

INDUSTRIAL AND ORNAMENTAL LIMESTONES QUARRYING INSIDE A NATURA 2000 AREA

Sustainability of Mineral Resources and the Environment

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The Portuguese Mining Sector in a nutshell



**Exports for 116
countries**



**8th World Ranking –
International Trade**



**2nd country Per Capita
– International Trade**



**Imports covered by
823%**



**Annual turnover of 1.4
Billion €**

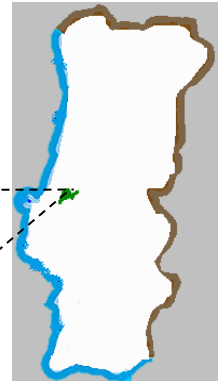
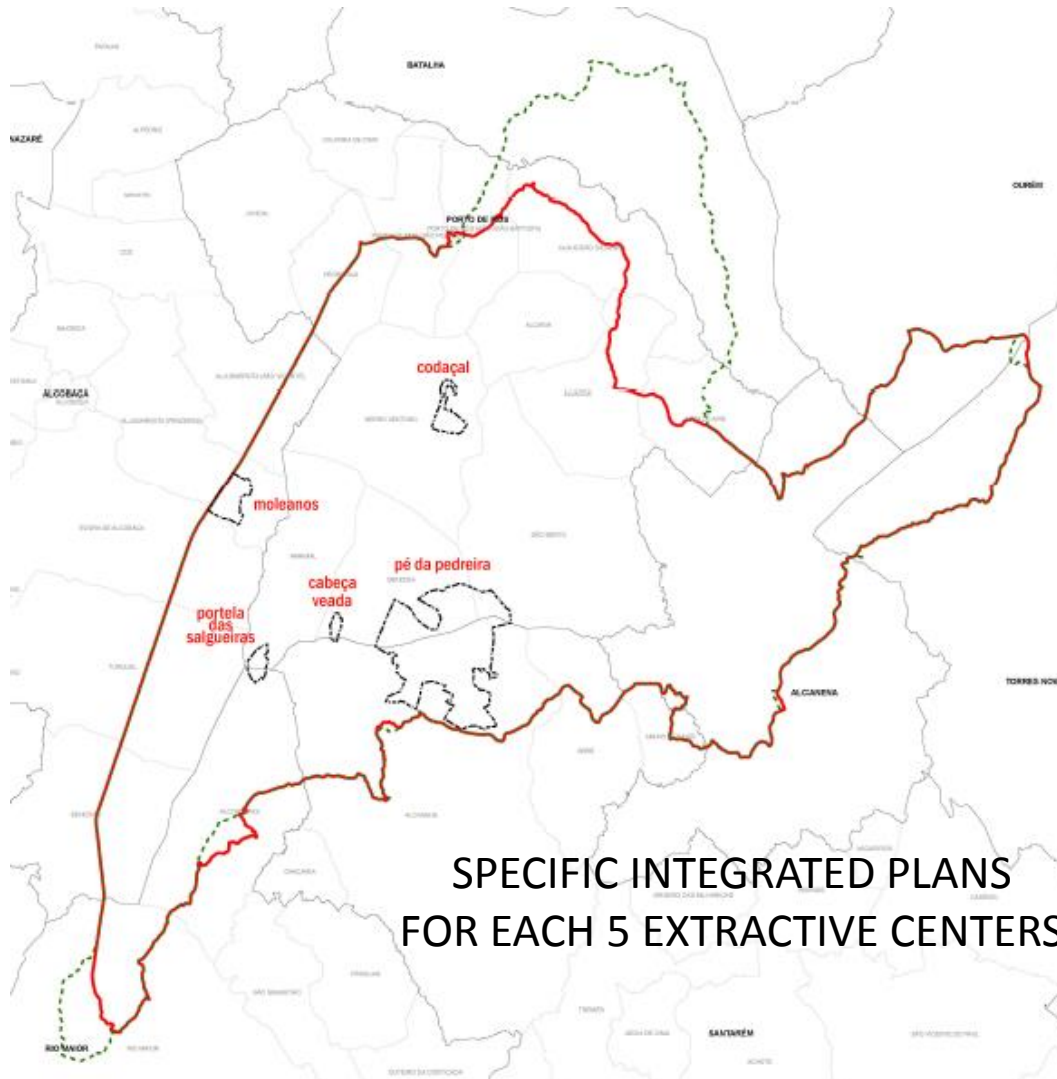


**3300 companies
24000 direct jobs**



**45% of Exports for
outside Europe**

The problem



**EXTRACTIVE
INDUSTRY**

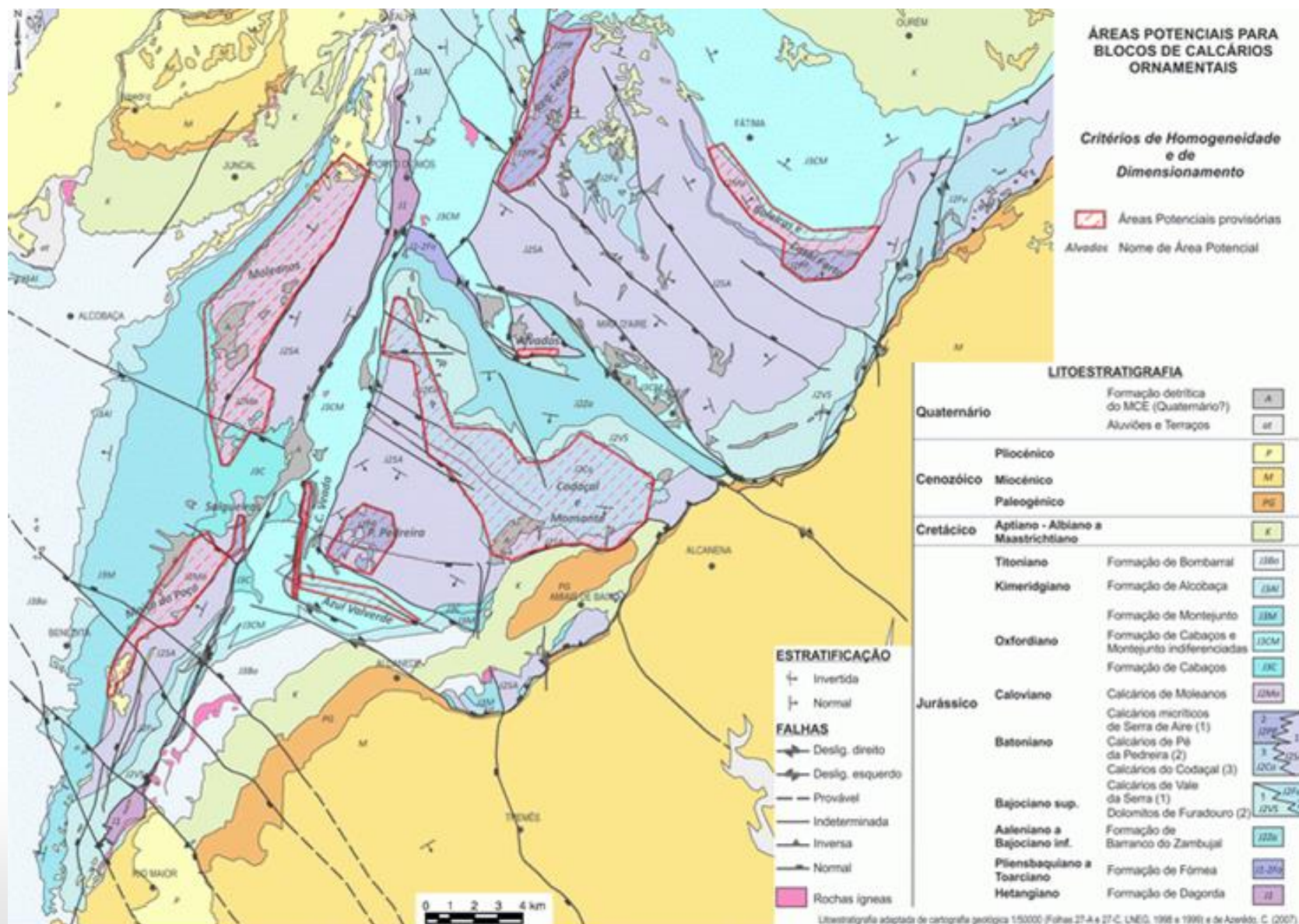
**ECONOMICAL
DEVELOPMENT**

**NATURAL PARK
NATURA 2000**

The Geological Knowledge



Assimagra®
Recursos Minerais



Land Valorisation Studies

1



Geology and aptitude for ornamental stone.

5



Fauna.

2



Geomorphological and speleological heritage.

6



Groundwater Resources.

3



Paleontological heritage.

7



Noise, vibrations and air quality.

4



Flora and Habitats.

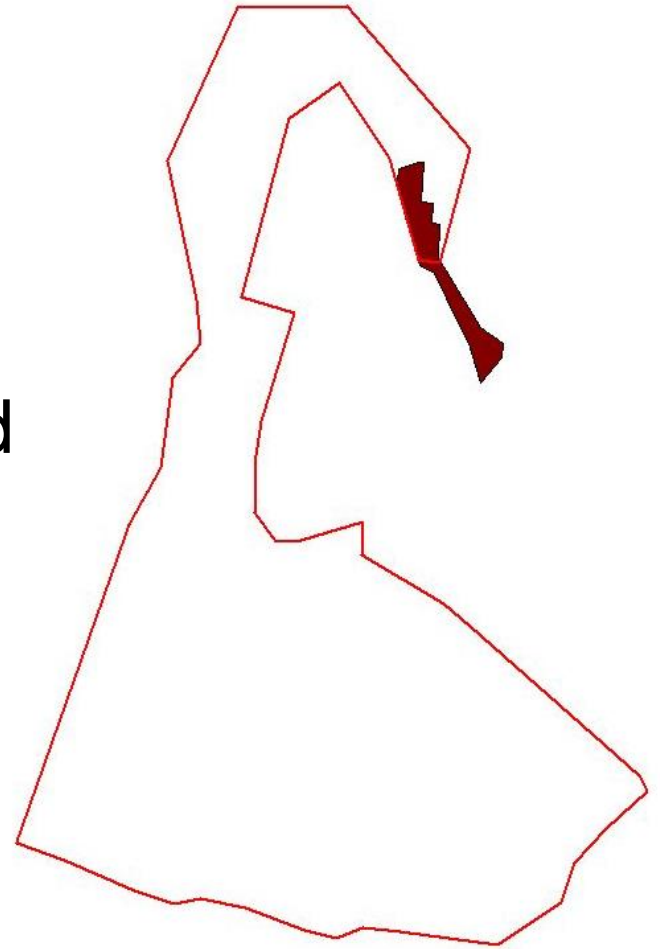
8



Landscape heritage and Karstic environments.

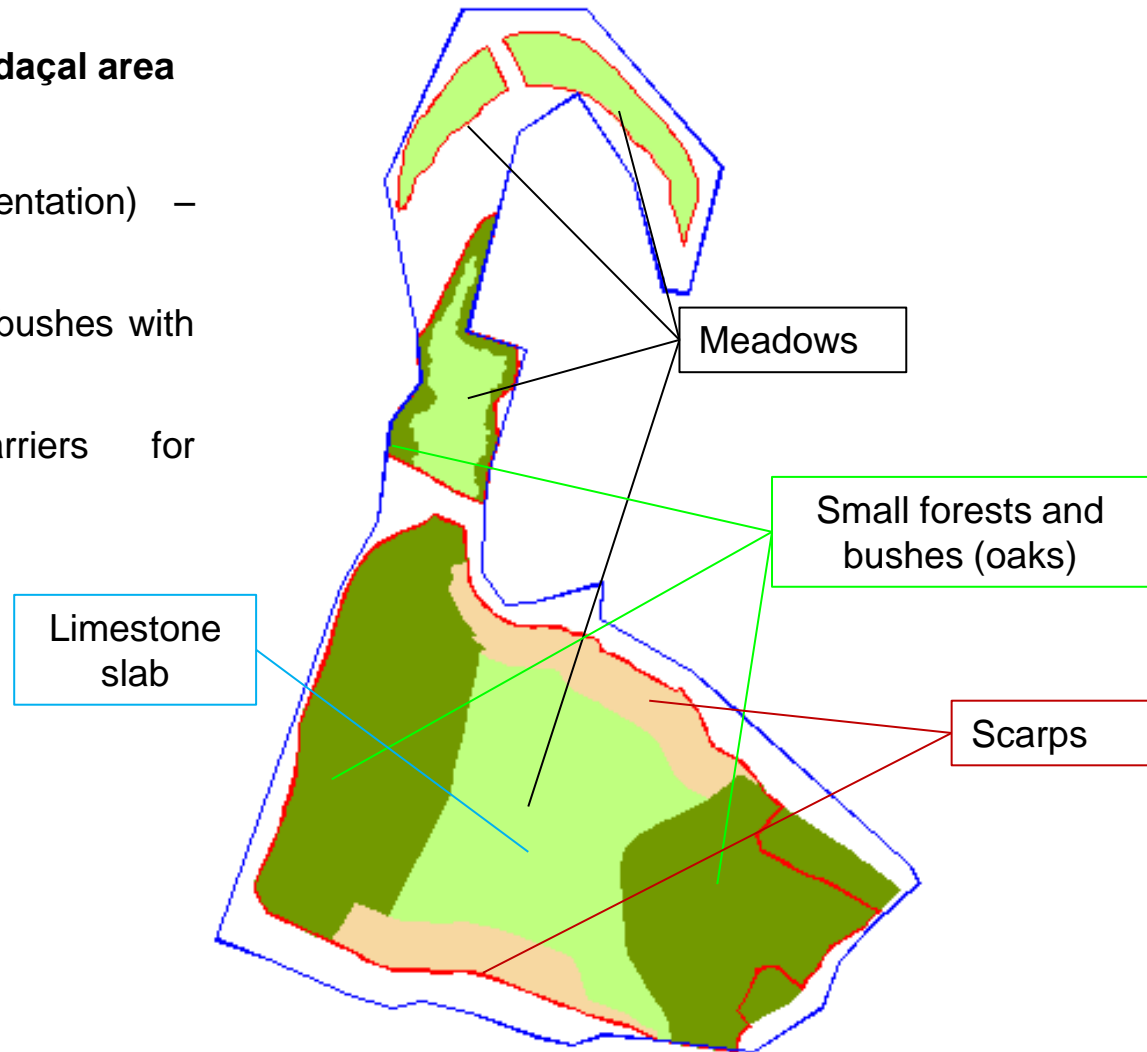
REHABILITATED AREA

Area where quarrying or associated materials deposition have occurred and that was land modelled and the vegetal covering was rehabilitated
(Article 4th POPNSAC)

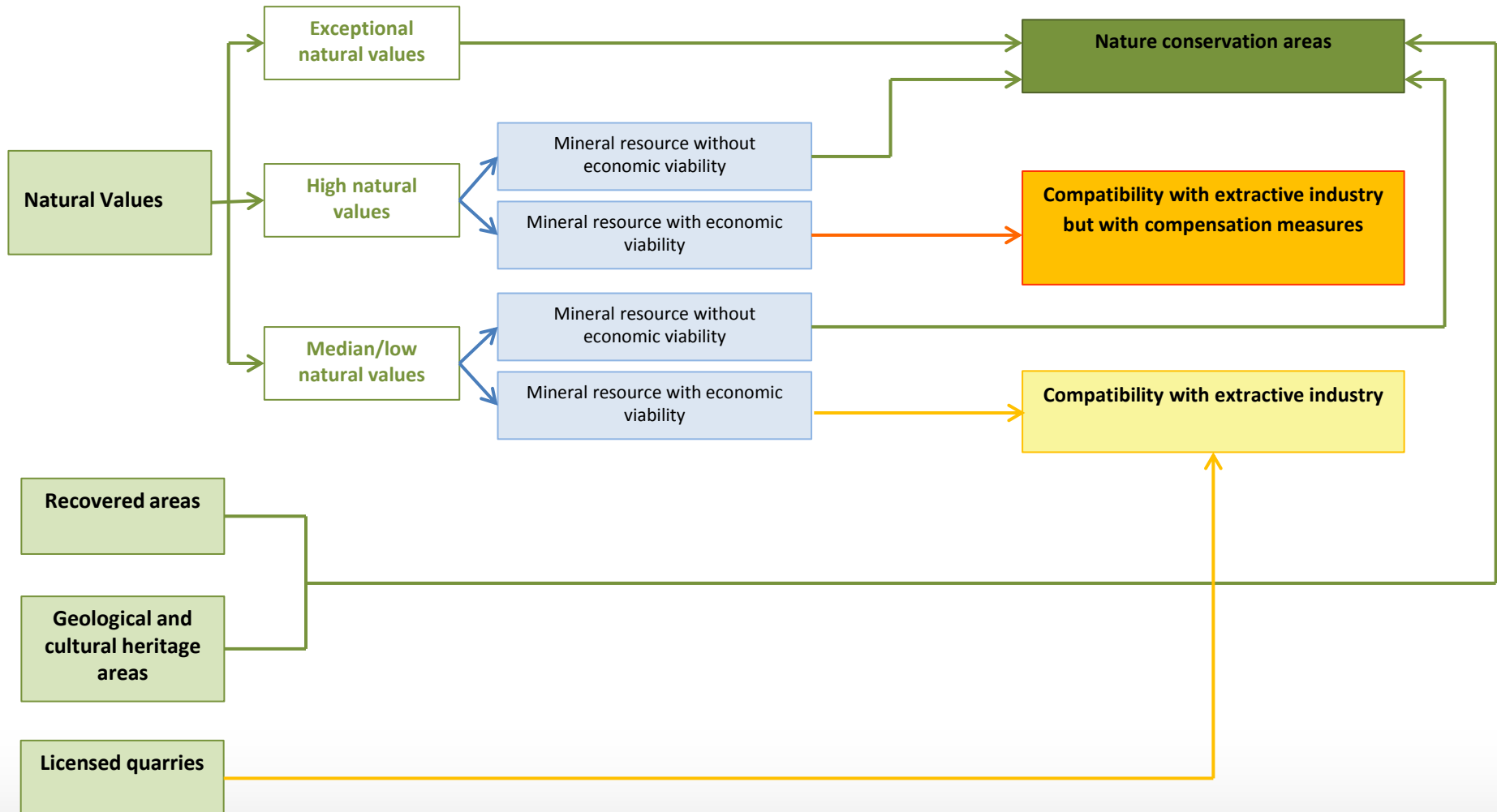


Landscape rehabilitation plan – Codaçal area

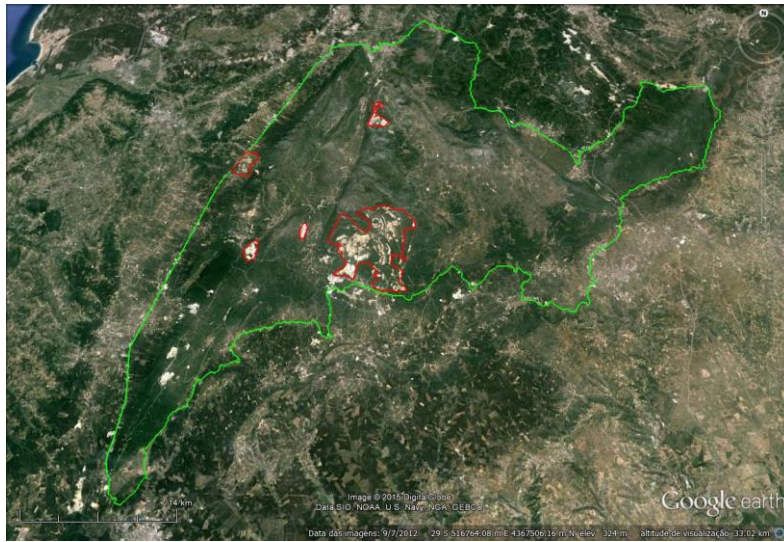
- Meadow areas (birds alimentation) – Limestone slabs;
- Creation of small forests and bushes with autochthonous species;
- Creation of natural barriers for minimization of visual impacts;
- Scarps.



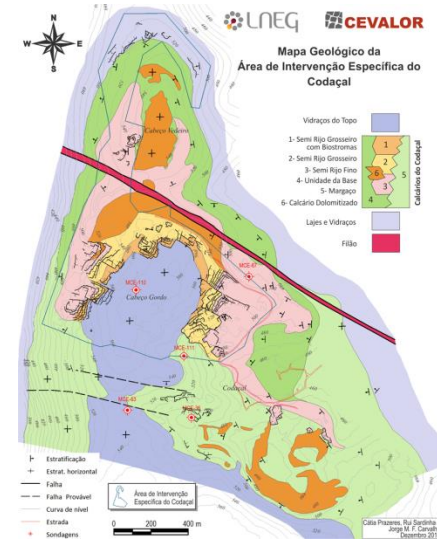
The Methodology



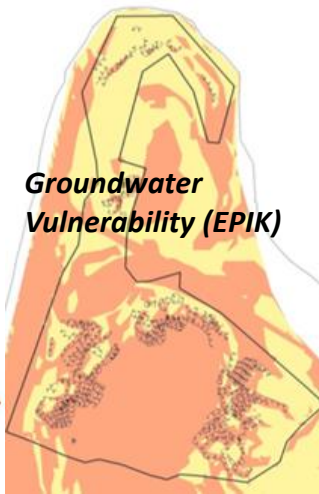
The Results



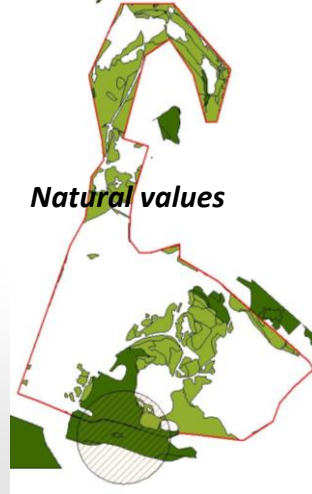
Codaçal Area
98 ha
19 ornamental stone
quarries



**Economic
Mineral resource**



**Groundwater
Vulnerability (EPIK)**



Natural values



**Land classes
spatial planning**

Mineral resource	Exceptional or high natural values	Land Class
Yes	No	Compatibility with extractive industry
Yes	Yes	Compatibility with extractive industry but with compensation measures
No	Yes or No	Nature conservation areas

Main Objectives Achieved:

- **Guarantee the rational utilization of the mineral resource;**
- **Manage properly the use of the land during the extraction phase, allowing the reconversion of it for other land uses in the post-quarrying phase;**
- **Assure a correct management of the quarrying waste;**
- **Guarantee a proper management of the non-quarrying waste;**
- **Assure the best health and safety conditions of the quarries' workers;**
- **Minimize the environmental impact.**

- **Definition of the correct exploitation methods;**
- **Definition of rules for articulation with contiguous quarries;**
- **Definition of the most appropriate quarrying waste management;**
- **Definition of an integrated landscape rehabilitation methodology;**
- **Parity between mineral resources and the other natural resources;**
- **Without economical development we cannot take care of our environment;**
- **Involvement of all the stakeholders, especially the INDUSTRY (project developed with the industry and for the industry).**

Partners



Project Promotors



Integrated Project Promotor



Direcção Geral
de Energia e Geologia

Technical Support



biodesign

Counties



Financial Support



**EUROPEAN ENTERPRISE PROMOTION AWARDS
2015**

**1ST PRIZE FOR SUPPORT TO ECOLOGICAL MARKETS DEVELOPMENT
AND RESOURCE EFFICIENCY**



ARE NOT POVERTY AND NEED
THE GREATEST POLLUTERS?

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THANK YOU FOR YOUR ATTENTION