

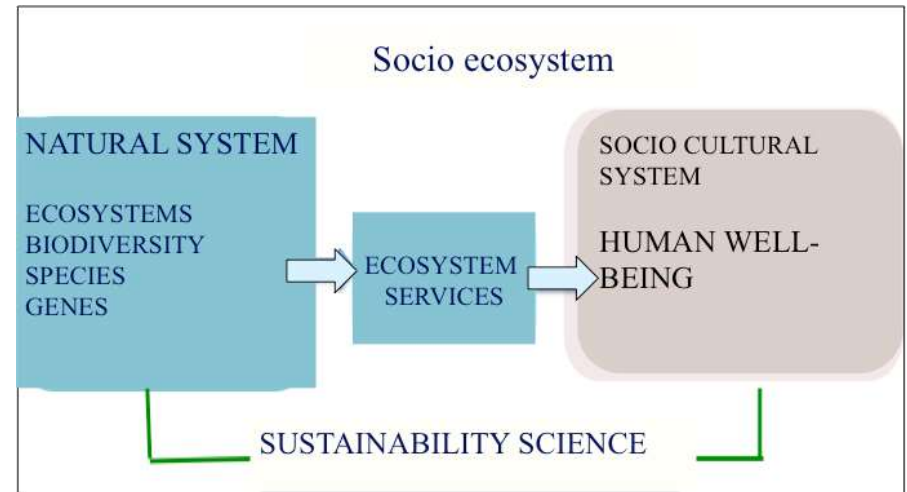
# From Biosphere Reserves to a global strategy for human well-being

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# 1- Socio-ecosystems. Ecological and social processes are connected

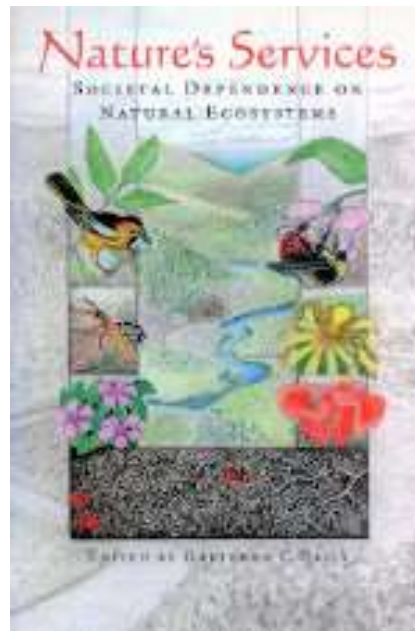
-A socio-ecological system consists of a *biophysical unit and its associated social actors and institutions.*

- Socio-ecological systems are complex and adaptive and delimited by spatial or functional boundaries surrounding particular ecosystems and their problem context



## 2- Ecosystem Services approach

**Ecosystem services are the benefits that ecosystems provide to society**



**Ecosystems for resilient communities**

## 3- Green Infrastructure and ecosystem services

- Green Infrastructure is a network of natural and semi-natural areas managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings.
- Green Infrastructure provides benefits from nature to people

# Benefits provided by Green Infrastructure



## Environmental benefits

- Provision of clean water
- Removal of pollutants from air and water
- Pollination enhancement
- Protection against soil erosion
- Rainwater retention
- Increased pest control
- Improvement of land quality
- Mitigation of land take and soil sealing



## Social benefits

- Better health and human well-being
- Creation of jobs
- Diversification of local economy
- More attractive, greener cities
- Higher property values and local distinctiveness
- More integrated transport and energy solutions
- Enhanced tourism and recreation opportunities



## Climate change adaptation and mitigation benefits

- Flood alleviation
- Strengthening ecosystems resilience
- Carbon storage and sequestration
- Mitigation of urban heat island effects
- Disaster prevention (e.g. storms, forest fires, landslides)



## Biodiversity benefits

- Improved habitats for wildlife
- Ecological corridors
- Landscape permeability

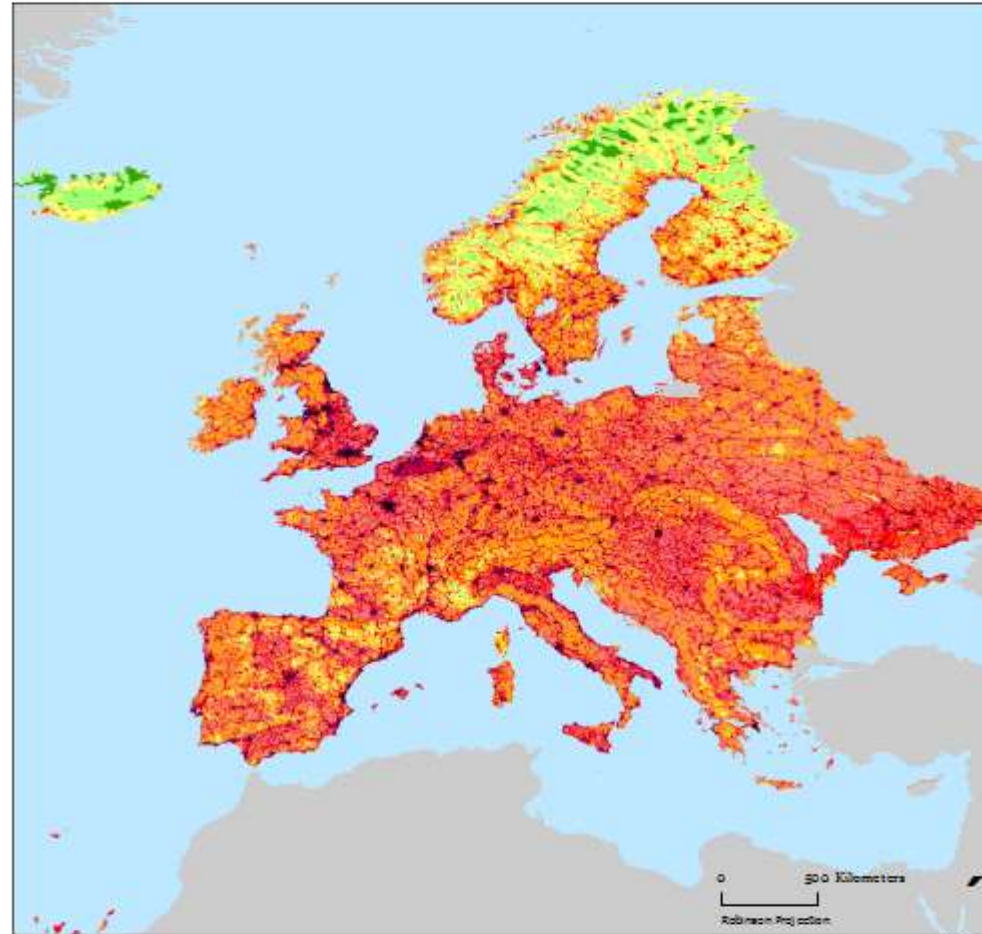


# 3- An urban/rural gradient of green infrastructure

Green infrastructure solutions are specially important in urban environments, where most people live (more than 60% of the population in Europe)

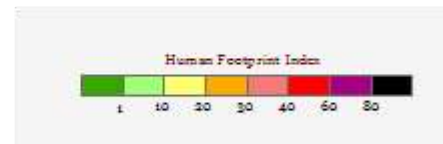
# The Human Footprint ver. 2

## Europe



### The Human Footprint Index

The Human Footprint Index (HFI) expresses as a percentage the relative human influence in each terrestrial biome. HFI values range from 0 to 100. A value of zero represents the least influenced – the “most wild” part of the biome with value of 100 representing the most influenced (least wild) part of the biome.



Hansen, E., et al. 2006. The Human Footprint: A Globally Consistent Metric of Environmental Change. *PLoS ONE* 1(2): e122. doi:10.1371/journal.pone.0012222

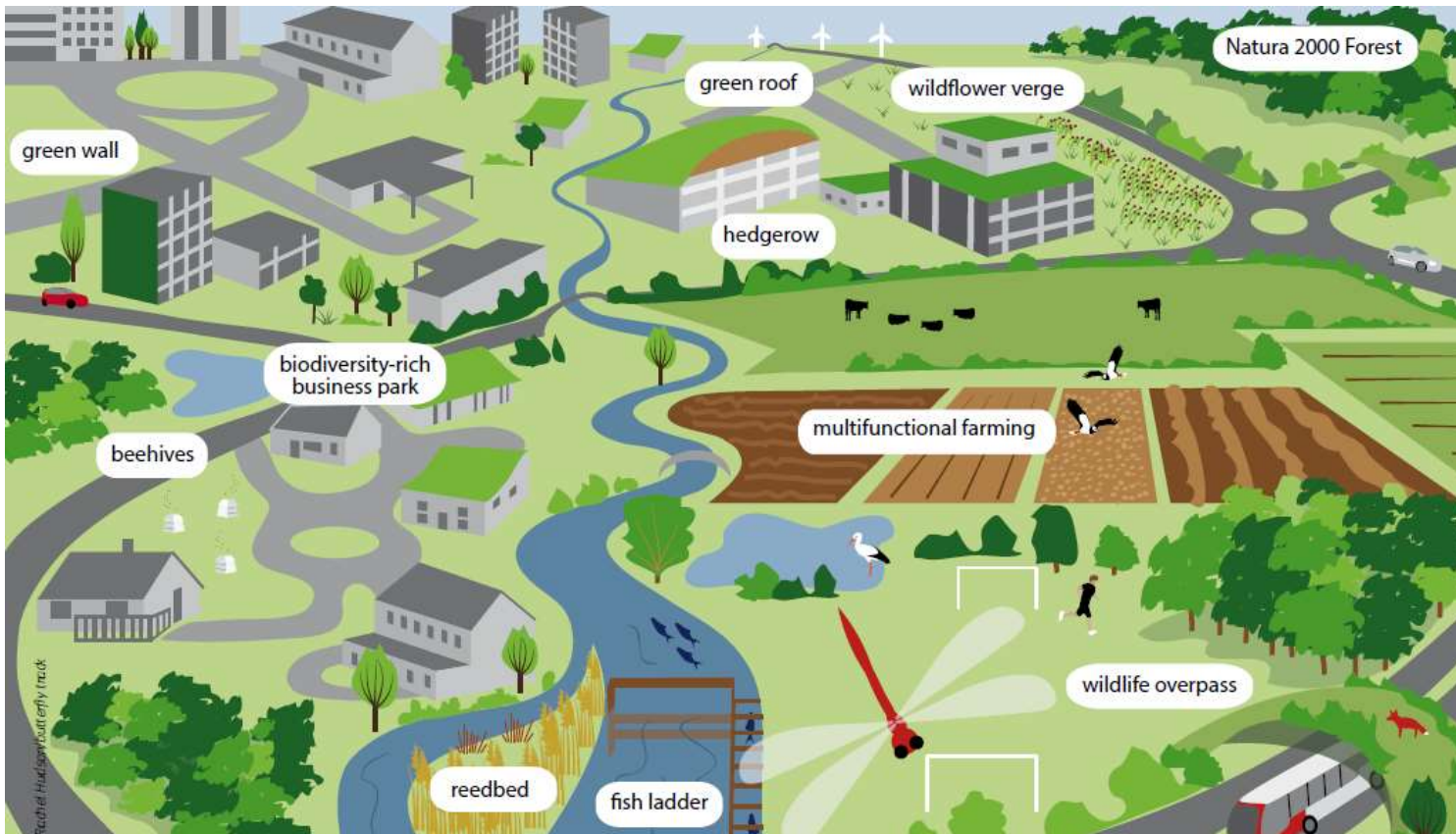
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Green infrastructure is an opportunity to connect rural and urban areas and provides healthy areas for people to live  
- Natural and social connections

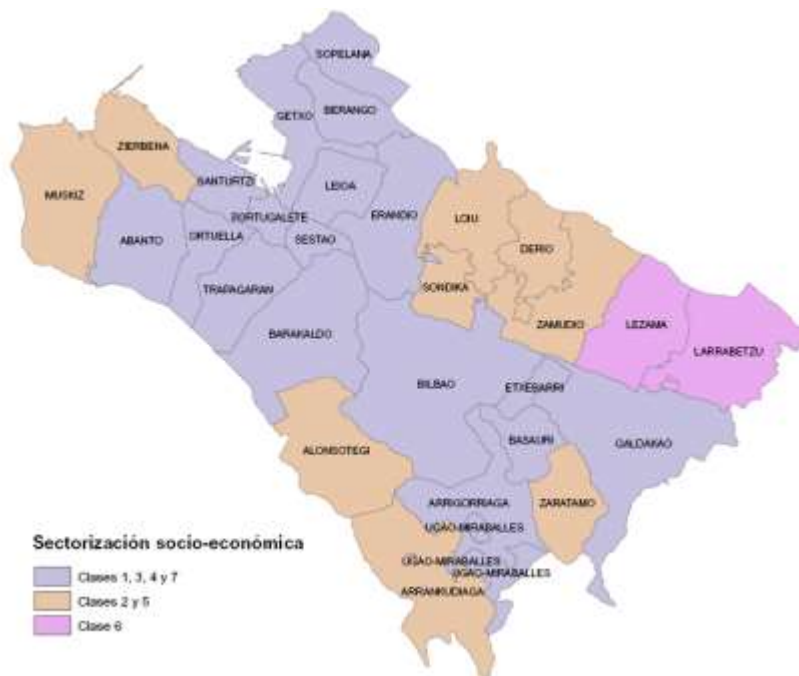
# 4. A rural/urban gradient. Case of metropolitan area of Bilbao (30 minutes RB)

406 km<sup>2</sup>

•893.298 habitantes

•2.200 inh/km<sup>2</sup>

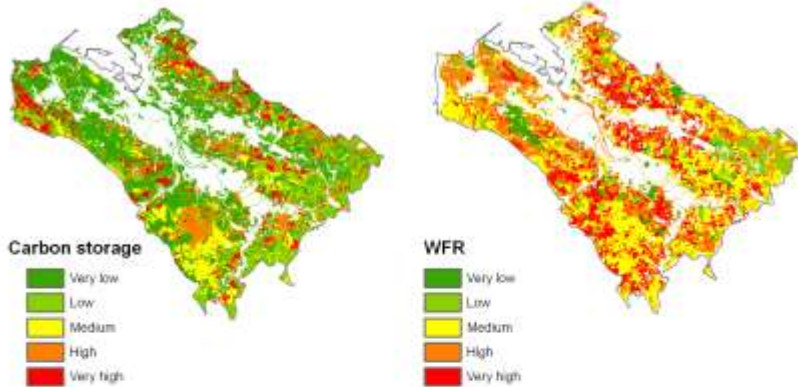
•(Bilbao 8.564 inhab/km



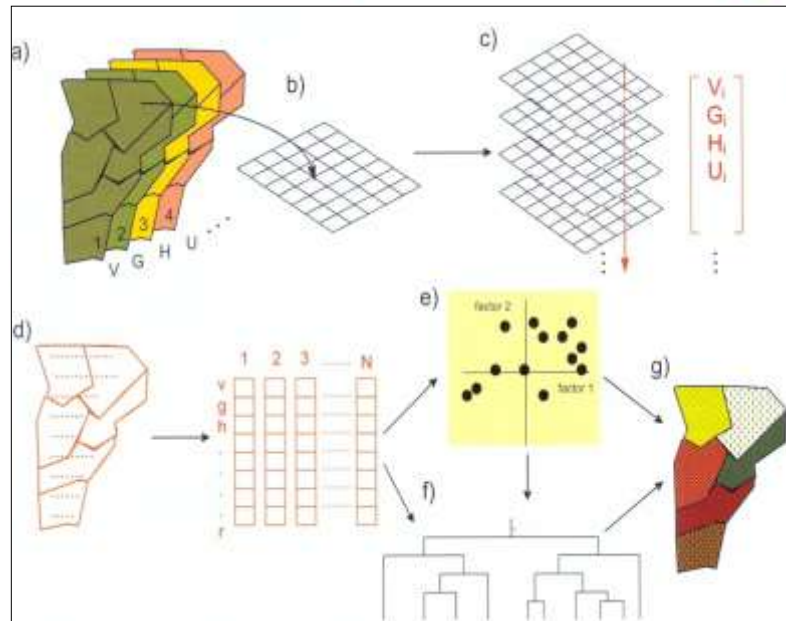
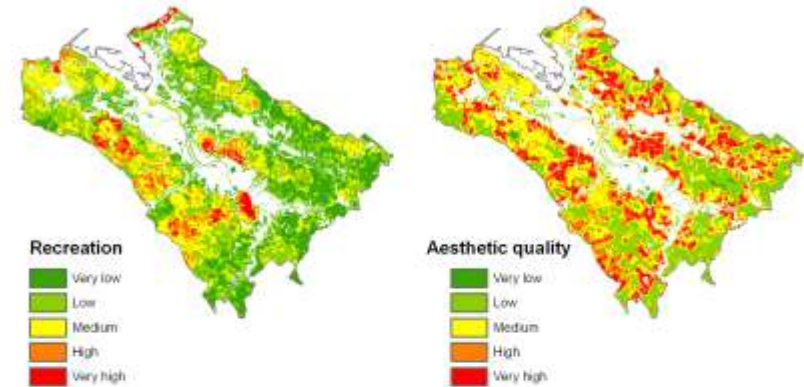
- High % of urban soil: services
- Primary sector
- Mixed uses: agriculture and industrial

✓ Define multifunctional areas

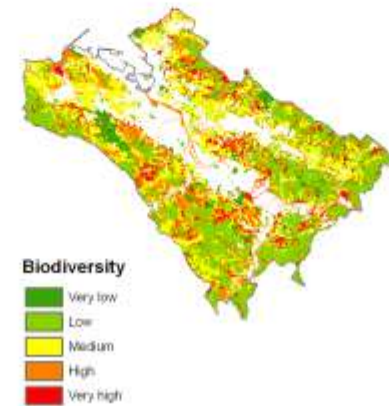
## Regulating services



## Cultural services

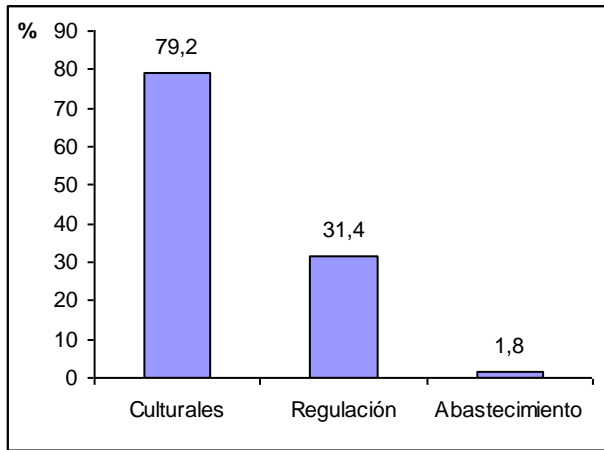


## Biodiversity



- multifunctionality: natural forests and coastal ecosystems

# Social approach: demand of ES

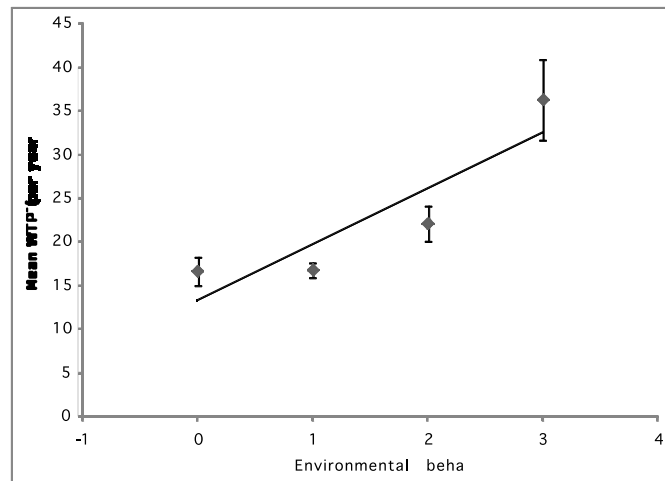


The most important services:

- Biodiversity
- Air quality

- Education level and age :  
most influent for the value  
given to ES

Williness to pay (WTP)



## 4- BR as models for a global Strategy for Sustainability

- Connected green infrastructures: natural/rural/urban
- Methodological innovation (social and biophysical approaches)
- Stakeholders participation
- Applying the model in other areas “Beyond the Protected areas” (PRUG-PTP, DOT)

**Thank you  
Gracias**

**Think global and act local**



***.....Sustainable Development Goals....***