

ΔΙΑΘΕΣΙΜΑ ΕΡΓΑΛΕΙΑ & ΔΕΔΟΜΕΝΑ  
ΓΙΑ ΤΗΝ ΑΞΙΟΠΙΣΤΗ ΑΞΙΟΛΟΓΗΣΗ ΚΑΙ  
ΧΑΡΤΟΓΡΑΦΗΣΗ Ο.Υ.

*Δρ. Ευαγγελία Δράκου*

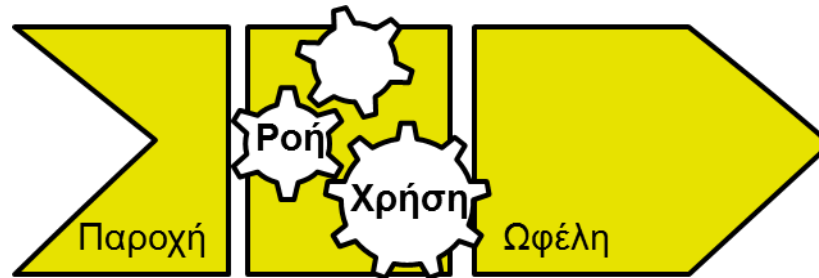
*Επίκ. Καθηγήτρια, Τμήμα Γεω-πληροφορικής*

*Πανεπιστήμιο Twente, Ολλανδία*

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# ΧΑΡΤΟΓΡΑΦΗΣΗ Ο.Υ.

Δείκτες Ο.Υ. (ES Indicators)



# ΧΑΡΤΟΓΡΑΦΗΣΗ Ο.Υ.

**1. Εννοιολογικό πλαίσιο  
χαρτογράφησης**  
(ερώτημα, *narrative*)

**2. Δέντρο  
απόφασης**

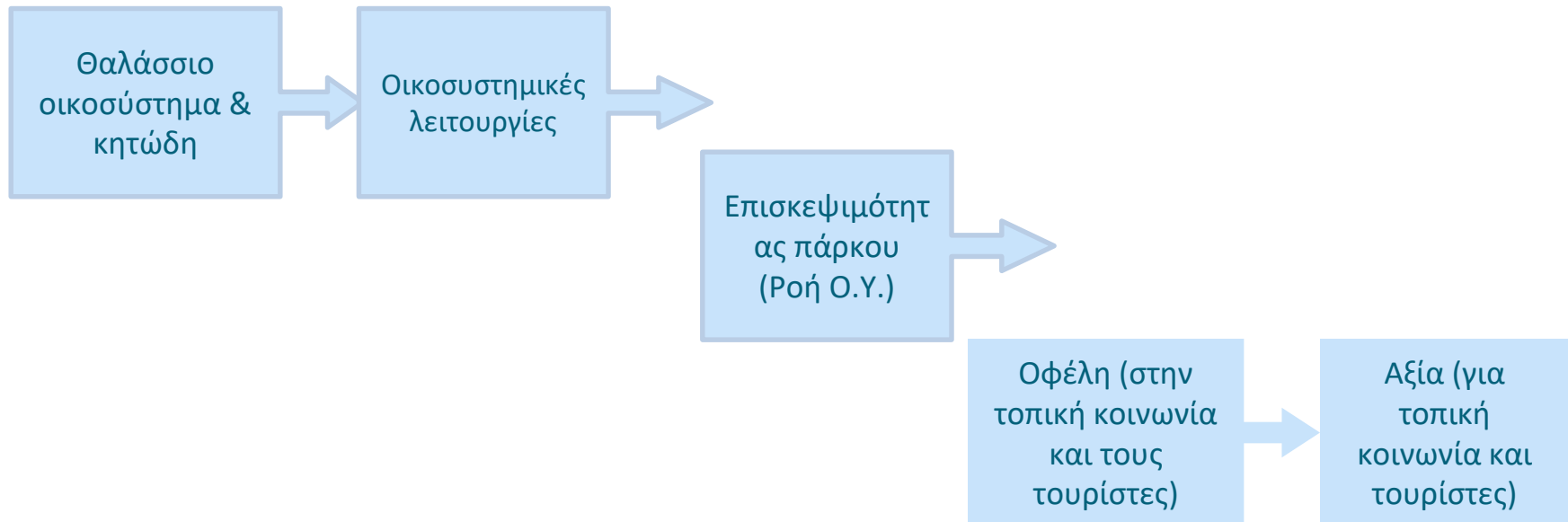
**3. Επιλογή μεθόδου  
χαρτογράφησης**

**4. Ο.Υ. metadata**

**5. Δημοσίευση και  
αξιολόγηση**

# 1. ΕΝΝΟΙΟΛΟΓΙΚΟ ΠΛΑΙΣΙΟ ΧΑΡΤΟΓΡΑΦΗΣΗΣ

*Π.χ. Οφέλη από επισκεψιμότητα θαλάσσιου πάρκου*



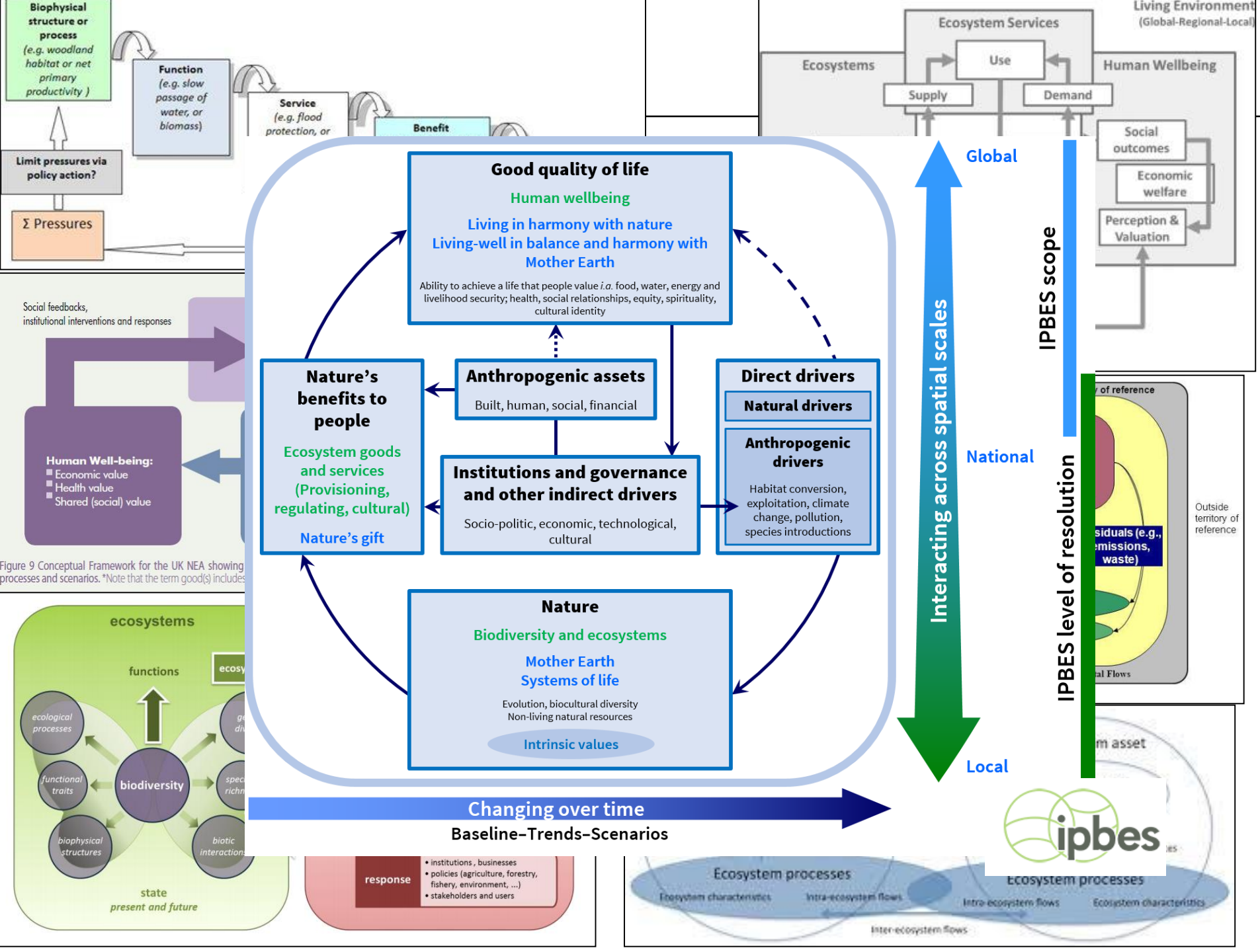


Figure 9 Conceptual Framework for the UK NEA showing processes and scenarios. \*Note that the term good(s) includes

# \* ΕΠΙΛΟΓΗ ΕΝΝΟΙΟΛΟΓΙΚΟΥ ΠΛΑΙΣΙΟΥ

This paper		MA	Beaumont	TEEB	CICES
Provisioning	Food provision	Food	Food provision	Food	Terrestrial plant and animal Freshwater plant and animal Marine plant and animal Potable water
	Water storage and provision				
	Biotic materials and biofuels				

This paper		MA	Beaumont	TEEB	CICES	
Regulating and maintenance	Water purification	Water purification and waste treatment	Bioremediation of waste	Waste treatment	Bioremediation Water quality regulation	
	Air quality regulation	Air quality regulation	Nutrient cycling	Nutrient cycling	Dilution and sequestration of wastes	
	Coastal protection	Natural hazard regulation	Disturbance prevention	Moderation of extreme events	Mass flow regulation	
		Water regulation				Regulation of water flows
	Climate regulation	Erosion regulation	Gas and climate	Erosion prevention	Air flow regulation	
	Weather regulation					
	Ocean nourishment					
	Life cycle maintenance	Symbolic and aesthetic values	Spiritual and religious values	Cultural heritage and identity	Spiritual experience	Spiritual
			Cultural heritage values			
Cultural diversity		Feel good or warm glow	Aesthetic information	Aesthetic, heritage		
Sense of place						
Recreation and tourism	Aesthetic values	Leisure and recreation	Opportunities for recreation and tourism	Recreation and community activities		
	Recreation and ecotourism					
Biological regulation	Social relations	Inspiration	Cognitive effects	Inspiration for culture, art and design	Information and knowledge	
Cognitive effects		Knowledge systems	Cognitive effects	Information for cognitive development	Information and knowledge	

This paper		MA	Beaumont	TEEB	CICES
Cultural	Symbolic and aesthetic values	Spiritual and religious values	Cultural heritage and identity	Spiritual experience	Spiritual
		Cultural heritage values			
	Cultural diversity	Feel good or warm glow	Aesthetic information	Aesthetic, heritage	
	Sense of place				
Recreation and tourism	Aesthetic values	Leisure and recreation	Opportunities for recreation and tourism	Recreation and community activities	
	Recreation and ecotourism				
Biological regulation	Social relations	Inspiration	Cognitive effects	Inspiration for culture, art and design	Information and knowledge
Cognitive effects		Knowledge systems	Cognitive effects	Information for cognitive development	Information and knowledge

# \* ΠΡΟΣΑΡΜΟΓΗ ΟΡΙΣΜΩΝ

## Παροχή τροφής

- a. Από αλιεία
- b. Από ιχθυοκαλλιέργεια



**Προστασία από πλημμύρες**  
Φυσική προστασία από την παράκτια ζώνη



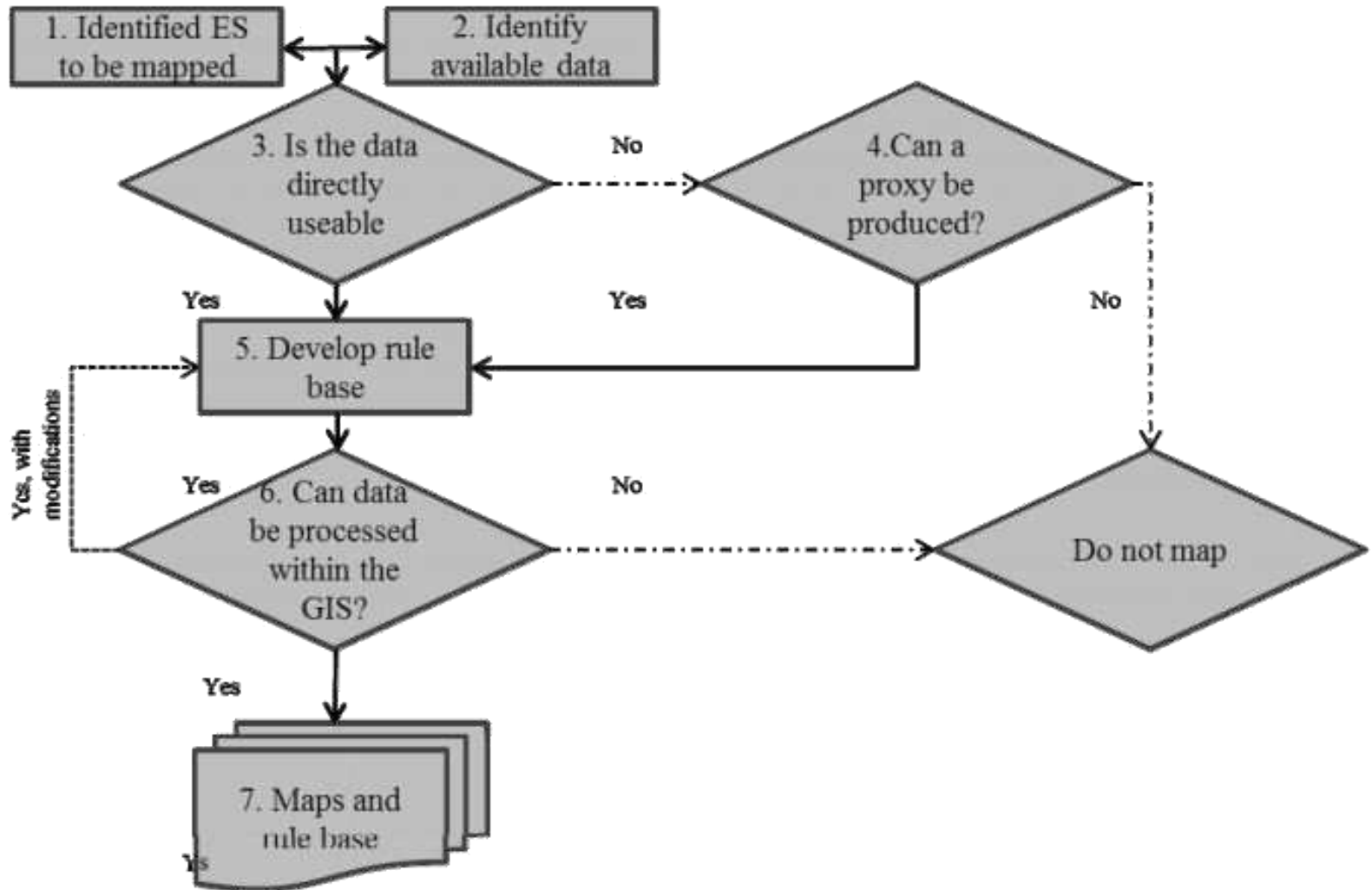
## Τουρισμός

Δραστηριότητες στην ακτή,  
Παραθερισμός κλπ.



© E. Drakou

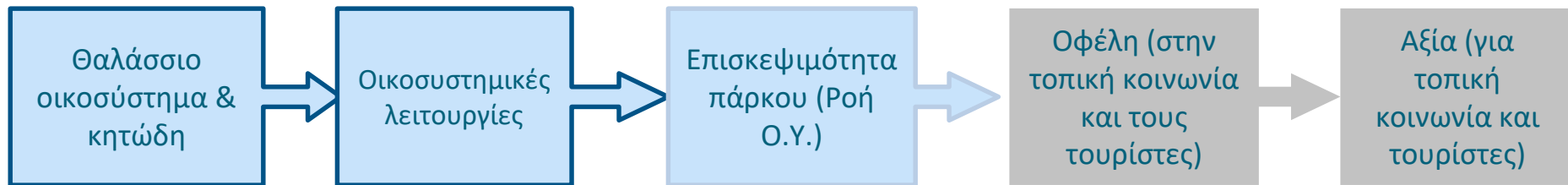
## 2. ΔΕΝΤΡΟ ΑΠΟΦΑΣΗΣ





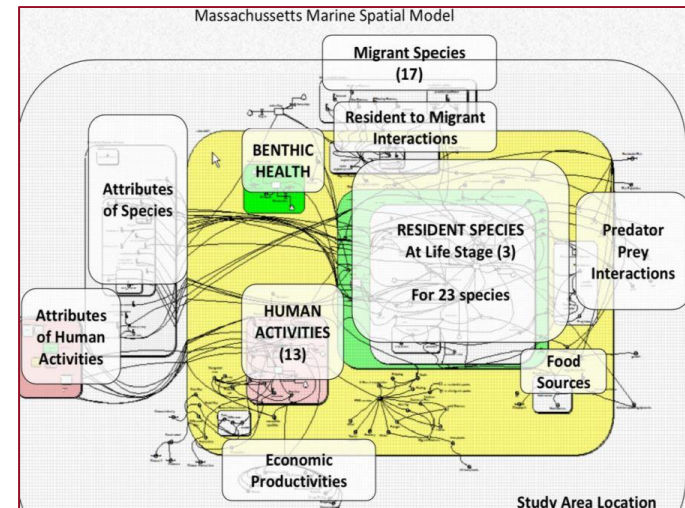
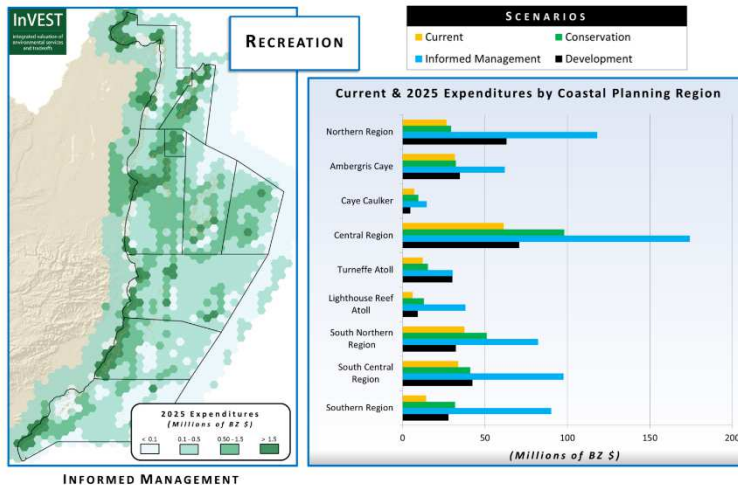
## 2. ΔΕΝΤΡΟ ΑΠΟΦΑΣΗΣ

*Π.χ. Οφέλη από επισκεψιμότητα θαλάσσιου πάρκου*



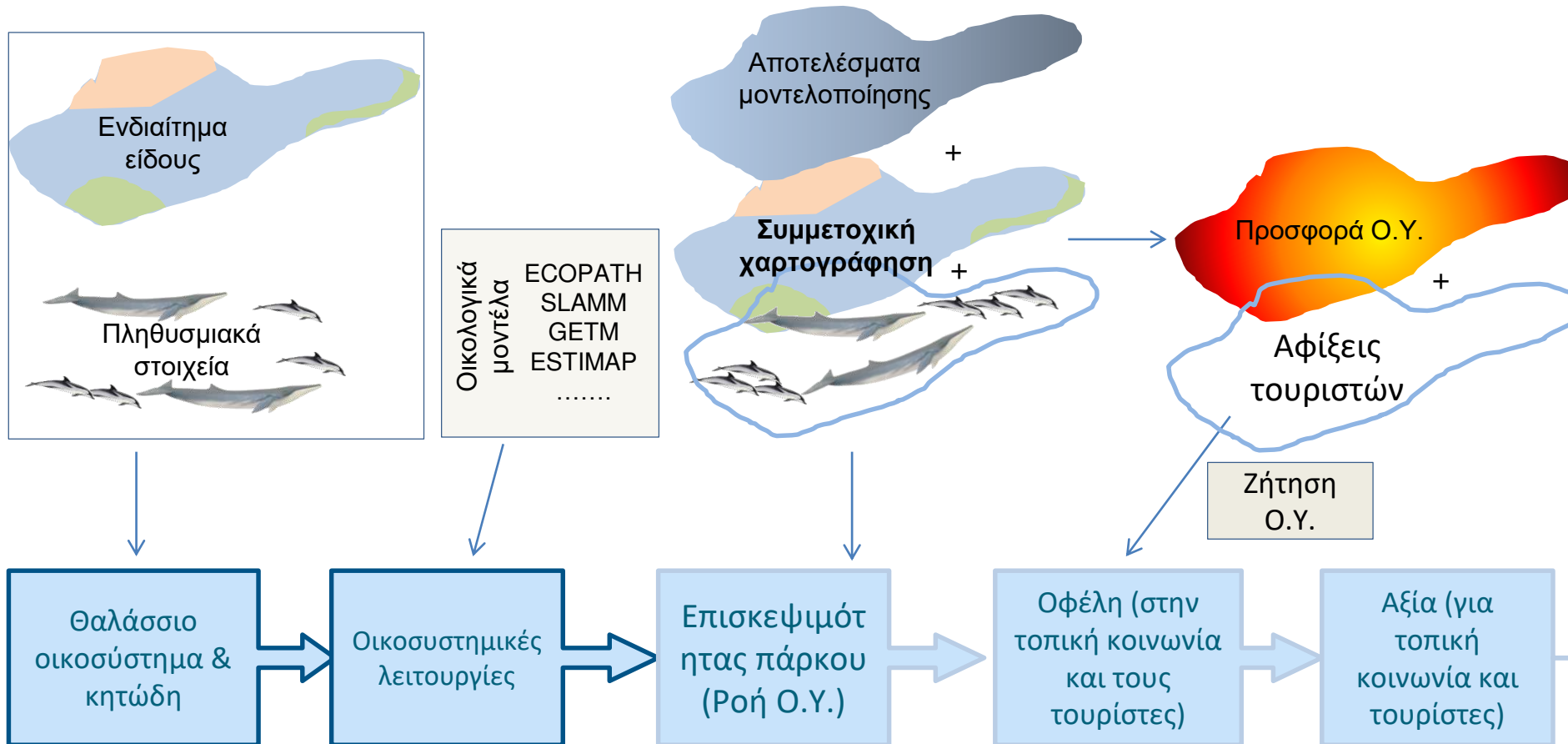
### 3. ΕΠΙΛΟΓΗ ΜΕΘΟΔΟΥ ΧΑΡΤΟΓΡΑΦΗΣΗΣ

- i. Τύποι κάλυψης γης
- ii. Χρήση δεικτών (μοντελοποίηση)
- iii. Συμμετοχική
- iv. Συνδυασμός μεθόδων

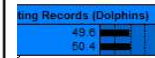
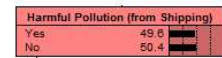
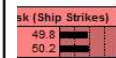
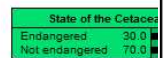
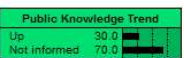
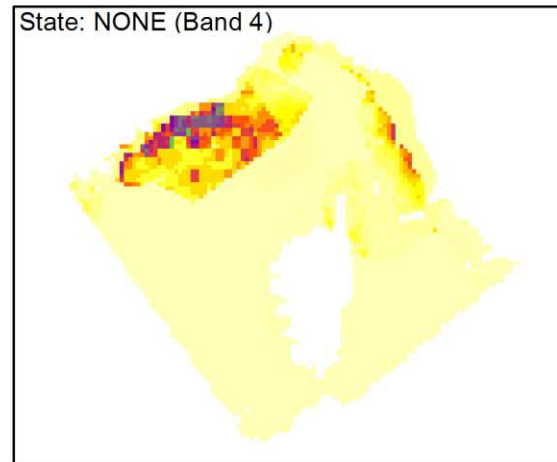
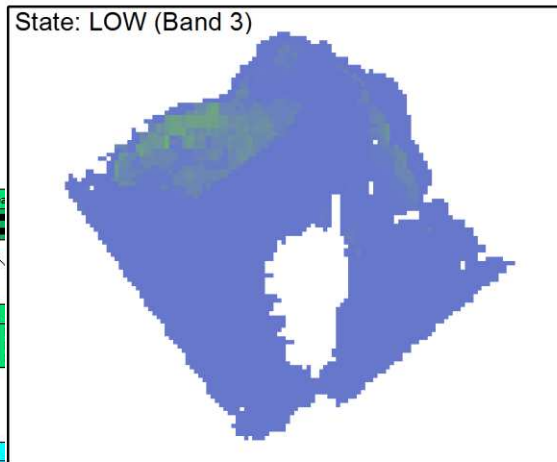
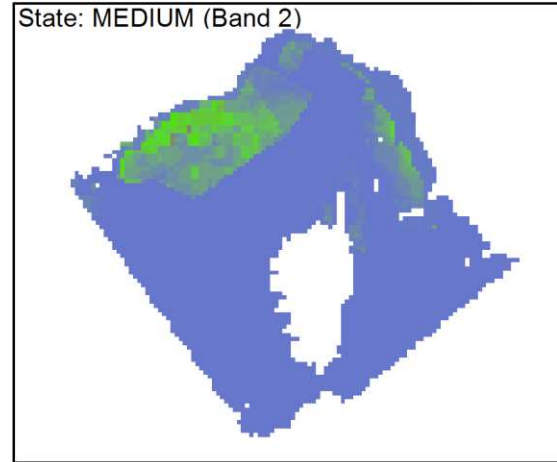
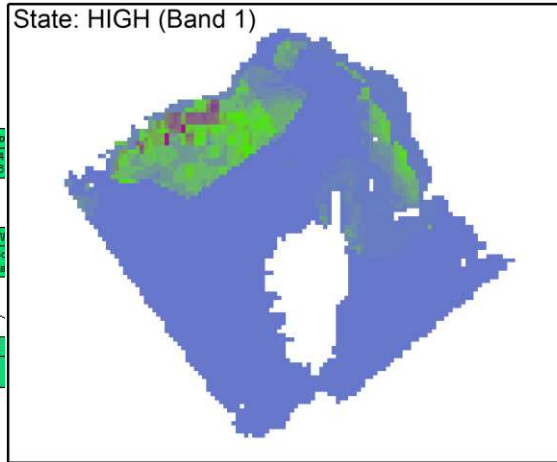
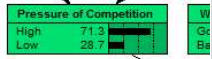
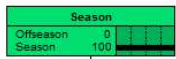


### 3. ΕΠΙΛΟΓΗ ΜΕΘΟΔΟΥ ΧΑΡΤΟΓΡΑΦΗΣΗΣ

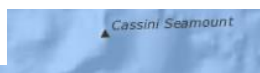
*Π.χ. Οφέλη από επισκεψιμότητα θαλάσσιου πάρκου*




# 3. ΕΠΙΛΟΓΗ ΜΕΘΟΔΟΥ ΧΑΡΤΟΓΡΑΦΗΣΗΣ



Matching Expert Knowledge  
 Expert / Empirical Data  
 Cetacean Presence (Empirical Data)  
 Ecosystem Value




# 4. METADATA O.Y.



Contents lists available at SciVerse ScienceDirect

## Ecosystem Services

journal homepage: [www.elsevier.com/locate/ecoser](http://www.elsevier.com/locate/ecoser)



Article title	Abstract	Keywords	ES Indicator	Quantification unit	Input	Method	Spatial details	Mapped	Study	Comments	
<p>Ne... Ig... Kremer</p>	<p>ing and modelling ecosystem services</p>	<p>CS In Na Eu En</p>	<p>Type</p>	<p>Beneficiary</p>	<p>Time (e.g. year)</p>	<p>(model output, measured/primary aggregated statistics)</p>	<p>Extent (size)</p>	<p>Resolution (pixel size, minimal)</p>	<p>(e.g. 2000 or 1990 - 2050)</p>	<p>(e.g. 1-year, to 5= no)</p>	<p>(e.g. limitations, key assumptions)</p>
<p>Food Water</p>											
<p>ARTICLE</p> <p>Article history Received 30 Accepted 8</p> <p>Keywords: Environmen Spatial anal Geographic Ecosystem a Standards Indicators</p>											
<p>Provisioning</p>											
<p>Regulating</p>											
<p>Other</p>											

services and thereby help to close the gap between theory and practice.  
Crown Copyright © 2013 Published by Elsevier B.V. All rights reserved.

**Κλίμακα**

**O.Y.**

**Χρονιά**

**Δείκτης O.Y.**

**Τύπος O.Y.  
(Παροχή, ροή, κλπ.)**

**Extent**

**Δεδομένα**

**Resolution**

**Τελικός αποδέκτης**

**Μέθοδος ποσοτικοποίησης**

**Μονάδα ποσοτικοποίησης**

*Crossman et al 2013*

# 5. ΔΗΜΟΣΙΕΥΣΗ ΚΑΙ ΑΞΙΟΛΟΓΗΣΗ (VALIDATION)

**MESP MARINE ECOSYSTEM SERVICES PARTNERSHIP**

Home Explore Ecosystem Services News About MESP Help Resources Contact Us

**Locate Ecosystem Services Valuations**

Getting Started

When the map loads, all countries with valuation studies are highlighted in gold. Clicking on the coastal zones in the will select that country, and show ecosystem service studies in the grid below the map.

Click to expand the panels below and discover areas based on Ecosystem type or a specific Exclusive Economic Zone. The map will update to show the zones which fit the criteria. Use your Ctrl key to select multiple rows.

Selecting items from the grid at the bottom of the page places them on the map and offers more details, with a more link to see the complete record.

Title	Country
Estimating the value of beach recreation from property values: An exploration with compar...	United States
The economic impact of tourism on Westerly, Rhode Island	United States
Valuing recreation and amenities at San Diego County beaches	United States
Recreational Use Value for Three Southern California Beaches	United States

**ESP** the Ecosystem Services Partnership Visualization tool

About Maps Data Upload Help

Baselayer Overlay Uploaded

**Welcome to the ESP Visualization tool (ESP-VT)**

The ESP-VT is an interactive knowledge platform that allows users to share information on ecosystem services maps, data and mapping methods.

ESP-VT is a joint initiative of the Ecosystem Service Partnerships Working Groups on Mapping and Modelling ES, developed and supported by the [Joint Research Centre](#) of the European Commission (JRC EC) and the [Commonwealth Scientific and Industrial Research Organisation](#) (CSIRO) of Australia.

Please cite ESP-VT as:

E.G. Drakou, N.D. Crossman, L. Willemen, B. Burkhard, L. Palomo, J. Maes, S. Peedell, A visualization and data-sharing tool for ecosystem service maps: Lessons learnt, challenges and the way forward, *Ecosystem Services*, Available online 14 January 2015, ISSN 2212-0416, <http://dx.doi.org/10.1016/j.ecoser.2014.12.002>.

# ΔΕΔΟΜΕΝΑ ΚΑΙ ΕΡΓΑΛΕΙΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ



# A. ΕΡΓΑΛΕΙΑ ΛΗΨΗΣ ΑΠΟΦΑΣΕΩΝ

Τρεις μεγάλες βάσεις «μεθόδων»



<https://ebmtoolsdatabase.org/>

## National Ecosystem Approach Toolkit



<http://neat.ecosystemsknowledge.net/>



# Α. ΕΡΓΑΛΕΙΑ ΛΗΨΗΣ ΑΠΟΦΑΣΕΩΝ

Τρεις μεγάλες βό

Choose a term below within one of the categories to begin a guided search. On the next page you will be able to drill down in other categories to find what you're looking for.

## General

### Content type

- Resources (184)
- Tool (184)
- Practitioner Profile (78)
- Project (34)
- Organizations (16)

### Keywords

- webinar (59)
  - tool demonstration (48)
  - marine spatial planning (12)
  - ecosystem services (11)
  - climate change (10)
  - fisheries (8)
  - gis (7)
  - marine (7)
  - coastal (6)
  - stakeholder engagement (6)
  - tools (6)
  - ecosystem-based fisheries management (5)
  - coral reefs (4)
  - decision support (4)
  - ecosystem-based management (4)
- [MORE >>](#)



EBM Tools Database

[Home](#)

[Tools](#)

**Webinars!!!**

[http://www.natureserve.org/conservation-tools/ecosystem-based-management-tools-network/tools\\_training/presentations.html#upcoming%20webinars](http://www.natureserve.org/conservation-tools/ecosystem-based-management-tools-network/tools_training/presentations.html#upcoming%20webinars)

<https://ebmtools>

- Method (2)
- Other (1)

## Categories

- Project management (15)
  - Data collection (13)
  - Modeling and analysis - Habitat suitability and species distribution modeling (13)
  - Modeling and analysis - Socioeconomic modeling (12)
  - Decision support - Multi-objective planning and management (11)
  - Data collection - Geophysical data collection (9)
  - Decision support - Marine spatial planning/Ocean zoning (9)
  - Modeling and analysis - Conceptual modeling (9)
  - Monitoring and assessment (8)
  - Data collection - Biological data collection (7)
  - Modeling and analysis - Cumulative impact assessment (7)
  - Modeling and analysis - Oceanographic and dispersal modeling (7)
- [MORE >>](#)

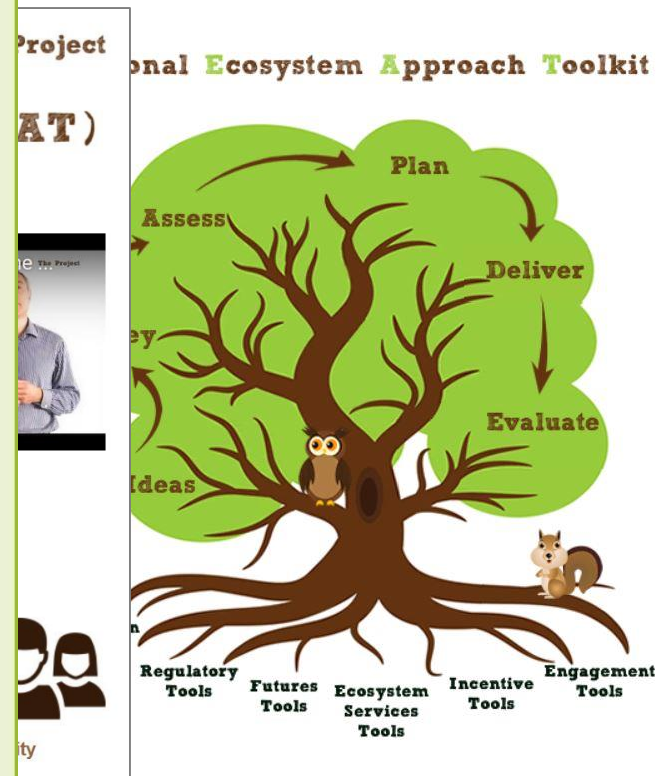
### Tool Cost

- Free (71)
- Varies with application (13)
- >\$500 (9)
- \$100-\$500 (4)
- <\$100 (2)

# A. ΕΡΓΑΛΕΙΑ ΛΗΨΗΣ ΑΠΟΦΑΣΕΩΝ

Τρεις μεγάλες βάσεις «μεθόδων»

Tool categories	Ecosystem-proofed tools
Ecosystem Services tools	Corporate Ecosystem Valuation tool
Engagement tools	Cost-Benefit Analysis tool
Futures tools	Ecosystem Assessment tool
Incentive tools	Ecosystem Mapping tools
Regulatory tools	Environmental Impact Assessment tool
Valuation tools	Futures Tools toolkit
	Natural Capital Asset Check tool
	Payments For Ecosystem Services tool
	Strategic Environmental Assessment tool



# A. ΕΡΓΑΛΕΙΑ ΛΗΨΗΣ ΑΠΟΦΑΣΕΩΝ



Learn more about

- 1 Choose Policy Area
- 2 Choose Purpose
- 3 Check Examples & Top Tips

Purposes ▾

- Acting on Ecosystem Service Opportunities
- Assessment methods for carbon certification
- ARIES - Intelligent
- Benefit metho

ValuES – Integrating Ecosystem Services into Policy, Planning and Practice

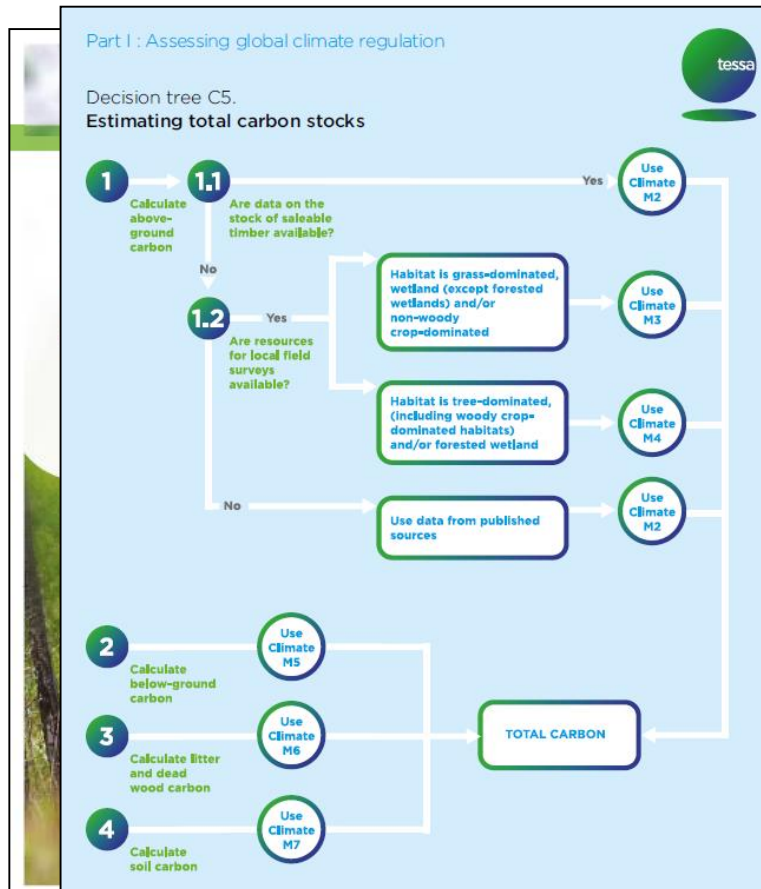
ValuES Project Report:  
**Analysis of 19 ecosystem service assessments for different purposes**  
Insights from practical experience

Augustin Berghöfer, Anja Wittich, Heidi Wittmer,  
Julian Rode, Lucy Emerton, Marina Kosmus, Hugo van Zyl

April 2015

<http://www.aboutvalues.net/>

# A. ΕΡΓΑΛΕΙΑ ΛΗΨΗΣ ΑΠΟΦΑΣΕΩΝ



<http://tessa.tools/>

- Ανοιχτά διαθέσιμο (κατόπιν ζήτησης)
- Αποτιμήσεις τοπικής κλίμακας
- Καθοδήγηση για αποτίμηση /χαρτογράφηση χαμηλού κόστους
- Σχεδιασμένο για φορείς λήψης αποφάσεων, ιδιωτικό τομέα (απαιτείται ελάχιστη επιστημονική εξειδίκευση)
- Απαιτεί συμμετοχή πλήθους φορέων
- Βασική μέθοδος: εναλλακτική κατάσταση οικοσυστήματος (μέσω σεναρίων)

## B. ΔΕΔΟΜΕΝΑ

---

- Διαθέσιμα δεδομένα σε εθνικό επίπεδο / επίπεδο φορέων
- Συλλογή δεδομένων σε **εθνικό** επίπεδο
- Συλλογή δεδομένων σε **τοπικό** επίπεδο
- **Ανοιχτά δεδομένα**

## B. ΔΕΔΟΜΕΝΑ

- Διαθέσιμα
- Συλλογή δεδομένων
- Συλλογή δεδομένων
- **Ανοιχτά δεδομένα**



All of these datasets are available under our terms and conditions

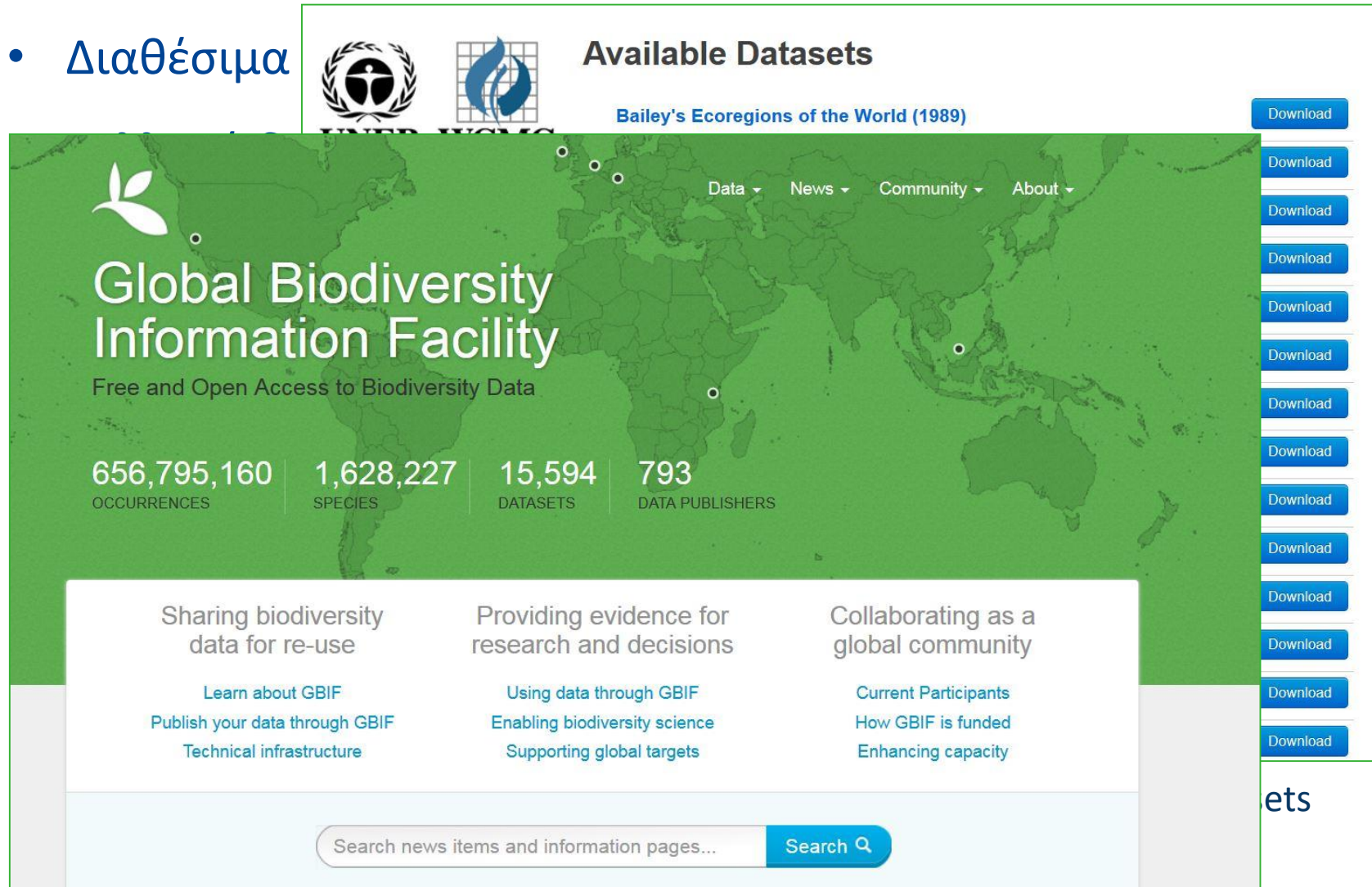
### Available Datasets

Bailey's Ecoregions of the World (1989)	Download
Centres of Plant Diversity (1995)	Download
Centres of Plant Diversity (2013)	Download
Drylands Dataset (2007)	Download
Generalised Biogeographic Realms (2004)	Download
Generalised Original and Current Forest (1998)	Download
Holdridge's Life Zones	Download
Mountains and Forests in Mountains (2000)	Download
Mountains and Tree Cover in Mountain Regions (2002)	Download
Original Natural Habitats of the Indo-Malayan Realm (1997)	Download
Remaining Natural Habitats of the Indo-Malayan Realm (1997)	Download
Tropical Dry Forests (2006)	Download
Tropical Montane Cloud Forest Sites (1997)	Download
Udvardy's Biogeographical Provinces (1975)	Download

<http://datadownload.unep-wcmc.org/datasets>

## B. ΔΕΔΟΜΕΝΑ

- Διαθέσιμα



The screenshot shows the GBIF website interface. At the top, there are logos for the United Nations and GBIF, followed by the text "Available Datasets". A specific dataset, "Bailey's Ecoregions of the World (1989)", is highlighted with a "Download" button. Below this is a world map with navigation links for "Data", "News", "Community", and "About". The main heading is "Global Biodiversity Information Facility" with the tagline "Free and Open Access to Biodiversity Data". Statistics are displayed for Occurrences (656,795,160), Species (1,628,227), Datasets (15,594), and Data Publishers (793). Three columns describe the facility's mission: "Sharing biodiversity data for re-use", "Providing evidence for research and decisions", and "Collaborating as a global community". A search bar at the bottom is labeled "Search news items and information pages..." with a "Search" button.

## B. ΔΕΔΟΜΕΝΑ

- Διαθέσιμα



Available Datasets

Overview

Application Domains

Products and Services

Support Activities

Tenders and Grants

Document Repository

Project Database

News

Events

Press Room

15/02/2016

**Follow online the Sentinel-3A launch from Plesetsk Cosmodrome**

© ESA-Pierre Ca

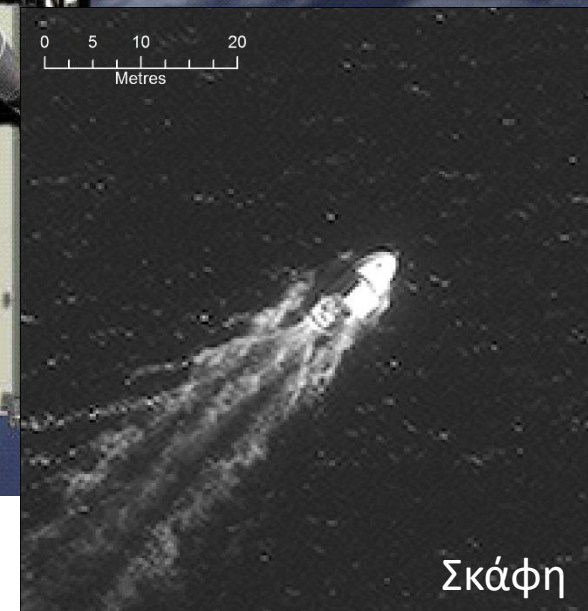
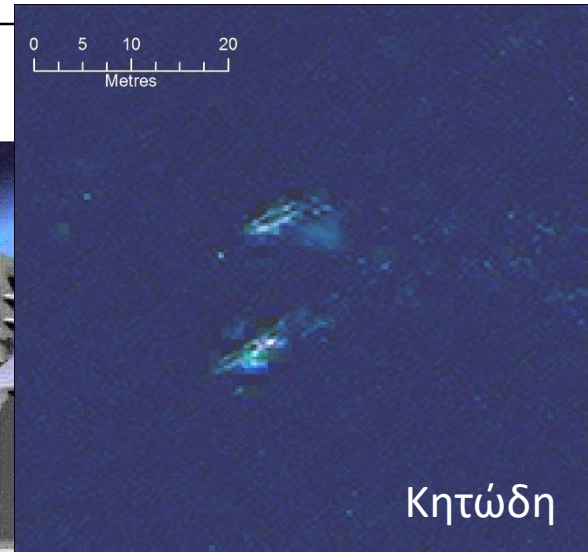
Search news items and information pages... Search



## B. ΔΕΔΟΜΕΝΑ



- WorldView3
  - Launch August 2014
  - Data now available
  - 31 cm panchromatic
  - 1.24 m colour and NIR (7 bands)
  - 3.7 m SWIR (4 to 7 bands)
  - Water penetrating coastal band



# B. ΔΕΔΟΜΕΝΑ

**FAOSTAT** FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
STATISTICS DIVISION

ENGLISH | FRANÇAIS | ESPAÑOL

HOME BROWSE DATA DOWNLOAD DATA COMPARE DATA SEARCH DATA ANALYSIS METHODS & STANDARDS

FIND YOUR STATISTICAL DATA BY EXPLORING FAOSTAT DATA DOMAINS. CLICK ON THE DOMAIN GROUPS BELOW

- Production
- Trade
- Food Balances
- Food Security
- Prices
- Investment
- Inputs
- Population
- Emissions - Agriculture
- Emissions - Land Use
- Agri-Environmental Indicators
- Forestry
- ASTI R&D Indicators
- Emergency Response

Rankings ▶  
Country / Region ▶

**Highlights**  
Number of undernourished declining Millions of people

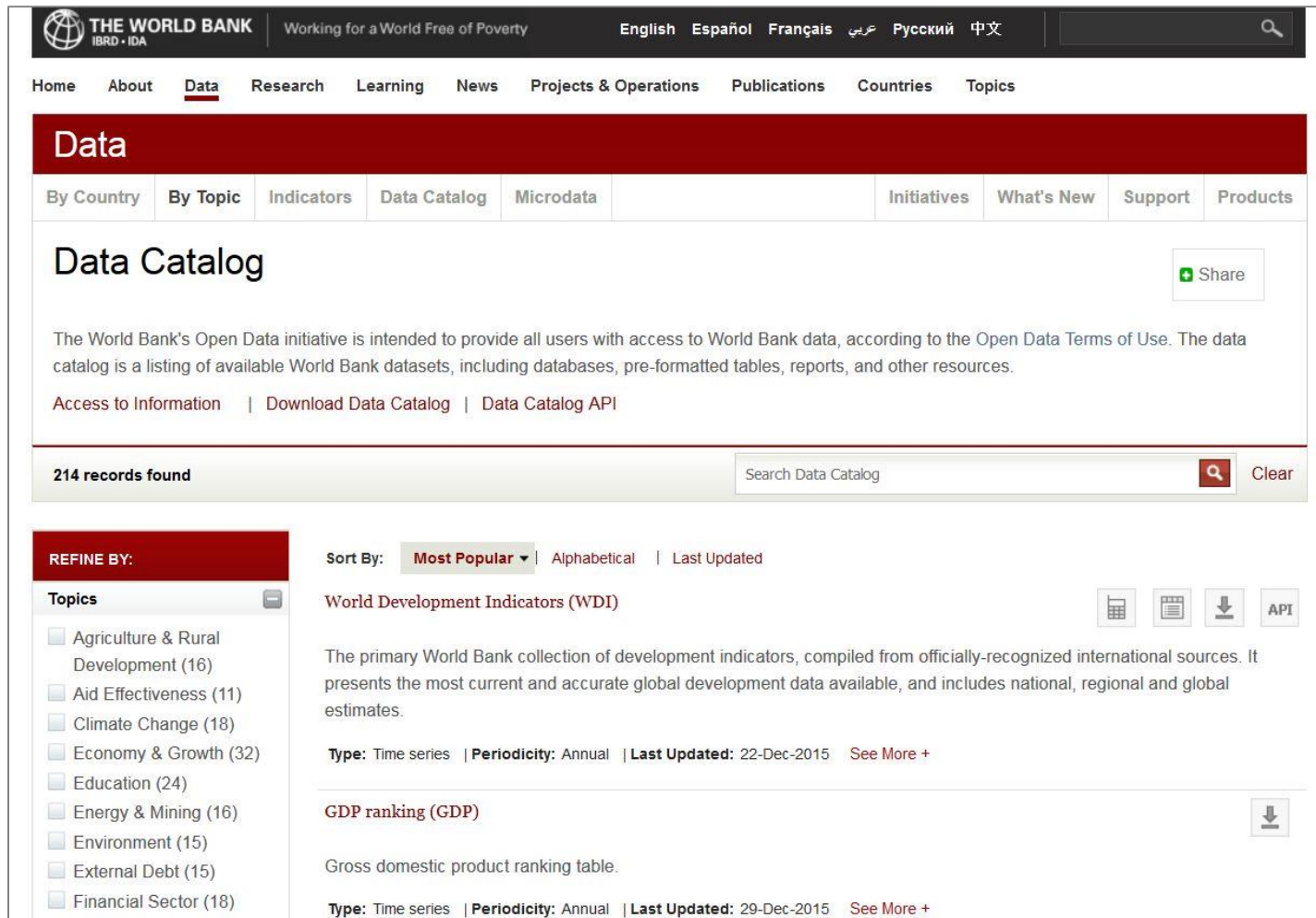
Year	Number of undernourished (Millions of people)
1991	1000
1992	1020
1993	1030
1994	1010
1995	990
1996	970
1997	950
1998	940
1999	930
2000	920
2001	930
2002	940
2003	950
2004	960
2005	950
2006	940
2007	920
2008	900
2009	880
2010	860
2011	840
2012	820
2013	810
2014	800
2015	800

**Featured Links**

- Coming soon KEY INDICATORS
- Download FAOSTAT DATABASE WITH ONE CLICK (APPROX. 500Mb) 2016-02-03
- Explore COUNTRY PROFILES

<http://faostat3.fao.org/home/E>

# B. ΔΕΔΟΜΕΝΑ



**THE WORLD BANK**  
IBRD • IDA

Working for a World Free of Poverty

English Español Français عربي Русский 中文

Home About **Data** Research Learning News Projects & Operations Publications Countries Topics

## Data

By Country By Topic Indicators Data Catalog Microdata Initiatives What's New Support Products

### Data Catalog

[Share](#)

The World Bank's Open Data initiative is intended to provide all users with access to World Bank data, according to the Open Data Terms of Use. The data catalog is a listing of available World Bank datasets, including databases, pre-formatted tables, reports, and other resources.

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214 records found

Search Data Catalog

**REFINE BY:**

**Topics**

- Agriculture & Rural Development (16)
- Aid Effectiveness (11)
- Climate Change (18)
- Economy & Growth (32)
- Education (24)
- Energy & Mining (16)
- Environment (15)
- External Debt (15)
- Financial Sector (18)

**Sort By:** **Most Popular** | Alphabetical | Last Updated

**World Development Indicators (WDI)**

The primary World Bank collection of development indicators, compiled from officially-recognized international sources. It presents the most current and accurate global development data available, and includes national, regional and global estimates.

**Type:** Time series | **Periodicity:** Annual | **Last Updated:** 22-Dec-2015 [See More +](#)

**GDP ranking (GDP)**

Gross domestic product ranking table.

**Type:** Time series | **Periodicity:** Annual | **Last Updated:** 29-Dec-2015 [See More +](#)

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

The image shows a screenshot of the Esri website. At the top left is the Esri logo. To its right are navigation links: Industries, Products, Support & Services, About, and Community. A search bar is located on the right side of the top navigation. Below the navigation is a large banner for ArcGIS for Desktop. The banner features the text "ArcGIS for Desktop" in a large, orange font, with a "60-Day Free Trial" button below it. To the right of the text is a computer monitor displaying a 3D topographic map of a region with several blue circular markers. Below the banner is a dark navigation bar with links: Main, Features, Extensions, System Requirements, and Wh. In the foreground, there is a white box containing the QGIS logo (a stylized yellow 'Q' with a green arrow) and the text "QGIS Trademark".

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ



<http://free.sourcemap.com/view/3554>

<http://vitalsigns.org/data-visualizations>



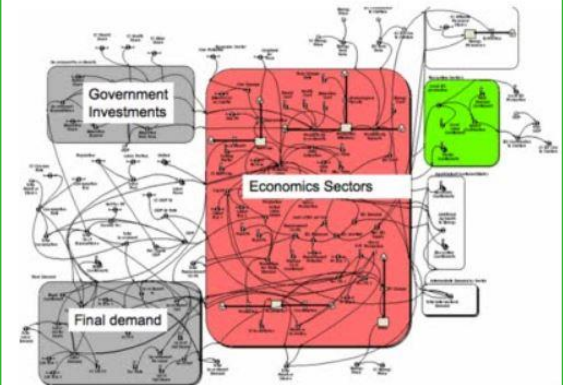
# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

# InVEST

integrated valuation of  
ecosystem services  
and tradeoffs



Dynamic Spatial Modeling - MIMES



# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

*InVEST: Integrated Valuation of Ecosystem Services and Tradeoffs*

<http://www.naturalcapitalproject.org/invest/>

**Ανοιχτό λογισμικό** με διαθέσιμα μοντέλα για την  
οικονομική αποτίμηση και χαρτογράφηση Ο.Υ.



*Tallis & Ricketts 2010*

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

## *InVEST: Integrated Valuation of Ecosystem Services and Tradeoffs*

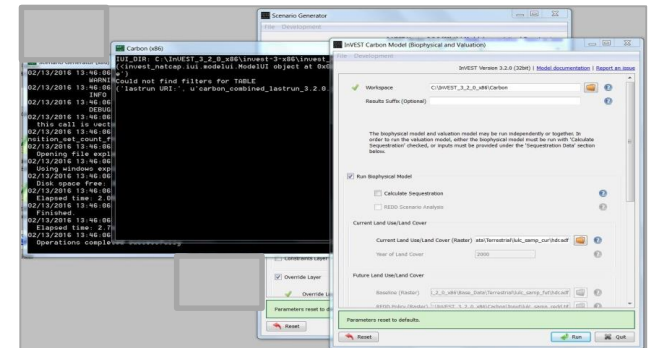
Models (18)		Analytical Tools
Carbon storage & sequestration	Pollination	Overlap analysis model
Coastal Protection (wave attenuation, erosion reduction)	Scenic quality	Coastal Vulnerability model
Crop production	Timber	DelineateIT
Finfish aquaculture	Water yield	RouteDEM
Marine water quality	Wave energy	Scenario generator
Habitat quality	Wind energy	Scripting Guide
Nutrient retention	Blue Carbon	
Fisheries habitat	Recreation	
Habitat risk assessment	Sediment delivery	



# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

## *InVEST: Integrated Valuation of Ecosystem Services and Tradeoffs*

Τα μοντέλα βασίζονται σε **οικοσυστημικές λειτουργίες** και υπολογίζουν πως οι **αλλαγές** στη δομή και λειτουργία του οικοσυστήματος μπορεί να επηρεάσουν τη **ροή και τα κοινωνικά οφέλη** από Ο.Υ. στο τοπίο.



Τα μοντέλα λαμβάνουν υπόψιν την παροχή των Ο.Υ. αλλά και την θέση των τελικών αποδεκτών των Ο.Υ.

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

*ARIES: Artificial Intelligence for Ecosystem Services*  
<http://aries.integratedmodelling.org/>

Μέθοδος χαρτογράφησης με σκοπό τη δημιουργία πιο «**δυναμικών**» και λιγότερο στατικών χαρτών, που εστιάζει περισσότερο στην πλευρά των **αποδεκτών/οφελών των Ο.Υ.**, παρά στην παροχή.



Είναι ένα web-based λογισμικό, το οποίο προσαρμόζεται στις ανάγκες του χρήστη και μπορεί να χρησιμοποιηθεί για **χαρτογράφηση, οικονομική αποτίμηση, σενάρια, και χωρικό σχεδιασμό.**

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

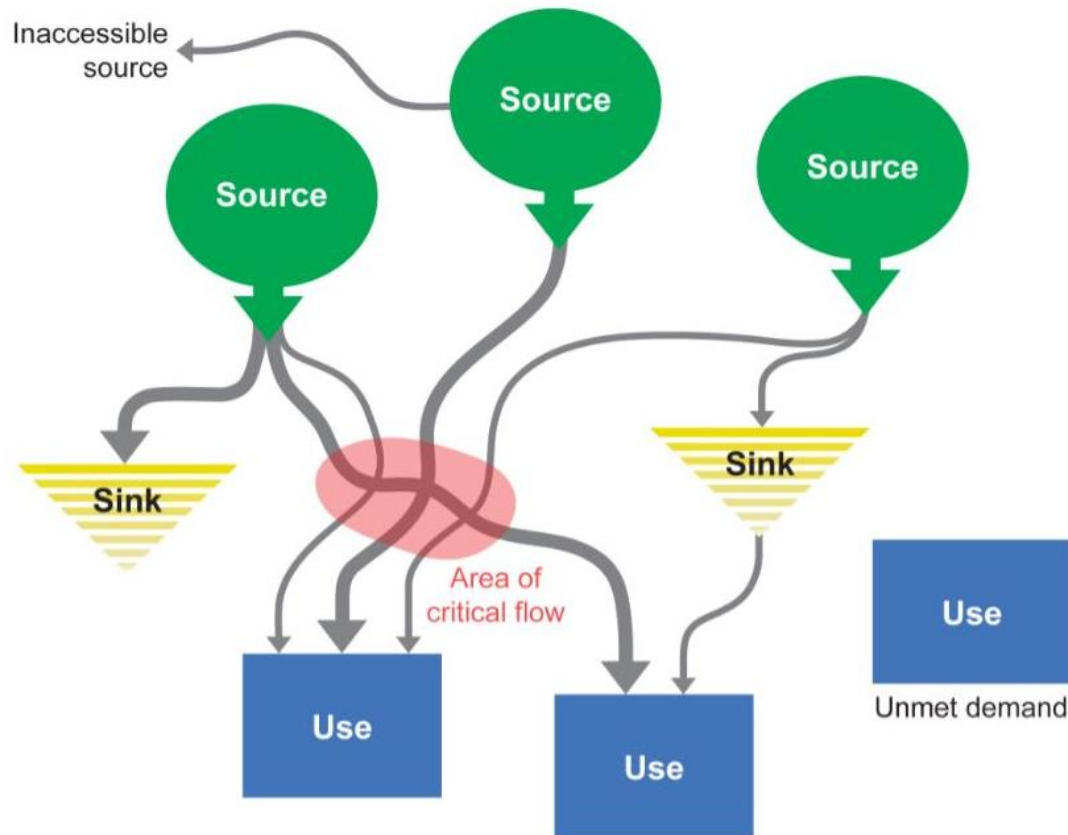
*ARIES: Artificial Intelligence for Ecosystem Services*  
<http://aries.integratedmodelling.org/>

Χρησιμοποιεί μεθόδους τεχνητής νοημοσύνης, π.χ.  
pattern recognition, machine learning.

Σχεδιάζει στοχαστικά δίκτυα (**Bayesian probabilistic networks**), βασιζόμενο στα διαθέσιμα δεδομένα και χτίζοντας λειτουργικές σχέσεις μεταξύ των υπάρχοντων δεδομένων (μη ντετερμινιστικά μοντέλα).



# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ



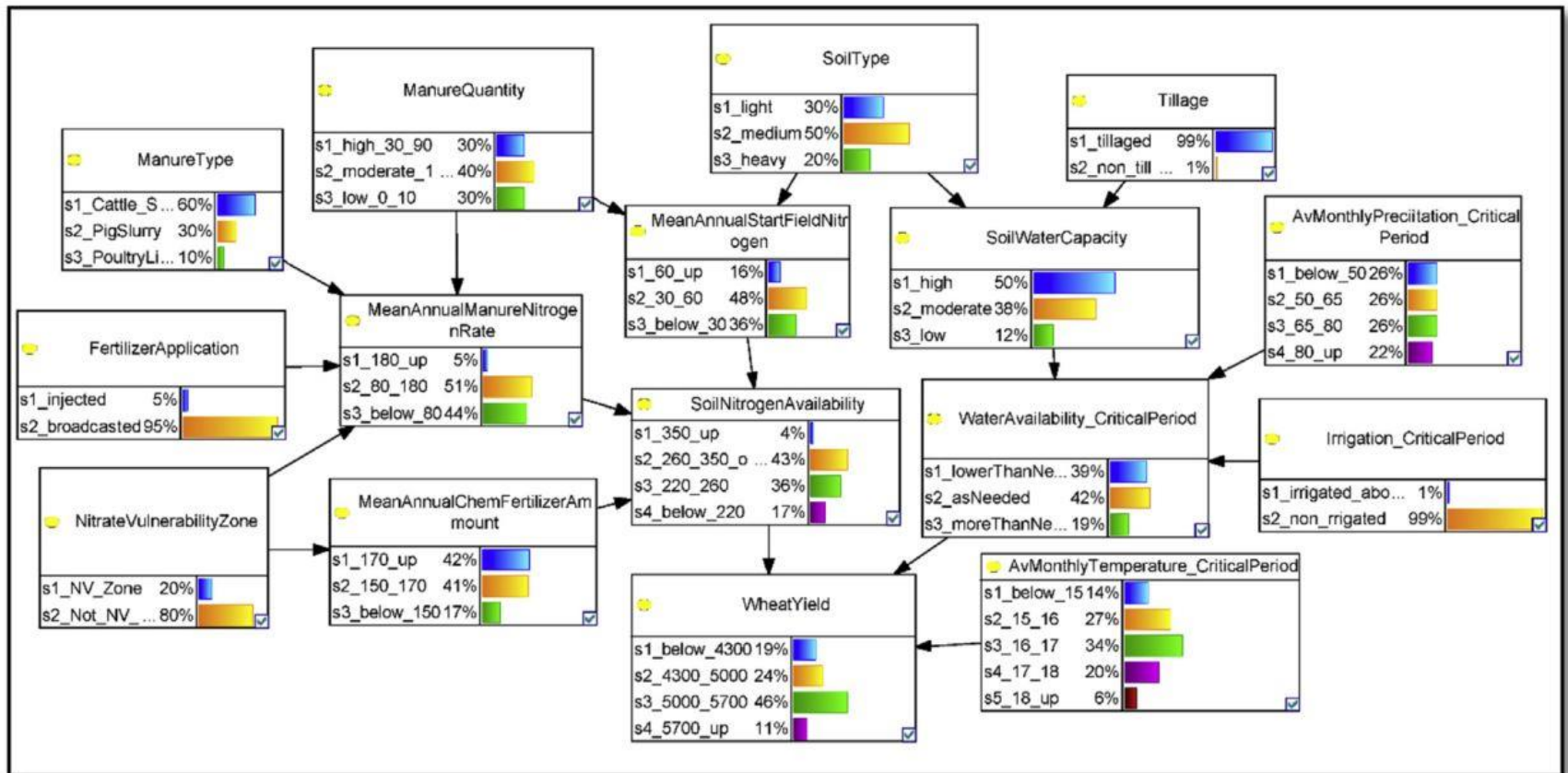
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The screenshot displays the KLAB software interface. The main window shows a map of Metro Vancouver with various regions outlined in red. The interface is divided into several panels:

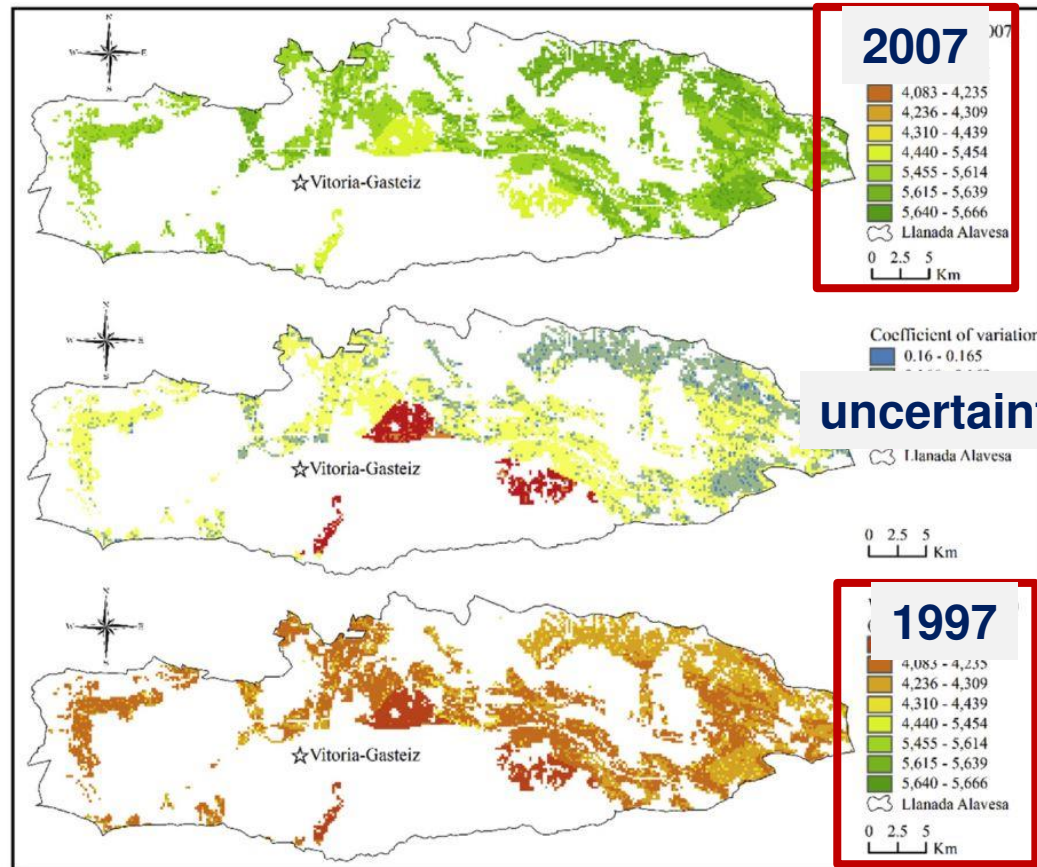
- Left Panel (kLAB Navigator):** A tree view showing the project structure, including folders for 'metro-vancouver' and 'vulnerability.tgz'.
- Central Panel:** A map of Metro Vancouver with various regions outlined in red. A scale bar is visible at the bottom of the map.
- Right Panel (Task):** A task management panel showing the progress of a task named 'aries.metro.vancouver.tutorial.vulnerability.var'. It includes a 'Notification' section with a list of observations and a 'Tasks' section with a table of tasks.
- Bottom Panel (Quick reference):** A panel showing a table of bookmarks and a 'Scenarios' section.

A green circular icon with a downward arrow is overlaid on the bottom left of the map area.

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ



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**USGS**  
science for a changing world

**Social Values for Ecosystem Services (SolVES)**

HOME

**SolVES**  
Social Values for Ecosystem Services

**Downloads**

SolVES 3.0 Tool

**Quick Start**

**SolVES 3.0 Now Available! (ArcGIS 10-compatible)**

**A GIS Application for Assessing, Mapping, and Quantifying Ecosystem Services**

Ecosystem services are the benefits provided by nature, which contribute to human well-being. Services such as recreation and aesthetics. As the use of these benefits becomes more important when assessing possible tradeoffs among ecosystem services, the need for tools used for quantifying and spatially extending these services has developed. SolVES 3.0 is a new GIS extension developed. SolVES 3.0 provides a user-friendly interface for assessing ecosystem services, particularly regarding public use and recreation. The tool allows users to respond to public use and recreation services in a variety of ways.

**Pike and San Isabel National Forests**  
Motorized Recreation\_OPPOSE  
Aesthetic

Value Index

25 12.5 0 25 Miles

Aesthetic:  
Training AUC = 0.8263  
Acceptable model for study area  
Test AUC = 0.7735  
Potential model for value transfer

Refer to the relevant environmental dataset for a description of the categories indicated by the numeric values displayed on the x-axis of any categorical data graphs

- Online, ανοιχτό
- ArcGIS extension
- MAXENT (μοντέλα καταλληλότητας ενδιαιτήματος) για να καθορίσει τις κοινωνικές αξίες των Ο.Υ.
- Τελικό αποτέλεσμα: χάρτες & γραφήματα



# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

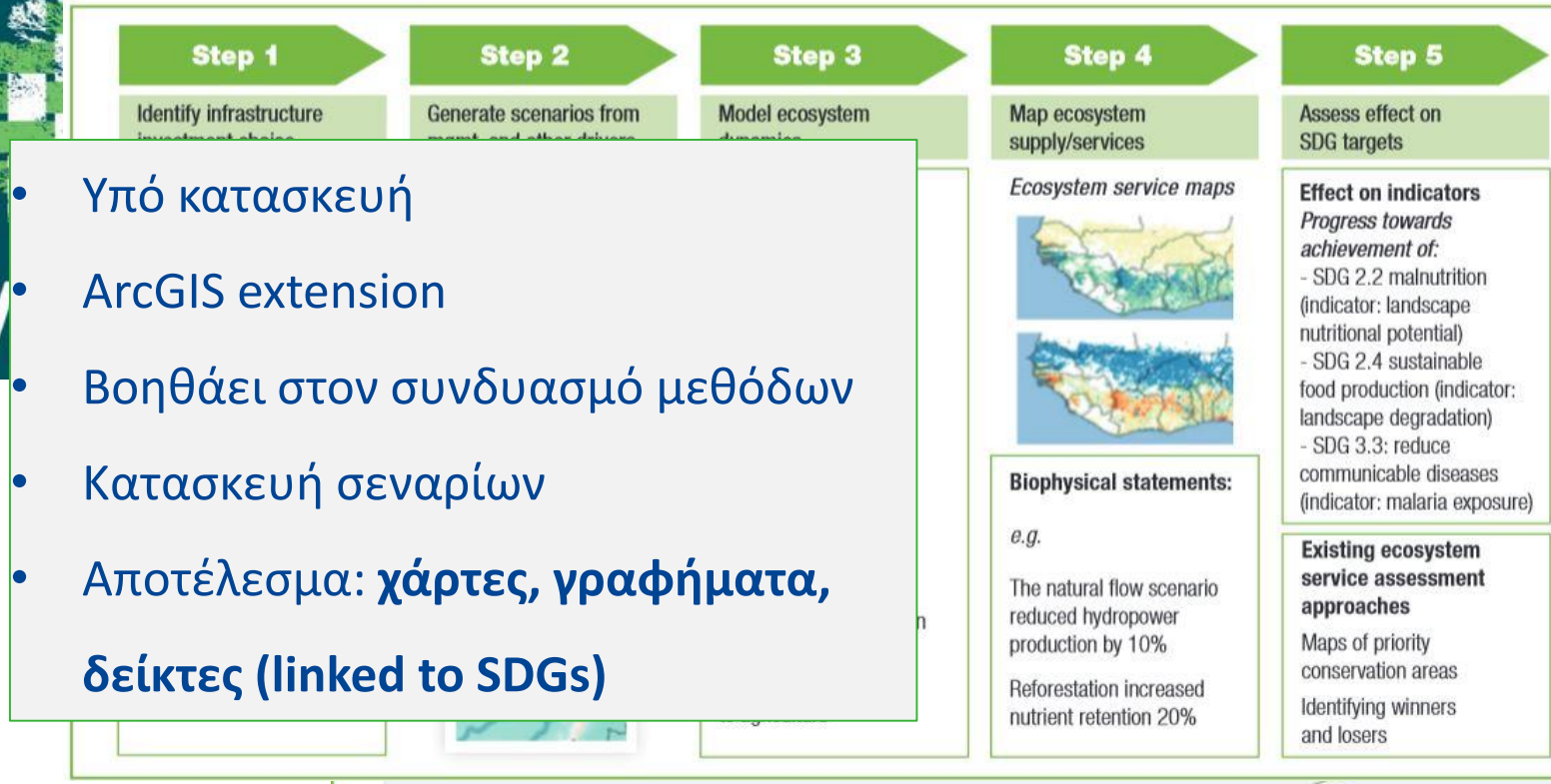


**SERVES (Simple and Effective Resource for Valuing ES)**

- Διαθέσιμο κατόπιν ζήτησης
- Χρησιμοποιεί Κάλυψη γης σαν δεδομένα βάσης
- Cost benefit analysis
- Τα αποτελέσματα είναι οικονομικές αποτιμήσεις (αποτέλεσμα σε excel)
- Έχουν “researcher’s library” η οποία δίνει στον χρήστη πρόσβαση σε βάση δεδομένων με οικονομικές αποτιμήσεις Ο.Υ. (κατόπιν ζήτησης)

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

## Mapping Ecosystem Services to Human well-being



- Υπό κατασκευή
- ArcGIS extension
- Βοηθάει στον συνδυασμό μεθόδων
- Κατασκευή σεναρίων
- Αποτέλεσμα: χάρτες, γραφήματα, δείκτες (linked to SDGs)

Browse individual inputs and outputs in map format

<http://www.naturalcapitalproject.org/MESH.html>

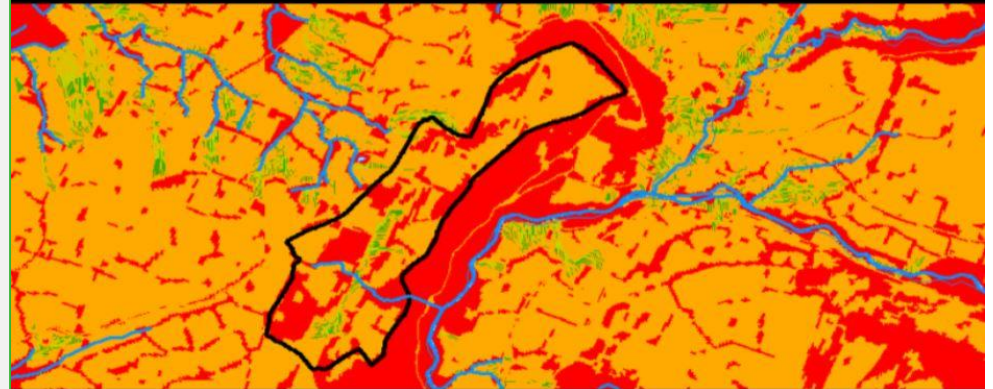
# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

## Polyscape

- Χωρική ανάλυση συσχετίσεων μεταξύ Ο.Υ.
- Πληροφορίες για διαχείριση τοπίου
- Χρειάζεται δεδομένα κάλυψης γης
- Έτοιμα μοντέλα/αλγόριθμοι
- Για αναλύσεις **τοπικής κλίμακας**

## Polyscape

Participatory approaches to spatial planning using visual tools



Dr Tim Pagella, Dr Bethanna Jackson,  
[t.pagella@bangor.ac.uk](mailto:t.pagella@bangor.ac.uk)

<http://www.polyscape.org/software>

*Jackson et al 2013, Landscape Urb Plan 112, 74-88*

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

maptionnaire

WHY / HOW / FEATURES / BUY IT / TO WHOM / CONTACTS / DEMO

INICIAR SESIÓN INSCRIBIRSE

Crowdsource citizen insight on maps

Collaborate, Interact, Discuss

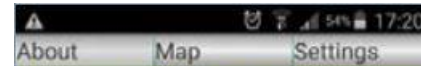
Ask, Collect data, Analyze

[maptionnaire.com](http://maptionnaire.com)

# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ

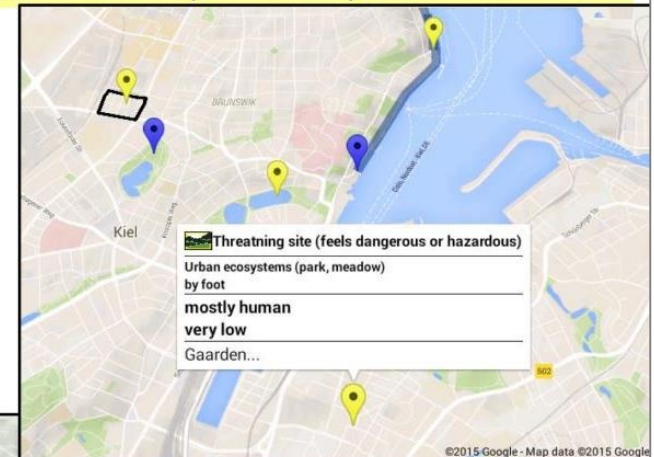


# Γ. ΛΟΓΙΣΜΙΚΑ ΧΑΡΤΟΓΡΑΦΗΣΗΣ /ΜΟΝΤΕΛΟΠΟΙΗΣΗΣ/ ΟΙΚΟΝΟΜΙΚΗΣ ΑΠΟΤΙΜΗΣΗΣ



France (Calais), Germany (Kiel), Mexico (Oaxaca)

- Χρήστης σηματοδοτεί περιοχή που αντιλαμβάνεται την Ο.Υ.
- Χαρτογραφία ροή Ο.Υ.
- Available for download on ANDROID phones/tablets v4.1 or later
- Χρήστες: επιστημονική κοινότητα και οποιαδήποτε κοινωνική ομάδα
- Αποτέλεσμα: **χάρτες** με σημεία παροχής Ο.Υ.



# Δ. ΔΗΜΟΣΙΕΥΣΗ ΑΠΟΤΕΛΕΣΜΑΤΟΣ (ΒΑΣΕΙΣ ΔΕΔΟΜΕΝΩΝ Ο.Υ.)

Assessments and Services

## Catalogue of Assessments and Services

<http://catalog.ipbes.net/>

Advanced search CLEAR

Geographical scale

Systems assessed

Ecosystem services/functions assessed

Tools and approaches used

PRINT SEARCH DOWNLOAD EXCEL

Title	Countries
Adaptation to change in Interlinked Cultivated and Wetland Ecosystems: A Study in Western India	India
Adaption strategies for the sustainability for coffee producers and ecosystems in the Colombian Andean region	Colombia
Africa Environment Outlook (2nd report)	-
A global map of the functionality of terrestrial ecosystems	-
Agricultural Resources and Environmental Indicators	United States
Agriculture and biodiversity: benefiting from synergies. Multidisciplinary Scientific Assessment.	France
Alberta Ecosystem Services Approach Pilot on Wetlands	Canada
Alien Species in Norway - with the Norwegian Black List 2012	Multiple
Altai-Sayan Ecoregion	Multiple

# Δ. ΔΗΜΟΣΙΕΥΣΗ ΑΠΟΤΕΛΕΣΜΑΤΟΣ (ΒΑΣΕΙΣ ΔΕΔΟΜΕΝΩΝ Ο.Υ.)

**ESP**  
The Ecosystem Services Partnership Visualization tool

Navigation: About | Maps | Data | Upload | Help

Search:  Data restricted by: nothing | Clear all filters

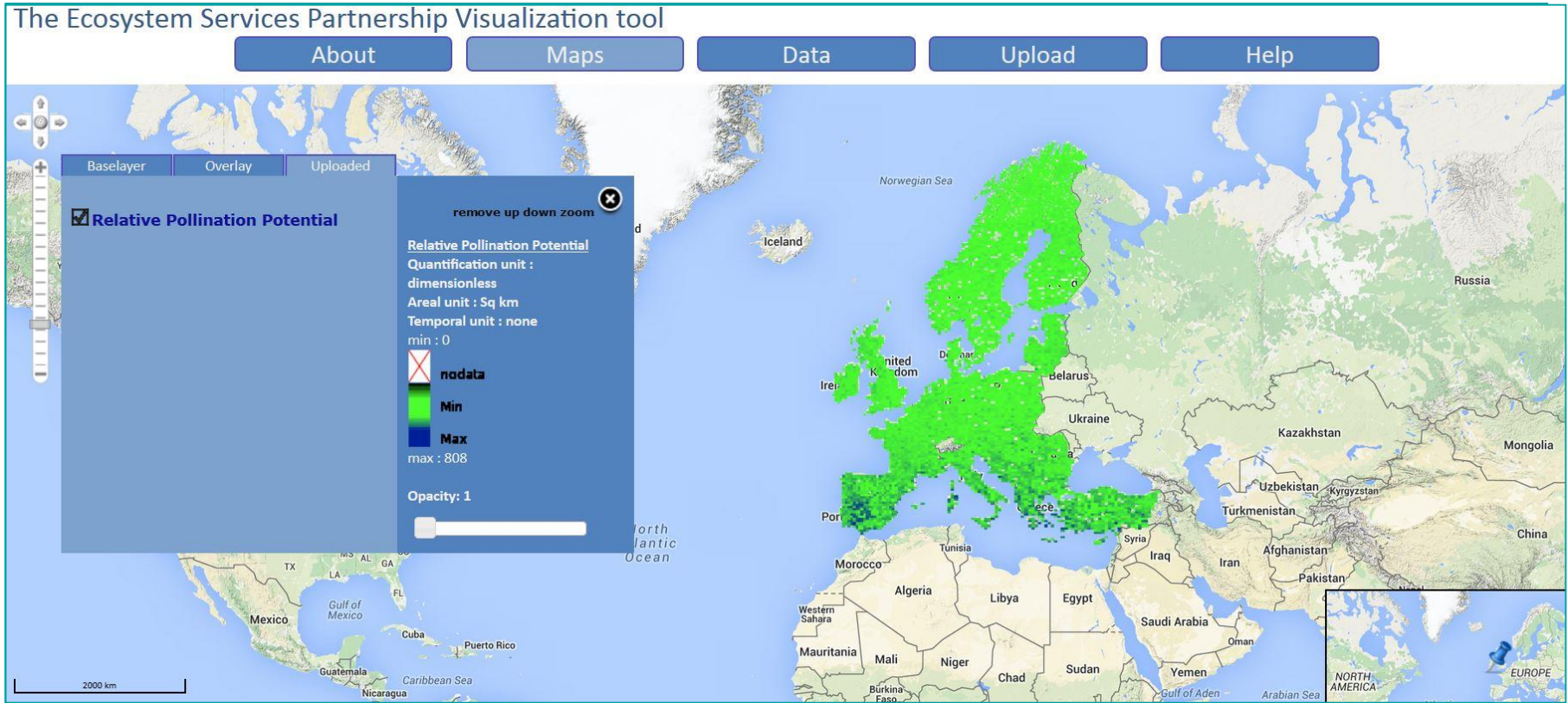
Indicator	Location	Study	Duration	Purpose
<input type="checkbox"/> Relative Pollination Potential	European Union	<b>Linking Land Cover Data and Crop Yields for Mapping and Assessment of Pollination Services in Europe</b>	null	Ecosystem Service Quantification
<input type="checkbox"/> Crop Pollination Deficit	European Union	<b>Linking Land Cover Data and Crop Yields for Mapping and Assessment of Pollination Services in Europe</b>	null	Ecosystem Service Quantification
<input type="checkbox"/> Recreation potential	European Union	<b>Mapping cultural ecosystem services: A framework to assess the potential for outdoor recreation across the EU</b>	null	Ecosystem Service Quantification
<input type="checkbox"/> Net Ecosystem Productivity	European Union	<b>A European assessment of the provision of ecosystem services</b>	2010-2011	Ecosystem Service Quantification
<input type="checkbox"/> Mangrove Primary Production	Caribbean basin	<b>Marine and coastal carbon stocks in the Caribbean basin</b>	2012-2013	Prioritization of intervention areas
<input type="checkbox"/> Asthma exacerbation avoided due to nitrogen dioxide removed	Durham, North Carolina	<b>Health Benefits of Pollutants Removed by Tree Cover (EPA)</b>	null	Ecosystem Service Quantification
<input type="checkbox"/> Coastal Protection Capacity	European Union	<b>Assessment of coastal protection as an ecosystem service in Europe</b>	null	Ecosystem Service Quantification
<input type="checkbox"/> Chla primary production	Caribbean basin	<b>Marine and coastal carbon stocks in the Caribbean basin</b>	2012-2013	Prioritization of intervention areas
<input type="checkbox"/> Pollinator potential	Great Britain (UK)	<b>Mapping pollination services for British agriculture</b>	2011- 2013	Scenario impact assessment

<http://esp-mapping.net/>

Drakou et al 2015, *EcoServices* 13, 134-140



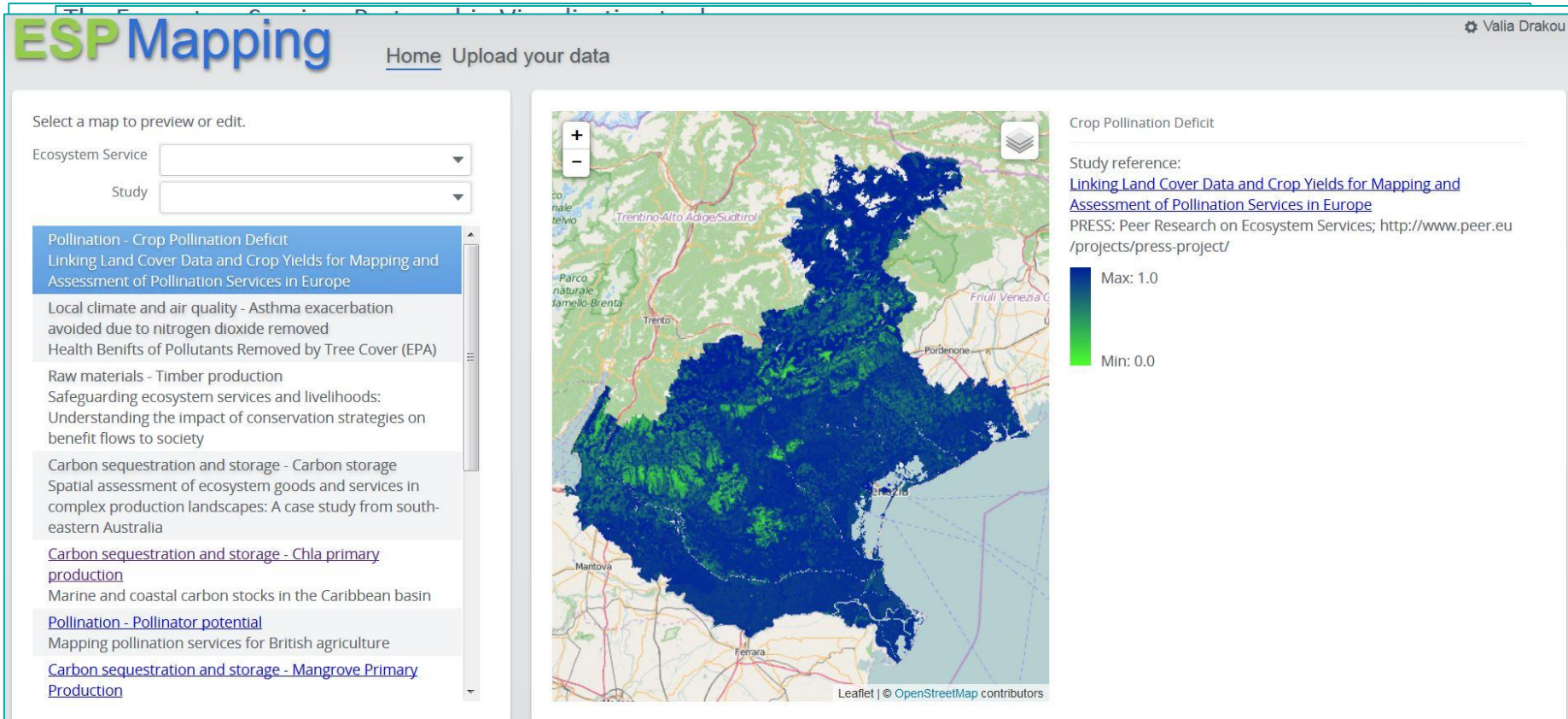
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<http://esp-mapping.net/>

Drakou et al 2015, *EcoServices* 13, 134-140

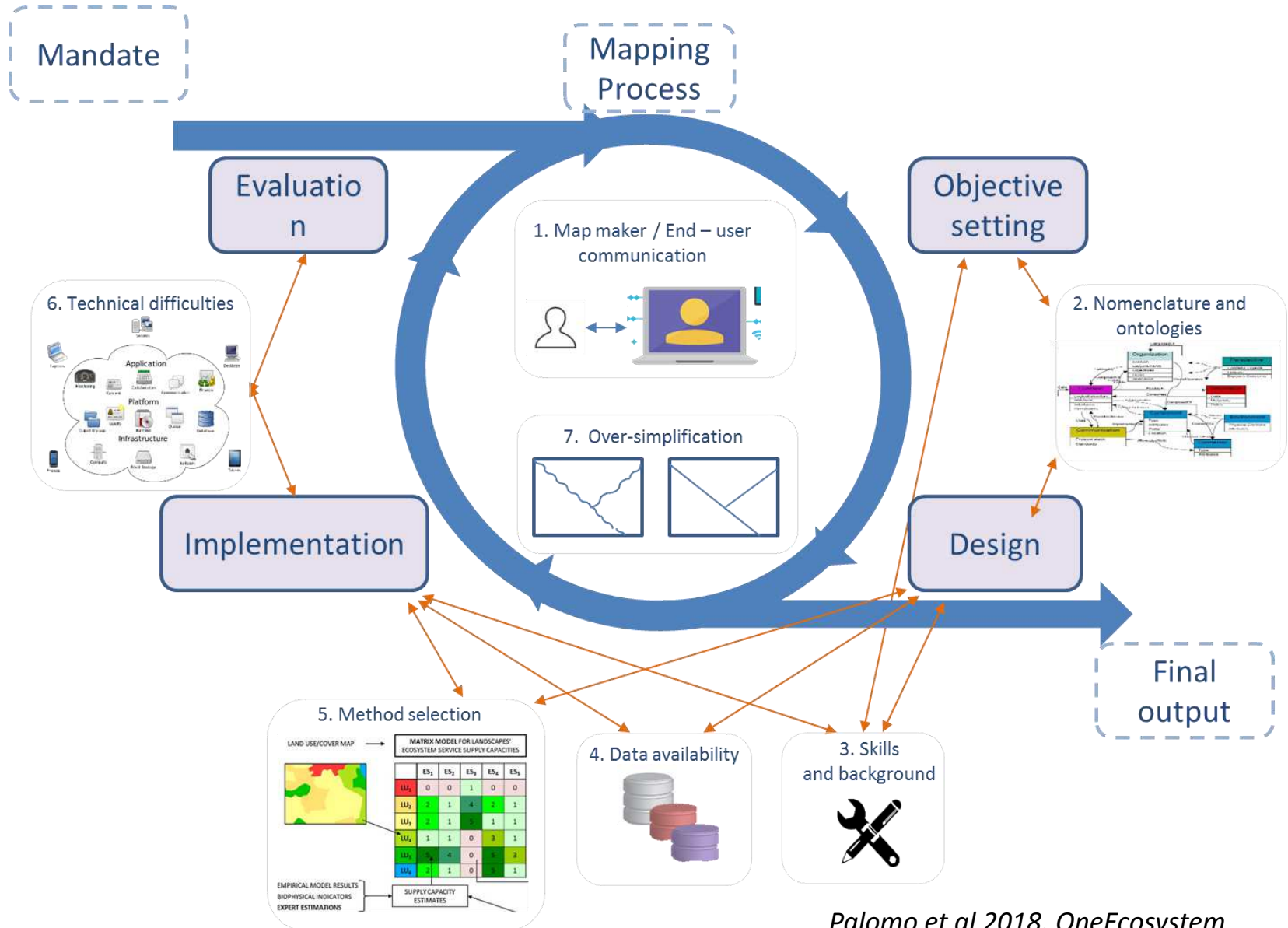
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<http://esp-mapping.net/>

Drakou et al 2015, *EcoServices* 13, 134-140

# ΠΑΡΑΤΗΡΟΥΜΕΝΕΣ ΔΥΣΚΟΛΙΕΣ



# ΠΙΘΑΝΕΣ ΛΥΣΕΙΣ

---

- Περισσότερα ανοιχτά δεδομένα
- Ενίσχυση αποτιμήσεων τοπικής κλίμακας
- Προσαρμογή μεθόδων σε τοπικές ανάγκες
- Συλλογή κοινωνικο-οικονομικών δεδομένων
- Συνεχής συμμετοχή φορέων-τοπικής κοινωνίας σε επιστημονικές αναλύσεις / χαρτογραφήσεις
- Καλύτερη κατάρτιση/εκπαίδευση
- Ενημέρωση για την αξία των Ο.Υ.



---

Ευχαριστώ για την προσοχή σας

[e.drakou@utwente.nl](mailto:e.drakou@utwente.nl)

