
Boosting biodiversity and ecosystem services for territorial development

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Green infrastructure: key features

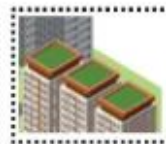
Connectivity – creating networked geographical areas.

Multifunctionality – performing several functions while also providing valuable ecosystem services.

Multi-scale approach – integrating spatial planning across urban, peri-urban and rural settings.



Wetland



Green roofs



Urban trees



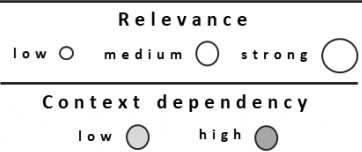
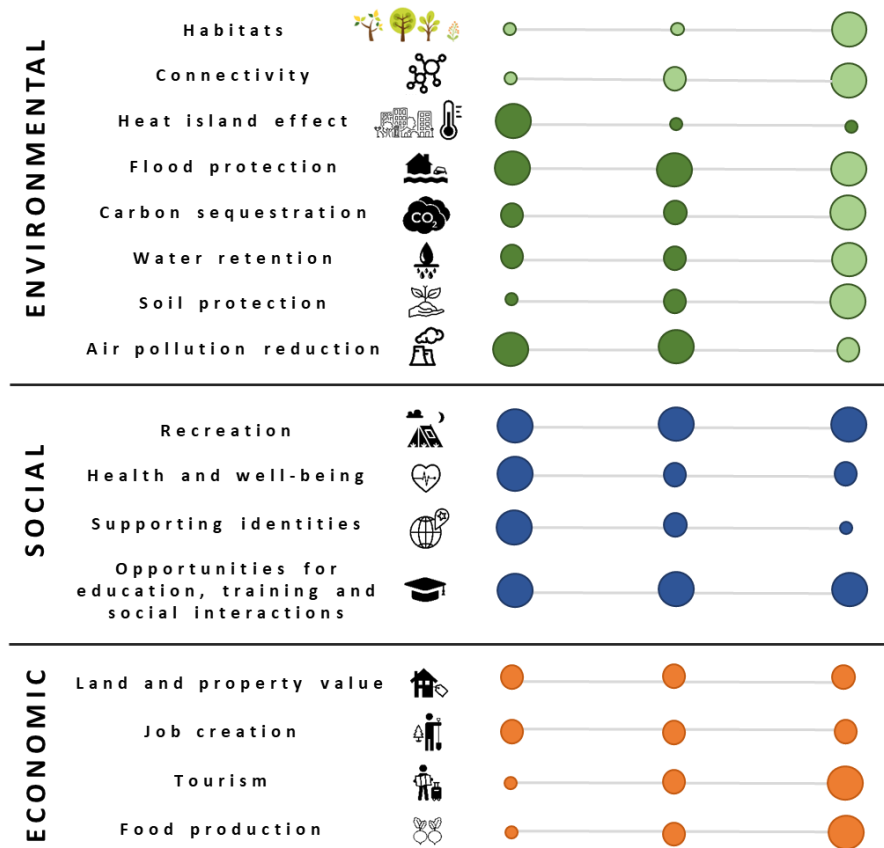
Hedgerow
bordering an
agricultural field



River and
riparian
vegetation

Ecological, social, cultural and economic benefits

Main benefits provided by Green Infrastructure at different scales



But, green infrastructure has **potential side effects** that are important to be aware of, like:



Risk of invasion by alien species



**Eco-gentrification
Human health effects**

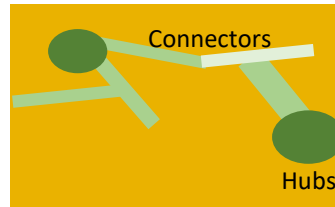


**Higher costs to initiate or
maintain green
infrastructure**

Integrating in territorial development

Connectivity

Physical mapping



GI hubs
(Natura 2000
EMERALD)

GI connectors
(natural and semi-
natural not protected)

Planning & management perspective

Biodiversity

Climate
change &
DRR

Water
Framework
Directive

Policies
(Multiple
purposes)

Ecosystem Services Functional mapping

Habitat
Quality

Relative
pollination

Net Ecosystem
Productivity

Gross
Nutrient
Balance

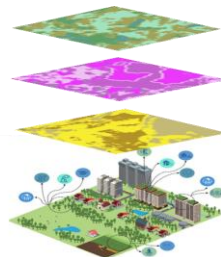
Water
Retention
Index

Water
Purification

Soil Erosion
Control

Recreation
Potential

Multifunctionality



*Food
production*

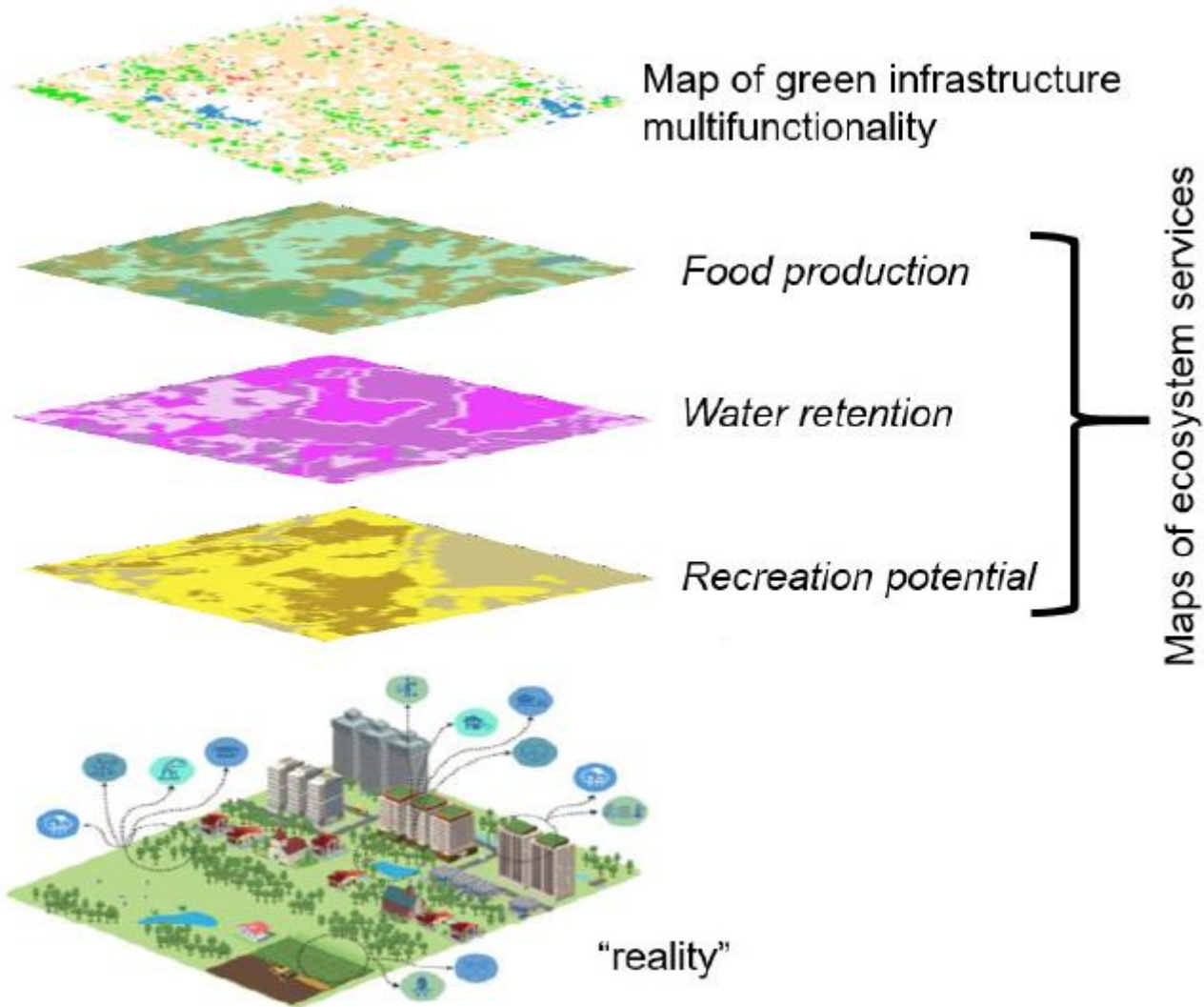
Water retention

Recreation potential

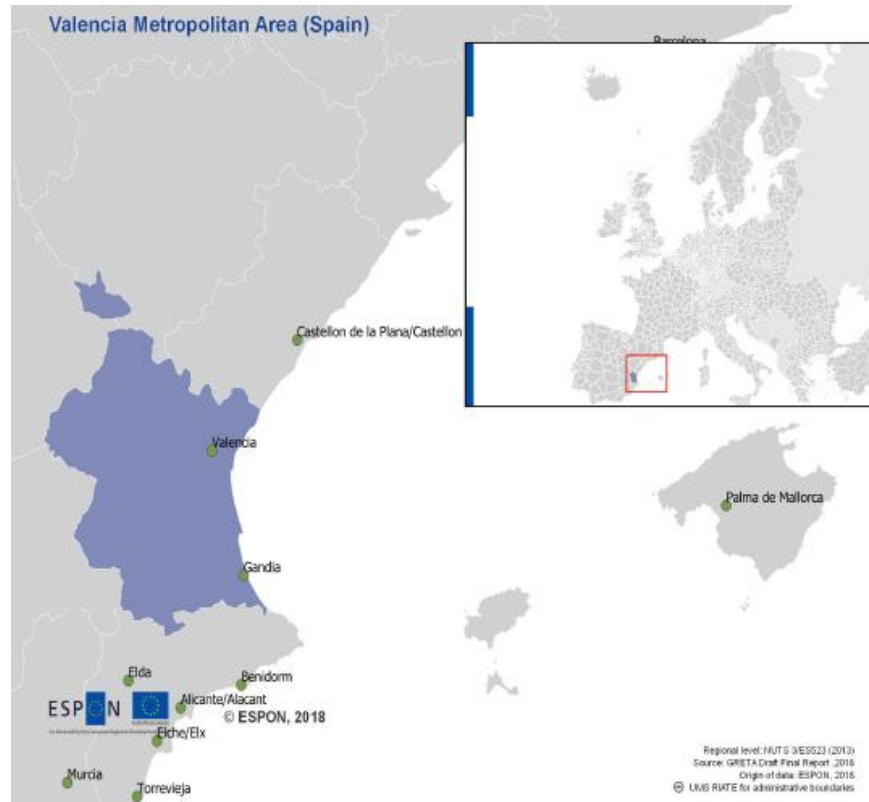
Maps of ecosystem
services

To what extent
the ES of each GI
component can
support specific
policies?

In practice



Valencia: Planning a metropolitan region



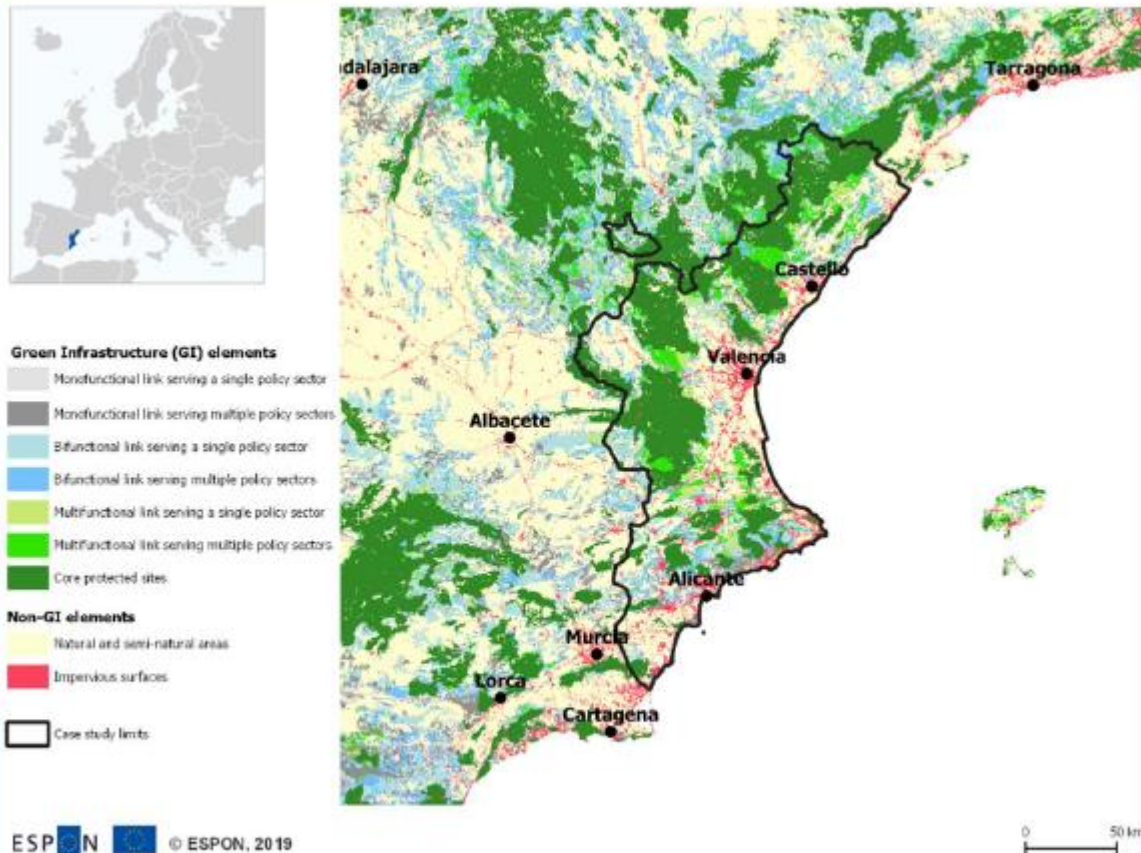
Metropolitan Territorial Plan of Action under development

Challenges

- Economic specialization on urban core area
- Industrial concentration in peripheral area
- Low density urbanization in peripheral area
- Manage connectivity of several protected areas

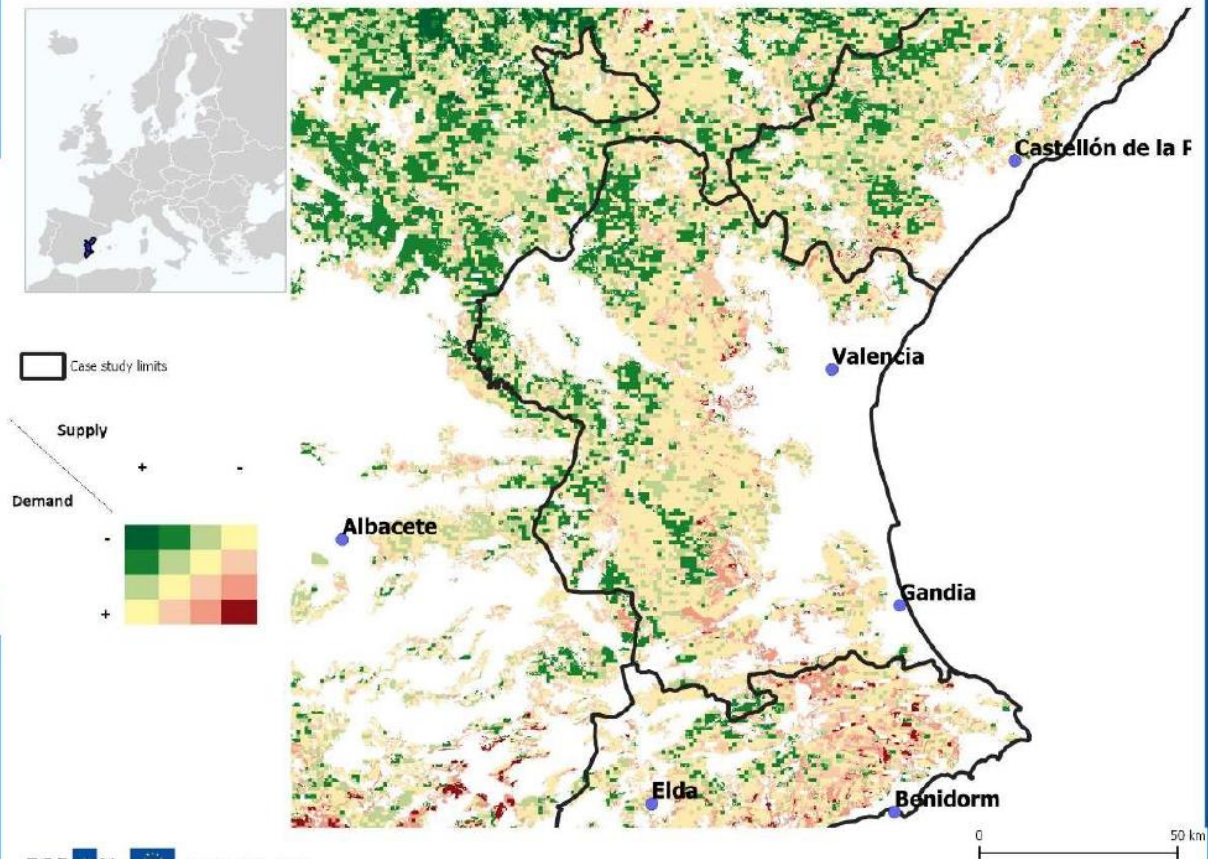
Valencia: Potentialities

Overview map on potential GI serving multiple policies - Valencia Metropolitan Region



Valencia: Supply and demand for soil erosion

Balancing Supply and Demand for Soil Erosion in Valencia Metropolitan Area



- Work together with **multiple stakeholders**. Multiple partnerships.
- **Wording** is important: urban planners use Ecosystem Services approaches although they do not always talk about services or functions per se
- Very often **legislation already exist** to facilitate policy integration
- Promote **benefits** of GI: Health and tourism
- Need for **vision** and **narratives**



Malta: Challenge of compact city

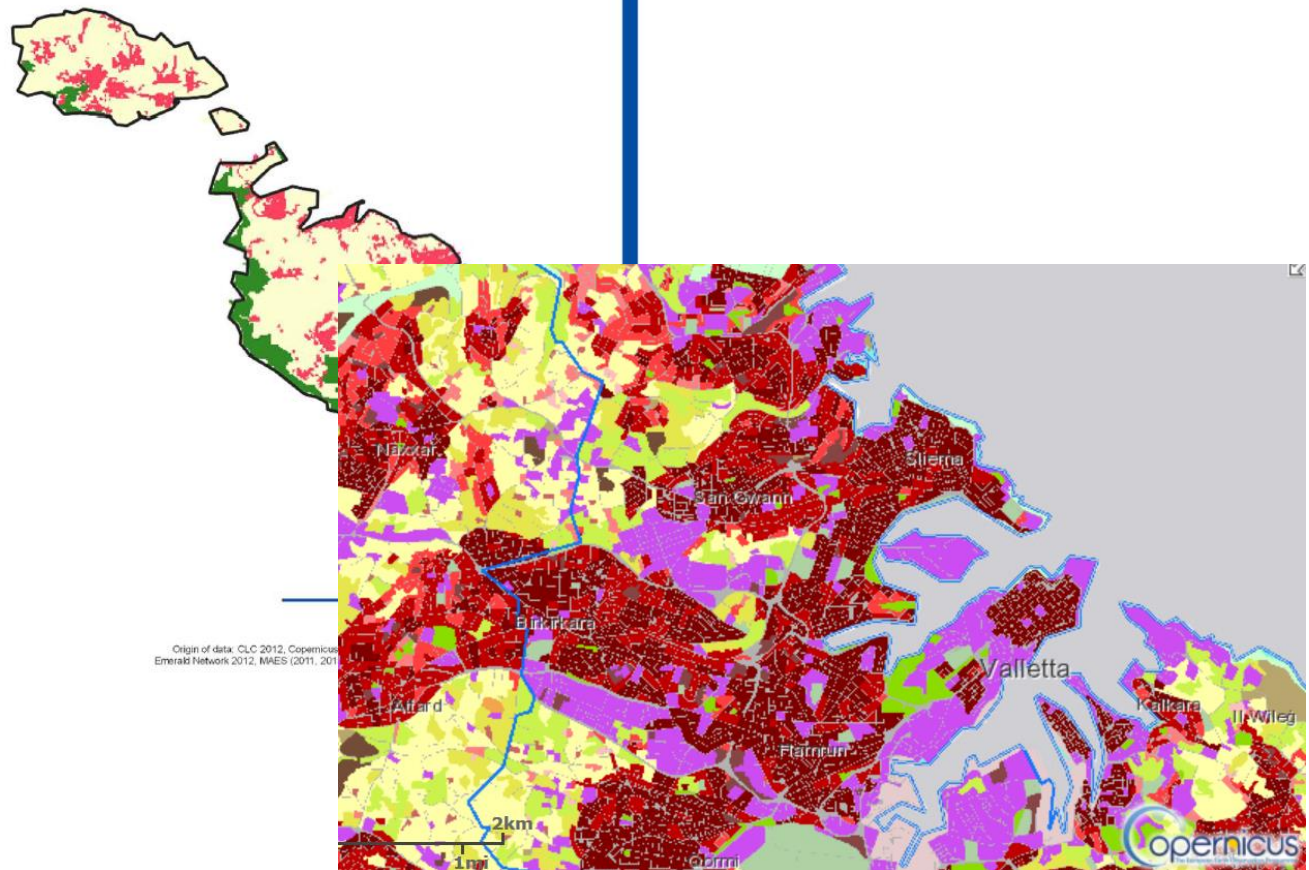
Overview map on potential GI serving multiple policies - Malta



- Green Infrastructure (GI) elements**
- Monofunctional link serving a single policy sector
 - Monofunctional link serving multiple policy sectors
 - Bifunctional link serving a single policy sector
 - Bifunctional link serving multiple policy sectors
 - Multifunctional link serving a single policy sector
 - Multifunctional link serving multiple policy sectors
 - Core protected sites
- Non-GI elements**
- Natural and semi-natural areas
 - Impervious surfaces
 - Case study limits

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Origin of data: CLC 2012, Copernicus
Emerald Network 2012, MAES (2011, 2018)



Malta: Green roofs

Challenges

- Develop know-how for green roofs on Mediterranean climate
- Suppliers (market)

Strategy

- Starting with an LifeMedGreenRoof project
- Involve multiple stakeholders
 - Research
 - Startup
 - Other companies

Benefits

- Reduced use of energy in building
- Improved water management
- Biodiversity: pollinators



Integrating health

In some Swedish regions the health and social service sector can prescribe '**green care**' to rehabilitate people that have been outside job market for a long time. These jobs are on **appointed farms**, in **forestry** and in **park management**.

Financing opportunities

- Cyprus and Slovakia combine national environmental funds with European structural funds (i.e. ERDF, ESF, CF, EAFRD, EMFF).
- Belgium used the EAFRD for agro-environmental subsidies to enhance agricultural lands.
- Denmark improved environmental quality of Natura 2000 areas using EAFRD funding mechanism.
- Slovenia used Cohesion Funds for enhancing urban green
- The European Fund for Strategic Investments have strict targets for climate-smart investments to ensure reaching the Paris agreement.

Conclusions

- GI planning is needed across policy areas
- Cross-scale collaboration
- Main challenges for GI implementation are transport, boundary issues, demographic pressure, agriculture and non-sustainable forest management and forest drainage
- Involve multiple stakeholders from the beginning
- Economic perspective
 - Usually external funds are used to start the process
 - Potential for job creation (not always evident)
 - Improve know-how
- The context is very important. Need to consider carefully when looking at best practices
- Monitor progress and adapt to change



Thanks for your attention!

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ESPON GRETA
www.espon.eu/green-infrastructure