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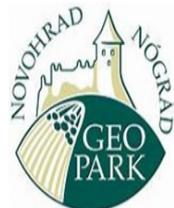
THE ANDALUSIAN GEODIVERSITY STRATEGY

ANALYSIS AND PROGRESS

Grupo de Desarrollo Rural Subbética



eodiversidad
de Andalucía



C1.- TRAINING COURSE



Junta de Andalucía
Consejería de Agricultura, Ganadería,
Pesca y Desarrollo Sostenible



UNIVERSITY OF
BUCHAREST
VERITAS ET SAPIENTIA

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ANDALUSIA a reference region, concerning Geodiversity management

1995- Agreement between the Environment Department and the University of Granada to create the Basis for the Andalusian Geodiversity Strategy.

2004- Publication of the 1st Andalusian Geosites Inventory

2010- Implementation of the Andalusian Geodiversity Strategy

2011- Update of the Andalusian Geosites Inventory



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Andalusian Geodiversity

Three orogenies involved

600 Million years

M.A.	ERA	SISTEMA	SERIE
0.01	CENOZOICO	CUATERNARIO	HOLOCENO
0.06			PLISTOCENO
0.12			PLISTOCENO
0.35			PLISTOCENO
0.6			PLISTOCENO
2.0			PLISTOCENO
5.0			PLISTOCENO
23			PLISTOCENO
34			PLISTOCENO
52			PLISTOCENO
65	PLISTOCENO		
95	CRETÁCICO	CRETÁCICO	SENONIENSE
130			NEOCENIENSE
150	JURÁSICO	JURÁSICO	MAJAM
178			DOGGER
204			LIAS
229			LIAS
230	TRIÁSICO	TRIÁSICO	SUPERIOR
245			MEDIO
250			INFERIOR
360	PERMIANO	PERMIANO	SUPERIOR
360			INFERIOR
400			INFERIOR
425			INFERIOR
495	DEVONIANO	DEVONIANO	SUPERIOR
495			INFERIOR
530			INFERIOR
530	CARBÓNIFERO	CARBÓNIFERO	SUPERIOR
530			INFERIOR
530			INFERIOR
530	PÉRCAMBIANO	PÉRCAMBIANO	VENECIENSE
530			ARCAICO



• 87.268 k m²





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ANDALUSIAN GEODIVERSITY STRATEGY



**ANDALUSIA: wide range of ecosystems
encompassing an astonishing natural diversity**



GLOBAL GEOSITES PROJECT in SPAIN

-21 Geological Contexts (16 in Andalusia)

-215 Global Geosites localities (66 in Andalusia).



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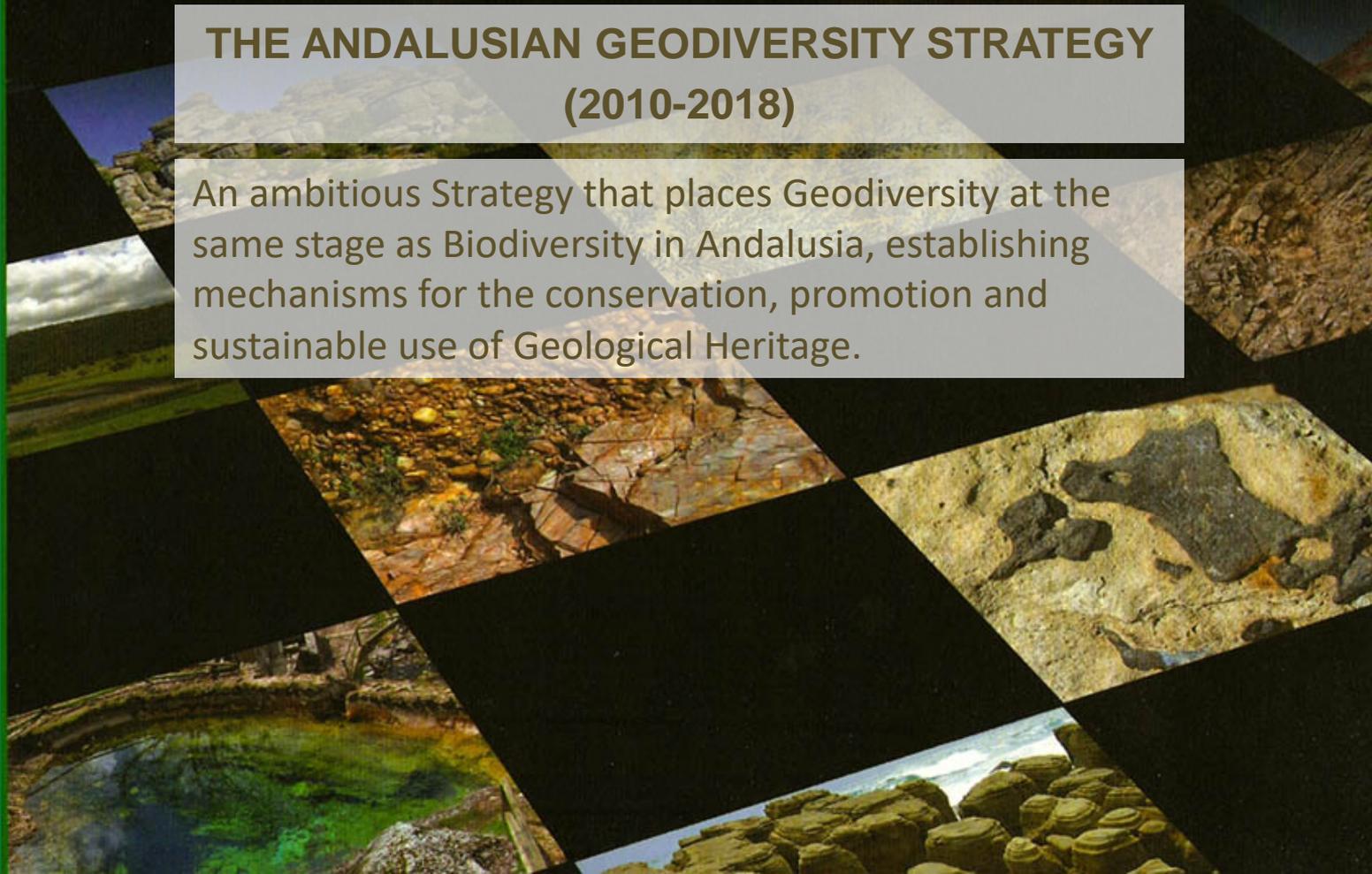


ESTRATEGIA Andaluza de GESTIÓN INTEGRADA de la GEODIVERSIDAD



THE ANDALUSIAN GEODIVERSITY STRATEGY (2010-2018)

An ambitious Strategy that places Geodiversity at the same stage as Biodiversity in Andalusia, establishing mechanisms for the conservation, promotion and sustainable use of Geological Heritage.





OBJECTIVES

1. DEFINITION OF AN INSTITUTIONAL POLICY AND A MODEL FOR INTEGRATED
GEODIVERSITY **MANAGEMENT**

2. GUARANTEE **GEO-CONSERVATION** IN ANDALUSIA

3. PROMOTE **GEOTOURISM** IN ANDALUSIA

4. STRENGTHEN **EDUCATION** AND TRAINING FOR
CONSERVATION AND GEOTOURISM

5. PROMOTE PARTICIPATION IN
INTERNATIONAL PROGRAMS

6. **ASSESSMENT**
AND MONITORING THE ACTION PLAN



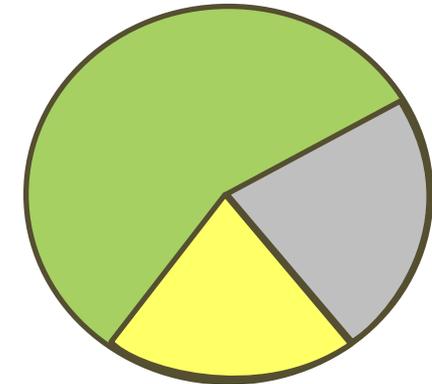


6. ASSESSMENT AND MONITORING THE ACTION PLAN

Evaluate the Level of compliance

Biannual Reports

Compliance level
of the Specific Actions (93 actions)



● NOT STARTED

● IN PROGRESS

● APPLIED/ COMPLETED



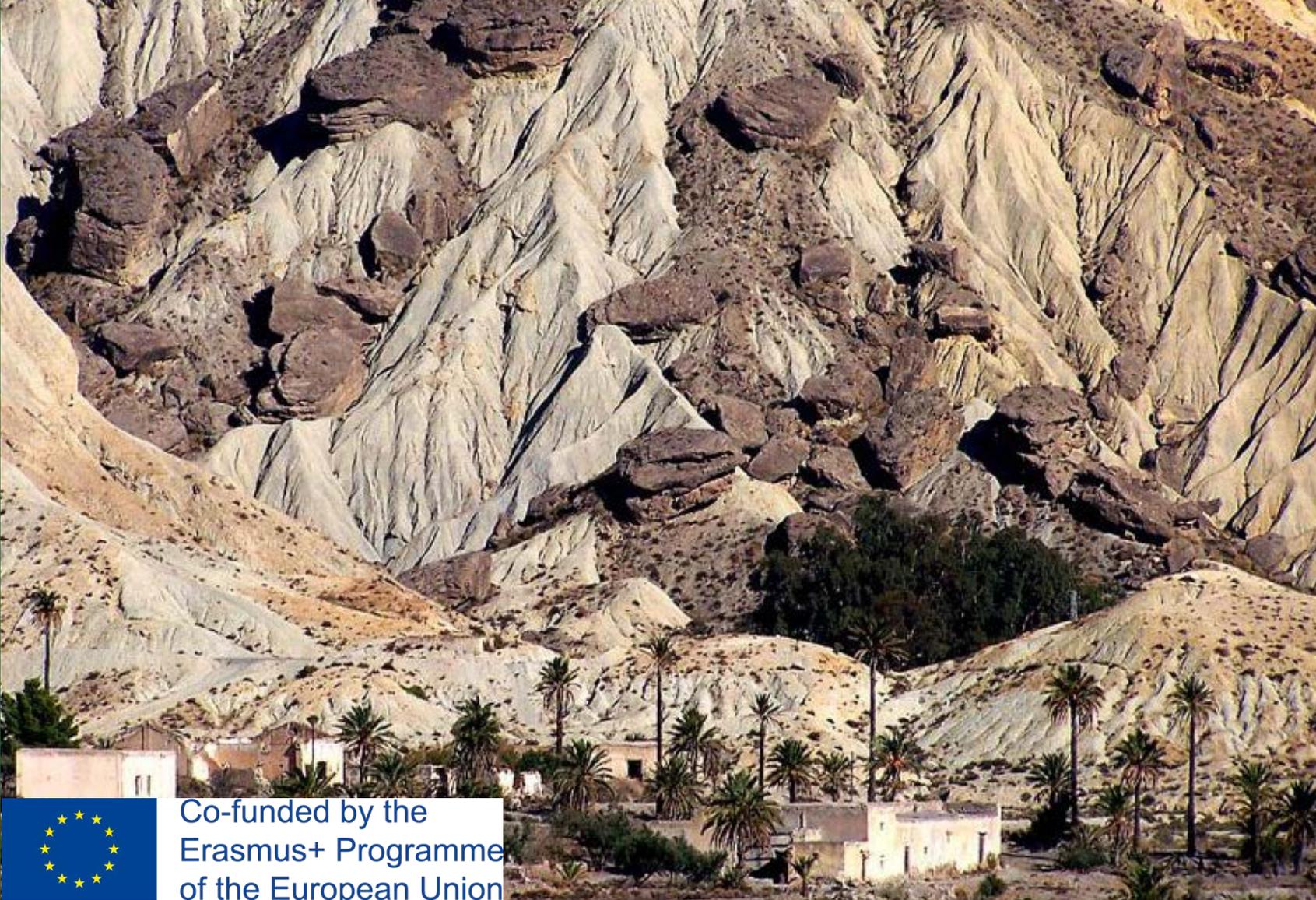


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ANDALUSIAN GEODIVERSITY STRATEGY



1. DEFINITION OF AN INSTITUTIONAL POLICY AND A MODEL FOR INTEGRATED GEODIVERSITY **MANAGEMENT**



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1. DEFINITION OF AN INSTITUTIONAL POLICY AND A MODEL FOR INTEGRATED GEODIVERSITY **MANAGEMENT**

National Legal Framework

LAW NATURAL HERITAGE AND BIODIVERSITY

“For the first time Geodiversity and Geological Heritage are included in a legal context, and equated to Biodiversity in conservational issues”.





1. DEFINITION OF AN INSTITUTIONAL POLICY AND A MODEL FOR INTEGRATED GEODIVERSITY **MANAGEMENT**

Establish a legal framework appropriate for Geodiversity management.

- Establishment of **Regulations** for **speleological activities**
- Procedures to **include Geodiversity in the Andalusian Decree of Environment.**
- Procedures to create the **Andalusian Committee of Geodiversity**





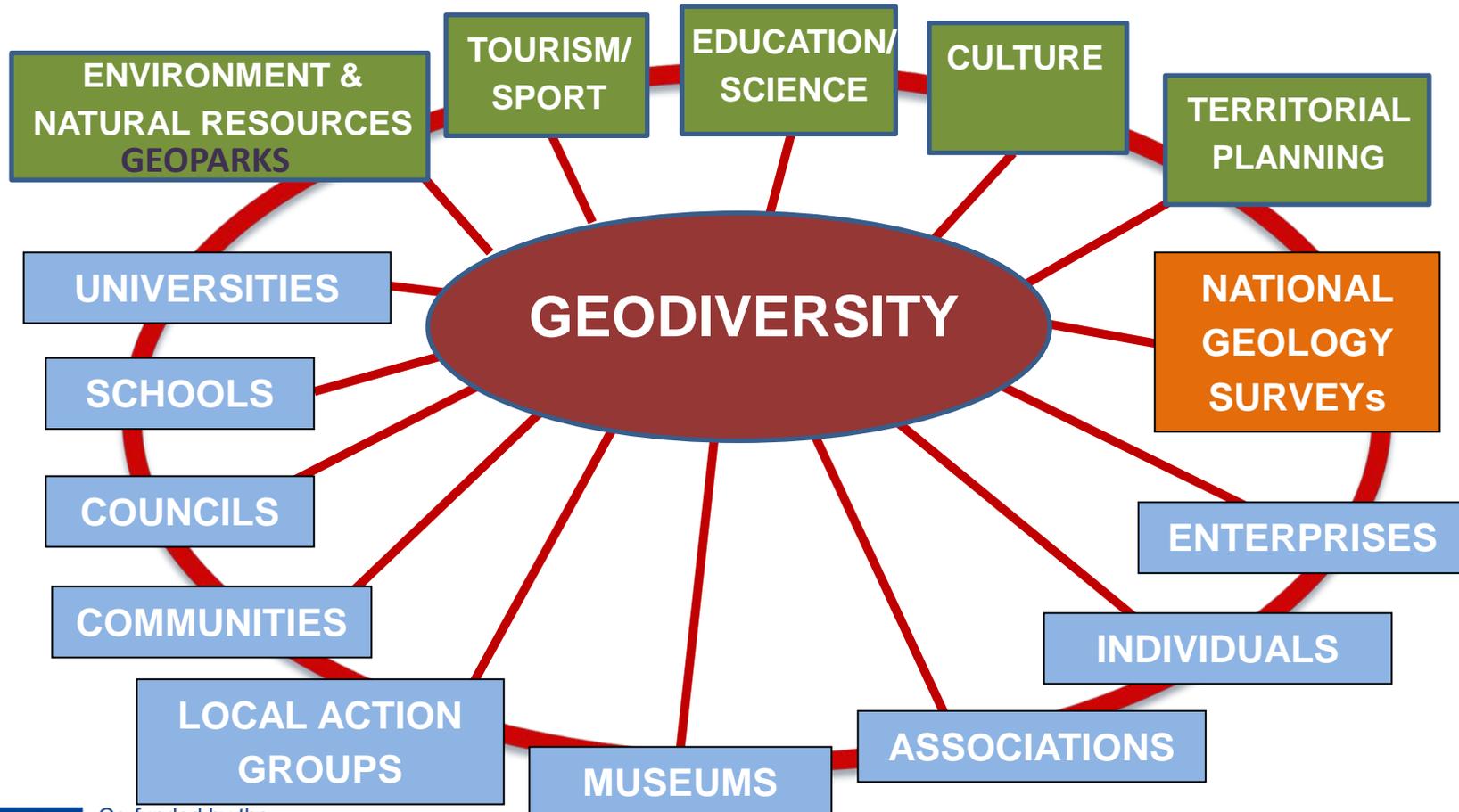
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1. DEFINITION OF AN INSTITUTIONAL POLICY AND A MODEL FOR INTEGRATED GEODIVERSITY **MANAGEMENT**

Promote coordination among administrations and other collectives.

REGIONAL GOVERNMENT (Junta de Andalucía)



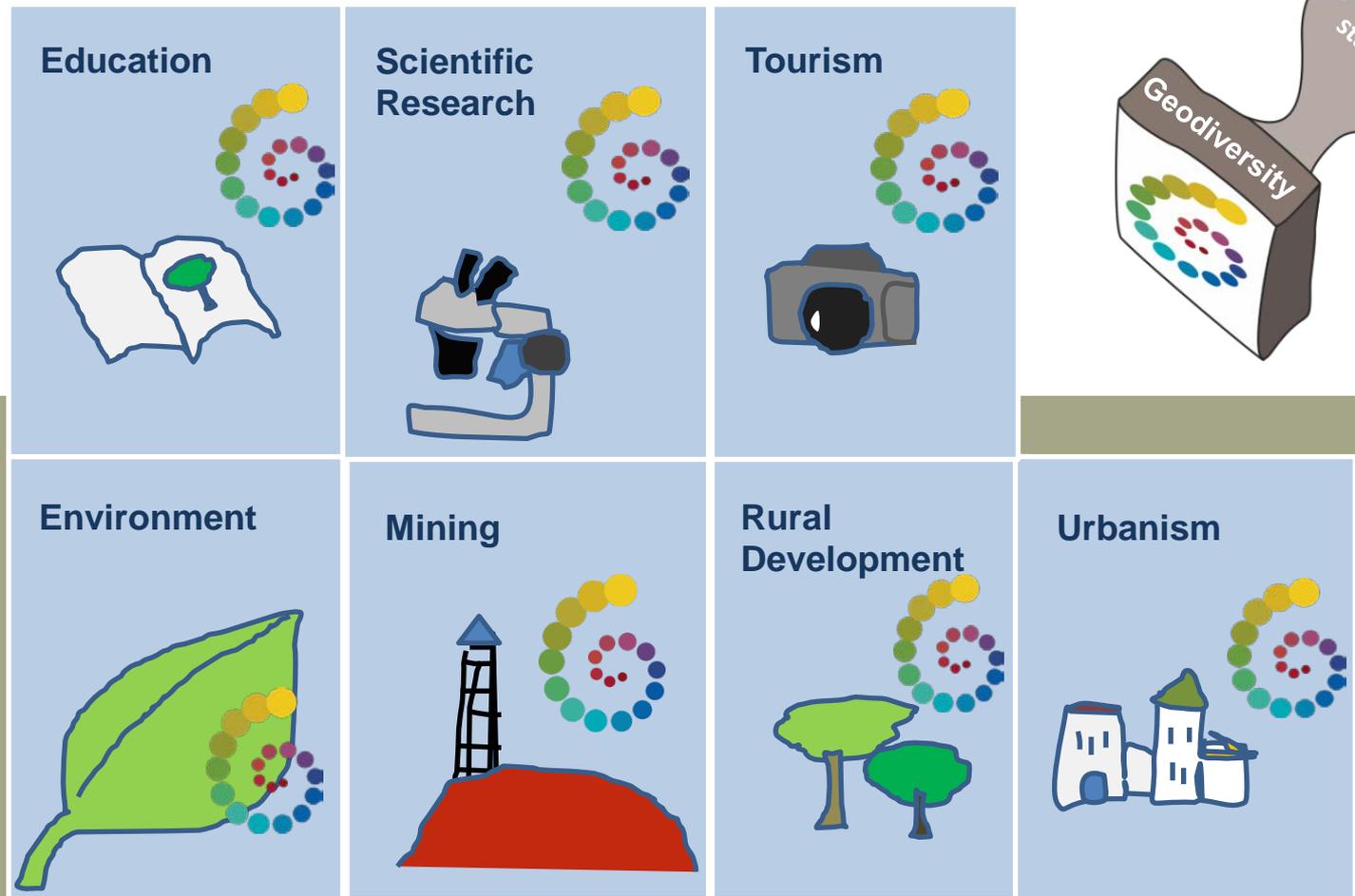


ANDALUSIAN GEODIVERSITY STRATEGY



1. DEFINITION OF AN INSTITUTIONAL POLICY AND A MODEL FOR INTEGRATED GEODIVERSITY **MANAGEMENT**

Incorporate and promote Geodiversity management through existing regional planning tools.





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ANDALUSIAN GEODIVERSITY STRATEGY



1. DEFINITION OF AN INSTITUTIONAL POLICY AND A MODEL FOR INTEGRATED GEODIVERSITY **MANAGEMENT**

Promote social and public participation in the management of Geodiversity.

Directory of institutional or social agents linked to Geodiversity

Development of Participation Fora on Geodiversity.



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2. GUARANTEE **GEO-CONSERVATION** IN ANDALUSIA



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2. GUARANTEE **GEO-CONSERVATION** IN ANDALUSIA

Definition of Tools for Andalusian Geoconservation

- Update and Improvement of **Andalusian Geosites Inventory, 2011:**
 - 74 new geosites
 - total 662 geosites.





2. GUARANTEE **GEO-CONSERVATION** IN ANDALUSIA

Definition of Tools for Andalusian Geoconservation

- Incorporation of the Andalusian Geosites Inventory in G.I.S. and to the Spanish Geosites Inventory





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ANDALUSIAN GEODIVERSITY STRATEGY



2. GUARANTEE **GEO-CONSERVATION** IN ANDALUSIA

Definition of Tools for Andalusian Geoconservation

Development of the **Action Program for Andalusian Geosites**
(Geoconservation and Sustainable Use)

Geoconservation: Ex.: Extraction and transportation of the Viar fossil trunk (17 meter Permian *Araucaria*) To the Berrocal Visitor Centre for its permanent exhibition. (Sierra Norte de Sevilla UGG).

Sustainable Use: Setting of new information points, interpretive pannels, paths, view points, etc., related to Geodiversity. Maintenance of facilities.



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2. GUARANTEE **GEO-CONSERVATION** IN ANDALUSIA

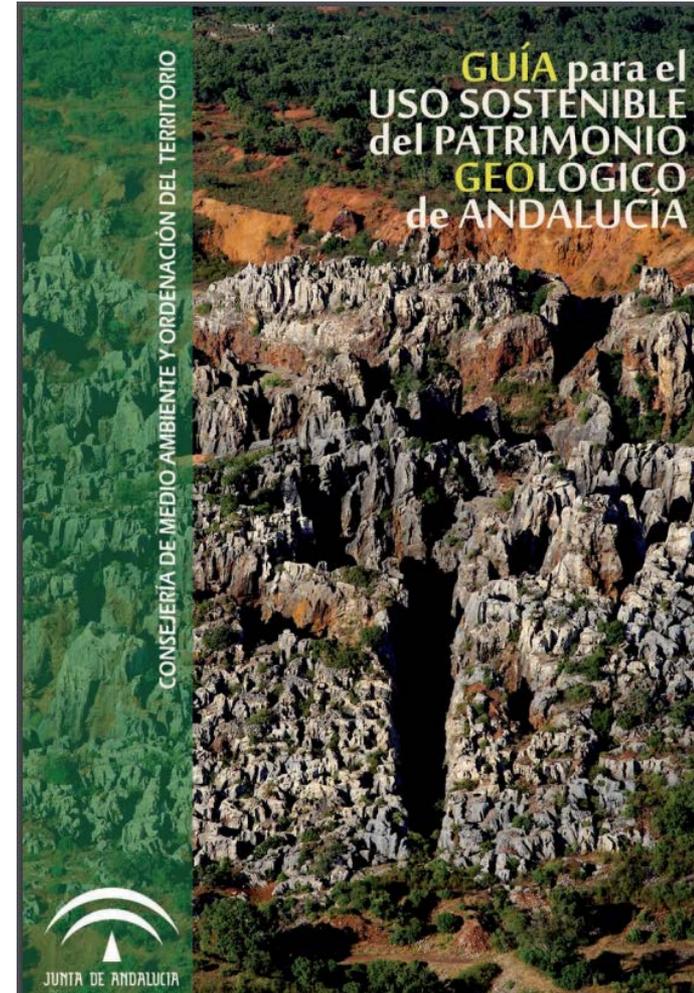
Definition of Tools for Andalusian Geoconservation

Design of diagnostic and management criteria compatible with geoconservation

Guide for the Sustainable Use of the Andalusian Geological Heritage (2013).

Geosites

- Geological Categories (paleontological, tectonic, petrology...)
- Threatens
- Guidelines for promoting use of geological heritage in balance with geoconservation





2. GUARANTEE **GEO-CONSERVATION** IN ANDALUSIA

Definition of Tools for Andalusian Geoconservation

General **Assessment of Andalusian Geodiversity Status** (Andalusian Geosites)

- Scientific-Touristic-Educational Value.
 - Threatens- conservation status (qualitative/quantitative).
 - Use Potential
 - Needs Diagnosis
-
-  Establishment of agreements and other models of sustainable management (Land Stewardship)
 -  Development of a system of indexes for the continuous assessment of Andalusian Geodiversity.
 -  Assessment of Andalusian Geodiversity linked to Climatic Change and to Habitats and Ecosystems.





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3. PROMOTE **GEOTOURISM**



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3. PROMOTE **GEOTOURISM**

- Consolidation of Geodiversity in Andalusian Geoparks and Natural Areas through **Sustainable Development Plans**
- Sensitization campaign of **Geodiversity as a tourism product**, targeted at tourism professionals.
- Definition of a logo for Andalusian Geodiversity



- Establishment of new Geological Information Points





3. PROMOTE **GEOTOURISM**

MINING GEOTOURISM

Andalusian Mining Resources Ordening Plan (2010-2013).



Restoration of Mining Abandoned Sites (30 actions aprox. (2011-2014))



Andalusian Mining Parks Network



Support to SMEs in Geo (mining) tourism





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3. PROMOTE **GEOTOURISM**

- Elaboration of a **Catalog of craft-local products** related to Geodiversity (**Geoproducts**)
- Promotion reinforcement of **craft-local products** related to Geodiversity (**Geoproducts**) through the channels of the Andalusian Department of Tourism and Merchandising.



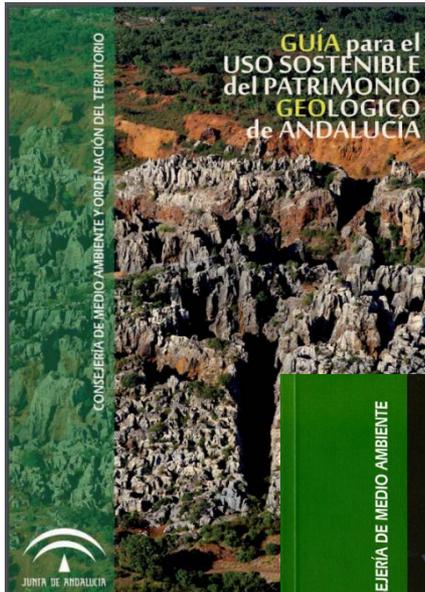
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3. PROMOTE **GEOTOURISM**

Publications

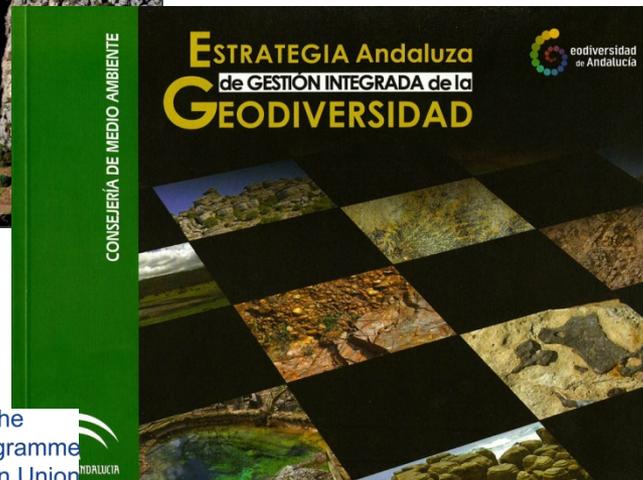
Guide for Sustainable Use of Geological Heritage



Andalusian Geodiversity facing Sustainable Use

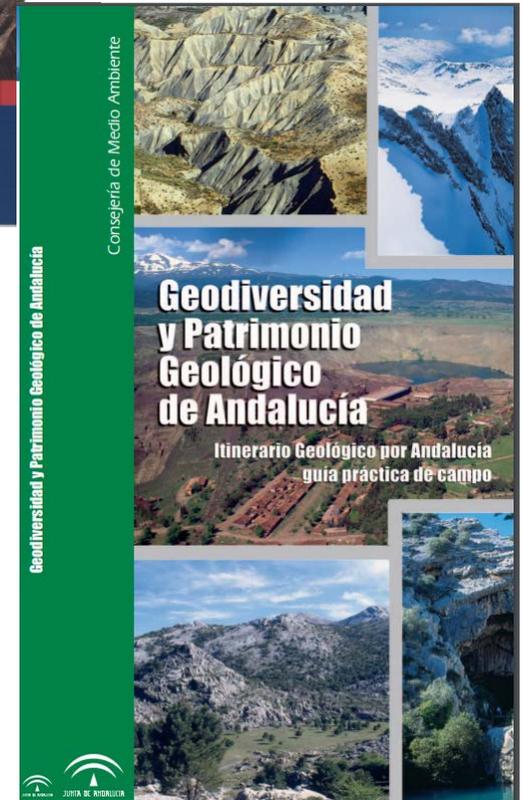


The Andalusian Geodiversity Strategy



Available online for free

Andalusian Geodiversity & Geological Heritage



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3. PROMOTE **GEOTOURISM**

Geo-Itineraries of Andalusia (mobile app.)



Provincia	Término municipal	Espacio Protegido	Itinerarios
Almería	Bejar (Castala)	SIERRA DE GADOR	Sierra del Plomo
Almería	Carboneras	GEOPARQUE CABO DE GATA-NÍJAR	Mesa Roldan y Playa de los Muertos
Cádiz	Algeciras y Tarifa	DEL ESTRECHO	Flysch del Estrecho
Córdoba	Cabra y Zueros	GEOPARQUE SIERRAS SUBBÉTICAS	Río Bailón
Granada	Dílar	ESPACIO NATURAL SIERRA NEVADA	Canal de la Espartera / Arenales del Trevenque
Huelva	Moguer (Mazagón) y Almonte (Matalascañas)	ESPACIO NATURAL DOÑANA	El Asperillo
Jaen	La Iruela y Santiago-Pontones	SIERRA DE CAZORLA, SEGURA Y LAS VILLAS	Río Borosa
Málaga	Antequera	TORCAL DE ANTEQUERA	Rutas Amarilla y Verde
Sevilla	San Nicolás del Puerto	GEOPARQUE SIERRA NORTE DE SEVILLA	Vía Verde Sierra Norte

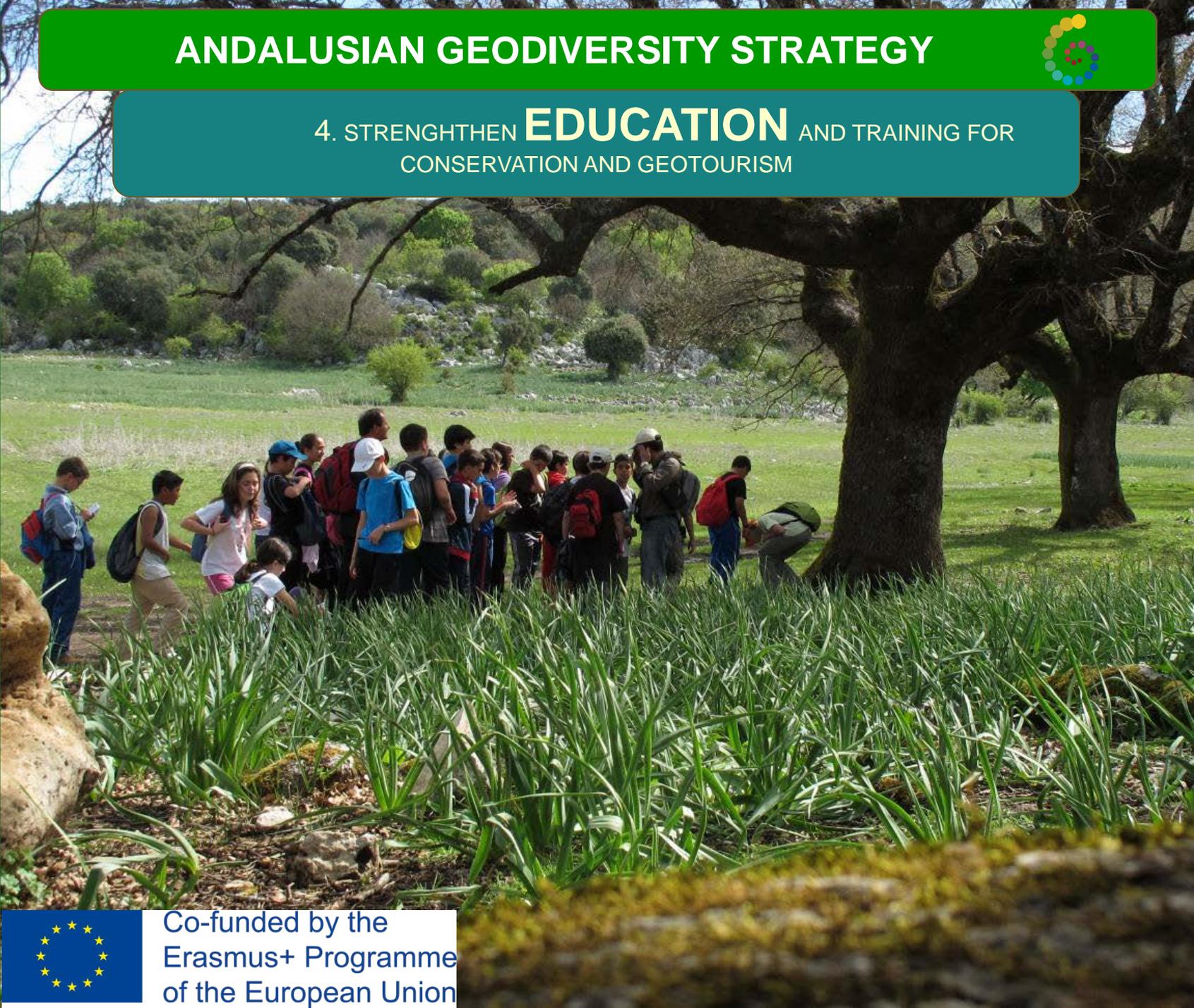


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ANDALUSIAN GEODIVERSITY STRATEGY



4. STRENGTHEN **EDUCATION** AND TRAINING FOR CONSERVATION AND GEOTOURISM



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4. STRENGTHEN **EDUCATION** AND TRAINING FOR CONSERVATION AND GEOTOURISM

Incorporation of Geodiversity to Strategies and Policies in issues of Environmental Education.

Incorporate Geodiversity in **non-formal environmental education centres**
(Farm- Schools)

- Incorporate Geodiversity in the **environmental formal education** programme
Aldea Activa





4. STRENGTHEN **EDUCATION** AND TRAINING FOR CONSERVATION AND GEOTOURISM

Training special collectives on Geodiversity issues:

The Educational Community

- Tourism agents and tour operators
- Workers of Visitor Centres and Information Points
- Park Rangers





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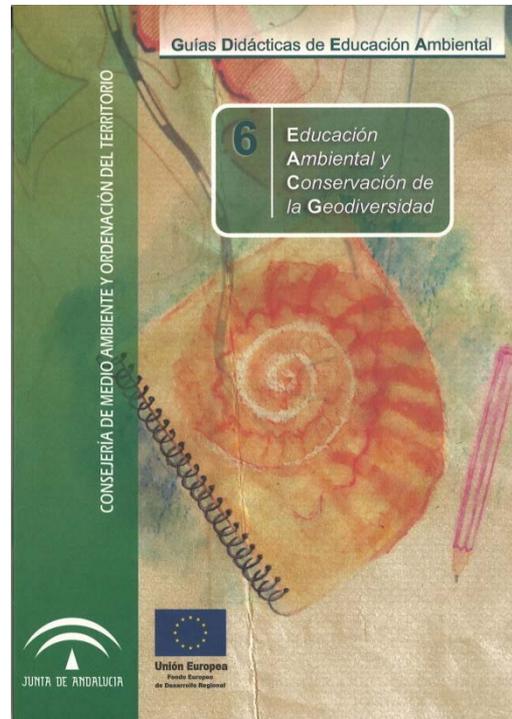
ANDALUSIAN GEODIVERSITY STRATEGY



4. STRENGTHEN **EDUCATION** AND TRAINING FOR CONSERVATION AND GEOTOURISM

Design of materials, tools and events directed to dissemination and diffusion of Geodiversity.

Environmental Education Didactic Guides: Environmental Education and Geoconservation



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4. STRENGTHEN **EDUCATION** AND TRAINING FOR CONSERVATION AND GEOTOURISM

Improve knowledge of Andalusian Geodiversity through Scientific Research.

Incorporate Geodiversity to priority research matters in Andalusia in the framework of the **Andalusian Plan for Research, Development and Innovation (2020)**

● Work to include management of Geodiversity in strategic lines of **R+D+I** (Research, Development and Innovation).

● **Signature of protocol to promote research in issues of Geodiversity, Geological indexes and Sustainable management of Geodiversity** (between Andalusian Universities, Department of Environment and Department of Economy, Innovation and Science).



5. PROMOTE PARTICIPATION ON INTERNATIONAL INITIATIVES AND PROGRAMS

● UNESCO Global Geoparks in Andalusia

Cabo de Gata-Níjar Unesco Global Geopark (2006)

Sierras Subbéticas (2006).

Sierra Norte de Sevilla (2011)

Granada (2020)





5. PROMOTE PARTICIPATION ON INTERNATIONAL INITIATIVES AND PROGRAMS

- Support the regional phase of the International **Earth Science Olympiad**



Víctor Haro (Córdoba, Andalusia)
First **GOLD MEDAL** for Spain in the IESO

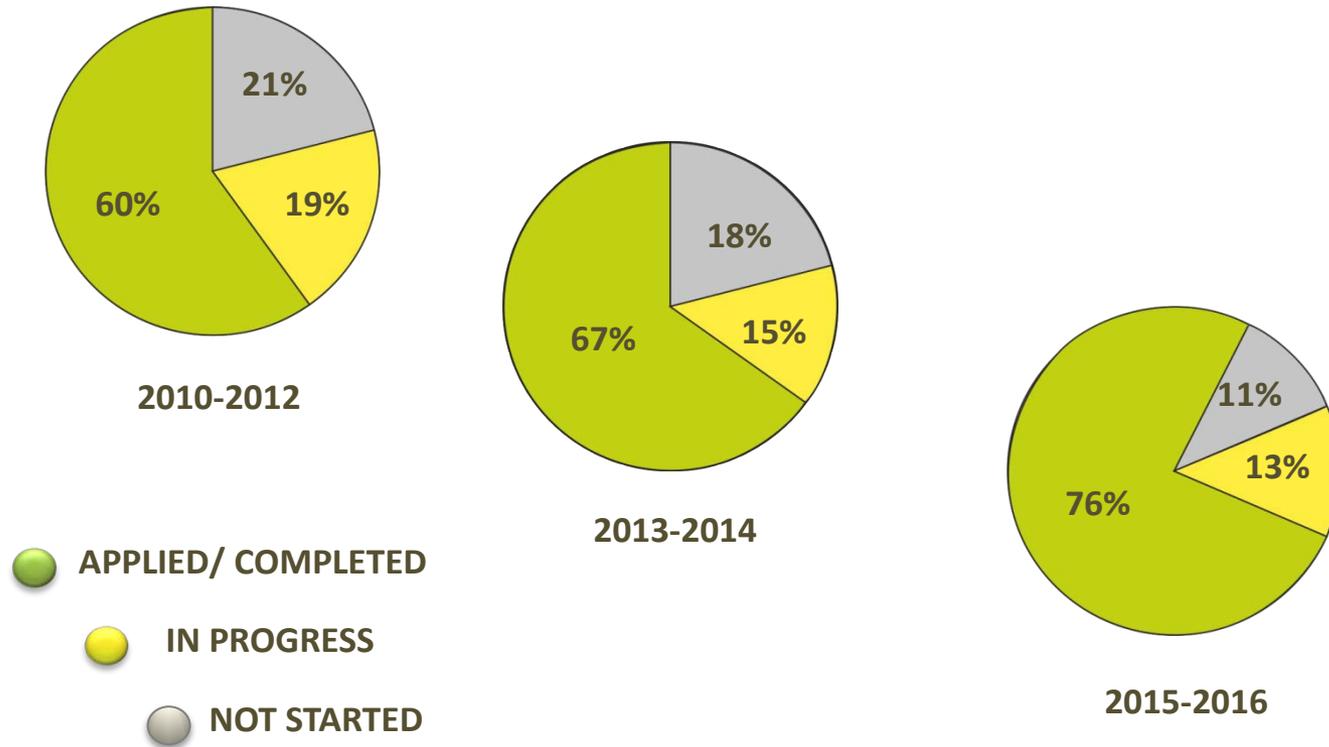


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6.ASSESSMENT AND MONITORING THE ACTION PLAN

Evaluate the Level of compliance of the Andalusian Geodiversity Strategy





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ANDALUSIAN GEODIVERSITY STRATEGY



6.ASSESSMENT AND MONITORING THE ACTION PLAN

II ANDALUSIAN GEODIVERSITY STRATEGY (2022-2027)

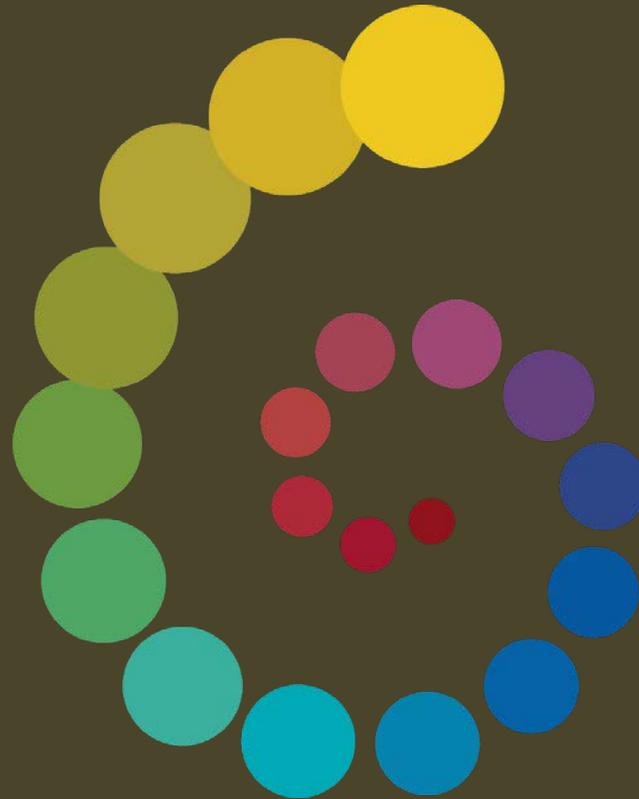


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Erasmus+ University of Andalucía



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