

# Ecosystem Services Assessment in the Basque Country

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# ECOSYSTEM SERVICES ASSESSMENT

An integrative approach to enhance the link  
between science, policy-making and society



**MANAGEMENT**



**SCIENCE**

**SOCIETY**

# Services ecosystems bring to society

## Provisioning

Food, fresh water,  
wood, fiber,  
genetic resources



## Regulating

Climate regulation,  
air quality,  
pollination



## Cultural

Educational,  
recreational, traditional  
knowledge, local  
identity



# Study area: Different working scales



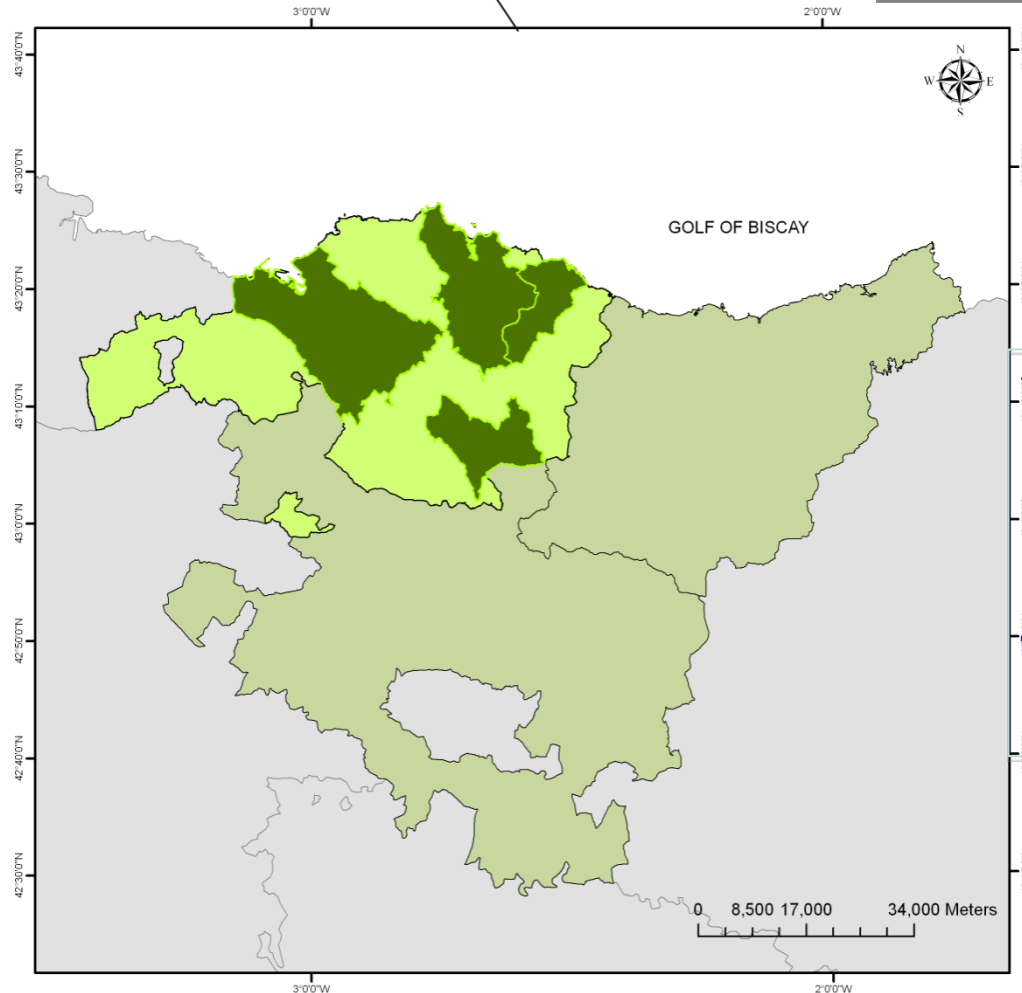
## Basque Country

7.229 km<sup>2</sup>

2.18 M inhabitants

(302 inhab/km<sup>2</sup>)

BM 2.189 inhab/km<sup>2</sup>



## Urdaibai

252 Km<sup>2</sup>

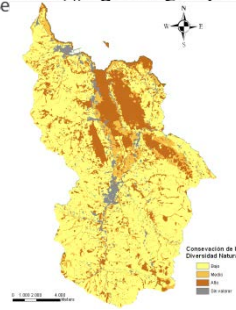
(11,38%)

44.557 Inhab

(177 Inhab/Km<sup>2</sup>)

## 1. Mapping ecosystem services at different scales

Identifying hotspots or priority areas for multiple ecosystem services to enhance sustainable land management



Biosfera Erreserba  
Reserva de la Biosfera

## 2. Analyzing social preferences (demand)

Users' perceptions: participatory processes. An urban/rural/natural gradient. Metropolitan area of Bilbao.



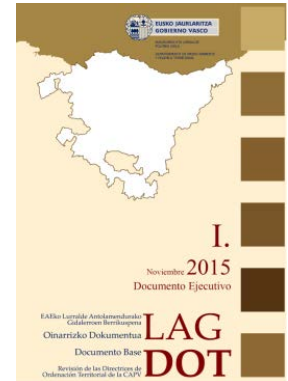
## 3. Indicators of multifunctionality

Socio-economic compensation for landscape multifunctionality at municipality level

GRUPO DE SERVICIOS	SERVICIO	INDICADOR	ENTONCES
Alimentación	Alimentación	1	A
	Agua dulce	2	B
	Recursos genéticos de origen local	3	C
	Recursos genéticos de origen local	4	D
	Recursos genéticos de origen local	5	E
Regulación	Regulación climática	6	F
	Regulación hídrica	7	G
	Control de la erosión	8	H
	Disponibilidad del suelo	9	I
	Conservación de patrimonio	10	J
Cultura	Conservación de patrimonio	11	K
	Conservación de patrimonio	12	L
	Conservación de patrimonio	13	M
	Conservación de patrimonio	14	N
	Conservación de patrimonio	15	O

# IMPLEMENTATION IN MANAGEMENT STRATEGIES AND POLITICS

- Regional Planning Guidelines (DOT)
- Bilbao Metropolitan Landscape Planning
- Urdaibai Biosphere Reserve



## Future steps

- Elaboration of a practical guide to facilitate the actual implementation of ES concept in planning
- Inclusion of ecosystem service indicators in official statistics



# LESSONS LEARNED AND CHALLENGES

**The perspective of ecosystem services contributes to develop sound land-use policies and planning actions, with the participation of stakeholders**

- **Important issues:**

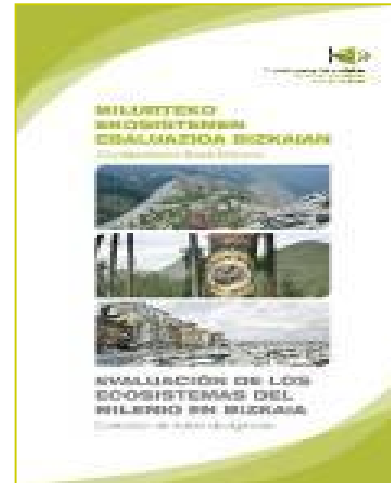
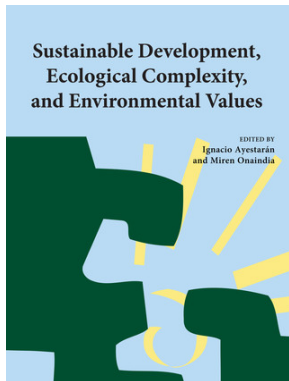
- Collaboration between researchers, technicians and politicians
- Development of technical tools: mapping, indicators, others (spatially explicit accurate information). Data credibility.
- Engagement in Networks. Make it more relevant for local / regional policy-makers

# Outreach materials and educational programs



**Naturaleza,  
la base  
del bienestar**

Evaluación de los Ecosistemas del Milenio en la CAPV



Escenarios de futuro en Bizkaia

Escenarios de futuro en Bizkaia  
Escenarios de futuro en Bizkaia  
Escenarios de futuro en Bizkaia

**1. Introduction**  
The contribution of ecosystems to the world's economy and human well-being has been widely recognized in science and policy (Carter et al., 2012; Miller and Meade, 2012; van Oort et al., 2012). Ecosystems provide a number of goods and services to humans such as food, water, carbon sequestration, flood control, climate regulation, erosion control, aesthetic beauty and recreation (MEA, 2005). Nevertheless, ecosystem services (ES) are essential to the natural system (e.g., flood control and climate regulation), their economic value is not quantified. Only a few studies, such as food and timber, have been able to value ES (Costanza et al., 1997; Turner et al., 2003). This has given rise to the degradation of non-marketed services as a result of actions taken to increase the supply of marketed ES (Costanza et al., 2003).

Costanza, 2007). Safeguarding and enhancing the provision of non-marketed ES is crucial from both the human and ecological perspectives. As a consequence, initiatives have been developed to promote the supply of non-marketed services (Costanza et al., 2003), such as payments for ecosystem services schemes (Schroter and Meade, 2005; Turner et al., 2003), habitat banking (Duke, 2011; Yin et al., 2010) or different initiatives. One of the main drawbacks of these initiatives is that they usually follow a farm scale approach, which goes after the principle of a defined service on a particular land (van der Voort, 2011). This farm scale approach is based in two ways. First, it does not take into consideration the existing synergies and trade-offs between different services (Dwyer et al., 2012; Turner et al., 2003; Dwyer et al., 2012). It does not allow 'bundling' of ES in a trading scheme (Dwyer et al., 2012) and usually prioritizes only one service such as water purification, adaptation of flooding, aesthetics, biodiversity conservation, or carbon sequestration (Costanza et al., 2003). Bundling is potential trade-offs with other services that are either not recognized or undervalued. Second, it is well known that the provision of many ES depends on diverse





## *Integration of science and stakeholders improves decision-making processes*



Thank you very much  
Eskerrik asko

**Further information:**

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