigliatello, Trenta Coste*). The management of the aforementioned Nature Reserves is the responsibility of the Park Authority.

Table: Biogenetic Nature Reserves

Name of Reserve	*Geographic Location*	*Size*	*Property*
Riserva Naturale Statale I Giganti della Sila	Sila Grande - Cosenza	5.44 ha	State Property
Riserva Naturale Golia Corvo	Sila Grande -	350 ha	State Property

14 Whose primary endpoint is to safeguard a ultra centenarian pine forest and conserve an ecosystem which is suitable for the production and subsequent collection of seeds to create new forests and for genetic research.

	Cosenza		
Riserva Naturale Gallopane	Sila Grande - Cosenza	200 ha	State Property
Riserva Naturale Tasso Camigliatello Silano	Sila Grande - Cosenza	223 ha	State Property
Riserva Naturale Poverella Villaggio Mancuso	Sila Piccola - Catanzaro	1,086 ha	State Property
Riserva Naturale Coturelle Piccione	Sila Piccola - Catanzaro	552 ha	State Property
Riserva Naturale Gariglione Pisarello	Sila Piccola - Catanzaro	450 ha	State Property
Riserva Naturale Macchia della Giumenta – S. Salvatore	Sila Grande - Cosenza	323 ha	State Property
Riserva Naturale Trenta Coste	Sila Grande - Cosenza	295 ha	State Property

15. DEVELOPMENT FUNCTION:

15.1. Potential for fostering economic and human development which is socio-culturally and ecologically sustainable:

15.1.1 Describe how and why the area has potential to serve as a site of excellence/model region for promoting sustainable development.

The Sila, located in the heart of the Mediterranean, as described by Guido Piovene (1963) "*is a landscape paradox and it leads us to certain surreal compositions which get their fascination from pulling together diverse and displaced objects. It feels like having fallen into a corner of Scandinavia with the Sila pines being taller and slimmer than the firs.*" "In fact, the particular morphology of the Sila, together with its prime ornament - the coniferous forests and, especially, the *Pinus laricio* forests - make this massif an entirely original area within the Mediterranean region" (Bevilacqua, 1999). It is certainly a fascinating and unexpected reality, the result of particularly favourable ecological conditions, but also a consequence of intense human activity which has shaped the landscape over the centuries.

Sila Biosphere Reserve attempt to achieve two fundamental actions for the benefit of the entire Sila territory: to preserve and protect the natural heritage of the Sila within the protected areas system and to promote the adoption of suitable instruments to rationalise the action programmes in place within the territory in order to encourage eco-compatible development. In this regard, overall Sila National Park has promoted various initiatives:

- it first established the Park Community and then encouraged it to reach the institutional objectives of the Park Authority by stimulating synergic work between the Institutions that are involved in the Park: the Region, Provinces, Municipalities, Mountainous Communities, etc.
- it launched a series of interventions for the protection of the territory, the development of eco-compatible tourism and the internal organisational development of the Park Authority and the contacts with public and private stakeholders.
- it initiated many territorial management instruments, such as: the Park Plan, the Park Regulation and the Park Multi-Year Social and Economic Development Plan.

The whole community of the proposed Biosphere Reserve already work together in some socio economic development project, namely as Local Developmente Integrated Project and the Work Local Plan “SilaLavoro”.

As agriculture has been the historical and long-term traditional activity (cultivation of the "Sila potato" and common wheat are the two main cultivation activities across the entire Sila plateau) and the zootechnics are imbued with the ancient transhumance (with the creation of DOP products such as caciocavallo), the development of the wood supply chain and sustainable tourism are the areas for development for which the proposed Reserve can be the driving force for development of the entire Sila territory.

Through the coordination of Sila National Park, the proposed Biosphere Reserve will make use of alliance strategies for territorial management and for the development of programmes and projects, both through institutional agreements with Public Authorities, Public Bodies and Universities and by entering into agreements with private associations. Located in the Region of Calabria and with consolidated objectives, the Biosphere Reserve covers an area which is the most capable of

successfully taking forward projects funded by the EU[15] for mobility, for environmental and rural area improvement, for the development of competitiveness and diversification in the agricultural, forestry and tourism sectors (for local authorities, universities, research centres, cultural institutions, individual and associate agricultural and forestry entrepreneurs, small and medium enterprises, producer associations, chambers of commerce, etc.) with immediate socio-economic effects on the Sila and Calabrian communities.

In particular, the Park will also propose the implementation of the Integrated Local Development Projects for the creation of Local Tourist Systems/Local Tourist destinations and the Integrated Projects Development for the creation of Rural Districts. The project that will be proposed in relation to the "Sustainable mobility in the Sila National Park: Horseback Trail" will vary by territory. We will try to create a ring system that will affect the Sila plateau in Catanzaro, Cosenza and Crotone, in particular by linking the horseback trail with other realities present in the area, ranging from the Sila farm holiday accommodations to the historical, artistic and archaeological wealth, and allowing one to admire landscapes with views of incomparable beauty

With regard to the Rural Districts, The Sila National Park participated in the establishment of the organising committee of the Sila Rural District for the submission of the request for recognition. By resolution of the Regional Council no. 45 of 28/01/2010 the Sila Rural District has been identified and established under Law 21/2004, encompassing 9 municipalities that are part of the Sila National Park.

15.1.2 How do you assess changes and successes (which objectives and by which indicator)?

Development policies of the Biosphere Reserve Coordination Plan will be periodically assessed and monitored by the Management bodies as stated in the Partnership Agreement. In particular, the MaB-Sila Observatory will be the body in charge of monitoring sustainable development activities, elaborating an assessment table that will be discussed by the Management Committee and the Partnership Assembly.

The main objective identified in the Biosphere Reserve Coordination Plan is the one of developing the territories in a full sustainable perspective, fostering forestry sustainable exploitations and research, compatible and responsible ecotourisms activities and local quality productions (also by organic farming and labeling policies).

To achieve this objective, the Biosphere Reserve management should Stimulate a local debate between the different contact persons of the existing local development plan PISL (Piani di Sviluppo Locale); PLL (Piani Locali per il Lavoro), PIAR (Piani Integrati Aree Rurali), GAL (Gruppi di Azioni Locali), aimed at sharing MaB objectives with the existing project's ones.

The main objective of this strategy will be the one of giving an opportunity of development for the future generation, compatible with conservative fuctions of the protected areas in Sila. To assess this main objective a set of indicators will be identified by MaB Sila Observatory as: demographic trends; employment rates; number of farms; local medium income.

[15] *Worthy of mention are: Regional Operational Programme Calabria FES 2007-2013, Regional Implementation Programme Calabria FAS 2007-2013, Rural Development Plan 2007-2013 (PSR), Interregional Operational Programme (POIN).*

15.2. If tourism is a major activity:

15.2.1 Describe the type(s) of tourism and the touristic facilities available. Summarize the main touristic attractions in the proposed

In the proposed Biosphere Reserve the most important touristic centre is the Sila National Park. It is certainly one of the privileged destinations for national and foreign tourists attracted by the natural and cultural beauty of the plateau and the extraordinary biodiversity of flora and fauna.

There are many tourist activities within the Park. Among the most practised, we would mention:

(1) Mountain bike excursions along trails forged and re-established within the Park, with bike trails and bike hire points located across various areas of the Park (Campo San Lorenzo, Camigliatello, Guzzolini, Valico Monte Scuro, Lorica, Villaggio Mancuso, Cupone, Croce di Magara, San Nicola and Villaggio Palumbo).
(2) Walking excursions along the trails of the plateau. To this end, the Park Authority has put together a map with commentary of 32 nature trails within the Park district which can all be walked by foot.
(3) Horseback excursions along sites of interest in the Sila territory, from the Giganti della Sila (Giants of Sila) to the visitor centres or the old bandit trails.

(4) Cross-country or downhill skiing.
(5) Orienteering.
(6) Canoeing on Lakes Cecita, Arvo and Ampollino (among the largest) and Passante, Ariamacina (among the smaller lakes). In summer, you can also hire sailing boats or surfboards, canoes or skates.
(7) Canyoning in the gorges (Trionto, Vulganera, Coserie, Soleo, Simeri, Alli, Corace, Melito, Crocchio and Tàcina), the canyons and the Park's water ways.
(8) Boating sports on the main lakes of the Park (Arvo, Ampollino and Cecita).
(9) Archery.
(10) Birdwatching: birdwatching points are currently being set up in areas of particular ornithological interest (observation points over lakes in particular).
(11) Paragliding.
(12) Skating.

	Type of tourist activities	*Location in the Biosphere Reserve*
Tourism activities	Recreational fishing	Villaggio Palumbo (Cotronei)
	Alpine skiing	
	Ice skating	
	Summer skiing	
	Mountain biking	
	Alpine skiing (Scuola italiana Sci Lorica)	Lorica (CS)
	Football	
	Tennis	
	Mini-golf	
	Mountain biking	
	3 tracks for cross-country skiing	Passo Carlomagno/Fallistro and Monte Scuro
	Downhill skiing (Scuola di sci Camigliatello)	Camigliatello Silano (CS)
	Trekking	
	Horse-riding	
	Mountain biking	
	Trekking	Pagliara (Fago del Soldato)
	Alpine skiing	
	Birdwatching and orienteering	
	Canyoning	
	Paragliding	
	Walking excursions	
	Educational trails	
	Boating activities (sailing and canoeing)	Park Lakes (Arvo, Ampollino and Cecita)

Tourism facilities and their location

Tourism facilities in the Biosphere Reserve	• Farm Stays/B&B • Facilities for conferences/seminars/workshops • Tourist guides • Info points • Information panels in Braille • Bike tracks • Trails • Translation services • Restoration services/facilities • Audio instruments • Hotels • Facilities for the disabled (paths/wheelchairs, etc...)

Most important tourism facilities in the Biosphere Reserve		
Location in the Reserve	*Type of tourism facility*	*Number*
Lorica (village of Cavaliere)	Ski lift systems	1
	Slopes equipped with ski lifts for alpine skiing	2
	Summer bobsled slope at the bottom of the ski lift	1
	Football fields	…
	Tennis courts and mini-golf courses	…
	Bike tracks	
	Bike hire points	1
	(Scuola italiana Sci Lorica)	1
Passo Carlomagno	Cross-country skiing centre (2.5 to 7.5 km long)	1
	10 km trails for amateurs	1
	Indoor ice skating rink	1
Camigliatello	Rifugio del Tasso (station from where the ski tows depart at 1600m)	1
	Ski slopes (blue slope, red slope and non-coloured slope)	2/3
	Horse riding stables (Circolo Ippico Sila)	1
	Ski lifts	1 chairlift 1 skilift 1 cableway
	Bike track	
	Bike hire points	1
	Scuola Italiana Sci Camigliatello (ski and snowboard hire)	1
Pagliara (Fago del Soldato)	Ski slope (night-lit)	1
	Trails with facilities	
	Itineraries (main, peaks, lakes, walking)	
Villaggio Palumbo (Kr)	Ski lifts	4
	Ski slope	1
	Bobsled slope	1
	Skating rink	1
	Summer ski slope	1
	Snow mobile hire	1
	Skiing school	1
	Bike tracks and bike hire points	
Ciricilla (CZ) – Municipality of Taverna/Villaggio Mancuso	Cross-country skiing track	2
	Downhill skiing track	1
Tirivolo – Municipality of Zagarise (CZ)	Adventure Park "Orme nel Parco"	1

The table below provides specific details of the type and characteristics of the ski lift systems located in the proposed Biosphere Reserve:

Ski lifts in the Reserve				
	Location	*Type of system*	*Characteristics*	*Notes*
1.	Camigliatello Silano (Cs) - SS 107 between Cosenza and Crotone at 1,278 above sea level	Cableway	Length of 1,650 m with a 370 m difference in altitude	The lift systems arrive at Monte Curcio.
		Ski lift	Length of 350 m with a 70 m difference in altitude	
		Blue slope	Length of 2,220 m (from an altitude of 1,748 to 1,386) with a 362 m difference in altitude	
		Red slope	Length of 2,050 m (from an altitude of 1,781 to 1,386) with a 395 m difference in altitude	
		Non-coloured slope	Length of 350 m (from an altitude of 1,479 to 1,395) with an 84 m difference in altitude	
		Chairlift	Length of 1,800 m with a 400 m difference in altitude	
2.	Villaggio Palumbo (Kr) on Lake Ampollino in the Municipality of Cotronei.	Two-seat chairlift	Length: 1,000 m	Villaggio Palumbo can be reached by car from the Alto Crotonese mountainous community or from San Giovanni in Fiore in half an hour.
		Caprarella Ski lift	Length: 250 m	
		Cima Bianca lunga ski lift	Length: 400 m	
		Bucaneve hand-drag	Length: 200 m	
		Ski slope	Length: 20 km	
		Artificial bobsled slope	Length: 1,000 m	
		Ice skating rink	Length: 20x30 m	
		beginner's slope with moving walkway	Length: 120 m	
		Ski slopes	The slopes have a total length of 20 km of which the longest is a scenic route Min. altitude of slopes: 1,350 m Max. altitude of slopes: 1,650 m Skiable difference in altitude: 350 m Artificial snowmaking: 2 km	
		Slope night lighting	Lighting for 2 km	

		Snow park		
		Skiing school		
		Snow mobile hire		
		Summer bobsled	With 2 steel slopes of 1,000 m each	
		Summer ski slope	in neveplast of 120 m	
3.	Lorica (Cs) on Lake Arvo at approx. 30 minutes drive from San Giovanni in Fiore	Cableway	Length of 2,206 m with a 472 m difference in altitude	The lift systems arrive at the top of Mount Botte Donato.
		Ski lift	Length of 688 m with a 195 m difference in altitude	
		Ski lift	Length of 763 m with a 212 m difference in altitude	
		Blue Slope cableway return	Length of 3,300 m (from an altitude of 1,877 to 1,405) with a 472 m difference in altitude	
		Red Slope Cavaliere ski lift	Length of 1,000 m (from an altitude of 1,584 to 1,389) with a 195 m difference in altitude	
		2 Red Slopes Valleinferno	Length of 1,000 m and 350 m (from an altitude of 1,867 to 1,665) with a 212 m difference in altitude	
		Artificial bobsled slope		
4.	Ciricilla (Cz) Municipality of Taverna, near Villaggio Mancuso	Ski lift		……
		Downhill skiing track	Length 2,000 m	
		Buturo downhill slope		
		Tirivolo downhill slope		

- Adventure Park "*Orme nel Parco*": area with facilities within the Reserve (Zagarise)
- Adventure Park "*Silavventura*": area with facilities within the Reserve (Lorica)

"*Orme nel Parco*" and "Silavventura" are acrobatic parks suspended among the trees and immersed in the breathtaking Sila forests. They have been designed for visitors of all ages and types, from children to school students. As a result, there are various scheduled activities, from simple guided or cycling excursions to recreational climbing and trekking to discovering the most beautiful natural attractions of Calabria. Below is a table of the various activities offered, divided into type and target users:

Adventure Park "Orme nel Parco" Activities		
Type of activity	*Target users*	*Notes*
Guided trekking/excursion in the Presila Catanzarese mountainous community	Families/all ages	The National Park trails are walked accompanied by a GAE (Environmental Excursion Guide)
Mountain bike excursions	Families/all ages	The National Park trails are cycled freely or with a GPS.
Orienteering	Children (6-13 years)/schools	Team game aimed at developing orientation skills with the aid of a compass.
Sentimental journeys	Groups and students	Pages of books read by costumed actors by using the five senses.
Sports climbing	Groups and students	With 6 m artificial walls within the Park
Entertainment	Children (5-10 years)	Outdoor games and creative activities with entertainers who aim to stimulate curiosity about the surrounding environment.
Environmental interpretation at the Centro Visite "Garcea" (Monaco)	All ages	Educational activities to raise awareness of the biodiversity in the Sila with nature experts
Environmental education at the park	All ages	Teaching activities that include manual activities, games, studies on the ecology of beech forests.
Summer camps	Schools	
Outdoor company training	Companies/businesses	Training sessions surrounded by nature
Events	Companies/businesses	Organisation of company meetings and assemblies or events to launch new products and services.

Accommodation facilities active in the territory[16]								
Province	Hotels		Bed & breakfast		Camping and country house		Other	
	Number	Bed	Number	Bed	Number	Bed	Number	Bed
Cosenza	219	25,416	186	502	183	26,806	67	2,763
Crotone	26	5,321	7	37	34	9,881	24	381
Catanzaro	48	6,331	51	250	41	8,332	8	311
BR total	293	37,068	244	789	258	45,019	99	3,455

An important point to mention is the "undeclared tourism", which can be observed with the presence of unoccupied houses which are not officially surveyed and cannot, therefore, be easily identified. In 2002, ISTAT had estimated that within the Reserve, over 48,000 second holiday homes had been used with a tourist flow of more than 2 million people which, if compared to official numbers, is quite a significant figure.

[16] Source: CTS processing of ISTAT data 2008

15.2.2 How many visitors come to the proposed biosphere reserve each year? (Distinguish between single-day visitors and overnight guests, visitors only visiting the proposed biosphere reserve or only passing on the way to another place). Is there an upward or downward trend, or a particular target?

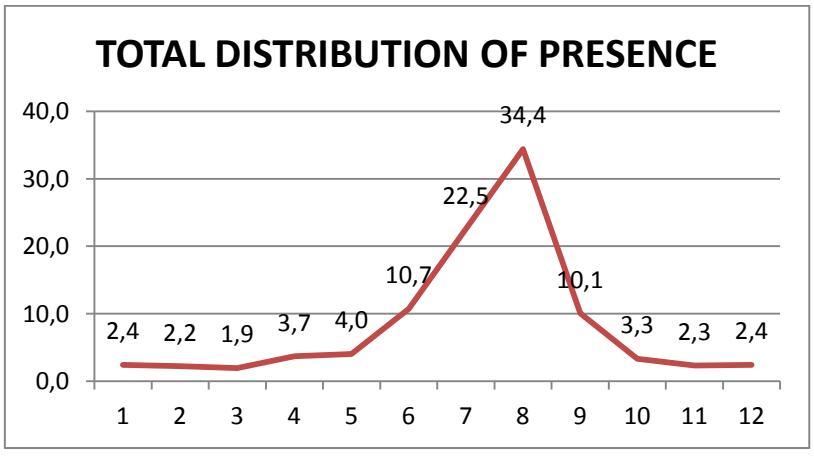
Percentage of visitors in the Reserve	National 90.7%
	Foreigner 9.3%

In 2006, the BR municipalities, particularly those located in the Province of Cosenza, recorded 85,281 arrivals and calculated 389,513 stays based on the number of accommodation facilities. This data highlights the high prevalence of Italian tourists compared to foreign tourists. On average, 90.7% of arrivals were Italians and the remaining 9.3% were foreigners against the 15.6% recorded overall in Calabria.

The season of preference is summer with a peak in August, while in winter, unlike the regional trend, there is a slight increase between the months of December and February, mostly for skiing (months in which winter sports are practised). It is worth mentioning that in winter, the area is used as an excursion destination which does not attract tourists from faraway places.

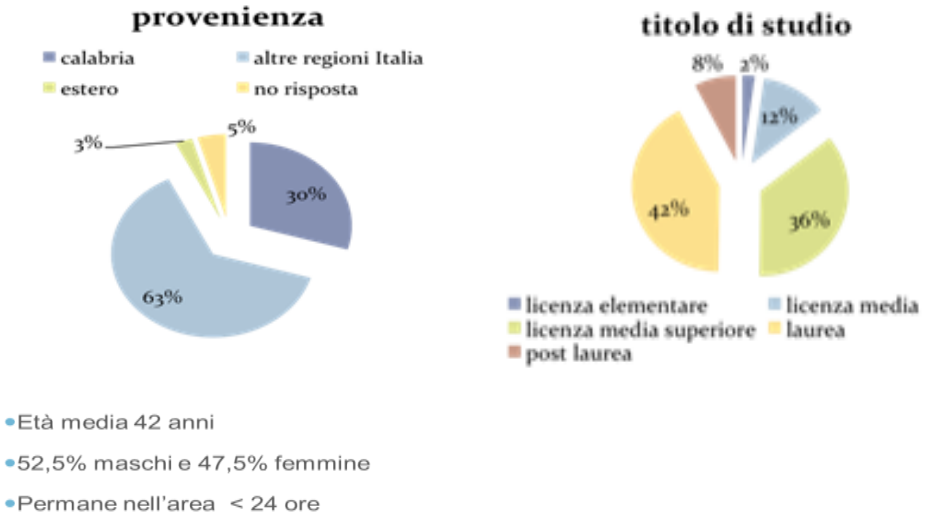
Arrivals and stays[17]

Italian arrivals	***Italian stays***	***Foreigner arrivals***	***Foreigner stays***	***Total arrivals***	***Total stays***
77.334	*318.877*	*7.947*	*70.636*	*85.281*	*389.513*



17 Source: Calabria Tourism Monitoring Body 2012.

Visitors Profile[18]



Below is an approximate calculation of the type of visitors in the Reserve based on their origin (if national, local or foreign). As one can see, the percentage of foreign tourists visiting the Sila Park is much lower (3%) than the percentage of nationals (63%) or locals (30%). It is also worth noting that the Visitor Centres within the proposed Reserve in the Sila National Park have a step counter to monitor the flow of tourists in the areas in question. The data obtained is interpreted in the table below.

Visitor Centres[19]	***Visitors***	***Year***
Centro Visite A. Garcea (CZ)	100.000	2011
Buturo casa Giulia (CZ)	2.000	2011
Centro Visite Cupone (CS)	106.882	2011
Riserva Giganti della Sila (CS)	20.000	2011

2) Presences as registered visitors with guides at the Centro visita Cupone[20] are the following:

Period	**No. Guides Performed**	**Total Presences**
January-December 2009	177	Total 10,685
January-December 2010	202	Total 10,506
January-December 2011	171	Total 9,100

- Applications for students, the elderly and disabled people:

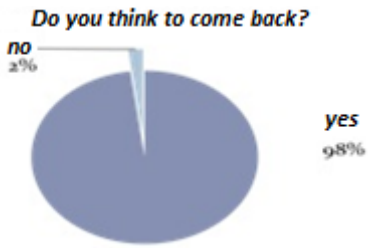
Grant of contributions to cover 90% of the travel expenses for Schools, Organisations, Associations and Cooperatives of elderly and disabled people from all over Italy who organise social excursions or trips with at least two nights' stay in accommodation facilities located within the Park between 15

18 Provenience and level of study. Source: processing of questionnaires distributed at Visitor Centres and Museums of Park - 2010
19 Source: Territorial Office for Biodiversity of Cosenza and Catanzaro.
20 Source: Territorial Office for Biodiversity of Cosenza and Catanzaro - Target of reference schools and the elderly

March and 30 May and 15 September and 15 November. This initiative has markedly increased off-peak tourism.

Year	*Arrivals*	*Stays*
2006	*3.432*	*7.492*
2007	*4.874*	*11.647*
2008	9.359	12.939
2009	*10.050*	*19.424*
2010	*10.130*	*21.199*
2011	*10.000*	*21.000*

Restore and renew of the old sawmill to the Cupone recreative Centre of the Park in 80s



Source: processing of questionnaires distributed at Visitor Centres and Museums in the Park - 2010

The so-called "turismo sommerso" (undeclared tourism) has not been included in these totals given that its flow in terms of arrivals and stays obviously slips through the accurate and systemic monitoring system. The "undeclared" segment represents quite a large segment of the tourist market with absolute values which are even higher than "official" tourism figures, so the exclusion of these numbers from the totals greatly distorts the actual definition of the local tourism system.

15.2.3 How are tourism activities currently managed?

In the last year Sila National Park has launched the first trial in Calabria of SmartDMO, an initiative designed to promote more intelligent and integrated tourism offer in Sila seizing the range of business opportunities offered by internet. SmartDMO is designed to help players in the area to place their product on the web making team. Its goal is to create in whole Sila area a management of relationships between tourism operators through digital channels.

The ecotourism activities present in the boundaries of buffer zone are directly managed by Sila National Park. All the tourism facilities built in the boundaries of the National park are managed by Park Agency. At the regional level the competent authority for the Tourism is in cgarge ofr the activities of promotion and monitoring of tourism activities and trends in all the Calabria Region territories.

At this stage is missing an unique touristic plan for the proposed Biosphere Reserve: some of the Municipalities involved, anyway, shared some project to implement tourism activities. Also the Park Agency tried to stimulate a common management of tourism resources through some actions identified in PPES.

Nowadays, a specific local entity is in charge of monitoring and suggest policies for tourism at a regional level: the Regional Informative System. Every year this regional observatory report with quantitative analysis about data and trends registered in the area.

15.2.4 Indicate possible positive and/or negative impacts of tourism at present or foreseen and how they will be assessed (linked to section 14)?

Type of threat caused by tourism	*Threat to the environment*	*Threat to tourism*
Urbanisation and excessive infrastructures in natural areas with a change in land use.	Erosion of some categories of use of highly natural land Loss of biodiversity	Loss of natural tourist attractions
Illegal collection of arboreal and undergrowth plants	tree felling over large areas wildfires	Alteration of the landscape Loss of valuable landscape elements
Lighting fires in prohibited areas	Wildfires and habitat erosion	Alteration of the landscape Loss of valuable landscape elements
Pressure to extend the urbanised areas and increase of roads, ski slopes etc.	Urbanisation and loss of biodiversity Erosion of habitats	Alteration of the landscape Loss of valuable landscape elements
Pollution caused by waste from tourist villages and other infrastructures located across the territory	Pollution from urban waste	Impossibility of using water for recreational purposes
Use and disposal of solid and liquid wastes (detergents and toxic chemical substances)	Pollution by toxic chemical substances	Impossibility of using water for recreational purposes
Increase of vehicular traffic	Damage to vegetation	Loss of attractiveness

with consequential emissions into the atmosphere	and fauna	in polluted areas
Waste dumping	Diffusion of waste that is hazardous for fauna infections and infestations environmental deterioration	Loss of attractiveness in polluted areas
Pressure on forests and illegal collection of products from the undergrowth	Alteration and fragmentation of ecosystems Damage to important animal and vegetable species	Loss of attractiveness
Construction of accommodation facilities and ski slopes without a suitable environmental assessment	loss of forest and grassland mountainous habitats, interfering with fauna, alteration of the landscape	Permanent infrastructures not connected to suitable services (in time and space) lead to high management costs and, as a result, degradation and loss of attractiveness in the area for tourists

15.2.5 How will these impacts be managed, and by whom?

These impact will be managed by the management body of the Biosphere reserve, in coordination with the stakeholders involved in the tourism management, through two different strategies.

At the level of ecotourism activities that took place in the buffer zone, Sila Biosphere Reserve policies will develop the protection tools already present in the National Park Plan in order to ensure the protection of the Sila territories under this Plan.

In the transition zone, the Sila Biosphere Reserve Coordinator, together with the Management Committee and the MaB-Sila Observatory, will stimulate shared process with local stakeholders and authorities for the adoption of specific mesearues to avoid any negative impacts on the objective of conservation and sustainable development of the proposed Biosphere Reserve. Different policies will be suggested, based on periodic analysis of data concerning flow of tourism, tourist infrastructures and tourism intensity.

15.3. Agricultural (including grazing) and other activities (including traditional and customary):

15.3.1 Describe the type of agricultural (including grazing) and other activities, area concerned and people involved (including men and women).

In the Sila area farms have an average surface between 1 hectare and 5 hectares with the surface of the companies mainly belonging to the holder farmer. The majority of farms included among the upland of Sila have an exstension of one and the 5 hectares. Represented is also the category 5-10 Ha although to a lesser extent. From using of farm land is also evident the great extent of permanent

grassland and pastures that are around 17% and forests that have always been the vegetation present in the area. The tree crops are scarce, around the 3%. The arable land in the order of 20% of the UAA, represent the ordinariness of the area with the potato in the foreground and cereals, especially wheat. In short we can say that the area occupied by crops on the plateau Silano interests a strip of land between 1,000 and 1,400 meters above sea level.

The agriculture surface is about 87,000 hectares, of which:
- 33.000 hectares in olive trees:
- 20.000 hectares in potato;
- 18.000 hectares in cereals autumn winter crops;
- 15.000 hectares in fruit and vineyards;
- 15.000 hectares in pasture grass.

The potato crops in Sila engages the ground from March-April to September-October. Tipically, the wheat is placed in succession to it, from late October to early August. the preparation of the seed bed for the potato culture consists in a plowing, harrowing a and fertilizer. The plowing is done in March-April, fertilization is made in pre-sowing and broadcaster, immediately after running the harrowing. the fertilizer used is a ternary title with 11-22-16; the quantity used in the majority of cases is between 17-20 quintals per hectare. The sowing is carried out with procedures mechanized mind using two-row seeders equipped with container shed where the tubers seed that using tape with cotter pins are placed in the ground. The sowing adopted by most companies is around 45-48000 plants / ha (30-32 cm on the row and 70 between the rows). Irrigation is performed to rain, plants consist of motor pump, pipes and irrigators. The average number of irrigations is 5-6 interval of 7-10 days (60-70 mm at a time). Usually after each watering making pesticide treatments. As for the collection, in companies that perform it manually, you using two-row scavatuberi who grub up the tubers and leave them on the ground for the next manual harvesting. In companies that perform mechanical harvesting, the tubers eradicated through a tape, are transported in a container that once filled it can download automatically in the trailers.

The wheat is grown in succession to potato crops. So the work of preparation for planting is only the harrowing following the digging of potatoes. The soil does not need plowing because after the digging potatoes the soil is well stirred and then proceed with preliminary work and then sowing without any fertilization. Only in hedging is carried out fertilization with ammonium nitrate.

Animal husbandry is an other of the major agricultural activities of the Sila. The most common phenomenon appears to be the transhumance of cattle although it is becoming increasingly popular breeding stable. Transhumance is the seasonal migration of animals. This custom, which expected - during the winter season and, on the contrary, the height of the summer season – the moving of the cattles from the hills and mountains to the coastal plains and vice versa. In this area it is very common transhumance from the coast to the Sila. Frequently in late spring it is possible to meet many breeders on the streets with their pets that go up to the pastures of Sila for remain there until October. With the improvement of living conditions on the plateau Silano there are many farms that have diversified their production by introducing the herds of cattle stable. The farming system appears to be more widespread than semi-wild. This farming system involves the keeping of animals for 4 months inside the barn and stable for the rest of the year out on the lawns or in the pastures.

In the boundaries of the nominated area, we can find also traditional cultivation connected to products of great importance for their qualities. Calabria Region is the fourth in Italy for number of protected products. Its 36 protected denominations fall mainly in the sector of wine, charcuterie and olive oil. Some of this are cultivated in the boundaries of the proposed Biosphere Reserve.

In the proposed Biosphere Reserve some interesting traditional practices contribute for the making of of wine and food of international interest:

- ✓ Melissa DOC (wine);
- ✓ Savuto DOC (wine);
- ✓ Terre di Cosenza DOC (wine);
- ✓ Calabria IGT (wine);
- ✓ Val di Neto IGT (wine);
- ✓ Alto Crotonese DOP (olive oil);
- ✓ Bruzio DOP (olive oil);
- ✓ Caciocavallo Silano DOP (cheese);
- ✓ Fichi di Cosenza DOP (fruit);
- ✓ Liquirizia di Calabria DOP (fruit);
- ✓ Clementina di Calabria IGP (fruit);
- ✓ Patata della Sila IGP (vegetable);
- ✓ Capocollo di Calabria DOP (cold cut);
- ✓ Pancetta di Calabria DOP (cold cut);
- ✓ Soppressata di Calabria DOP (cold cut);
- ✓ Salsiccia di Calabria DOP (cold cut).

On the other hand, a specific local Sila District for agriculture, where the majority of the municipalities involved in the candidacy, has been created to manage agriculture policies and mediate the local need with regional and national authorities. With regard to the Rural Districts, The Sila National Park participated in the establishment of the organising committee of the Sila Rural District for the submission of the request for recognition. By resolution of the Regional Council no. 45 of 28/01/2010 the Sila Rural District has been identified and established under Law 21/2004, encompassing 9 municipalities that are part of the Sila National Park.

15.3.2 Indicate the possible positive and/or negative impacts of these activities on biosphere reserve objectives (section 14).

Activities	*Negative effects*
Agricultural and/or industrial practices: • Intensive agriculture; • Monoculture; • Factories; • Agribusiness • Use of pesticides • Forestry/energy production line	• Surface water and groundwater pollution/soil sealing • Eutrophication • Regression of biodiversity • Air pollution • Reduction of forest cover

15.3.3 Which indicators are, or will be used to assess the state and its trends?

The MaB-Sila Observatory, in collaboration with the other local authorities and the government bodies of the proposed Biosphere Reserve, will identify some indicators to assess the state and trends of local agriculture, according eith the local experts of Sila District for Agricutlure. Namely:

- ✓ Percentage of soil used for agriculture;
- ✓ Number of agriculture production per year;

- ✓ Percentage of different productions per year;
- ✓ Number of employed in the primary sector;
- ✓ Evaluation of the value added of the BR products.

These indicators could be integrated in the future analysis also taking into account the assessment conducted by local authorities and union trades.

Already some analysis on the agriculture are made by the Region and the local district for agriculture, considering in particular:

- ✓ livestock farms;
- ✓ organic farming practice;
- ✓ agricultural area used;
- ✓ sustainable forest management certification;
- ✓ distribution of fertilizers (fertilizers, soil and correction);
- ✓ distribution of pesticides (herbicides, fungicides, insecticides, acaricidie);
- ✓ eco-efficiency;
- ✓ emissions of ammonia;
- ✓ greenhouse gas emissions;
- ✓ management of agricultural soils;
- ✓ water resources management;
- ✓ wood production;
- ✓ water quality - pollution from pesticides;
- ✓ agricultural land covered for experimental purposes of genetically modified plants;
- ✓ use of pesticides.

15.3.4 What actions are currently undertaken, and which measures will be applied to strengthen positive impacts or reduce negative impacts on the biosphere reserve objectives?

Activities	*Measures taken*
Agricultural and/or industrial practices: • Intensive agriculture; • Monoculture; • Factories; • Agribusiness • Use of pesticides • Forestry/energy production line	• Land reconversion • Crop rotation • Restoring traditional farming practices • Extensive agriculture • Providing information and sensitization

15.4 Other types of activities positively or negatively contributing to local sustainable development, including impact/influence of the biosphere reserve outside its boundaries.

15.4.1 Describe the type of activities, area concerned and people involved (including men and women).

Activities and/or uses in transition
Urbanisation Tourism/ecotourism Migration flows Education
Presence of quarries/dumps

Agricultural and/or industrial practices: • Intensive agriculture; • Monoculture; • Factories; • Agribusiness • Use of pesticides • Forestry/energy production line
Fishing and hunting

15.4.2 Indicate the possible positive and/or negative impacts of these activities on biosphere reserve objectives (section 14). Have some results already been achieved?

Activities and/or uses in transition	*Negative effects*
Urbanisation Tourism/ecotourism Migration flows Education	• Illegal construction • Anthropic/traffic load • Surface water and groundwater pollution/soil sealing • Exploitation of natural resources (water) • Forest fires
Presence of quarries/dumps	• Possible reopening
Agricultural and/or industrial practices: • Intensive agriculture; • Monoculture; • Factories; • Agribusiness • Use of pesticides • Forestry/energy production line	• Surface water and groundwater pollution/soil sealing • Eutrophication • Regression of biodiversity • Air pollution • Reduction of forest cover
Fishing and hunting	• Exploitation of natural resources • Loss of biodiversity;

15.4.3 What indicators are, or will be used to assess the state and its trends?

The indicators for these activities will be identified by MaB-Sila Observatory, according to the local stakeholders involved in the management and monitoring of the proposed Biosphere Reserve.

Some evaluation were made in particular for the elaboration of the PPES and of the development policies by CUEIM - Consorzio Universitario di Economia Industriale e Manageriale entitled "Check up per la formulazione delle prime ipotesi di quadro strategico e per la valutazione delle iniziative volte allo sviluppo del Parco della Sila". In particular, the picture that emerges from the analysis, even if simplified, is of a territory with some difficulties linked to emigration. The BR candidacy want to go over the difficulty of local players to integrate their energies towards a shared trajectory, giving a common shared basis to develop activities and initiatves together.

This research has highlighted the state of this area, indicating opportunities and limities.

Strong points	*Weak points*
✓ Abundant natural heritage	✓ Limited integrations between institutional entities

✓ Excellent eno-gastronomic tradition	✓ Lack of specific education for local operators
✓ Abundance of areas for new production and sustainable activities	✓ Limited infrastructures connections
✓ Spread of local costumes through specific projects	✓ High depopulation trends
✓ Artistic and cultural heritage of high quality	✓ Difficult to allocate new productive activities

15.4.4 What actions are currently undertaken, and which measures will be applied to strengthen positive impacts or reducing negative ones on the biosphere reserve objectives?

Activities and/or uses in transition	***Measures taken***
Urbanisation Tourism/ecotourism Migration flows Education	• Decongestion plan • LIFE + project • Programs to reduce water pollution and sustainable use of resources • Monitoring wooded areas worst hit by fires. • Information/sensitisation
Presence of quarries/dumps	• Recovery interventions
Agricultural and/or industrial practices: • Intensive agriculture; • Monoculture; • Factories; • Agribusiness • Use of pesticides • Forestry/energy production line	• Land reconversion • Crop rotation • Restoring traditional farming practices • Extensive agriculture • Providing information and sensitization
Fishing and hunting	• Regulation of fishing and hunting areas • Providing information and sensitization

15.5 Benefits of economic activities to local people:

15.5.1 For the activities described above, what income or benefits do local communities (including men and women) derive directly from the site proposed as a biosphere reserve and how?

With regard to the relationship between tourism and local production, it should be mentioned that the enogastronomical products are undoubtedly the primary tourism ambassadors and so there is a necessity to make them recognisable by introducing a marking that can guarantee quality and traceability.

Subjects benefitting from the income from tourism activities	• local communities • agricultural/handicraft/manufacturing businesses • tourism businesses

	• small-medium enterprises/companies • Sila National Park • residents of the Reserve (of all three areas involved) • stakeholders

Currently there is no local marking on agri-food produce, but during an interview with the BR coordinator, a wish was expressed to promote the establishment of a proprietary marking for typical agri-food products of the Sila in order to qualify, protect and distribute them on an increasingly competitive market. There are many typical products in the area, which often also have certificates of quality: these include oils, wines, cured meats, cheeses, honey and the famous Sila potato. Despite the fact that the agricultural land dedicated for vineyards is quite small, the Sila territory and neighbouring areas produce fine and quality wines: this is the case for the IGT Valle del Crati wine and Val di Neto wine and the Donnici DOC wine.

The cultivation system for potatoes has also emerged as a strength of the Sila plateau, one that feeds its production supply chain and has a Protected Geographical Indication (PGI). The strengths of the Sila economy can be linked back to three production supply chains: the potato supply chain, the livestock supply chain, and the wood supply chain.

In the current period of European planning, we are attempting to give value to these resources, especially by participating in Integrated Supply Chain Projects (PIF). Mention should also be made of the Integrated Projects for Rural Areas (PIAR) which promote and perform coordinated public interventions which aim to adapt infrastructures for mobility and improve service usability, by supporting initiatives aimed at preventing environmental risks and enhancing the natural/landscape value of the territory.

4 DOP markings on Sila cured meats: Salsiccia di Calabria, Soppressata di Calabria, Capocollo di Calabria and Pancetta di Calabria. 1 DOP marking: Caciocavallo Silano 1 PGI: Sila potato. With a view to protecting, promoting and raising awareness around the identity of Calabria, particularly in the Province of Cosenza, by enhancing the value of natural resources and recovering the culture and local traditions linked to agriculture, enogastronomy and the rural environment and local traditions, with Presidential Resolution no. 15 of 18 March 2011, a memorandum of understanding was approved between the Sila National Park Authority, the Cosenza Chamber of Commerce and the Pollino National Park Authority for the implementation of concrete cultural, promotional and marketing activities in order to raise awareness for the respective members of the above bodies and to create the necessary coordination to encourage social aggregation, animation of the territory, enhancement of the culture, artistic heritage and landscape and to disseminate local traditions with the ultimate aim of making the tourism chains in the area operative while respecting the environmental resources.

Within the park there are 112 businesses which have the ISO 9001 certification, 24 which have the ISO 14001 environmental certification and 2 which have the EMAS certification. From a socio-economic study conducted on the park, it was found that in the industry sector, the majority of local units belong to the construction sector (50.63%) and the manufacturing sector (47.92%), the agricultural sector has a negative trend at 4%, fishing activities have a very low percentage, representing only 0.50% of the entire Park Geographical Area. And in fact, the municipalities of the PGA mainly stretch across interior hilly and mountainous land.

The lack of large and medium-large enterprises is evident, not only in all individual municipalities but also in the provinces of Crotone and Catanzaro. The industrial structure is quite basic as it does

not consist of small and medium enterprises, but rather micro-enterprises and individual companies with an average of 2.92 employees. In this regard, however, the Park Authority is taking steps to act and stimulate socio-economic development.

15.5.2 What indicators are used to measure such income or other benefits?

Among the numerous initiatives for this section, we would mention:

- Report on the state of the environment (Region of Calabria): periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve. For the socio-economic section: use of resources, tourism, social aspects, etc.)
- Certification of the Sila National Park Environmental System in accordance with the UNI EN ISO 14001 standard.
- Study entitled: "Proposte per un nuovo modello di sviluppo locale".
- Study entitled "Il Parco Nazionale della Sila come fonte propulsiva di ricchezza e di lavoro tra uso corretto delle fonti energetiche rinnovabili e integrazione sociale".
- Application to the Ministry of the Environment and Protection of the Land and Sea "Fonti Rinnovabili, risparmio energetico e mobilità sostenibile nelle aree protette".
- Creation and recognition of the Carta Europea del Turismo Sostenibile del Parco Nazionale della Sila.
- Research by the CUEIM - Consorzio Universitario di Economia Industriale e Manageriale on behalf of the Park Authority entitled "Check up per la formulazione delle prime ipotesi di quadro strategico e per la valutazione delle iniziative volte allo sviluppo del Parco della Sila".

In particular, the table below shows some driver to assess those activities identified by the last one study mentioned above.

Driver	***Note***	***Pertinence***
1. Involvement of the local stakeholders	It is necessary to recall the concept of integration in support of initiatives that the various types of operators in the area will want to put in place. Consequently initiatives presented will be appreciated if between the actuators are present, coordinated by the Park, public agencies and institutions in conjunction with private operators (or their associations).	All projects
2. Mixed funding	The initiatives will be preferred if they provide for their realization, also a mixed financial coverage (ie with the help of private capital). The funding will represent a further expression of the integration of forces for the development of the area.	Where relevant
3. Market research or benchmark analysis available	Any initiative, as part of its proposal, it must be accompanied by a brief feasibility study that drives the analysis of the desired stakeholder (or at least from a marketing study to define customer segments potentially affected) and which presents, where available, even references to other operational best practices found in other natural areas or similar contexts.	All projects

4. Adequate human resources to manage the activities	Initiatives need to be overseen directly by the Coordinator in order to ensure monitoring related to their effective implementation. All proposals must be submitted in a format determined by the BR, which includes a GANTT articulated in terms of expected results, time and costs, as well as a model for monitoring the progress of individual jobs during construction.	All projects
5. Law 394/91 standards respected	The rule provides that in protected natural areas and in their nearby could be promoted the development and testing of eco-friendly production activities	Where relevant

15.6 Spiritual and cultural values and customary practices:

15.6.1 Describe any cultural and spiritual values and customary practices including languages, rituals, and traditional livelihoods. Are any of these endangered or declining?

From village to village, in the Region's heart, inlands and on the coasts, Sila offers a Historical Lesson, a variety of different languages, a wonderful nature and also art and handicraft.

The costume worn by women represented a family capital. It was the work of expert craftmen and only wealthy people could afford this expense. It cost a mint of money because of the high quality fabric, silver and golden embroideries, laces, jewels. Buying such a dress was an investiment and mothers and daughters passed it from generation to generation. In Calabria the variations can be noticed only in women's costumes. On the contrary men's costume is rather the same and the differences concern only colours: black or blue; the type of fabric: wool or cotton ; the type of hat: a rigid cone or a soft hat, the first, decoreted with multi-coloured hatbands, was considered a sort of political mark, the belonging to brigandage as an Austrian Decree established in 1848. In the Sila Area for the women's costume silk and satin are the favourite tissues with colg embroidered boleros hemmed with laces, two skirts laid one upon the other and stuffed in the hips. The costume was mostly worn by married women, yet their hairstyle or the veil worn in a particular way and bracelets and rings showed a person's civil state.

Sila area's history can be read not only in the streets, on monuments, in the archeological museums, but also in the ethnographical and folklore collections. Some constant elements can be found in Calabrian traditions: Carnival feasts are rare and often are overlapped to pigs slaughtering as a way to exorcise sorrows and problems. On the contrary the processions during the Holy Week are very diffused: this clearly underlines the deep link to religion and the incapacity to free anxiety into transgression. Reknown are the processions at Cassano all'Ionio (CS). At easter you can see the so-called "Affruntata" that is the meeting between Christ Resurrected and His Mother. In the province of Catanzaro you can assist the "Pigghiata" that is Christ caught before His Passion. In summer many villages have the tradition of "Flaggellati" or "Spinati" where the faithful are bare-footed and their heads and bodies are covered with thorns to show their penitence.

But the culture is expressed also through the cuisine, with specific food, that nowadays the old women use to make for the traditional festival, as for example the "Pitta 'mpigliata", of San Giovanni in Fiore (CS), the "Bucchinotti" of Acri (CS), or the "Pitta 'nchiusa" of Zagarise (CZ), traditional sweets of this Area.

One of the most important intangible value is linked to the agro-pastoral values of this territories: in the proposed Biosphere reserve is living one of the most traditional human practice; the transhumance. The Sila area is one of the most important areas in Italy for the ancient transhumance, the movement of flocks and herds from hilly areas to mountain areas in the summer and vice versa in winter. A vast network of "sheep-tracks", routes used for centuries by transhumance, is present today in the area. Nowadays only three are the routes used by farmers.

15.6.2 Indicate activities aimed at identifying, safeguarding, promoting and/or revitalising such values and practices.

In the proposed Biosphere Riserve there are many initiatives aimed at promoting traditional values and practices, managed by local authorities and local association.

These inititatives cover a wide range of local traditions, mainly religious practices and rural identity, as already explained in § 15.6.

Some of these are linked with the sustainable development. The project "Fattorie aperte in Sila" is directed towards families and tourists of all ages and nationalities and involves a cycle of guided tours for tasting activities at farms, farm stay accommodation, dairy farms and commercial farms in the Sila. The aim is to raise awareness in the population and, more specifically, in future generations regarding the agricultural and artisan activities in the Sila territory, thus favouring the local community (artisans, farmers). With the programme "dodici ore con il fattore" (12 hours with the farmer), the visitor/tourist has the opportunity to work alongside the farmer during milking, lunch, animal care and stall closure activities. They can then purchase typical products from the farm shop or farm stay accommodation they have visited, thus contributing to increasing the income of local people and small commercial farms located in the Sila area.

An important activity related to the rural identitiy of the local communities is “Transumanze”, a periodic event to revitalise the ancient practice of transhumance in the area. This event is aimed at promoting and showing to the young generation the importance of this traditional practice, part od the identity of the local community.

It is important to underline that Calabria Region begin a research to evaluate a possible candidancy of the Calabrian language and dialect as intangible cultural heritage element for the inscription in the Unesco Representative List.

15.6.3 How should cultural values be integrated in the development process: elements of identity, traditional knowledge, social organizations, etc.?

One of the axes of interventions for the development function has been identified in the revitalization of the traditional craftsmanships linked to the cultural identities of the local communities, as well agricultural and rural practices and rituals.

This is of central importance beacus traditional knowledge dos not consist in isolated solutions but in a whole system that includes know-how and environmental awareness, appropriate producers, sensitivity to social cohesion and solisarity, capability in the administration of community resources, services and equipment as well as organizational and managerial procedures and cultural, symbolical and spiritual values. Each technique is part of an integrated relationship, among society,

culture and production, consumption and transfer of weakth, that is closely tied to a world view based on the careful management of local resources. they are therefore strictly connected with the traditional culture expressions and with the intangible heritage, incorporating ethical, civil and human values. the synthesis between traditional knowledge and social systems leads to forms of intensification by appropriately using the resources, antailing positive status changes, assuring quality of day life. The use and the perpetuation of these knowledge is strictly linked at festivity and ritual moments consolidating the cohesion, the identity and the social well-being of Sila communities.

With the emigration and the dramatic transfer from traditional habitats into new urban agglomerations, the trend of abandonment of the prime sector by large segments of the population and with the superifical suggestion of the absolute superiority of modern technology, the process of conservation and dissemination of knowledge could be interrupted and loss without specific initiatives, helping good welfare conditions, social cohesion , confidence within cultural identity and safeguarding traditional systems. Local knowledge, if well managed, can be a propulsive factor.

15.6.4 Specify whether any indicators are used to evaluate these activities. If yes, which ones and give details.

As stated in the Partnership Agreement , MaB-Sila Observatory will be in charge for the monitoring activities of cultural values, in particular of the values linked with the traditional practices of craftsmanship. The indicators will be identified at a later stage, including:

- ✓ presence and number of formal and non-formal education programmes that transmit these values and practices,
- ✓ number of revitalisation programmes in place,
- ✓ number of speakers of an endangered or minority language.

16. LOGISTIC SUPPORT FUNCTION:

16.1 Research and monitoring:

16.1.1 Describe existing and planned research programmes and projects as well as monitoring activities and the area(s) in which they are (will be) undertaken in order to address specific questions related to biosphere reserve management and for the implementation of the management plan (please refer to variables in Annex I).

With regard to the abiotic parameters:

- Periodic monitoring scheduled in the "Piano di Tutela delle Acque (Regione Calabria)" on the quality of water in the areas located within the Sila BR.
- Climate monitoring and research. Monitoring Station of the Aereonautica Militare di Monte Scuro; Ciancio.
- Periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve required for drafting the "Rapporto sullo stato dell'ambiente (Regione Calabria)". For the abiotic section: atmosphere, geosphere, physical agents, hydrosphere, natural and anthropogenic risks, landscape, etc.
- Monitoring of the hydrological balance in basins and water processes in *Pinus laricio* populations. "Bonis bacino" sampling point of the Istituto per i Sistemi Agricoli e Forestali del Mediterraneo (CNR).

Biotic parameters:

- Periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve required for drafting the "Rapporto sullo stato dell'ambiente (Regione Calabria)". For the biotic section: nature and biodiversity.
- Multiyear social and economic plan for the Sila National Park.

There will be a continuation of research and monitoring activities as part of fauna research regarding: wildcat, deer and roedeer and regarding the flora and fauna check list for Biogenetic Reserves. Furthermore, the usual periodic monitoring previously described for the biotic, abiotic and socio-economic factors will continue.

Finally, various protocols have been signed for partnerships and future studies with various Organisations with regard to the socio-economic sector:

- Memorandum of Understanding between the Sila National Park Authority, the Province of Cosenza and Ferrovie della Calabria for the redevelopment of the steam train on the railway section "*Moccone, Croce di Magara, Righio San Nicola/Silvana Mansio, Torre Garga, San Giovanni in Fiore*" located within the Sila National Park.
- Agreement between the Sila National Park Authority and the University of Calabria for *scientific partnership and teaching support activities*.
- An Understanding between the Sila National Park Authority, the Region of Calabria and the provinces of Cosenza, Catanzaro and Crotone for *a new model of territorial development in the Sila National Park area*.

16.1.2 Summarize past research and monitoring activities related to biosphere reserve management (please refer to variables in Annex I).

The Sila area has been the object of interest for naturalists and has featured in many observations and studies since the 1800s and it has enjoyed considerable attention from the scientific community since the '40s and '50s. There are also many observations and documents which date back to previous centuries, especially with regard to the forest heritage. The Sila forests, in fact, have been exploited since Roman times and already in 1536, the importance of the Sila forests was emphasised with a first hint of controlled management; a subsequent general plan for the Sila territory was published in 1791.

However, given that a lot of knowledge about the habitats, flora and fauna was quite fragmented and studies dated back to the '80s, the more recent research and monitoring programmes have mostly been directed towards more closely examining and renewing the ecological awareness of the territory and meeting the conservation objectives set out in the "Habitat" Directive.

Amongst the more recent research and monitoring activities, many have been taken forward as initiatives of research bodies and universities (e.g. Università di Calabria, Università di Molise, Accademia Italiana di Scienze Forestali, Università di Catania, ARPA) or as part of projects funded by the EU and the Park Authority.

The Sila National Park, proposed as an MAB Reserve, is part of the ecological Natura 2000 network so the environmental research and monitoring programmes mainly converge towards: verifying and renewing awareness of the distribution of habitats and species, including: evaluating the ecological needs of the habitats and species; evaluating the conservation status of the habitats and species; identifying threats, impact and mitigation factors; identifying conservation measures; drafting monitoring programmes; drafting the Park Plan; drafting management and conservation plans for the SCIs and SPAs present; analysing forest populations and forestry management.

These activities have allowed general and specific conservation measures to be defined for every area present in the Core Area or which are part of the Natura 2000 network. At the same time, periodic monitoring has been, or is being, carried out on the abiotic component and on environmental quality, including: inland waterways, soil and climatology which wholly or partially affect the Sila National Park.

- Research and monitoring of abiotic parameters

Research and monitoring of abiotic parameters	*Climatology*	*Monitoraggi e studi climatologici*. Monitoring Station of the Aereonautica Militare di Monte Scuro; Ciancio	Monitoring underway since 1961.
	Geology and pedology studies	Dimase A. C., Iovino F., Bonazzi A., 1996 – *Effetti dell'impatto antropico sull'erosione dei suoli dell'altopiano della Sila (Calabria).* Annali dell'Accademia Italiana di Scienze Forestali, Volume XLV: 307-329.	Year 1996. Studies on soil erosion due to human impact in the Sila area.
		Amodio-Morelli, et al. *L'arco Calabro-Peloritano nell'orogene appenninico Maghrebide (The Calabrian-*	Year 1976. Geological studies in the BR Sila territory.

		Peloritan Arc in the Apennine-Maghrebide orogen). Memorie della Società Geologica Italiana 17, 1–60;	
		Colonna, V., Piccarreta, G., 1975. *Schema strutturale della Sila Piccola Meridionale*. Bollettino della Società Geologica Italiana 94, 3–16.	Year 1975. Geological studies in the BR Sila territory.
		Ghisetti, F., 1979. Evoluzione neotettonica dei principali sistemi di faglie della Calabria centrale. Boll. Soc. Geol. It. 98, 387–430.	Year 1979. Geological studies in the BR Sila territory.
		Messina, A., et al. *Il Massiccio della Sila, Settore settentrionale dell'Arco Calabro-Peloritano*. Bollettino della Società Geologica Italiana 113, 539–586.	Year 1994. Geological studies in the BR Sila territory.
		Tortorici, L., 1982. *Lineamenti geologico-strutturali dell'Arco Calabro Peloritano*. Società Italiana di Mineralogia e Petrografia 38, 927–940.	Year 1982. Geological studies in the BR Sila territory.
		Van Dijk, J.P., et al. *A regional structural model for the northern sector of the Calabrian Arc(southern Italy).* Tectonophysics 324, 267–320.	Year 2000. Geological studies in the BR Sila territory.
	Hydrology studies	*Gestione delle risorse idriche nel Parco*	Year 2005. This study provided a census and definition of the hydrological regime and quality of source water and water areas present in the Sila Park. This produced a detailed overview of the status of water resources in the Park in order to identify the source water, running water and groundwater required for the conservation of ecosystems which cannot, therefore, be captated.
		Monitoraggi sulla qualità delle acque (Piano di Tutela delle Acque Regione Calabria)	Periodic Monitoring
		Caratterizzazione idrica del reticolo idrografico	Year 2010. This overall study has provided an overall model of the water balance in the

			Park.
	General	*Rapporto sullo stato dell'ambiente*	Periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve. For the abiotic section: atmosphere, geosphere, physical agents, hydrosphere, natural and anthropogenic risks, landscape, etc.

- Research and monitoring of biotic parameters

Research and monitoring of biotic parameters	*Forests*	*Ripartizione dei popolamenti forestali*	Year 2005. This study has helped to establish the characterisation of forestry vegetation in the Sila National Park and the altimetric distribution into three fundamental zones: submontane, lower montane, and higher montane.
		Francesco Iovino, Giuliano Menguzzato, et al. Stand structure of a Calabrian pine old-growth forest: indications for forest management and landscape conservation.	Year 2005. Forestry studies on forestry and landscape management.
		Salvaguardia e conservazione del soprassuolo finalizzata alla conservazione in situ delle risorse genetiche forestali. (Istituto Sperimentale per la Selvicoltura)	Year 2001.
		Studio del bilancio idrologico a livello di bacino e dei processi idrici a scala di versanti (sottobacini), in popolamenti di pino laricio, in relazione anche alla dinamica evolutiva conseguente agli interventi di diradamento.	Studies and monitoring procedures since 1986.

	Ecology, biodiversity and conservation	*Progetto Chirotteri della Calabria. 63° Convegno dell'Unione Zoologica Italiana.*	Year 2002. Conservation project.
		Crispino F., Gervasio G. 2006. Il Lupo Canis lupus.	Year 2006. Identification of the areas of significant natural interest for the conservation and management of the Sila National Park.
		Progetto di conservazione del tritone crestato italiano nel Parco Nazionale della Sila;	Years 2007- 2009. This conservation project devised a plan to improve awareness of the species *Triturus Carniflex* and its protection and management, but also included activities to raise awareness for the local community.
		Tutela e valorizzazione della flora e della fauna nelle zone protette della Sila Grande (Agriconsulting)	Year 2009. The purpose of this project was to redefine the knowledge of Habitats, flora and fauna in the "Sila Grande" SPAs. New habitats and species were identified and the current conservation status was defined. The ecological needs of species and habitats were defined and relationships, processes and dynamics that influence the conservation status were identified. Measures to guarantee the conservation status were devised and indications were given for the organisation of a monitoring system.
		Progetto sulla Lepre italica.	Years 2008- 2009. This study analysed the distribution and conservation status of Lepus corsicanus across the Sila BR.
		Misure di conservazione per i siti Natura 2000 inclusi nel Parco Nazionale della Sila. (Dipartimento di ecologia dell'Università della Calabria)	Year 2009. The aim of this project was to devise conservation measures for sites belonging to the Natura 2000 network which were located within the boundaries of the Sila National Park in order to devise an "INTEGRATED" Park Plan. This produced a better characterisation of the biotic elements of the habitats, flora, fauna and conservation status of species of conservational interest, as well as the analysis of existing threats for species and habitats.
		Monitoring peripheral populations of the Eurasian Otter (Lutra lutra) in Southern Italy: new occurrence in the	Years 2009- 2010. Environmental monitoring and modelling on the southern peripheral *Lutra lutra* population. For the first time, this study collected objective evidence

		Sila National Park.	on the presence of the otter in the protected area, which seems to document a recent recolonisation after the presumed extinction some 30 years ago on the Sila plateau.
	Ecology and conservation	*Radiotracking del Cervo.*	Year 2011. Reintroduction, monitoring and ecological and behavioural studies.
		Radiotracking del gatto selvatico (Felis silvestris)	Year 2011. Reintroduction, monitoring and ecological and behavioural studies.
		Progetto Tutela della Biodiversità	Activities to be undertaken in the three-year period 2009 - 2010 - 2011 to protect and safeguard the fish communities and fish species and amphibians of EU interest.
		Progetto di Conservazione del capriolo italico in Calabria.	Years 2009- 2010. Urgent actions to be taken in Sila National Park.
		Caratterizzazione genetica del capriolo italico	Year 2008. Studies on the genetics of the population in the Sila Park.
		Biodiversità nella Rete Natura 2000 del Parco Nazionale Della Sila: Le Zone Umide.	Year 2011. Studies on the biodiversity of the Park wetlands with the aim of: providing an identification of wetlands; evaluating their importance from a conservational point of view; raising public awareness.
		Individuazione delle aree di rilevante interesse naturalistico ai fini della conservazione della fauna del Parco Nazionale della Sila.	Year 2005. This study has identified the most valuable areas for fauna in order to devise management interventions.
Research and monitoring of biotic parameters		*Tutela della Biodiversità Fiumara Trionto – Alta Valle del Neto*	Year 2009. The endpoints of these project were: 1) to improve the ecology function of the water ways of the upper Neto and the upper Trionto; 2) to improve the conservation status of animal and vegetable species included in the Habitat Directive.
	General	*Rapporto sullo stato dell'ambiente.*	Periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve. For the biotic section: nature and biodiversity.
		Studio sull'Indice di Funzionalità Fluviale.	Year 2008. This project led to the following results: - identification of some of the most representative river reaches of the Park

			- survey of the transversal interventions along the sections identified and verification of the presence of interventions for safeguarding native fish fauna - completion of records for IFF evaluation - data entry of results obtained into a GIS

- Research and monitoring for socio-economic factors

Among the numerous initiatives for this section, we would mention:

- Report on the state of the environment (Region of Calabria): periodic regional monitoring of the parameters regarding the territories located within the proposed Biosphere Reserve. For the socio-economic section: use of resources, tourism, social aspects, etc.)
- Research by the CUEIM - Consorzio Universitario di Economia Industriale e Manageriale on behalf of the Park Authority entitled "Check up per la formulazione delle prime ipotesi di quadro strategico e per la valutazione delle iniziative volte allo sviluppo del Parco della Sila".
- Certification of the Sila National Park Environmental System in accordance with the UNI EN ISO 14001 standard.
- Creation of the "Blue4promo" service for the Sila National Park.
- Study entitled: "Diagnostica dell'offerta turistica nell'ambito del progetto per la redazione della Carta Archeologica del Parco Nazionale della Sila".
- Creation of the environmental accounting system for the Sila National Park.
- Study entitled: "Proposte per un nuovo modello di sviluppo locale".
- Study entitled "Il Parco Nazionale della Sila come fonte propulsiva di ricchezza e di lavoro tra uso corretto delle fonti energetiche rinnovabili e integrazione sociale".
- Application to the Ministry of the Environment and Protection of the Land and Sea "Fonti Rinnovabili, risparmio energetico e mobilità sostenibile nelle aree protette".
- Creation and recognition of the Carta Europea del Turismo Sostenibile del Parco Nazionale della Sila.

Through field surveys and research, knowledge has been renewed on the conservation status of the habitats flagged up in the Natura 2000 profiles. More specifically, the presence of previously unmentioned, but highly significant, habitats was discovered. The conservation status of habitats was evaluated as much as possible by attempting to interpret the dynamic trends for each habitat and for particularly significant guide species.

With regard to the vegetable and animal species, for each site which is part of the Natura 2000 network, a significant knowledge update procedure was carried out to ascertain the presence of other species of conservational interest (included in regional and/or national red lists) and/or biogeographical interest, in addition to the species of EU interest (included in the Annex to the Habitat Directive). For the majority of sites, data on the presence of bryophytes and lichens was also acquired for the first time, which, in addition to its consistent contribution to the effort of quantifying and describing the biodiversity of sites, is also in many cases an excellent indicator of the conservation status of some types of habitats.

A good number of geological studies have also been conducted on areas located within the Sila National Park. Furthermore, forestry research has been conducted with a view to learning and identifying forestry management practices and measures. The periodic measurement of

environmental quality parameters is regularly undertaken. Below is a list of some types of studies and monitoring exercises undertaken.

16.1.3 Indicate what research infrastructure is available in the proposed biosphere reserve, and what role the biosphere reserve will play in supporting such infrastructure.

Permanent research and/or monitoring stations	• Università Mediterranea di Reggio Calabria • Università della Calabria - Ecology Department • Università della Calabria – Land Protection Department • Accademia Nazionale Scienze forestali • CNR
Temporary research and/or monitoring stations	There are no temporary research stations located within the Reserve

The permanent observation points which are active all year round are mostly located in the part of the territory identified as the Reserve's transition area, or in neighbouring municipalities (Zone Z in the Park Plan). These structures specifically include:

- a mini catch basin of the National Research Centre, installed in 1986 and aimed at studying the hydrological balance in basins and water processes in *Pinus laricio* populations.
- research centres of the Università Mediterranea di Reggio Calabria and the Università di Cosenza (Ecology Department)
- Istituto di silvicoltura (land plots).

Type of research/monitoring station		***Facilities/systems/instruments***
1.	Planetarium Astronomy Observatory	• library • computer • observation points (*plots*) • computer system • telescopes
2.	Meteorological research centre Aeronautica Militare meteorological station	• video equipment • hydrological station • weather station • computer
3.	Nature laboratory/observatory Centro Visite Cupone (Sila Grande)	• auditorium • library • binoculars

	Centro Visite A. Garcea (Sila Piccola)	• sheds • computer • GIS/computer system • microscopes • teaching and/or taxonomy samples
4.	Environmental education centre in the municipality of Bocchigliero	• library • binoculars • sheds • computer • teaching samples
5.	Library at the administrative office of the Sila National Park Authority	• cases with entomological cassettes • samples of granite stones • materials for environmental education projects
6.	Università della Calabria	• laboratories (ecology/microbiology/geosciences/geotechnology/environmental technology) • jeeps/vehicles • computer room and reading room • library • database/research
7.	Istituto per i Sistemi Agricoli e Forestali del Mediterraneo (CNR)	• solar panels • 6 V x 240 Ah batteries • instruments for measuring CO2 and steam exchanges • micrometeorological sensors

For accommodation for scientists, researchers, thesis writers and students, the Sila National Park offers guest accommodation which can accommodate up to 60 people (60 beds).

16.2 Education for sustainable development and public awareness:

16.2.1 Describe existing and planned activities, indicating the target group(s) and numbers of people involved (as "teachers" and "students") and the area concerned.

The Reserve is very attentive towards education and training and, to this end, for around five years, it has been involved in local, national and international projects to devise educational and scientific research activities, particularly together with Legambiente and the State Forestry Department. It has been particularly sensitive to the topic of communication and interaction with schools and over the last year, the Park has intensified this synergy.

In this regard, a recent project is *"Tagga il Parco Nazionale della Sila"* (Tag the Sila National Park), the only one of its kind in Italy, in which it brings together participated teaching and technology for new generations through awareness about environmental resources. Another project from this year is the approval of the memorandum of understanding with the Università of Calabria aimed at devising environmental education projects.

- Educational programmes aimed at adults

Educational programmes aimed at adults				
Start (end) date?	*Type of programme and/or name of project*	*Location*	*Target users*	*Objectives and results obtained*
23 July/25 September 2010/11/12	"*Fattorie aperte in Sila*" Guided tours of the farms of the Sila plateau to directly observe the production, transformation and packaging phases of typical dairy products	Farm Stay Accommodation, commercial farms, dairy farms and farms of the Sila	Families (about 20,000 per year)	• To raise awareness for Italian families and future generations around the traditional artisan and agricultural activities • To incentivise the purchase of typical Sila dairy products and to favour local communities.
2010	*Concorso Fotografico del Parco Nazionale della Sila* Photo competition which has the Park and its resources, landscapes, flora and fauna as its theme.	Whole Park	70 expert and 224 amateur photographers of any nationality	The winning photograph will become the icon of the spring online advertising campaigns for the Sila National Park.
2009/2010/2011/2012	"*Sotto i Cieli del Parco*" shows at the Planetarium	Lorica and at the Centro Visite Antonio Garcea	Project aimed at families and students (20,000 people per year)	
2009/2010/2011/12	"*Puliamo il Mondo*" National	Sila National Park area	Project aimed at schools, voluntary	Awareness raising on the topic of

	campaign sponsored by Legambiente in collaboration with Federparchi, UPI and ANCI and supported by MATTM and MIUR.		associations, local authorities, families and a general adult public (about 3,000 people)	recycling
2009- 2012	Environmental interpretation teaching programme	Centro Visite "Garcea"(Monaco)	All ages (about 100,000 people)	• Awareness raising and educational activities about the Sila biodiversity with nature experts
2009-2012	Environmental education programme at the Park	Visitor Centres	All ages (about 100,000 people)	• Teaching activities that include manual activities, games, studies on the ecology of beech forests.

➢ Educational programmes aimed at young people

The Sila National Park Authority has signed a memorandum of understanding with the Ufficio Scolastico Regionale per la Calabria regarding environmental information and education to address towards schools as well as activities for updating and training teaching staff and the implementation of regional information campaigns.

In this field, a series of programmes and projects targeted not only to school institutions located within the Sila National Park but also to schools across the whole of Calabria have been devised.

The table in the following page outlines the most significant:

Educational programmes aimed at young people (schools)				
Date	*Type of programme and/or name of project*	*Location*	*Target users*	*Objectives and results obtained*
2009	*"Parchi & Parchi Video Festival. "* A demonstration	Municipality of San Giovanni in Fiore	300 students and teachers from 23 school groups coming	During the demonstration the "Video Festival" was held: a national preview

	sponsored by the MATTM and the Chair of the Chamber of Deputies at the end of the environmental awareness raising and information campaign "PARCHI & PARCHI".		from 14 Italian regions and 19 provinces.	of school audio visual groups on the topics "Youth, Nature, Environment, Climate Change"
2010	*E.C.C.O. Project* (Education, Citizenship, Awareness, Employment) in collaboration with Federparchi and with the contribution of the Ministry of Labour, Health and Social Welfare.	Centro Visite Cupone	150 schools involved	The schools involved presented projects on the Park to spread knowledge of the area and of the value of the protected areas of the Sila
2010/2011	*"Il Parco che vorrei"* Competition of ideas promoted by the Sila National Park Authority	Provinces of Cosenza, Catanzaro and Crotone	First and second grade schools from the three Park Provinces (350 students)	• To stimulate a "green" conscience among young people • awarding the best works in a category of choice including literature, painting and sculpture with the Sila National Park as its subject
2011/2012	*"La scuola incontra il Parco"* A project promoted by the Authority in collaboration with the URS (Regional School Office) and the national and territorial Legambiente, with the ATP (Provincial Physical Education Coordination CS, KR, CZ).	Park Area	students of 10 classes (400 pupils)	• to encourage and develop knowledge of the area and its natural value • to contribute to improving the relationship and perception that citizens have of the Sila National Park by involving younger generations (awareness raising).
2009/2010	*"VIVIDARIA" Competition* in collaboration with Federparchi on the topic of biodiversity	Park Area	Schools of any type and grade of the SNP	To encourage knowledge on Biodiversity (international year of Biodiversity)
2012	*Progetto Piccole Guide sulla piste dell'Appennino –junio*	Sila National Park area	Primary schools - (teachers,	Teaching activities in the classroom and on the field to train young SNP

	Ranger		students) - Official SNP Guides (about 1,000 participants)	guides
2012	*Progetto Eco-school*	Sila National Park area	Istuto Comprensivo G. falcone Quattromoglia di Rende (120 students)	Teaching activities in the classroom and on the field on the following topics: The Sila National Park, sustainability and on the Ginesta

The Sila National Park has stepped forward as a partner for schools in Calabria which intend to submit projects as part of the initiative *LE(g)ALI AL SUD: UN PROGETTO PER LA LEGALITÀ IN OGNI SCUOLA"* -PON: "*Competenze per lo Sviluppo*" funded with the FSE 2010/2011, as part of the aforementioned Project "Tagga il parco" in accordance with Law no. 6/2000 "Initiatives for the dissemination of scientific culture" in partnership with the ITIS "A. Monaco" of Cosenza and finally as part of the Progetti EU-Ecoschool.

The Park has also promoted information campaigns through specific conventions and seminars dedicated to the dissemination and promotion of important topics and awareness raising.

- Educational activities for tourists:

Educational activities for tourists				
Start (end) date?	*Type of programme and/or name of project*	*Location*	*Target users*	*Objectives and results obtained*
23 July/25 September 2010/11	"*Fattorie aperte in Sila*" Guided tours of the farms of the Sila plateau to directly observe the production, transformation and packaging phases of typical dairy products	Farm Stay Accommodation, commercial farms, dairy farms and farms of the Sila	Tourists of all ages (about 100,000)	• To incentivise natural and rural tourism • To raise awareness for tourists of the traditional artisan and agricultural activities • To incentivise the purchase of typical Sila dairy products and to favour local communities.

The project "Fattorie aperte in Sila" is directed towards families and tourists of all ages and nationalities and involves a cycle of guided tours for tasting activities at farms, farm stay accommodation, dairy farms and commercial farms in the Sila. The aim is to raise awareness in the population and, more specifically, in future generations regarding the agricultural and artisan activities in the Sila territory, thus favouring the local community (artisans, farmers).

With the programme "dodici ore con il fattore" (12 hours with the farmer), the visitor/tourist has the opportunity to work alongside the farmer during milking, lunch, animal care and stall closure activities. They can then purchase typical products from the farm shop or farm stay accommodation they have visited, thus contributing to increasing the income of local people and small commercial

farms located in the Sila area. The 11 facilities among farm stay accommodation, dairy farms, commercial farms and farms involved in the programme are listed below:

Type of facility	*Location*	*Activities*
Fattoria Biò Farm Stay Accommodation Commercial Farm	S. Maria Lagarò Celico (CS)	Guided tours of stalls, production and tasting of dairy products. Direct sale.
4 star Farm Stay Accommodation	Lagarò Celico (CS)	Guided tours of stalls, farm shop with meats and cured meats, typical dining
BIOSILA Commercial Farm	Acri (CS)	Guided tours of stalls, producing and tasting of dairy products, farm shop with meats and organic cheese with direct sale, picnic area, recreational trout fishing.
Sirianni Francesco Farm Stay Accommodation Zagaria Commercial Farm	Zagaria Spezzano della Sila (CS)	Guided tours of stalls, production and tasting of dairy products, typical dining Direct sale.
Sirianni Nicola Commercial Farm	Zagaria Spezzano della Sila (CS)	Guided tours of stalls, deer and roedeer photography, production and tasting of dairy products. Direct sale.
SIMAO Farm Stay Accommodation	Zagaria Spezzano della Sila (CS)	Guided tours of deer and roedeer, horse riding, moutain biking, picnic area, typical dining.
il Villaggetto Farm Stay Accommodation	Spezzano della Sila (CS)	Visits to stalls and farm gardens. Accommodation. Typical dining. Trekking and excursions.
Le Delizie di Marianna Commercial Farm	Lorica (CS)	Teaching farm, berries, vegetables, fruit, jams and conserve production, guided tours to gardens. Farm produce tasting. Direct sale.
Caseificio Vallefiore	S. Giovanni in Fiore (CS)	Guided tours of dairy farm, production and tasting of dairy products. Direct sale.
Tenuta di Torre Garca Farm Stay Accommodation	S. Giovanni in Fiore (CS)	Tours to farm gardens, archery, trekking, mountain biking, product tasting, picnic area, typical dining, accommodation. Direct sale.
Fattoria dei ricordi	S. Giovanni in Fiore (CS)	Guided tours among the Sila flora and fauna, horse riding and mountain biking, archery, scout camp, product tasting and typical dining.

16.2.2 What facilities and financial resources are (or will be) available for these activities?

The proposed Reserve has a suitable network of facilities for educational and informative activities. The visitor centres are distributed as green museums located in broad natural environments with suitable facilities for conventions and cultural demonstrations, where it is possible to find books and brochures, purchase gadgets, receive information, guidebooks for excursions and much more.

Among the facilities worthy of mention are: offices, local offices, animal areas, information centres, botanical gardens, which can all be partially used by people with motor or sensory impairment, in addition to 4 specific nature trails. With regard to nature trails, this year the Park Authority has

entered into a memorandum of understanding with the Azienda Forestale della Regione Calabria which aims to protect the natural and nature trail heritage.

Facilities for educational activities and training	• school/summer camps • observation huts • environmental education centres • visitor centres/infopoints • eco-museums on the sustainable use of natural resources • formal education institutions (schools/universities) • informal education institutions (public services) • agricultural museums • open air museums • nature museums • nature trails • Translation services

- Visitor Centres in the Sila Biosphere Reserve:

To date, the Sila National Park has 2 visitor centres located at the tourist villages and in the only urban centres located within the Park territory (Spezzano della Sila (CS), Taverna (CZ)). These Centres, among the most important and complete in Italy, are visited each year by hundreds of tourists, the majority being schools from the central/southern regions interested in the environmental education, nature and forestry activities that these environments offer. More specifically, the centres can teach, inform and educate the public about respect for natural, environmental, social and economic resources in the Sila territory with facilities and areas set up for this purpose by the Forestry Authorities. A third visitor centre in the Park located in Cotronei (KR) will open soon.

Among the facilities offered in the Centres, we would mention: natural and theme-based museums, teaching trails, nature, forest and environmental education centres, libraries, theatres and green classrooms, botanical gardens and geological gardens, gardens/nurseries of Sila biodiversity, animal enclosures, CITES rooms, planetariums, teaching laboratories, adaptation and awareness centres for wolves, deer, roedeer and the Eurasian Eagle-Owl, demonstration centres for deer and Convention Rooms. The areas also have a sufficient quantity of support infrastructures for tourist activities and vast excursion networks which can be walked or ridden on horseback or on mountain bikes.

Table: Visitor Centres in the Reserve

Name of the Centre	***Location in the Reserve***	***Equipment/facilities offered***	***Notes***
Visitor Centres "*Cupone*"	Municipality of Spezzano della Sila (CS) - Sila Grande at Lake Cecita	Natural museum of Cupone	Teaching trails are located within...
		Museo Etnografico sulla lavorazione del legno	
		1 Biking point	There are 8 biking points in the Sila territory in total; the other seven are located in Camigliatello Silano, Valico di Monte Scuro, San Nicola - Silvana Manaio. Croce di Magara - Giganti della Sila Reserve, Lorica, Trepidò - Villaggio Palumbo, Centro Visite Monaco.
		Botanical Gardens	The botanical gardens cover a surface area of 10,400 m2 and can be easily accessed by disabled and visually impaired people. It includes: (a) teaching trail approx. 350 metres long with wooden sleepers bordered by a fence with handrail (b) Braille plaques for the visually impaired[21]. (c) plaques with large font for long-sighted people. (d) break areas (e) 116 observation points for each species (f) audio and mp3 player files
		Picnic areas along Lake Cecita	……
		Geological gardens	..... botanical trail
		Animal enclosures/Area faunistica Golia	Here deer and fallow deer, roedeer, Eurasian Eagle-Owls and wolves can be seen.
		Circolo Ippico Sila	This circus is located near the Centro visite Cupone and offers courses for equestrian permits, mounting stations and horse accommodation.
		Official video/photography archive of the Park	Centre of collection, cataloguing and creation of audio/video content and photographs of cultural and environmental assets of the Park.
		Museo della biodiversità	Collection of natural items and relative scientific publications.

21 Adaptation works on the Garden facilities for the visually impaired and disabled people were implemented in collaboration with the Environment Department of the Province of Cosenza and the public officers of the Associazione Provinciale Ciechi of Cosenza.

		faunistica	
		Recreational/teaching laboratories	For the environmental education activities targeted at schools of all types and grades and other private and public organisations upon request.
		Veterinary service for wild fauna	……
Centro Visite "*Monaco/Antonio Garcea*"	Sila Piccola at the Villaggio Mancuso - Municipality of Taverna (CZ)	Museo Naturalistico di Monaco	(see table Museums in the Reserve)....
		Museo dell'Olio d'oliva e della Civiltà contadina di Zagarise	Ecomuseum (see table Museums in the Reserve)
		Museo della Civiltà agrosilvopastorale, delle Arti e delle Tradizioni del Parco Nazionale della Sila	Ecomuseum (see table Museums in the Reserve)
		Giardino botanico di Roncino	located in the Centro visite Monaco
		1 Biking point	There are 8 biking points in the Sila territory in total; the other seven are located in Camigliatello Silano, Valico di Monte Scuro, San Nicola - Silvana Manaio. Croce di Magara - Fallistro Reserve, Lorica, Trepidò - Villaggio Palumbo, Centro Visite Cupone.
		Animal enclosures	Here deer and fallow deer and roedeer can be seen.
		Teaching trail	Designed to raise awareness of the agricultural, forestry and pastoral culture of the Calabrian peasant civilisation.
		Villaggio dei carbonai	Reconstruction of ancient charcoal burning establishments and village with typical huts of the Sila area
Centro Visite "*Monaco/Antonio Garcea*"	Sila Piccola at the Villaggio Mancuso - Municipality of Taverna (CZ)	Aromatic and medicinal herb garden	Botanical trail
		Nature Centre	This centre has convention rooms, temporary exhibition rooms and a theme-based museum
		Study centre - natural, environmental and forestry education	With teaching rooms, library, teaching laboratory and open-air green classroom.
		"Le Foreste della Sila"	Theme-based museum
		"Le Foreste e l'Uomo"	Theme-based museum
		"Green Theatre"	With 500 seats
		"Piazzetta UNICEF"	To host cultural and recreational demonstrations for environmental education.
		Adaptation and awareness centre	The aim of these centres is to assist the reintroduction of some animal species

		for roedeer, deer and Eurasian Eagle-Owl, teaching/demonstration centre for deer	to establish biological balance and protect the food chain. Two demonstration and adaptation enclosures are currently being created for wolves and wild boar.
		Geological trail for the visually impaired	
		Comando Stazione Forestale	
		Please note! The Centro visite Antonio Garcea is located within the Biogenetic Nature Reserve "Poverella-Villagio Mancuso"	
Visitor Centres *Trepidò*	At the village of Trepidò on Lake Ampollino, Municipality of Cotronei		opening soon
Albi (CZ)	Sila Piccola	Museum of banditry and the agricultural, forestry and pastoral civilisation of Albi	now open

- Museum network within the Sila Biosphere Reserve

The museum network of the Sila National Park was created by the Sila National Park and in part by the State Forestry Department, today CFS - UTB (Territorial office for Biodiversity of the National Forestry Authority). These structures were also made possible thanks to funding from the Region of Calabria - Environmental Department (P.O.R. Calabria 2000-2006 P.I.S. Rete Ecologica, MIS 1.10) and are part of the framework of promotion, awareness raising and environmental education activities about protected areas.

More specifically, the network intends to pay homage to the traditions and nature of the forests and woodlands which populate the Sila, transmitting its natural value not only to visitors and foreign tourists but also to local communities and residents.

The table below identifies some museums present within the Sila territory and their main characteristics.

Museum Network of the Reserve			
Name	*Location*	*Type*	*Notes*
Museo dell'Artigianato silano e della difesa del suolo	Municipality of Longobucco (CZ) - in the former Convent of Frati Francescani minori	*Eco-museum*	established by the Sila National Park Authority in collaboration with the Municipality of Longobucco, the Environment Department/Department of Environmental Policies within the framework of a territorial redevelopment project.
Museo dell'Olio d'oliva e della Civiltà contadina di Zagarise	Centro Visite Monaco (Taverna, CZ)	*Eco-museum*	established by the Sila National Park Authority in collaboration with the Municipality of Zagarise, the Environment Department/Department of Environmental Policies within the framework of a territorial redevelopment project.
Museo della Civiltà agrosilvopastorale, delle Arti e delle Tradizioni del Parco Nazionale della Sila	Centro Visite Monaco (Taverna, CZ)	*Eco-museum*	established by the Sila National Park Authority in collaboration with the Municipality of Albi, the Environment Department/Department of Environmental Policies within the framework of a territorial redevelopment project.
Antica Segheria del Cupone	Centro Visite Cupone Spezzano della Sila	*Museo Etnografico sulla lavorazione del legno*	Restoration and redevelopment works of the Segheria del Cupone to be used as a Museum. The project involves establishing the "Museo dell'uomo e del bosco". Created by the Sila National Park Authority

"Le Foreste della Sila"	Centro Visite "*Monaco/Antonio Garcea*"	*Theme-based museum*	The establishment of "Le Foreste della Sila", aimed at a diversified audience, particularly schools, was created as a tool for raising awareness about forests and woodlands with a specific focus on the forests of the Sila Piccola (evolution of the physical landscape, transformation of forest land coverage, types of forests and their inhabitants, signs left by animals and humans, etc...). Established by the State Forestry Department - UTB of Catanzaro
"Le Foreste e l'uomo"	Centro Visite "*Monaco/Antonio Garcea*"	*Theme-based museum*	The theme of this Museum if the complicated relationship of hundreds of years between humans and the Sila. The aim is to educate/inform visitors, and particularly schools, through stories, images and sounds, about the problem of a balanced use of natural resources and the difficulties the local communities have for their livelihood. Established by the Corpo Forestale dello Stato - UTB of Catanzaro

In the Parks will be opened soon a biodiversity museum. In 2011, management contracts for the ecomuseums of Albi, Longobucco and Zagarise were also signed, which were opened to the public in April with demonstrations directed towards their users (conventions, WWF project "Biodiversamente", visits of facilities for the European Robinwood project).

In the transition zone, we can find other museum of relevant cultural value, as indicated below.

Other museums		
Name	*Location*	*Type*
Museo diocesano di Arte Sacra	Santa Severina (KR)	*Religious museum*
Museo Archeologico	Santa Severina (KR)	*Documentation centre of research on Castles of calabria*
Museo dell'arte contadina	Savelli (KR)	*Ethnographic museum*
Museo della Castagna	Cerva (CZ)	*Agricultural museum*
Museo degli attrezzi contadini	Soveria Simeri (CZ)	*Ethnographic museum*
Museo civico	Taverna (CZ)	*Archeological Museum*
Museo d'Arte Sacra	Zagarise (CZ)	*Religious museum*

Museo etnografico e risorgimentale	Margisano (CZ)	*Ethnographic museum*
Museo Agorà dell'Arte	Sersale (CZ)	*Art gallery*
Museo delle "Rimembranze"	Cosenza (CS)	*Ethnographic museum*
Galleria Nazionale di Cosenza	Cosenza (CS)	*Art gallery*
Museo Civico dei Brettii e degli Enotri	Cosenza (CS)	*Archeological Museum*
Museo del Costume e degli Ori Arbëreshë	Vaccarizzo Albanese (CS)	*Ethnographic museum*
Museo Internazionale "Raccolta di arte presepiale"	Corigliano Calabro (CS)	*Religious museum*
Museo di Arte Sacra	Rogliano (CS)	*Religious museum*
Museo della Liquirizia	Rossano (CS)	
Museo della Civiltà Contadina	Acri (CS)	*Ethnographic museum*
Museo Demologico dell'Economia, del Lavoro e della Storia Sociale Silana	San Giovanni in Fiore (CS)	*Ethnographic museum*
Museo Archeologico Nazionale della Sibaritide	Cassano all'Ionio (CS)	*Archeological Museum*

- Park trail network:

The trail network of the Park is organised into various trails that fall within the territories of the three provinces of Cosenza, Catanzaro and Crotone, with a total length of 600 km. The trails were marked out by the CAI, the three aforementioned provinces, the Mountainous Communities, the Municipalities, the CFS and by environmental associations. The Park Authority then signed an Agreement with the CAI Nazionale - Calabrian section - for the concrete implementation of a cleanup, recovery and maintenance project for the entire trail network of the Park in order to make the trails more usable to a wider range of users beyond simple excursionists. Each trail is, therefore, equipped with suitable signage which shows the level of difficulty of the trail, the time it takes to walk it, the presence of areas of particular natural, cultural or historical interest and water refill points. Below are all the trails that are located within the Park, with their relative length and location.

Park Trails			
CAI TRAIL NO.	NAME	LENGTH KM	MUNICIPALITIES INVOLVED
440	PASQUALE CELESTINO	4,120	San Giovanni in Fiore
440a	CICCIO 'E MARANO	0,880	San Giovanni in Fiore
416	DI CARRUMANCO	15,900	San Giovanni in Fiore
416a	DA PETRA 'E L'ATARI	2,440	San Giovanni in Fiore
437	DELL'ABATE	18,088	Serra Pedace

422	DELLA REGIA SILA	19,930	Serra Pedace, Spezzano Piccolo
438	DELLA CROCE DEI LAGHI	5,530	San Giovanni in Fiore
420	DI MONTENERO	15,810	San Giovanni in Fiore
418	DEI ROSSI	5,920	San Giovanni in Fiore
441	DI ZURLO	5,500	San Giovanni in Fiore
410	DELLA TRANSUMANZA	26,970	Spezzano Piccolo, Serra Pedace, Spezzano Sila, Longobucco
410a	DEL VIVAIO	1,200	Longobucco
412	DELL'ARIAMACINA	7,760	Serra Pedace
413	DI VOLPINTESTA	7,070	Serra Pedace, San Giovanni in Fiore
421	MIMMO MERANDO	6,900	Celico, Spezzano Sila
421a	DEL TASSO	2,500	Spezzano Sila
419	DELLA CROCE	7,232	Serra Pedace
427	DI MACCHIA DI PIETRO	8,570	Serra Pedace, San Giovanni in Fiore
443	DELLO SPIRITO SANTO	5,190	Spezzano Piccolo, Spezzano Sila
329	ANELLO DELLA CHIESUOLA DIRUTA	8,775	Cotronei
330	ANELLO DEL PURGATORIO	9,780	Cotronei
331	ANELLO DI CASA PASQUALE	5,105	Cotronei
436	DELLA PINETA	5,980	Spezzano Sila
439	DEL BOSCO DEL CORVO	9,670	Spezzano Sila
442	DEL FIUME CECITA	5,900	Spezzano Sila
414	DI MACCHIALONGA	13,540	Spezzano Piccolo, San Giovanni in Fiore, Longobucco
414a	DEL DESTRO DELLA MADONNA	2,800	San Giovanni in Fiore
411	DI ARNOCAMPO	5,710	Spezzano Piccolo, San Giovanni in Fiore
435	DEL PINO BELLO	8,500	Spezzano Sila
512	DEL LUPO	6,380	Longobucco
512a	DEL COLLE DELL'ESCA	0,880	Longobucco
511	DEL BRIGANTE	5,950	Longobucco
434	RECINTI FAUNISTICI	3,060	Spezzano Sila
510	DEL PINO TORTO	10,600	Longobucco
321	TREPIDO' – FIUME TACINA	13,420	Taverna, Cotronei
321a	DEL CROCIFISSO DELLA CHIESOLA	1,859	Cotronei
307	GARIGLIONE – FIUME TACINA	4,458	Taverna
313	ANELLO DEL PISARELLO	6,403	Zagarise, Taverna
313a	DEI CARBONAI	1,894	Zagarise
313b	PER IL FIUME TACINA	0,305	Zagarise
313c	PER LA VETTA DEL CUGNO DI PORRAZZO	0,371	Zagarise

313d	PER LA VETTA DEL CUGNO PISARELLO	0,332	Zagarise
313e	DELL'ACQUEDOTTO DI CROTONE	1,864	Taverna
312	ANELLO DEL MONTE GARIGLIONE	4,335	Taverna
312a	PER LA VETTA DEL MONTE GARIGLIONE	0,606	Taverna
312b	DEI GIGANTI	2,053	Taverna
311	ANELLO DEL GARIGLIONE	18,430	Mesoraca
311a	DELLA FONTANELLA	0,470	Taverna
311b	PER TAVOLA PARATA E CROCI DI MAMMA GIUSEPPINA	3,529	Taverna
311c	PER IL FIUME SOLEO	1,559	Mesoraca
311d	DELLE MACCHIE	3,393	Mesoraca
317	ACQUA DELLE DONNE – COLLE DEL TELEGRAFO	6,152	Taverna
315	DEL TORRENTE RONCINO	4,071	Taverna, Albi
315a	SCUTELLO – RONCINO	2,304	Taverna
315b	DEI MONOLITI	2,796	Taverna
320	DEL TORRENTE SIMMERINO E DEL PONTE VECCHIO	4,585	Taverna, Albi
320a	VECCHIA LOCANDA MILLE PINI – MULINO AD ACQUA	1,312	Taverna
320b	ALBERGO DELLE FATE – TORRENTE SIMMERINO	2,345	Taverna
319	DEL MONACHESIMO	7,135	Taverna, Albi
319a	BIVIO VARANO – ALBI – PESECA	4,927	Taverna, Albi
319b	DELLA CASCATA DEL TORRENTE LITRELLO	0,966	Albi
319c	CHIESA DI SAN GIOVANNI GUALBERTO – MONACO	1,833	Taverna
314	TIRIVOLO – MACCHIA DEL BARONE	12,060	Zagarise, Petronà, Mesoraca
316	ALTA VALLE DEL FIUME TACINA	11,080	Taverna
316a	MAZZAFORTE – TESTA DI SIMMARI	1,742	Taverna
316b	DELLA VALLE DI CIRICILLA	4,956	Taverna
318	CIRICILLA – BERBERANO – LAGO AMPOLLINO	7,216	Taverna
318a	VALLE DI CIRICILLA – ALTA VALLE DI TACINA	3,620	Taverna
318b	BERBERANO TACINA – VACCHERIA ALTA	5,357	Taverna

323	OSTELLO DELLA GIOVENTU' - PANTANELLI	3,679	Magisano, Zagarise
323a	DELLE CASCATE DEL LUPO E DEI FAGGI	1,176	Albi
324	ANELLO DEL GIGANTE DI BUTURO	2,917	Taverna, Albi
515	DEL TIMPONE GAZZERA	4,720	Savelli
513	DELLE MINIERE	3,390	Longobucco
428	DI GIANCHI	2,600	Spezzano Sila
445	DI TORRE SPINA	3,920	San Giovanni in Fiore
445a	DEL MANCO DI SPINA	1,641	San Giovanni in Fiore
425	DEL CARDONE	15,780	Serra Pedace, Spezzano Piccolo
426	DA PETRA DA GRUPILLA	4,040	Serra Pedace
325	PANTANELLI – MAGISANO	14,230	Magisano
325a	DELLA PETRA DU RUVAZZO	0,372	Magisano, Zagarise
325b	DELLE CASCATE DELLE NINFE E DELLA PIETRA	2,563	Magisano, Albi
326	VILLAGGIO BUTURO – TORRE DELLA MARCHESA	3,387	Albi, Taverna, Zagarise
327	FIUME CROCCHIO – BIVIO CASCATA DEL PARADISO	4,698	Magisano, Sersale
327a	DELLA CASCATA DEL PARADISO	1,918	Magisano
328	TIRIVOLO – COLLE DI VESPA	11,800	Zagarise, Sersale, Petronà
328a	PARCO AVVENTURA TIRIVOLO – VILLAGGIO GRECHI	2,151	Zagarise
328b	PER LA VALLE DEL FIUME CROCCHIO	1,956	Zagarise
328c	PER IL FIUME CROCCHIO	0,834	Sersale
332	DELLE QUATTRO VALLI	7,230	Zagarise, Taverna
332a	DELLA VALLE DEL TORRENTE PISARELLO	2,104	Taverna
332b	DELLA VALLE DEL TORRENTE PICIARO	2,602	Taverna
333	DEL GIGANTE PROMETEO	5,201	Taverna
333a	DELLA FONTANELLA DEI PASTORI	0,326	Taverna
337	DELLO SCORCIAVUOI	8,799	Taverna, Cotronei
337a	PER LA VETTA DEL MONTE SCORCIAVUOI	0,495	Taverna
337b	DI FEGHICELLO	0,784	Taverna
338	FIUME TASSITO – MONTE SCORCIAVUOI	6,830	Taverna, Cotronei
339	TEMPONE MORELLO	6,410	Taverna
516	VILLAGGIO PINO GRANDE – MEZZOCAMPO	8,910	Savelli, Bocchigliero
429	DI ZIO FILIPPO	2,930	Celico, Spezzano Sila

430	DEL FIUMICELLO	6,114	Serra Pedace, Pietrafitta
509	DEL MONTE SORDILLO	6,555	Longobucco
(401)SI – TAPP A 17	CAPOROSE – LORICA SEDE PARCO	16,285	San Giovanni in Fiore
(402)SI – TAPP A 18	LORICA – BOTTE DONATO	16,800	San Giovanni in Fiore
(403)SI – TAPP A 19	BOTTE DONATO – CAMIGLIATELLO	11,440	Serra Pedace, Spezzano Piccolo, Spezzano Sila
(404)SI – TAPP A 20	CAMIGLIATELLO – SPEZZANO PICCOLO	15,280	Spezzano Piccolo, Spezzano Sila
(303)SI – TAPP A 15	VILLAGGIO MANCUSO – VILLAGGIO BUTURO	20,680	Taverna
(304)SI – TAPP A 16	VILLAGGIO BUTURO – CAPOROSA	27,860	Taverna, Zagarise

Table The historical, religious and nature trails

Historical trail		This trail starts from the mountain refuge Casello Margherita (.....) and moves along incorporating mushroom and chestnut collecting, passing by ancient mule tracks and mountain trails which have been beaten through for centuries by people and animals travelling towards the Sila.
Religious trail		These trails visit areas of the Sila which bear witness to the passage of the monk Joaquim of Fiore. Visiting points will include: abbeys on hills, hermitages hidden in the forests, solitary prayer sites and the birth place at Celico
Nature trail	*Crotone*	4 trails/itineraries (Villaggio Palumbo, Trepidò and Pino Grande)
	Cosenza	15 itineraries
	Catanzaro	12 itineraries
	La Sila Greca	Panoramic itinerary "Bosco dell'Acqua"
		Historical/artistic itinerary "Santuario Patirion"
		Panoramic itinerary "Torrente Coriglianeto"
		Panoramic itinerary "Barraccone Torrente Coriglianeto"
		Nature itinerary "Torrente Cino" which falls within the Biogenetic Reserve "Trentacoste"

		Nature itinerary "Torrente Cino"	
	Valli Cupe itineraries	Sentiero del Canyon	This trail, which originally ran between four Basilian monasteries and the Bourbon coalyard, is populated by a thick oak forest and other species typical of the phytoclimatic area of Lauretum. In addition to the characteristic biodiversity of species (flora and fauna), human works of the past can also be seen, such as: a reconstruction of old "carnuvere", a "gebbia" (Arabic irrigation system), a "carcara" (blast furnace for whitewash production) and a "pagliaru".
		Sentiero degli Alberi Giganti	On this trail, it is possible to observe: (a) the Gigante Buono, a 500 year old chestnut which originally formed part of a large chestnut grove which fed the local peoples (b) the Giganti dei Melitani, true natural monuments with 10 metre circumferences (c) the Milicurciu: an ultra centenarian tree of the Celtis australis species.
		Sentiero delle Cascate	Here, visitors can admire: the Cascata Campanaro (22 m), other small waterfalls and the Crocchio gorges.
		Sentieri dei Monoliti e dei Musei etno-naturalistici di Sersale	Here the attractions are: (a) Petra do' Ruvazzo (robin): a true eco-museum with important testimony of human history (banditry) (b) Petra aggiallu: a monolith 18 metres tall.

- Transport networks:

The proposed Biosphere Reserve is located in a central position in relation to the regional territory and is located within the following infrastructural and services context:

- Roads: the motorway A3 Salerno-Reggio Calabria reaches the proposed Biosphere Reserve from the west by exiting at the "Cosenza" exit; from here the SS107 takes you to Cupone for the Sila Grande and to "Silvana mansio" for the Sila Piccola. The entrance from the east, instead, is served by the SS106 Taranto-Reggio Calabria towards Crotone; from here the SS107 takes you to S. Giovanni in Fiore.
- Railway: the proposed Biosphere Reserve can be reached by train from the junction stations of Paola, Lamezia Terme, Catanzaro from where a small narrow gauge railway of the Ferrovie della Calabria will take you to the Sila (Cosenza-Catanzaro and Catanzaro-Cosenza).
- Airports: there are two airports near the proposed Biosphere Reserve: Lamezia Terme on the Tyrrhenian side and Crotone S. Anna on the Ionian side.
- Transport services: the main municipalities are connected to the three Provinces by a bus service which runs daily. These services increase during peak seasons.
- Private mobility: car rental organisations are established at Lamezia Terme, Cosenza, Crotone and Catanzaro.

16.3 Contribution to the World Network of Biosphere Reserves:

16.3.1 How will the proposed biosphere reserve contribute to the World Network of Biosphere Reserves, its Regional and Thematic Networks?

The easy access to research centres and institutes, the availability of sophisticated monitoring systems, the presence of numerous facilities dedicated to environmental education and training programmes, the inclusion of Cosenza and the vicinity to residential areas and to the larger cities in Calabria (Catanzaro and Crotone) mean that this Reserve can fully meet the three functions required for each Biosphere Reserve in the MAB Programme which can eventually be shared with the other Reserves that belong not only to the MAB Network, but also to the other theme-based Networks of reference.

To this end, the following priorities have been identified with a view to respond to the need for collaboration with other Reserves:

- to strengthen Italy's MAB Network
- to work in close contact with some reserves belonging to the European MAB Network
- to participate in MAB activities, also in an international setting, in order to forge friendly relations with other areas

Encourage relations with other Biosphere Reserves belonging to a common geographical area (mountains), sharing projects and issues.
The Sila Reserve actively participates in meetings of the National MAB-Italia Committee which has been recently formed with the Ministry of the Environment Decree, and which joins together all nine Italian Reserves which are currently part of the Network (BR Cilento e Vallo di Diano, BR Vesuvio e Miglio d'Oro, BR Miramare, BR Valle del Ticino, BR Circeo, BR Collemeluccio-Montedimezzo, BR Selva Pisana, BR Isole Toscane, BR Monviso) and those proposed for 2013. It is in this context that the MAB Committee has guaranteed its role as accompanist, thus giving concreteness to this candidacy process for becoming a Biosphere Reserve.

The direct contact made with the Reserves has allowed, and continues to allow, a continual and beneficial exchange of scientific information and expertise on the topics of conservation and sustainable development, whilst guaranteeing participation in related seminars and workshops at the same time.

Among the programmes and partnerships already in place, we would mention:

- the ARCO Programme, promoted by the Ministry of Labour and Social Welfare with the Agenzia Italia Lavoro to encourage employment within the Park territory. Among the subjects involved: in addition to the SNP, the Città della Montagna Nebrodi (Sicily), the Gran Sasso and Monti della Laga National Park (Abruzzo, Lazio, Marche), the Cilento and Vallo di Diano National Park (MAB Reserve Circeo Forests). The aim is to build a network between Parks, Associations and other types of subjects which deal with the promotion, value enhancement and recovery of landscape, handicraft, agro-food and cultural resources of central-southern Italy. (2010)

Signing of a Memorandum of Understanding for the promotion, implementation and development of the experimental project "EQUILIBRI NATURALI" - Restituire la Natura ai Bambini e i Bambini alla Natura (natural balances – give nature back to children and children back to nature). This project was conceived by the Società Ecoidea di Pomezia (Rome) in collaboration with the National Parks of the Monti Sibillini, Dolomiti Bellunesi and Circeo, the Protected Marine Area of the Plemmirio, the Lazio Regional Parks Authority, the Authority for the management of protected

areas of the river PO - Turin section and the Associazione Italiana Direttori e Funzionari della Aree Protette.

16.3.2 What are the expected benefits of international cooperation for the biosphere reserve?

The proposed Reserve is particularly interested in activities undertaken and required within the EuroMaB setting and guarantees its participation in meetings, workshops and seminars organised for this purpose. We believe that every contact with the Network can enable the Reserve to acquire fundamental information and expertise in order to better manage and promote the territory, while at the same time giving a significant contribution in the topic of conservation and sustainable development.

One of the priorities of the proposed Reserve is to encourage relations with other Biosphere Reserves which belong to a common geographical setting (in this case any Reserves belonging to the theme-based Network of mountains) and to share projects and issues.

The nature of a territory nearly entirely covered by forests, with habitats that are highly representative of the Mediterranean Region, primarily requires collaboration with Reserves that share similar characteristics. The Global network of mountainous regions (GLOCHAMOR) and the *Global and Climate Change in Mountain Site*s (GLOCHAMOST) Programme represent the ideal situations for sharing values and criticalities and for devising activities with common aspects of nature.

The proposed Reserve can undoubtedly play a fundamental role in an MAB setting and it is absolutely ready to build partnerships with other Reserves that are part of the MAB Network on a national and international level. One of the priorities identified to this end (*see above*) is the participation, wherever possible, in meetings and activities scheduled by the MAB Programme, also in an international setting, in order to forge friendly relations with other involved areas. Among the initiatives of national and international importance run by the Park Authority, mention should be made of:

- the Federparchi Regional Coordination for Calabria (22 October 2010): new synergies between the protected regional areas to strengthen the united image of nature and to implement socio-economic development policies of the territory to which they belong. The following are part of the Coordination: the Sila National Park, the Aspromonte National Park and the Pollino National Park, the Protected Marine Area of Capo Rizzuto, the Serre Regional Park, Legambiente Calabria, WWF - Calabria section, the LIPU, the CAI (Italian Alpine Club) - Calabria Section, AIGAE (Italian Environmental Excursion Guides Association) - Calabria section, E.N.G.E.A. (National Environmental Horseriding Guides Association) - Calabria section. + Region of Calabria, FAI, Friends of the Earth and Italia Nostra.
- Convention for the Italian and European Parks Centenary in Cosenza, at the CONI. Among the participating subjects: experts and well-known figures of Parks, university lecturers and representatives from Federparchi/Europarc from Europea and the USA.
- European Day of Parks promoted by Europarc (2011)
- Convention on the “Conservation measures for areas belonging to the Natura 2000 Network (2011)
- Convention on the biodiversity of the Sila National Park for the International Year of Forests (2011).

Project "Destination mountain" in partnership with the Metsahallitus Parks and Forestry Authority (Finland), Municipality of Dealu (Romania) and the Municipality of Reggio Calabria (see page 118).

16.4 Internal and external communication channels and media used by the biosphere reserve:

16.4.1 Is (will) there (be) a biosphere reserve website? If yes, what is its URL?

Actually the proposed Biosphere reserve does not have a specific web site. A specific section of the Park's website hosts the proposed Biosphere Reserve activities. This solution was identified because of the good trends of internet traffic of the website, in order to guarantee the best wareness possible to MaB candidature. This website has had quite a lot of user hits (there were around 31,898 hits to the site in 2006, 44,131 in 2007, 106,874 in 2008, 76,195 in 2009 and 115,122 in 2010). In the three-year period 2009-2011, a new institutional website for the Sila National Park was launched, indicated below, to adapt it to the current laws and directives enacted by the Civil Service and AIPA. More specifically, 7 virtual tours are available on the website which allow users to fully appreciate some of the views and structures present in the area. The majority of the structures used for educational and teaching activities within the Reserve have an Internet connection.

- Official Sila National Park Website: www.parcosila.it
- Email address: presidente@parcosila.it

16.4.2 Is (will) there (be) an electronic newsletter? If yes, how often will it be published?

In the recent years all the activities promoted with the aim of promoting and sharing competence and information to create a plausible candidancy of Sila area for the Biosphere Reserves Worl Network has been communicated to the wide public using the communication resources of Sila National Park. the newsletter was used as one of the main tools to reach the public of more than 3,000 users. Newsletters informed all the people inscribed, every week, about activites promoted by Sila National Park as coordinator of the Mab-Sila Partnership. In the last year almost 200 newsletter were sended. In the last two years a specific section dedicated to MaB Programme has been added to inform about this UNESCO programme, the opportunities deriving from it.

16.4.3 Does (will) the biosphere reserve belong to a social network (Facebook, Twitter, etc.)?

In order to spread and communicate all the BR activities, nowadays are used all the social network tools of the Sila National Park profile. One of the actions of the coordination plan is aimed at creating a social network account for animating the activites of the proposed Biosphere Reserve and stimulating the involvmente of local communities.

17. GOVERNANCE, BIOSPHERE RESERVE MANAGEMENT AND COORDINATION:

[Describe the following characteristics in the prospective that the site is being designated.]

17.1 Management and coordination structure:

17.1.1 What is the legal status of the biosphere reserve?

The extended area of the Sila Biosphere Reserve is composed by 71 municipalitie legally linked by a specific Partnership Agreement, aiming at rationalizing and armonizing sustainable development projects and programmes both existing and planning.

The Sila MaB Reserve Agreement was signed in September 10th 2013 in Cupone Visitor Centre, one of the municipalities included in the transition zone, not only by the local authorities but also by al the stakeholders participated in the participative meetings for the MaB candidancy. The Partnership includes also privates and representative of local stakeholders, trade unions and local association.

Namely, the Sila MaB Partnerhisp includes:

- ✓ Sila National Park, as coordinator;
- ✓ Calabria Region;
- ✓ Cosenza Province;
- ✓ Crotone Province;
- ✓ Catanzaro Province;
- ✓ All the 66 municipalities that expressed their consensus for the Biosphere Reserve proposal;
- ✓ 5 Mountain Communities;
- ✓ 3 LAG;
- ✓ Trade association;
- ✓ Trade unions;
- ✓ Research institutes.

17.1.2 What is the legal status of the core area(s) and the buffer zone(s)?

The six core areas and the buffer zone are constituted by the zones of integral protection and the boundaries of Sila National Park, respectively. Established by Decree of the President of the Republic (DPR) November 14, 2002[22], the Sila National Park comprises the territories previously belonging to the "historic" National Park of Calabria (1968). Article 2 of the Decree identifies aims of the Park as the "protection and promotion of sustainable development" and aims to ensure:

a) conservation of animal and plant species, plant or forestry associations, geological formations of palaeontological singularities, biological communities, biotopes, natural processes, ecological balances;
b) protection of the landscape;
c) the application of land management methods, suitable to realize integration between man and the environment through the maintenance and development of agro-forestry-pastoral traditional activities;
d) the promotion and development of organic agriculture through appropriate incentives for the conversion of existing crops through the funding provided within the EU (European Union);
e) forest conservation and management of forest resources through interventions that do not

26 According to the national law 344/97, the Sila National Park is established by the Decree of the President of the Republic at the proposal of the Ministry of Environment, after hearing the regions concerned and after consultation with the municipalities and provinces concerned (art. 4)

alter the landscape and fundamental features of the ecosystem;

f) promoting education, training and scientific research, even interdisciplinary and compatible recreational activities;
g) protection and recovery of hydraulic and hydrogeological stability;
h) experimentation and development of compatible productive activities.

Core areas

Within the plan acceptable actions are identified by category[23] throughout the Park and proposed Biosphere Reserve, as well as activities and compatible uses as described in par. 16. In the BR proposed core area, which corresponds to areas A (absolute nature reserve) of the Park, the natural environment is preserved as a whole, as required by art. 7 of the Park regulations (paragraph 1).

In those areas (areas A of the park) conservation is expected as a form of management. Preservation is a management choice that tends not to interfere with the ongoing processes. It is a form of passive conservation. In a strict sense, preservation recognises the intrinsic value of what needs to be protected in a strictly biocentric point of view. It excludes man's direct intervention, who remains an observer of natural processes.

Buffer zone

In the buffer zone, corresponding to zone B,c and D of the Park, strengthening of the eco-system functions is encouraged and the conservation of the landscape and cultural resources available through the reduction of noise factors. In these zonethere is a special prohibition for: new construction works, expand existing buildings, shifting earth or change of land use, except for purposes of conservation, maintenance and restitution, make changes of use that require substantial changes in construction and engineering. Management works by the Park authority may however be allowed. For forestry management of the systems falling under zone B, conservation is in *systemic silviculture* in the presence of little altered forest ecosystems in their anthropic functions. It tends towards *renaturalisation* for those forest systems that are greatly simplified in composition and structure. Some agro-forestry-pastoral activities are encouraged according to traditional uses, or organic farming methods.

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[29] *Acceptable interventions throughout the Biosphere Reserve are divided into the following five categories:*

- *Conservation: including the actions and interventions aimed primarily at the conservation of natural resources and biocenotic processes, resources and cultural relics, the identifying characteristics and landscape quality, with all maintenance and enjoyment closely related to conservation aims;*
- *Maintenance: including actions and interventions given priority to the maintenance of primary resources, maintenance to the fabric of agrarian landscape and cultural heritage, with light and widespread operations of recovery, re-use, refunctioning and marginal physical modification, strictly aimed at the management and balanced use of the existing resources and structures, and so as not to alter or change the situations of value and to encourage long-lasting development, even through a harmonic evolution process of the landscape forms;*
- *Return: includes the actions and interventions aimed primarily at restoration, recovery and rebalancing environmental conditions that were altered, degraded or compromised by pollution, the restoration of monuments and cultural history testimony, the recovery of abandoned patrimony, the organisational elements and matrices that shape the agricultural landscape, the restoration of natural conditions, the elimination or mitigation of degradation or alteration factors of the types or levels of use incompatible with the physical or functional modifications strictly necessary and compatible with such aims;*
- *Requalification: including the actions and interventions focussed on improving the existing conditions and the exploitation of resources, poor or underutilized, with physical or functional changes, even radically innovative interventions and landscape arrangement designed to guide and organise the processes of evolution, but that do not substantially increase the loads and environmental planning, to reduce or eliminate the conflict or impropriety of use in place, or to improve the landscape quality in situations of particular decay and deterioration;*
- *Transformation: including actions to introduce substantial innovations of use or structure for economic or social purposes in keeping with the purposes of the Park, including new commitments for the formation of new settlements or substitutions or radical changes of settlement or infrastructure fabrics, aimed at strengthening the structures and practices already in place, and the creation of new landscape establishments, in terms of improvement of pre-existing conditions and the recovery of degraded areas.*

In zone C, in relation to the characteristics of forest systems present, also in socio-economic considerations, in addition to systemic silviculture and renaturation, traditional or classic silviculture can be also provided for, albeit with appropriate corrections to be defined on a case by case basis and specified in the rules of the Park. The framework law recalls the agro-forestry-pastoral activity as a form of traditional land use compatible with the objectives of the C zone, and part of the B zone. The legal framework also recognises the anthropological, historical and landscape value, as well as economic value, of the forms of traditional use.

17.1.3 Which administrative authorities have competence for each zone of the biosphere reserve (core area(s), buffer zone(s), transition area(s))?

The territory of the proposed Biosphere Reserve includes the Sila National Park, established in Italy by Decree of the President of the Republic on 14 November 2002, and the areas of the conitguos municipalities. Under the current boundaries, the proposed Biosphere Reserve covers the territories of 66 municipalities, located in a central position with respect to the region, including 46 in the Province of Cosenza, 13 in the Province of Catanzaro and 10 in the Province of Crotone. As you will see, Municipalities and Provinces are a legal part of the managing body of the proposed Biosphere Reserve.

Table: The local authorities proposed reserve

Sila Biosphere Reserve			
State	*Region*	*Provinces*	*Local Authorities*
Italy	Sila National Park		
	Calabria	Catanzaro, Crotone, Cosenza	Municipalities: Acri, Albi, Andali, Belcastro, Belvedere di Spinello, Bocchigliero, Botricello, Caccuri, Caloveto, Campana, Casabona, Casole Bruzio, Cassano all'Ionio, Castelsilano, Celico, Cellara, Cerenzia, Cerva, Colosimi, Corigliano Calabro, Cosenza, Cotronei, Cropalati, Figline Vegliaturo, Gimigliano, Lappano, Longobucco, Luzzi, Magisano, Mangone, Marcedusa, Mesoraca, Pallagorio, Paludi, Parenti, Pentone, Petronà, Piane Crati, Pietrafitta, Pietrapaola, Rocca di Neto, Roccabernarda, Rogliano, Rose, Rovito, San Giovanni in Fiore, San Pietro in Guarano, Santa Severina, Santo Stefano di Rogliano, Savelli, Sellia Marina, Serra Pedace, Sersale, Spezzano Albanese, Spezzano della Sila, Spezzano Piccolo, Taverna, Terranova da Sibari, Trenta, Umbriatico, Vaccarizzo Albanese, Verzino, Zagarise, Zumpano.

As summarised in the table below, in addition, the nominated territory also falls within the jurisdiction of four Mountain Communities (MC), one Union of Municipalities, as well as 4 Local Action Groups aiming to implement the 2007 2013 Rural Development Programme of the European Union and to allocate resources to the LEADER Approach, and implementation planning of Local Development Plans by strengthening the capacity and management planning of all institutional players.

Table: Mountain communities and LAG within the BR territory[24]

Authority	*Municipalities of the BR*
MC Alto Crotonese	Cotronei, Mesoraca, Savelli.
MC Presila Catanzarese	Albi, Magisano, Petronà, Sersale, Taverna, Zagarise.
MC Silana	Celico, San Giovanni in Fiore, Serra Pedace, Spezzano della Sila, Spezzano Piccolo
MC Sila Greca - Destra Crati	Acri, Bocchigliero, Longobucco, Corigliano Calabro
Unione dei Comuni della Presila	Serra Pedace; Spezzano Piccolo; Spezzano della Sila; Celico
LAG Sila Greca – Basso Jonio Cosentino	Bocchigliero; Longobucco
LAG della Sila	Acri; Celico; Rovito; San Giovanni in Fiore; Serra Pedace; Spezzano della Sila; Spezzano Piccolo
LAG Kotron	Cotronei, Mesoraca, Policarpo, Savelli
LAG Valle del Crocchio	Albi, Petronà, Magisano, Sersale, Taverna, Zagarise

17.1.4. Clarify the respective competence of each of these authorities. Make a distinction between each zone if necessary and mention any decentralized authority.

Core areas

Sila National Park is the governance structure in charge of enforcing the protection regimes. It reports to the Italian Ministry of Environment.

Buffer zone

Sila National Park is the governance structure in charge of enforcing the protection regimes and coordinate all the activities (research, sustainable development, ecotourism), taking place in this territory. The 18 Park Municipalities share the same management plan: Acri; Albi; Bocchigliero; Celico; Corigliano Calabro; Cotronei; Longobucco; Magisano; Mesoraca; Petronà; San Giovanni in Fiore; Savelli; Serra Pedace; Sersale; Spezzano della Sila; Spezzano Piccolo; Taverna; Zagarise. The mayor of all of them signed the endorsement section. Municipalities are given the local power to enforce the approved Park Plan at the scale of their territories, being this plan sovraordinated to the individual municipalities master plans.

Transition zone

The 66 Municipalities of transition zone share the Sila MaB Partnership Agreement, signed in Cosenza on September 12th 2013. It enforces the strictly link already existing between them for the development of the area and of the local communities.

24 See the previous note.

17.1.5 Indicate the main land tenure (ownership) for each zone.

Area of the BR	***Ownership regime***	
Core Area	*These forests were owned by the former State Forestry Authority and today are state property of the Calabria region, bound by constraints because they are identified as total reserve areas. As provided for in the regulations, the remaining privately-owned properties in the area are subject to a number of constraints to guarantee their preservation.*	Public ownership
Buffer area	*All areas already covered by the previous National Park of Calabria (Fossiata and Gariglione sector) are areas owned by the former State Forestry Authority and today are in the Calabria region availability. The remaining part is mainly state owned and have been bound for nearly 40 years.*	Public ownership
		Private ownership
Transition Area	*This zone includes state-owned (municipalities) and private. Private ownership is dominant.*	Public ownership
		Private ownership

17.1.6 Is there a single manager/coordinator of the biosphere reserve or are several people in charge of managing it? If one manager/coordinator, who designates and employs him/her (national authorities, environmental administrative agency, local authorities)?

The Authority entrusted with the administration of the proposed Biosphere Reserve as a whole is the Sila National Park Authority, in coordination with the local Administrations identified.

17.1.7 Are there consultative advisory or decision-making bodies (e.g., scientific council, general assembly of inhabitants of the reserve) for each zone or for the whole biosphere reserve?

- ***If yes, describe their composition, role and competence, and the frequency of their meetings.***

The Sila Mab Partnership is a representative body that puts together 66 municipalities of Calabria region, between Cosenza, Catanzaro and Crotone provincies. These municipalities in the lat years have already shared a series of commo projects and programme for the development of the area. Sila MaB Partnership is a meltin' pot of this sharing will, playing a key role with Calabria region in the definition of the future planning of development for the whole Sila Area.

The Sila MaB Partnership has four different bodies with different competences:

- ✓ a Coordinator (Soggetto Coordinatore), in charge of the project managing of conservation measures of core and buffer areas and of development porgrammes for the transition zone;
- ✓ a Management Committee (Comitato di Gestione), with the function of defining genral and specific objective for the dsustainable development of the whole area;

- ✓ a Partnership Assembly (Assemblea di Partneriato), hosting all the representatives from each stakeholders will be the most relevant place of discussion and debating for the indication of public policies for the area;
- ✓ a Sila MaB Observatory (Osservatorio), with the role of monitoring all the research activities about the development axes of the proposed Biosphere Reserve.

The Partnership's Assembly is a representative body including all the 66 municipalities that signed the partnership Agreement. The Assemby is the place for denating and suggesting policies aimed at favouring a sustainable development of Sila Area for the future generation. In the Assembly all the different stakeholders of the area cooperate to the main objective, deciding to adopt sustainable policies in their own development programmes. This consultative body includes the 66 Mayor of the municipalities involved and rapresentatives of the local stakeholders. The components meet two times per year, as stated in the partnership Agreement, or by request of at least 30% of their components. All the decision of the Assemby are taken by consensus, in order to promote integrated actions for the development of the Sila Area. It nomines with majority system the components of the Management Committee.

The Coordinator, the Sila National Park, is the leader of the partnership projects in these year of meetings and other activities for the involvement of the local communities. The coordinator is the representative of the Partnership in the formal meetings and is in charge for calling the Assembly, the Management Committee and stating the agenda. It also coordinates assessment activities of the administrative and economic management. the coordinator can sign agreement with other public and private entities for implementing sustainable development objectives of the proposed Biosphere Reserve.

The Management Committee has got the role of guaranteeing an efficient coordinating action between the representative of the Partnership. it is in charge of promoting and coordinating suggestions about relevant policies for the area, also summarizing the emerged needs by local stakeholders in the Partnership's Assembly. It contibuets to determinate general and specific objectives, strategies and expected results of the proposed Biosphere Reserve and to definy commitments that each subject need to take to ensure effectiveness, quality and ability to impact (in terms of development and cohesion), of the proposed Biosphere reserve activites. In particular, it define the activities of information, collection of instances and local promotion of Sla MaB activities. In a mid-term perspective this is the body that will assure a perfect balance between the

three MaB function of the proposed Biosphere Reserve and the policies adopted in the area by the local authorities. It is composed by 7 representative of the most relevant local authorities and stakeholders: they are elected by the Assembly and remain in office for three years.

The Sila MaB Observatory contributes to develop in the local territories the awareness of the importance of the link between nature and sustainable development. The Observatory, constitutes by the main research institutes in the area (Calabria University, Mediterranean University, CNR and CRA), will develop research project about the area supporting the other bodies in the adoption of the management policies of the area. The Observaotry will monitore different indicators in order to assess periodically the status of the proposed Biosphere Reserve. In particular, it will be focused on some specific themes:

- ✓ Protection of the environment and ecosystems in the area with particular reference to the agro-forestry-pastoral;
- ✓ Monitoring of the dynamics of development of sustainable tourism;
- ✓ Improvement of cultivation practice;
- ✓ Technological innovation in the processes of food processing;
- ✓ Recovery and enhancement of typical craftsmanships;
- ✓ Enhancement and development of sustainable tourism;
- ✓ Demographic analysis;
- ✓ Analysis of demand and supply of labor in the area;
- ✓ Internationalization processes of the supply of products and services in the Sila Area.

17.1.8 Has a coordination structure been established specifically for the biosphere reserve?

- ***If yes, describe in detail its functioning, composition and the relative proportion of each group in this structure, its role and competence.***
- ***Is this coordination structure autonomous or is it under the authority of local or central government, or of the manager/coordinator of the biosphere reserve?***

The coordination structure is based on the Park Agency resources, as the Sila National Park has been designated by the Partnership as coordinator. All the Park's employees are involved in the coordination activities of the proposed Biosphere Reserve.

In relation to staffing approved by Presidential Resolution no. 45 of 22/11/2010, the Sila National Park Authority has a staffing level of 24 units.

Employees	***Economic level***
1	C2
11	C1
9	B1
3	A1
24	

On this basis of human resources, in full-time and permanent employment there are 19 professionals distributed according to the following table.

Professional Profile	***Area***[25]	***Functions***
Technical Associate	*C-C1*	*Head of Planning*

25 And corresponding economic level.

Technical Associate	*C-C1*	*Head of Technical Department*
Technical Associate	*C-C1*	*Head of Conservation and Naturalistic management*
Technical Associate	*C-C1*	*Head of Authorisations Office*
Technical Associate	*C-C1*	*Head of Socio-Economic Planning*
Technical Assistant	*B-B1*	*Planning Service Officer*
Executor	*A-A1*	*Conservation and Naturalistic Management Office Clerk*
Administrative worker	*C-C1*	*Head of Administrative Accounting Promotion Marketing*
Administrative worker	*C-C1*	*Head of Human Resources*
Administrative-Accounting Associate	*C-C1*	*Head of Accounting*
Technical Associate	*C-C1*	*Head of Promotion and Marketing*
Administrative-Accounting Assistant	*B-B1*	*Accounting Office Clerk*
Administrative-Accounting Assistant	*B-B1*	*Accounting Office Clerk*
Technical Associate	*C-C1*	*Head of Secretarial Service-Environmental Education-Communication-Information*
Technical Associate	*C-C1*	*Head of Secretarial Office*
Technical Assistant	*B-B1*	*Secretarial Service-Environmental Education-Communication-Information Office Clerk*
Operator	*B-B1*	*Secretarial Office Clerk*
Administrative worker	*B-B1*	*Secretarial Office Clerk*

Finally, in accordance with the regulatory provision in art. 1, c. 3, Legislative Decree no. 138/2011 converted into Law 148/2011, by resolution of the Board of Directors no. 10 of 04/04/2012, the staffing level of the Authority was redetermined at 22 units, which is currently in the approval process by the competent ministries. Pursuant to Laws 68/1999 and 113/1985, one unit of staff is being recruited, Area A, Economy level A1, belonging to protected categories.

17.1.9 How is the management/coordination plan adapted to the local situation?

The coordination plan adopted with the Partnership Agreement by all the Municipalities involved and the related stakeholders formalize a de facto situation: all the area shared in the past common development projects on different levels. A lot of planning tools take place in the recent years involving different parts of the partnership. With this agreement all the component could reinforce this collaboration planning a better future for the Sila Area. In this context Sila National Park plays a key role in the coordination and testing of sustainable activities, leading all the involved communities towards a more sustainable future.

17.1.10 Is there a procedure for evaluating and monitoring the effectiveness of the management?

The Partnership Agreement identifiy two different bodies that on a different level will evaluate and monitor the effectiveness of the management of the proposed Biosphere Reserve: the Management Committee and the Sila MaB Observatory, as explained in § 17.1.7 .

17.2 Conflicts within the biosphere reserve:

17.2.1 Describe any important conflicts regarding the access or the use of natural resources in the area considered (and precise period if accurate).

In the proposed Biosphere Reserve are not any kind of conflicts regarding the access or the use of natural resources.

17.2.2 If there are any conflicts in competence among the different administrative authorities in the management of the biosphere reserve, describe these.

There are no conflicts in competence among the different adiminsitrative authorities in the management of the proposed Biosphere Reserve.

17.2.3 Explain the means used to resolve these conflicts, and their effectiveness.

All the kind of conflicts were avoided through a participative and shared procedure for identifying the correct management structure.

17.3 Representation, participation and consultation of local communities:

17.3.1 At what stages in the existence of a biosphere reserve have local people been involved: design of the biosphere reserve, drawing up of the management/cooperation plan, implementation of the plan, day to day management of the biosphere reserve? Give some specific examples.

The involvement process has been carried out both Park Authority bodies and local stakeholder and aimed at getting consensus and sharing nomination process to WNBRs and to propose a new version of territory planning tools and programs. In the annex is possible to consult a brief report of these meetings.

The participatory process to the BR designation started in June 2009 with a first meeting held at Ministry for Environment, and it was followed with:

- the continuous involvement of the Council and Community for the first research concerning the technical nomination criteria in WNBRs of Sila territory (March 2011);
- the support of a national University Consorthium (May 2011 – August 2012) and the local expertise (University of Calabria, Mediterranean University of Reggio Calabria and so on) for the drafting of the nomination file and related annexes;
- the organization of several informal meetings opened with public society and local Administrations in order to discuss the proposal of Sila territory in WNBRs also with *ad hoc* presentation (as in Cosenza on May 2012[26]) explaining UNESCO and MAB mechanisms, missions and goals;
- the participation of the Director of the Park and his staff to some of the 2012 MAB National Italian Committee plenary sessions (namely before and after 24°ICC);
- the organization of the last formal sessions of the Council and the Community (namely on July and September 2012) for the approval of the final draft of the Sila nomination file to WNBRs and of the new versions of Regulation and Plan of the Park in view of the MAB designation process.
- after the MaB council deferral, in June 2013 was announced the will of the area to present a new dossier by September 2013.

[26] Reference key is to the presentation PPT document prepared for these meetings; see Appendix A.

- On July 12 and 13, was held a workshop with the involvement of the local authorities and stakeholders to evaluate how create the new proposals, sharing different approach for the management of the area.
- At the end of July three different meetings was held to formalize the involvement of the local authorities (provinces and munipalities) in the new proposals, sjaring the new nomination with local stakeholders.
- On September 12 the partnership Agreements was signed by local authorities and stakeholders. In this meeting, at the presence of the president of Calabria region and some Representatives of MaB National Committee was shown the new proposal and explained the new dossier.

17.3.2 Describe how the local people (including women and indigenous communities) have been, and/or are represented in the planning and management of the biosphere reserve (e.g., assembly of representatives, consultative groups).

The Partnership Assembly is a representative body that involves all the local people and their representative. The meeting of the Assembly are open to the public that can participate with suggestion to the debate and the discussions ina singular way or trhorug they local representatives.

17.3.3 Describe the specific situation of young people in the proposed biosphere reserve (e.g., potential impacts of the biosphere reserve on youth, consideration of their interests and needs, incentives to encourage them to participate actively in the governance system of the biosphere reserve).

In this area have been registred one of the main unemplyement rate in Italy (65% Istat), in the last years local authorities introduced some policies to avoid young migration and support young businessman.

The results of this local efforts are evident: in 2013 Sila Area known the best rate in Italy of young entrepreneur in the primary sector. Calabrian young entrepreneur trade is one of the most active union trade in this area, confirming the will of young people to develop sustainable policies for the future of this territory.

In the governance system of the proposed Biosphere Reserve there are no specific young association represented in the management committee but young instances will be present thanks to the local representative present in the Partnership Assembly.

17.3.4 What form does this representation take (e.g., companies, associations, environmental associations, trade unions)?

Private and stakeholders, specifically women and young people participate actively through association and unions in the partnership. They participate in the election of the governing bodies through their local rapresentatives.

17.3.5 Are there procedures for integrating the representative body of local communities (e.g., financial, election of representatives, traditional authorities)?

The 7 components of the Management Committee, representing all the different stakeholders present in the Sila Area, is elected every three years by the Assembley of the part of the Partnership. The Partnership and the Assembley can be integrated by new components from the local communities in every moment.

17.3.6 How long-lived are consultation mechanisms (permanent assembly, consultation on specific projects)? Make a complete description of this consultation. What are the roles of involved stakeholders compared to the role of the biosphere reserve?

Consultation mechanism of the local communities take place in every Partnership Assembley meeting. At this stage all the involved stakeholders and authorities can suggest policies, activities, programme or plan in accordance with the specific objectives stated by the Partnership Agreement.

In a second stage, Management Committee will summarize this suggestion, deciding with the coordinator if adopt or not adopt the specific purpose.

With this participative model all the stakeholders can participate in the decision making process representing and sharing with others their own position and purposing directly to the component body their sustainable vision for the future of Sila Area.

For specific projects and theme it could be possible the creation of public thematic-table to stimulate the participation of local communities and planning tools and programme for the proposed Biosphere Reserve.

17.3.7 What consultation mechanisms have been used, and who has been involved? Are they for specific purposes or long-term? What impacts have they had on decision-making processes (decisional, consultative or merely to inform the population)?

In addition to the traditional forms of stakeholders involvement that are regularly promoted by the Park, through meetings and web activities, and the system of its related municipalities, the MaB candidature preparatory phase has been characterised by an intensification of public meetings and debates.

The methodological approach was that of the participatory planning: various types of meeting were organised, designed around the needs of the specific groups of participants. A significant attention was always posed to the information and communication initiatives used to properly and largely promote each event. Namely:

- ✓ periodic large scale public meeting in the three Province involved (Cosenza, Catanzaro, Crotone) to present the concept of the Biosphere Reserve, its role in the given territories, the importance of the concerted actions and to introduce and discuss the opportunities offered by the Biosphere Reserve functions;
- ✓ educational meetings for young scholar to explain the peculiarities of a Biosphere Resserve and the importance of the International Network;
- ✓ public meeting for the constitution of an Observatory for the identification of new activities of development in the Biosphere Reserve, to elaborate indicators for monitoring the proposed Biosphere Reserve and coordinate research initiatives;
- ✓ workshop with the local stakeholders to inform them about the potential opportunities offered by the Biosphere Reserve for the territory;
- ✓ Communication champaign, press conference and meetings specifically devoted to involve the media in order to have them well informed and involved in the entire process.

All the activities have been widely promoted by properly using the media and the e-means of communication. In the Sila National Park website is hosted a particular section devoted to all the activities related to the MaB candidature, like newsletter or database.

The involvment of the local communities at this stage was not merely to inform and communicate future strategies but a specific part of a consultative process to have suggestion and purpose from the territories. Some of this have been adopted and arenow part of the Coordination Plan strategies for the future.

The table below shows the main meetings of the last year.

Date	*Meeting*	*Participants*	*Object*	*Output*
12.09.2013	Final event for MaB candidacy. Cupone Visit Centre (Camigliatello Silano, CS)	President and Director of Sila National Park, mayors of the municipalities involved, local authorities, President of Calabria Region, Representatives of the Ministry of Education, MAB National Committee, University of Calabria, stakeholders, associations, employers, trade unions, public from various sources, press.	In addition to the formal signing of the Memorandum of Understanding of the project partnership and its management model, the realization of this closing event is useful exposes the results of what has been achieved in recent months in support of the candidacy of the Sila National Park the program MAB - Man and Biosphere by UNESCO.	Partnership Agreement signed by all stakeholders involved. Obtained local authorities formal consensus for the future sustainable development projects in Sila area.
08.09.2013	"Sila Officinalis Summer.Biodiversity ad natural and economic asset in Sila". Piazzetta Misasi (Camigliatello Silano, CS)	Director of Sila National Park, local authorities, University of Calabria, stakeholders, experts, public from various sources, press.	Biodiversity ad natural and economic asset in Sila for lsustainable development local opportunities.	Alert to MaB Sila candidancy and suggestion for existing and future project for the proposed BR.
25.07.2013	Operative meeting in Crotone to discuss about MaB candidancy with local authorities, municipalities and stakeholders. Amministrazione provinciale di Crotone	President and Director of Sila National Park, municipalities, local authorities, stakeholders, associations, employers, trade unions, public from various sources, press.	Sharing of candidacy process and discussion about management model and ustainable development project for the area.	Guidelines and project for the management of the proposed BR.
24.07.2013	Operative meeting in Cosenza to discuss about MaB candidancy with	President and Director of Sila National Park, municipalities, local authorities,	Sharing of candidacy process and discussion about management model and ustainable	Guidelines and project for the management of the proposed

	local authorities, municipalities and stakeholders. Amministrazione provinciale di Cosenza	stakeholders, associations, employers, trade unions, public from various sources, press.	development project for the area.	BR.
23.07.2013	Operative meeting in Catanzaro to discuss about MaB candidancy with local authorities, municipalities and stakeholders. Amministrazione provinciale di Catanzaro	President and Director of Sila National Park, municipalities, local authorities, stakeholders, associations, employers, trade unions, public from various sources, press.	Sharing of candidacy process and discussion about management model and ustainable development project for the area.	Guidelines and project for the management of the proposed BR.
22.07.2013	Presentation of "SMARTDMO" project Sede dell'Ente Parco Nazionale della Sila (Lorica, CS)	Functionaries of Sila National Park, *stakeholders*, "Calabresi Creativi" Association, BTO Educational, tourism operators, public from various sources, press.	In the last year Sila National Park has launched the first trial in Calabria of SmartDMO, an initiative designed to promote more intelligent and integrated tourism offer in Sila seizing the range of business opportunities offered by internet.	Tourism management project shared for the proposed BR.
12.07.2013	*Workshop* MaB Unesco Cupone Visit Centre (Camigliatello Silano, CS)	President and Director of Sila National Park, mayors of the municipalities involved, local authorities, Functionaries of Calabria Region, Representatives of the Ministry of Environment, MAB National Committee, University of Calabria, stakeholders, associations, employers, trade unions, public from various sources, press.	Working session to decide zonation of BR and sjaring management models and sustainable development project.	Zonation decided tank to an active particpation by local authorities and stakholders. Expression of a wide will to be recognised as BR as opportunità to promote sustianable development projects for the future.

11.07.2013	Osservatorio permanente per lo sviluppo sostenibile nell'ambito della Riserva della Biosfera. Ufficio Territoriale per la Biodiversità di Cosenza	CUEIM , Italian Forestry Academy, Unical University, Mediterranean Studies University, Consorzio RECAL, Ordine degli Agronomi e Micologic Silano Group, CRA, CNR	Institution of a MaB Sila Observatory for the sustainable development in the proposed BR.	Guidelines to develop the Observatory with the collaboration of the main Research Institution.
10.06.2013	*Press tour*	President and Director of Sila National Park, municipalities, local authorities, stakeholders, associations, employers, trade unions, public from various sources, press.	Press visit to the proposed Area to promote the new candidacy.	Promote the new candidacy to the wide public announcing the will to present a new dossier by September 2013.

17.3.8 Do women participate in community organizations and decision-making processes? Are their interests and needs given equal consideration? What incentives or programmes are in place to encourage their representation and participation (e.g.: was(were) a "gender impact assessment(s)" carried out)?

Women participate actively in community organizations and decision making process. the number of women representative included in the Partnership Assembly is not so large but anyway relevant: only four Major, one president of Province and the President of the Park are women.

The Coordination Plan can implement some measures to favors the involvement of women in productive sector, thorugh the regional incentives already existing aimed at promote the entry into the meconomic market of women as active player for local production, as well they are strictly involved in the traditional practices and rituals.

17.4. The management/cooperation plan/policy:

17.4.1 Is there a management/cooperation plan/policy for the biosphere reserve as a whole?

The Biosphere Reserve Coordination Plan, adopted by the Partnership, with the Park Plan, Park Regulations and the PPES forms an organic and coordinated system for the regulation and planning of the Biosphere Reserve territory.

The Biosphere Reserve Coordination Plan, signed by all the stakeholders involved in the planning fo the activities of the proposed area, part of the MaB Sila Partnership, identifies objectives and activities in order to guarantee the implementing of the three biosphere functions: conservation, development, logistic support. The main aim of the integrated actions is to create a sustainable development for the future generation. In particular, at this stage, the partnership have identified some policies for each biosphere reserve function, as guidelines for the implementation of specific project and programmes to achieve countable results in each field.

Furthermore are also operative other tools for planning future activities in the boundaries of the proposed Biosphere Reserve. One of these tool is, "The Plan for the Park", prepared by the University of Calabria and, for the part regarding the forestry aspects, the forest management guidelines and the forest mapping of the Park with a scale of 1:50,000 were created by the Faculty of Agriculture of the University of Reggio Calabria. This tool has been approved, as already mentioned, on 31 July 2012. Alongside the Plan, it is important to point out the other planning tool of the Park and of the proposed Biosphere Reserve, the Multi-Annual Economic Social Plan (PPES) aimed at promoting compatible activities and at systematising the institutional relationships already initiated and yet to be initiated with the local public and private stakeholders (through *ad hoc* plan agreements). Integrated consistently and structurally within the forecasts made in the Park Plan and in the other planning tools, the PPES starts from an analysis launched on the profile of the territory (socio-demographic, economic framework; the assets of the PNS in terms of natural, historical, artistic, cultural, museum resources, of local products and of traditional knowledge; local services, the tourism industry, and hotel accommodation).

The PPES also charts policy paths that affect not just the Park but the entire Sila area that orbits around the proposed Biosphere Reserve (active protection of biodiversity, communication, territorial marketing, environmental education and training, Institutional agreements and alliances, accessibility, environmental sustainability) and identifying, furthermore, sources of funding and project priorities.

Additional mechanisms of implementation and planning of the territory are offered by:

- ✓ The Provisional Regulations on forestry use, drawn up by the Park Management with the support of the relevant technical departments on the "Sustainable management of forestry resources in the Sila National Park".
- ✓ The 2011 – 2015 plan against forest fires drawn up by the Italian Academy for Forestry Sciences;
- ✓ "Identification, characterization and drawing up of management guidelines for old forests in the Sila National Park and the production of suitable mapping" undertaken by the Italian Academy for Forestry Sciences;
- ✓ The Park Territorial Information System and management plan for mountain pastures: the project presented by the Italian Academy for Forestry Sciences is aimed at setting up the Territorial Information System (SIT) and management plan for mountain pastures in the Sila National Park;
- ✓ The survey of the hydrographic system, designed by the Department for Soil Protection of the University of Calabria. The project involved the "Water supply survey of the hydrographic system in the Sila National Park area and the supply sources and branches of the main works for storage and regulation in the aforesaid area in order to define the critical areas". The first three study phases have been completed.
- ✓ The Environmental Balance Sheet System, drawn up to forecast the actions to guarantee the environmental sustainability of the Park development policies.

17.4.2 Which actors are involved in preparing the management/cooperation plan? How are they involved?

The involvment of the local communities at this stage was not merely to inform and communicate future strategies but a specific part of a consultative process to have suggestion and purpose from the territories. Some of this have been adopted and arenow part of the Coordination Plan strategies for the future.

The Plan was developed through technical and consultation processes aimed at identifying the issues relating to the role of the Park and the cooperation between local operators and institutions, and possible obstacles to the development policies. This work was carried out through context analysis and goal identification, assessment of environmental effects, scenario analysis and construction of possible alternatives, drafting of the environmental report, construction of a geo-database of the socio-economic data and of the interventions. The sharing of such processes has been ensured with ad hoc meetings and consultative table.

The Plan starts, therefore, from a territorial, institutional and geographical profile, followed by a framing of the socio-demographic and economic factors together with the resources of the Park (natural, historical, artistic, cultural, museums, and agrosilvopastoral), to sum up the territory's services, tourism and related services, emphasising the operational capabilities of the Sila National Park, the actions to be promoted for the active protection of biodiversity, communication and territorial marketing, environmental education and training, as well as for the paths of understanding and project development to be launched with local stakeholders, understood within the context of the possible sources of funding.

In fact, as will be shown in the following paragraphs, ever since its establishment and pending the completion of the approval process of the planning tools, the Partnership bodies, in close contact with the public and private stakeholders, initiate a series of initiatives which hopefully will turn into Institutional Agreements and projects funded by the EU.

17.4.3 Do local authorities formally adopt the management/cooperation plan? Are local authorities making reference to it in other policies and/or plans? If so, please provide details.

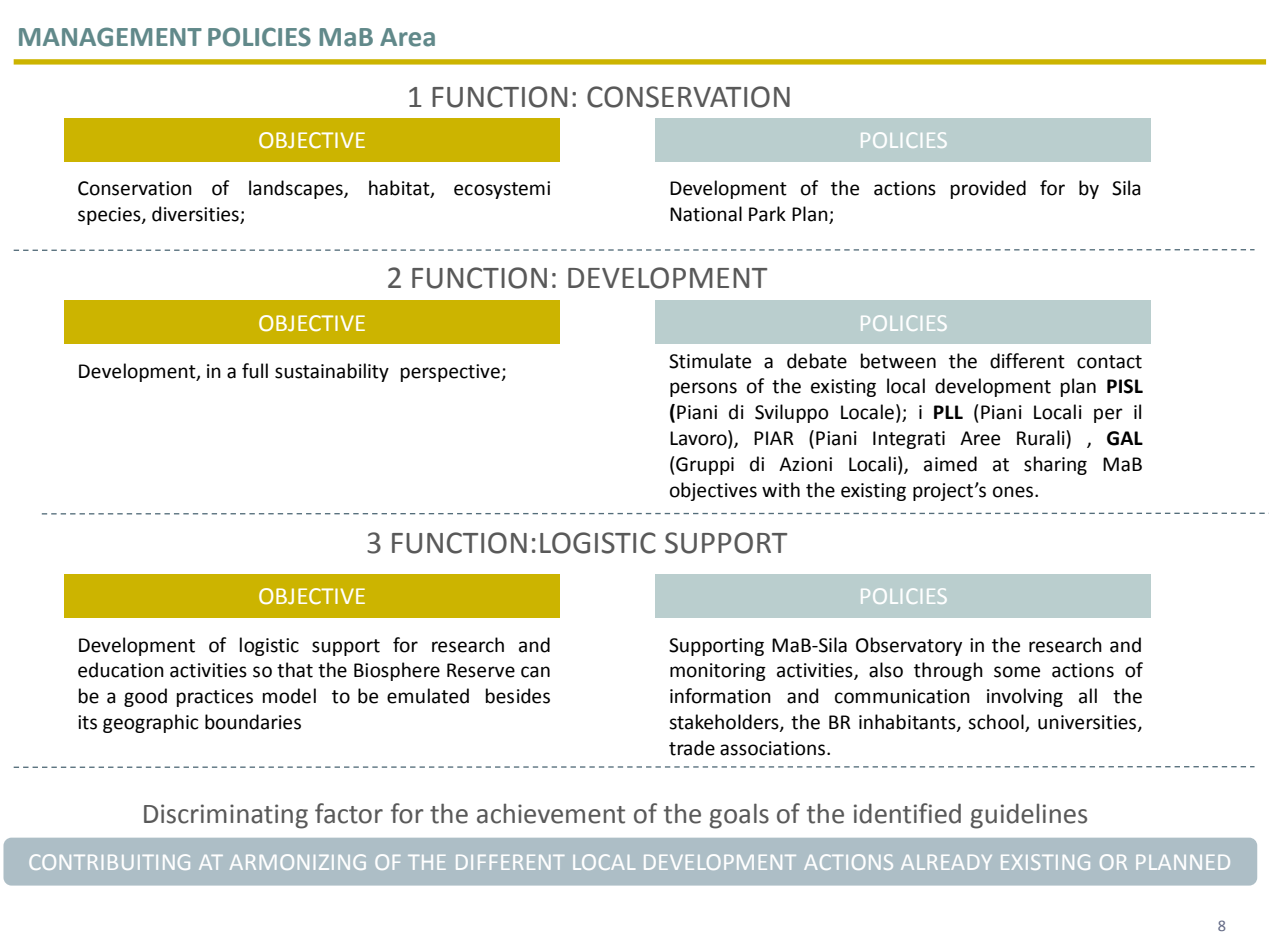
Local authorities formally adopted the Sila Biosphere Reserve Cooperation Plan through a formal resolution and signing the Partnership Agreement. In the annex it is possible to find a copy of the resolutions made by each municipality involved in the nomination process.

17.4.4 What is the duration of the management/cooperation plan? How often is it revised or renegotiated?

The cooperation plan does not have a duration because of it indicates some development guidelines and policies for the future activites in the proposed Biosphere Reserve. It can be renegotiated every three year at the changing of the components of the Management Committee.

17.4.5 Describe the contents of the management/cooperation plan. Does it consist of detailed measures or detailed guidelines? Give some examples of measures or guidelines advocated by the plan? (Enclose a copy).

Sila Biosphere Reserve Cooperation Plan is a set of guidelines and policies aimed at developing an armonized strategy for the sustainable development of the whole Sila area.



For conservation functions, the Plan identify the confirmation of the local conservation measures stated in the Plan of the Park of the Sila National Plan.

As already mentioned, the existing local development plans (about depopulation, cultural minorities, intermunicipalities mobility, life quality, tourism, productive system and village of excellence) will be gradually implemented in the cooperation plan, as shown by the table below.

Type	Tipologia	Description	Municipalities
PISL	Depopulation	Accomodation capacity	Albi, Andali, Belcastro, Marcedusa, Sorbo San Basile
PISL	Linguistic minorities	Ristrutturazione Casa delle Associazioni	Andali, Marcedusa
PISL	Intermunicipalities mobility	Lavori di M.S. sulla S.P. 5 Bivio Vescovo - Bivio Cuturelle - Bivio Rocchi - Belcastro SS. 109	Andali
PISL	Productive system	Centro Servizi territoriale, per lo sviluppo delle imprese attraverso la gestione dei servizi avanzato c/o Azienda Condoleo, Sila Km 0 – Piattaforma commerciale	Belcastro, Zumpano

PISL	Local tourism system	Bikepark, Cabinovia Codecola di Coppo, Skipass SILA, Impianti Valle dell'Inferno e innevamento artificiale, Recupero e valorizzazione del sito naturale e paesaggistico "Waterfront"	Cerva, Gimigliano, San Giovanni in Fiore, Sellia Marina, Zagarise
PISL	Life quality	Completamento campo sportivo comunale	Pentone
PISL	Village of excellence	Restauro e Risanamento conservativo della Grancia di San Martino di Canale e dei luoghi dell'Abate Gioacchino, sistemazione aree di pertinenza accessi, Ricostruzione e recupero Santuario e Convento San Francesco di Paola, Piattaforma WebGIS	Pietrafitta, Spezzano della Sila
PLL	Work Local Plan	Measures for local employment	Casole Bruzio, Celico, Cellara, Lappano, Pietrafitta, rovito, San Giovanni in Fiore, San Pietro in Guarano, Serra Pedace, Spezzano della Sila, Spezzano Piccolo, Trenta, Zumpano, Andali, belcastro, Cerva, Gimigliano, Magisano, Marcedusa, Pentone, Petronà, Sellia Marina, Sorbo San Basile, Zagarise
PIF	Agriculture and forestry	Selvia brutia, PPAS	San Giovanni in Fiore, Spezzano della Sila

For the logistic support function, the Sila MaB Partnership will idenitify some specific initiatives for dissemination of information to public and environmental education in the local school, in coordination with the research and monitoring actions of Sila-MaB Observatory.

In terms of research and development,strictly linked one in the other, there are a large number of initiatives and projects under way or nearing completion that will be implemented with their outcomes in the Sila MaB Coordination Plan.

Accommodation, trails, and social projects
A Memorandum has been finalised at the meeting of professionals from the Park Authority and UNICAL, with their respective baggage of experience, to achieve the goals of environmental education pursued in the museum facilities of the Authority and of the UNICAL Rimuseum.

Instructional and educational paths will be favoured, connected with the entertainment aspect, in a new way, combining different aspects of everyday life through the main themes of man's relationship with the environment.

A Memorandum of Understanding was signed with the "Santi e Briganti" Association, the Province of Crotone, Gal Kroton, the Municipality of Cotronei, the Mountain Community of Alto Marchesato Crotonese, and Uncem; the project consists of the creation of a historical, naturalistic and cultural trail for the promotion and enhancement of the environmental resources of the Province of Crotone, with related service facilities, among which the most important will be used for the Museum of the Brigands using funds from the POR FESR 2007/2013 (Regional Operational Programme - European Fund for Regional Development) - actions for the enhancement of the regional museum system - line of action 5.2.2.1. - recently issued.

A Memorandum of Understanding was signed between the Sila National Park Authority and the UIC - Cosenza Chapter, aimed at a common commitment and mutual cooperation for the enhancement of the territory and of the naturalistic and trail heritage of the Park in order to ensure accessibility for people with physical and/or visual disabilities; the Park Authority and the UIC, to give effect to the above respective purposes, intend to jointly: participate in operational projects of intervention that can be classified as social environment, bringing in know-how, resources and original contributions through its operators; to enhance the quality of life of local residents not only to raise the level of personal well-being but also to encourage local hospitality alternatives; carry out activities to ensure the global accessibility of the Park to people with physical and/or visual disabilities, implementing, consistent with available resources, constantly new and different initiatives; in particular among the projects to be implemented jointly is the Braille signposting at the Botanical gardens located at the "Cupone" Visitor Centre.

The enhancement of traditional products: the agreement with Slow Food and the DOP (Protected Denomination of Origin) and IGP (Protected Geographical Indication) trademarks
A Memorandum of Understanding was signed with the Province of Cosenza, the A.PRO. ZOO Calabria and Slow Food to promote and protect Podolica cow meat, absolute excellence and characteristic of the local area, as a project in defence of biodiversity, through the establishment of a Slow Food presence that will ensure recognition and guarantees to the product; the "Presìdi" project of Slow Food Italia was created for the recovery and protection of small-scale production of gastronomic excellence threatened by industrial agriculture, environmental degradation, and standardisation. Currently under way are the procedures at Slow Food Italia for obtaining the necessary recognition.

In the Park's territory there are currently, among others, 4 recognised DOP trademarks[27] for Sila cold cuts (Salsiccia di Calabria, Soppressata di Calabria, Capocollo di Calabria and Pancetta di Calabria), a DOP for the Caciocavallo Silano, and one IGP[28] for the Sila Potato. In an effort to protect, promote and disseminate the identity of the Calabria territory, especially in the province of Cosenza, through the enhancement of the natural resources and the recovery of the culture and local traditions related to agriculture, food and wine, the rural environment and the local traditions, by Resolution of the President no. 15 of 18 March 2011 a Memorandum of Understanding was

27 The Protected Designation of Origin is a trademark for the legal protection of the designation given by the European Union to those foods whose peculiar characteristics depend primarily or exclusively on the territory and offer guarantees on different levels of the production process: origin, source of raw materials, location and traditional production process. DOP certified products are regulated by Italian and EU laws, are traceable because they come from a defined geographical area, are obtained through traditional methods, have special characteristics due to an intimate link between the product and the territory (with inimitable geological, agronomic and climatic characteristics) and are the result of production methods that preserve the traditional characteristics of the product.
28 The Protected Geographical Indication is assigned on the basis of quality and reputation deriving from the geographical origin by virtue of the production and/or processing and/or preparation in a certain context.

approved between the Park Authority, the Chamber of Commerce of Cosenza and the Pollino National Park Authority, for the start of concrete actions of cultural, promotional and commercial nature, making aware their respective members and creating the necessary coordination, aimed at promoting social gatherings, community activities, the enhancement of culture and of the artistic and landscape heritage, and the spread of local traditions, with the ultimate aim of establishing and making operational the tourist mechanisms of the territory, respectful of the environmental resources.

The energy independence of the Park and the projects funded in the field of renewable energy
The construction of 5 photovoltaic plants of 3.27 kwh and 1 plant of 9.50 kwh has allowed a reduction of CO2 emissions by a total of 11,000 kg of CO2/year. The second tender, which is being completed, regards the implementation of 2 photovoltaic roofs of 10 kw and 8 biomass boilers, which will allow to achieve the following results: the two roofs will bring a CO2 reduction of 1,700 kg of CO2/year, the 8 biomass boiler will bring a reduction of 257,970 kg of CO2/year.

With the project INTERREG IV C "Robinwood PLUS" - European project in collaboration with the Calabria Region - Sila National Park Authority took part in the call for tenders of the Ministry of the Environment, "Renewable Energy, Energy Conservation and sustainable mobility", presenting a project for the replacement and installation of biomass boilers, for the construction of an on-roof photovoltaic plant for sustainable mobility, for the construction of service centres for the maintenance of bicycles, to implement training and communication on renewable energy sources, energy conservation, and sustainable mobility for the public sector, while for the private sector, the Park project involved the creation of a call for tenders on thermal solar and biomass and a call for tenders on photovoltaics.

A first contract allowed the creation of 5 photovoltaic plants of 3.27 kwh and 1 plant of 9.50 kwh, which allowed to reduce annual CO2 emissions by a total of 11,000 kg of CO2, of which 8,500.00 by the 9.50 kwh plant located at the Park headquarters, and 2,500.00 by the 5 photovoltaic plants of 3.27 kwh. The second contract, which is being completed, regards the implementation of 2 photovoltaic roofs of 10 kw and 8 biomass boilers, which will allow to achieve the following results: the two roofs will bring a CO2 reduction of 1,700 kg of CO2/year, the 8 biomass boiler will bring a reduction of 257,970 kg of CO2/year. Specifically, the CO2 reduction brought by each plant is as follows: the plant located in Cupone 44,900 kg CO2/year, the plant located in Monaco 86,300 kg CO2/year, the plant located in Mellaro 36,000 kg CO2/year, the plant located in Taverna 12,600 kg CO2/year, the plant located in Villaggio Mancuso 17,800 kg CO2/year, the plant located in Cotronei 44,900 kg CO2/year, the plant located in Longobucco 43,170 kg CO2/year, the plant in Albi 21,400 kg CO2/year.

The hub for the Sila forest wood: the application of innovative technologies with high environmental sustainability in the forest-wood-energy production chain among activities of research and development
Among the ecological systems that provide goods and services, the forest and natural ecosystems play an irreplaceable role, which is continuously growing in importance and recognition, especially at the international level (see the recent Copenhagen Accord to reduce tropical deforestation). In fact, forests, although covering little more than 30% of all land surface, account for approximately 60% of its net primary productivity, and it is estimated that 70% of carbon exchange (absorption and respiration) occurs through forest ecosystems; also, forests contain more than 80% of the biomass and hypogeal terrestrial carbon and about 40% of that present in the soil. Forest ecosystems therefore play a key role in a number of important biogeochemical cycles of the biosphere, thereby regulating the parameters of the regional and planetary climate.

Therefore, at the root of the need for a transition towards a sustainable approach to the relationship between man and natural resources lie the advances in scientific knowledge that gave form and substance to an eco-systemic approach to the management of resources, i.e. of forest, soil, water and biodiversity. The concept of sustainability itself refers to actions of multiple meaning, where the service provider, the forest in this case, is also a user of return services: the control and reduction of destructive processes of both a hydrogeological nature and related to fires and to situations of extreme weather allows the creation of new soil and of environments more conducive to life, particularly forests, thereby increasing the capacity of the forest itself to withstand stress situations, to store larger quantities of carbon, and to increase its productivity.

As part of the National Operational Programme "*Research and Competitiveness 2007/2013, Axis I support to structural changes - High Technology Districts and related public-private networks and workshops*", in May 2012 the Ministry for Education, University and Research deemed eligible a project that aims to implement development and research activities promoted within the forest-wood-energy production chain[29] in the territory of the proposed Biosphere Reserve with the creation of an "*interdisciplinary public-private workshop*".

The objective of the "Workshop" is to encourage the development of actions in the field of innovation aimed at the enhancement of the processes and products related to the sector of forest, wood and energy, with the aim of favouring the pre-competitive development, the bringing into being, and the dissemination of the research results, as well as training, marketing, internationalisation of innovative products /processes, and the enhancement of the scientific results.

The work of insertion among the existing excellences and of connection to the Italian, European and international contexts level will be the focus of the activity. Such planning also aims to link the other districts, existing or being established, in the Calabria region and in other regions of convergence, in the context of environmental issues, food production and energy efficiency; the aim is to set up networks of structures and centres of innovation that can integrate their expertise and technological innovations in order to strengthen the system of local enterprises and services, also in view of their exportability, primarily at the level of other countries of the North and South shores of the Mediterranean.

The "aggregation" is made up of a multitude of public and private players located within Calabria and outside the Region; various categories of players are in alignment with the strategic aims of the aggregation, among which: companies contributing technologies and services, industrial and entrepreneurial realities, public research institutes and universities, private research institutions[30]. The processes of collaboration between the players and partners are developed on different levels:

- at the workshop level, the partners will collaborate for the creation of *Thematic Workshops* for the development of research technologies with the aim of linking public-private laboratories and research facilities to systematise the excellences and invite foreign experts for an international viewpoint;

29 The forest-wood-furniture production chain is understood as the set of all activities that go from the production (tree farms and forests) and utilisation of the wood, to its transformation into semi-finished products, before arriving at the production of the finished product and its commercialisation. Companies of the wood-furniture sector are of a small-medium scale (about four employees per company) and mainly craftsmen (87%). This structure was once one of the pivotal points of the manufacturing sector, but currently the timber market seems to favour larger firms, especially for a greater productive specialisation and greater efficiency in the process of marketing the product.

30 Including several Centres and Research Units of the Council for Research and Experimentation in Agriculture, departments of the National Research Centre, the University of Calabria, the Mediterranean University of Reggio Calabria, the University of Bari, the CIRPS, the TeRN Consortium, the CETMA Consortium, Fabiano Legnami s.r.l., SIN s.r.l., Officina InfoByte s.r.l., CRATI s.r.l., SMA s.p.a., the Sila Forest Consortium, SuperElectric, Laboratorio Tevere s.r.l., Impresambiente S.c. a r.l., the Italian Centre for Geomatics etc..

- at the project level, the partners will work together for executive projects of research, innovation and training for the study and implementation of transdisciplinary technological building blocks based on cutting edge technologies for the benefit of the internationalisation of the entire environment-wood-energy production chain;
- at the executive level, depending on the technologies developed in the executive projects, the creation of business spin-offs will be promoted around technologies and services for the internationalisation of wood production and of general environmental services.

Workshops and thematic projects will be developed for advanced monitoring/sensors, advanced stock-taking of forest and environmental resources, integrated resource planning and relationship with the territory, land use, mechanisation and logistics, wood technology, and processing of biomass energy. Among the hypotheses of proposed interventions, the following are noteworthy:

- observation systems for the monitoring of forest resources;
- stock-taking of resources, definition of indicators and scenarios, modelling;
- territorial planning and decision support systems (DSS) for Environmental Risks;
- sustainable management of natural resources, forestry and biomaterials;
- harvesting and processing of wood;
- wood for structural and environmental uses, and antiseismic construction;
- robotics and high-tech, ground-based and embodied sensors;
- innovation and energy/environmental assessment of the wood-energy production chain.

Finally, in this context we highlight the upcoming creation of a Centre for the exploitation of biomass energy in San Giovanni in Fiore. The project proposes a concrete example of a hub where the energy consumption is not only optimised but, above all, entirely met through a high efficiency cogeneration plant, with total use of thermal and electrical energy produced, fuelled by locally produced biomass which is, by the way, a production waste material. The hub's production is also aimed to the local diffusion of pellets, an entirely renewable fuel, which allow low-pollution domestic heating, as well as being much more economical than traditional fossil fuels. Also remarkable is the economic impact of the project on the local economy. In fact, it provides local agricultural and forest farms with a concrete, immediate and long-lasting source of economic income. In addition, the project enables the development of new local industrial firms, with the creation of about 88 new jobs in the mountains.

17.4.6 Indicate how this management/cooperation addresses the objectives of the proposed biosphere reserve (as described in section 13.1).

The Coordination Plan - through which the Partnership pursues the protection of natural and environmental assets, as well as the traditional historical, cultural, anthropological ones - sets out guidelines, objectives, and actions for the management of forest assets (including the preservation, storage, and use of forest resources and of the related traditional activities), meadows and pastures, water resources, fauna and flora. The Plan has in fact as general objective the governance of the nominated area, and has the purpose of ensuring the preservation, protection and enhancement of its wealth of naturalistic, environmental, cultural and agricultural heritage. Furthermore, the Plan:

- sets itself objectives of enhancement of the resources of the proposed Biosphere Reserve through forms of cultural, educational, recreational and tourist use compatible with the conservation objectives first set out and consistent with each other;
- aims to create conditions for the promotion of economic activities compatible with the primary objectives of the protection of naturalistic and environmental resources present in the core areas and buffer zone;

- organises the Park territory, the infrastructure and the urban fabric so that the territorial authorities concerned may develop, in synergy with the Park, coordinated development actions, especially in the sectors of agriculture, forestry, livestock, handicrafts, trade and tourism based on the products of the protected area and on the quality of its environment.

Based on the naturalistic, agricultural and landscape structure of its territory, integrated with the value held by the ecological systems contained therein, and to the risk factors currently acting on them, the Plan represents the summary of the proposed multidisciplinary approach, summarised in the specialist reports included with this document.

The management objectives that the Plan has identified, articulated with specific reference to the different territorial areas affected, are oriented towards these basic goals:

1) Conservation and coevolutionary development. The conservation objectives are closely intertwined with those of local development. In general, the enhancement (in an interregional and European perspective) of the overall image of the Area can contribute to the pursuit of both orders of goals. In particular, the Plan must identify the most appropriate forms of regulation and incentives for the traditional activities and for the use activities in order to jointly ensure:

- the stabilisation and evolution of the environmental systems, the active defence of their resilience, the conservation of biological and landscape diversity, the mitigation of hydraulic and hydrological imbalances, particularly with regard to forests, pastures, critical areas and endangered species;
- the expansion of the characteristics of naturalness, with the recovery and rehabilitation of marginal and blighted areas, and with appropriate forms of management of the processes of renaturalisation;
- the preservation and enhancement of the wealth of historical, anthropological, social and cultural heritage, and of the significance of the landscape for the local cultures, particularly with regard to the settled structures and the historic connection networks;
- the most appropriate social use of the Park and its resources, in terms of education, training and scientific research, as well as recreation and tourism, favouring in particular the more vulnerable groups and people with disabilities;
- the lasting consolidation of the local economic and social systems, of the self-organising capabilities and aptitudes of the local communities, and their prospects for endogenous development, also based on the new economies of usage, and also with appropriate facilities for public and private initiatives consistent with this objective.

The Plan must tend towards a "prudent management" of the available resources and an effective maintenance of the landscape and environment heritage. This implies in particular:

- the rigorous containment of the consumption of soil and water resources, especially with regard to urban and infrastructural uses not strictly motivated by compelling collective needs; and, on the other hand, the promotion of actions for the recovery of abandoned spaces, for the reduction of waste and misuses of water resources;
- the rigorous containment of infrastructural developments not strictly corresponding to compelling collective needs, especially in the presence of underutilised or abandoned infrastructural resources, excluding however additive or transformative developments liable of affecting the recognition, readability and usability of the historic structures and their related landscape contexts, or to determine undesirable environmental impacts; and, on the other hand, the promotion of interventions of recovery, renovation and enhancement of existing infrastructure networks, especially the courses likely to enhance and enrich the enjoyment of the natural, landscape and cultural heritage, as well as measures to promote the use of renewable energy or other energy sources with a lower environmental impact.

2) Development of local networks and identities. The Plan, together with other plans concerning the area covered by the proposed Biosphere Reserve, must pursue the enhancement of the local identities through thei traditional craftsmanship, of the resources, landscapes and local cultures, because:

- on the one hand, they are an expression of the image and the overall wealth of the Park, and a factor of recognition and competitiveness, also for an effective integration of the different local realities into the circuits of use, exchange and production;
- on the other hand, they are an expression of self-organising and self-representative capabilities of the local systems, and a factor in qualifying the conditions of habitability and usability of the territory.

This enhancement involves the promotion of forms, including innovative ones, of use and of tourism, based on the consolidation, reuse and renovation of the building, urban, and infrastructural heritage, and the development of informational, cultural and interpretive activities.

3) Logistic support for an Interregional and European role. The management and enhancement strategies must strive to identify new collaboration and partnership all over the Biosphere Reserve network. In this case the Observatory will develop some strategies and research line to analyze, promote and monitor Sila area and related sustainable development activities, so that Sila MaB can consolidate its international image and strengthen the role it is called to play in the Apennines and in the European ecological and environmental networks.

17.4.7 Is the plan binding? Is it based on a consensus?

The plan is binding for all the partner, as stated by the Partnership Agreement at par. 5. Its adoption was based on a consensus basis, as for all the other decision of the Partnership, as stated by the Partnership Agreement at par. 5, c. 5.

17.4.8 Which authorities are in charge of the implementation of the plan, especially in the buffer zone(s) and the transition area(s)? Please provide evidence of the role of these authorities.

The subject responsible for the implementation of the Biosphere Reserve is the Park Authority; in accordance with the mechanisms provided by National Law 394/91, with the Memoranda of Understanding, conventions and agreements signed for programmatic initiatives or to participate in individual projects, the Park collaborates with a wide variety of public and private stakeholders at a local, regional and national level.

17.4.9 Which factors impede or help its implementation (e.g.: reluctance of local people, conflicts between different levels of decision-making).

As mentioned, already in an early stage of sharing those drafts with the public and private stakeholders, the Sila National Park has pursued a strategy of alliances for land management and for the development of programs and projects with the local community, both through institutional agreements with public administrations, public bodies and universities, and with the signing of agreements with private associations.

Below is a list of agreements in place (the year of signing is in brackets) that can help tje implementation of the objective of the coordination plan in the area in the future.

- Renewal of the agreement with the State Forestry Department (CFS) for the period 2010-2011. (2009).
- Agreement with the Department of Ecology of UNICAL, to support the management of the Natura 2000 Network (2009).
- Agreement with the Department of Agricultural and Forestry Systems Management of the Mediterranean University of Reggio Calabria, to support the management of the Natura 2000 Network (2009).
- Memorandum of Understanding with the UTB (Offices for the Protection of Biodiversity) of the CFS for the management of the ancient sawmill of the Cupole Visitor Centre (2009).
- Memorandum of Understanding with the Province of Cosenza and the Calabria Railways, for the enhancement of the Sila tourist steam train (2010).
- Institutional understanding for "New Territorial Development Policies in the National Park of the Sila" with the Calabria Region and the provinces of Cosenza, Catanzaro and Crotone, for the protection and enhancement of the naturalistic, environmental, historical and cultural resources of the territory of the Park (2010).
- Slow Food Memorandum, with the Province of Cosenza, A.PRO. ZOO Calabria (Livestock Producers Cooperative Company), and Slow Food to promote and protect Podolica cow meat, absolute excellence and characteristic of the local area, as a project in defence of biodiversity, through the establishment of a Slow Food presence that will ensure recognition and guarantees to the product (2011).
- Rimuseum Memorandum, finalised at the meeting of professionals from the Park Authority and UNICAL, with their respective baggage of experience, to achieve the goals of environmental education pursued in the museum facilities of the Authority and of the UNICAL Rimuseum (2011).
- Memorandum of Understanding with the Italian Union of the Blind (UIC - Cosenza Chapter), aimed at a common commitment and mutual cooperation for the enhancement of the territory and of the naturalistic and hiking trail heritage of the Park, in order to ensure accessibility for people with physical and/or visual disabilities (2011).
- Memorandum of Understanding with the “Santi e Briganti” Association, the Province of Crotone, the Gal Kroton (Group for Local Action), the Municipality of Cotronei, the Mountain Community of Alto Marchesato Crotonese and the Uncem (National Union of Mountain Municipalities, Communities and Institutions); the project consists of the creation of a historical, naturalistic and cultural trail for the promotion and enhancement of the environmental resources of the Province of Crotone (2011).
- Memorandum of Understanding with the A.Fo.R. (Regional Forestry Company), with the common commitment and mutual cooperation for the enhancement of the territory of the Park and of its naturalistic and hiking trail heritage (2011).
- Memorandum of Understanding with UNICAL for the creation of projects for environmental education (2011).
- Agreement with the Faculty of Agriculture of the University of Naples "Federico II", for the creation of the project "Better Land - Active conservation of the landscape through agriculture" (2011).
- Memorandum of Understanding between the Sila National Park Authority, the Chamber of Commerce of Cosenza, and the Pollino National Park Authority for the development of the territory respectful of the history, traditions and culture (2011).
- Memorandum of Understanding between the Sila National Park Authority and the Department of Pharmaceutical Sciences - University of Calabria, to promote collaborative programmes in order to expand the knowledge of the plants species and disseminate knowledge (2011).
- Partnership agreement with the Appennino Lucano Val d’Agri Lagonegrese National Park, the Pollino National Park and the National Park of the Casentino Forests, aimed at the

creation of the project “Piccole Guide sulle piste dell'Appennino” ("Small Guides on the slopes of the Apennines") through the raising of national funds (2011);

17.4.10 Is the biosphere reserve integrated in regional/national strategies? Vice versa, how are the local/municipal plans integrated in the planning of the biosphere reserve?

The creation of the Sila proposal begins with the recognition of the role that the proposed Biosphere Reserve can be called to play in the national and European system of protected areas, in the Apennine and Mediterranean system of natural areas, and in the ecological and environmental networks configured on the different scales, ranging from European to local. The adoption of an interregional and European perspective was deemed necessary to pursue an effective integration of the locallcommunities affected by it in the enhancement circuits and to avoid the risks of isolation and marginalisation. This perspective implies an approach that is global (aimed at framing the problems of the area within the broadest environmental and territorial issues), integrated (aimed at including the local policies in the set of multi-sectoral policies for sustainable development) and socially oriented (aimed at connecting the policies of the area to the needs, the expectations and the management capabilities of the local communities and players).

The importance of the proposed Biosphere Reserve was mentioned in the National Biodiversity Strategy Report 2011-2012. MaB Programme is identified as one of the most important initiative at the national plan, for its aim at linking natural values and sustainable development. It identifies MaB Biosphere reserve as laboratory where testing new development strategies, strictly linked with the preservation of the natural diversity of the territory. Thus the conservation of the natural environment became a specific tool for the preservation of the cultural diversity and

Each municipality integrated the specific provision for the fulfillment of the three criterion for the inscription in the BR network, adopting a specific resolution reported in annex.

17.4.11 Indicate the main source of the funding and the estimated yearly budget.

The main sources of resources to implement the objectives of the biosphere reserve and projects will be identified by its governing body.

In addition to resources derived from the participation in ad hoc project activities[31], Sila National Park, as coordinator of the partnership, will guarantee financial, material and human resources and all the other facilities needed, also through the main funding of the Park Authority assigned by the Ministry of the Environment (art. 5, paragraph 13 of Presidential Decree n.97/2003).

The budget of Sila National Park must fulfil the fundamental requirement of equilibrium, which does not allow for provisions; like the annual budget, the long-term (three-year) budget must also be

31 In the Statute of the Park Authority, among the identified revenues, the following are indicated:
a) ordinary and extraordinary contributions from the State;
b) contributions of the Regions and public bodies;
c) funding granted by the European Union;
d) bequests, donations and cash donations;
e) any property income;
f) fees from the concessions provided for by law, the proceeds of the rights of entry and franchise, and other income from services rendered;
g) proceeds from commercial and promotional activities;
h) proceeds from penalties due to non-compliance with regulations;
i) any other proceeds acquired in relation to the activities of the Park Authority.

balanced. The grand total for 2012, incoming and outgoing for the equilibrium requirement, amounts to euros 2,811,671.

Table Multi-Annual Budget 2012/2014

Year 2012	*Year 2013*	*Year 2014*
Residual assets, surplus and current expenditure forecast	Current expenditure forecast	Current expenditure forecast
€ 2,811,671	€ 2,518,183	€ 2,567,864

With regard to the participation of local communities in resource management, in addition to the above mentioned tools and the initiatives pursued, a special mention is reserved for the set of collaborations undertaken under the POR 2007/2013 programme. As part of the 2007-2013 Planning, a new strategic course has been launched for the Territorial Planning and the Integrated Planning aimed at supporting and strengthening the processes of institutional cooperation and of partnership between the players in local development.

In particular, the Park will propose the implementation of the Integrated Local Development Projects for the creation of Local Tourist Systems/Local Tourist destinations and the Integrated Projects Development for the creation of Rural Districts. The project that will be proposed in relation to the "Sustainable mobility in the Sila National Park: Horseback Trail" will vary by territory. We will try to create a ring system that will affect the Sila plateau in Catanzaro, Cosenza and Crotone, in particular by linking the horseback trail with other realities present in the area, ranging from the Sila farm holiday accommodations to the historical, artistic and archaeological wealth, and allowing one to admire landscapes with views of incomparable beauty

With regard to the Rural Districts, The Sila National Park participated in the establishment of the organising committee of the Sila Rural District for the submission of the request for recognition. By resolution of the Regional Council no. 45 of 28/01/2010 the Sila Rural District has been identified and established under Law 21/2004, encompassing 9 municipalities that are part of the Sila National Park. The Sila National Park will continue, throughout 2012, to contribute to the creation of the Sila rural district according to its specific expertise in the field of land management, in order to ensure a more sustainable integration between man and the natural environment, so as to preserve the natural heritage for future generations.

The Park Authority presented its project proposals, signing memoranda of understanding, tailored to participate in the following national tenders:

- call for tenders “Beni culturali invisibili: una risorsa italiana da valorizzare” (invisible cultural heritage: an italian resource to be enhanced) promoted by the Telecom Italia Foundation (FTI) with the project "Sensations from Sila's nature". The project involves the installation of the Museum of Man and the Forest in the former sawmill of the Cupone Visitor Center located in the Sila National Park, and in particular the execution of minor building works, the completion of technical systems, and the installation of museum section using innovative and interactive multimedia technologies, to raise awareness of the interactions that have characterised the relationship between man and the forests of the Sila. The total value of the project is € 580,200.00, of which the amount requested as contribution is € 406,560.00 and the share of co-financing is € 101,640.00: admitted to the ranking but not funded due to limited resources;
- call for tenders "Special and Innovative Projects", sponsored by the “Fondazione per il SUD” (Foundation for the South) with the project "Autonomy and freedom of movement in the Sila National Park" aimed at implementing facilities for the blind in the park through the use of

innovative technologies. The desired replacement and upgrade intervention primarily involves the Cupone Visitor Centre, where there are already services for the blind which need to be modernised and extended, and the Biogenetic Reserve "The Giants of the Sila" where these kinds of services are not present. The total project cost is € 50,000.00: not funded;

- Memorandum of Understanding signed with the ITIS A. Monaco (State technical and industrial high school) of Cosenza to participate as a partner in the project "Tag the park" presented in the scope of the Law n.6/2000 "Initiatives for the dissemination of scientific culture" in partnership with the ITIS "A. Monaco". The project idea is to create a myriad of targets on which to load the information and content that would be viewable and downloadable with an appropriate reader. The Tags will be distributed along the "Thematic trails" created in the Park: the project is nearing completion;
- partner of the educational institutions of the Calabria region wishing to submit projects under the initiative "Le(g)ali al sud: un progetto per la legalità in ogni scuola" (legal/loyal to the south: a project for the rule of law in every school" - Announcement of the presentation by the "Obiettivo Convergenza" (Objective: Convergence) educational institutions of a project within Objective C: "Improving the level of knowledge and competence of young people" Action C. 3 "Interventions on the rule of law, human rights, environmental and intercultural education, including through informal learning modes" of the Programma Operativo Nazionale (National Operational Programme): "Skills for Development" - 2007IT051PO007 - financed by the European Social Fund for the years 2010/2011. 12 agreements with educational institutions have been signed, for the creation and promotion of project activities, and 12 projects were presented under the aforementioned initiative: the projects were all accepted and funded and 10 of 12 have been executed, with two remaining unexecuted for lack of school scheduling;
- agreement signed with the Serra Commercial Technical Institute - Quasimodo Technical Institute for Surveyors of Cosenza for the creation and promotion of project activities, by which it joined as a partner in the project: "Design and promotion of an educational trail in the Sila National Park" presented by the same IIS - ITCG (S. Quasimodo - A.Serra) Via A. Morrone No. 16, Cosenza, in the scope of the school/work alternation course for the school year 2010/2011. The project was approved for funding and will be implemented during the year: executed and closed.

Furthermore, the Authority has also joined the AR.CO programme of the Ministry of Labour and Social Policy, a programme of territorial development for growth and employment – the line of intervention is 4 actions towards local systems for the creation of multi-actor regional networks. Promotional actions were carried out on the territory, involving institutions and private businesses of the area in order to make known the contents and the opportunities for growth and employment development offered by the programme: project completed.

The Authority has presented its candidacy to participate in the following EU programmes:

1. Mini-programme INTERREG IVC Robinwood Plus, with the submission of the candidacy form in the context of the Call for tenders by the Calabria region for Sub-project proposals "for the selection and funding of sub-projects with international partnerships, for skills development and exchange of experiences in matters relating to shared forest planning and sustainable management of forests";
2. Europe Discovery project - Promotion and distribution of Tourism reception services in Europe presented by the city of Cosenza in the scope of the EU programme ICT PSP (Information and Communication Technologies Policy Support Programme).

Thanks to the aforementioned subscription, the Park was the winner on two projects:

- "Destination mountain (development of sustainable tourism: initiatives for the valorisation of mountains)", a project submitted by the province of Cosenza, as leader, in partnership with the

Metsahallitus Parks and Forestry Authority (Finland), Municipality of Dealu (Romania), the Municipality of Reggio Calabria, the Sila National Park Authority. The project was presented and funded within the scope of the mini-programme Robinwood Plus, available under the Interreg IVC programme, between the Liguria Region, Calabria Region, the Regional Council of Limousin (France), Regional Authority of Kainuu (Finland), the Regional Council of Harghita (Romania). The project aims to promote the development of sustainable tourism in forest areas and protected natural areas. The starting point is the recognition that forests can play a key role for the support and maintenance of the economy of rural communities, rural areas and mountain areas, including through the instrument of interregional cooperation.

- "Participation principle for sustainable forest management with multidisciplinary approach". The project sees the involvement of the University of Calabria, the National Park of the Sila, in the province of La Spezia, Romania, Finland, and the province of Crotone. This is a project aimed at identifying one or more rural areas with a strong vocation for forestry - ZRF (Fish restocking and reproduction area) and falling within the Sila National Park; developing a catalogue of opportunities of development of the ZRFs in a transdisciplinary perspective that highlights the cultural, social, environmental and economic sustainability; preparing and developing a management model of the ZRFs; preparing and developing a model of participatory communication within one or more ZRFs.

The Park Authority has subscribed to the call for tenders issued by the Calabria Region - Department of Environmental Policies concerning the "Approval and publication process of accreditation and certification of the experience centres of the IN.F.E.A. (Information, Training, Environmental Education) network of the Calabria region." Therefore the procedure was launched for the accreditation and certification of the Sila National Park as a centre of expertise in the IN. F. E. A. network of the Calabria Region.

17.5 Conclusions:

17.5.1 In your opinion, what will ensure that both the functioning of the biosphere reserve and the structures in place will be satisfactory? Explain why and how, especially regarding the fulfillment of the three functions of biosphere reserves (conservation, development, logistic) and the participation of local communities.

From a historical point of view, Italian parks and PAs both terrestrial and marine are mainly devoted to the conservation and preservation of natural, landscape and ecosystem values and features. Within the strict protection obligations and measures required by the so called Framework Law on Protected Areas (the National law 394/1991), the implementation of the objectives of sustainable development and related promotion activities *in loco* and according to the effective territorial context have been assigned (and delayed) to the regulatory and planning tools set by the entity responsible for the management in accordance with its internal bodies and the territorial Administrations.

As shown in the several activities carried out in the recent years, the aim of the proposed Biosphere Reserve is at involving local communities in a sustainable development strategy for the future, with areas contiguous to a National Park, laboratory for new sustainable development tools.

The vision of the proposed BR is to create a Mediterranean relevant area for enhancing the traditional activities carried out for centuries (e.g. agriculture, wood crafting), tourism sector and research, and to finally offering new opportunities into a revitalized local sustainable development context. The coordinatiom plan of the Biosphere Reservehas been structured along those development axes, with the main purpose to offer new chances for the local traditional activities to

have a sustainable future. The series of public debates organized within the preparatory phase offered the chance to the various stakeholders to manifest their intentions and indications in relation to the desired future ways of fostering the local sustainable development.

In particular, 3 main 'axes', corresponding to Biosphere Reserve functions, emerged as being the preferred drivers for the future Biosphere Reserve development function – also by using European funds in an Italian Region (Calabria) considered as primary for European budget target – and namely:

- ✓ conservation of landscapes, habitat, ecosystems, species and biological diversities, through the actions and activities identified by the Sila National Park;
- ✓ developing the territories in a full sustainable perspective, fostering forestry sustainable exploitations and research, compatible and responsible ecotourisms activities and local quality productions (also by organic farming and labeling policies);
- ✓ guaranteeing a full logistic support for research and education activities, also through the Sila-MaaB Observatory, so that the Sila Biosphere Reserve can be a good practices' model to be emulated besides its geographic boundaries.

The mission is to address main forest and natural values as a driving force not only for the National Park perimeters but for the entire Sila tableland comprising almost 150.000 ha of prevalent mountain territory whose 50% has been already inserted within the National Park and whose 80% is covered by forests of relevant importance and rich with biodiversity in the Mediterranean Eco region. The mission therefore is to create a district including natural park areas and park areas not declined to the specific objectives of the MAB. As shown in cartography attached to Annex 1 of the nomination form (and namely map n. "*1.2 Zonation map of the proposed BR matched with Park zonation*") the potential to enlarge the Biosphere Reserve transition area firstly to contiguous areas provides a first idea for the proposed MAB designation.

Further, the vision is also to establish a main international area in Mediterranean Region. By adding what it has been already stressed in nomination form (par. 15.4.4), Sila regional contribution on a European scale and for EuroMAB network addresses a growing potential for natural areas in the whole Region thanks to Sila richness in term of ecosystem and biodiversity. Within current negotiation in EU institutions in order to create a European framework for the application of the CBD Nagoya Protocol for access and benefit sharing of genetic resources (ABS) and traditional knowledge associated, the draft Regulation proposed by European Commission on October 2012 aims at establishing a unique Union Register for collection in order to spread out cooperation both in research and sustainable uses activities. Since many years Sila already developed cooperation in this field with a germoplasma bank whose seeds and genetic materials have been shared with European countries in order to facilitate reforestation processes.

Matter of fact, since the very first meeting held in 2009 about RB designation process, MAB international dimension is stimulating and awakening institutional and private stakeholders by arising a new interest toward the previous "historical" National Park, by generating new opportunities and also by renewing its regulatory and planning tools. The whole nomination is therefore a process of increasing relevance for a the Region (which participate both Council and Community of the Park Agency) to spread out sustainable development opportunities for the Sila collectivity.

Indeed, efforts and actions carried out by the Park to share both the entire designation initiative and to spread out MAB Program values and principles in the period 2009-2012 followed two main modalities:

1. aiming at involving all the authorities involved (namely the Council and the Community of the Park, gathering all the concerned local Administrations at municipal, provincial and regional level) and Ministry for Environment[32] through technical and official meetings.
2. a second channel to directly involve the whole process with Sila territory citizenship, stakeholders, experts and local universities and academics through *ad hoc* seminar and round table, stimulating the scientific community for the future BR activities.

In order to facilitate both tracks, communication materials have been produced (as shown in Appendix A of the present integrations) to present the UNESCO and MAB Program principles and values and to introduce the whole Sila designation process; experts, researchers both at local and national level, Park officers have been also committed to make a divulgation essay which will be published next spring and aiming at summarizing both natural features of the territory and sustainable activities developed according to the BR Statutory Framework criteria and BR zoning functions.

After meetings with the Presidents of the Sila Provinces, in 2010 Park Agency also gathered *ad hoc* funds to sustain this initiative (with economic contributes from the Provinces of Catanzaro, Cosenza and Crotone) by granting to a technical working group (with the contribution of experts and academics of local and national universities) in order to deepen this process and to delimitate the proposed territory. In Annex 5 of the nomination form it has been reproduced part of this whole process:

- in a first part, some local newspaper reports about activities spread out in Sila meetings held about UNESCO designation process;
- in a second part with letters among Park Agency bodies and local Administrations for the internal meeting and the support for the designation of Sila Biosphere Reserve (including the technical Community and Council sessions which formally decided the sending of the nomination form to Italian National MAB Committee).

As already mentioned, the participatory process to the BR designation started in June 2009 with a first meeting held at Ministry for Environment, and it was followed with:

- the continuous involvement of the Council and Community for the first research concerning the technical nomination criteria in WNBRs of Sila territory (March 2011);
- the support of a national University Consorthium (May 2011 – August 2012) and the local expertise (University of Calabria, Mediterranean University of Reggio Calabria and so on) for the drafting of the nomination file and related annexes;
- the organization of several informal meetings opened with public society and local Administrations in order to discuss the proposal of Sila territory in WNBRs also with *ad hoc* presentation (as in Cosenza on May 2012[33]) explaining UNESCO and MAB mechanisms, missions and goals;
- the participation of the Director of the Park and his staff to some of the 2012 MAB National Italian Committee plenary sessions (namely before and after 24°ICC);
- the organization of the last formal sessions of the Council and the Community (namely on July and September 2012) for the approval of the final draft of the Sila nomination file to WNBRs and of the new versions of Regulation and Plan of the Park in view of the MAB designation process.

[32] At the time of the first operative meeting held in the Ministry for Environment upon request of the President and the Director of the Sila Park Agency, in June 2009 Italian National MAB Committee reestablishment was on progress but not completed yet. Also because of Sila and other Italian natural protected areas request to participate MAB Programme, as reported in the following ICC 21° Session Italian report, inter-ministerial meetings at Ministry for Foreign Affairs and a first thematic seminar "*Island and Coastal Biosphere Reserves in the Mediterranean: Models for Sustainable Development*" of Syracuse (November 2009) were held.

[33] Reference key is to the presentation PPT document prepared for these meetings; see Appendix A.

In conclusion, the added value and benefits provided by the designation of the nominated area into a Biosphere Reserve, according to the MaB Programme are the following:

- future extension of the areas outside the borders of the National Park in order to create a natural district in Calabria, which will be mainly based on the natural development of the park sectors (forestry, renewable energy, agriculture, eco-tourism);
- export the *best practices*, carried out within the Sila National Park, outside its borders;
- development of new research and forest natural values opportunities for local communities through EU funding[34] and cooperation projects at Mediterranean scale (according to the above mentioned 4 axes) through the development of long term management plan (PPES), along with BR cooperation activities within the Mediterranean and European framework;
- the potential involvement of private and public stakeholders also through the Community permanent MAB forum, as well as through specific committees in order to spread out the Sila Biosphere Reserve mission as well as the principles and values of BR networks and MAB Program;
- Sila Biosphere Reserve, if recognized as such, will definitely act as a *focal point* within both the local area and the Mediterranean basin as for sustainable development and education projects;
- Accreditation of Sila Biosphere Reserve within the INFEA[35] (Information, Environmental Education) Network;
- Implementation and promotion of Conventions and Agreements between National and local Bodies for the development of conservation projects, as the Convention signed between the Sila National Park Agency, University of Reggio Calabria (Department of Agricultural and Forestry management); the University of Calabria (Natural History Museum of Calabria and botanical garden), State Forestry Body - Territorial Office for Biodiversity of Cosenza, for the realization of the project called: Development of a part of the Fossiata State Forest, with particular reference to the "Fiume Cecita" and "Vivaio Sbanditi" for the conservation, in and ex situ, of species of particular conservation and forestry value, and aimed to the realization of the "Arboretum of the Sila National Park" and within the meaning of the recognition of the Sila Biosphere Reserve[36].

[34] Calabria is one of the Italian Regions covered by the ERDF Convergence objective, which focuses its intervention on diversifying economic structures as well as safeguarding or creating sustainable jobs.

[35] The *INFEA* program (Information Environmental Education) is an initiative of the Ministry of the Environment and aims at disseminating on the territory environmental information, training and education structures.

[36] Art 2 "Object" of the Convention above mentioned.

18. SPECIAL DESIGNATIONS:

Type of designation	*Action/recognition*
UNESCO Convention for the Protection of World Heritage Sites of 1972	Inclusion in the National Tentative list (2012)
European Charter for Sustainable Tourism	Recognition of the Sila National Park (2012)
Rete Natura 2000 sites[37]	25 SPAs (Special Protected Area), 23 SCIs (Sites of Community Importance) and one Important Birds Area (IBA)
Centres of plant diversity IUCN and WWF	Priority areas for the conservation of the biodiversity of the eco-region of the central Mediterranean, especially for mammals, amphibians, reptiles and vascular plants
IUCN Red List	
European Landscape Convention	The Calabria Region, on 30 May 2006, signed, as a founding member, the statute of the European Network for the Implementation of the European Landscape Convention (RECEP). The Region then produced the Calabrian Landscape Charter, which should serve as a reference for territorial policies.

[37] *Pursuant to the Council Directive 79/409/EEC on the Council relating to the "Conservation of wild birds", also known as the Birds Directive, and the Directive 92/43/EEC of the Council relating to the "Conservation of natural and semi-natural habitats and of the flora and wild fauna", known as the Habitats Directive.*

19. SUPPORTING DOCUMENTS:

(1) Location and zonation map with coordinates

[Provide the biosphere reserve's standard geographical coordinates (all projected under WGS 84).

Provide a map on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve (Map(s) shall be provided in both paper and electronic copies). Shapefiles (also in WGS 84 projection system) used to produce the map must also be attached to the electronic copy of the form. If applicable, also provide a link to access this map on the internet (e.g. Google map, website).]

1.1 Location map of the proposed BR in the regional context

1.2 Zonation map of the proposed BR

1.3 Geolithological map

1.4 Geomorphological map

(2) Vegetation map or land cover map

[A vegetation map or land cover map showing the principal habitats and land cover types of the proposed biosphere reserve should be provided, if available].

2.1 Land cover map

(3) List of legal documents (if possible with English, French or Spanish synthesis of its contents and a translation of its most relevant provisions)

[List the principal legal documents authorizing the establishment and governing use and management of the proposed biosphere reserve and any administrative area(s) they contain. Provide a copy of these documents.

3.1 Partnership Agreement

3.2 National Law 6 December 1991 no. 394

3.3 National Law 8 October 1997 no. 344

3.4 Decree of the President of the Republic 14 November 2002

(4) List of land use and management/cooperation plans

[List existing land use and management/cooperation plans (with dates and reference numbers) for the administrative area(s) included within the proposed biosphere reserve. Provide a copy of these documents. It is recommended to produce English, French or Spanish synthesis of its contents and a translation of its most relevant provisions]

4.1 Land use list

4.2 Sila MaB Cooperation Plan

(5) Species list (to be annexed)

[Provide a list of important species occurring within the proposed biosphere reserve, including common names, wherever possible.]

5.1Important species checklist

(6) List of main bibliographic references (to be annexed)

[Provide a list of the main publications and articles of relevance to the proposed biosphere reserve over the past 5-10 years].

6.1 Bibliographic References

(7) Original Endorsement letters according to paragraph 5

7.1 Local Authorities Resolutions

(8) Further supporting documents.

8.1 Press review

8.2 Supporting letter from the the Italian National Committee MAB

20. ADDRESSES :

The Authority of reference of the Biosphere Reserve is the National Park Authority to which should be addressed all correspondence coming from the MAB Secretary and from the Global Network of Biosphere Reserves. The contact given is that of the director of the Sila National Park, Mr. Michele Laudati, while the representative is Mrs. Sonia Ferrari, President of the Park Authority.

20.1 Contact address of the proposed Biosphere Reserve:	Name	*Mr. Michele Laudati (Coordinator)*
	Street	*Via Nazionale snc*
	City with postal code	*87055 Lorica of San Giovanni in Fiore (CS)*
	Country	*Italy*
	Telephone	*+39.0984.537109*
	Email	*info@parcosila.it - direttore@parcosila.it*
	Website	*http://www.parcosila.it/*

20.2 Administering entity of the core areas:	Name	*Sila National Park* *Mrs. Sonia Ferrari (president)*
	Street	*Via Nazionale snc*
	City with postal code	*87055 Lorica of San Giovanni in Fiore (CS)*
	Country	*Italy*
	Telephone	*+39.0984.537109*
	Email	*presidente@parcosila.it*
	Website	*http://www.parcosila.it/*

20.3 Administering entity of the buffer zone:	Name	*Sila National Park* *Mrs. Sonia Ferrari (president)*
	Street	*Via Nazionale snc*
	City with postal code	*87055 Lorica of San Giovanni in Fiore (CS)*
	Country	*Italy*
	Telephone	*+39.0984.537109*
	Email	*presidente@parcosila.it*
	Website	*http://www.parcosila.it/*

20.2 Administering entity of the transition area:	Name	*Sila MaB Partnership* *Mr. Michele Laudati (Coordinator)*
	Street	*Via Nazionale snc*
	City with postal code	*87055 Lorica of San Giovanni in Fiore (CS)*
	Country	*Italy*
	Telephone	*+39.0984.537109*
	Email	*presidente@parcosila.it*
	Website	*http://www.parcosila.it/*

Annex to Biosphere Reserve Nomination Form, January 2013
MABnet Directory of Biosphere Reserves
Biosphere Reserve Description

Administrative details
Country: Italy
Name of BR: *Sila Biosphere Reserve*
Year designated: (*to be completed by MAB Secretariat)*
Administrative authorities: *Sila National Park Authority*
Name Contact: Mr. Michele Laudati (coordinator)
Contact address: Via Nazionale snc, 87055 Lorica di San Giovanni in Fiore (CS), Italia, +39.0984.537109, direttore@parcosila.it
Related links: *http://www.parcosila.it/*
Social networks**: (16.4.3)**

Description

General description: *(Site characteristics in 11.1; human population in 10)*

Sila Biosphere Reserve is located in Calabria, a Southern Italy region in the centre of the Mediterranean, and includes the territory of the Sila National Park (PNS), which is located in three of the five provinces of Calabria (Cosenza, Catanzaro, Crotone). The Sila area is a large rectangular upland, with N-S orientation, located in the central part of the Calabria Region, and covering approximately 1,700 square kilometres. It is defined morphologically by the Sibari Plain and the final part of the Crati River to the north; the valleys of the Crati and Savuto Rivers to the west; the Lamezia Terme Plain, the Amato River, the Sella di Marcellinara and the Catanzaro Ionian coast to the south; the Marchesato and the Crotone and Cosenza Ionian coast to the east. The uplands form a magnificent and mature erosion surface with soft-contoured mountains, scattered with higher mountain chains and peaks, from which the main rivers of the region descend (Crati, Tacina, Neto, Trionto, Savuto, Corace etc.). There are glacial moraines between the altitudes of 1,600 m and 1,750 m on Mount Botte Donato, as well as several springs, lakes and seasonal lakes; the largest ones are the Cecita, Arvo and Ampollino reservoirs. The territory of the Reserve contains the main mountains of the Sila uplands. The plateau consists of many different landscapes, which stretch across more than 400,000 hectares of alluvial plains and valleys, with hilly terraced terrain alternating with extensively flat areas and peaks that can reach up to nearly 2,000 m, where the forest is the most predominant and peculiar element. Sila landscape has witnessed interactions between humans and nature for over a thousand years and despite this, harmony has always been maintained between human activities (mainly agricultural, animal breeding and the use of the forests) and the special physical and natural environment and the urban settlements that have been harmoniously built up within its natural context. The population living in the 71 Municipalities coming within the MAB Reserve totals is about 386,000, of which 6,500 in the buffer zone.

The Sila Biosphere Reserve is undoubtedly the area of the Italian peninsula with the most hotspots of genetic diversity within the Mediterranean region, since the fauna has a level of genetic differentiation much higher than the European average. Due to its morphological and geographical characteristics, the area hosts extremely varied natural environments with microclimates that vary depending on altitudes and slopes. This results in a wide variety of habitats and species, including rare, localised and endemic species. Sila hosts approximately 1,000 types of vascular plants, of which 81 endemic; over 210 species of vertebrates of which: 113 birds (82 nesting), 65 mammals, 16 reptiles, 12 amphibians, 6 fish, and a rich biodiversity of arthropods with 2,632 known taxa and an estimated number of over 15,000, with considerable local and regional endemic distribution.

Major ecosystem type: *Sub-Mediterranean pine forests with endemic black pines*

Major habitats & land cover types

The most important natural habitats including: the "*Sub-mediterranean pine forests with endemic black pines*" and those in the "*Deciduous Mediterranean Forests*", including: the "Apennine beech forests with Abies alba and beech forest with Abies nebrodensis" and the "*Apennine beech forests with Taxus and Ilex*". In the Sila, these South-Apennine forest species cover the greatest area, and have an excellent conservation status. More specifically, the habitat of the *Sub-mediterranean pine forests with endemic black pines* is formed by the endemic arboreal subspecies *Pinus laricio* ssp. *Calabrica* (sometimes known in English as the Corsican pine) covering around 33,400 ha in total of the Sila territory.

Five major habitats and land cover types have been identified:

1. *"Coniferous forests of the Mediterranean and Macaronesian mountains", including the "Sub-mediterranean pine forests with endemic black pines"*
2. "*Deciduous Mediterranean forests", including: "Apennine beech forests with Abies alba and beech forests with Abies nebrodensis" and "Apennine beech forests with Taxus and Ilex*"
3. *Herbaceous and alpine shrub vegetation*
4. *Mediterranean Oak Forests*
5. *Hygrophilous arboreal vegetation*.

The Sila territory hosts habitats recognized as “Forests of temperate mountain conifers” and the habitats of “Mediterranean deciduous forests”. These Southern Apennine forests types in the Sila mountains are the ones that are most widespread and representative with regard to the state of conservation. The territory within the nominated Biosphere Reserve SCIs is characterized by the most common habitats: 42.7% of ***Pinus laricio*** (9530* Sub-mediterranean pine forests with endemic black pines), 30.2% of ***beech forest*** (9220* Apennine beech forests with Abies alba and beech forests with Abies nebrodensis - 30.0% and 9210* Apennine beech forests with Taxus and Ilex - 0.2%), more than 6.8% ***riparian formations*** (92A0 Gallery forests of Salix alba and Populus alba) and 4.2% ***oak forests*** (9340 Forests of Quercus ilex and Quercus rotundifolia).

Bioclimatic zone (11.5)

Location (latitude & longitude):

Cardinal points:	**Latitude**	**Longitude**
Most central point:	39° 20′ 26″ N	16° 26′ 30″ E
Northernmost point:	39° 47′ 2″ N	16° 19′ 8″ E
Southernmost point:	38°58′0″N	16°32′0″E

Westernmost point:	39° 18′ 0″ N	16° 15′ 0″ E
Easternmost point:	39°11′18″N	17°0′15″E

Total Area (ha): **357,294 ha**

Core area*(s):* **6,803.22 ha**

Buffer zone*(s):* **59,557.92 ha**

Transition area*(s) :* **290,933.02 ha**

Different existing zonation: The Sila National Park Plan, recently approved by the Council of the Park on 15 July 2012 and by the Community of the Park on 17 December 2012, in compliance with the above mentioned *Framework Law on protected areas* (art 12, 2 paragraph), and according to the conservation measures for Natura 2000 sites, organizes the whole territory of the National Park as follows:

- ✓ **A Zone**: Integral Reserve zones;
- ✓ **B Zone**: General Oriented Reserve zones;
- ✓ **C Zone**: Protection areas for traditional uses;
- ✓ **D Zone**: areas for sustainable economic promotion;

Transition zone areas, right outside, are equally subjected to Regional regulations with particular reference to fishing, hunting and mining activities carried out inside their territory, as laid down in art 32 of the *Framework Law on protected areas* no. 394/1991.

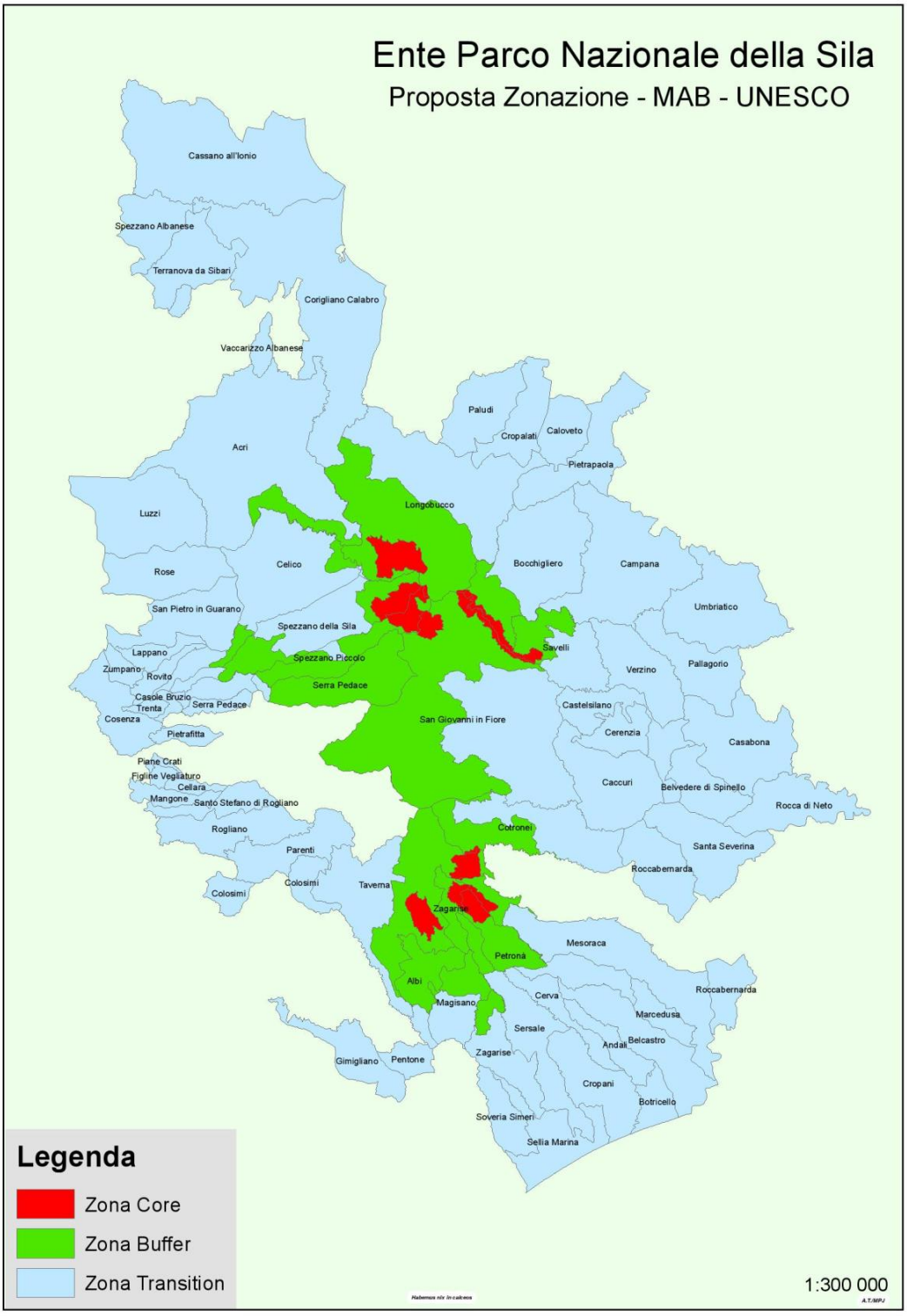
In the context of the strict conservation of natural resources as set forth in Law 394/91, an attempt has been made to conserve the special aspects of the Sila uplands created over centuries of history and related to customs and traditions that have made this territory unique. There has been particular emphasis on the presence of large areas used, today and in the past, for the grazing from May to November, which helps maintain the tradition of transhumance and agriculture with the coastal areas of the Ionian coastline of the Provinces of Cosenza and Crotone. Specifically:

- ✓ The Core Area is subdivided into various areas scattered over the entire poposed Reserve. The division has been based above all on the forest areas representing the most mature stage of the vegetation series, seeking to represent the different types in the territory of the Park. Sections of forest vegetation were chosen where the flora structure and composition was well preserved, taking into account the sites already coming under the protected areas. They correspond to “A Zone” of the park, territories of integral protection;
- ✓ The Buffer Zone of the proposed Sila Bioshpere Reserve features valuable forests not included in the Core Areas, as well as other types highly significant environmental features such as humid meadows, arid meadows and mountain shrubs for which the presence of grazing is a major control on growth. In some cases the Buffer Zone includes SIC sites and natural reserves, systems quite similar to the ones included in the integral reserves (Core Areas). These Areas are similar to integral reserves with regard to some protection rules, but in these sites some kind of human activity in order to preserve natural values are allowed. The correspond to “B Zone”, “C Zone” and “D Zone” of the Sila National Park, areas aimed at protecting the integral reserve nucleus with specific tools;
- ✓ For the creation of the Transition Zone, the contiguous municipalities that hosts areas most dedicated to farming, forestry and livestock raising have been identified, as well as sites

sharing sustainable development activities set forth in the various development plans, projects and programmes in the past and in the present.

Altitudinal range *(*metres above sea level):
Highest elevation above sea level: **1,929 m** metres at Botte Donato Mount.
Lowest elevation above sea level: **0 m** metres at Cassano all'Ionio

Zonation map(s):



Main objectives of the biosphere reserve

Brief description (13.1)

This process for the "internationalization" of the Sila area aims at capitalizing the work done in previous years and at favouring:
- The growth and coordination of a network of quality territories – which can be considered as environmental districts – as learning laboratories aimed at maintaining and developing ecological and cultural diversity, and guaranteeing the ecosystem services for human wellbeing;
- The development and integration of knowledge, also in the scientific sphere, for a better understanding of the interaction between man and nature;
- The enhancement of the capacity to manage complex socio-ecological systems, the constant dialogue between science and politics, environmental and multimedia educations, and active participation of the community.

Research

Brief description (16.1.1)

The activity opf research will be promoted and coordinated by the Sila MaB Observatory, composed by the main research centres of Calabria Region: Calabria University, Mediterranean University of Reggio Calabria, CNR and CRA. Various protocols have been signed also by the coordinatior for partnerships and future studies with various organisations with regard to the socio-economic sector.

Monitoring

Brief description (16.1.1)

Monitoring activities will be promoted and analyed by MaB Sila Observatory. In particular some activities are already planned, with the contribution of coordinator of the proposed Biosphere Reserve, with regard both to the abiotic parameters (quality of water, climate, atmosphere, geosphere, physical agents, hydrosphere, natural and anthropogenic risks, landscape, etc.) and biotic parameters (nature and biodiversity, social and economic trends).

Specific variables (fill in the table below and tick the relevant parameters)

Abiotic		Biodiversity	
Abiotic factors	X	Afforestation/Reforestation	X
Acidic deposition/Atmospheric factors	X	Algae	
Air quality	X	Alien and/or invasive species	
Air temperature		Amphibians	X
Climate, climatology	X	Arid and semi-arid systems	
Contaminants		Autoecology	
Drought		Beach/soft bottom systems	
Erosion		Benthos	
Geology	X	Biodiversity aspects	X
Geomorphology	X	Biogeography	
Geophysics		Biology	
Glaciology		Biotechnology	
Global change		Birds	X
Groundwater	X	Boreal forest systems	
Habitat issues	X	Breeding	
Heavy metals		Coastal/marine systems	
Hydrology		Community studies	
Indicators		Conservation	X
Meteorology	X	Coral reefs	
Modeling		Degraded areas	
Monitoring/methodologies	X	Desertification	
Nutrients		Dune systems	
Physical oceanography		Ecology	
Pollution, pollutants		Ecosystem assessment	
Siltation/sedimentation		Ecosystem functioning/structure	
Soil		Ecosystem services	
Speleology		Ecotones	
Topography		Endemic species	X
Toxicology		Ethology	
UV radiation		Evapotranspiration	
		Evolutionary studies/Palaeoecology	
		Fauna	X
		Fires/fire ecology	
		Fishes	
		Flora	X
		Forest systems	X
		Freshwater systems	X
		Fungi	
		Genetic resources	X
		Genetically modified organisms	
		Home gardens	
		Indicators	
		Invertebrates	X
		Island systems/studies	
		Lagoon systems	
		Lichens	
		Mammals	X
		Mangrove systems	
		Mediterranean type systems	X
		Microorganisms	

		Migrating populations	
		Modeling	
		Monitoring/methodologies	
		Mountain and highland systems	X
		Natural and other resources	X
		Natural medicinal products	
		Perturbations and resilience	
		Pests/Diseases	
		Phenology	
		Phytosociology/Succession	
		Plankton	
		Plants	
		Polar systems	
		Pollination	
		Population genetics/dynamics	
		Productivity	
		Rare/Endangered species	
		Reptiles	X
		Restoration/Rehabilitation	
		Species (re) introduction	
		Species inventorying	X
		Sub-tropical and temperate rainforest	
		Taxonomy	
		Temperate forest systems	
		Temperate grassland systems	
		Tropical dry forest systems	
		Tropical grassland and savannah systems	
		Tropical humid forest systems	
		Tundra systems	
		Vegetation studies	X
		Volcanic/Geothermal systems	
		Wetland systems	
		Wildlife	

Socio-economic		Integrated monitoring	
Agriculture/Other production systems	X	Biogeochemical studies	
Agroforestry	X	Carrying capacity	
Anthropological studies		Climate change	
Aquaculture		Conflict analysis/resolution	
Archaeology		Ecosystem approach	
Bioprospecting		Education and public awareness	
Capacity building		Environmental changes	
Cottage (home-based) industry		Geographic Information System (GIS)	X
Cultural aspects	X	Impact and risk studies	X
Demography	X	Indicators	X
Economic studies		Indicators of environmental quality	
Economically important species		Infrastructure development	
Energy production systems		Institutional and legal aspects	
Ethnology/traditional practices/knowledge	X	Integrated studies	
Firewood cutting		Interdisciplinary studies	
Fishery		Land tenure	
Forestry	X	Land use/Land cover	
Human health		Landscape inventorying/monitoring	
Human migration		Management issues	
Hunting		Mapping	
Indicators		Modelling	
Indicators of sustainability		Monitoring/methodologies	
Indigenous people's issues		Planning and zoning measures	X
Industry		Policy issues	
Livelihood measures		Remote sensing	
Livestock and related impacts		Rural systems	X
Local participation	X	Sustainable development/use	X
Micro-credits		Transboundary issues/measures	
Mining		Urban systems	
Modelling		Watershed studies/monitoring	
Monitoring/methodologies			
Natural hazards			
Non-timber forest products			
Pastoralism			
People-Nature relations			
Poverty			
Quality economies/marketing			
Recreation			
Resource use			
Role of women			
Sacred sites			
Small business initiatives			
Social/Socio-economic aspects	X		
Stakeholders' interests			
Tourism	X		
Transports			

Annex II to the Biosphere Reserve Nomination Form, January 2013
Promotion and Communication Materials
For the Proposed Biosphere Reserve

Provide some promotional material regarding the proposed site, notably high quality photos, and/or short videos on the site so as to allow the Secretariat to prepare appropriate files for press events. To this end, a selection of photographs in high resolution (300 dpi), with photo credits and captions and video footage (rushes), without any comments or sub-titles, of professional quality – DV CAM or BETA only, will be needed.

In addition, return a signed copy of the following Agreement on Non-Exclusive Rights. A maximum of ten (10) minutes on each biosphere reserve will then be assembled in the audiovisual section of UNESCO and the final product, called a B-roll, will be sent to the press.

United Nations Educational, Scientific and Cultural Organization
Organisation des Nations Unies pour l'éducation, la science et la culture
Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura
Организация Объединенных Наций по вопросам образования, науки и культуры
منظمة الأمم المتحدة للتربية والعلم والثقافة
联合国教育、科学及文化组织

UNESCO Photo Library
Bureau of Public Information

Photothèque de l'UNESCO
Bureau de l'Information du Public

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Reference:

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   b) These rights are granted to UNESCO for the legal term of copyright throughout the world.

   c) The name of the photographer will be cited alongside UNESCO's whenever his/her work is used in any form.

2. I certify that:

   a) I am the sole copyright holder of the photo(s) and am the owner of the rights granted by virtue of this agreement and other rights conferred to me by national legislation and pertinent international conventions on copyright and that I have full rights to enter into this agreement.

   b) The photo(s) is/are in no way whatever a violation or an infringement of any existing copyright or licence, and contain(s) nothing obscene, libellous or defamatory.

Name and Address :

Date :
Signature :

(sign, return to UNESCO two copies of the Agreement and retain the original for yourself)

Mailing address: 7 Place Fontenoy, 75352 Paris 07 SP, Direct Telephone: 00331 – 45681687
Direct Fax: 00331 – 45685655; e-mail: photobank@unesco.org; m.ravassard@unesco.org

United Nations Educational, Scientific and Cultural Organization
Organisation des Nations Unies pour l'éducation, la science et la culture
Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura
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