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Project Title

Towards a Common Quality Control and food chain traceability system for the Greek – Italian primary sector of activity



Agroquality

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INTRODUCTION

This document responds to the action 4.4.2 "Maps Provisioning" project "AGROQuality: Towards a Common Quality control and food chain traceability system for the Greek - Italian primary sector of activity", in relation to which the Municipality of Lecce, partner (P2) Agroquality, provides geographic information and related map for the area of interest, in particular for the Province of Lecce.

This document is accompanied by a series of data in electronic form (ortho, shapefiles, images, etc.) that enable all stakeholders to use them in any combination and proceed to further analysis in order to create their maps.

Shapefiles and the products of spatial analysis will be developed using ESRI ArcGIS software, directly managed by the Lead Partner.

1. Maps of the project

The implementation of the GIS system plays a significant role in the platform Agroquality .

The objective that we wanted to achieve with the GIS is the geo - correlation , and therefore the correlation in the data space available, in order to ensure a useful and intuitive interaction of the end user, a storage and effective management of structured data and an efficient spatial query .

The GIS will provide geographical information of the context in which they related , at the same time , a set of data that will provide a framework of knowledge , in terms of location and quality characteristics of product and process, for each phase : cultivation, production, storage, of a part of companies representative of the different oil realities in Salento, and a production of high and very high quality .

This will be possible thanks to an interaction between GIS and the ECR system , which will allow the association between geographic map and data contained in the ECR Record .

The information, relating to the companies involved, will refer to :

- Localization of companies

Through the GIS system will be able to easily locate on map companies taken into account

in the project and each will see the land on which production takes place.

In order to delineate the land of production, starting from the cadastral information (Municipality, sheet and particles) relative to the 10 companies selected in the mapped sample, it has been possible to trace the coordinates of the perimeter of such particles and thus to their representation in the system GIS.

- General Characteristics of the Repository

the set of agronomic knowledge in terms of classification, cultivation practices, use of fertilizers, pesticides, chemicals, organic practices, collection systems, irrigation systems, etc..

- Data of individual crops

- Static data (for example, location, company ID, characteristics and composition of the soil);
- Changing data (for example, climate, soil moisture, pests, cultivation activities), information that can generally change in each cultivation period.

The first step towards the construction of the GIS system was the identification and collection of data and then processing them.

The project team of the Municipality of Lecce, in agreement with the Lead partner, in order to find the geo-spatial information useful for the implementation of the Record ECR, began its work by starting from the identification and collection of data through a qualitative research based on visits and meetings with producers of the sample directly from their farms.

This kind of research has allowed the collection of general information concerning the characteristics of the plots and of detailed information concerning the growing techniques. This information are present in the ECR - Electronic Record of Crops, and therefore also directly accessible via the GIS.

The GIS system will contain a lot of different information and data, such as land use maps , cadastral maps , orthophotos, satellite images , Excel tables, and more, the system arranges for layers or layer , integrated and superimposed in a single geographic reference

system .

It was decided, therefore, to data collection, drawing from different sources, to build those layers of information representing the territorial context and reality of the business under consideration.

The different layers of information will be administered through a single reference system (GIS) directly managed by the Lead Partner will have the following structure.

2. The background cartographic

To meet the needs of a digital map background, recourse was made to the database of the Puglia region.

The Region of Puglia, for some years, has a Geographic Information System (GIS) that aims to respond to the needs expressed by the local authorities by providing an information basis only, official and shared, and all the tools necessary to support the operational processes of planning.

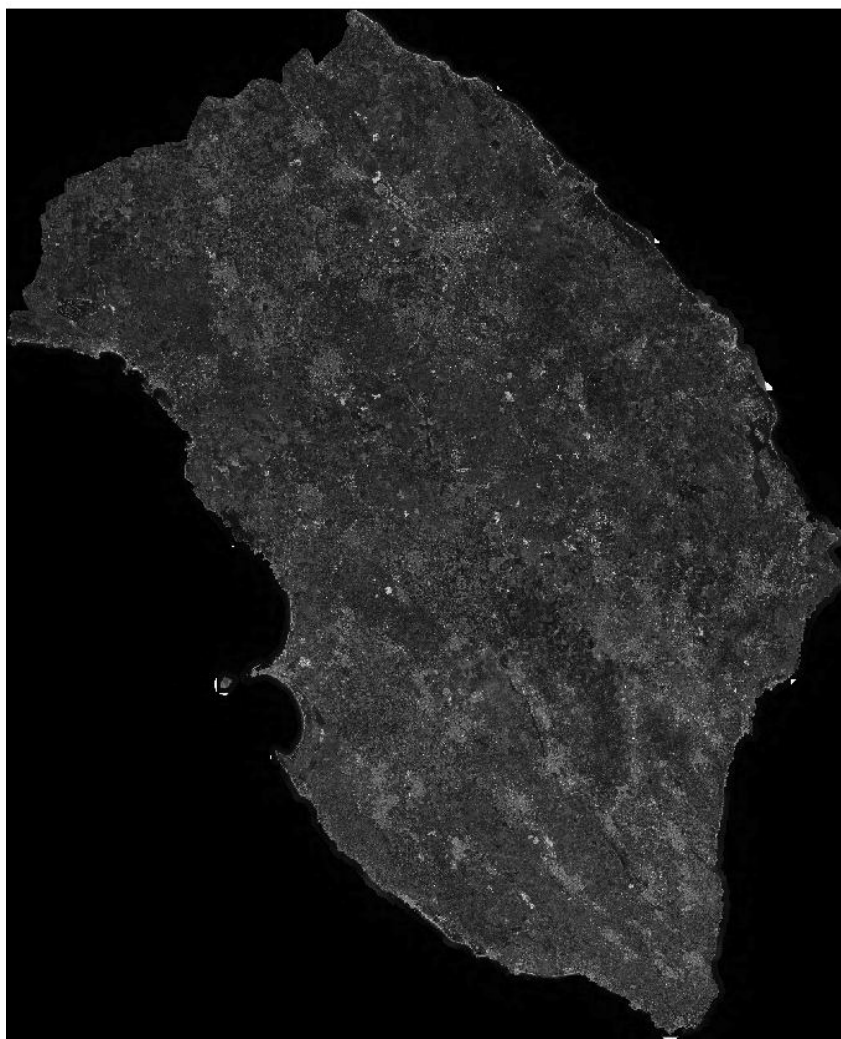
Using the Geographic Information System of the Region of Puglia, with reference to the territory of the Province of Lecce, has acquired the availability digital orthophoto 2010.

The digital orthophoto 2010 was acquired with a digital camera in the period April to August 2010.

Specifications:

<ul style="list-style-type: none">– pixel: 50 cm– scale: 1:10.000	<ul style="list-style-type: none">– file format: .ecw– reference system: UTM zone 33N
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Figure 1. Digital orthophoto 2010



Fonte: SIT Regione Puglia

According to the Agreement for cooperation in the geotopocartographic field signed between the Region of Puglia and AGEA (Agency for Agricultural Payments), the orthophoto is made available via the SIT, through consultation services and WMS services.

Therefore, the Municipality of Lecce, under the Agreement, in order to have the cartographic product has entered into a special agreement with the Region of Puglia for reuse orthophoto 2010 AGEA property on the territory of the Province of Lecce.

3. The thematic map of ground use

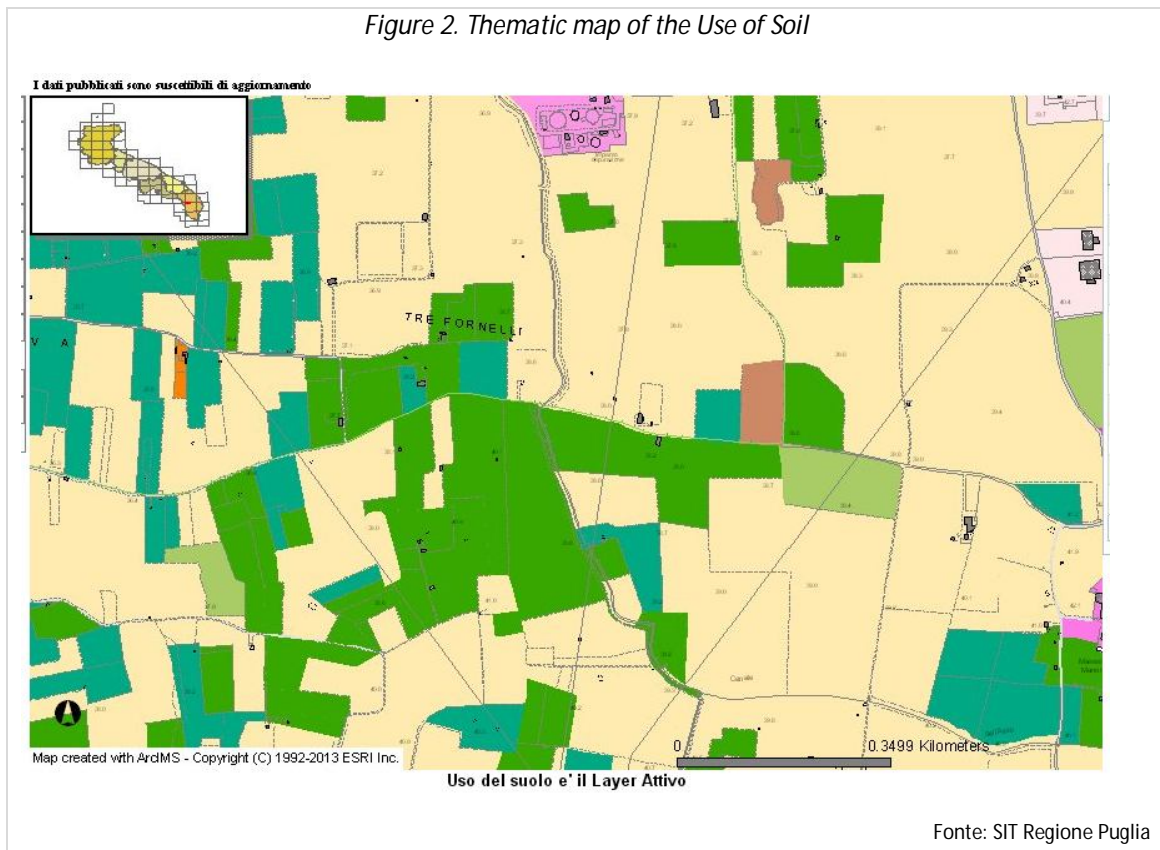
The Region of Puglia also provides card Land Use.

Use of the card Soil is derived from orthophotos with pixels of 50 cm made from airplane flight from 2006 to 2007.

The main geometrical characteristics are the following:

- scale 1:5.000
- minimum areal bile 2,500 square meters
- reference system UTM – WGS84, zone 33.

Figure 2. Thematic map of the Use of Soil



Regarding the thematic content, the land use map is compliant with the standard defined at European level with the specifications of the project *CORINE* Land Cover (with extension to the fourth level) and involves the characterization of the Legend in 69 classes.

Figure 3. Key to the Use of Soil Thematic map

I Livello	II Livello	III Livello	IV Livello
1 Superfici artificiali	1.1 Insediamento residenziale	1.1.1 Insediamento continuo	1.1.1.1 Tessuto residenziale continuo, antico e denso
			1.1.1.2 Tessuto residenziale continuo, denso più recente, basso
			1.1.1.3 Tessuto residenziale continuo, denso più recente, alto
		1.1.2 Insediamento discontinuo	1.1.2.1 Tessuto residenziale discontinuo
			1.1.2.2 Tessuto residenziale rado e nucleiforme
			1.1.2.3 Tessuto residenziale sparso
	1.2 Insediamento produttivo, dei servizi generali pubblici e privati, delle reti e delle aree infrastrutturali	1.2.1 Insediamento industriale, commerciale e dei grandi impianti di servizi	1.2.1.1 Insediamento industriale o artigianale con spazi annessi
			1.2.1.2 Insediamento commerciale
			1.2.1.3 Insediamento dei grandi impianti di servizi pubblici e privati
			1.2.1.4 Insediamenti ospedalieri
			1.2.1.5 Insediamenti degli impianti tecnologici
			1.2.1.6 Insediamenti produttivi agricoli
			1.2.1.7 Insediamenti in disuso
		1.2.2 Reti ed aree infrastrutturali	1.2.2.1 Reti stradali e spazi accessori (svincoli, stazioni di servizio, aree di parcheggio, ecc).
			1.2.2.2 Reti ferroviarie comprese le superfici annesse
			1.2.2.3 Grandi impianti di concentrazione e smistamento merci
			1.2.2.4 Aree per impianti delle telecomunicazioni
			1.2.2.5 Reti ed aree per la distribuzione, la produzione e il trasporto dell'energia
		1.2.3 Aree portuali	
		1.2.4 Aree aeroportuali ed eliporti	



1.3 Aree estrattive, cantieri, discariche e terreni artefatti ed abbandonati	1.3.1 Aree estrattive	
	1.3.2 Discariche e depositi di rottami	
	1.3.2.1 Discariche	
	1.3.2.2 Depositi di rottami a cielo aperto, cimiteri di autoveicoli	
	1.3.3 Cantieri	
	1.3.3.1 Cantieri, spazi in costruzione e scavi	
	1.3.3.2 Suoli rimaneggiati ed artefatti	

1.4 Aree verdi urbanizzate	1.4.1 Aree verdi urbane	
	1.4.2 Aree ricreative e sportive	
	1.4.2.1 Campeggi, strutture turistiche ricettive a bungalows o simili	
	1.4.2.2 Aree sportive (calcio, atletica, tennis, ippodromi, golf, ecc)	
	1.4.2.3 Parchi di divertimento (acquapark, zoosafari e simili)	
	1.4.2.4 Aree archeologiche	
	1.4.3 Cimiteri	

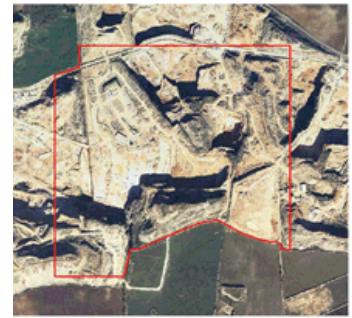
2 Superfici agricole utilizzate
























2.1 Seminativi	2.1.1 Seminativi in aree non irrigue	
	2.1.1.1 Seminativi semplici in aree non irrigue	
	2.1.1.2 Colture orticole in pieno campo, in serra e sotto plastica in aree non irrigue	
	2.1.2 Seminativi in aree irrigue	
	2.1.2.1 Seminativi semplici in aree irrigue	
	2.1.2.3 Colture orticole in pieno campo, in serra e sotto plastica in aree irrigue	

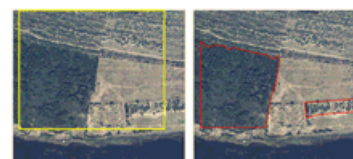
2.2 Colture permanenti	2.2.1 Vigneti	
	2.2.2 Frutteti e frutti minori	
	2.2.3 Oliveti	
	2.2.4 Altre colture permanenti	

2.3 Prati stabili (foraggiere permanenti)	2.3.1 Superfici a copertura erbacea densa	

2.4 Zone agricole eterogenee	2.4.1 Colture temporanee associate a colture permanenti	
	2.4.2 Sistemi colturali e particellari complessi	
	2.4.3 Aree prevalentemente occupate da colture agrarie con presenza di spazi naturali	
	2.4.4 Aree agroforestali	



3 Superfici boscate ed altri ambienti naturali			
3.1 Aree boscate			
	3.1.1 Boschi di latifoglie		
	3.1.2 Boschi di conifere		
	3.1.3 Boschi misti di conifere e latifoglie		
	3.1.4 Prati alberati e pascoli alberati		
3.2 Ambienti caratterizzati da copertura vegetale prevalentemente arbustiva e/o erbacea in evoluzione naturale			
	3.2.1 Aree a pascolo naturale praterie, incolti		
	3.2.2 Cespuglieti e arbusteti		
	3.2.3 Aree a vegetazione sclerofilla		
	3.2.4 Aree a vegetazione arborea e arbustiva in evoluzione		
		3.2.4.1 Aree a ricolonizzazione naturale	
		3.2.4.2 Aree a ricolonizzazione artificiale (rimboschimenti nella fase di novellato)	
3.3 Zone aperte con vegetazione rada o assente			
	3.3.1 Spiagge, dune e sabbie		
	3.3.2 Rocce nude, falesie, affioramenti		
	3.3.3 Aree con vegetazione rada		
	3.3.4 Aree interessate da incendi o da altri eventi dannosi		
4 Ambiente umido			
	4.1 Zone umide interne		
	4.1.1 Paludi interne		
	4.2 Zone umide marittime		
	4.2.1 Paludi salmastre		
	4.2.2 Saline		
	4.2.3 Zone intertidali marine		
5 Ambiente delle acque			
	5.1 Acque continentali		
	5.1.1 Corsi d'acqua, canali e idrovie		
			5.1.1.1 Fiumi, torrenti e fossi
			5.1.1.2 Canali e idrovie
	5.1.2 Bacini d'acqua		
			5.1.2.1 Bacini senza manifeste utilizzazioni produttive
			5.1.2.2 Bacini con prevalente utilizzazione per scopi irrigui
			5.1.2.3 Acqua colture
	5.2 Acque marittime		
	5.2.1 Lagune, laghi e stagni costieri		
	5.2.2 Estuari		



Fonte: SIT Regione Puglia

The Land Use was produced as part of the Framework Program (FPA) in the Field of e - government and Information Society of the Region of Puglia, Project for the implementation of the Regional Geographic Information System (GIS) project, funded through POR 2000/2006 measure 6.3, the CIPE. 17/2003 and the subsequent CIPE. 83/2003. The use of the soil was carried out by RTI Rilter / SIT / Telespazio and tested by Technopolis.

4. The Charter Idrogeomorfologica of Puglia

Using the Geographic Information System of the Puglia region it was possible to extrapolate the Charter Idrogeomorfologica on the territory object of interest.

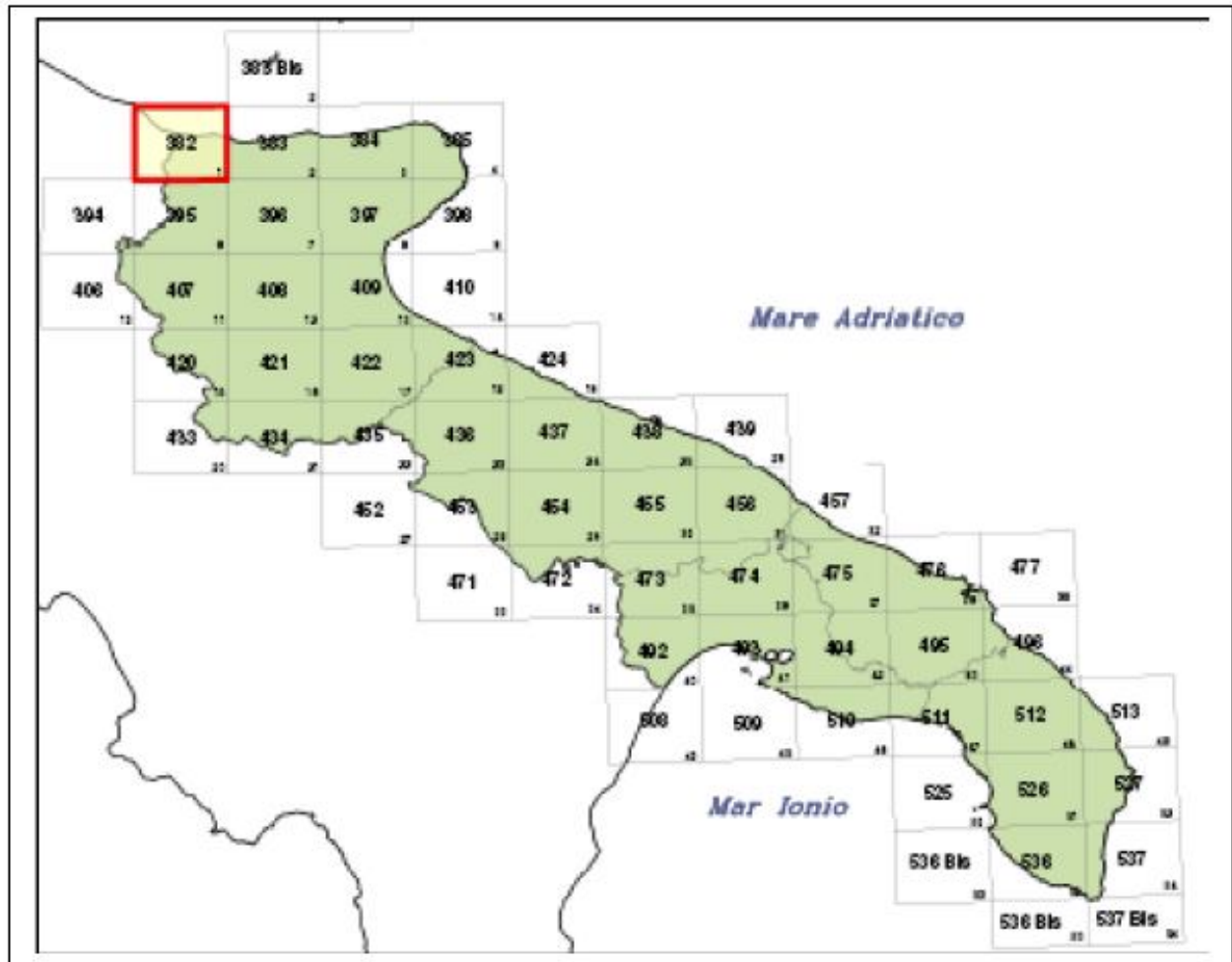
The Regional Council of Puglia, with resolution no. 1792, 2007, entrusted Basin Authority of Apulia the task of drafting a new charter Idrogeomorfologica of Apulia, as an integral part of the cognitive framework of the new Regional Spatial Landscape Plan (PPTR), suitable for the Legislative Decree 42/2004.

The new Charter Idrogeomorfologica of Apulia, in a scale of 1:25,000, has as its main objective is to provide a framework of knowledge, consistent and up to date, of the various elements that contribute to the current physical configuration of the earth's relief, with particular reference to those relating to morphological and hydrographic structure of the same territory, outlining the morfografici and morphometric characters and interpreting the source as a function of geomorphic processes, natural or human-induced.

The new Charter Idrogeomorfologica of Apulia was performed using as the baseline topographical data, the digital terrain model (DTM) and orthophotos (for the period 2006-2007), implemented by the Region of Puglia in the project of the new Charter Regional Technical (CTR).

The work was organized for projects corresponding to the individual "leaves", in accordance with the division of "sections" of cartography IGMI a scale of 1:50,000, which sees the entire Apulian territory encompassed n. 54 of these sections.

Figure 4. Framework for union of the leaves of the Charter Idrogeomorfologica of Puglia



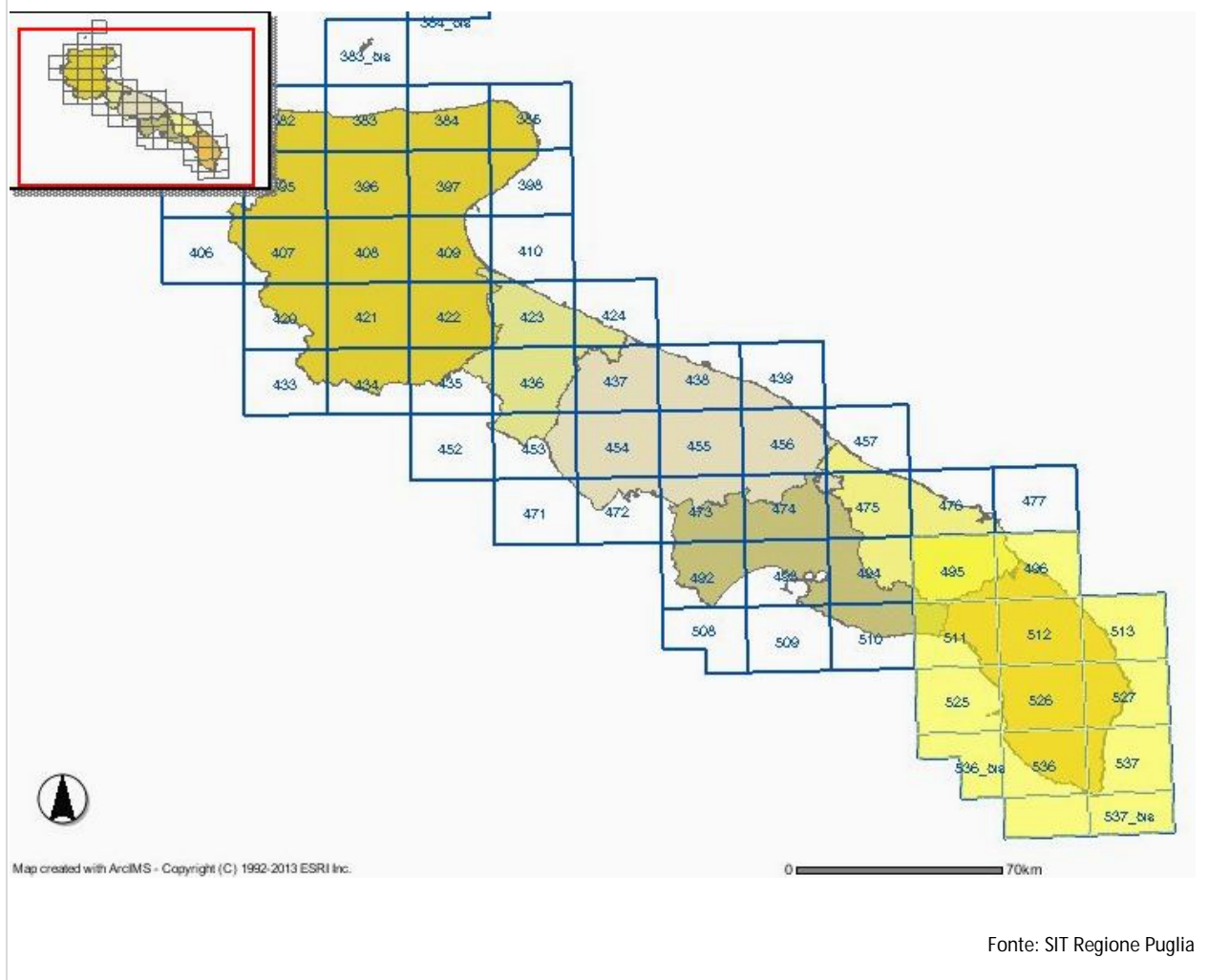
Source: SIT Puglia Region

From the portal SIT of the Puglia region, it was possible to download for selection of the sections of interest relating to the Province of Lecce, the compressed archive containing all the layers of information broken down by elements IGMI 1:50,000.

In particular they have been selected and downloaded to the layers of information relating to IGM sheets:

536, 536_bis, 537, 537_bis, 511, 512, 513, 525, 526, 527, 495, 496.

Figure 5. Selection of the sections of interest, relating to the Province of Lecce



The legend of the Charter Idrogeomorfologica of Apulia (ANNEX 1) is divided into themes and elements, where the latter is also associated with a graphic symbol. The color representation helps to facilitate the reading and interpretation.

The issues identified are groupings of elements and shapes characterized by having a precise genetic nature, almost always linked to specific processes morfologici kind of natural (or anthropogenic).

The choice of themes and elements to be represented, as well as the criteria for cartographic representation was made, consistent with the standards required by the guidelines "Geomorphological Map of Italy 1:50,000 - driving detection", published by the Geological Survey National (1994).

Figure 6. Legend of the Charter Idrogeomorfologica of Puglia

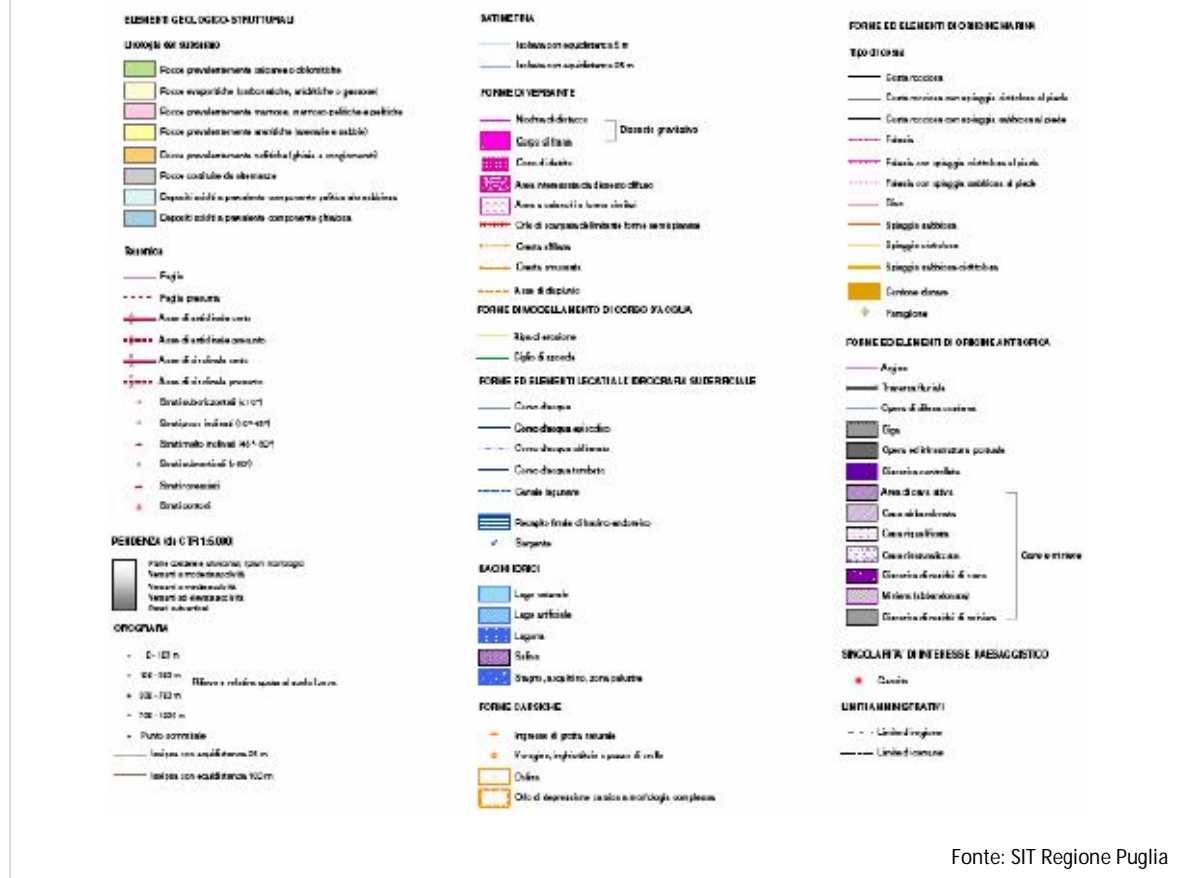
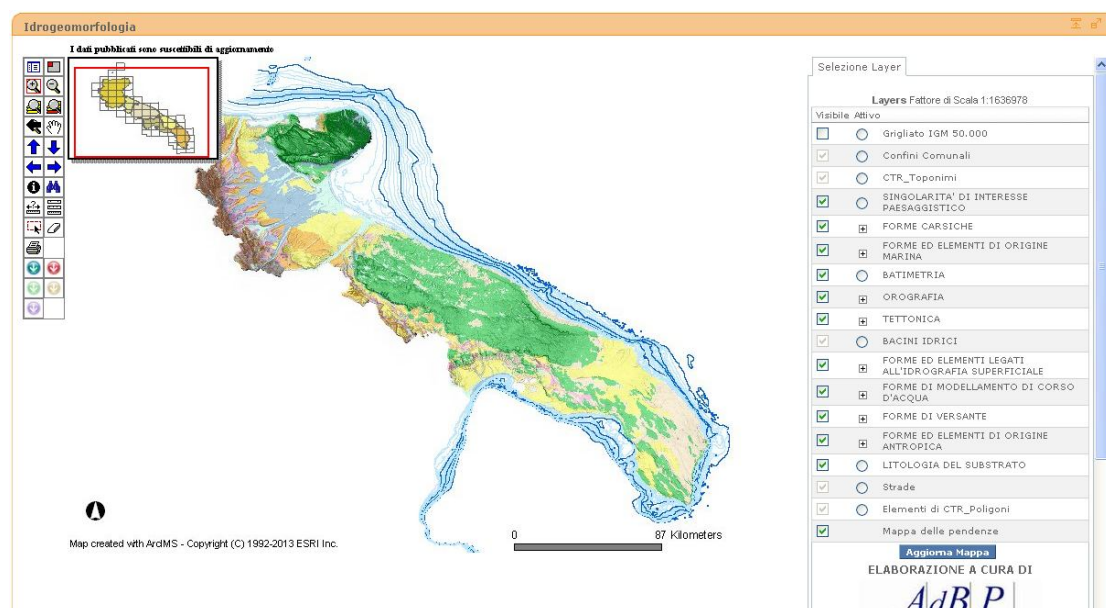


Figure 7. Idrogeomorfologica Puglia Region



The themes presented in the paper are the following: 1) geological structural elements (sub-divided into "lithology of the substrate" and "tectonic"), 2) Slope 3) Orography 4) Bathymetry 5) Forms of slope; 6) Forms modeling of the watercourse; 7) Forms and elements related to surface hydrography; 8) Reservoirs; 9) Forms karst; 10) Forms and elements of marine origin; 11) Forms and elements of anthropogenic origin; 12) Singularity of scenic interest; 13) administrative boundaries.

The graphical functions available in GIS software used made it possible to represent each project sheet, in a single print layout, the contents of four different levels of information, some of areal character and others of a linear and punctual, using the transparency features and overlap of the same elements. The levels of information are presented in order of superposition, the following:

- lithological substrate (fields differentiated polygonal pattern with different solid color);
- steepness of the surfaces (raster image in grayscale paper of the parameter "steepness", represented by shades of color transparency in the color of the lithological substrate);
- topographic base (bottom topography resulting from the simplified linear and polygonal elements of the new CTR, black in color, with emphasis on evidence at the towns);
- idrogeomorfologici elements (polygons, lines and points with specific symbology, superimposed on all topics above).

The thematic data represented in the Charter, for which the following is a brief description, derived both from official databases made in the course of projects and plans at national and regional (eg. Geological Map of Italy Protection Plan waters in Puglia - 2007, regional Coastal Plan - 2008 regional Cadastre of the Caves) duly verified and adjusted, and is especially analysis and processing carried out from scratch by the Basin of Puglia, or by external parties affiliated with the same, based on the data available knowledge of the territory. All themes products, in vector format, were processed graphically in a geo-referenced in the reference system WGS84 UTM-N33.

Thematic Data (Source: 'Report Card Idrogeomorfologica Puglia Region):

Lithology of the substrate

Starting from the geo-lithological classes contained in the Charter of Puglia geolithological

based on the synthesis and processing of the Geological Map of Italy at 1:100,000 scale ", and" Notes ", previously called up, and on the basis of" guidelines "set out to 'inside the same study, designed to operate more mergers and / or simplifications of the 25 units in the Geo-lithological of Puglia, Puglia Basin Authority has identified 9 lithological classes, intending to form a synthetic representation of the distribution geographical prevailing lithologies outcropping in the Puglia region, reported on the basis of what is present in the geological sheets at a scale of 1:100,000.

The 9 classes lithologies of the substrate, are those of the following units:

- unit mostly of limestone or dolomite;
- unit predominantly clay component;
- unit predominant component silty-sandy and / or arenitica;
- unit predominant component arenitica;
- unit predominant component ruditica;
- unit consisting of alternations of rocks in composition and / or particle size variable;
- unit argillitica a prevailing component with a general disorganized structure;
- loose deposits predominantly pelitic component;
- loose deposits with predominantly sandy-gravel component.

Tectonics

For the representation of this theme have been selected some of the linear and point shown in the second edition of the Geological Map of Italy, which are specifically faults, folds axes and planes of arrangement of the layers.

In particular, the traces of the fault lines are represented differently depending on whether the same have been classified in the Geological Map of Italy as "certain" or "alleged". In the same way have been reported paths of the axes of the folds, also in relation to their distinct nature sinclinalica or anticline. Finally, the local arrangement of rock layers was represented with point symbols consistent with those used in the official geological mapping and differentiated into discrete classes of angles, ranging from

horizontal to vertical, also including the category of the layers and layers twisted upside down.

Slope

The data on this topic has been obtained through processing in GIS from the digital terrain model (DTM), produced by the Apulia Region within the project of the Regional Technical Map, having a ground resolution of 8 meters. From this was derived in the paper via automatic slope, which was subsequently rasterized with the same resolution in color classes included in grayscale.

Have not been defined within the color separations for net clivo metric identified, which provides for the gradient from white to black in going from low slope values to values of high slope; nevertheless, to facilitate the contextualization of the same values, in legend were provided of qualitative attributes in relation to the main orographic contexts associated to certain classes of slope, according to the following scheme, which proceeds from low slope values to high values of slope:

- Piane coastal and alluvial shelves morphological
- Slopes in modest steepness
- Slopes medium steepness
- Slopes high steepness
- Subvertical walls

This element, through the procedures of representation in transparency, in paper appears as a shade of gray in the color representative of the element "lithology of the substrate," which therefore will appear with dark shades tending to the increase of the slope of the land, and tending to clear otherwise.

Orography

In this issue have been considered and represented the mountain ranges and the level curves.

The mountain ranges were in turn differentiated into two sub-themes, made from real measurements (ie those in which it is officially assigned a name given in the official

topographic maps) and summit points (ie altimetrically points higher than in the surrounding territory, but without an official name yet).

The contour lines shown in the paper, extracted from the new Regional Technical Map of Apulia, were only those "facts" (equidistance of 100 m) and those "guidelines" (equidistance of 25 m), divided by lines having different thickness.

Bathymetry

The bathymetric seabed areas overlooking the Apulian coast has been achieved through the representation of the "depth contours," in 1:100,000 scale, given in the Report "Geophysics relatively to the study of coastal dynamics for critical areas" compiled under the "preliminary studies for the preparation of basin plans of the Puglia region." The equidistance of the representation of depth contours, from the present - 5 m to -100 m, is 5 meters, with more pronounced graphical representation of depth contours with equidistance of 25 meters.

Forms of slope

In this issue have been included, in particular, the forms resulting from gravitational phenomena slope, which are attributable to the landslides themselves, or other types of instability, which are included among those of the diffuse type, those accelerated in the land of nature predominantly pelitic that lead to the formation of so-called "gullies" or similar forms, and finally those fluvial-gravitational that lead to the formation of cones of debris at the foot of the slopes.

Fall into this class of shapes including those resulting from the process of shaping a predominantly regional, such as the edges of cliffs delimiting semispianate forms (which are included among the terraces of marine origin or structural) and ridges, which outline the trends of the summit areas of mountains that are characterized by a linear development of non-negligible extension.

Forms of modeling of the watercourse.

This theme includes the morphological discontinuity of the slope of the linear type exclusively produced from the natural action (or anthropically induced) of waterways.

In relation to these processes, we have distinguished two categories of elements: the

"cliffs of erosion" and "eyelashes shore."

The "cliffs of erosion" represent the morphological gradient of a certain representative present on one side, mostly located in the portions of the same altimetrically medium-high.

The "eyelashes bank", however, represent the upper limit of the shores of the active floodplains of rivers as well as those of the existing natural and artificial channels, where these have characteristics that allow a clearly recognizable morphological, within the threshold of representability of the same in relation to the Regional Technical Map scale 1:5.000.

Forms and elements linked surface hydrography

This theme includes a number of elements related to physical surface hydrography of the area. The most represented in the paper is that of the " waterways " , and this includes the set of linear paths of concentrated runoff water , which form the drainage network of a territory.

The element watercourse was in turn divided into different types according to the addresses provided by the DM 131/2008 ("Regulation establishing the technical criteria for the characterization of water bodies "), which defines the types of streams in relation to the hydrological regime of the same characteristic . Specifically , in relation to these categories defined by law and on the basis of hydrological data available to officers , have been identified in the Apulian territory between those two categories as possible, the " rivers " and " episodic streams ," meaning with the latter all those temporary , with water in the river bed only after precipitation events particularly intense , even less than once every 5 years.

Other specific types of waterways, provided in the paper are those of the " waterways obliterated " , which are stretches of river network in which locally the morphological evidence of the thalweg have been erased from human activities , and those of " courses water tombati " , where the same thalweg has been affected by the works considered as belonging to the same natural hydrographic network .

A fundamental property that characterizes the set of types of water courses represented

in the Charter Idrogeomorfologica is that of the "hydraulic continuity", namely the condition that a drainage network must necessarily have an end in the final delivery defined, which may be in the specific case , the sea, a form karst (sinkholes, chasms), a depressed area of natural kind (final delivery of endorheic basin) or artificial (and such. quarry), all of which are also represented in the same paper.

E 'to indicate that the streams represented in the paper do not include hydrographic patterns that perform hydraulic reclamation of an area, which as a rule can not be considered as belonging to the same natural hydrographic network.

A further element represented in this theme is that of the " lagoon channels " , which identify , always in a linear fashion , areas which connect the coastal lagoons both among themselves and with the sea, and that are generally affected by the constant presence of water , animated by ebb and flow influenced by tidal variations in sea level .

In this theme were also inserted " final details of reservoirs endoreici " enormously popular in the Apulian territory , with particular reference to the areas of emphasis Gargano and Salento Murgia plateau , and are characterized by having a delivery area inside the continent where , in case of significant weather events , there is normally a process of natural trough that leads to the formation of a body of water having areal extent proportional to the intensity and duration of the event of rainfall .

Finally in this issue have been including sources , whose existence and location in punctual was derived both from official databases (Ground Water Protection of the Region of Puglia, IGM cartography at a scale of 1:25.000) and by direct verification in the field .

Reservoirs

In this issue have been presented in the form areal surface water bodies in the area, characterized by substantially without water . Specifically, the natural lakes are considered to be those that originate a mirror perennial water for natural reasons ; artificial lakes are considered to be those in which the mirror of the water originates due to the presence of a work setting (dam , embankment , cross, etc. .) and therefore can also show changes in the areal extent of wet areas in relation to the regulatory regime of the same; coastal lagoons are considered mirrors of water within the continent and hydraulically connected

to the sea by tidal channels (relevant examples are those of Hvar and Varano and Alimini)
.

The element salt has been identified as a result of the significant extension of some areas having these characteristics .

Finally, by associating the term " pond, marsh , marshy area ," were mapped areas of predominantly temporary stagnation of water due to natural reasons , such as for example the poor soil drainage (" lakes carcisi of Conversano "), or due to anthropogenic transformations of the territory (land reclamation), or periodically suffer because of the effects of the breakers of the sea.

Karst

In this issue have been including the main morphological forms derived from the peculiar nature of karst processes that have acted or are acting in Puglia .

Among the themes represented there are some of a specific, which for the size commonly held by related forms generally are not really mappable at the scale of representation of the paper, and these are to be counted among the karst is a primarily vertical (" chasms , sinkholes or wells of collapse ") , and those in development predominantly horizontal (" input of natural cave , " of which is indicated the entry point present on the surface) .

Another characteristic element represented within this theme is that of " sinkholes " , for which it has been mapped in a polygonal shape , the rim morphology , which in places with pronounced morphological evidence places and in a gradual manner , it marks the limit outdoor areas not affected by the process of carsogenesi .

Forms and elements of anthropogenic

In this theme were included a number of forms and elements of the territory, connected to human activity exerted on it , which resulted in a significant cooling of the original structure of the surfaces on which they stand .

Specifically , in relation to the items related to the streams, the element of " bank " is in the linear form , the planimetric development of riverside structures , of different heights and material constitution , made in close proximity to waterways or reservoirs, while the elements " dams " and " sleepers " indicate the occupation of space caused by the

presence of these works of hydraulic engineering. In relation to the anthropic elements present in the coastal environment , were represented certain categories of maritime engineering works , such as " works and infrastructure portuli " and " coastal defense " .

More items listed in this issue are those related to the mining activity of natural stone materials , specifically the quarries and mines , meaning that the second in Puglia are detectable only in the " abandoned."

Singularity of scenic interest

In this theme have been incorporated in the form of timely reporting, places where there are the "geo-sites", particular forms or elements which, because of the singularity phenomenon that originated them or for the environmental and scientific value they represent, may be considered clear testimony of its geological and geomorphological history of the region, and therefore the true fundamentals of the regional landscape, as well as natural and cultural resource.

Insomuch classified sites, according to what is stated in the Design of Regional Law no. 34/2008 of 29/07/2008, all have a considerable scientific interest, and include outcrops of value stratigraphic, sedimentological, structural, palaeontological, mineralogical, petrographic, hydrogeological, as well as landforms such as dolines, rutted fields, cliffs, ravines, blades, ravines, forms by selective erosion.

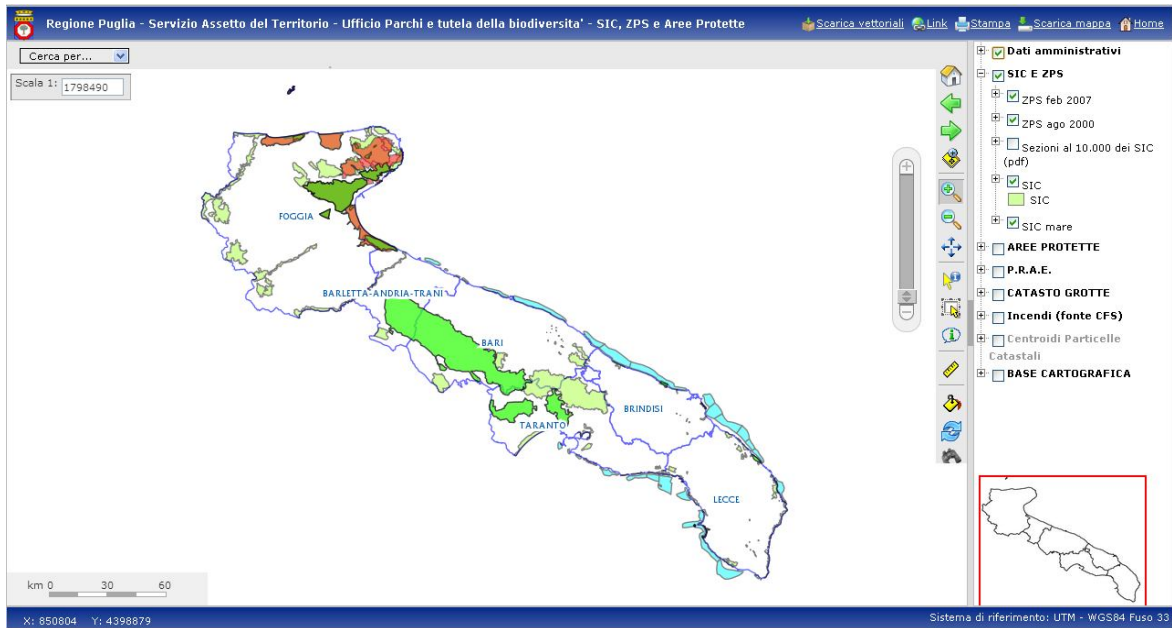
Administrative boundaries

In this issue are represented by lines with different thickness of the line chart, the limits of the region and those of the municipalities.

5. The Portal Environment of the Region of Puglia, for the collection of data relating to areas under nature protection (SCI, SPA, protected areas)

Through the Portal Environment of the Puglia region in the mapping it was possible to see through the web-gis areas SCI, SPA and Protected Areas and download the corresponding vector in *. Shp. The vector having as reference the Region of Puglia, it was decided, therefore, to extrapolate the data relating to the Province of Lecce.

Figure 8. Apulia Region - Spatial Planning Service -
Department of Parks and protection of biodiversity ' - SCI and SPA



Fonte: WebGis Parchi Regione Puglia

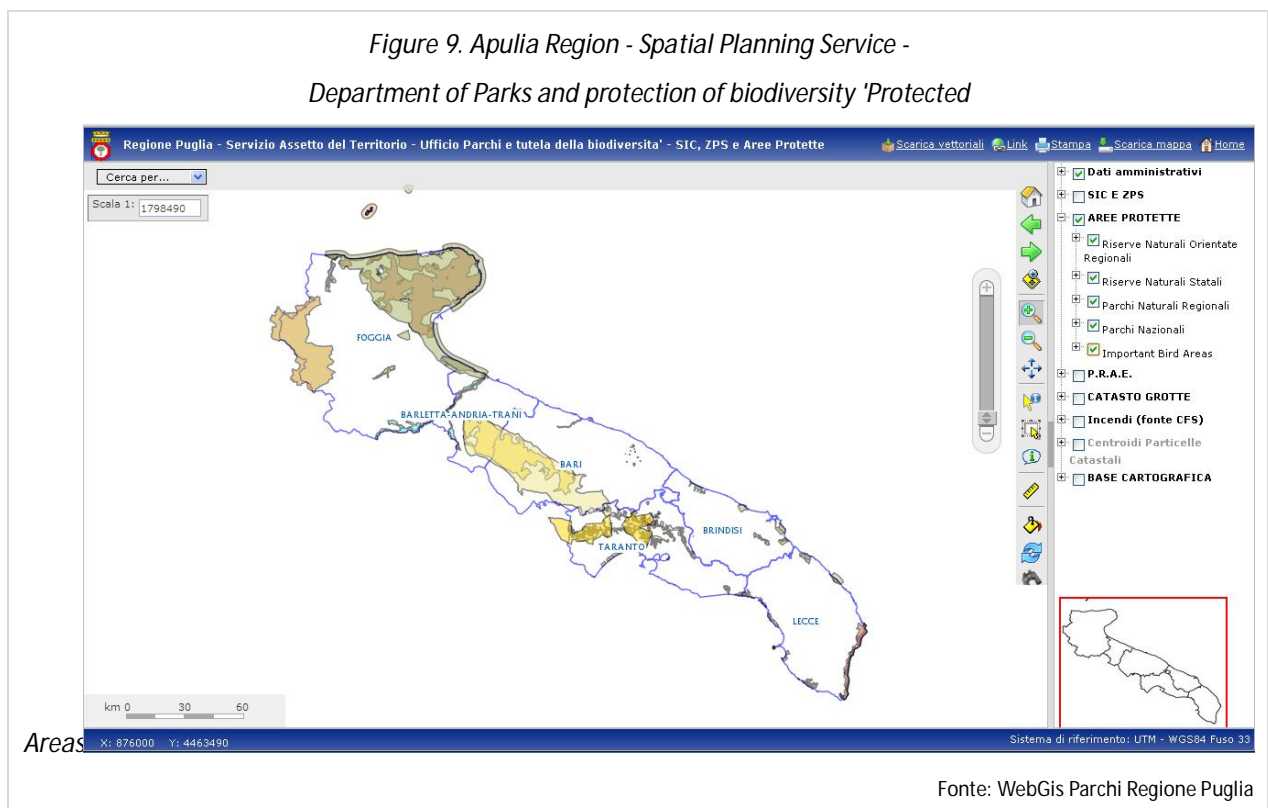
Natura 2000 is the main instrument of EU policy for the conservation of biodiversity. It is an ecological network spread throughout the territory of the Union , as established under Directive 92/43/EEC " Habitat " to ensure the long-term maintenance of natural habitats and species of flora and fauna threatened or rare level Community .

The Natura 2000 network consists of the Sites of Community Interest (SCI) , identified by the Member States in accordance with the provisions of the Habitats Directive , which are then designated as Special Areas of Conservation (SACs) , and also includes Special Protection Areas (SPAs) established pursuant to Directive 2009/147/EC "Birds" on the conservation of wild birds.

The areas that make up the Natura 2000 network are not strictly protected reserves where human activities are excluded , the Habitats Directive aims to ensure the protection of nature while also taking " account of economic , social and cultural requirements and regional and local characteristics " (Art . 2) . Private entities can be owners of Natura 2000 sites , ensuring sustainable management from the point of view of ecological and economic.

The Directive recognizes the value of all those areas in which the age-old human presence

and its traditional activities has allowed the maintenance of a balance between human activities and nature. Agricultural areas, for example, are linked to many plant and animal species are now rare and endangered the survival of which is necessary for the continuation and enhancement of traditional activities, such as grazing or non-intensive agriculture. At the same time the Directive specifies the goal is not only to preserve the natural habitats but also those habitats (such as areas of traditional agriculture, the woods used, pastures, etc..).



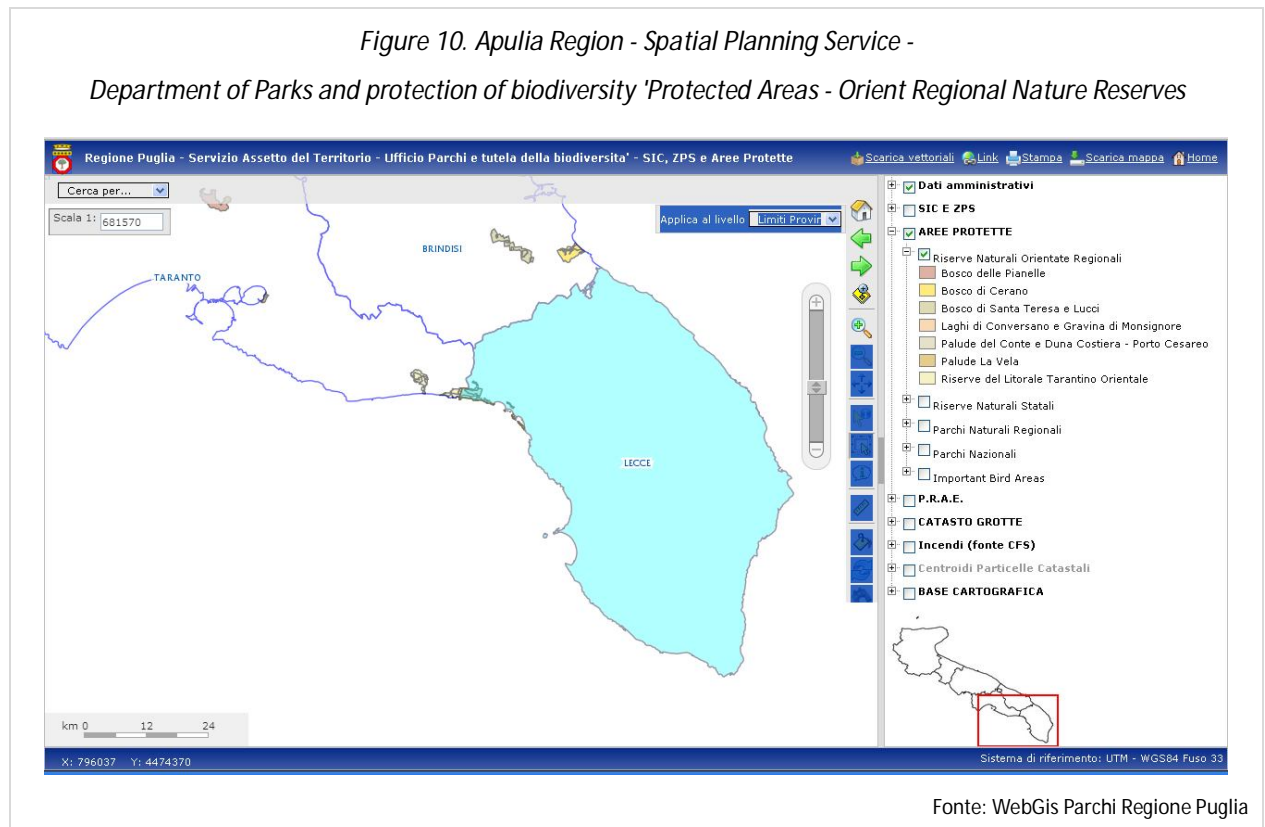
The turning point in and for the management of protected natural areas has been the approval of Law 394/91, which occurred after a long debate. It does, to provide a unified framework at national and regional level, has allowed to reorganize the material, hitherto fragmented, the protection of nature and environment. He also identified the classification of protected natural areas and their official list, defining the procedures for the establishment and management of parks and reserves. Where the National Parks "are made up of land, river, lake or sea that contain one or more 'or ancheparzialmente intact ecosystems altered by human intervention, or a more' physical, geological, geomorphological, biological, of international or national importance for naturalistic,

scientific, aesthetic, cultural , educational and recreational facilities such as to require the intervention of the State in order to preserve them for present and future generations " (Article 2, paragraph 1 L 394 /91) and nature reserves " consist by land, river , lake or sea that contain one or more species naturalistic relevance of flora and fauna , or with one or more ecosystems are important for biological diversity or for the conservation of genetic resources. nature reserves may be state or regional according to the importance of the interests they represented " (article 2 , paragraph 3 L 394 /91).

The next L 426/98 has made some amendments to the Act framework aimed at giving greater weight to the role of the regions and local communities in the establishment and management of protected natural areas .

At the regional level , the Framework Law of Puglia Regional Law July 24, 1997 , n . 19 and subsequent amendments "Rules for the establishment and management of protected natural areas in the Puglia Region " identifies the criteria for the establishment and management of protected natural areas regional . Currently , from the territories of finding art. 5 of this rule , there were established 18: 11 regional nature parks (Woods and Marshes Rauccio , Saline Punta della Contessa , Land of the Ravines , Porto wild and Captain Marsh , Woods Crowned, Sant'Andrea Island and Coast Punta Pizzo , Costa Otranto and Santa Maria di Leuca Tricase Forest , coastal Dunes at Torre San Leonardo , Waterfront Ugento , River Ofanto Lama Balice) and 7 regional nature reserves (forests of Santa Teresa and Lucci , Wilderness regional -oriented of tarantino eastern coast , Forest Cerano , Pianelle Forest , Swamp and coastal dune Count - Porto Cesareo, La Vela Marsh , Lakes of Conversano and Gravina Monsignor) . E ' was also approved the Bill establishing the park called " Middle Fortore ." Where the regional nature parks " are made up of land, river , lake , by the sea areas near the coast , which constitute a homogeneous system identified by the natural assets of the area, the landscape values and artistic places and cultural traditions of local populations "(article 2 paragraph 1 letter a Lr 19/97) and the regional nature reserves " consist of land, river , lake or sea that contain one or more species naturalistic relevance of flora and fauna that is most important ecosystems or presentinouno for biological diversity or for the conservation of genetic resources " (Article 2, paragraph 1, letter b Lr 19/97) . These areas have recently been included in the

List of protected areas , marine and terrestrial , pursuant to Law 394/1991 , which classifies the type and which forms the basis for the allocation of funds to the management entities . He is currently in force on the 6th update , approved by Resolution of the State-Regions Conference of 17 December 2009 and published in the Official Gazette no. 125 of 31.05.2010 .

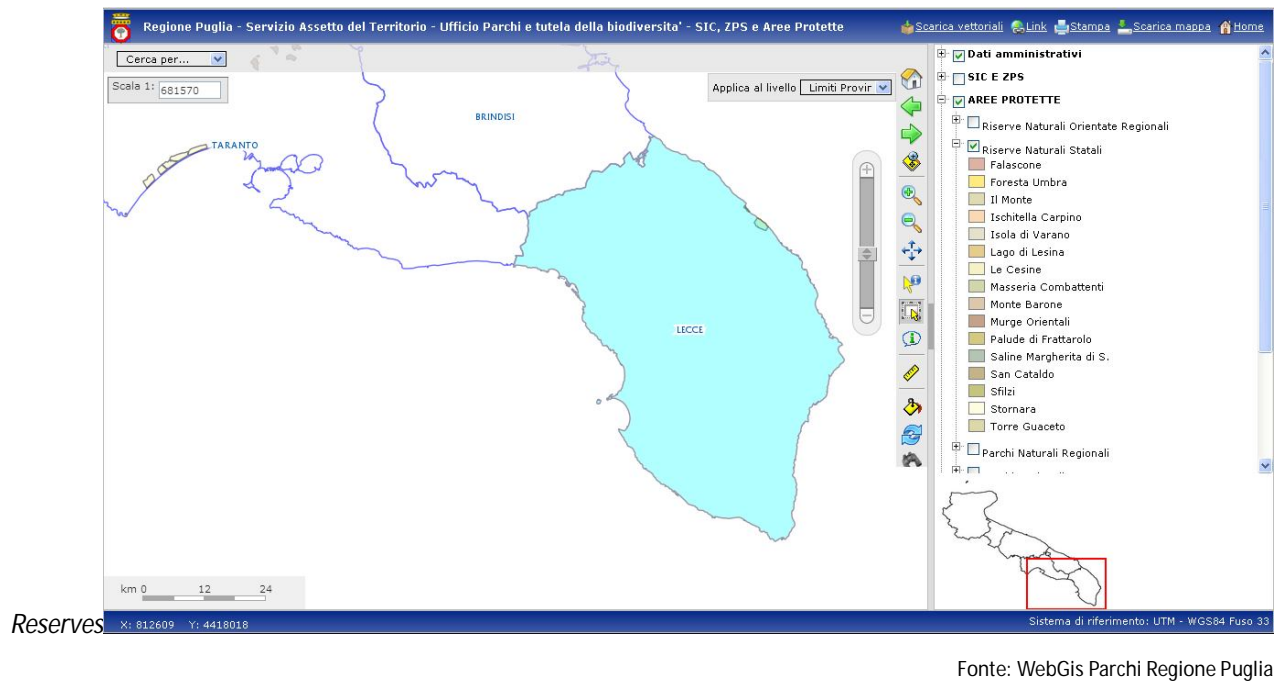


Orient Regional Nature Reserves in the Province of Lecce:

- Palude del Conte e Duna Costiera – Porto Cesareo.

Figure 11. Apulia Region - Spatial Planning Service -

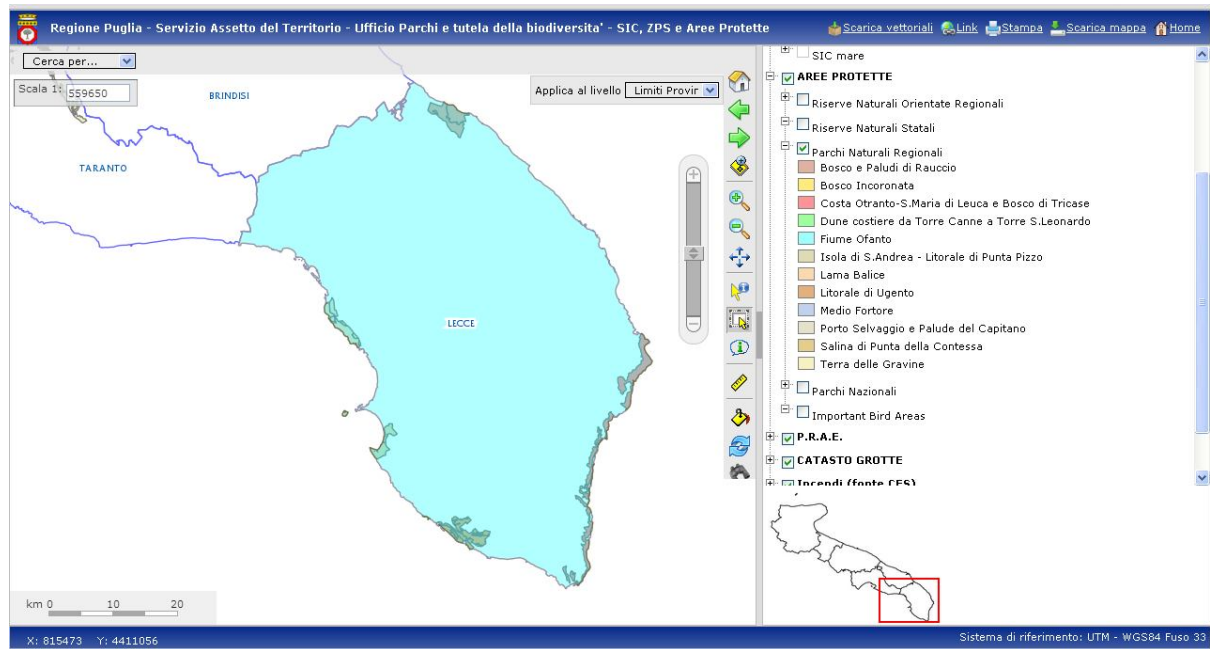
Department of Parks and protection of biodiversity 'Protected Areas - State Nature



State Nature Reserves in the Province of Lecce:

- Le Cesine, San Cataldo

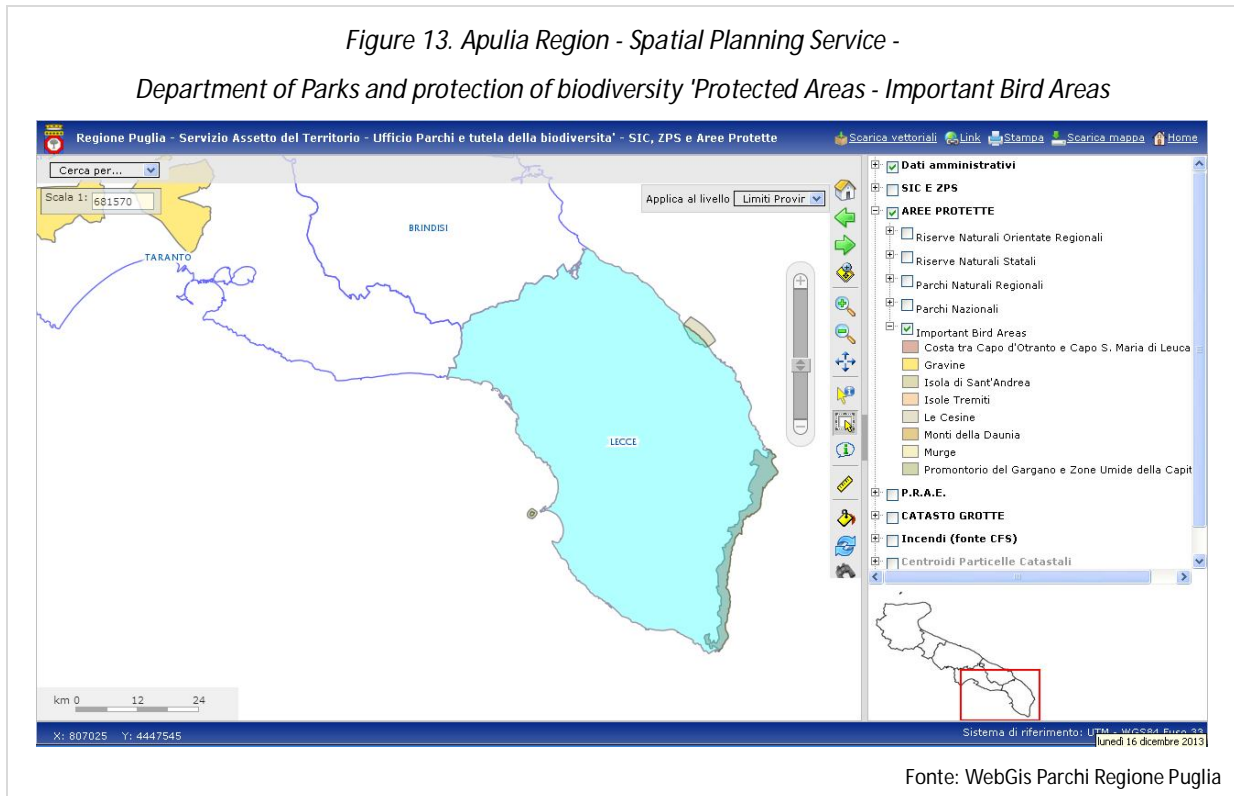
Figure 12. Apulia Region - Spatial Planning Service -
Department of Parks and protection of biodiversity 'Protected Areas - Regional Natural Parks



Fonte: WebGis Parchi Regione Puglia

Regional Natural Parks of the Province of Lecce:

- Bosco e Paludi di Rauccio
- Costa Otranto-S.Maria di Leuca e Bosco di Tricase
- Isola di S.Andrea - Litorale di Punta Pizzo
- Litorale di Ugento
- Porto Selvaggio e Palude del Capitano



Important Bird Areas of the Province of Lecce:

- Costa tra Capo d'Otranto e Capo S. Maria di Leuca
- Isola di Sant'Andrea
- Le Cesine

6. The administrative boundaries of the municipalities of the Province of Lecce

To delineate the administrative boundaries of the municipalities of the Province of Lecce, has recourse to the database made available by ISTAT (National Statistics Institute).

The National Statistics Institute is a public research institution. Present in the country since 1926, is the leading producer of official statistics in support of citizens and public decision-makers. Work independently and in continuous interaction with the academic and scientific world.

In preparation for the censuses of 2011, Istat releases the administrative boundaries updated to 1 January 2011, as layers of information at national level. The administrative boundaries are composed of three hierarchical levels with national coverage, respectively,

regions, provinces and municipalities. The data is in shapefile format, public format for exchanging data in a GIS, are issued in the reference system ED_1950_UTM Zone 32.

Figure 14. Administrative borders



7. Companies and points of interest

Compared to the 10 companies extracted from the reference sample , it was decided to build a file (ANNEX 2) that contained the coordinates of the particles of the land of production of the same . Reference system WGS84 . This will allow , through the GIS system , an easy boundary map of each of the companies and the opportunity to acquire a comprehensive knowledge framework in terms of quality of process and product .

In the process of collecting and processing the data useful for georeferencing Agroquality in the project was to build a top layer that collects information possible areas of interest for stakeholders and end-users , compared to the sector.

Each of the points of interest has been located on the map through the geospatial coordinates , with a brief description for each of the points of interest. Reference system WGS84 .

The working group , through a desk analysis and field research based on interviews with the olive oil sector Puglia and Salento , identified a sample of about 75 points of interest including:

- Institutions and organizations in the field
- Historical landmarks and tourist
- Points of interest related to receptivity.

Enclosed is the list of points of interest (ANNEX 3).