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

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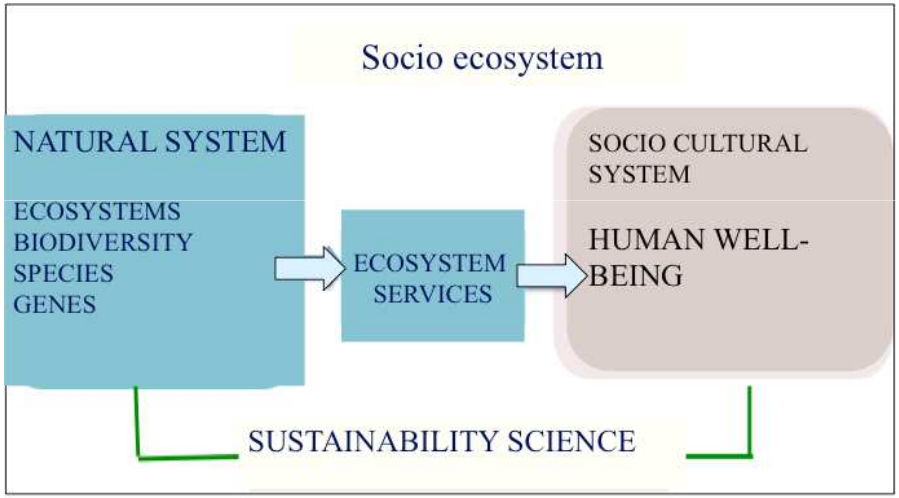
1- Socio-ecosystems. Ecological and social processes are connected

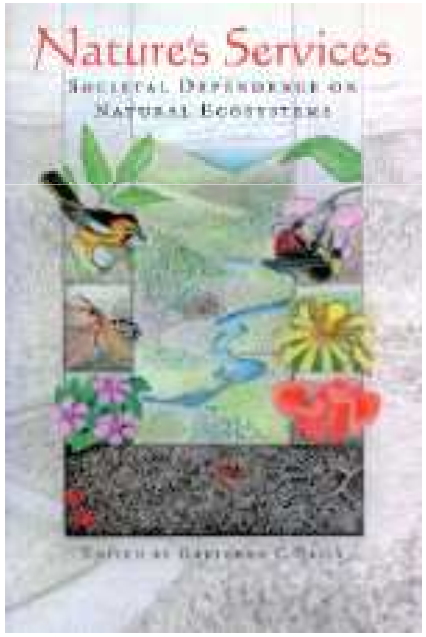
-A socio-ecological system consists of a *biophysical unit and its associated social actors and institutions.*



- 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

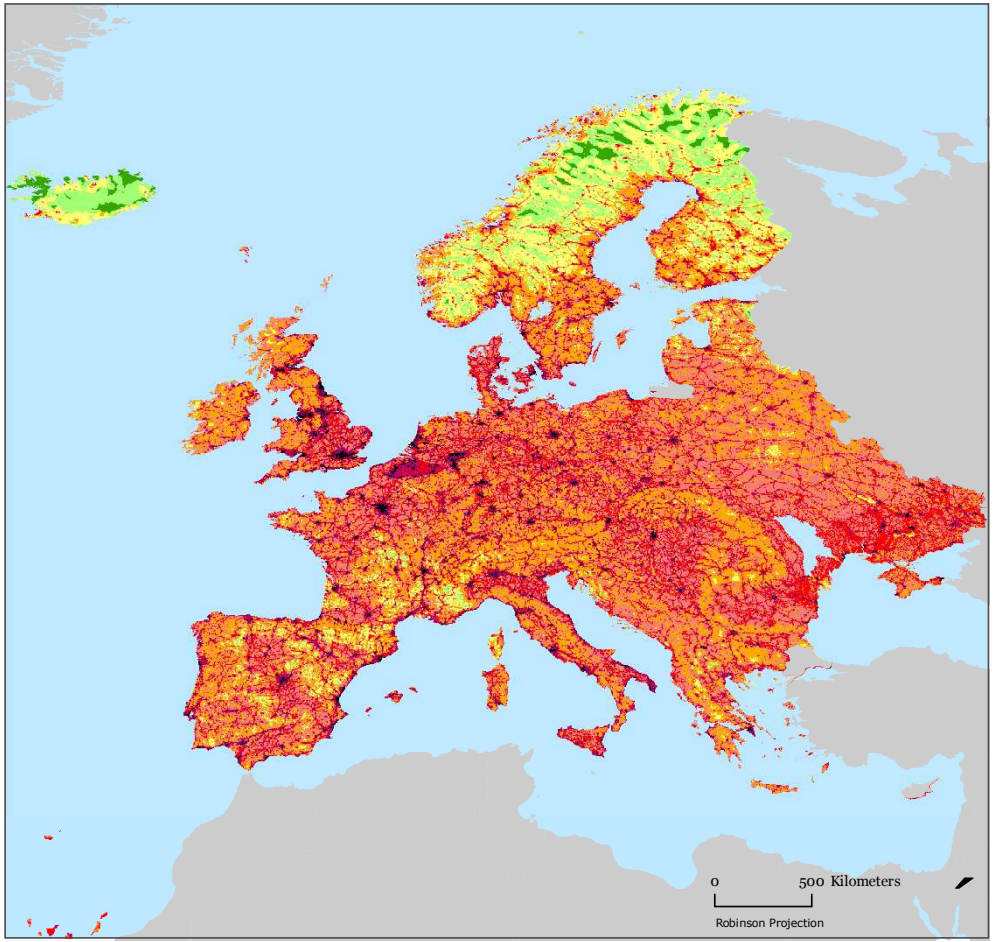
- Improved habitats for wildlife
- Ecological corridors
- Landscape permeability

3- An urban/rural gradient of green infrastructure

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

The Human Footprint ver. 2

Europe



The Human Footprint Index

The Human Footprint Index (HF) expressses as a percentage the relative human influence in each terrestrial biome. HF 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.

Human Footprint Index

1 10 20 30 40 60 80

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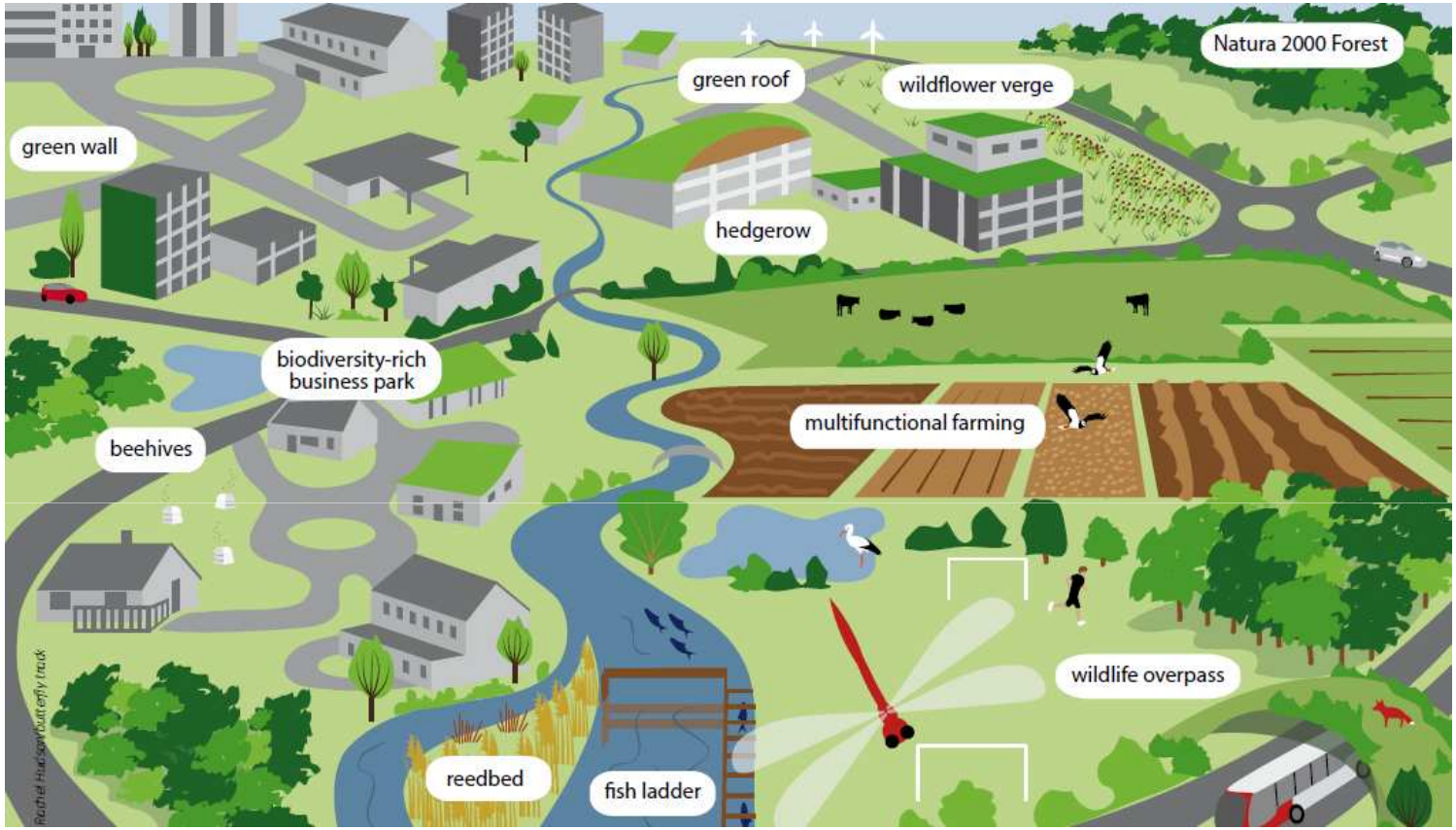
4th World Congress of Biosphere Reserves
LIMA-PERU 14-17 March 2011

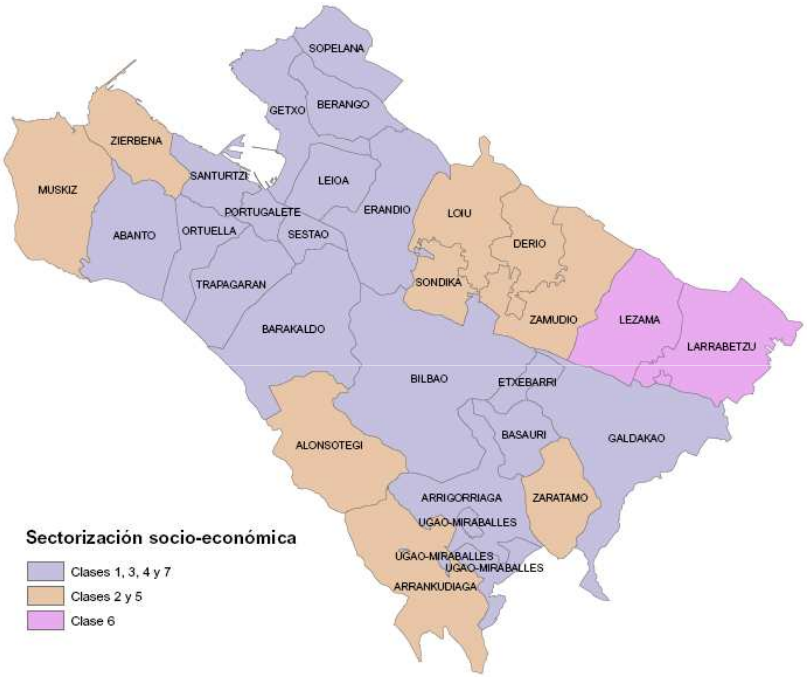


Green infrastructure is an oppotunity to connect rural and urban areas and provides healthy areas for people to live
- Natural and social connections

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

406 km^2

- 893.298 inhabitantes
- 2.200 inh/km^2
- (Bilbao 8.564 inhab/km



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

✓Define multifunctional areas

Biophysical approach: delivery of Ecosystem services

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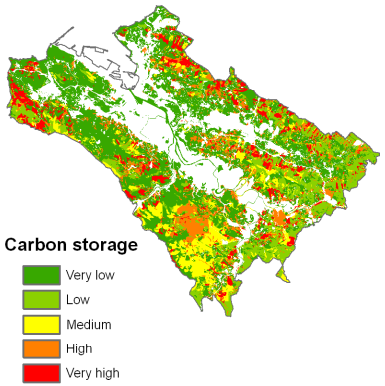
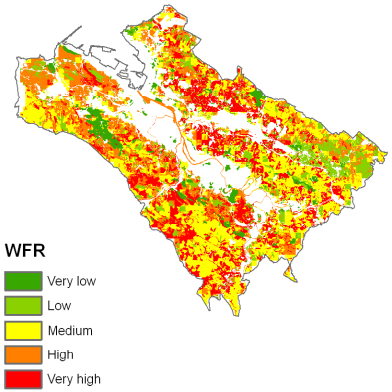
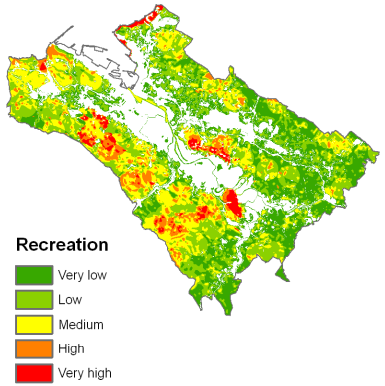
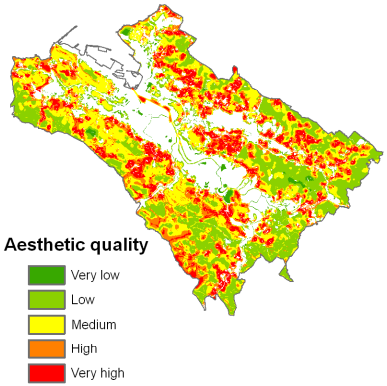
Regulating services

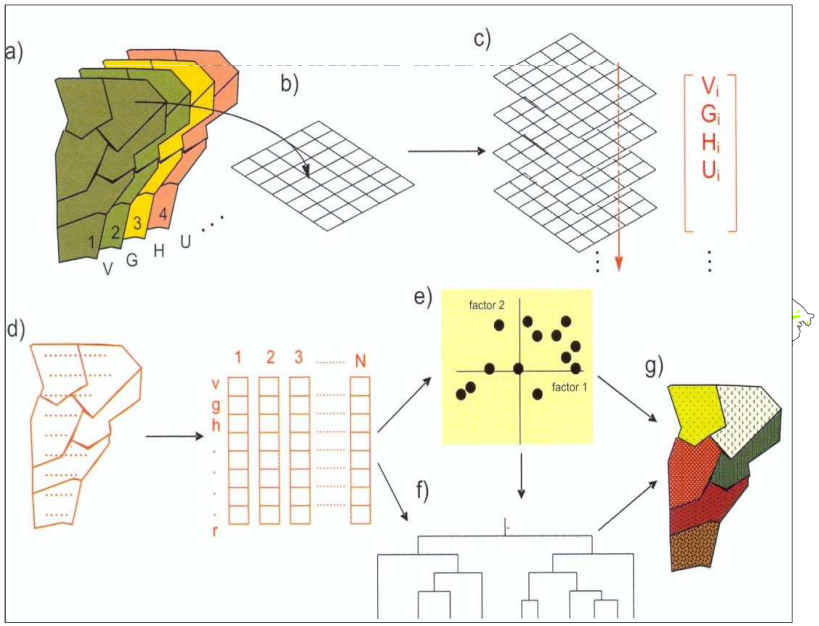




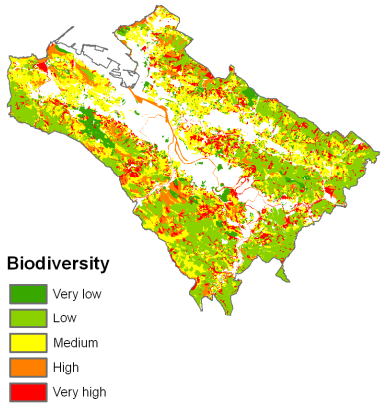
Cultural services





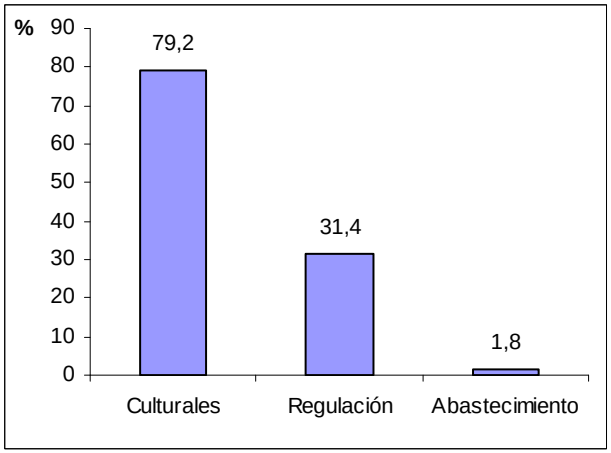


Biodiversity



- multifunctionality: natural forests and coastal ecosystems

Social approach: demand of ES

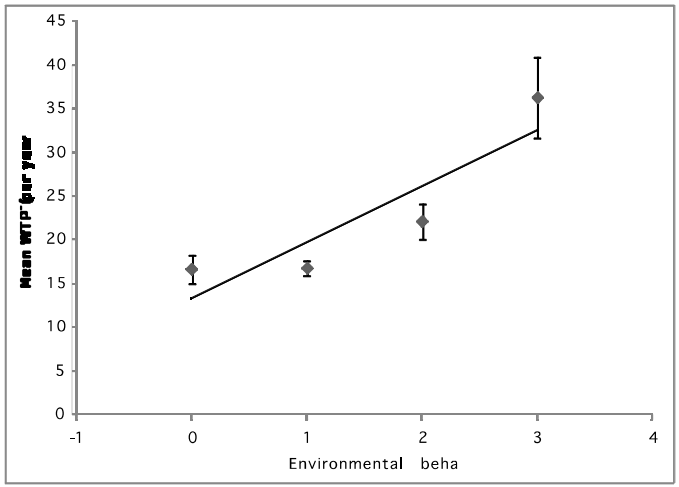


The most important services:

- 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….