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# Linking Millennium Ecosystem Assessment global scenarios to local scenario planning; a participatory approach from the Millennium Ecosystem Assessment in Biscay SGA (Basque country, Northern Spain)

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# Study area



## Biscay (Province scale): Indicators, Forest ES, Scenario planning

**01**  
Metropolitan Bilbao  
Greenbelt cultural services



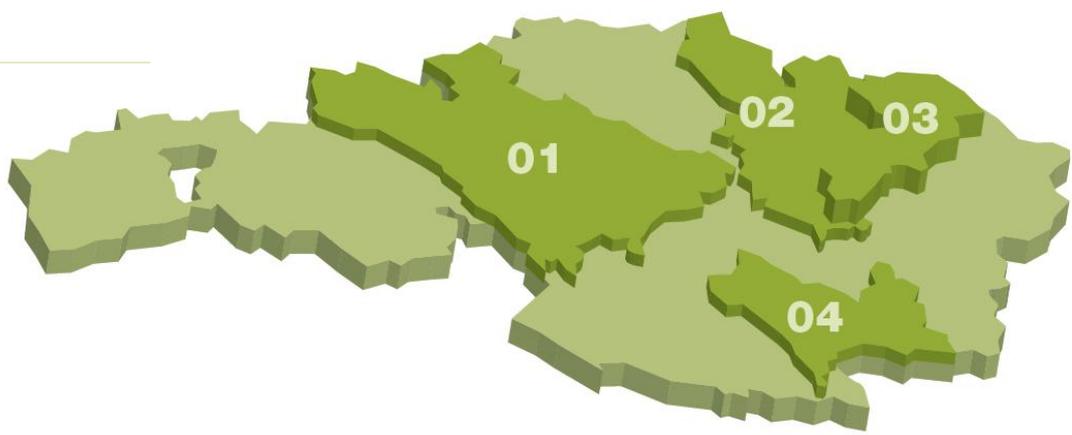
**04**  
Urkiola  
Regulation services (forest and karst)



**02**  
Urdaibai  
Regulation service (coastal)



**03**  
Lea  
Provisioning services (Atlantic landscape and river ecosystem)



2.216 km<sup>2</sup>  
1.2 M inhabitants  
(520 inhab/km<sup>2</sup>)

# Introduction

We developed scenarios for Biscay through **2050** in an integrated and participatory way by **downscaling MA global scenarios**, analyzed how ecosystem services and human well-being might change in a range of plausible futures and **identified management strategies** for the territory.



Fig. 1. Scenario workshops held in Bilbao on June 2010

## Aim:

1. Develop scenarios at local scale as a process and tool for landscape planning, create buy-in to the assessment process and explore possible responses options.
2. Provide more insights on how large-scale scenario developments can be translated to the local level.

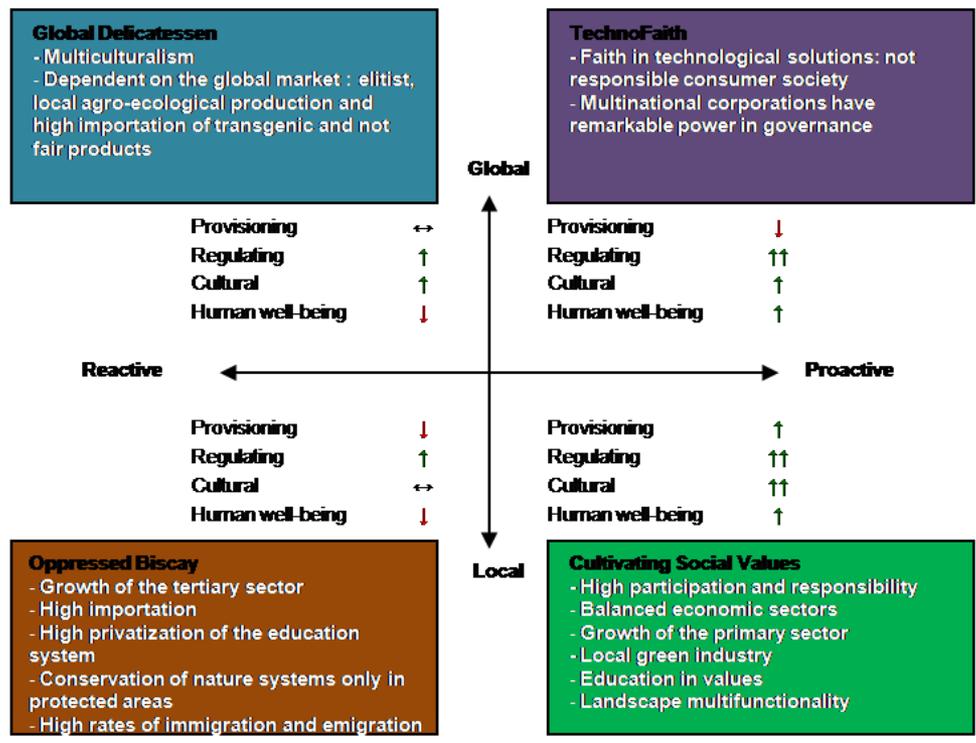
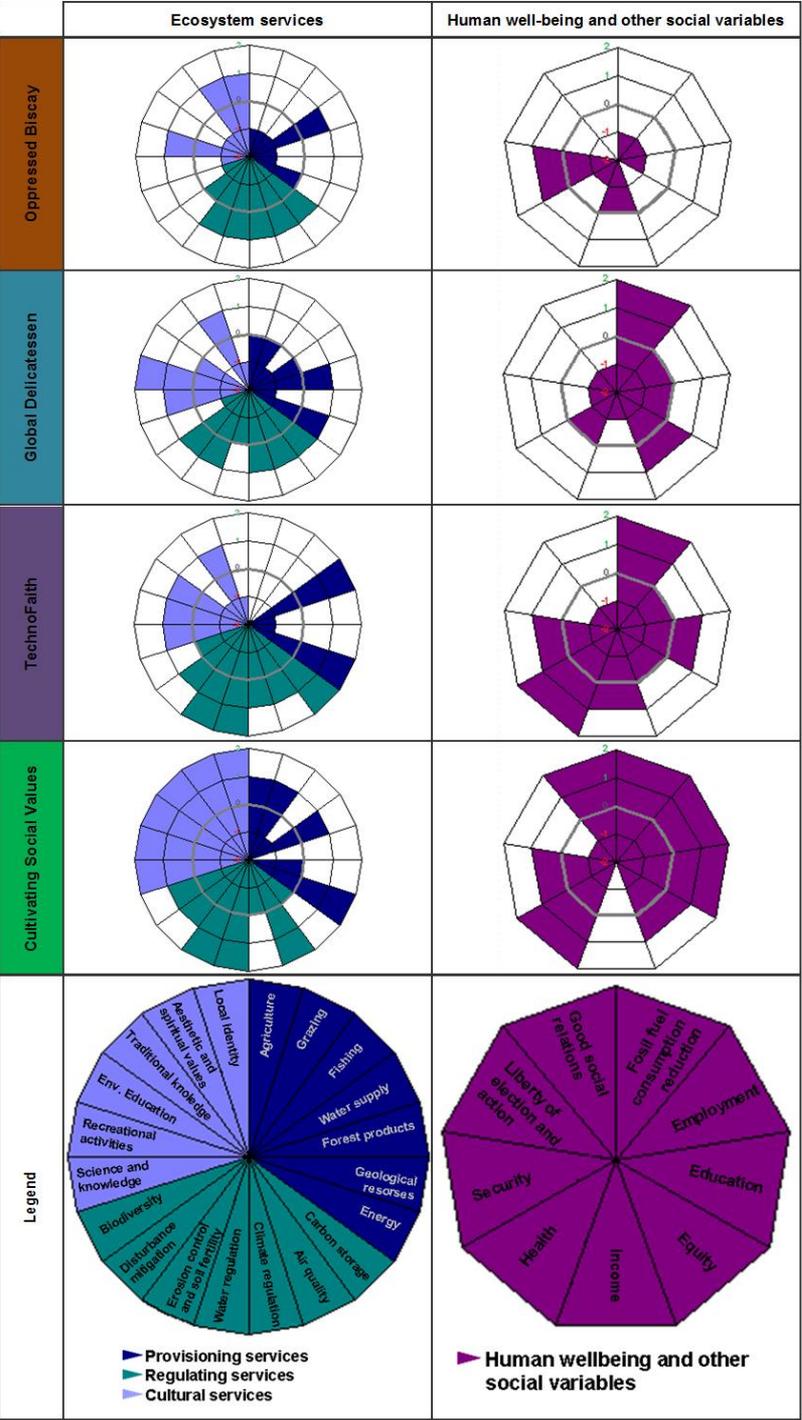
# Methodology

## Six phases:

1. Identification of key stakeholders;
2. Definition of the importance of ecosystem services and the potential for successful intervention;
3. Identification of key drivers of change;
4. Development of local participatory scenarios for Biscay by downscaling MA global scenarios;
5. Characterization of scenarios in terms of the provision of ecosystem services and human well-being;
6. Description of the target scenario and definition of management strategies for Biscay.

# Results

**Fig. 3.** Provision of ecosystem services and indicators of human well-being under each scenario, compared to the current conditions (substantial increase = 2; increase = 1; constant or increases in some aspects and decreases in other aspects = 0; decrease = 1, large decrease = 2).



**Fig. 4.** Summary of the evolution of ecosystem services and human well-being under each of the four scenarios.

# Key discussion points

- Biscay scenarios: forest management relevance and population density constrains
  - Multifunctional forest management seems to be an appropriate solution for Biscay social ecological system.
  - For the Target scenario to be possible, the population would have to be smaller than it currently is.
  - A core aspect of the target scenario is that a real change in social values is proposed.
- Linking sub-global scenarios to MA global scenarios: the scale issue

Downscaling global MA scenarios in a consecutive scenario development process using a coherent linkage across scales, allowed both, using MA previous work to prevent much work that otherwise would have had to be redone; and allowed stakeholders' creativity and local variability, while maintaining a scientific credible global context.

The outcome scenarios, therefore, have local management relevance and at the same time, they can be compared to other assessments.

- Lessons learned from the applied methodology
  - Administering a survey before the workshop enabled saving time during the workshops.
  - In Biscay SGA, stakeholder engagement process key from the outset -> ensured a widespread buy-in of the scenarios exercises.
  - For the applied methodology to be successful, workshops must be designed carefully.



**Fig. 5.** Several core team meetings were organized for the design of the workshops, including those with experienced scenario practitioners

# Conclusion

- A core aspect of the target scenario is that a real change in social values is proposed
- The applied methodology can be considered a useful tool for consensus building in socio-ecological systems towards a sustainable future, while maintaining consistency across scales
- Workshops must be designed carefully, with clear goals and a coordinated team that counts on experienced scenario practitioners

# Thank you!!

*A sustainable future is possible  
working from local to global and vice-versa*

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