MOVE ON

Site d'ancrage : La Réunion

Cathleen Cybèle
Agence Régionale de Développement

NEXA

30 Janvier 2023




Coordinated by: GOVERNO DOS AÇORES, FRCT

Partners: Leibniz Universität Hannover, Universidad Rey Juan Carlos, Nexa, UNIVERSITÉ DE LA RÉUNION, Biodiversidad Atlántica y Sostenibilidad, UNIVERSITY OF PORTSMOUTH, WWF, IRD Institut de Recherche pour le Développement, Atlantic Area, Universitas Athenaeum Studiorum, UNIVERSITY OF TRENTO, NBE NOVA BLUE ENVIRONMENT

Supported by:

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Le projet MOVE-ON

MOVE-ON :

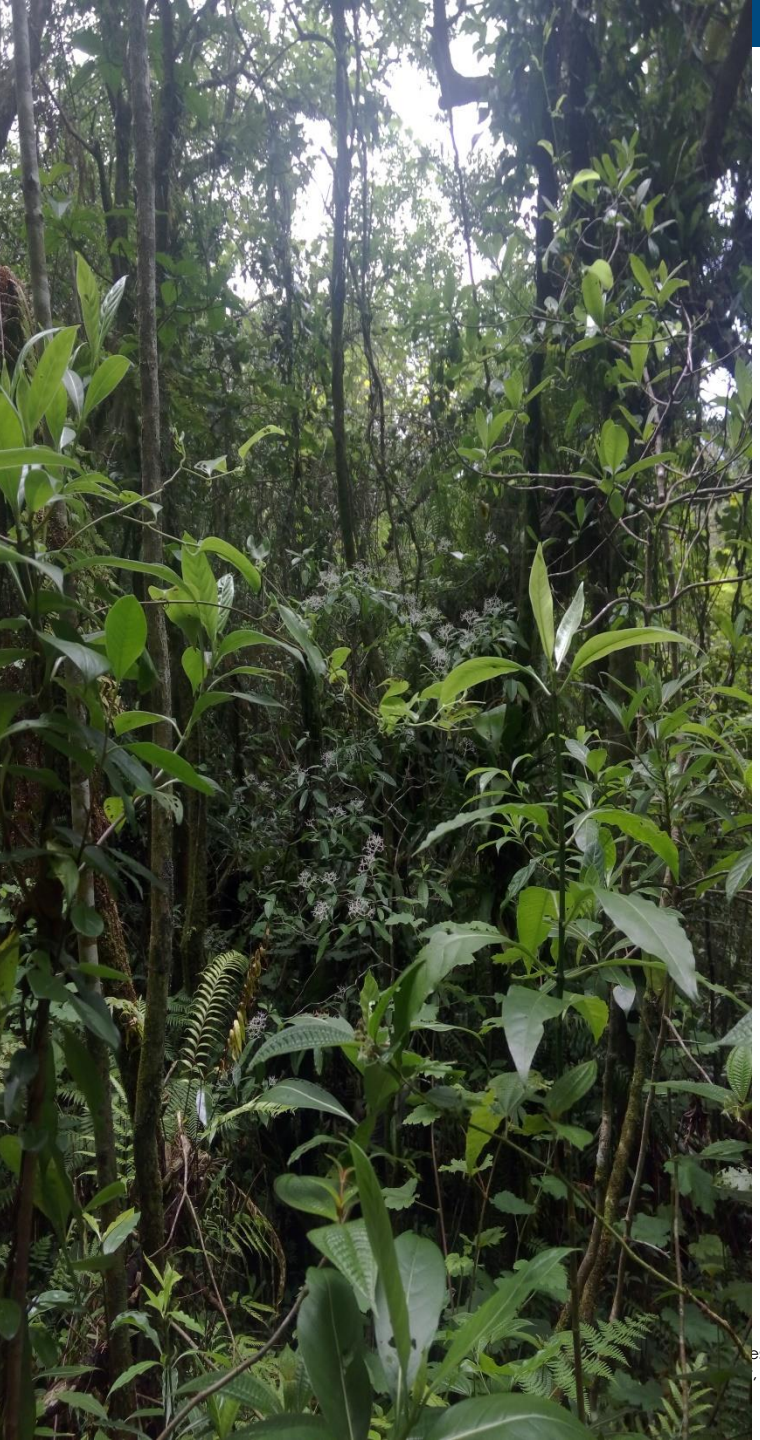
« faire progresser les méthodes de cartographie et d'évaluation des écosystèmes et de leurs services dans les régions ultrapériphérique et pays et territoires d'outre-mer »

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Fiche projet

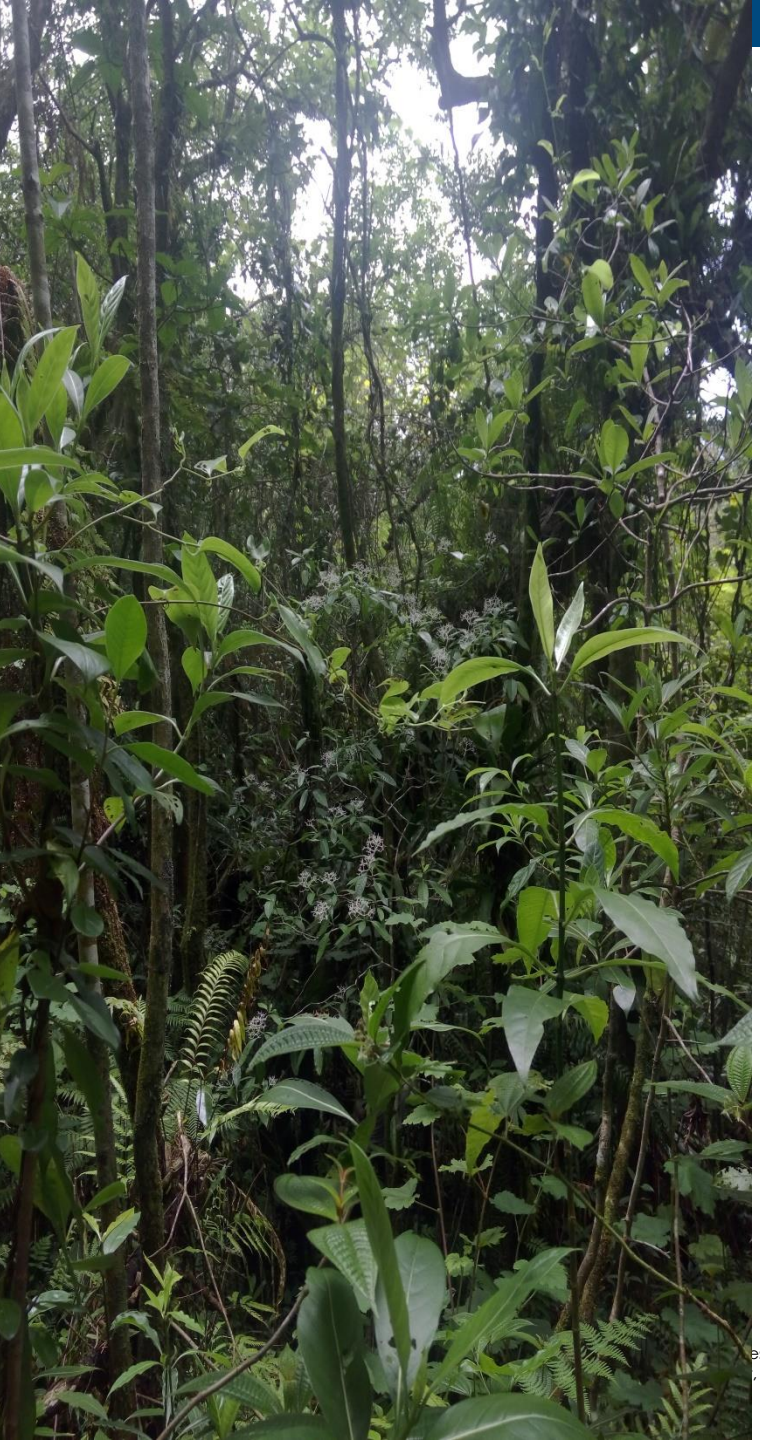
- Implémentation : 2020 – 2023
- Reference: ENV/2019/CFP/MAES OR OCT 2
- Subvention Réunion: 210 178 €
- Subvention total du projet : 1 499 856 €

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2



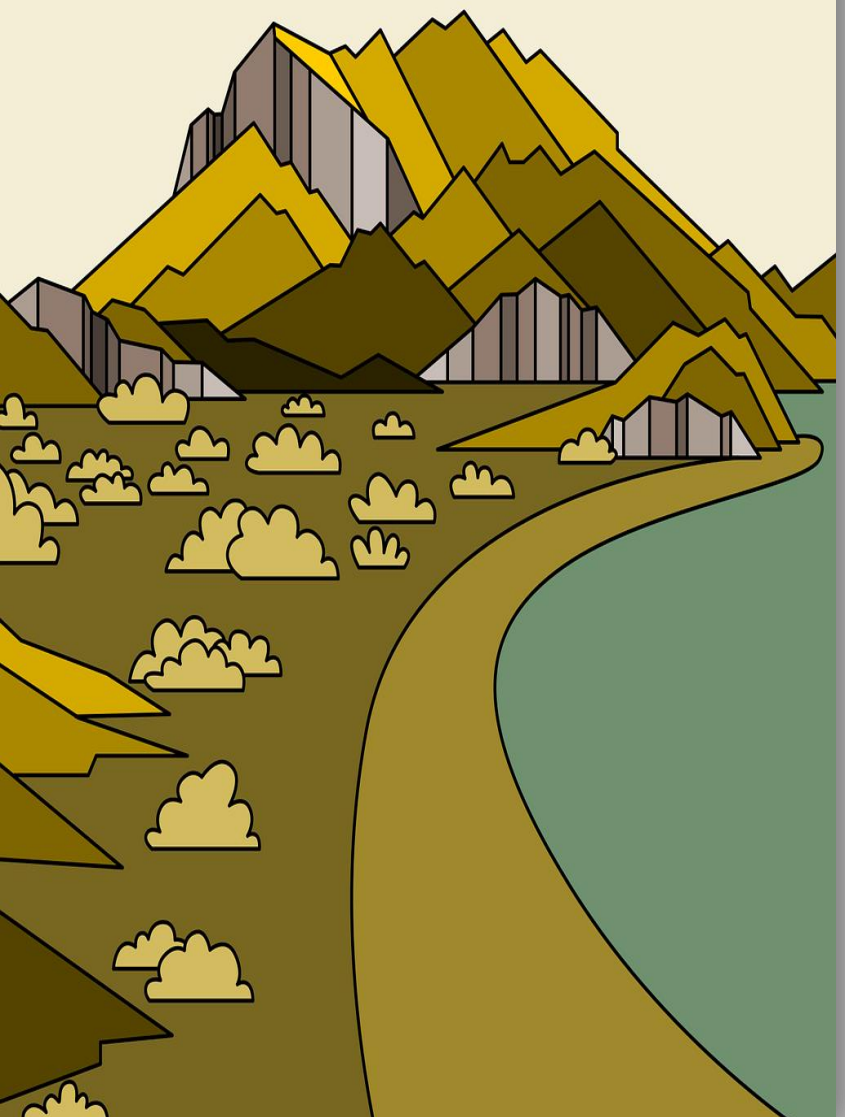
Contexte

- Face à l'accélération de la disparition des espèces et des habitats
- Actions prioritaires de la stratégie européenne de biodiversité



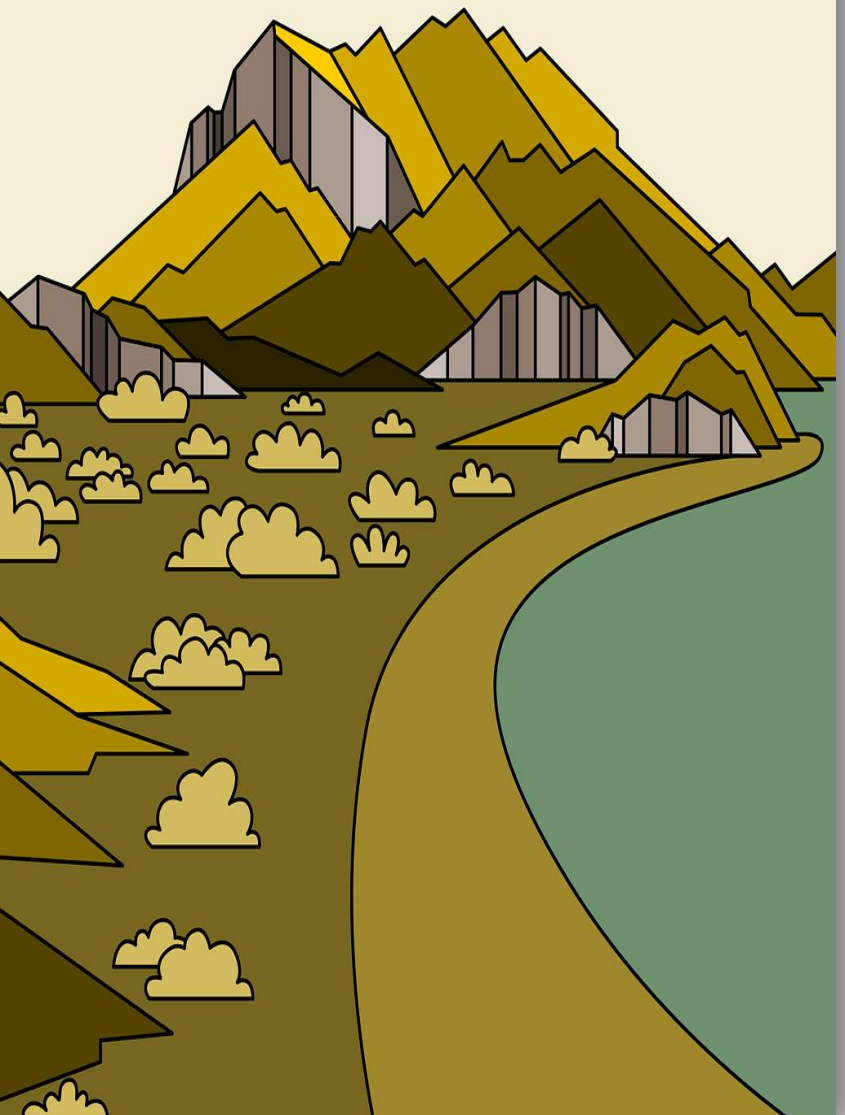
Contexte

- Face à l'accélération de la disparition des espèces et des habitats
- Actions prioritaires de la stratégie européenne de biodiversité



Contexte

- Connaissance des services écosystémiques parcellaire pour les écosystèmes continentaux, plus rares encore sont les travaux portant sur les territoires ultramarins qui accueillent pourtant la majeure partie de la biodiversité européenne (80% dans les RUP par exemple



Contexte

- C'est l'objectif de l'initiative MAES "Mapping and Assessment of Ecosystems and their Services" porté par la Direction générale de l'Environnement de la commission européenne

Et comment?

- Les objectifs des projets MOVE et MOVE ON sont de rendre applicable aux régions ultramarines les outils de cartographie et d'évaluation de l'état et de l'évolution des écosystèmes et des services associés développés pour des territoires continentaux

Les régions ultrapériphérique (RUP)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Les régions ultrapériphérique (RUP)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Actions

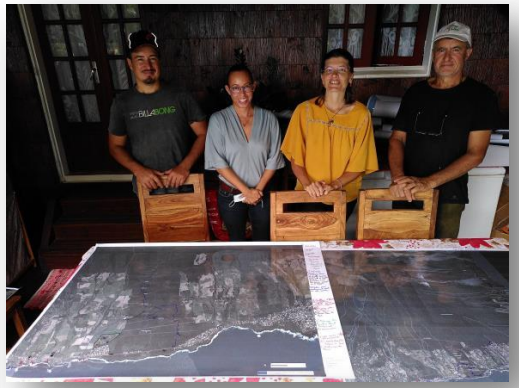
- Faire un état des lieux, une sélection des méthodologies d'évaluation et de cartographie les plus pertinentes et un travail de déclinaison opérationnelle des outils pour des territoires géographiquement délimités
- Implémenter les méthodologies sélectionnées sur des sites pilotes. Le site pilote retenu pour La Réunion est le corridor écologique de St Philippe (du littoral de Mare Longue jusqu'au volcan) et un atelier au niveau régional

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Cartographie des SE (Récreation, tourisme & bien-être) Focus Groups

Activités socio-économiques de la commune > Développement économique du territoire

Echelle: **Mare-Longue & Saint-Philippe**



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

InVEST
Visitation : Loisirs et Tourisme

Stanford University

natural capital PROJECT | NATURAL CAPITAL PROJECT

InVEST

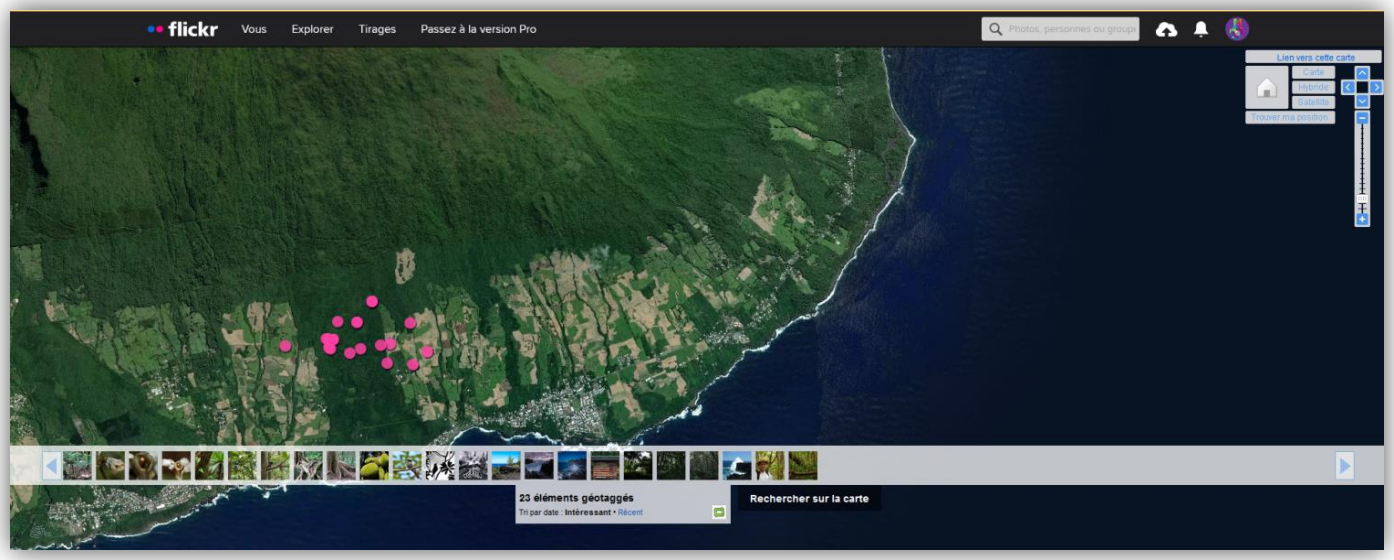
integrated valuation of ecosystem services and tradeoffs

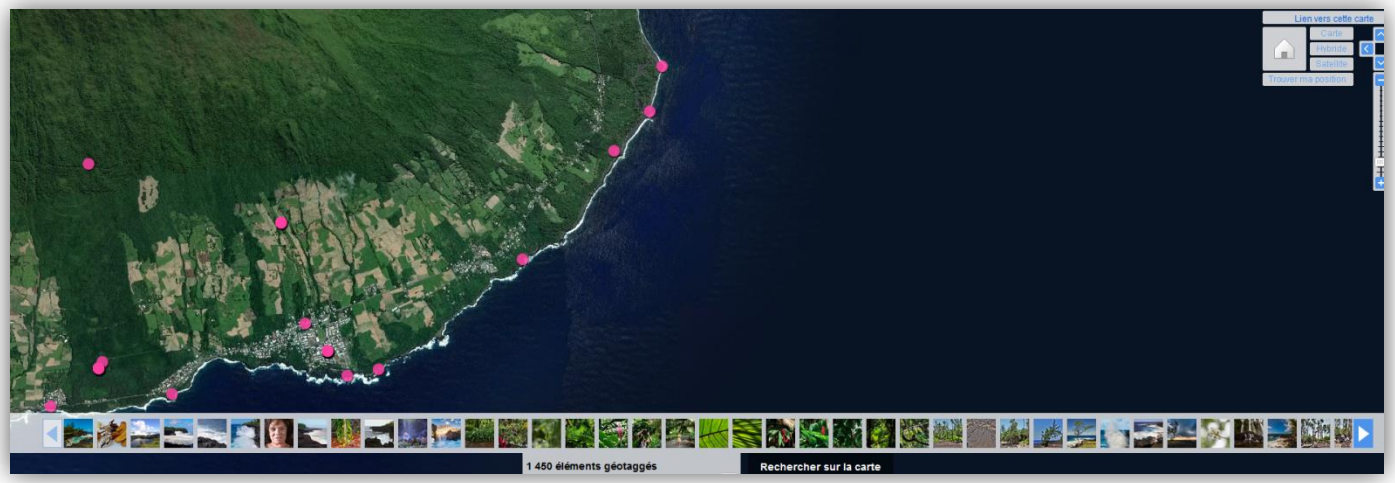
Le model :

- Quelles caractéristiques de l'environnement (naturel/habitat) influencent la répartition spatiale des taux de fréquentation, et quels sont les niveaux relatifs d'influence de ces caractéristiques ?

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

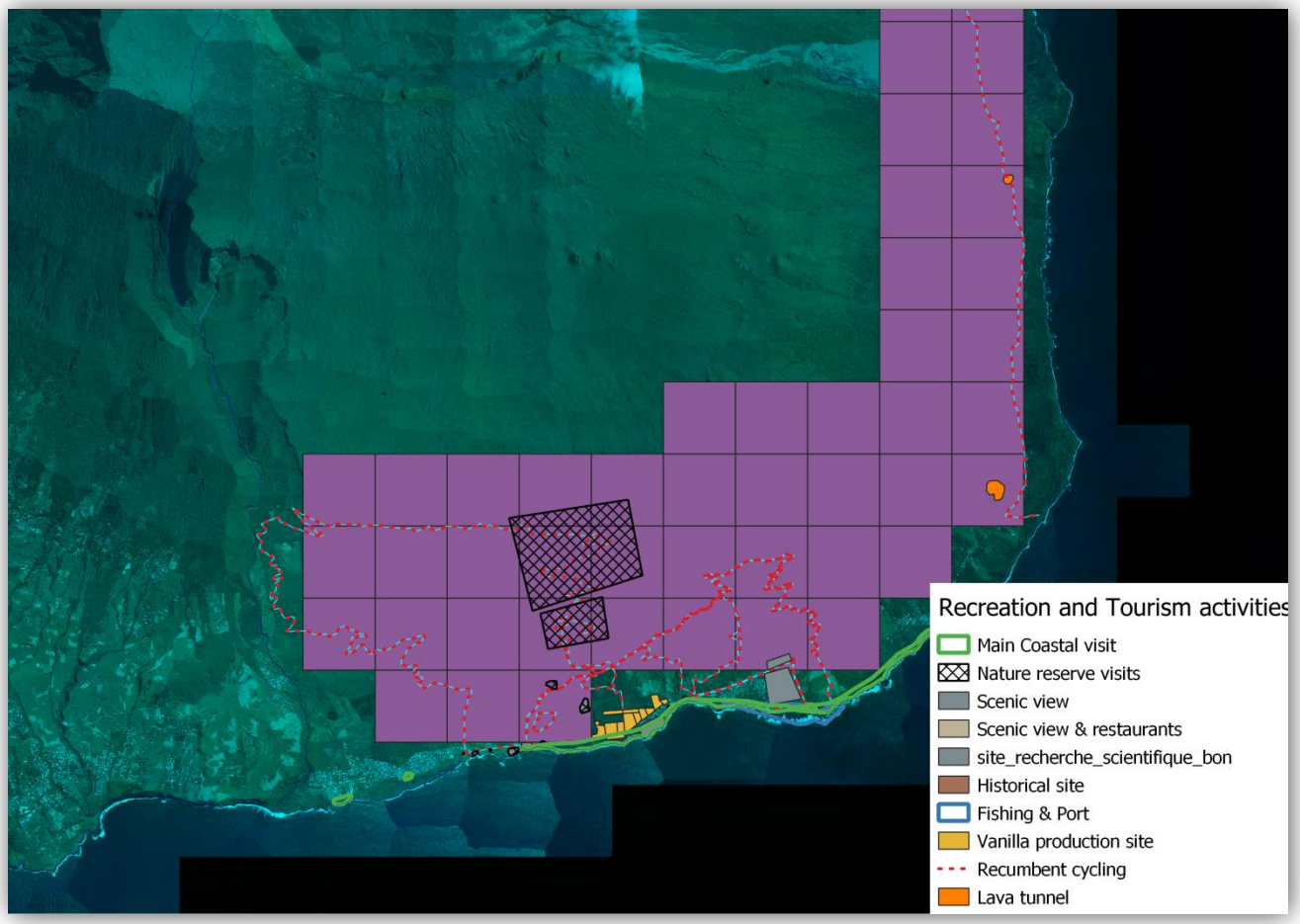
Flickr : Anchor site





This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Work in progress…



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

MOVE ON

UNIVERSITÀ DI TRENTO

PLANES lab
PLANNING FOR ECOSYSTEM SERVICES AND URBAN SUSTAINABILITY

Methods and tools for mapping ecosystem services: the MAES framework to support landscape-urban planning decisions

Francesco Sica, Ph.D.

Jarumi Kato Huerta, Ph.D.

Prof. Davide Geneletti




Coordinated by: GOVERNO DOS AÇORES, FRCT

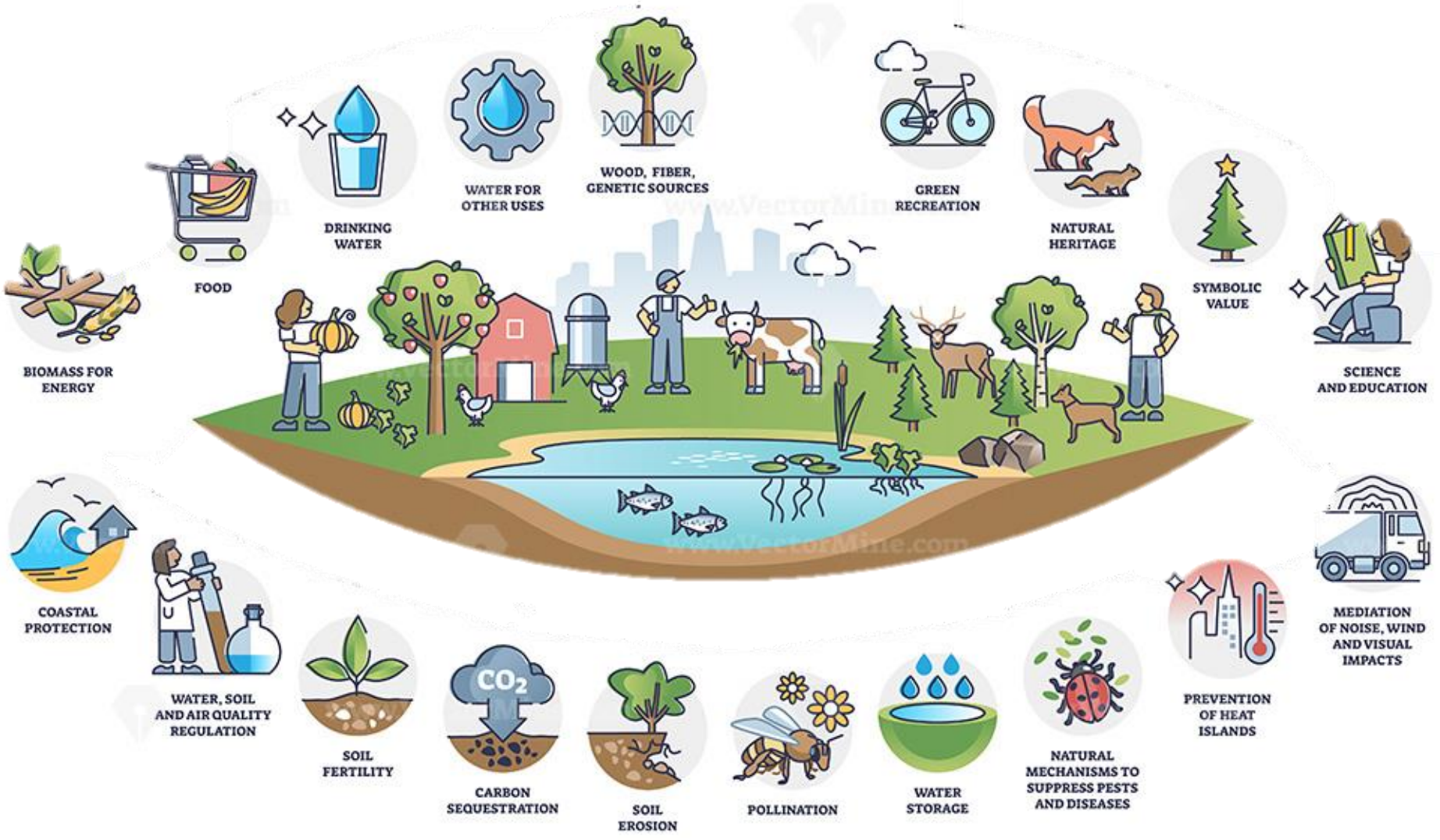
Partners: Leibniz Universität Hannover, Universidad Rey Juan Carlos, Nexa, UR Université de La Réunion, Biodiversidad Atlántica y Sostenibilidad, University of Portsmouth, WWF, IRD Institut de Recherche pour le Développement, Azores Atlantic, University of Trento, NBE Nova Blue Environment

Supported by:

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

30/01/2023

ECOSYSTEM SERVICES



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

ES classification proposals

- Millennium Ecosystem Assessment
- TEEB – The Economics of Ecosystems and Biodiversity (https://teebweb.org/)
- SEEA – System of Environmental and Economic Accounting - https://seea.un.org/ecosystem-accounting
- CICES - Common International Classification of Ecosystem Services (www.cices.eu)
- …

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

ES classification

cultural services

- Recreation and tourism
- Aesthetic values
- Inspiration
- Education and research
- Spiritual and religious experience
- Cultural identity and heritage
- Mental well-being and health
- Peace and stability

provisioning services

- Food
- Water
- Raw material
- Medicinal resources
- Ornamental resources
- Genetic resources

supporting services

- Ecosystem process maintenance
- Lifecycle maintenance
- Biodiversity maintenance and protection

regulating services

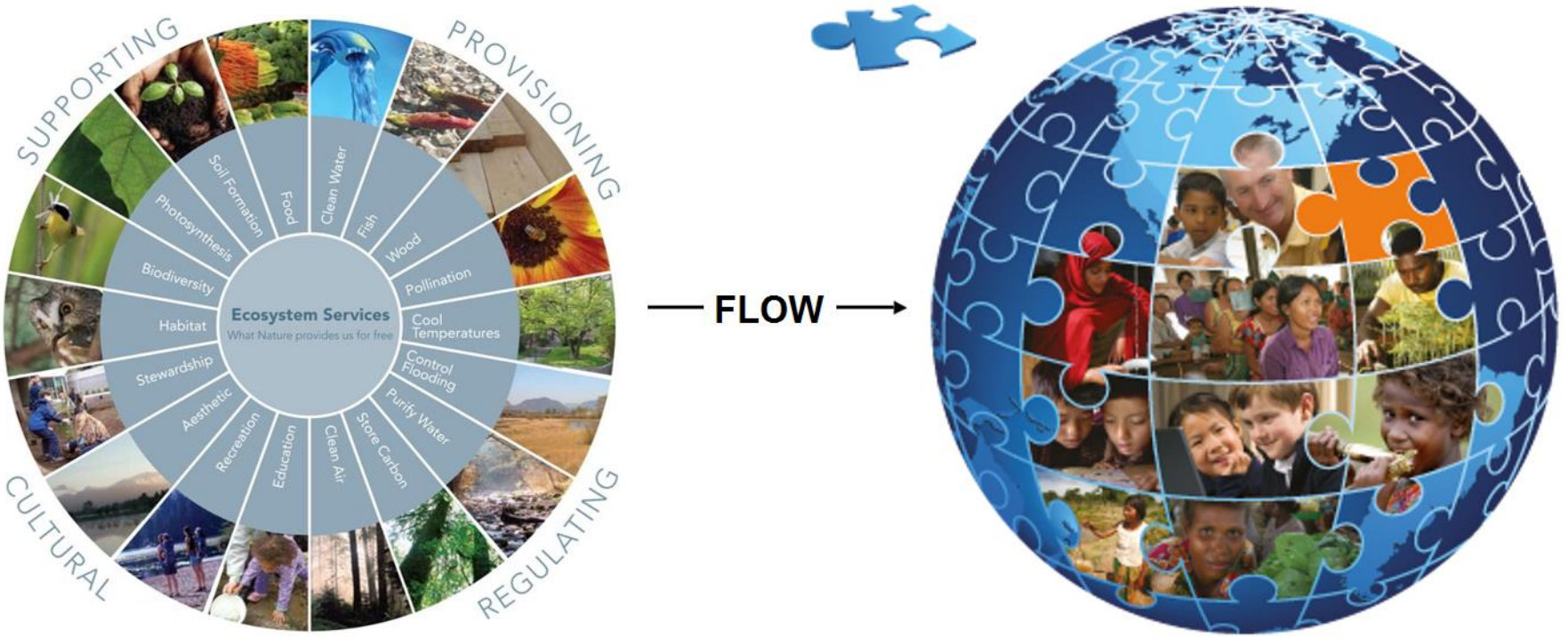
- Climate
- Natural hazards regulation
- Purification and detoxification of water, air and soil
- Water / water flow regulation
- Erosion and soil fertility regulation
- Pollination
- Pest and disease regulation

Figure 1: **Ecosystem services and related goods (adapted from multiple sources including the Millennium Ecosystem Assessment, 2005)**

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

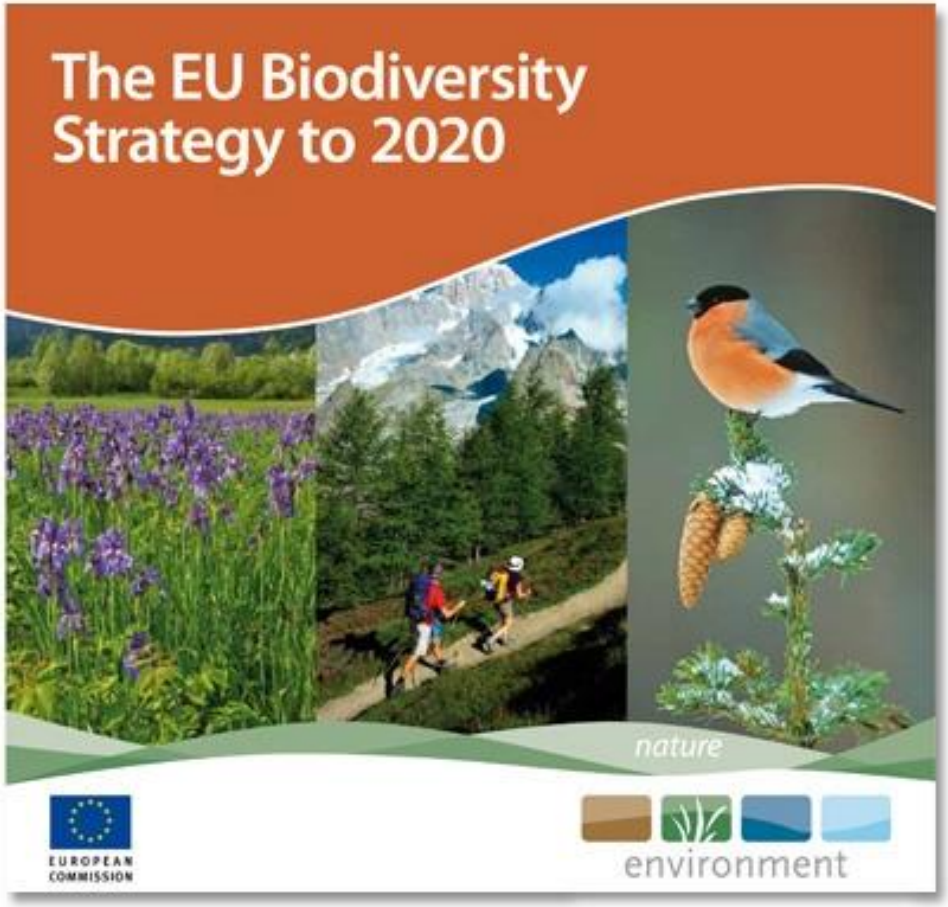
"… the benefits that people obtain from ecosystems"

Millennium Ecosystem Assessment, 2005



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

How to assess these ES? Introducing MAES: Mapping and Assessment of Ecosystem Services



Target 2:

"*to improve knowledge of ecosystems and their services in the EU (**Action 5**) – the member states shall **map and assess the state of ecosystems and their services** in their national territory…*"

Protecting ecosystems and biodiversity remain key policy targets in the EU's biodiversity strategy for 2030 and in the European Green Deal.

http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

The seven steps of MAES

STEP 1 – Identification of policy questions

STEP 2 - Identification of relevant stakeholders

STEP 3 - Network creation/Involvement of stakeholders

STEP 4 - Mapping and assessment process

STEP 5 - Case study application

STEP 6 - Dissemination and Communication

STEP 7 - Implementation

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

STEP 1 – Identification of policy questions

STEP 2 - Identification of relevant stakeholders

STEP 3 - Network creation/Involvement of stakeholders

STEP 4 - Mapping and assessment process

STEP 5 - Case study application

STEP 6 - Dissemination and Communication

STEP 7 - Implementation

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

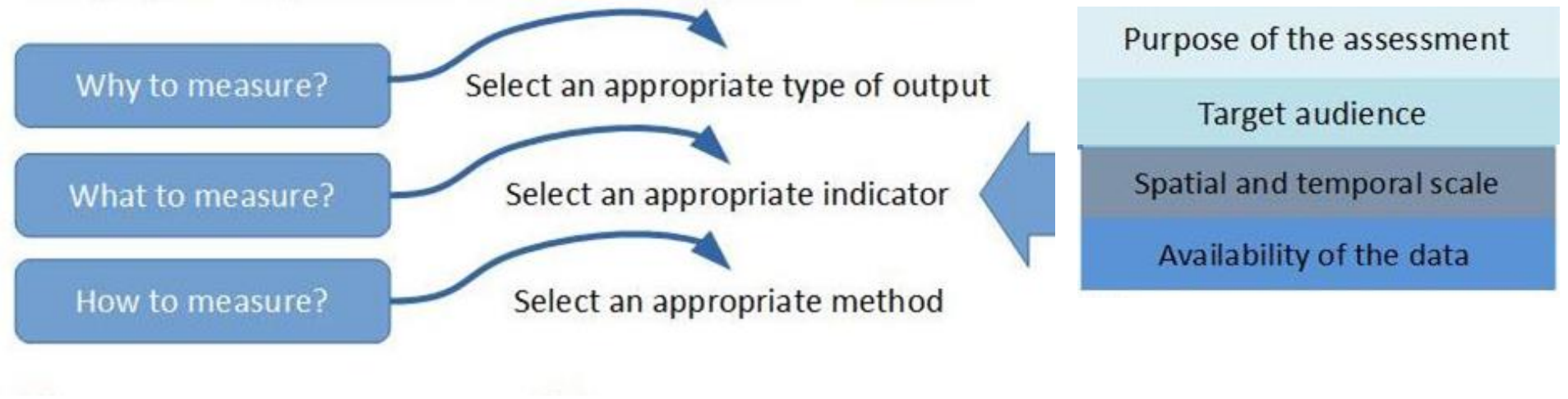
Three main categories of ES assessment approaches

BIOPHYSICAL	SOCIAL	ECONOMIC
Based on quantification of different parameters of **biotic and abiotic structure** that determine the provision of ES.	involve measure of **individual** and **collective preferences** to support the operationalization and further development of the ES concept.	Involve measuring the **economic value of ES**, including its spatial variation, and structuring this information to support decision making and the design of policy instruments.
Vihervaara et al., (2018)	*Santos-Martin et al., (2018)*	*Brander et al., (2018)*

The EU-funded project ESMERALDA developed comprehensive guidelines for each of them.
Available here:
http://www.esmeralda-project.eu/documents/1/

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Selecting methods: the rationale



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Biophysical methods: a classification

1

Direct measurements

- Field observations
- Surveys and questionnaires
- Remote sensing and earth observations

2

Indirect measurements

- Remote sensing and earth observation derivatives (NDVI, land cover, surface temperature)
- Use of statistical data
- Spatial proxy methods

3

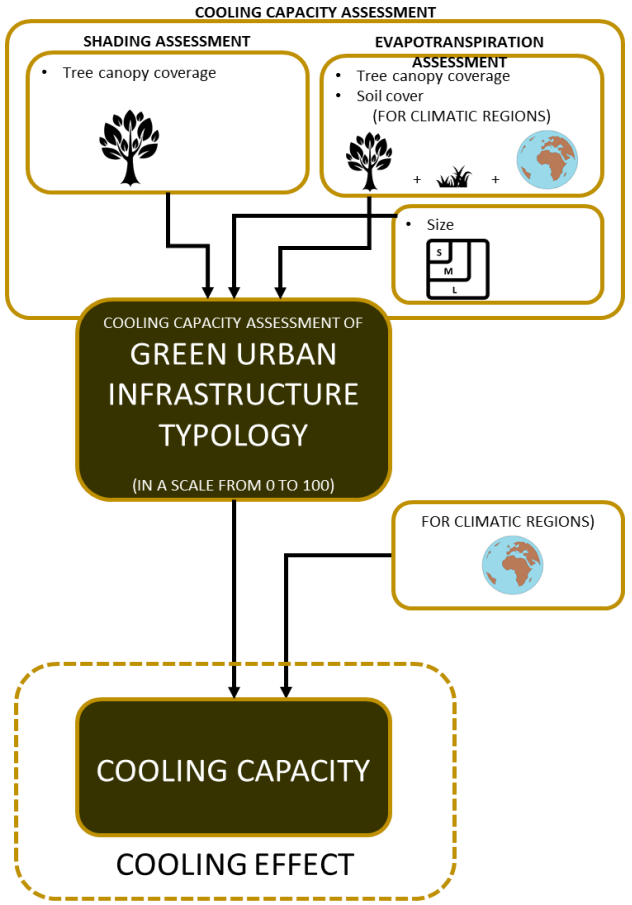
Modelling

- Phenomenological models
- Macroecological models
- Trait-based models
- Process-based models
- Statistical models
- Ecological connectivity models
- State and transition models

Vihervaara et al. (2018). Report on biophysical mapping and assessment methods for ES. D3.3 EU H2020 ESMERALDA Project, Grant No. 642007.

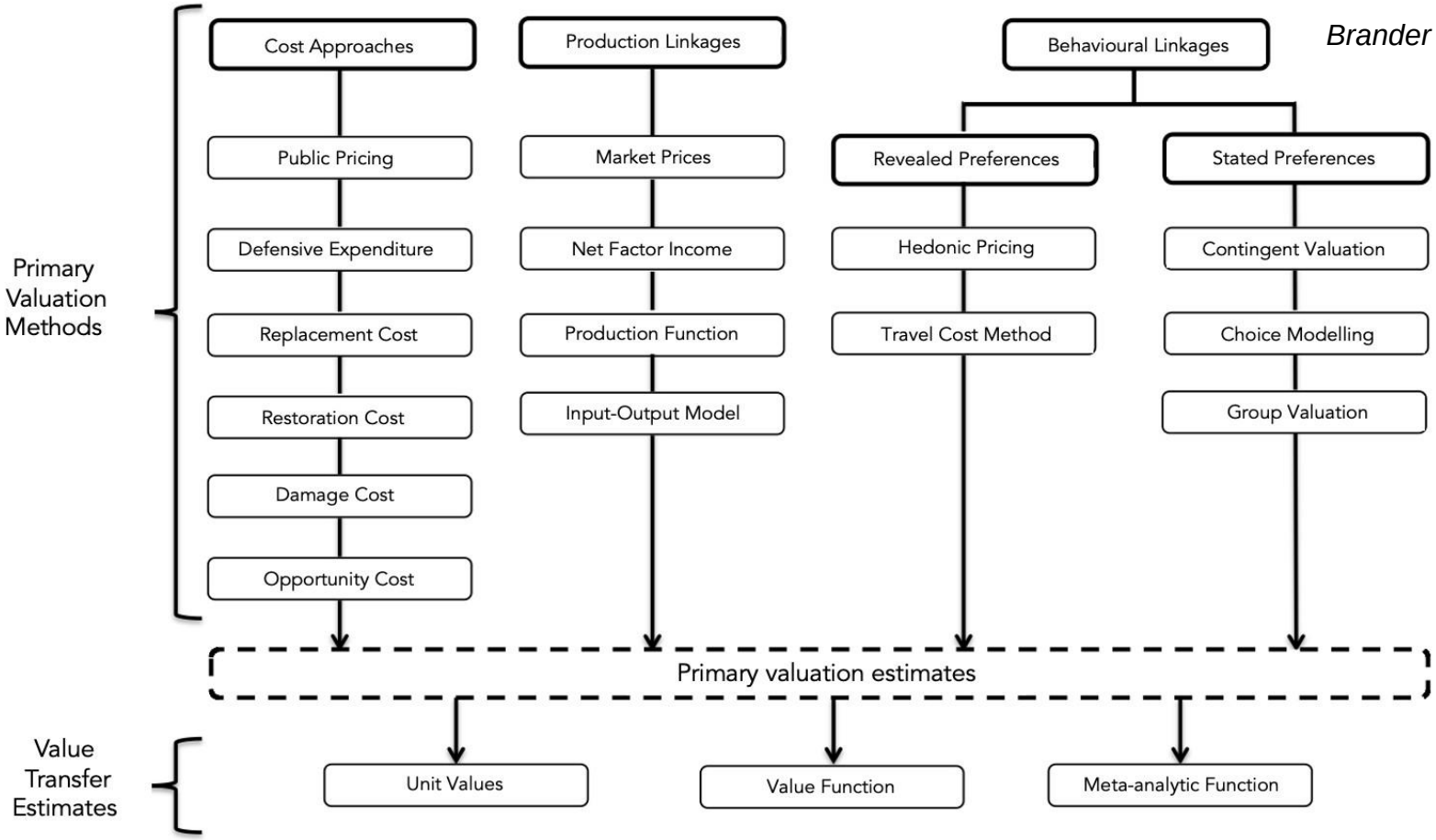
This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Modelling the cooling capacity of green spaces



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

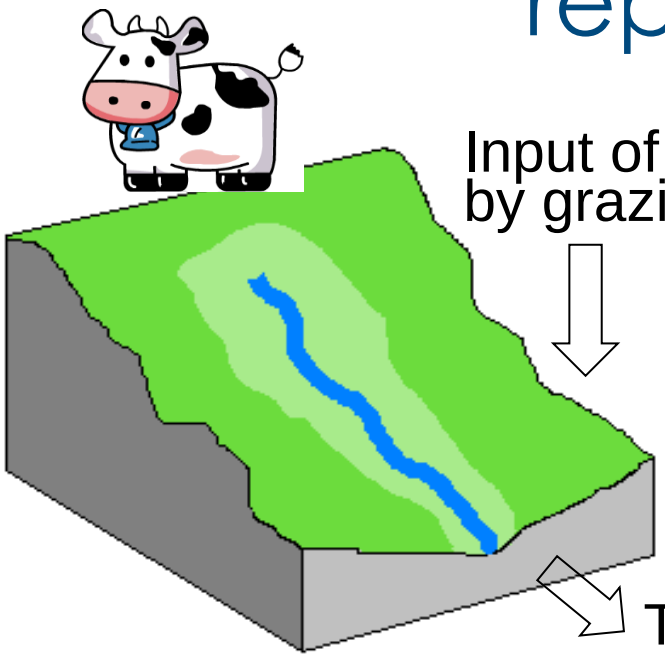
Economic methods: a classification



Brander et al. (2018)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

The cost approach: example of replacement cost



Input of Nitrogen by grazing

Tons of N removed by riverside ecosystems

Replacement cost: phytoremediation plant

€*ha

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

The environmental-economic accounting of carbon storage service

Ecosystem service	Components	Definition	Units
Crop provision	Actual flow	Amount of crop production attributable only to the ecosystem contribution	tonne
Timber provision	Actual flow	Amount of timber growth attributable only to the ecosystem contribution	m^3
Global climate regulation	Actual flow	CO_2 uptake by ecosystems	tonne
Crop pollination	Potential	Extent of areas with high pollination potential	km^2
	Demand	Extent of pollinator-dependent crops	km^2
	Actual flow	Yield production attributable to pollination in overlapping areas between pollination potential and demand	tonne
Flood control	Potential	Extent of areas with high runoff retention potential	km^2
	Demand	Extent of economic assets and population in floodplains	km^2
	Actual flow	Extent of the demand with upstream protection from the upstream ecosystems with high runoff retention potential	km^2
Nature-based recreation	Potential	Extent of service providing areas: 'high-quality areas for daily recreation'	km^2
	Demand	Population number	number of inhabitants
	Actual flow	Estimated visits to the 'high-quality areas for daily recreation'	number of visits

Ecosystem services [role of the ecosystem[a]]	Definition	Years	Accounting approach	Monetary valuation method
PROVISIONING				
Crop provision [source: productivity[b]]	Ecological contribution to the growth of cultivated crops that can be harvested and used as raw material	2000, 2006, 2012	Fast-track (disentangling ecosystem contribution)	Market values
Timber provision [source: productivity[b]]	Ecological contribution to the growth of timber that can be harvested and used as raw material	2000, 2006, 2012	Fast-track (disentangling ecosystem contribution)	Market values
REGULATING AND MAINTENANCE				
Global climate regulation [sink[c]]	Sequestration of greenhouse gases from the atmosphere by ecosystems	2000, 2006, 2012	Fast-track	Carbon rates
Flood control [buffer[d]]	Regulation of runoff by ecosystems that mitigates or prevents potential damage to economic assets (i.e., infrastructure, agriculture) and human lives	2006 and 2012	Spatial model	Avoided damage cost
Crop pollination [source: suitability[e]]	Fertilisation of crops by insects and other animals that maintains or increases crop production	2000, 2006, 2012[g]	Spatial model	Market values
CULTURAL				
Nature-based recreation [information[f]]	Biophysical characteristics or qualities of ecosystems that are viewed, observed, experienced or enjoyed in a passive, or active, way by people on a daily basis.	2000 and 2012	Spatial model	Zonal travel cost method

Source: Vallecillo et al., 2019; Vallecillo et al., 2018; Vallecillo et al., 2019a.

[a] Typology of ecosystem flow according to the role of ecosystems (La Notte et al., 2019b).

[b] 'Source: productivity' refers to the net delivery of biomass or energy eventually leaving the ecosystem.

[c] 'Sink' refers to the matter or energy absorbed by the ecosystem.

[d] 'Buffer' refers to the matter or energy flowing through the ecosystem.

[e] 'Source: suitability' refers to the delivery of biomass and energy generated within the ecosystem.

[f] 'Information' refers to the information delivered by the ecosystem (this delivery process does not modify the original state of the ecosystem).

[g] For 2012 the demand for crop pollination is assumed to be the same as in 2006.

Sociocultural methods: A classification

1 Observation methods

- Preferences and values
- Quantitative data
- Researchers
- Free listing and ranking
- Understand social demands and priorities

2 Consultation methods

- Motivations and values
- Qualitative data
- Non-academic stakeholders
- Surveys, interviews
- Evaluate social value and motivations of ecosystems

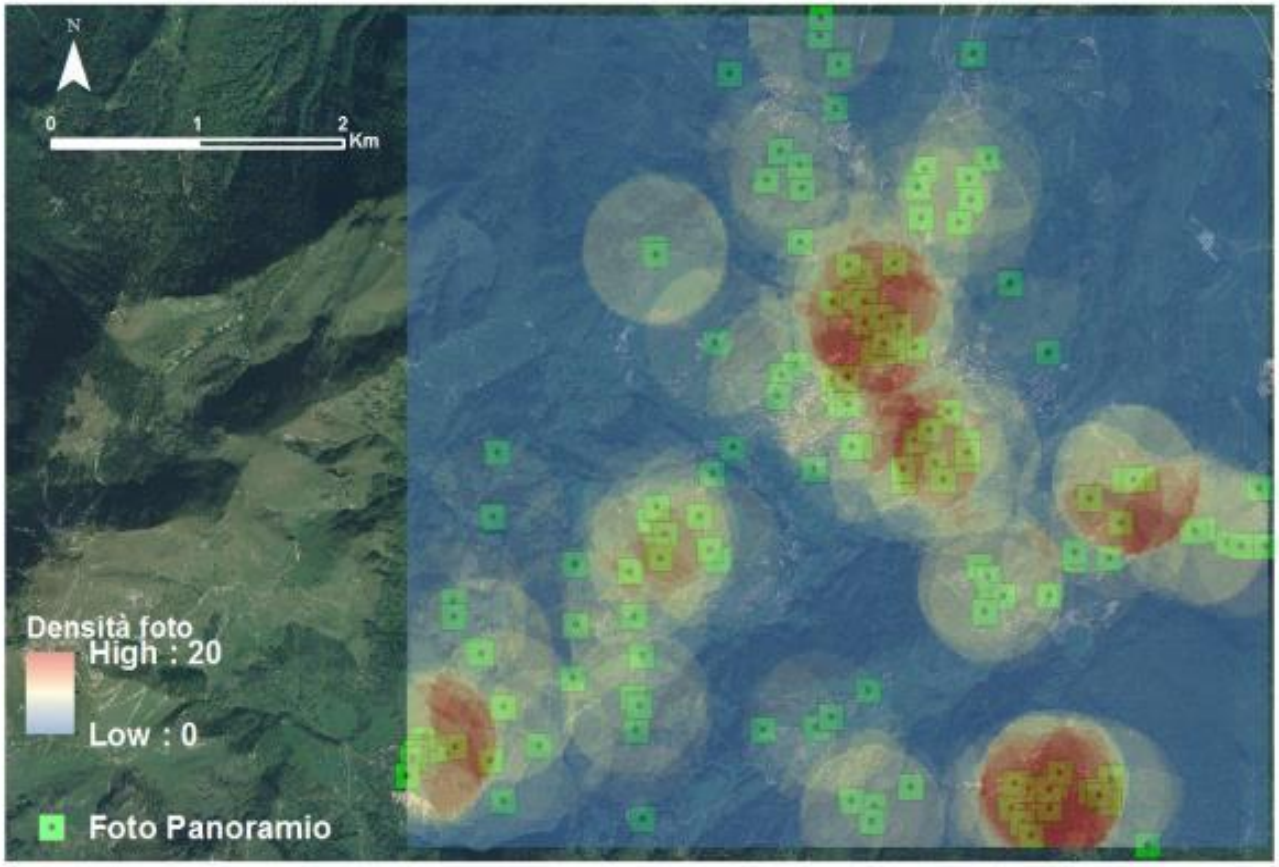
3 Engagement methods

- Perceptions and values
- Quantitative/Qualitative data
- Researchers & stakeholders
- Workshops, focus groups
- Solve social conflicts and trade-offs

Santos-Martín F. et al. (2018). Report on social Mapping and Assessment methods D3.1 EU H2020 ESMERALDA Project, Grant No. 642007.

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

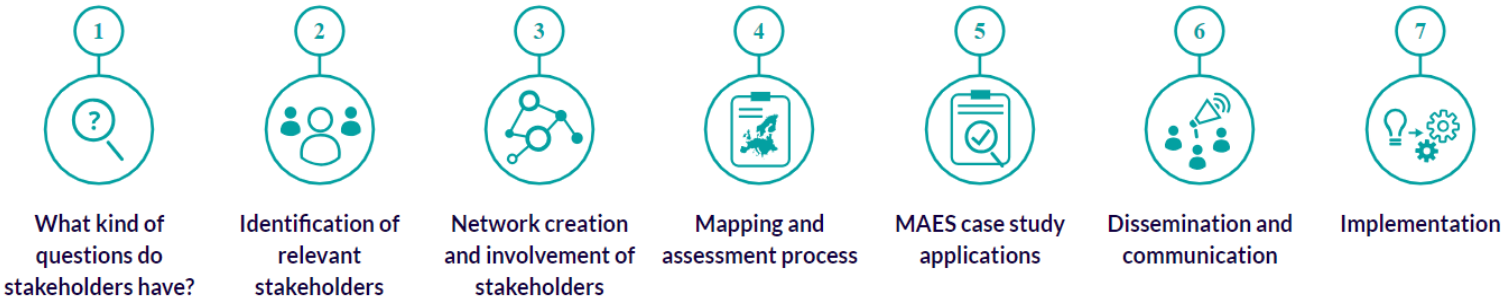
Geotagged pictures to estimate landscape attractiveness, visitor flow, etc



Orsi, F., & Geneletti, D. (2013)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

An online guidance tool providing directions on the process of mapping and assessment of ES as required by **Action 5** of the [EU Biodiversity Strategy to 2020].



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

MAES methods Explorer tool (Link)

- **Database** of existing studies on mapping & assessing ES
- Based on literature review & input from ESMERALDA partners
- **883 entries** describing case studies where ES-relevant methods have been applied, highlighting attributes of the **ecosystem** and **methods** (e.g., **scale, ecosystem type, ES categories** etc..)

Methods' documentation (Link)

- **SOCIAL** mapping & assessment methods for ES
- **ECONOMIC** mapping and assessment methods for ES
- **BIOPHYSICAL** mapping and assessment methods for ES
- **TIERED** Approach
- Other supporting material.

Mapping and assessment process

The ecosystem services mapping and assessment process is the technical/methodological core of MAES. Mapping refers, in this context, to the spatial delineation of ecosystems as well as their condition and the services they supply through the spatial integration of a wide range of methods and data sets. Assessment includes the analysis and review of (existing) information derived from research for the purpose of helping someone in a position of responsibility to evaluate possible actions or think about a problem. In ESMERALDA, the focus was on ecosystem services mapping and assessment, less on ecosystem types, condition or accounting, the other relevant parts for MAES.

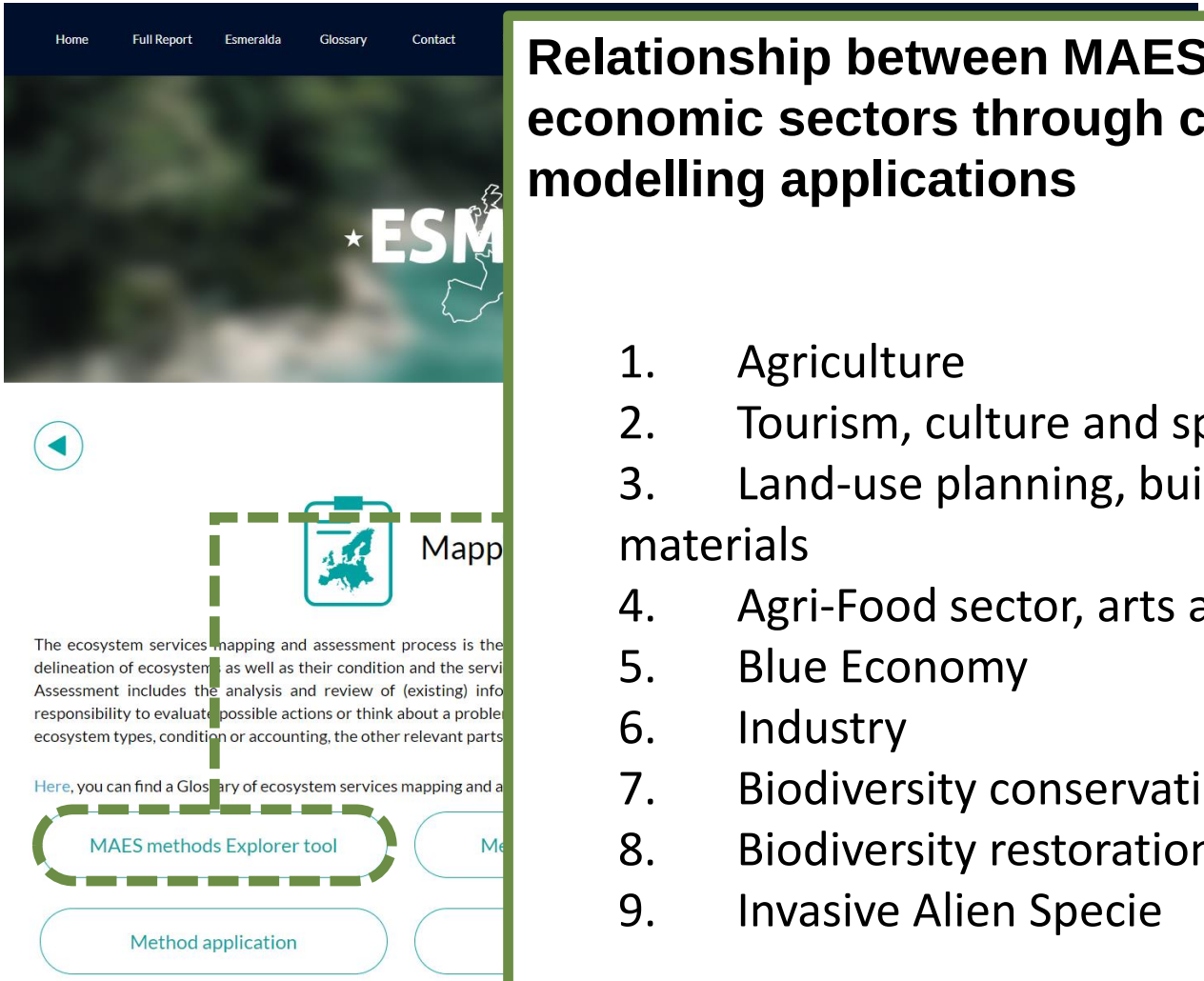
Here, you can find a Glossary of ecosystem services mapping and assessment terminology.

MAES methods Explorer tool | Methods' documentation | Method integration

Method application | CICES | ESP Visualization tool

Case studies (Link)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2



Relationship between MAES and eight economic sectors through case study and modelling applications

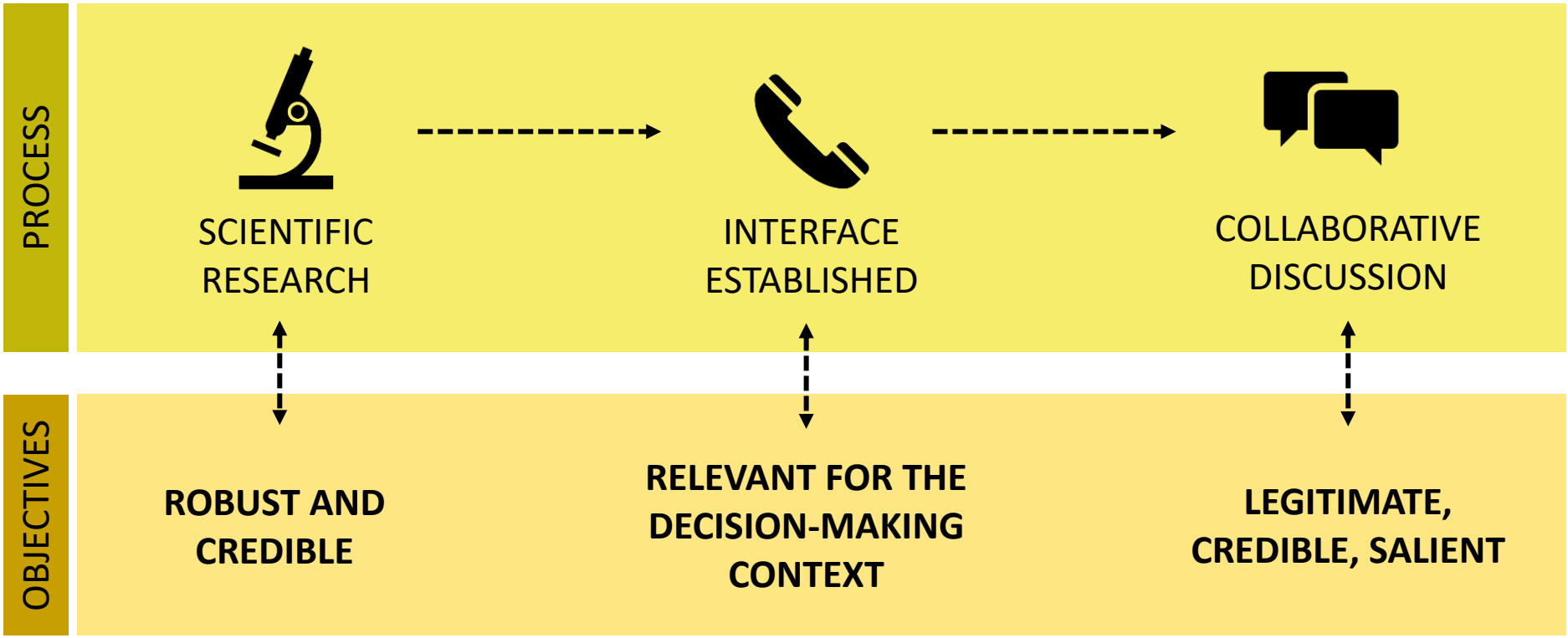
1. Agriculture
2. Tourism, culture and sports
3. Land-use planning, building industry and materials
4. Agri-Food sector, arts and crafts
5. Blue Economy
6. Industry
7. Biodiversity conservation
8. Biodiversity restoration
9. Invasive Alien Specie

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

MAES in policy and decision making: a case study in the city of Trento

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

The MAES process in Trento



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Formal involvement into the drawing of a new urban plan of the city

2017

NEW URBAN PLAN

integrating an ecosystem service approach:

1. At the STRATEGIC level

2. At the IMPLEMENTATION level

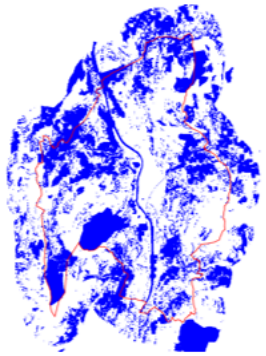
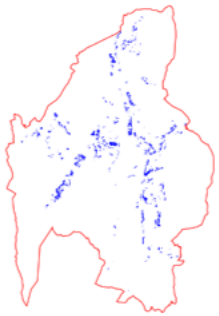
This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

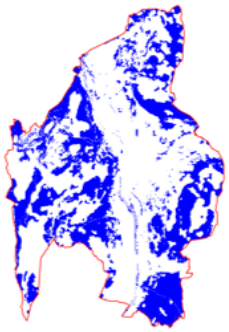
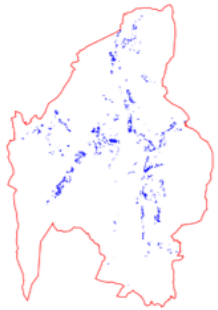
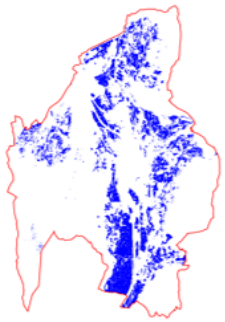
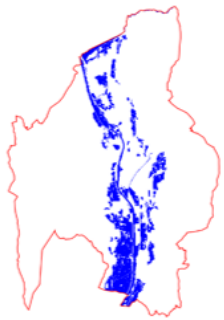
Methods to asses ES and identify hotspots

Ecosystem service	Indicator	Hotspot (values/thresholds)
Habitat for biodiversity	Potential richness of focal species (Pedrini et al. 2013)	Biodiversity hotspots (i.e., areas larger than 200 ha with high potential richness) medium, high, or very high potential richness
	Level of protection	Protected areas at various levels (Natura 2000 sites, local reserves, etc.)
Risk mitigation (rock falls, landslides, floods)	Protective function with respect to rock falls (Wolynski et al. 2016)	Forest patches characterized by potential protective function
	Level of landslide hazard	Forest patches in areas of high geological hazard
	Level of river flooding hazard	Permeable (non-urban) areas in flood-prone zones
Air purification and noise reduction	Proximity to high-traffic roads (and railways for noise) and residential settlements	Wooded areas within a maximum distance of 50 m from both residential settlements and main transport infrastructures
Landscape value (aesthetic appreciation and identity)	Class of landscape value based on forest types and location	High landscape value
Food production	Suitability for agriculture (a combined indicator considering economic value based on current crops and morphological suitability)	Suitability ≥ 6 (range: from 2 to 8)
Nature-based recreation	Class of Recreation Opportunity Spectrum (Cortinovis et al. 2018)	Class combining the highest levels of recreation potential and proximity
Cooling	Cooling capacity class (Zardo et al. 2017)	Cooling capacity class A or B (range: from A to E)

Cortinovis & Geneletti (2021)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

HABITAT FOR BIODIVERSITY	RISK MITIGATION	NOISE REDUCTION
		

RECREATION	AIR PURIFICATION	FOOD PRODUCTION	COOLING
			

land

MDPI

Article

Assessing Nature-Based Recreation to Support Urban Green Infrastructure Planning in Trento (Italy)

Chiara Cortinovis [1,*], Grazia Zulian [2] and Davide Geneletti [1]

One Ecosystem 3: e25477
doi: 10.3897/oneeco.3.e25477

OPEN ACCESS

Research Article

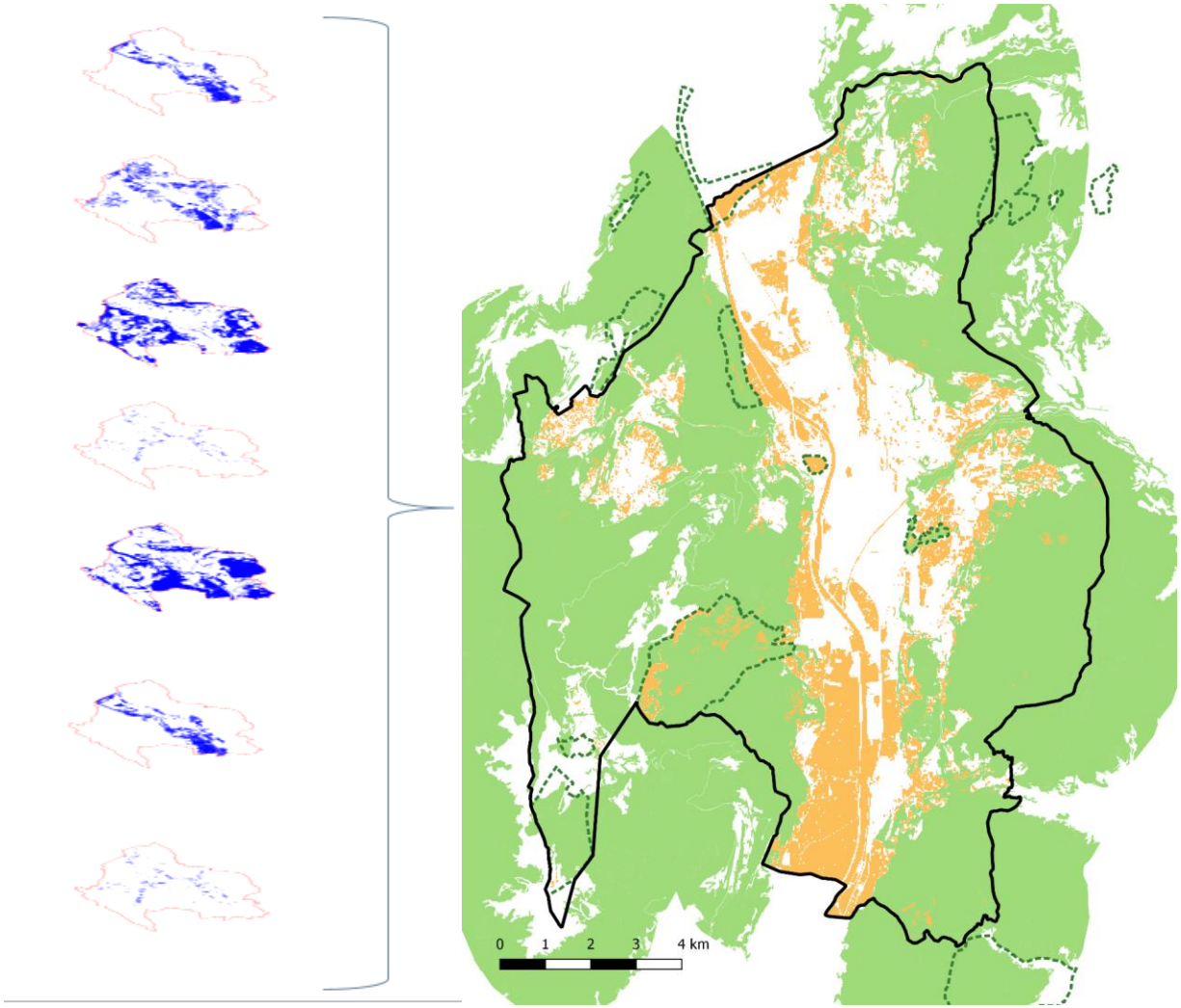
Mapping and assessing ecosystem services to support urban planning: A case study on brownfield regeneration in Trento, Italy

Chiara Cortinovis‡, Davide Geneletti‡

nent of Civil, Environmental and Mechanical Engineering, University of Trento, Trento, Italy

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

ES hotspots becoming structural elements of the plan



- Acknowledgement of ES as fundamental areas of service production

+

- ES hotspot became part of the official planning document to delineate areas that should be considered when proposing specific land use policies

=

- MAES becoming instrumental for specific land use decisions/regulations

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Second type of involvement

2017

NEW URBAN PLAN

integrating an ecosystem service approach:

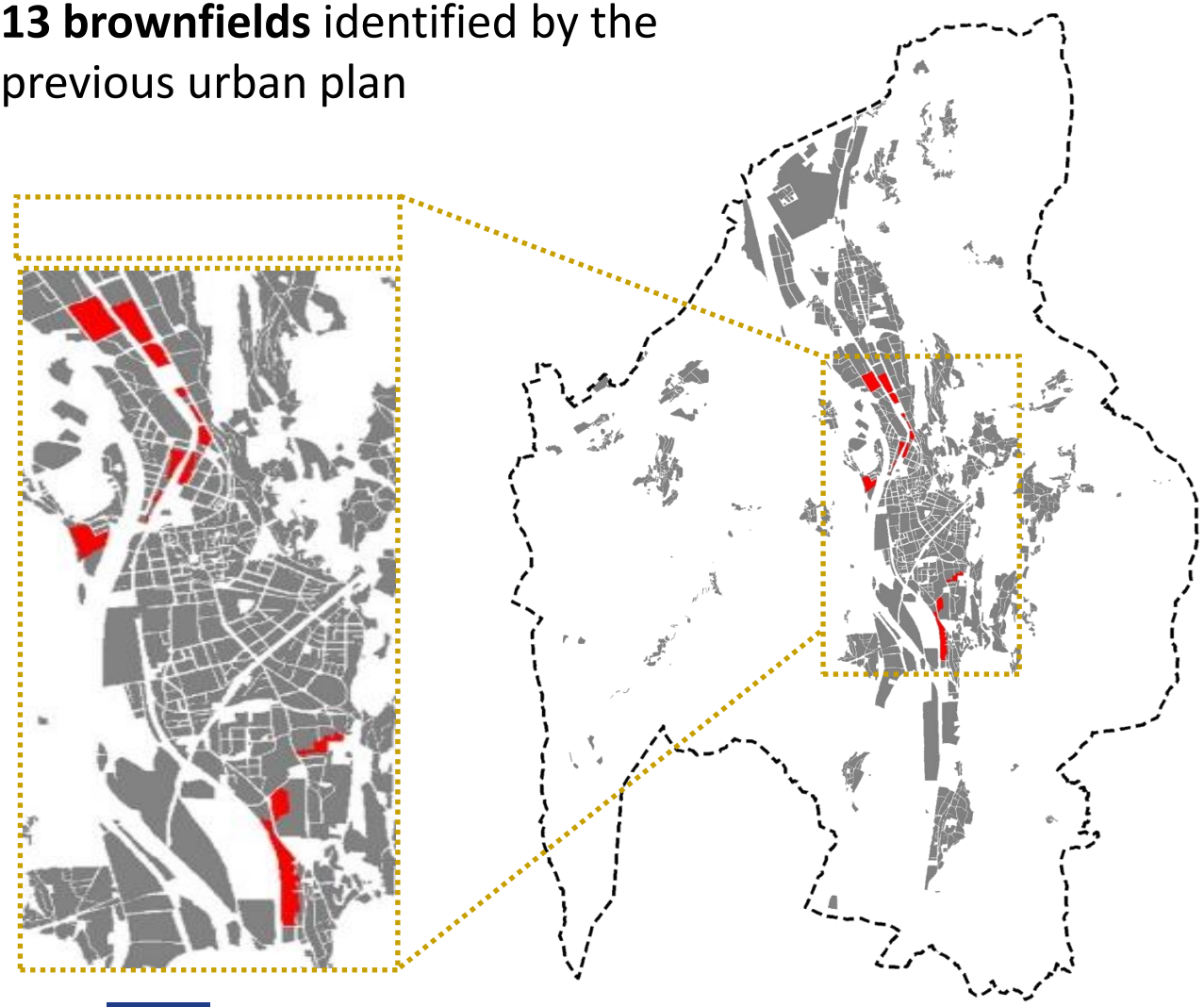
1. At the STRATEGIC level

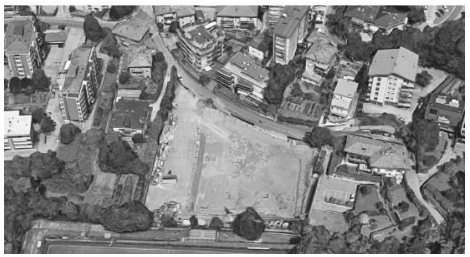
2. At the IMPLEMENTATION level

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Prioritising brownfield regeneration

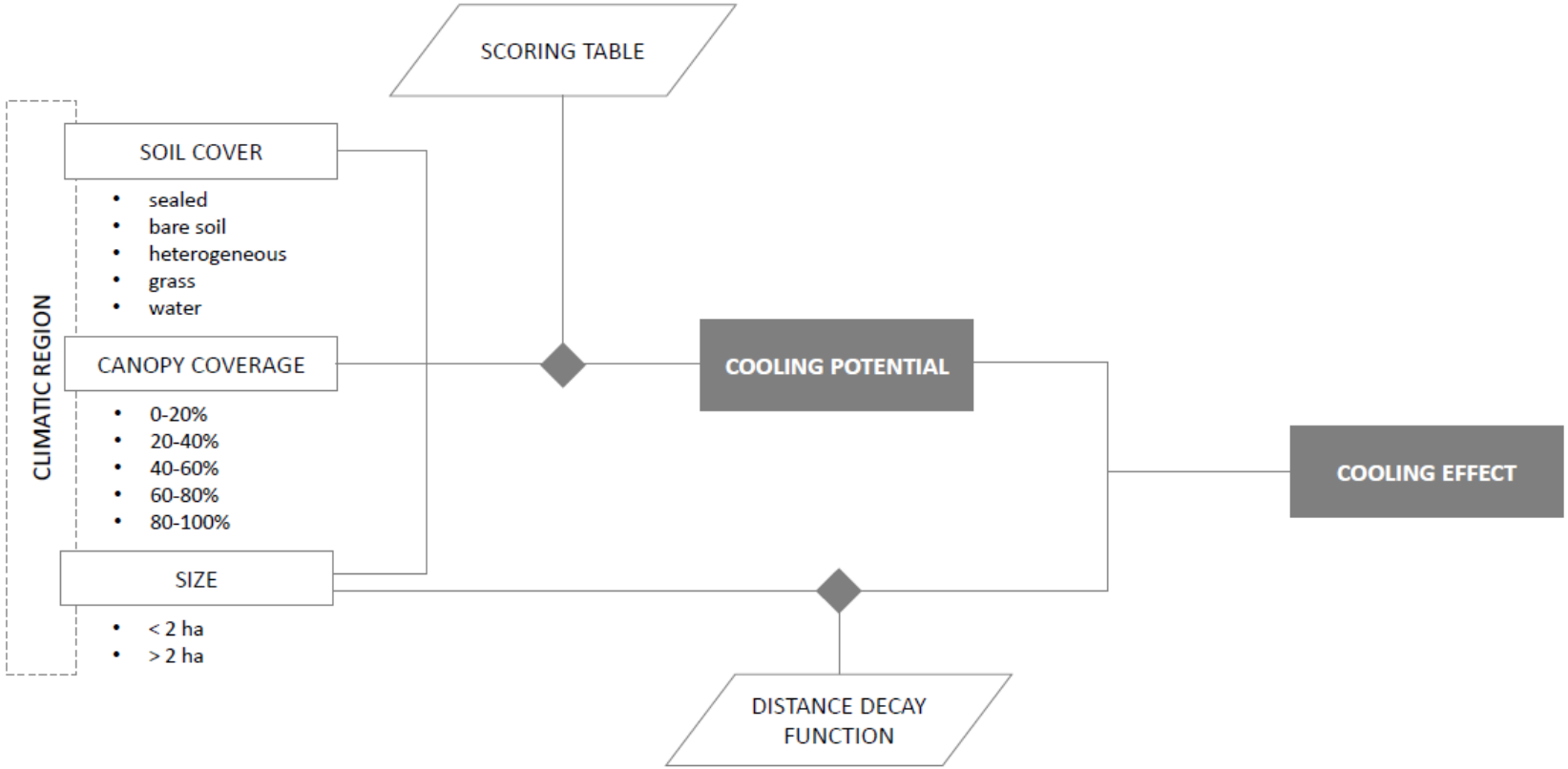
13 brownfields identified by the previous urban plan





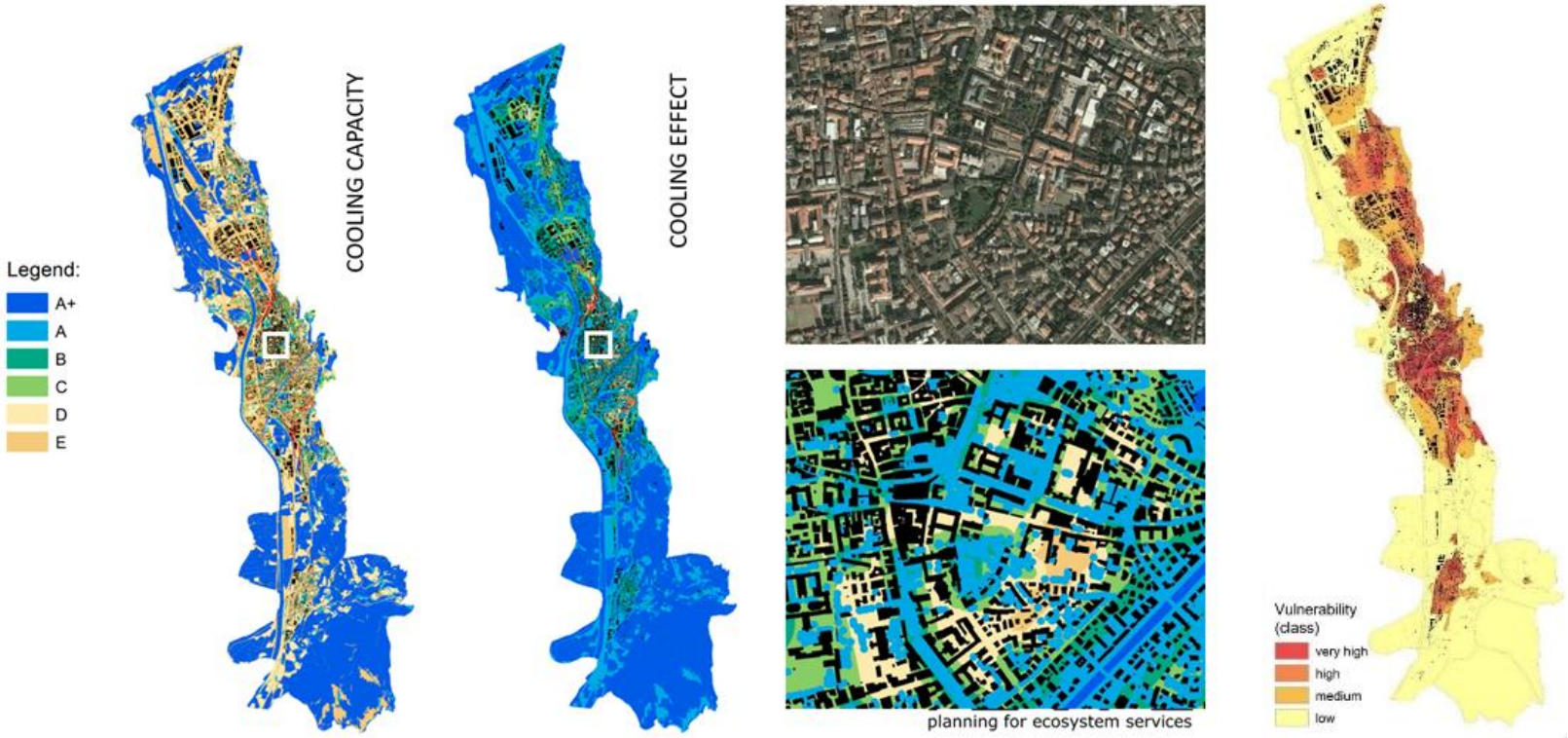
This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Focus on two ES models: microclimate regulation and recreation



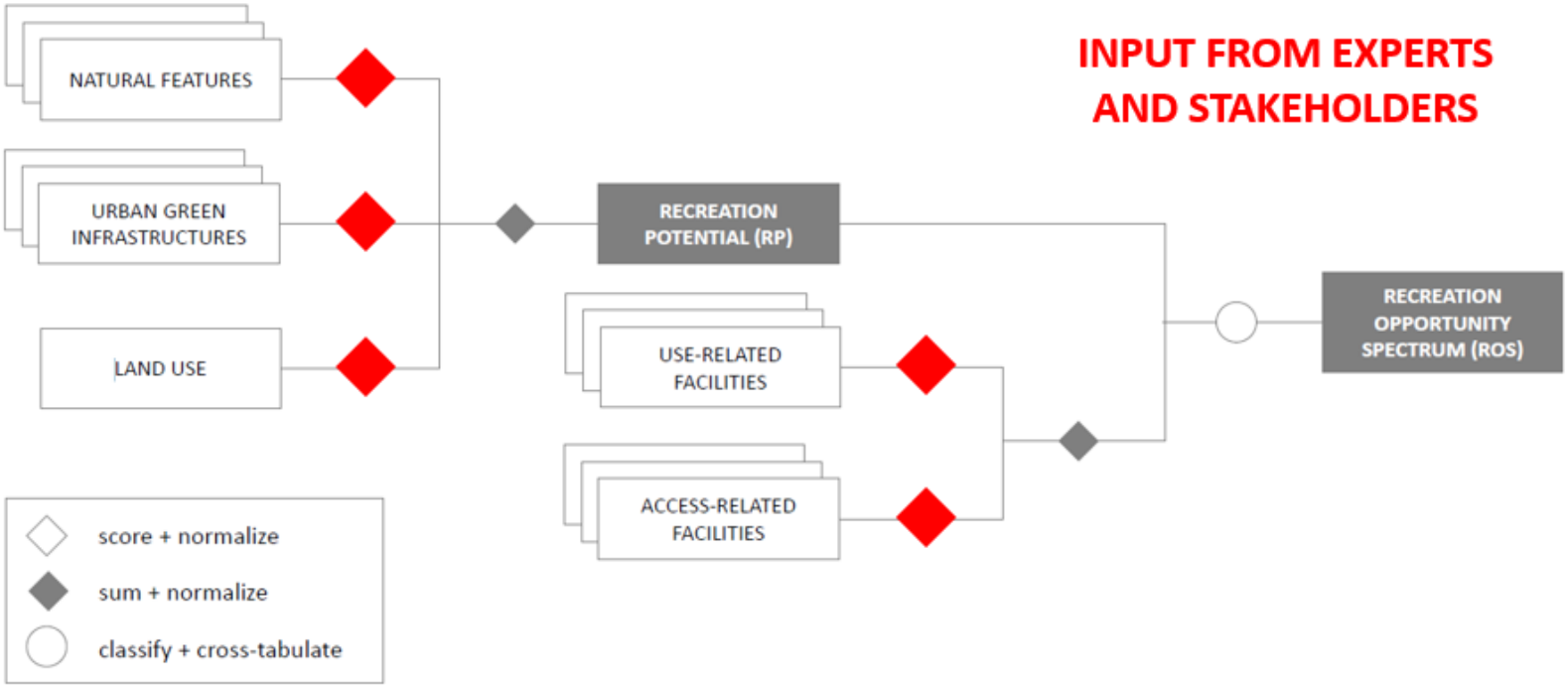
This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Focus on two ES models: microclimate regulation and recreation



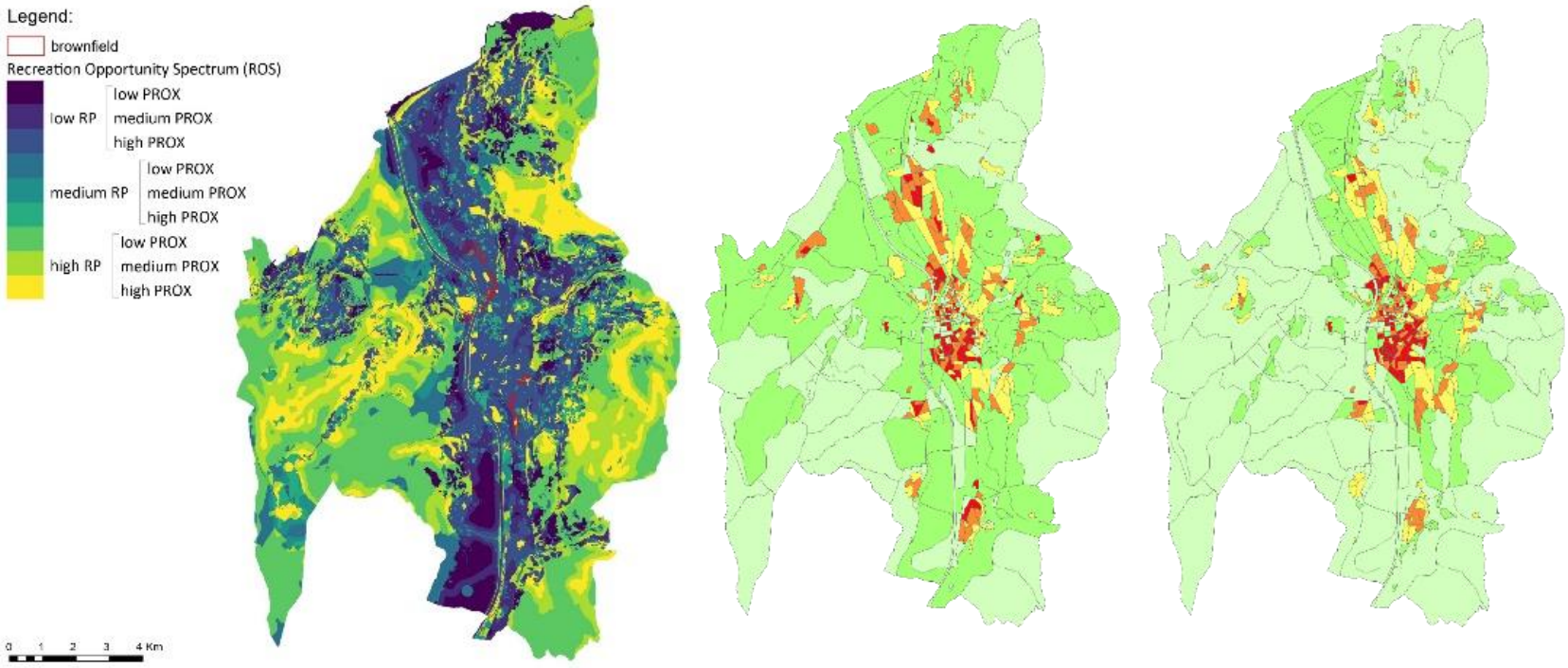
This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Focus on two ES models: microclimate regulation and recreation



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Focus on two ES models: microclimate regulation and recreation



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

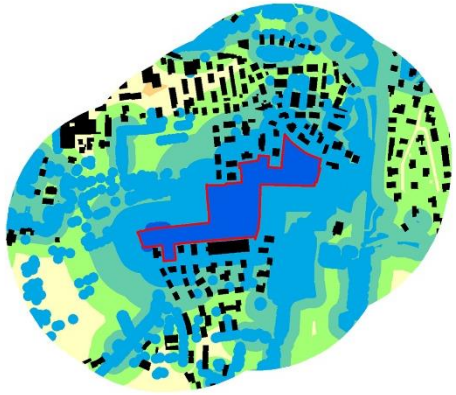
Estimating the benefits of brownfield regeneration

Baseline SITE #11

Re-generation scenario

Disaggregated beneficiaries

COOLING

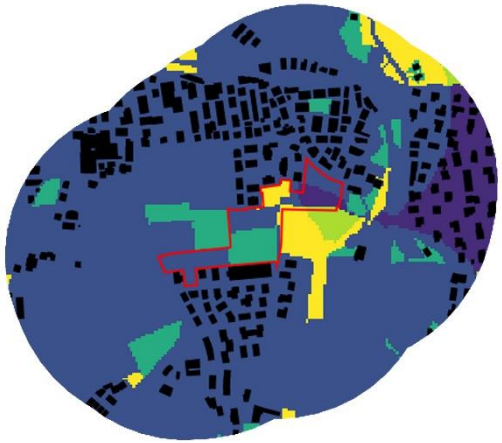


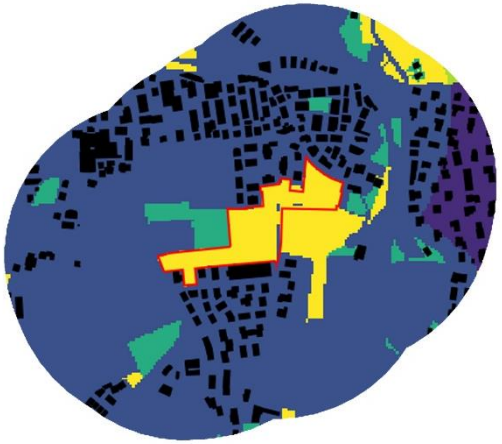
Children < 5

Elderly > 65

Other beneficiaries

RECREATION





Children + teenagers < 20

Elderly > 65

Other beneficiaries

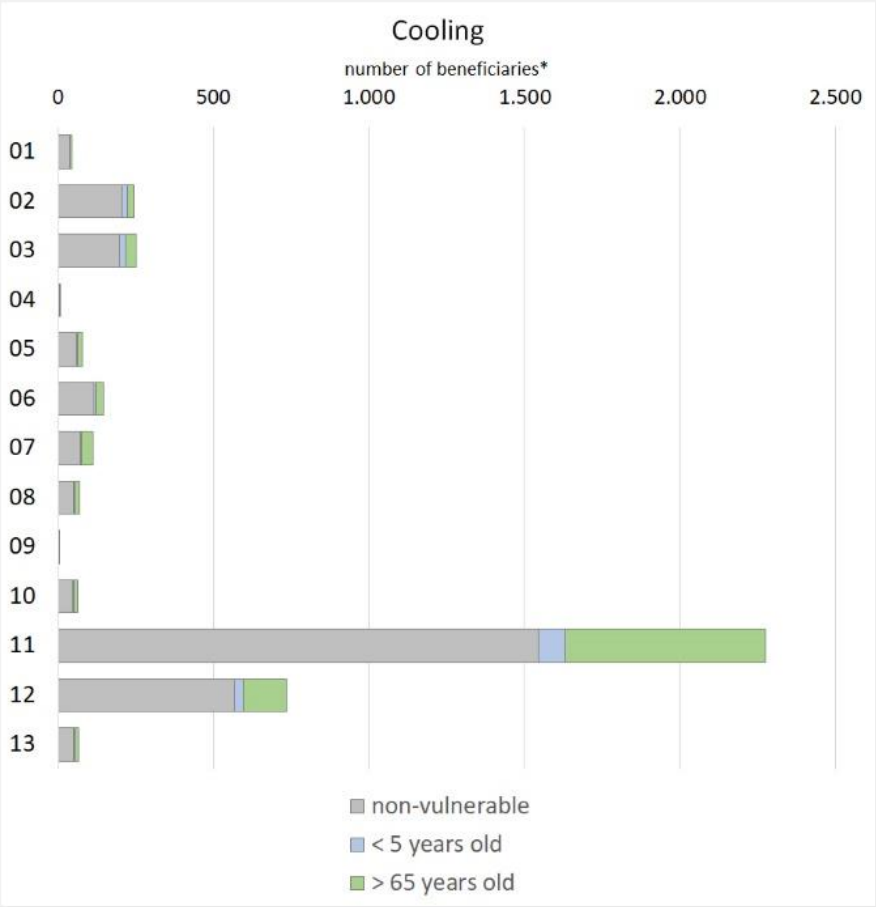
Cortinovis et al. 2018

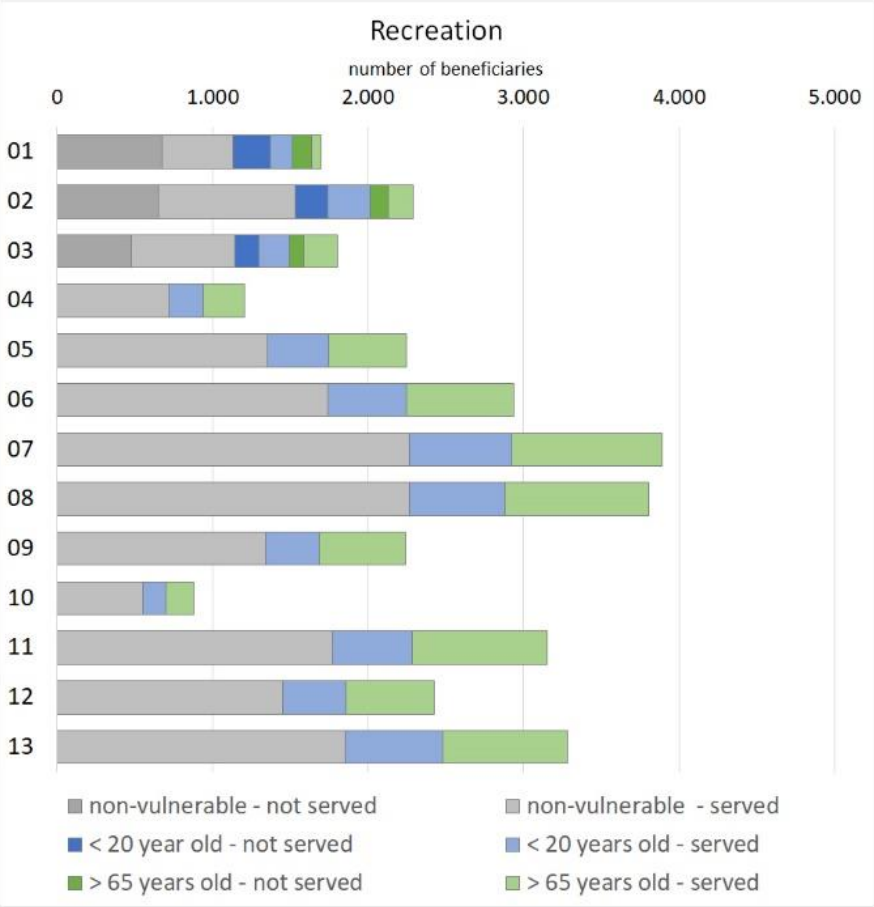
bare soil with scattered trees

homogeneous grassy area with tree coverage > 80% (e.g., intensely planted urban park)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Comparing the performance of regeneration interventions

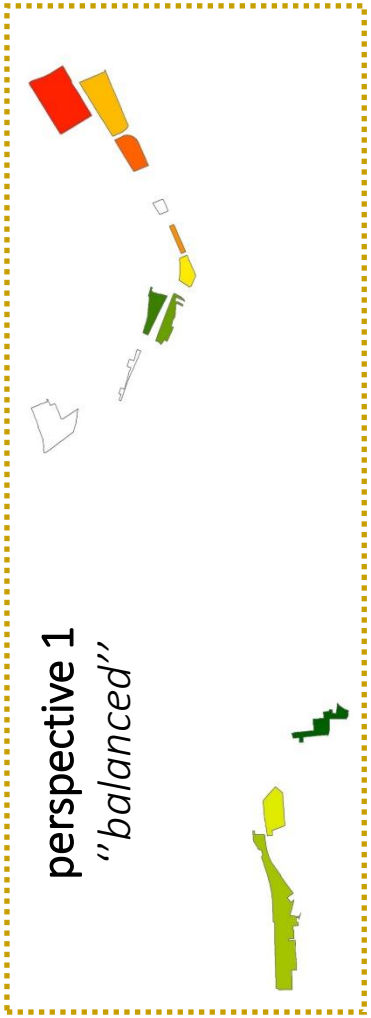




This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Use for decision support based on diverse perspectives

Re-generation sites



This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

Summary

2020

PLAN APPROVAL

Integrating an ecosystem service approach

1. At the STRATEGIC level
2. At the IMPLEMENTATION level

Proposal for further ES-based elements (performance-based approach for designing green interventions)

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

PLANES research-lines & projects participation

PLANNING FOR ECOSYSTEM SERVICES AND URBAN SUSTAINABILITY lab

https://planes.dicam.unitn.it /

Lab Head: Prof. Davide Geneletti
davide.geneletti@unitn.it

Understanding the transformative potential of Nature-based Solutions (NbS) to promote sustainable and resilient cities and environments

Ecosystem services mapping and assessment towards setting standards for international cooperation, sustainable land-use and nature restoration at multi-level landscape governance

SELINA SCIENCE FOR EVIDENCE-BASED AND SUSTAINABLE DECISIONS ABOUT NATURAL CA...

BioValue

Exploring innovative planning and management tools for biodiversity-inclusive decisions in spatial planning systems

bioagora

Co-creation of a research-based knowledge service to assist decision-makers in making biodiversity-related decisions at the local, national, EU, and global levels

MOVE ON

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2

UNIVERSITÀ DI TRENTO

PLANNING FOR ECOSYSTEM SERVICES AND URBAN SUSTAINABILITY lab

Prof. Davide Geneletti
davide.geneletti@unitn.it

Jarumi Kato Huerta, Ph.D.
jarumi.katohuerta@unitn.it

Francesco Sica, Ph.D
francesco.sica@unitn.it

Thank you for your attention

This project has received funding from the European Union represented by European Commission Directorate - General Environment, under grant agreement N° 07.027735/2019/808239/SUB/ENV.D2