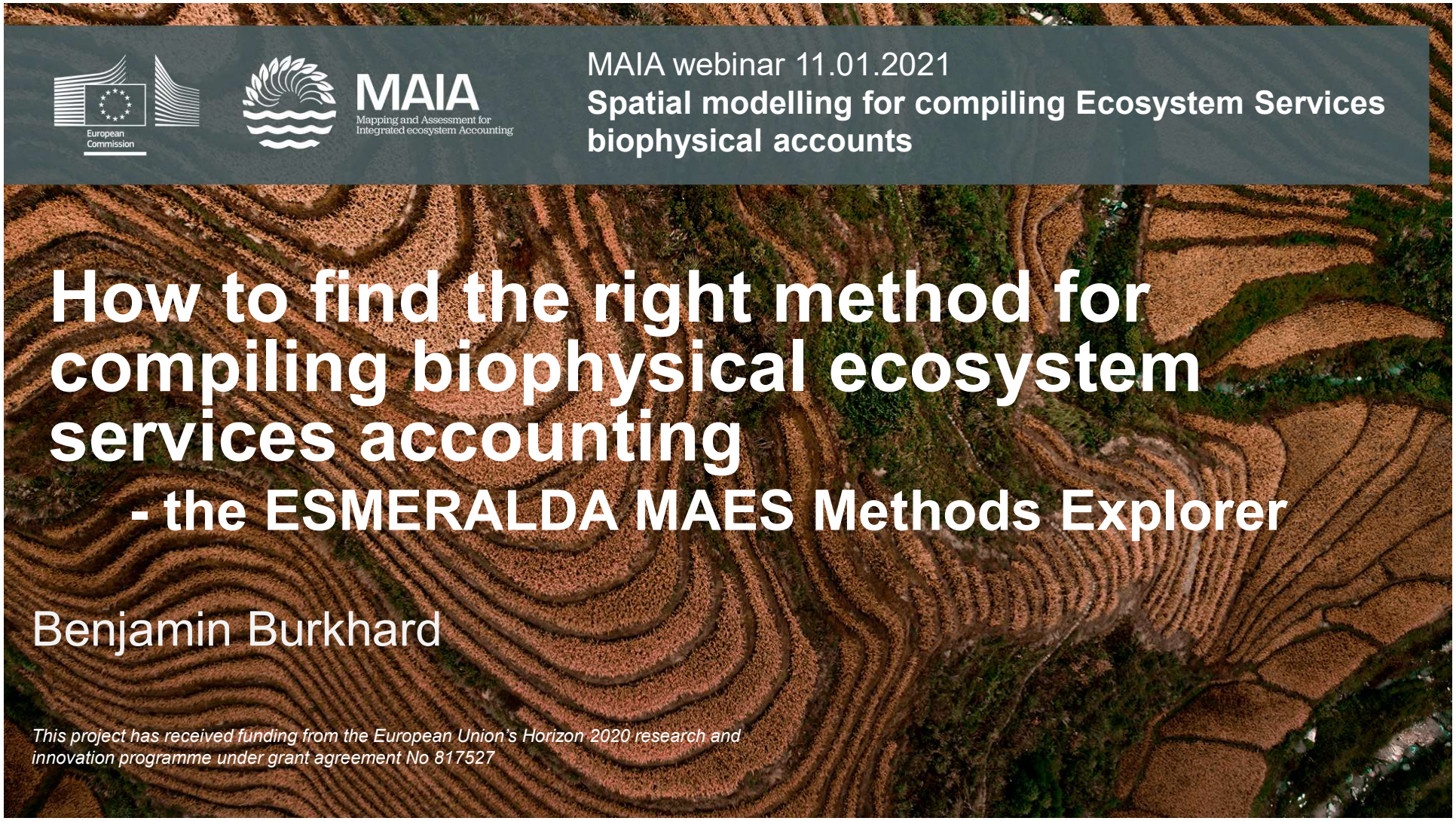


MAIA webinar 11.01.2021

Spatial modelling for compiling Ecosystem Services biophysical accounts

How to find the right method for compiling biophysical ecosystem services accounting

- the ESMERALDA MAES Methods Explorer

Benjamin Burkhard

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817527

ESMERALDA MAES Methods Explorer

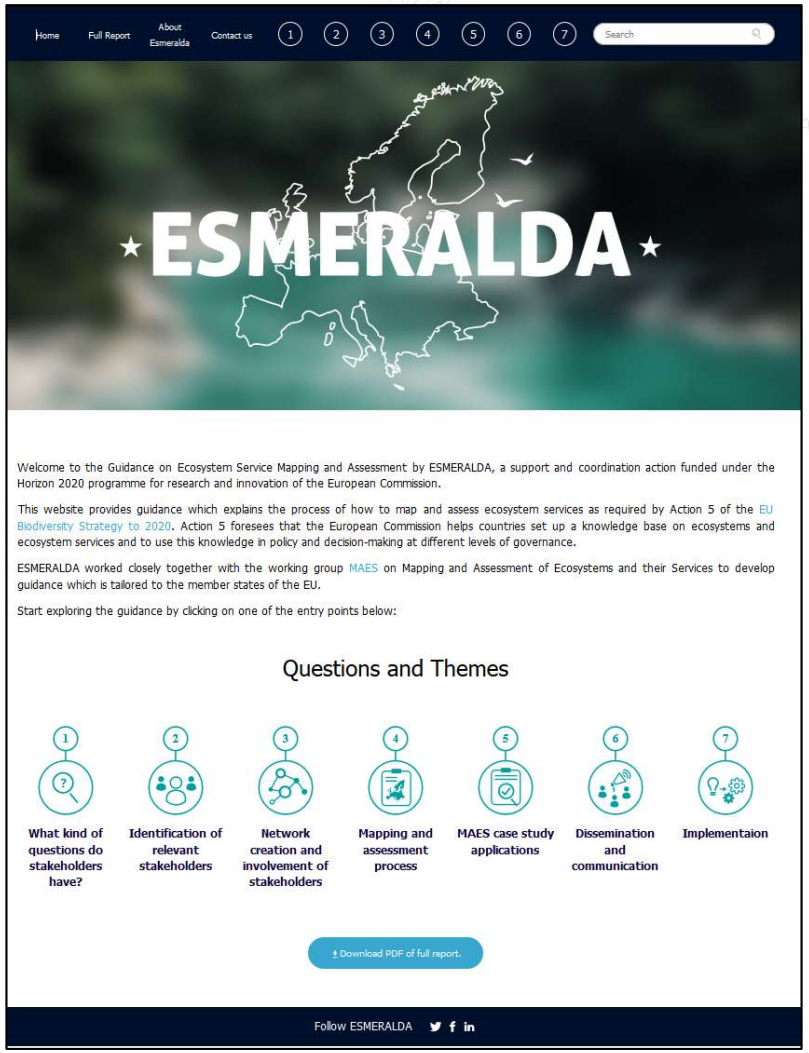
Enhancing ecosystem services mapping for policy and decision making

http://www.esmeralda-project.eu/

- EU **Horizon 2020 Coordination and Support Action**
- Support for EU member states in the implementation of MAES (**M**apping and **A**ssessment of **E**cosystems and their **S**ervices in the context of the EU Biodiversity Strategies 2020 and 2030)
- Project duration: 01.02.2015 - 31.07.2018
- 37 Project partners in all 28+3 EU member states
- aimed at identifying and testing ES mapping methods and to provide guidance on their application for various purposes

ESMERALDA MAES Methods Explorer

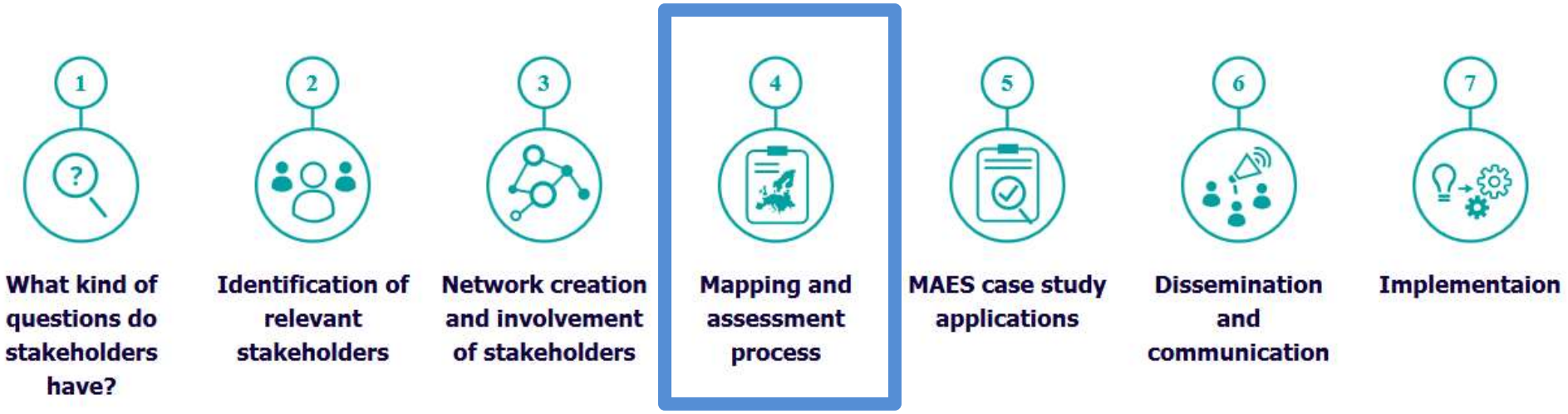
★ **ESMERALDA MAES Explorer**



http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer

★ **ESMERALDA MAES Explorer**



★ You can browse along the whole MAES process to find what you need to implement MAES in your country, region or case study

http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer

★ **ESMERALDA MAES Explorer**

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.

ESMERALDA developed a 'flexible methodology' for ecosystem services mapping and assessment providing the building blocks for regional, national and pan-European assessments. This methodology has been built on existing research, related projects, methods and databases. The results of the comprehensive ESMERALDA review of existing studies can be explored by the MAES methods Explorer, a searchable online database as well as the detailed Methods Documentations of biophysical, economic and social methods and possible Methods Integration. Finally, ESMERALDA is providing a useful overview of selected Methods' Applications and links to the ESP Visualisation tool, an online platform where ecosystem service maps can be shared.

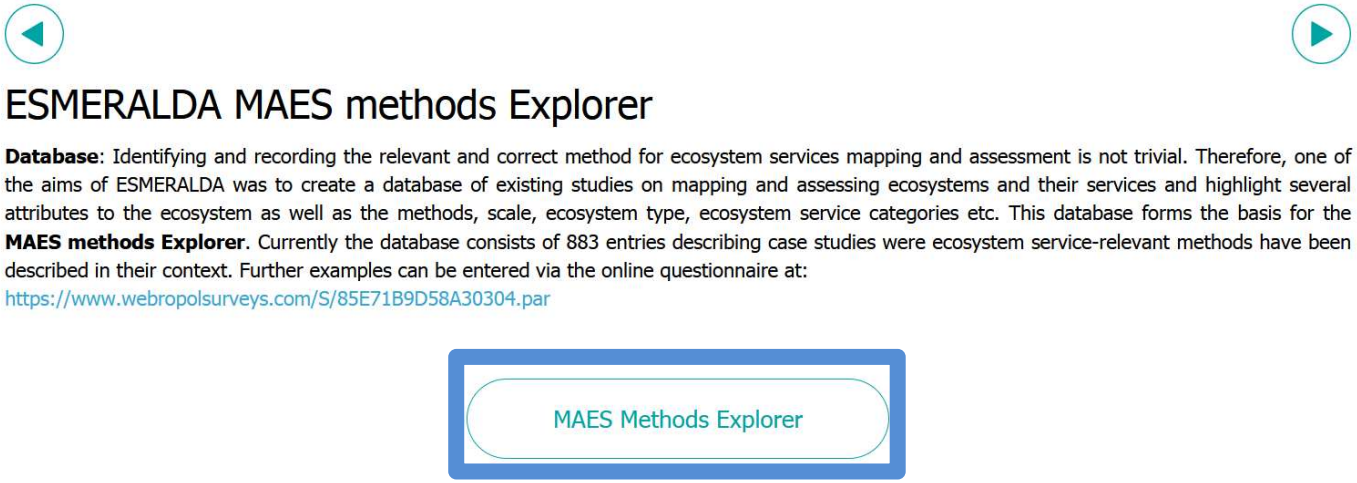
MAES methods Explorer tool | Methods' documentation | Method integration

Method application | ESP Visualization tool

http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer

★ ESMERALDA MAES Explorer



ESMERALDA MAES methods Explorer

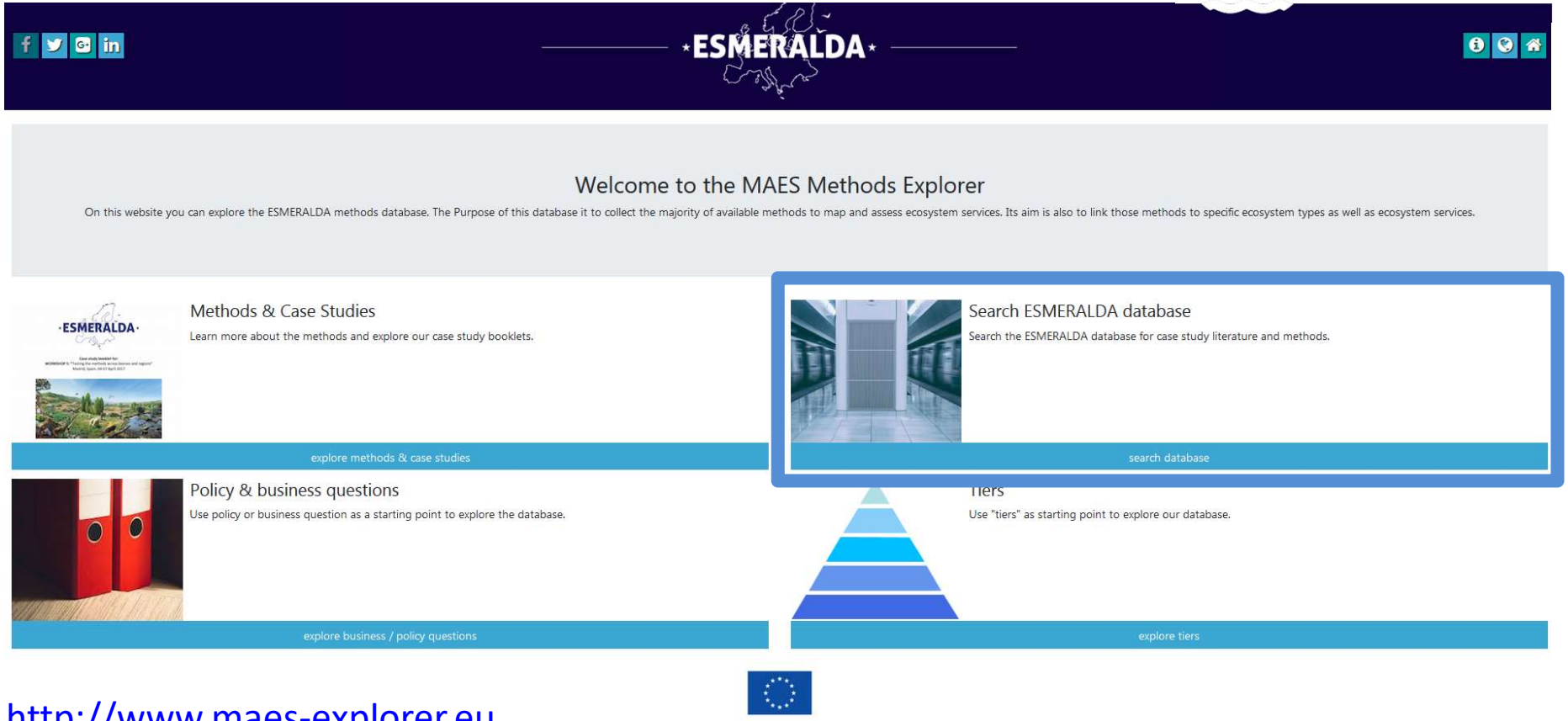
Database: Identifying and recording the relevant and correct method for ecosystem services mapping and assessment is not trivial. Therefore, one of the aims of ESMERALDA was to create a database of existing studies on mapping and assessing ecosystems and their services and highlight several attributes to the ecosystem as well as the methods, scale, ecosystem type, ecosystem service categories etc. This database forms the basis for the **MAES methods Explorer**. Currently the database consists of 883 entries describing case studies were ecosystem service-relevant methods have been described in their context. Further examples can be entered via the online questionnaire at:
https://www.webropolsurveys.com/S/85E71B9D58A30304.par

MAES Methods Explorer

The Online Tool provides a simple yet powerful interface for searching the database. The user can search for examples or methods by filtering the dataset by various attributes - such as ecosystem service, ecosystem type, policy question covered etc. From here the user will be linked to further information. The tool offers multiple entry points into the dataset to make it easier for first time users to explore the dataset in meaningful ways by providing preconfigured filters. For example to every case study booklet there has is a filter to select similar items to the topics covered in the case study booklet. Find more information to the case study booklets and other entry points:

http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer

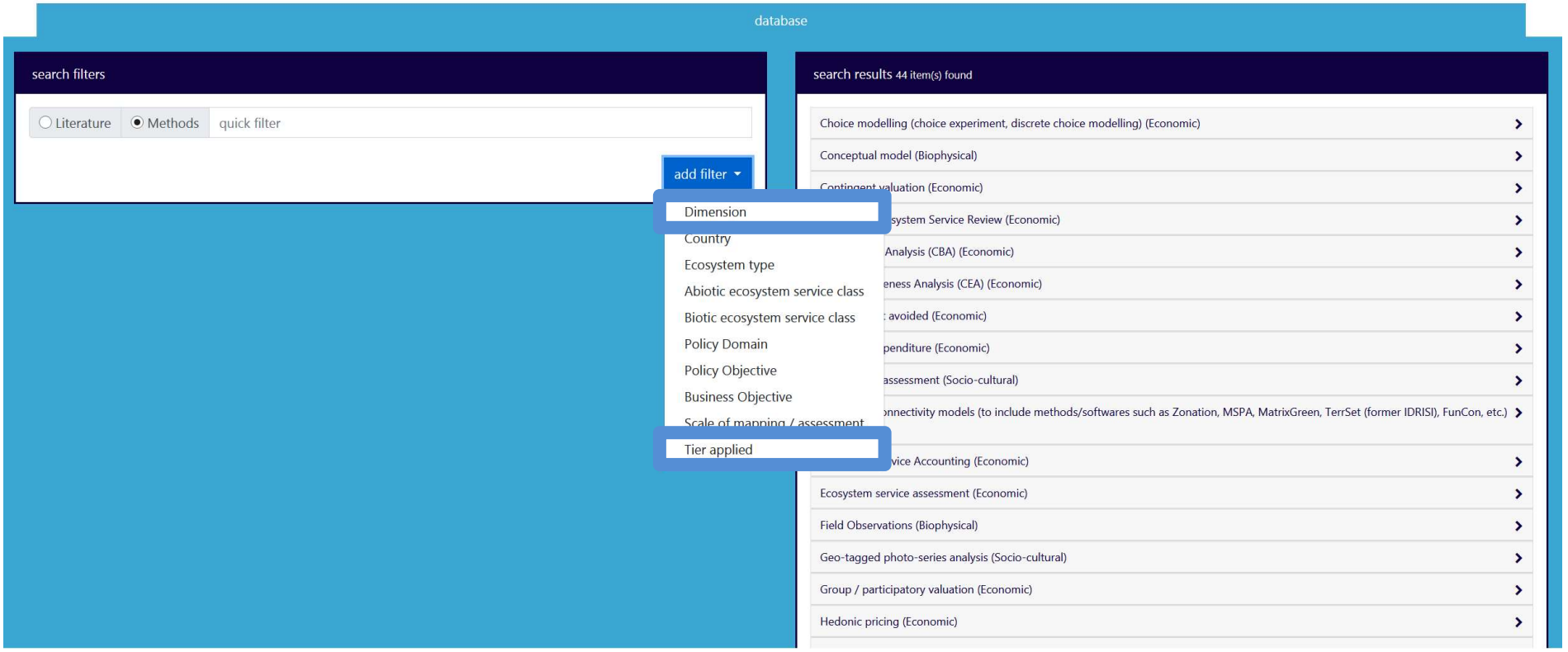


http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer

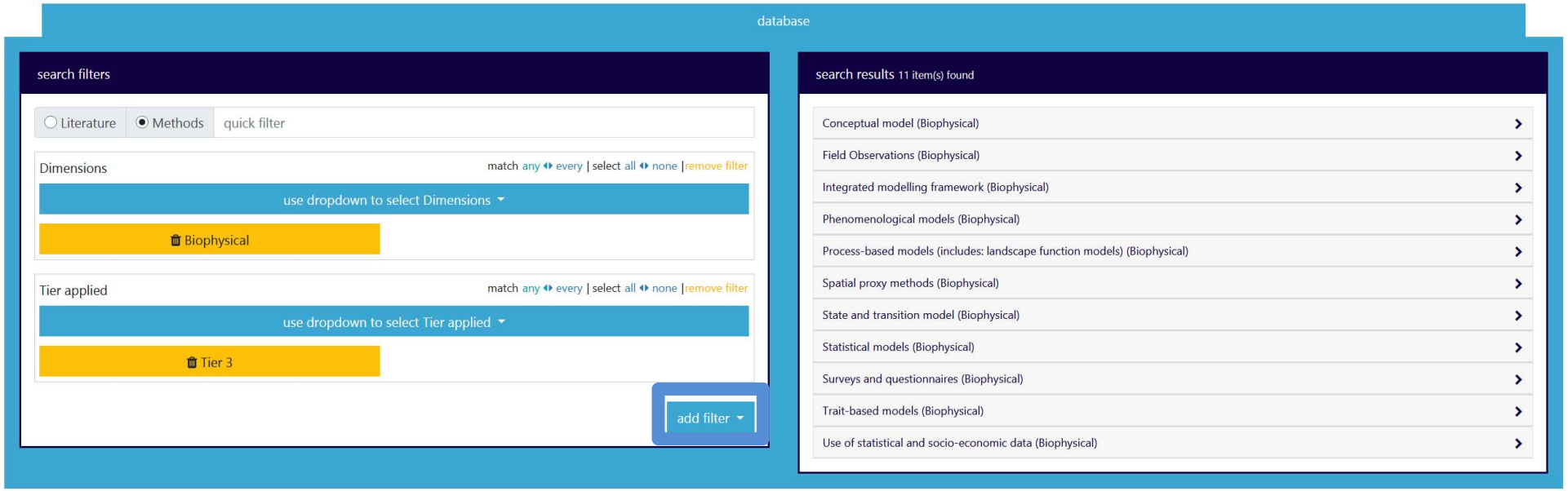
http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer



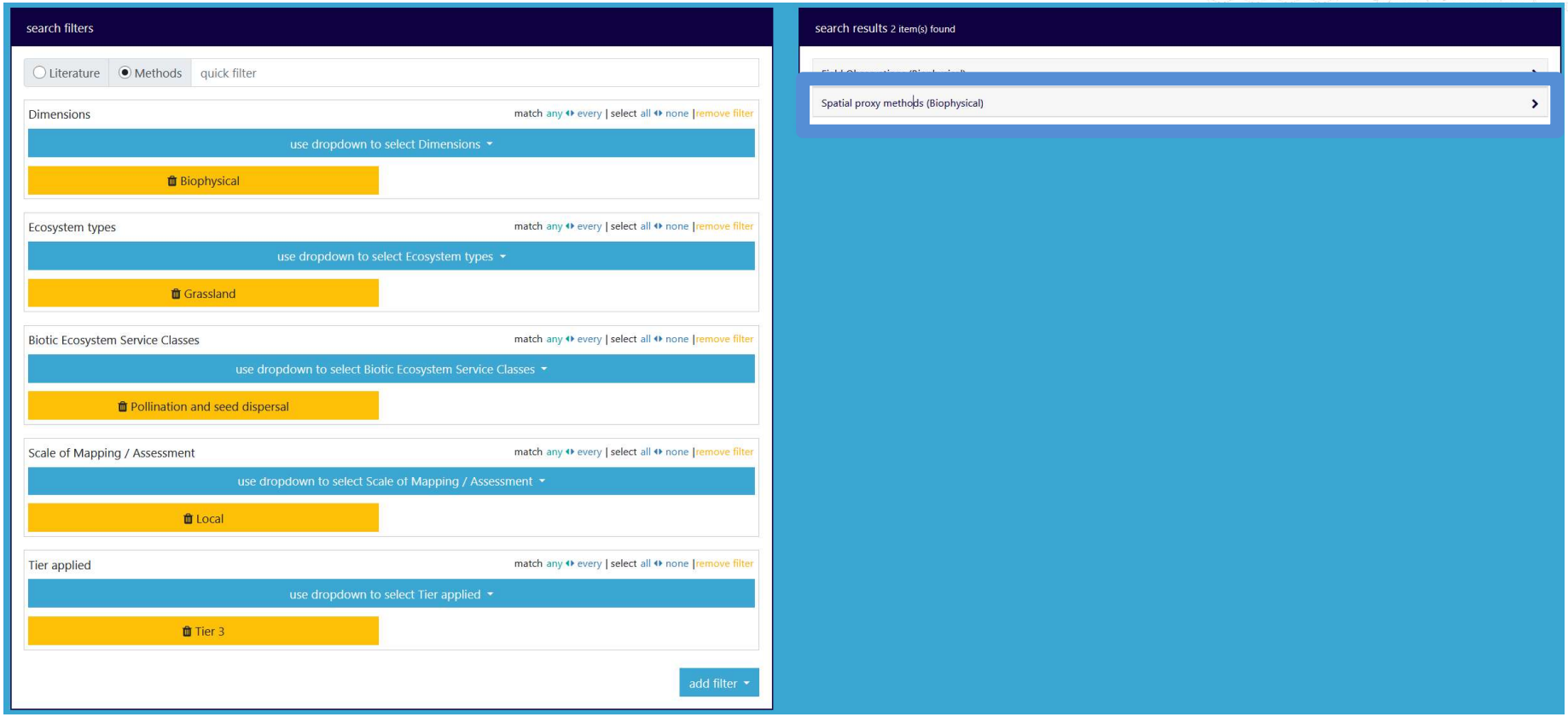
http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer



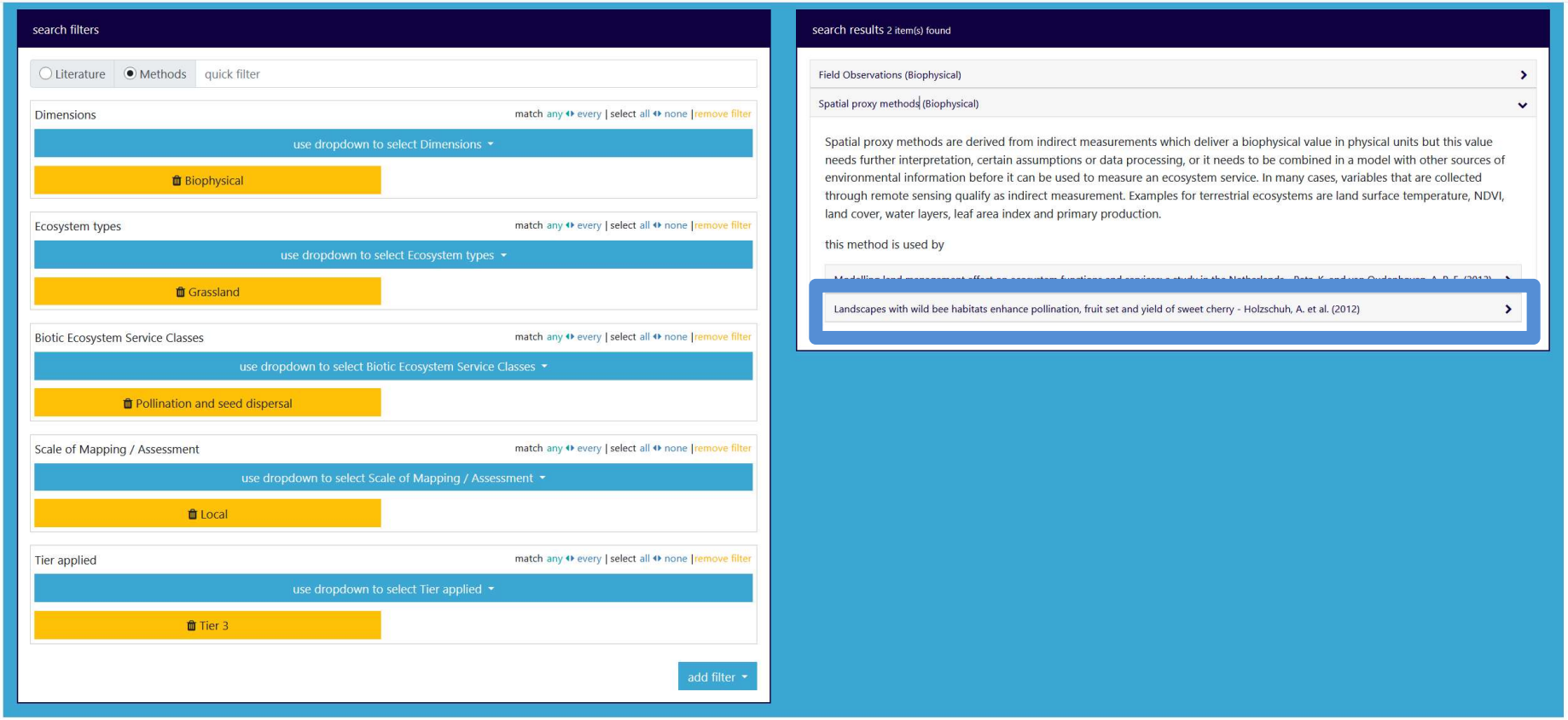
http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer



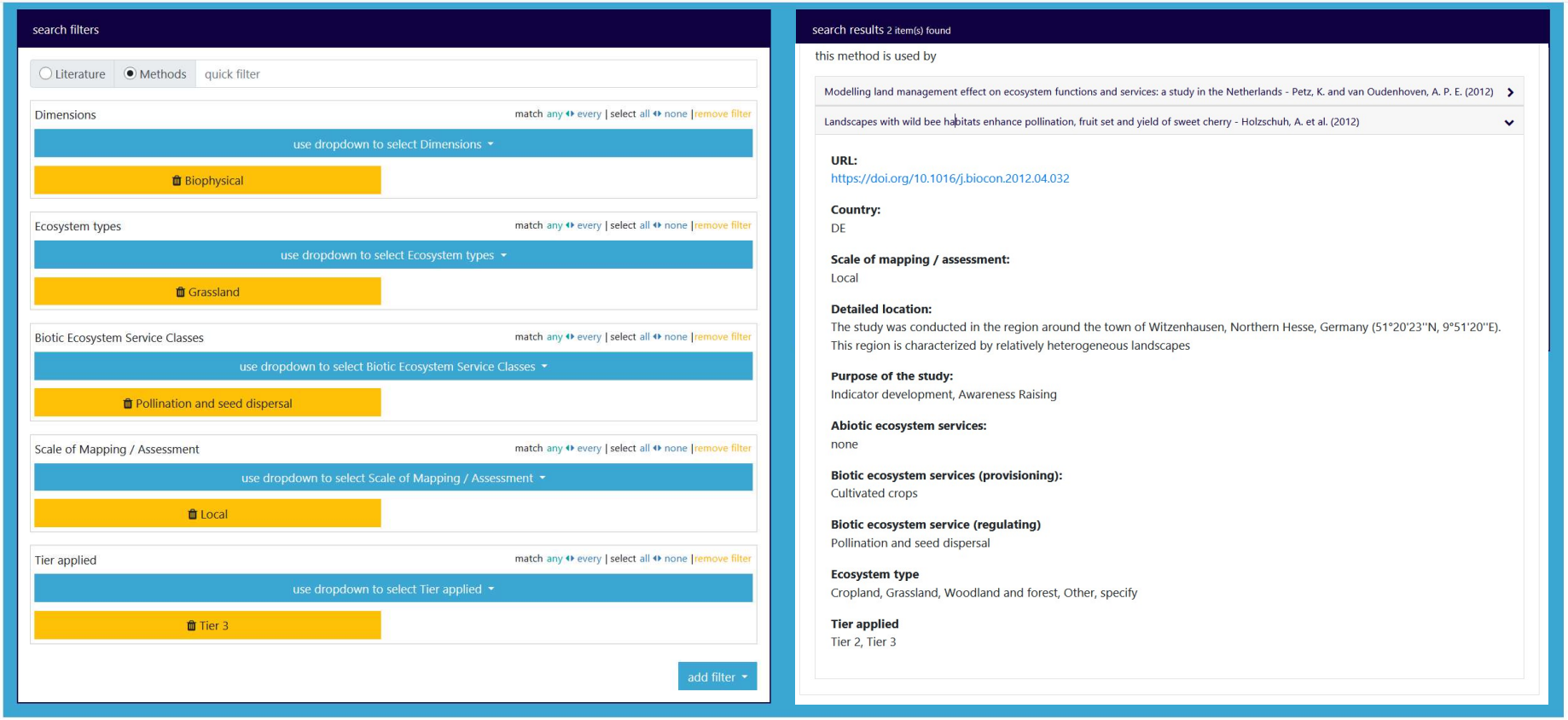
http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer



http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer

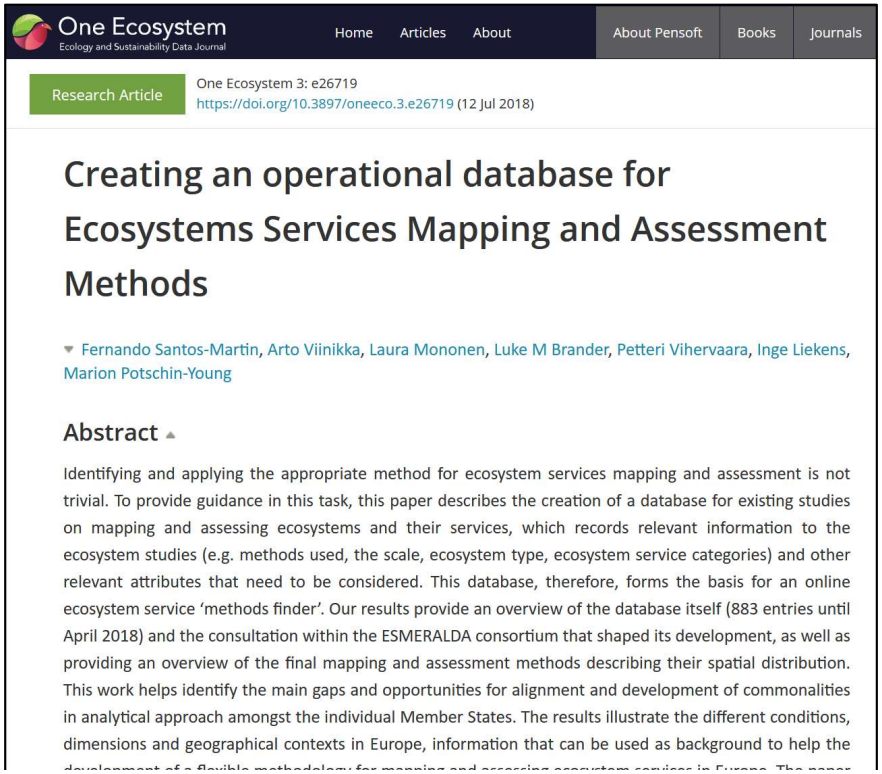


http://www.maes-explorer.eu

ESMERALDA MAES Methods Explorer

Publications on content creation (Santos-Martin et al. 2018) and on technical implementation (Reichel & Klug 2018)

https://oneecosystem.pensoft.net/article/26719



One Ecosystem
Ecology and Sustainability Data Journal

Home Articles About About Pensoft Books Journals

Research Article

One Ecosystem 3: e26719
https://doi.org/10.3897/oneeco.3.e26719 (12 Jul 2018)

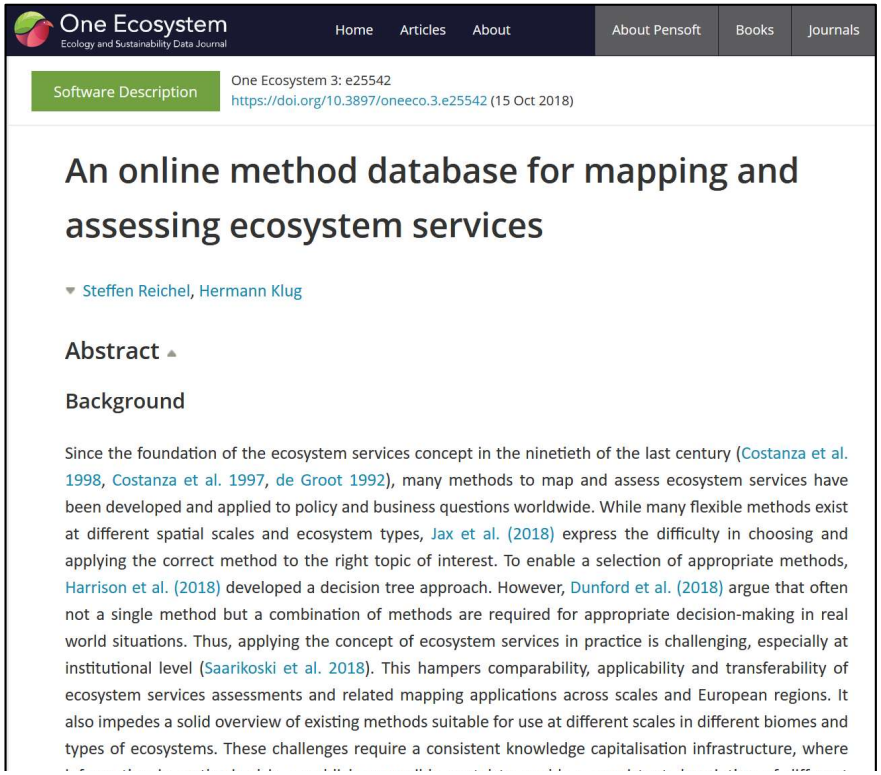
Creating an operational database for Ecosystems Services Mapping and Assessment Methods

Fernando Santos-Martin, Arto Viinikka, Laura Mononen, Luke M Brander, Petteri Vihervaara, Inge Liekens, Marion Potschin-Young

Abstract

Identifying and applying the appropriate method for ecosystem services mapping and assessment is not trivial. To provide guidance in this task, this paper describes the creation of a database for existing studies on mapping and assessing ecosystems and their services, which records relevant information to the ecosystem studies (e.g. methods used, the scale, ecosystem type, ecosystem service categories) and other relevant attributes that need to be considered. This database, therefore, forms the basis for an online ecosystem service 'methods finder'. Our results provide an overview of the database itself (883 entries until April 2018) and the consultation within the ESMERALDA consortium that shaped its development, as well as providing an overview of the final mapping and assessment methods describing their spatial distribution. This work helps identify the main gaps and opportunities for alignment and development of commonalities in analytical approach amongst the individual Member States. The results illustrate the different conditions, dimensions and geographical contexts in Europe, information that can be used as background to help the

https://oneecosystem.pensoft.net/article/25542



One Ecosystem
Ecology and Sustainability Data Journal

Home Articles About About Pensoft Books Journals

Software Description

One Ecosystem 3: e25542
https://doi.org/10.3897/oneeco.3.e25542 (15 Oct 2018)

An online method database for mapping and assessing ecosystem services

Steffen Reichel, Hermann Klug

Abstract

Background

Since the foundation of the ecosystem services concept in the ninetieth of the last century (Costanza et al. 1998, Costanza et al. 1997, de Groot 1992), many methods to map and assess ecosystem services have been developed and applied to policy and business questions worldwide. While many flexible methods exist at different spatial scales and ecosystem types, Jax et al. (2018) express the difficulty in choosing and applying the correct method to the right topic of interest. To enable a selection of appropriate methods, Harrison et al. (2018) developed a decision tree approach. However, Dunford et al. (2018) argue that often not a single method but a combination of methods are required for appropriate decision-making in real world situations. Thus, applying the concept of ecosystem services in practice is challenging, especially at institutional level (Saarikoski et al. 2018). This hampers comparability, applicability and transferability of ecosystem services assessments and related mapping applications across scales and European regions. It also impedes a solid overview of existing methods suitable for use at different scales in different biomes and types of ecosystems. These challenges require a consistent knowledge capitalisation infrastructure, where

ESMERALDA MAES Methods Explorer

Conclusions

- The database behind the ESMERALDA MAES Methods Explorer was initially filled with **883 entries** until April 2018
- Additional entries with focus on MAES in the **EU's Outermost Regions** and **Overseas Countries & Territories** were added in the course of the EU projects MOVE and MOVE-ON
- The ESMERALDA MAES Explorer (with the MAES Methods Explorer) will be hosted by the Ecosystem Services Partnership ESP in the future (transfer is currently going on)
- **Further entries** and updates on respective ES assessment methods and related applications are welcome, especially with regard to methods of **ES accounting**

Thanks a lot for your attention!

burkhard@phygeo.uni-hannover.de

Mapping & Assessment for Integrated ecosystem Accounting
http://maiaportal.eu/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817527