



European
Commission



Technical Report - 2013 - 087

Mapping and Assessment of Ecosystems and their Services

An analytical framework for
ecosystem assessments under Action
5 of the EU Biodiversity Strategy to
2020.

Discussion paper - Final, April 2013

Environment



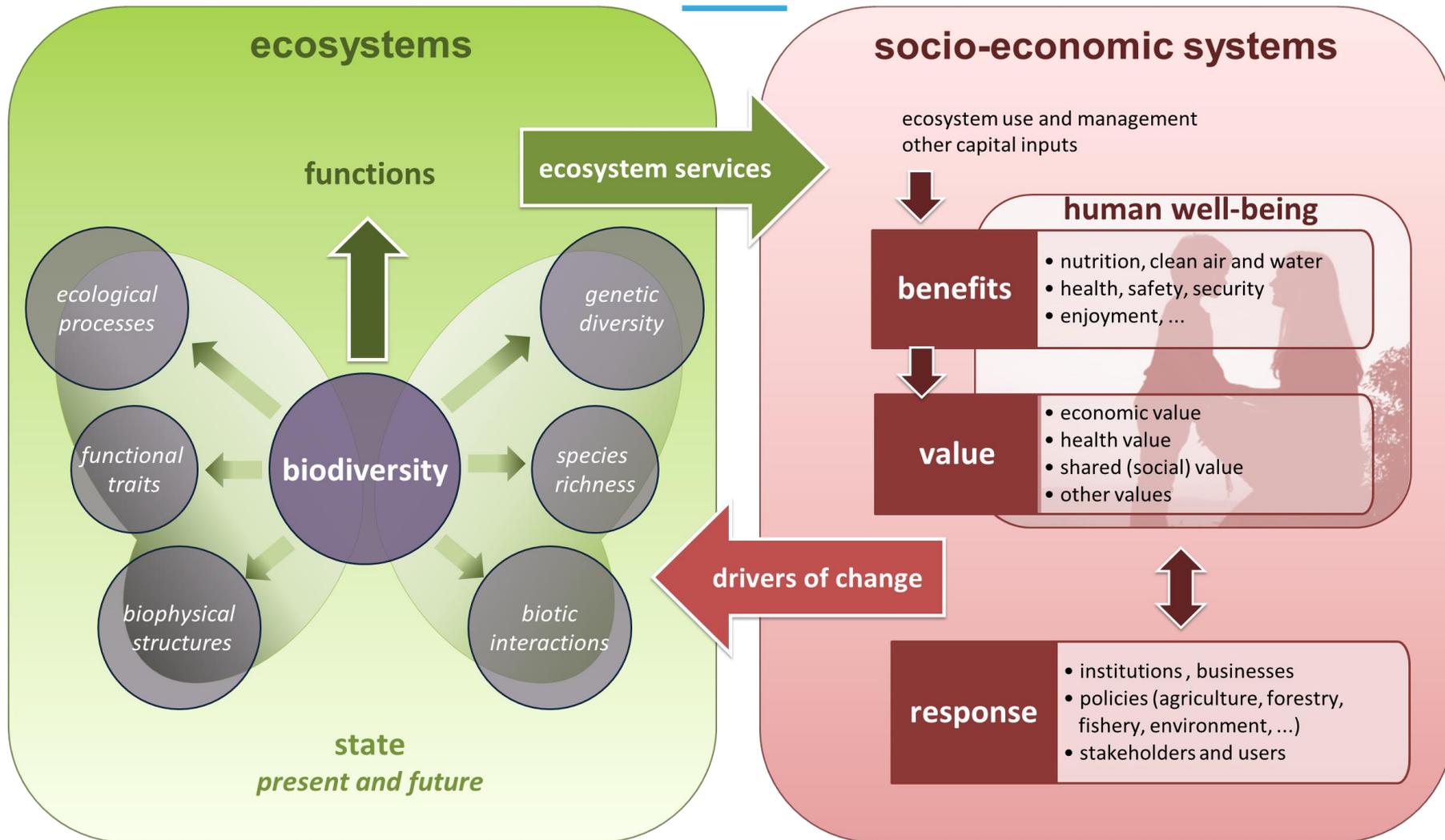
Technical Report - 2014 - 080

Mapping and Assessment of Ecosystems and their Services

Indicators for ecosystem assessments
under Action 5 of the EU Biodiversity
Strategy to 2020

2nd Report - Final, February 2014

Environment

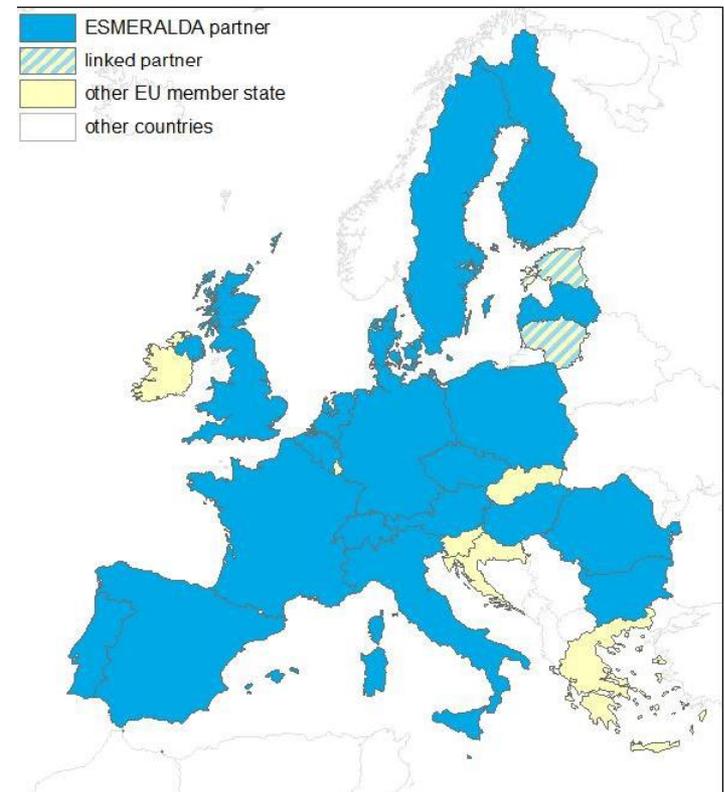


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Enhancing eco**S**ystem **S**ERvices
m**A**pping for po**L**icy and **D**ecision
m**A**king

Horizon 2020 Coordination
Action with 25 partners
(incl.JRC), EEA and ENV in the
advisory board

Coordinator: Benjamin
Burkhard (Christian Albrechts
University of Kiel)





Contents lists available at ScienceDirect

Ecological Indicators

Journal homepage: www.elsevier.com/locate/ecolind



Cross-scale analysis of ecosystem services identified and assessed at local and European level



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ABSTRACT

In recent years a consistent number of studies carried out at different spatial scales have proposed options for mapping and integrated assessment of ecosystem services. Examples of cross-scale assessments are limited and open questions remain on the extent to which general assessments are able to capture local phenomena. This study aims at investigating what the relation is between ecosystem services analysis carried out at different spatial scales, and to what extent approaches based on input data at different resolution can be reconciled.

In particular, the challenges and limitations involved in attempting holistic assessments of ecosystem services at the level of a management unit in the UK were investigated using two sets of ecosystem service indicators: (i) identified by local land managers and (ii) derived from EU-based spatially explicit data coupled with process-based models. The difference in the ecosystem services estimated for 11 sites of the Environmental Change Network (BCN) by the two methodologies was compared using (i) total ecosystem service index (TESI), (ii) regression analysis of comparable ecosystem service indicators, and (iii) multivariate techniques to determine site comparability. The comparative analysis revealed robust grouping of sites by both methods coupled with weak correlation between the different ecosystem service indicators assessed. This study indicated that both methods characterised the general landscapes in a similar way, but total ecosystem service index was critically dependent on indicators selected.

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Downscaling European maps to local scale explained between 20 and 30% of the variance

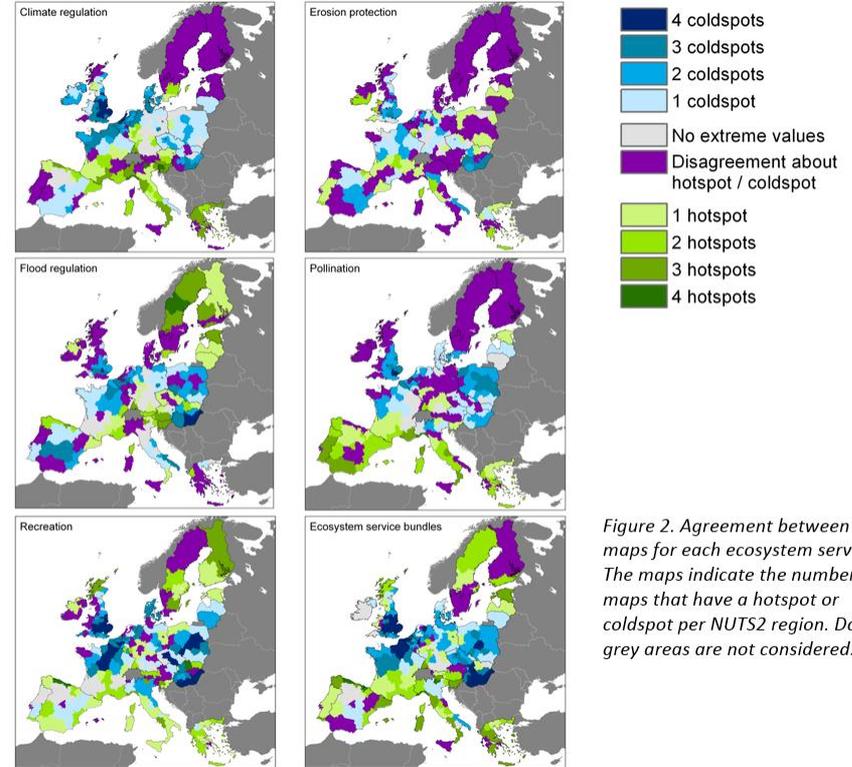


Figure 2. Agreement between maps for each ecosystem service. The maps indicate the number of maps that have a hotspot or coldspot per NUTS2 region. Dark grey areas are not considered.

Disagreement among 4 ecosystem service mapping studies

Schulp N, Burkhard B, Maes J, van Vliet J, Verburg PH (in press) Uncertainties in ecosystem service maps: a comparison on the European scale. **PLOS One.**



Operationalisation of
natural capital and
ecosystem services: from
concepts to real-world
applications

www.openness-project.eu



OpenNESS...

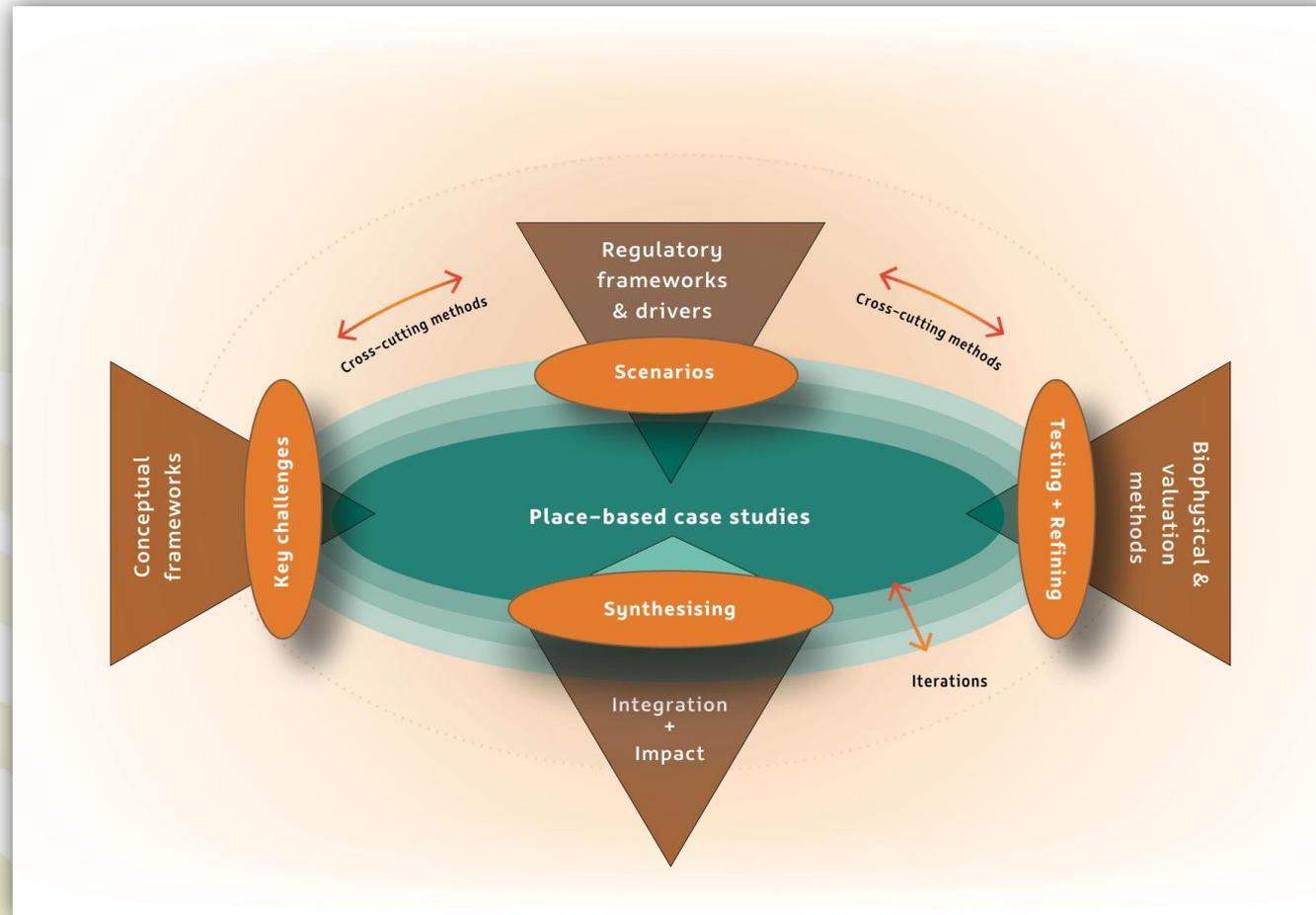
- aims to translate the concepts of natural capital and ecosystem services into operational frameworks that provide tested, practical and tailored solutions for integration into land, water and urban management and decision making.
- is an EU funded project which runs from December 2012 to May 2017
- is coordinated by the Finnish Environment Institute (SYKE)
- consists of 35 partners, including 10 SMEs, from 14 European and four non-European countries



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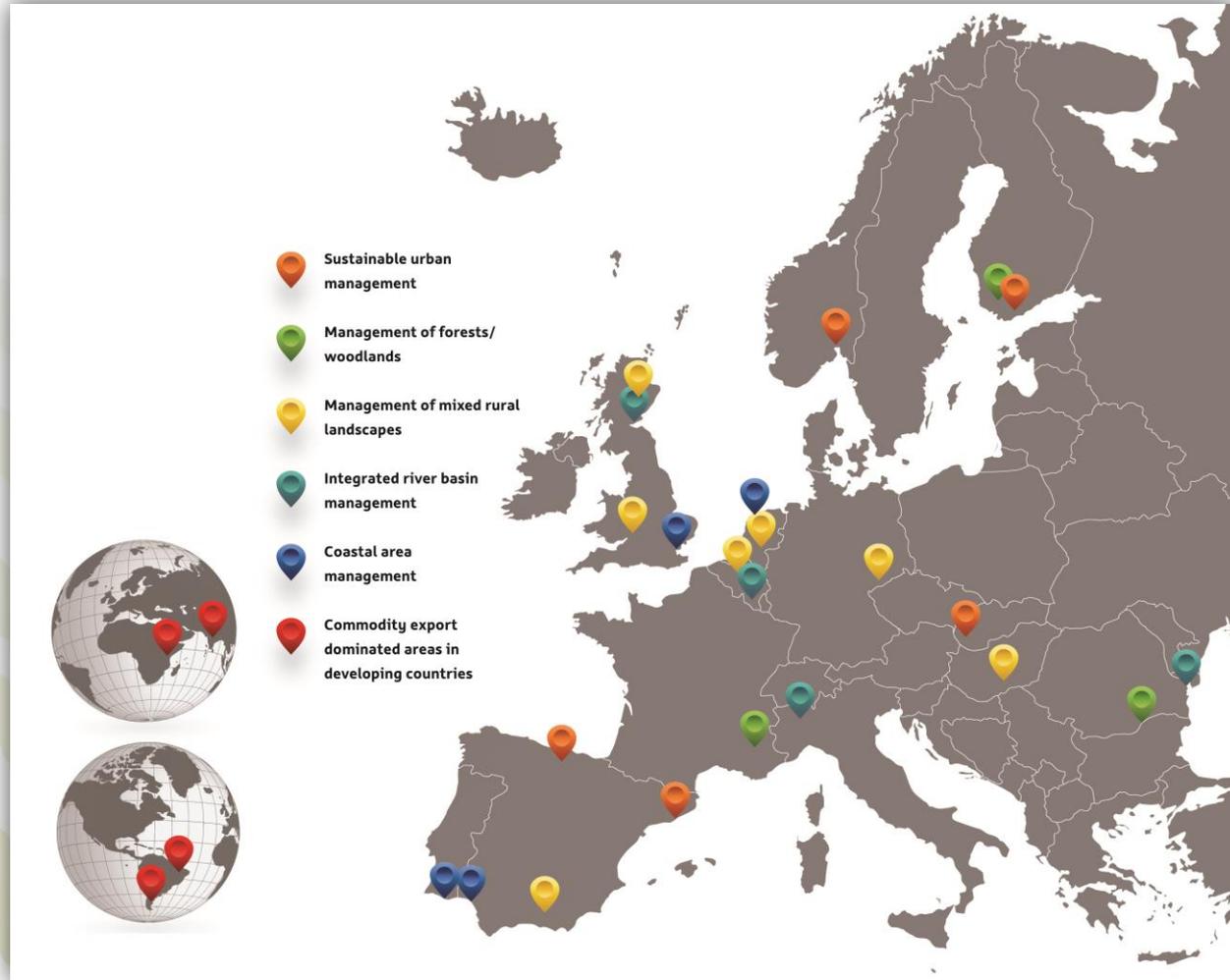
OpenNESS work packages

The OpenNESS approach is based on an iterative cycle of methodological development and refinement linked to the application in a set of real-world case studies.



OpenNESS case studies

The 27 OpenNESS case studies cover a range of socio-ecological systems and are clustered according to the policy and management focus for ecosystem service operationalisation.



Common platform

- **OpenNESS** is working very closely with the related research project **OPERAs** on developing the common platform **OPPLA**
- OPPLA will bring together all the knowledge, tools and services from both projects in support of parties that want to turn ecosystem services and natural capital into practice



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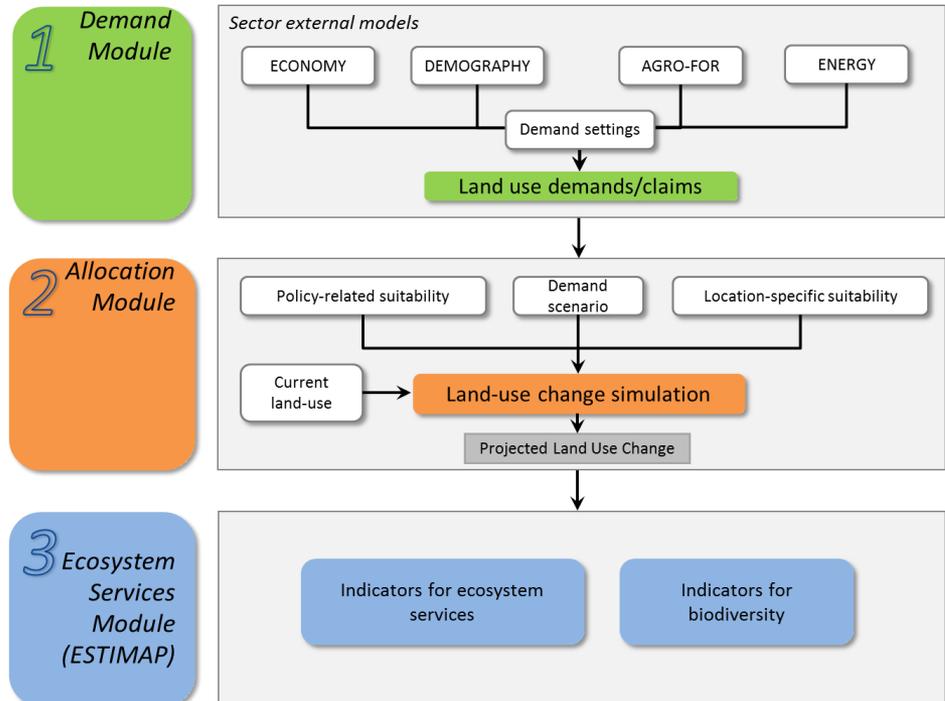
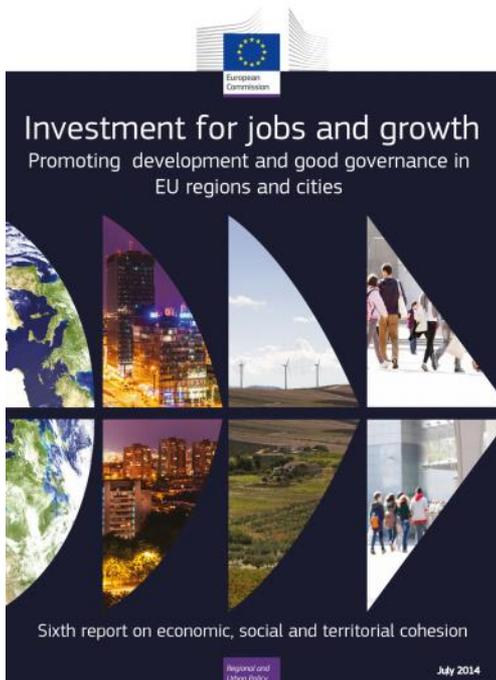


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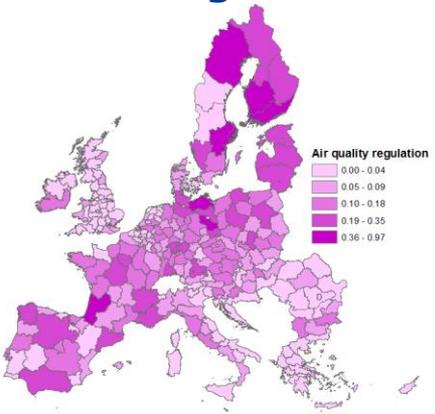
Policy impact assessment and policy support

- Land communication
- Cohesion report

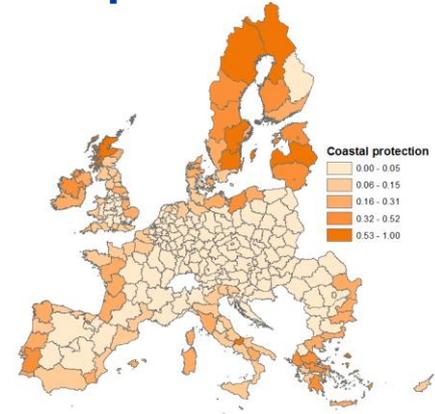
LUISA: the JRC's integrated assessment platform



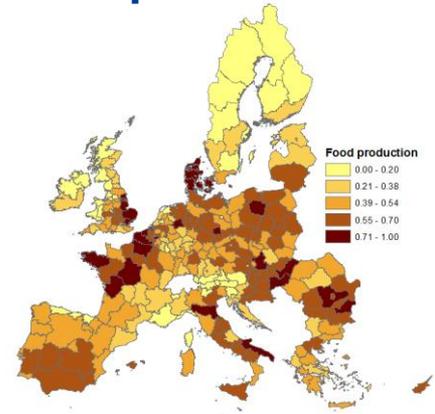
Urban air quality regulation



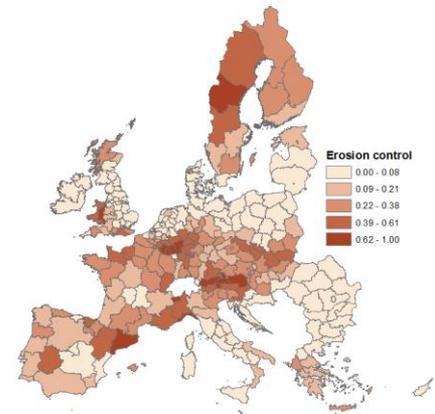
Coastal protection



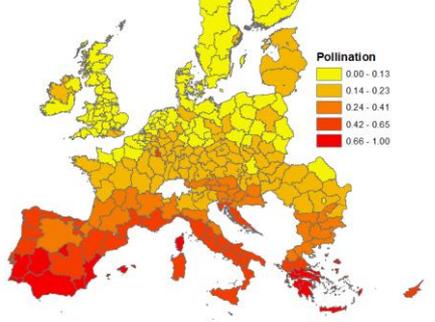
Food production



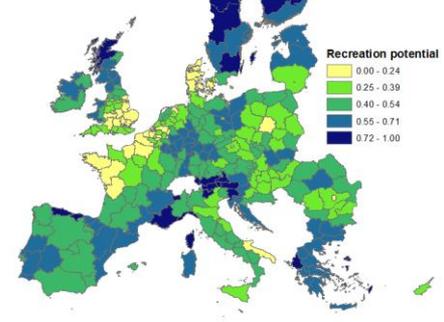
Erosion control



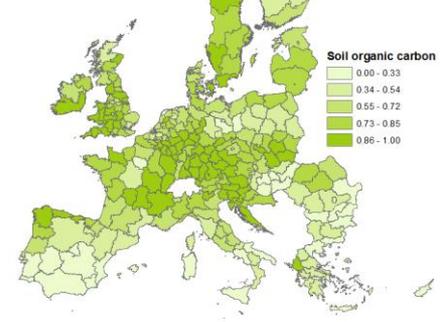
Pollination



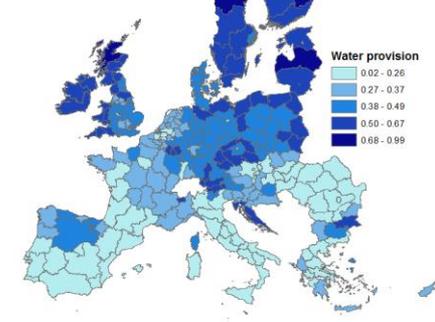
Recreation



Climate regulation



Water provision



Pollination

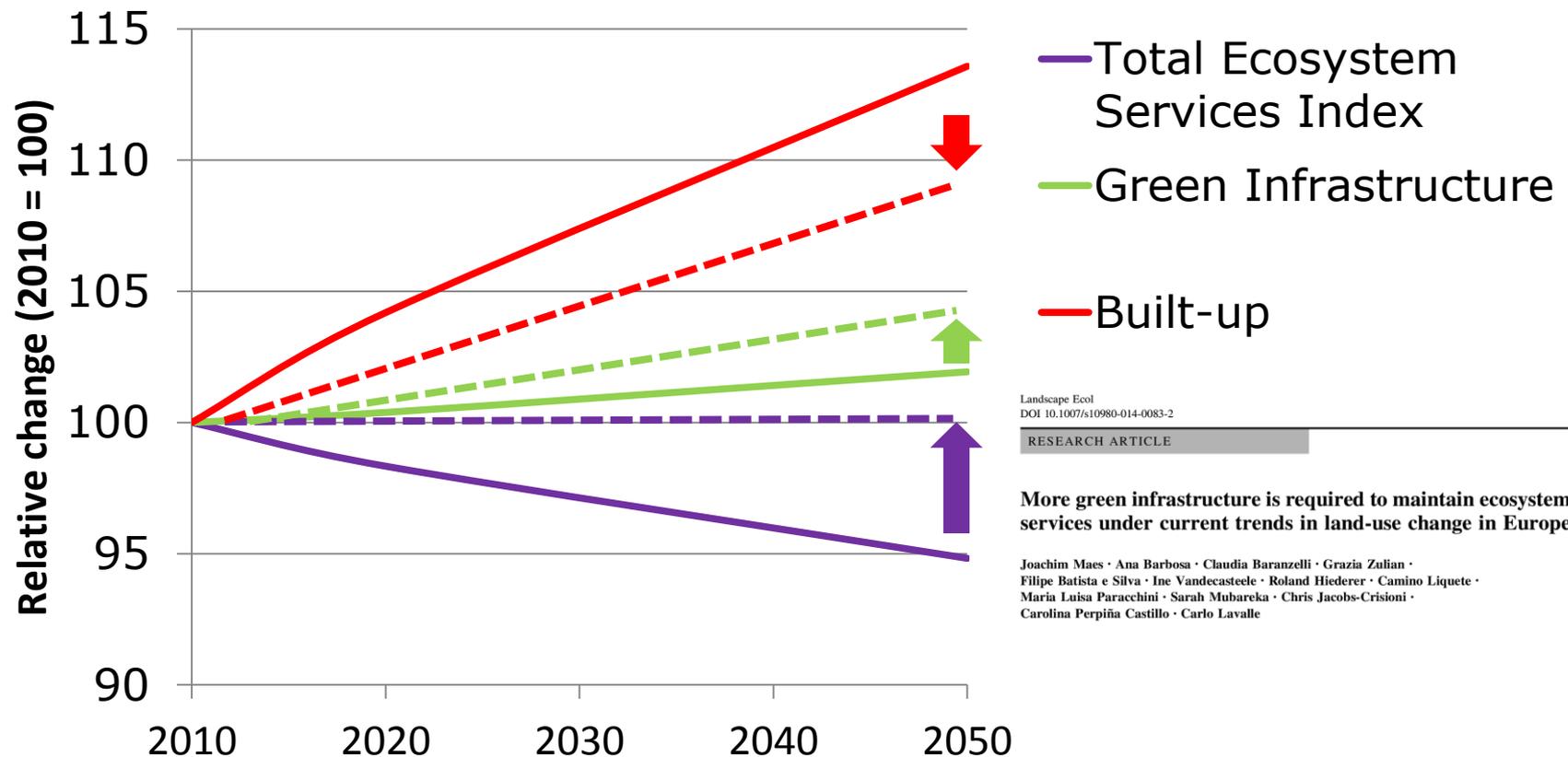
Recreation

Climate regulation

Water provision

Soil quality

Changes in ecosystem services under the baseline scenario



Landscape Ecol
DOI 10.1007/s10980-014-0083-2

RESEARCH ARTICLE

More green infrastructure is required to maintain ecosystem services under current trends in land-use change in Europe

Joachim Maes · Ana Barbosa · Claudia Baranzelli · Grazia Zulian · Filipe Batista e Silva · Ine Vandecasteele · Roland Hiederer · Camino Liqueste · Maria Luisa Paracchini · Sarah Mubareka · Chris Jacobs-Crisioni · Carolina Perpiña Castillo · Carlo Lavalle

The ESP Visualization tool (ESP-VT)



ESP
The Ecosystem Services Partnership Visualization tool

alpha^version

About Maps Data Upload Help

Welcome to ESP-mapping.net
An interactive knowledge platform for ecosystem service maps

This tool aims at facilitating the sharing of ecosystem service maps and mapping methodologies. It is a joint initiative of the Ecosystem Service Partnership's Working Groups on Mapping and Modelling ES, supported by the Joint Research Centre (JRC) of European Commission and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia.

The system has three major components

- Map**
View and download maps of Ecosystem Services
- Data**
Query, view and download information on ES indicators and relevant metadata
- Upload**
Login and upload your own maps and data for sharing in the system

Sponsors, partners, supporters



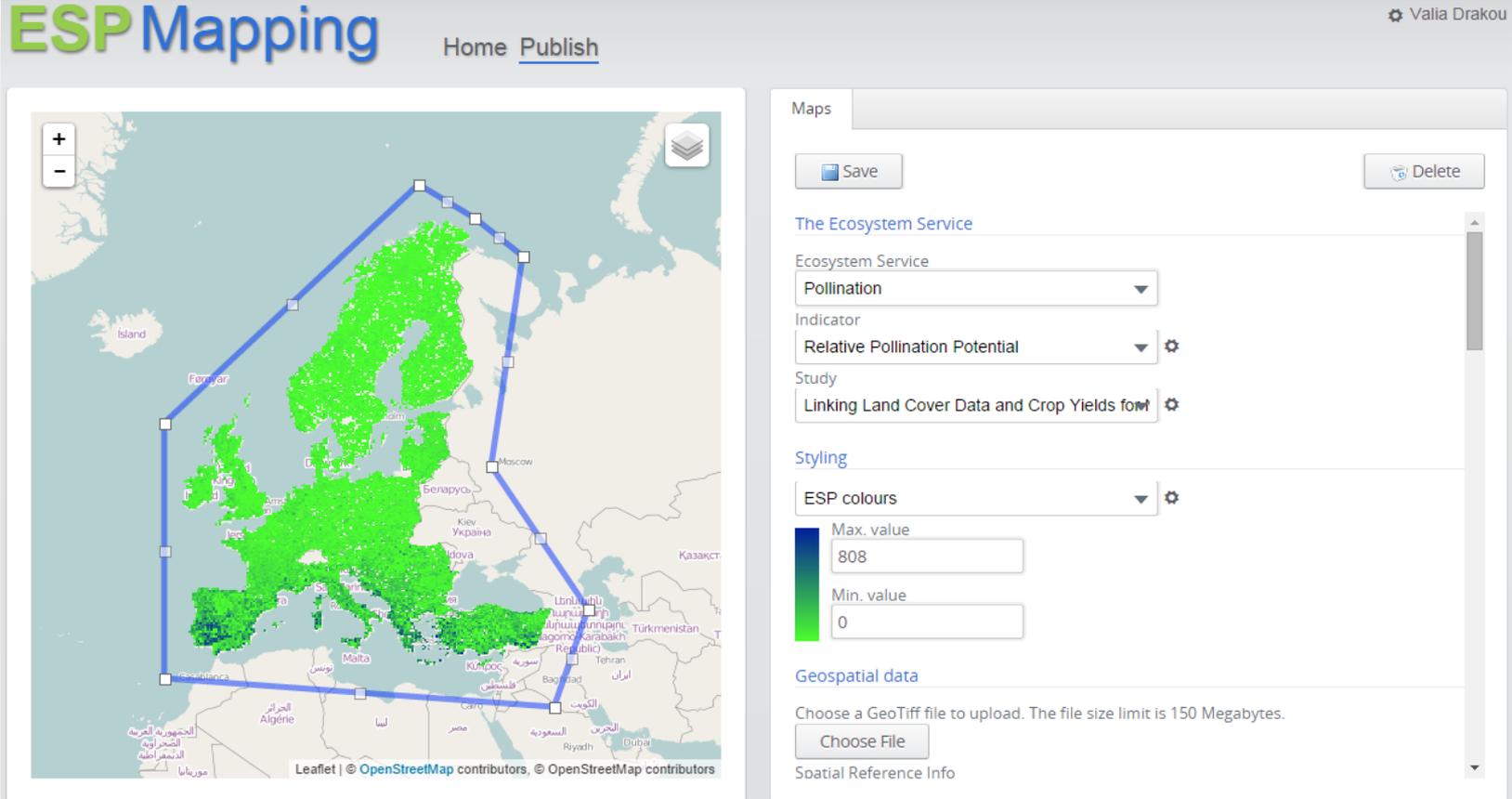
Give us your feedback!
[Contact us](#)

BIOPAMA

Southern Ocean

esp-mapping.net

The ESP Visualization tool (ESP-VT)



The screenshot displays the ESP Mapping web application interface. At the top left, the title "ESP Mapping" is shown in a large, bold, blue font. To its right are the navigation links "Home" and "Publish". In the top right corner, the user's name "Valia Drakou" is displayed next to a gear icon. The main content area is divided into two panels. The left panel features a map of Europe with a blue polygonal boundary and a green heatmap overlay representing the Ecosystem Service. The map includes zoom controls (+ and -) and a layer stack icon. The right panel, titled "Maps", contains a "Save" button and a "Delete" button. Below these is a section for "The Ecosystem Service" with dropdown menus for "Ecosystem Service" (set to "Pollination"), "Indicator" (set to "Relative Pollination Potential"), and "Study" (set to "Linking Land Cover Data and Crop Yields from..."). A "Styling" section includes a color scale dropdown (set to "ESP colours") and input fields for "Max. value" (808) and "Min. value" (0). A "Geospatial data" section has a "Choose File" button and a note about the 150 Megabyte file size limit. At the bottom of the right panel, "Spatial Reference Info" is partially visible. The map at the bottom left of the interface includes the text "Leaflet | © OpenStreetMap contributors, © OpenStreetMap contributors".

Ecosystem Services – Tools / Toolkits / Toolboxes / ...



InVEST
integrated valuation of
environmental services
and tradeoffs



ARIES
ARTificial Intelligence for
Ecosystem Services



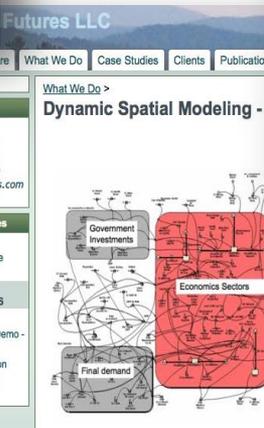
ipbes Home About the Catalogue
Assessments are currently under review and content i
**Catalogue of Assessments on
Biodiversity and Ecosystem
Services**



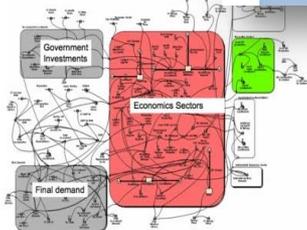
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Map showing the North Atlantic region, including Canada, United States, Iceland, Norway, United Kingdom, France, and Spain.



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Global Blue Carbon Categories

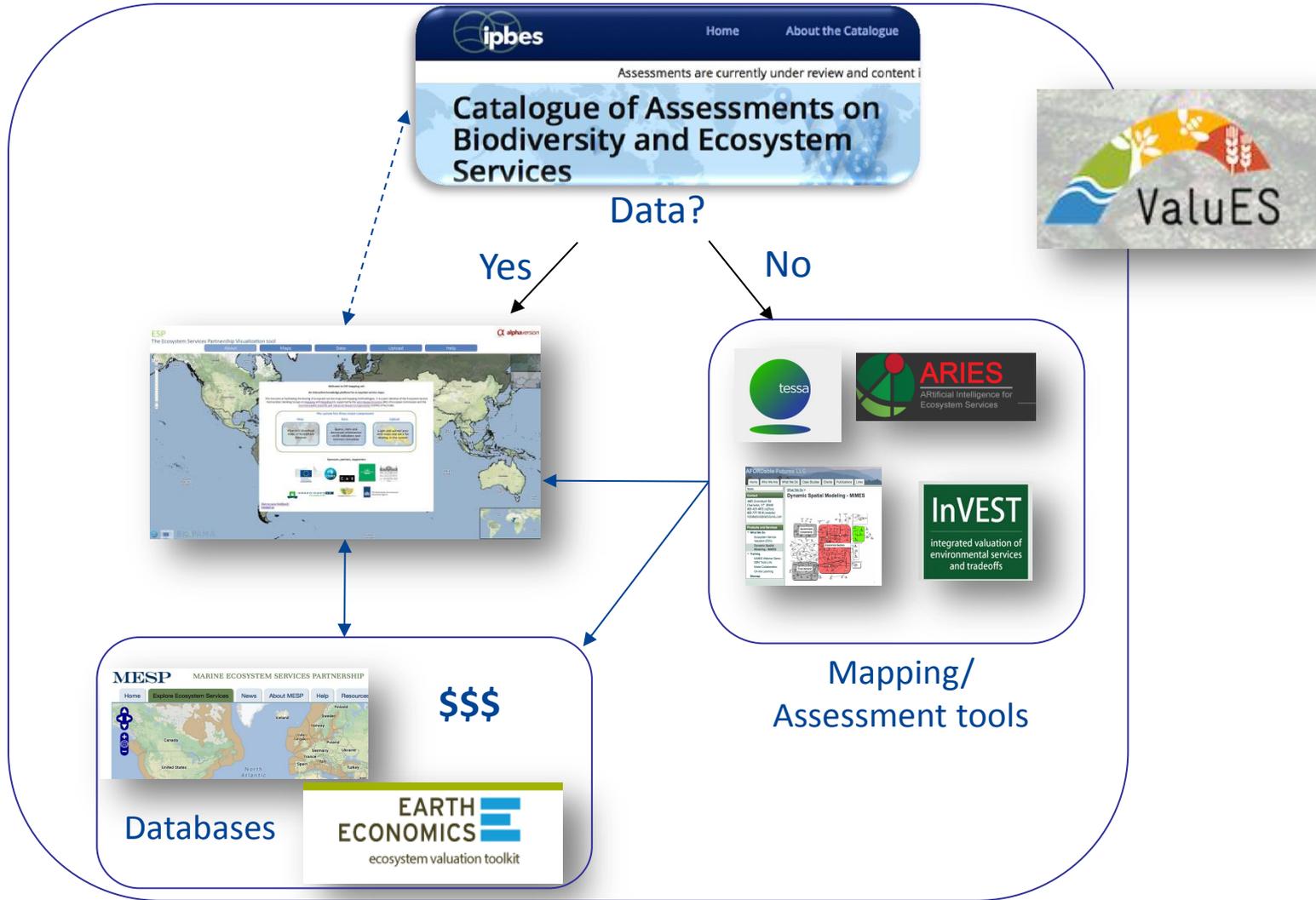


EARTH ECONOMICS
ecosystem valuation toolkit



Comparing Global Carbon Maps
Areas
My Areas
Cameroon
Ghana
Colombia

Brainstorming...



Many challenges remain

Ownership at all levels – Developing a community of practitioners

Demonstrating the role of biodiversity and ecosystem condition to underpin ecosystem functioning and services

Unlocking data (models, expertise) – Mobilise existing data, access to restricted data

Influencing macro-economic decisions by integrating biodiversity values in national/wealth accounts