



# Protection of key ecosystem services by adaptive management of climate change endangered Mediterranean socio-ecosystems Life AdaptaMed (LIFE14 CCA/ES/000612)

Tallin 10 -11 May 2017

## Life platform meeting on ecosystem services

Coordinating beneficiary:



JUNTA DE ANDALUCIA

CONSEJERÍA DE MEDIO AMBIENTE Y ORDENACIÓN DEL TERRITORIO

Associated beneficiaries:

JUNTA DE ANDALUCIA  
CONSEJERÍA DE MEDIO AMBIENTE  
Y ORDENACIÓN DEL TERRITORIO  
Agencia de Medio Ambiente y Agua



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Cofinances:

## PROJECT LOCATION: Andalusia (Spain)

**BUDGET:** 5.462.678 € (59,29% co-funded by EC)

**DURATION:** 16/07/2015 - 15/07/2020

## PROJECT'S IMPLEMENTORS:

### Coordinating Beneficiary:

Andalusian Environmental Ministry (Consejería de Medio Ambiente y Ordenación del Territorio , Junta de Andalucía)

### Associated Beneficiaries:

Agencia de Medio Ambiente y Agua, CSIC (EBD), Granada University (IISTA), Almeria University (CAESCG), IUCN-Med & Parque de las Ciencias.

## OBJECTIVES:

To mitigate the negative effect of Climate Change on key ecosystem services provided by 3 representative Mediterranean Natural Protected Areas through:

- An adaptive management framework tested in a pilot scale, aimed to improve resilience of the targeted socio-ecosystems (pilot project).
- A temporal and spatial multiscale indicator system to monitor the impact of the project actions.
- Communication and dissemination actions (demonstration project).



- Altitudinal gradient: 0 – 3.481 masl
- Gradient West-East
- Precipitation gradient: 300-1.500 mm.
- Very diverse ecosystems

**Increasing adaptation capacity towards climate change**



**Sierra Nevada**

National Park and Nature Park, IUCN  
 Green list site, BR, Ramsar site, ZEC.  
 172.238 ha .

Ecosystems included in the project:

- High mountain scrubland.
- Pine forests
- Oak and holm oak forests (*Quercus pyrenaica* & *Q. rotundifolia*)

**Cabo de Gata**

Nature Park, BR, GeoPark, ZEC. 49.512 ha  
 (12.012 marine).

Ecosystems included in the project:

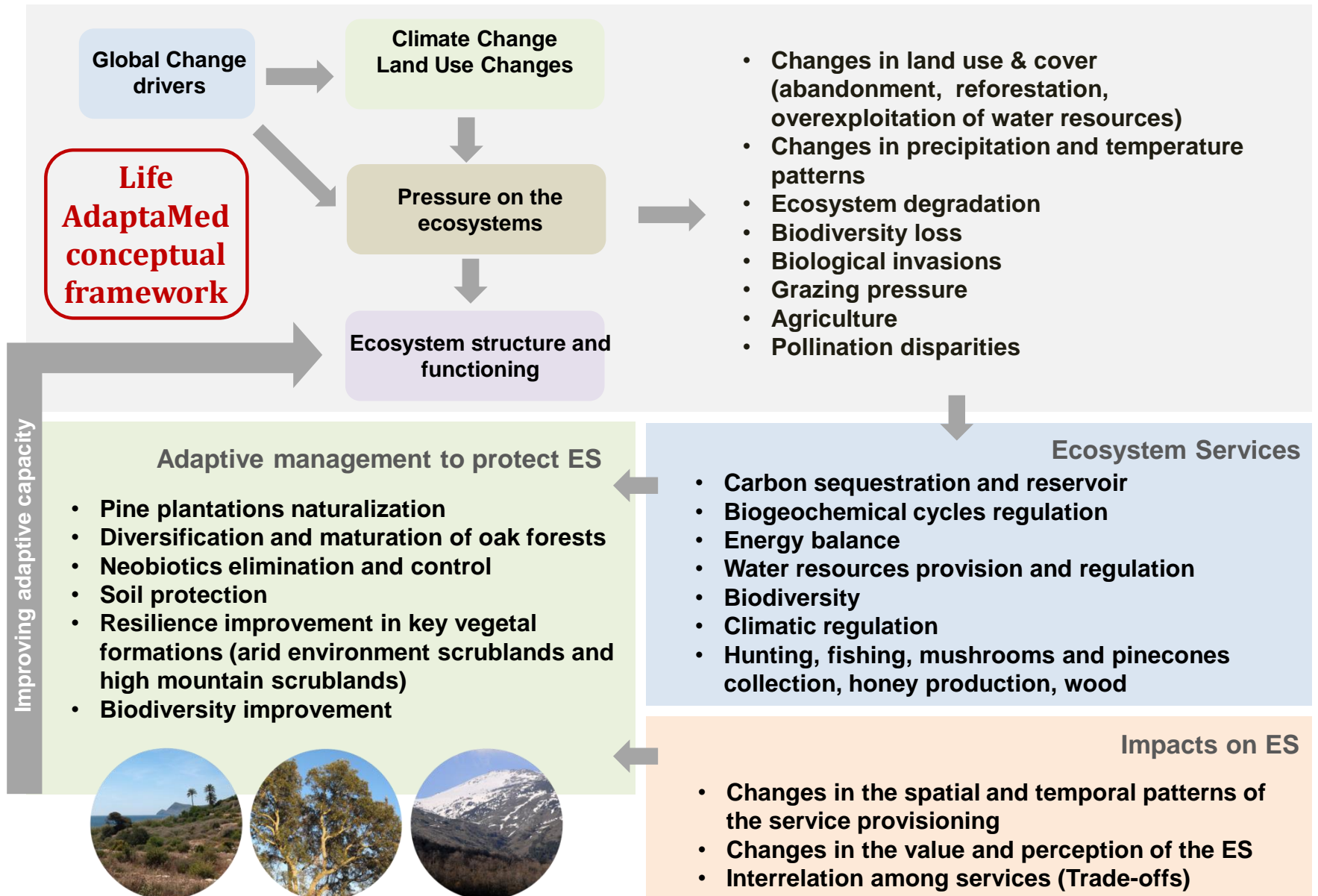
- Tree-shrubland with *Ziziphus*
- Thermo-Mediterranean and pre-desert scrub
- Pseudostepe with grasses and annuals

**Doñana**

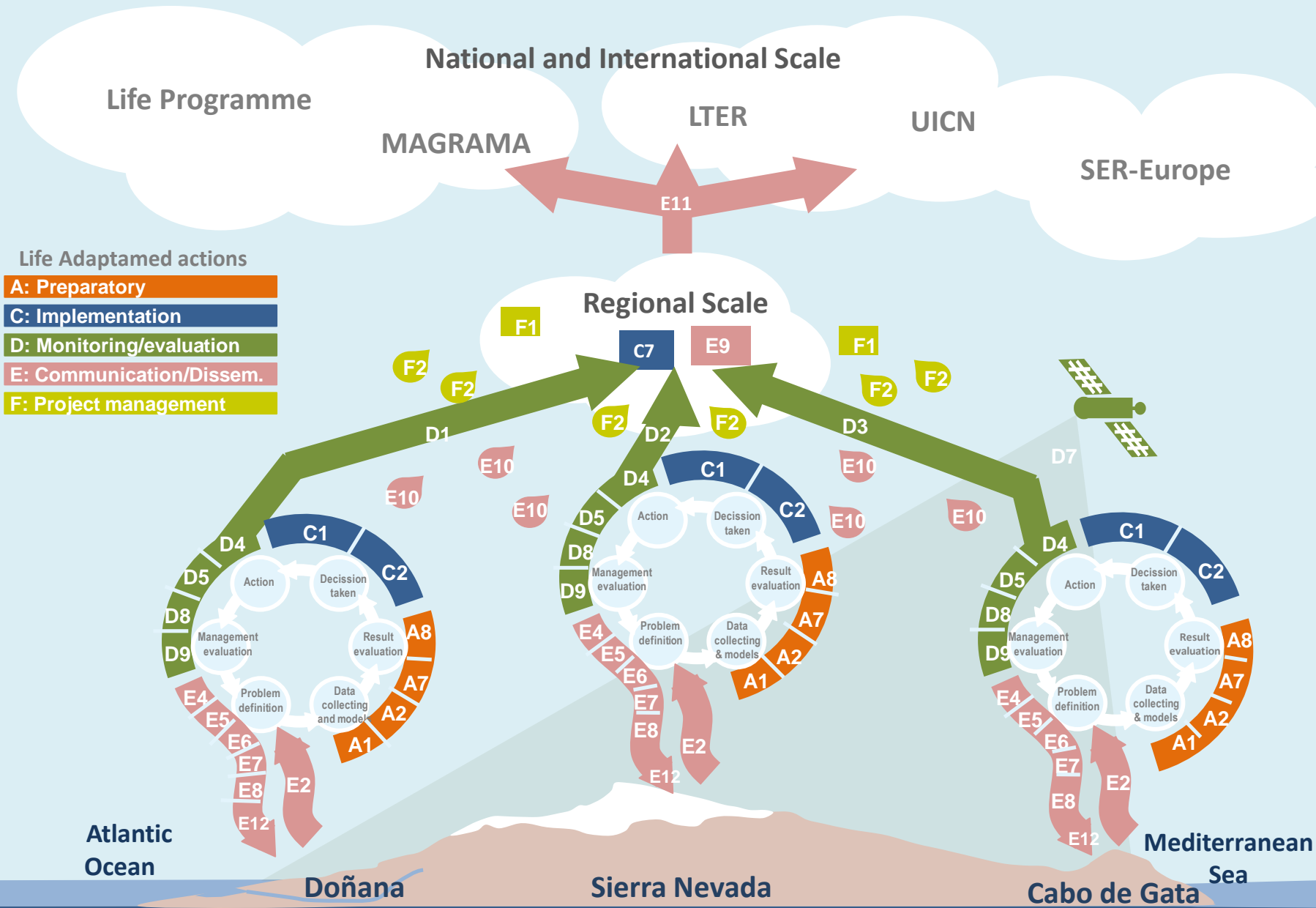
National Park and Nature Park, IUCN  
 Green list site, BR, Ramsar site, ZEC.  
 108.087 ha.

Ecosystems included in the project:

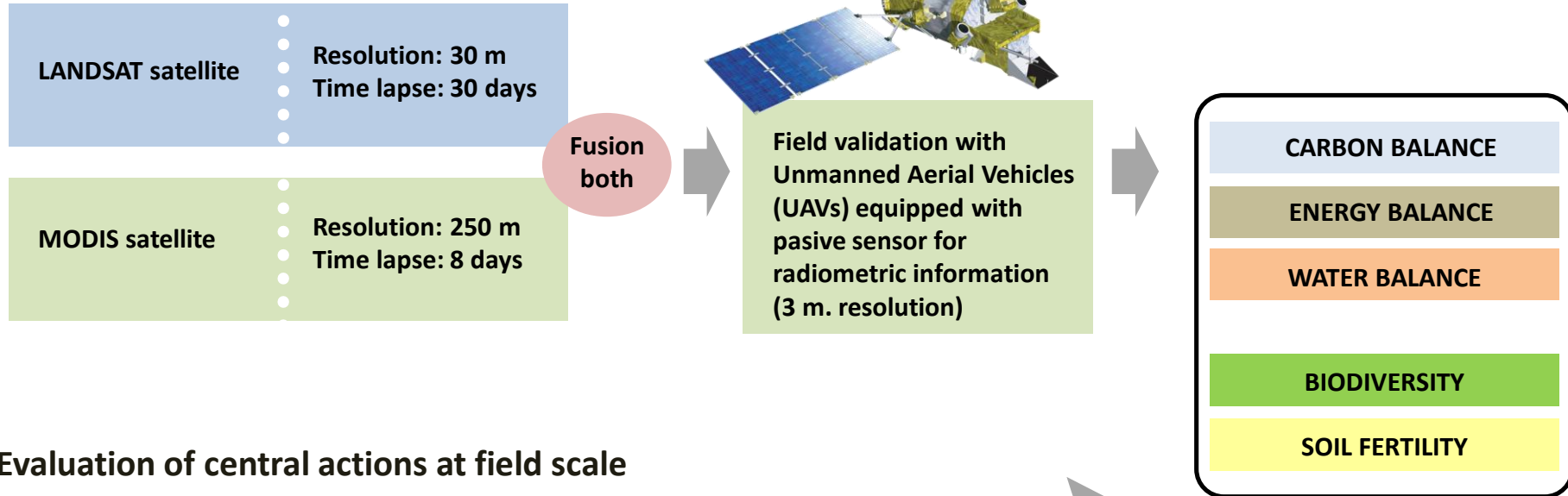
- Wooded dunes with pines (*Pinus pinea* and/or *Pinus pinaster*)
- Dehesas with evergreen *Quercus suber*.



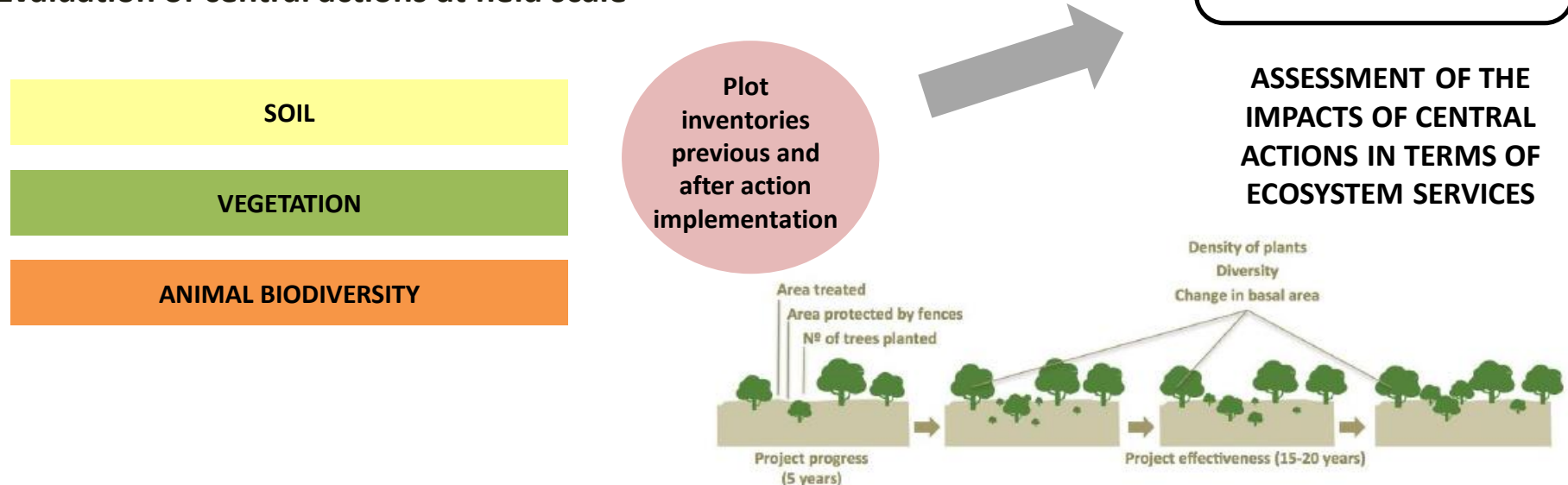




## Evaluation of central actions at landscape scale

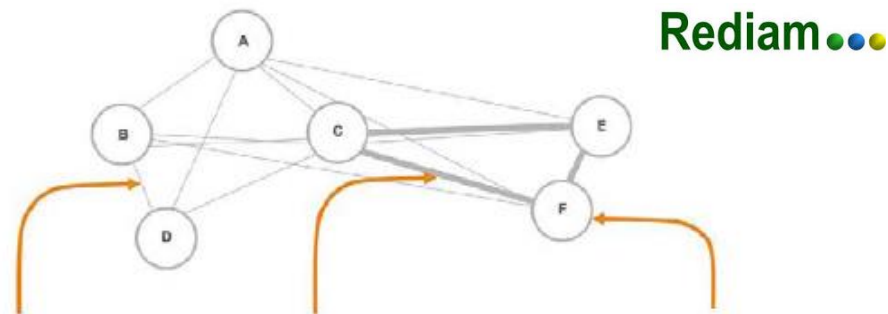


## Evaluation of central actions at field scale



## Implementation of an Information System to monitor CC in Andalusia

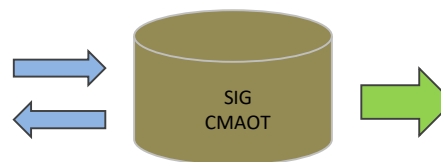
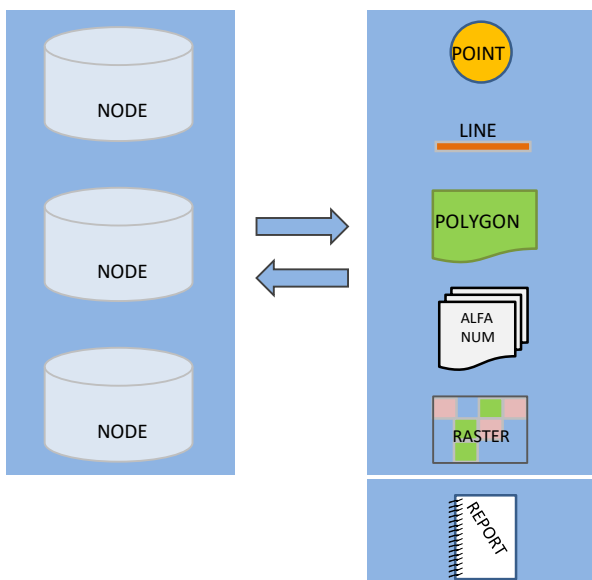
To generate a Distributed Information System within the 3 nodes and the central node (CMAOT Central Services)



**Level I:** tasks carried out by all nodes

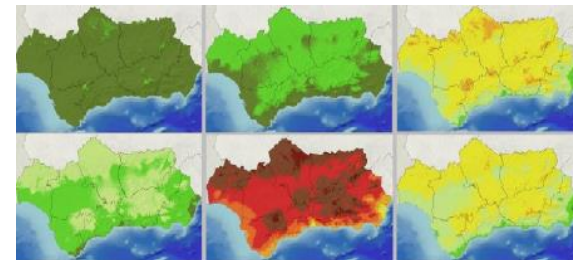
**Level II:** tasks carried out by some nodes with thematic or geographic similarities

**Level III:** tasks carried out exclusively by each node

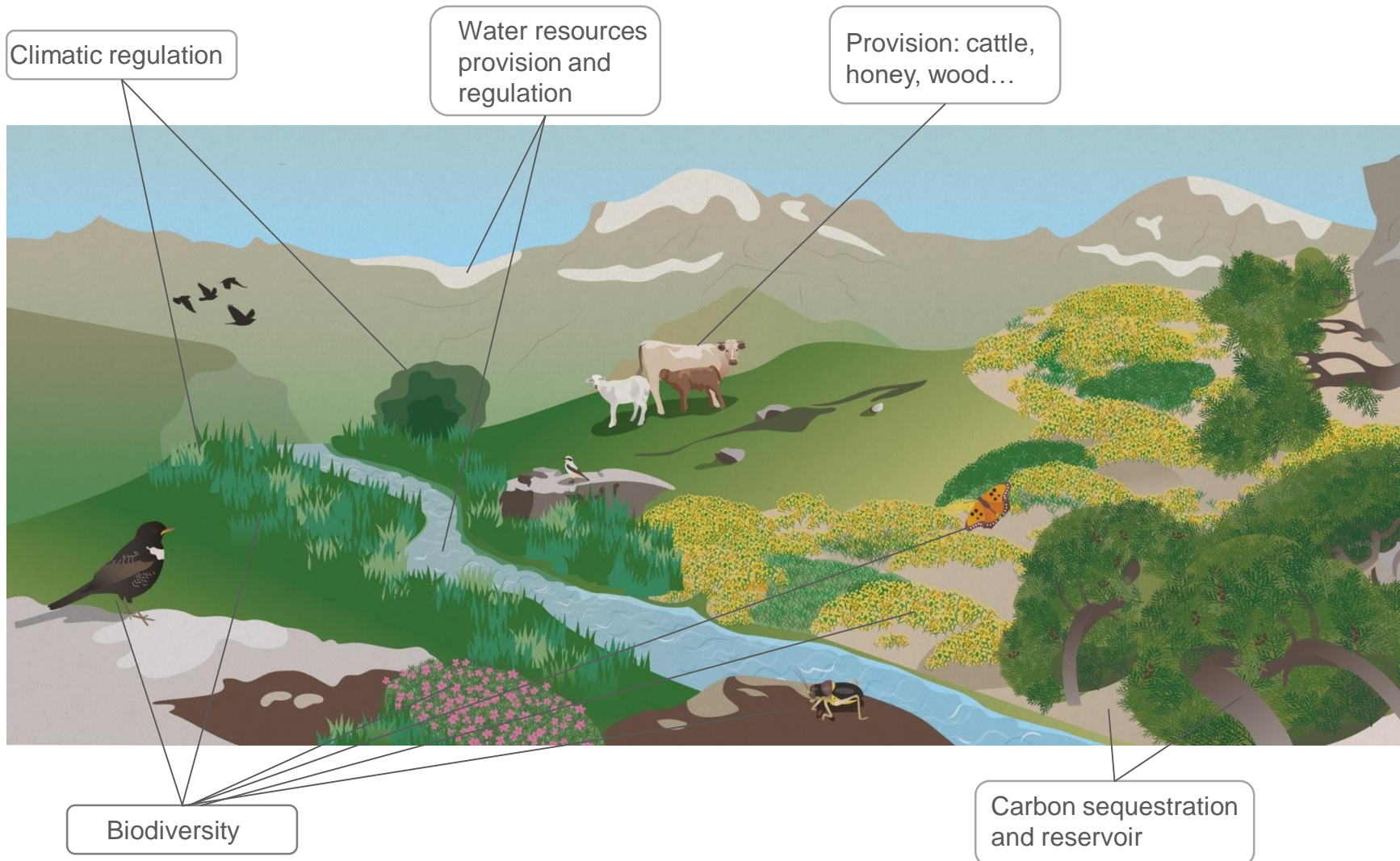


**WEB<sub>(E9)</sub>**

### CC assessment in Andalusia



## Communication and awareness rise on ES

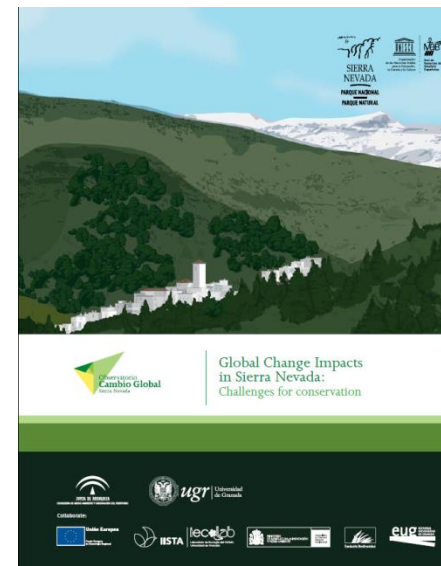




## Successful stories

Some interesting and successful previous experiences:

- **Sierra Nevada Global Change Observatory**: good example of collaboration between scientists and managers working together (germ to the current LIFE Project)



- **ES Mapping** in Sierra Nevada (Universidad Autónoma de Madrid, Laboratorio de socioecosistemas) → Useful information on ES perception in S.N.

## Main problems

- More **TIME** needed to assess the effect of the central actions in terms of maintenance or improvement of ES provision!

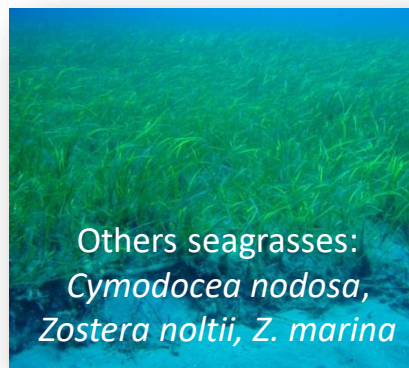
### MAPPING BLUE CARBON IN ANDALUSIAN?

Blue carbon is the carbon sequester and stored in mangroves, salt tidal marshes and seagrass meadows

**REGULATION SERVICES:**  
EVALUATION OF THE  
ENVIRONMENTAL SERVICES TO  
MITIGATE CLIMATE CHANGE

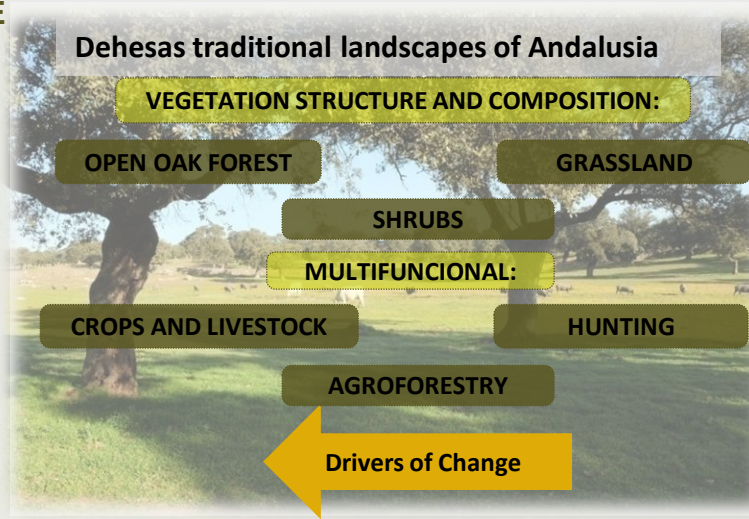


**METHODOLOGY: DPSIR**  
**FIELD SAMPLING: STRATIFYING**  
PROJECT AREA- SOIL CORING  
NATURAL AND ANTRHOPOGENIC  
VARIABILITY



## INNOVATIVE AND DEMONSTRATIVE CHARACTER OF THE PROJECT

The Life project **bioDEHESA** aims to promote the sustainable and integrated management of dehesas in order to improve the situation of biodiversity through the dissemination of demonstrational actions that address the main challenges related to their conservation.

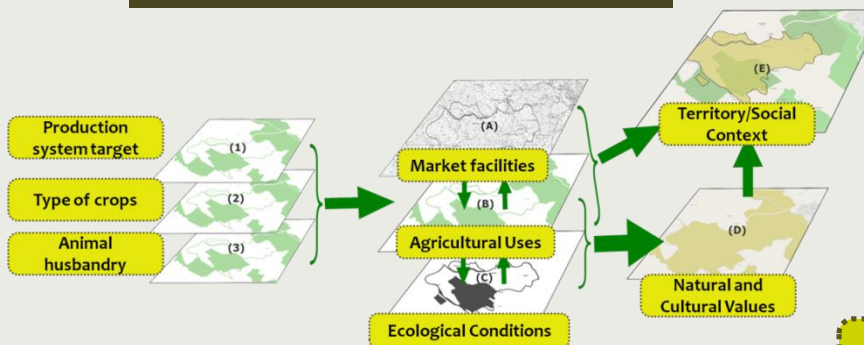


MILLENNIUM ECOSYSTEM METHODOLOGY

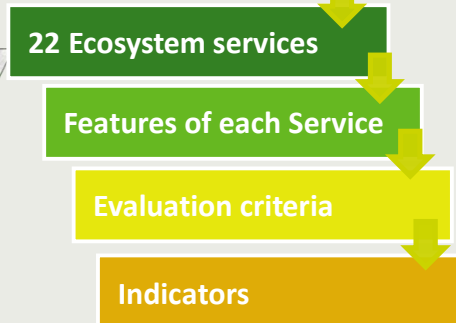


APPLICATION TO ESTATE SCALE

### Multidimensional classification of Life bioDehesa Pilot Dehesas Network



### Analysis of 11 Estates of the Pilot Network



### DEHESA ECOSYSTEM SERVICES ASSESSMENT

### MAIN CONCLUSIONS:

1. Economic viability is determined by **Alimentation Service**
2. **Regulation Services** have an important role on Dehesas with positive results on the different type of dehesas
3. **Cultural services** have a limitation for their analysis at state level



***Thank you very much for your attention !***

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