A demonstration version of the Common Platform (Oppla)

OpenNESS deliverable D6.5
OPERAs deliverable 5.2

2 June 2015

Authors: Peter Verweij, Marta Pérez-Soba & Bas Vanmeulebrouk, ALTERRA, Wageningen University & Research Centre

Claire Brown & Tim Wilkinson, UNEP-WCMC

George Cojocaru & Ana Aldescu, Tiamasg

Matthew Brown, Jonathan Porter & Paul Mahoney, Countryscape

Marc Metzger & Mark Rounsevell, University of Edinburgh

Ben Delbaere, ECNC

Heli Saarikoski, SKYE

Paula Harrison, University of Oxford

These project have received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreements 308428 & 308393

Prepared under contract from the European Commission

Contract n° 308428 Collaborative project FP7 Environment Project acronym: OpenNESS Project full title: Operationalisation of natural capital and ecosystem services: from concepts to real-world applications Start of the project: 01 December 2012 Duration: 54 months Project coordinator: Finnish Environment Institute (SYKE) Project website: www.openness-project.eu Deliverable title: Demonstration model Deliverable n°: D6.2 Nature of the deliverable: Report Dissemination level: Public WP responsible: Marta Pérez-Soba Lead beneficiary: Alterra	Project reference: 308393 Collaborative project FP7 Environment Project acronym: OPERAs Project full title: Operational Potential of Ecosystem Research Applications Start of the project: 1 December 2012 Duration: 54 Months Project Coordinator: The University of Edinburgh Project website: operas-project.eu Deliverable title: Demonstration model Deliverable number: 5.2 Nature of the deliverable: Report and online demonstration model Work package responsible: WP5 Partner responsible: WCMC Other Partners involved: Tiamasg, University of Edinburgh

Citation: Verweij, P., Pérez-Soba, M., Vanmeulebrouk, B., Brown, C., Wilkinson, T., Cojocaru, G., Aldescu, A., Brown, M., Porter, J., Mahoney, P., Metzger, M., Rounsevell, M., Delbaere, B., Saarikoski, H., Harrison, P., (2015). A demonstration version of the Common Platform (Oppla)

Due date of deliverable: Month n° 28

Actual submission date: Month n° 29

Preface

This report presents the Oppla development process, a description of the demonstration version and, feedback and considerations which the Oppla team will use to set priorities and plan the following development period.

Many thanks to the co-authors of this report: Marta Peréz-Soba, Claire Brown, Bas Vanmeulebrouk and Tim Wilkinson. The software implementation and the graphics of the Oppla website were done by Bas Vanmeulebrouk, George Cojocaru, Ana Aldescu and Matthew Brown. Without you we would not have had an operational website. Thanks for interpreting, structuring, and putting the concepts into actual software code and graphic designs and organizing all technical preconditions. Tim Wilkinson, thanks for tracking- and organizing weekly technical progress meetings to facilitate the co-operation in the distributed software development team. I would like to thank Marc Metzger, Jonathan Porter, Ben Delbaere, Mark Rounsevell, Heli Saarikoski, Paul Mahoney and Paula Harrison from the Oppla team and the many consortium members from both OpenNESS and OPERAs for their invaluable and constructive support. Thanks Mark Rounsevell and Martin Watson and your team for having organized two inspiring end user meetings. Finally, I would like to thank all end users for sharing their expertise and providing the input necessary to validate that we develop what you need.

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Introduction

Oppla is a web portal (an 'Open platform') being developed by the OpenNESS (http://www.openness-project.eu) and OPERAs (http://www.operas-project.eu) projects. It is the result of the agreement between both projects and DG RTD to jointly develop a shared vision and include their products into a single web portal, previously called Clearing House (OpennESS) and Resource Hub (OPERAs), and now named Oppla. This agreement includes a set of common Oppla deliverables. This is the second deliverable which describes the demonstration version of Oppla. It substantiates a first common deliverable entitled 'Scoping Document for the Common Platform' which included:

- the shared vision between OPERAs and OPENness
- the potential users and their roles and needs
- proposed content of the Common Platform
- branding of the Common Platform.

Oppla's main objective is providing an online common platform to facilitate access to outputs and other resources generated by both projects independently, with the overall purpose *to enable business, citizens and policy makers to better manage our ecosystems for human well-being by drawing upon best practice and robust knowledge*. Consequently Oppla is built around the questions communities need answers to in order to better manage our natural environment. The users' and stakeholders' needs are informing the design, functionality and content of this open platform.

The key products of Oppla are:

- *A website* – providing a continuous resource base and a range of services such as practical advice, guidance, tailored solutions, case studies, a Question & Answer facility ("Ask Oppla") – through which questions about natural capital and ecosystem services will be answered by experts, tested tools and techniques, and complemented by events, training courses, and other services on demand.
- *A community of practice* – for a growing range of potential users including entrepreneurs, consultants, policy makers, land managers and scientists. Oppla will be proactive in establishing strong communities of practice for sharing resources, new ideas, practical experience and to function as a marketplace – enabling members to find products, services and potential partners specialising in natural capital and ecosystem services, to help with their own projects.
- *A business plan* – to ensure the continuation of Oppla's activities beyond the lifetime of OpenNESS and OPERAs and evolve into the future by being established as an independent legal entity.

This report describes the demonstration version, which is available by following this link http://oppla-test.eu/web/demo. It defines the method used for the development and describes the content of the web portal, including approaches to gather feedback from both OpenNESS and OPERAs partners and potential end users. It ends identifying the next steps for further development.

Method

Website development

Many software development methods exist, ranging from very strict design-implement-test-deliver phased approaches to styles that embrace change. Change is often based on advances in understanding and priority shifts. These so-called 'agile' methods can adapt by executing many short iterations of the design-implement-test-deliver phases. At the end of each iteration users provide feedback to plan the following iteration. The careful selection and inclusion of different types of users, acknowledging their roles and determining feedback frequency are crucial to the success of a project. Depending the needs one might choose to select a large group of users from different communities, personas, or champions. Verweij et.al. (2014) recommend to distinguish between different feedback frequencies from groups with different roles:

- User group – provide feedback on development iterations, consisting of experts on ecosystem services, business-science interface and the policy-science interface;
- Working group – to ensure inclusion of broader group of ecosystem expertise and acceptability;
- Steering group – to gain support and acceptance of business and policy
- Management group – to monitor progress, provide feedback, organize contacts and set priorities, consists of donor and future maintainer

Often the agile development iterations are preceded by a visionary functional design, a formal documentation of what an application should do and how an application should function in interaction with a user. The functional design is a reference for the implementation (Verweij et.al. 2010).

Within the User Centered Design approach (Raskin, 2000) usability requirements drive the features and technical development by studying the usefulness with the intended users. Prototypes of interface design can be used to test usability with users. Prototypes can be incomplete versions of the software product, but may as well be screen designs in a software presentation tool, or even hand drawn sketches on paper (Sefelin et al., 2003). They allow users to evaluate developers' proposals for the interface construction of the product by actual testing, rather than having to interpret and valuate the design based on descriptions. The main objective of a prototype is to find out if the developers are on the right track and to further feed requirement discussion. In general a prototype is an inexpensive way to try out ideas so that as many technical, ecosystem service content, editorial, procedural and organisational issues as possible are understood before the real implementation is made.

Oppla development

An incremental software development method was chosen for Oppla based on the User Centered Design approach and evolutionary prototyping (McConnell, 1996; Verweij et al., 2010, Verweij et.al., 2014). This method considers the following four steps:

1. Scoping – clarify aims and objectives and define boundaries of the project;
2. Define sounding boards – to organize user involvement from the targeted communities and to gain support and political acceptance;
3. Develop the software concept
    - Inventory of key issues and concepts – by studying background material, semi-structured interviews (Wilson, 2013) and sounding board workshops
    - Group, relate and prioritize the concepts – during workshops
    - Develop prototypes – propose alternative wire framed solutions, discuss and interactively change during workshops;
4. Development iterations

- Develop a version – design, develop and test software together with gathered and incorporated data
- Deliver the version
- Elicit feedback – from the sounding boards
- Plan another iteration – based on the feedback

Scoping

The scoping was developed by a working group composed of individuals from the relevant work packages from the OpenNESS and OPERAs projects. The scoping phase ran during the end of 2013 resulting in:

- The shared vision on Oppla from both OpenNESS and OPERAs: '*enable European communities to better manage our ecosystems for human well-being and livelihoods by linking them to best practice ecosystem services science*' ;
- Potential user roles and Identification of potential users and their needs. Identified potential users: Policy making, private sector, civil society, academic;
- Propose content types: documents, videos, tools, services and news;
- Branding;
- A timeline and product descriptions
- List of challenges and solutions
- Shared project team and responsibilities: overall lead, user, technical, design, business plan.

Detailed information on the scoping can be found in the scoping document.

Oppla sounding boards

Oppla is being developed by a core team from both OpenNESS and OPERAs including ecosystem service experts, software experts, designers and editors. The core team has two face to face meetings each year and many bi-lateral tele-conferences. The following sounding boards were identified with corresponding roles:

- Annual OpenNESS and OPERAs meetings with Oppla sessions where the partners actively interact and provide potential questions a user might ask to Oppla, potential content and how they might interact with Oppla, post project;
- Annual OPERAs User Board meetings as a continuous instrument for inputs and exchanges with key stakeholders that practice ecosystem services evaluation and those that potentially request these services. At each of the User Board meetings, Oppla has been presented and input has been gathered on content, questions Oppla might answer, utilisation of the platform and other services the user board might want access;
- Participation at selected events to present Oppla and to collect feedback (e.g. ACES 2014 conference; ALTER-Net conference; EU Green Week);
- Specific project meetings (e.g. an SME event as part of OpenNESS);
- Bi-lateral meetings with end-users (e.g. EEA, DG Environment, SHELL, DG RTD)

Developing the software concept

Requirement inventory

During several workshops and interviews potential functionalities, content and designs of Oppla were inventoried (see Annex I and Annex II). We studied existing websites for inspiration[1], made draft designs and structured information from different perspectives. Figure 1 illustrates the conceptual structure of Oppla. Oppla can be regarded as a cloud of content on natural capital and ecosystem services in the form of factsheets, documents, maps, graphs and video's. That content can be accessed via several content structuring pathways, e.g. via a guidance tool, the case study finder, or via a sectoral policy. The pathway determines how different types of information (e.g. content) are brought together.

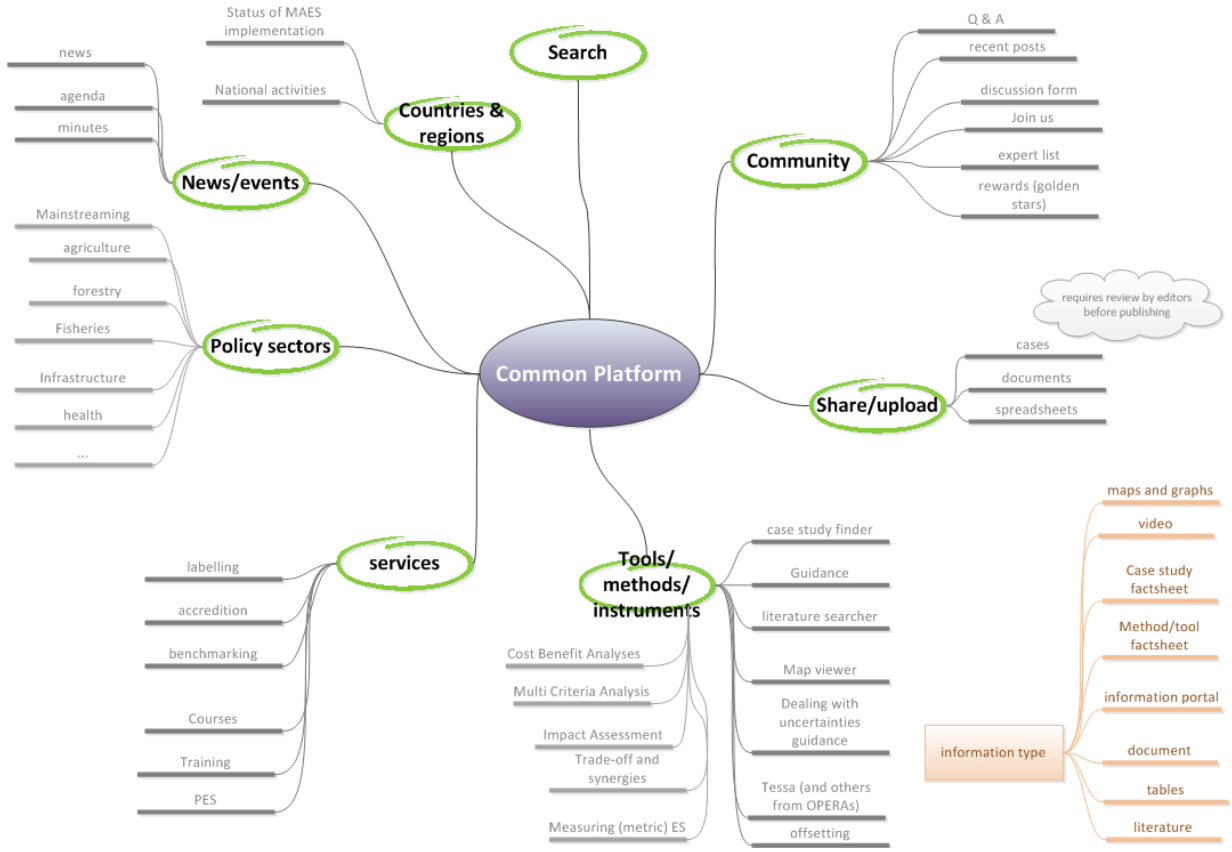


Figure 1 – Mind map diagram depicting the grouping of content for Oppla. Content types are displayed in pink.

Design

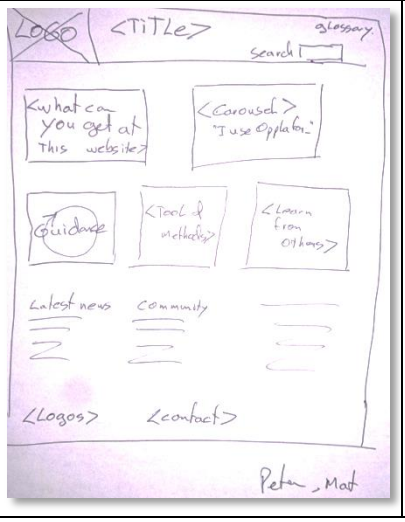
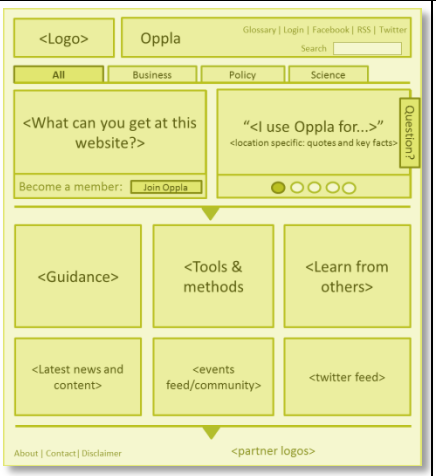
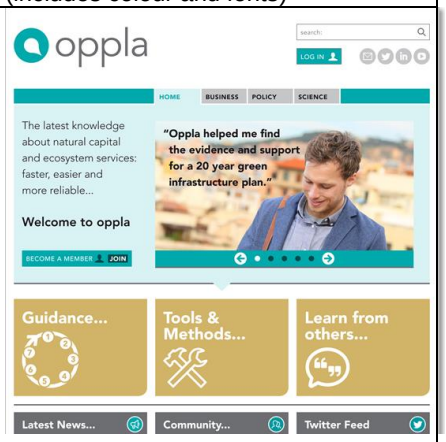
During the visionary development of the website three sequential design steps were followed:

[1] Incomplete list of existing websites that were studied: ClimateAdapt- on integrating many sources of information, the case study finder and a guidance tool; BISE- the European Information System on Biodiversity; WISE-RTD on how to serve different user groups; Amazon Mechanical Turk- as example to bring service providers and service user together; ValuES- on how to inform the public on Ecosystem Services; ESP - Ecosystem Services Partnership

1. *Sketch screens* – on paper and white board to analyse how to structure what content and with what layout to display it. Screen sketching includes determining the responsive logic within a single screen as well as the relationship between screens (Figure 2);
2. *Wire frame* the sketches to find out how the designs fit the actual screen sizes (e.g. in pixels on different platforms). See Annex III for all wire-frames;
3. Include *aesthetics* like colours, fonts, imagery which highly impact how a website is experienced. See Annex IV for all design aesthetics

Table 1 illustrates the products resulting from the design steps shaping the homepage.

Table 1 – Design steps of the homepage

Screen sketch (Structure, content, layout, logic)	Wire frame (includes metrics)	Aesthetics (includes colour and fonts)
		

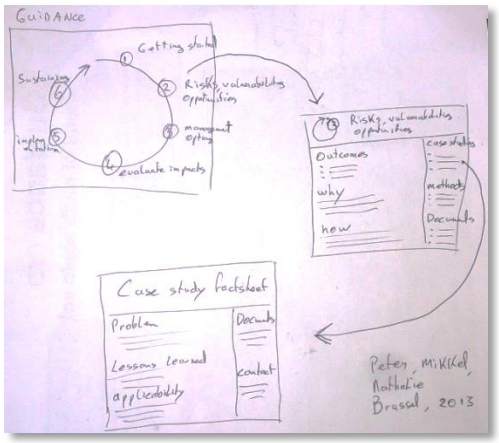


Figure 2 – screen sketched illustration capturing the flow between screens

Description of Oppla demonstration model

Homepage

A homepage's function is to attract the attention of users and to facilitate navigation to other website pages. Oppla's homepage (see Figure 3) shortly explains what the website is about and illustrates why visitors should use Oppla by rotating over a number of appealing images alternating over experiences of users and ecosystem service facts. Visitors can become (paying) members providing extended and privileged services like access to the expert network.

Various tools may be hosted through the Oppla website, but only three of them are placed in the spotlight at the homepage. Currently these are: the case study finder to learn from others, a library of tools & methods and a guidance tool to bring Ecosystem Services into assessment processes.

Finally, at the bottom of the page, we find latest news and community feeds providing direct access to recent information and publishing the active use of Oppla to visitors.

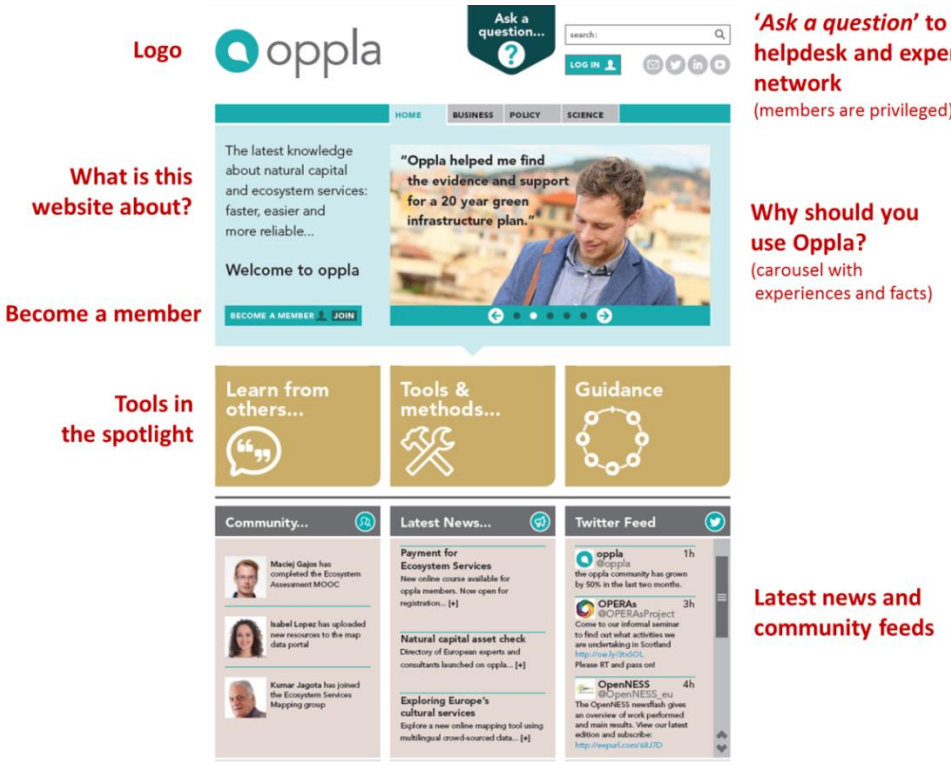


Figure 3 – Screenshot of the Oppla homepage

Case study finder to learn from others

When we are learning from others, finding out what worked (and failed!), we benefit from their experience as well as our own. Oppla publishes factsheets on case studies from OpenNESS and OPERAs. Each case study is described in terms of a title, an objective, a context, area characterisation, key findings and challenges, scale and keywords. In addition there may be references to tools used and publications and reports. Each case is accompanied by a contact point for further information and a location. The location is used to display all case studies on a map and help the website visitor decide whether the case is relevant for him/her (Figure 4). The displayed cases can be filtered by scale which distinguishes between: local, subnational, national, subcontinental, continental and global.

The case study finder software dynamically displays case studies from available data in the case study database. For the demonstration version of Oppla all 4 cases as provided by the content experts were included into the database. These 4 cases serve a functional demonstration purpose only. The automatically generated factsheets may contain incomplete, or even incorrect information.

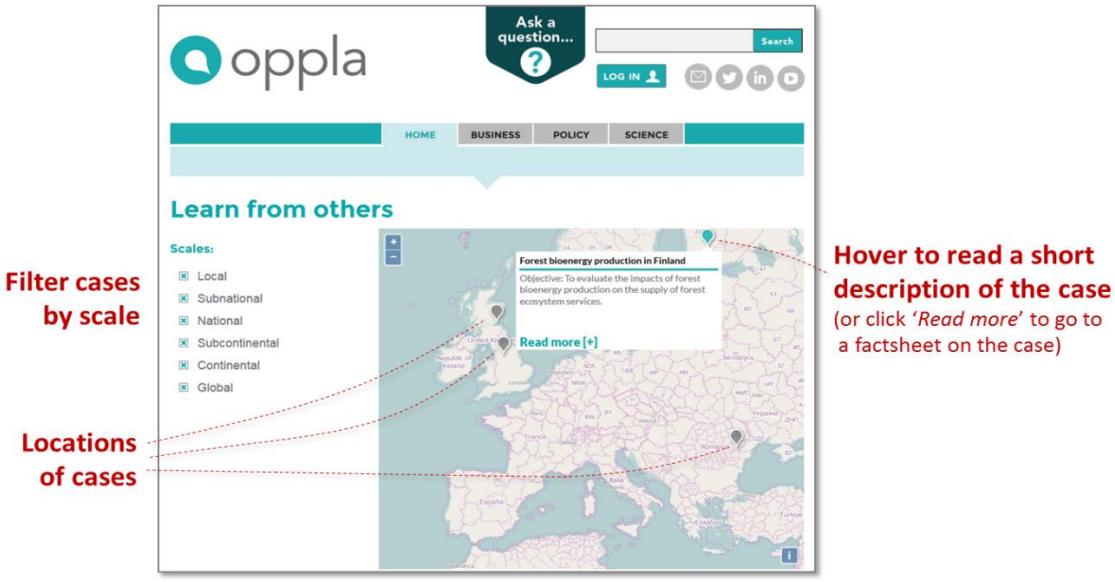


Figure 4 – screenshot of the 'case study finder'

Guidance or Menu of Multi-Scale Solutions

The Menu of Multi-Scale Solutions is a synthesis of the conceptual and methodological advances and the evidence base of their application in sustainable land, water and urban management. Early conceptualizations of the menu presented it as a circular guidance tool on bringing natural capital and ecosystem services into the impact assessment process[2]. For each step a single page describes what that step is about, what the results of that step are, how you can do it and it may contain references to case studies that focus on that step, tools & methods that are used within that step and provide links for further reading (Figure 5).

Several options for the guidance tool have been developed: from the business users perspective and from the scientists within the Oppla team. See Annex V for the different options. The currently published guidance tool originates from scientists. It is not operational, but a placeholder image only. The coming months it has to be decided what perspective to choose and how to develop it further.

[2] Presentations by Peréz-Soba, M. and Verweij, P. during the OpenNESS kick-off and the first joint OpenNESS-OPERAs meeting. The presentations were inspired by Climate Adapt's Adaptation Support Tool from the European Commission, see http://climate-adapt.eea.europa.eu/adaptation-support-tool

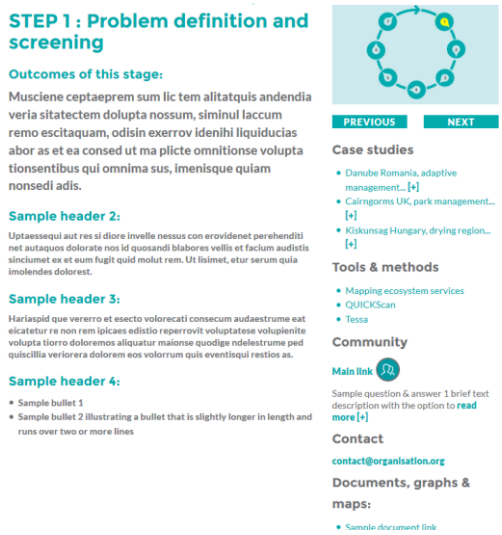


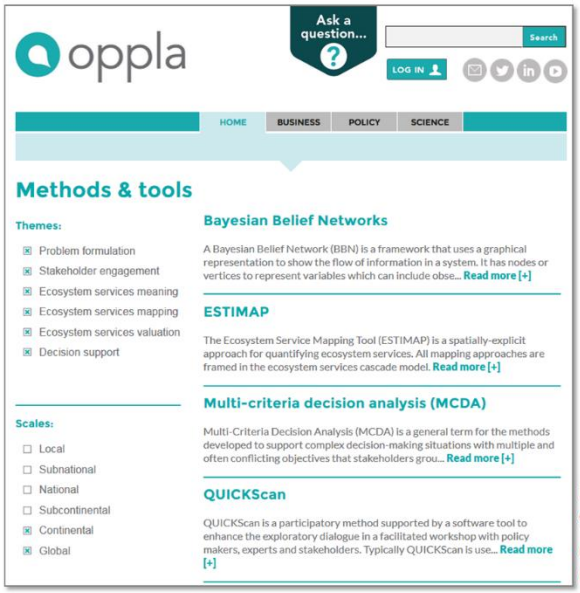
Figure 5 – screenshot of a step detail from the guidance tool

Tools & methods

Many tools and methods on ecosystems and their services exist. OpenNESS and OPERAs use a subset of available tools and methods. Oppla publishes factsheets on these tools & methods including: a title, a description, advantages, disadvantages and requirements. Each tool/method is tagged by a spatial scale and can have links to (factsheets of) case studies in which the tool has been applied. A contact point, publications and training & consultancy links may be provided.

To be able to filter available tools & methods, each tool is tagged with themes in which it may be applied and with a spatial scale (see Figure 6).

Similar to the case study finder, the method & tool finder software dynamically displays methods and tool factsheets from available data in the method & tool database. For the demonstration version of Oppla all 6 tools as provided by the content experts were included into the database. These 6 tools serve a functional demonstration purpose only. The automatically generated factsheets may contain incomplete, or even incorrect information.



Filter by theme and scale

List of methods & tools that meet the filter criteria
(click '*Read more*' to go to a factsheet on the method or tool)

Figure 6 – screenshot of 'methods & tools' finder

Software

Architecture

The increasing size and complexity of software force the use of abstraction and to break the system down into separate elements of concern in which each element has its own functional responsibilities. Such a common abstraction of a system, or architecture, manifests early design decisions and software qualities like modularity and extensibility, through which the system can be analysed (Verweij et al., 2010).

The Oppla portal uses the portal software architecture. A portal is a web based application that provides personalization (webpages are personalized based on the implicit characteristics of an individual), single sign on (access control of multiple related, but independent software systems), content aggregation from different sources and hosts the presentation layer of an information system. A portal integrates information from different sources into one page. A portal application consists of a group of portlets. A portlet is a Java software platform-based Web component that processes requests from a portlet container and generates dynamic content. The content generated by a portlet is called a fragment, which is a piece of markup (in the case of Oppla HTML) adhering to certain rules. A fragment can be aggregated with other fragments to form a complete document, called the portal page. Portlets are run by a component, called a portlet container that provides the portlet with the required runtime environment.

The portal works as follows (see Figure 7):

1. A user (client) opens the portal, and the portal application receives the client request and retrieves the current user's page data from the portal database;
2. The portal application then issues calls to the portlet container for all portlets on the current page;
3. The portlet container, which holds the user's preferences, calls the portlets via the portlet API, requesting the markup fragment from each portlet and returning the fragment to the portal;
4. The portal aggregates all markup fragments together into one page, which the portal finally returns to the client/user, giving the user the integrated, useful interface he or she is used to on the desktop.

In the case of Oppla, Liferay[3] is used as the portlet container. Portlets were developed for the Case study Finder, the Method/Tool Finder and the Guidance Tool.

[3] http://www.liferay.com/

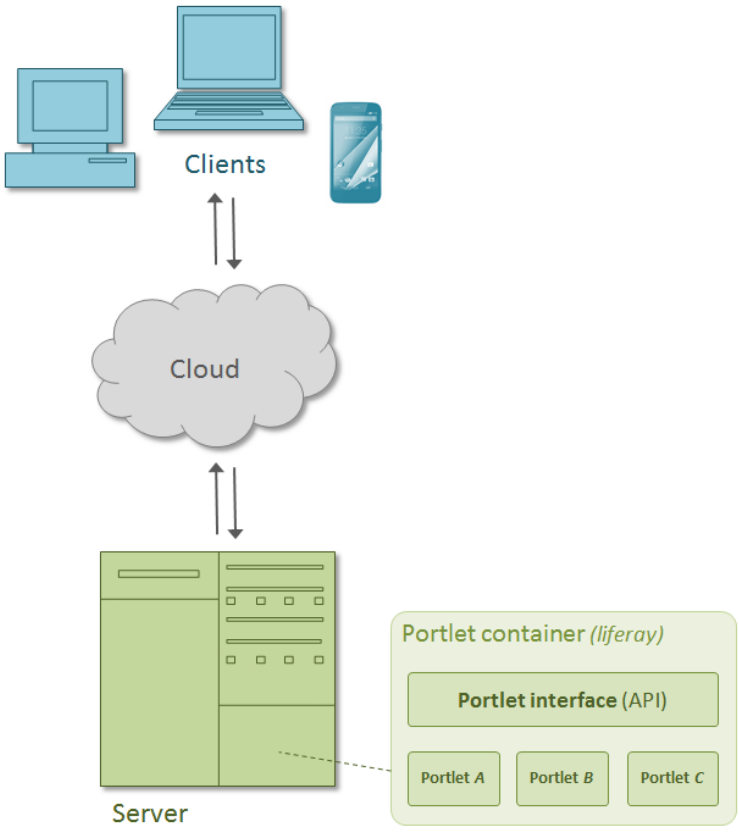


Figure 7 – Oppla software architecture

Build Process

The prototype application has been developed using a distributed software development team comprising of Alterra, Tiamasg and UNEP-WCMC. Version control of the software code by Apache subversion[4] enables multiple teams to work on the same code base in parallel. A Kanban scheduling system[5] was set up to manage the flow of work by estimating, assigning tasks and tracking progress as a group. The process is managed remotely via Trello[6], along with weekly Skype calls between the team to manage the Kanban board and discuss issues / plan for the next stage of development. The prototype was deployed continuously throughout the development period and shared with the project partners for feedback throughout.

[4] https://subversion.apache.org/
[5] http://en.wikipedia.org/wiki/Kanban
[6] https://trello.com/

Next steps

Further developments will be based on the feedback and discussions that took place during the many workshops and meetings that were organized (see Annex VI). The paragraphs below list important feedback and considerations which the Oppla team will use for priority planning the coming months.

Update tools

Case study finder

The *case study finder* currently hosts a small number of case studies for illustration purposes. Factsheets of additional case studies from OpenNESS and OPERAs will be written and made available within the Oppla case study database as soon as information comes available. Other sources of case studies (such as MAES catalogue of case studies[7]) may be integrated. Case studies are currently filtered by spatial scale.

Several land owner stakeholders would appreciate to include a filter option '*theme'* (e.g. woodlands, mixed rural landscapes, urban areas, river basin) and '*challenge'* (receive funding from ES, balance trade-offs, get public support).

Some business users relate the filter '*scale'* to: site, company, or the full life cycle assessment of a product. Additionally they would like to filter cases by '*impact issue*' using the terms: legal, reputational, financial and, operational. The case study factsheet should use a journalistic style to describe:

- The problem that you are trying to solve;
- Identification of potential benefits;
- Clarification of scalability of results (e.g. will the solution only work when you have got the same environmental and societal setting?).

Rating of case study factsheets is considered highly questionable.

Guidance tool

The setup of the *guidance tool* ('Menu of Multi-scale solutions') is under development. The Oppla team is taking two approaches to seek the terminology and order of guiding steps:

- from published papers and discussions within the scientific community and;
- from interviews with- and official documents from the business community.

Business and NGO end users recommend to use a single vocabulary to facilitate knowledge exchange between the various user groups.

Tools and Methods

Partners from the OpenNESS and OPERAs consortia use many tools and methods on Natural Capital and Ecosystem Services. Many more tools and methods exist outside of both the consortia. Several initiatives have made inventories of these tools and methods, such as the method database from 'ValuES: methods for integrating ecosystem services into policy, planning and practice'[8] which describes over sixty tools and methods. OpenNESS and OPERAs tools partially overlap with these existing initiatives. Oppla should build on these existing initiatives and make use of the continuous updates that already take place.

Quality assurance and editors

An editor has been assigned to assist in editing the content of Oppla during the development by OpenNESS and OPERAs. The Editor will take responsibility to work with individuals who submit content to ensure

[7] http://biodiversity.europa.eu/maes/maes-catalogue-of-case-studies
[8] http://aboutvalues.net/method_database/

readability and usability of the information that appears in Oppla. The Editor will not be responsible for the accuracy of the content of reports and tools made available through Oppla. The process of committing content, reviewing it, communicating with the author and the publishing on the website has still to be developed.

Assess explicit user roles

During scoping we have identified different user roles. Different functionality and content might be made available through targeted functionality based on a website visitor identifying himself by his, or her role[9]. In reality, however, multiple roles are represented in a single individual. During the user board meeting the users questioned the explicit distinction between user roles (see Annex VII). Moreover, stressing the difference between the various roles could potentially create barriers between the roles. Therefore Oppla may take a task based approach where there is no priming of users. Instead, a visitor explores and discovers content for a certain task he/she wants to execute. In the task-based approach the content is often written in a journalistic style in-contrast to a content style per user type.

Identify testing platforms and organize regular tests

Tests with users are crucial to validate that Oppla meets the user needs, to identify risks and to make objective assessments regarding the degree of conformance to specifications. Tests may also be used to try out ideas with users, broaden the network of ecosystem service experts and gain acceptance and support from businesses, land managers and policy makers.

To date tests have been carried out with the Oppla sounding boards which are mainly represented by OpenNESS and OPERAs partners which include a range of academic and SME organisations. Distinguishing between different objectives of testing and organizing fitting test schedules will profit the development, dissemination, acceptance and uptake of Oppla. Different profiles for testing might include: 1) feedback on development iterations (e.g. by selection of end users and experts on ecosystem services, the business-science interface and the policy-science interface); 2) ensure inclusion of broader group of ecosystem experts for their expertise and acceptance; 3) gain support and acceptance of targeted user groups (e.g. business and policy via the OPERAs user board); 4) Monitor progress, provide feedback, organize contacts and set priorities.

Link with relevant information portals

Many sources on ecosystem services and natural capital exist and are already in use by potential Oppla users. A preliminary inventory of relevant sources was made during the second OPERAs user board (see Annex VIII). These sources could be made accessible through Oppla.

Link with relevant projects

There are several (research) projects working on natural capital and ecosystem services. These projects might be linked to Oppla by providing a project factsheet with a hyper link and contact information. These interlinkages could play a role in consolidating the network with these projects and institutions.

Facilitate searching all databases at one click

It is envisaged that Oppla will host a huge amount of validated content on Natural Capital and Ecosystem Services. There will be several filters –functioning as perspectives- to access all that content, including the

[9] Example website of a visitor identifying his/her role to access specific functionality: http://www.wise-rtd.info/en

case study finder and the guidance tool. In addition there might be a general 'search' tool that allows users to filter content on content type (e.g. case study factsheet, document, video), scale and other filtering options. The returned list can still be huge (hundreds). Various ordering methods may be offered: alphabetically, date, relevance (by occurrence of search terms), or popularity.

The role of voting

Voting ('like' and 'dislike') is a common means to find popularity. The OPERAs user board expressed their worry on the use of voting as it might be hard to implement it impartially; a supplier might use the voting system to push up his/her tool in the list. However, if a trusted quality assurance is in place it may speed up finding the best information available.

Services

Ask Oppla

"Ask Oppla" is the question and answer service that will be provided by the Oppla website. Its purpose is to help simplify the process of obtaining information about ecosystem services (ES) and natural capital (NC) by enabling users to ask questions and receive answers that are directly relevant to their needs. Ask Oppla will be available to all users but is specifically targeted to individuals/organisations that are less familiar with the concepts of NC/ES and may not have a clear understanding of the information, services and resources that would be useful to them.

Ask Oppla is a service for helping people obtain useful information when they are unsure of what information they need. Its' role is similar to a librarian working in a library – it is the interface through which information about NC/ES can be accessed more quickly and reliably (that is, quicker and more reliable than searching online).

When clients ask Questions ('Ask Oppla'); Answers from Oppla to Clients flows via Oppla Secretariat that does an Intelligent Search for the best available knowledge: 1) in published peer reviewed reports (link to Science Search Engines); 2) grey literature (similar); 3) experts in the network (via database of experts per domain; expertise profiles required from participating individuals and institutions).

Ask Oppla might distinguish between a freemium model in which questions and answers are published in an open environment and a commercial model. In the latter questions could be answered in a closed environment to prevent potential issues of exposure and liability.

Some members from the OPERAs user board use the proteus partnership[10] for a similar service.

News and events

Website visitors may be offered packaged information on news and events to inform them on common topics. Common topics may include: upcoming courses, conferences, government proclamations, laws, etc.

It has to be decided what sources of news and events to use, what is published on Oppla and how to manage to flow of that news and events. The user board indicated the sources they currently use to find information (see Annex VII). Some might be relevant for Oppla and might be automatically fed from, filtered and published through Oppla.

Community building

The project partners will ensure there is a community behind Oppla. The community can be extended with networks that partners are part of (e.g. ALTER-Net[11], IALE[12]) and through promotion at events like Green week.

[10] http://www.proteuspartners.org/

The user board would appreciate community building functionality in Oppla if it brings added value to existing initiatives like the business oriented social networking service linked-in[13] (see Annex IX for more feedback on 'community building').

Advertising and training

Discussions on advertising services from consultants and (academic) experts took place during the 2nd user board meeting. Some users tempted to restrain consultants from advertising and allowed academia and experts to advertise their services (including training and massive online training) as academia and experts were considered impartial . Others played down the impartiality of academia and experts and wondered how they could assess the quality of the offered service (see Annex IX).

Future maintenance

Oppla is being developed during project execution of OpenNESS and OPERAs. Maintenance of Oppla after the projects end must be organized during the lifetime of both projects. Two options are explored: 1) place Oppla products and services under an existing initiative for which maintenance is secured; 2) develop a business plan and establish an independent legal entity.

Option 1: The Biodiversity Information System for Europe (BISE) is a website with information and advanced search functionalities on biodiversity, including Ecosystem Services. BISE is being funded by the European Commission and maintained by the European Environment Agency (EEA) and its network of European experts via the European Topic Centre on Biological Diversity by integrating knowledge, information and services from a wide range of sources such as: European countries, (European) research projects, United Nations Convention of BioDiversity, networks of NGO's and public participation. Much of the content on BISE must be cleared by the European Commission before it is published.

Option 2: Many research projects develop project websites to brand and publish their results with the objective to provide a platform that lasts beyond the project funding. Many fail. The Oppla team is developing a business plan with involvement of business. The business plan will cover longer term funding for Oppla. Oppla will adopt a freemium model that combines a range of free services with a range of paid services. Also, Oppla is offered to research projects as a cheap alternative to host their outputs on, rather than having to develop their own platforms.

Option 2 was chosen. Oppla will focus on Ecosystem Services instead of the larger biodiversity domain; the Oppla team wants full control over the content published on the website using the Oppla branding and; Oppla should host active communities.

[11] http://www.alter-net.info/
[12] http://www.landscape-ecology.org/
[13] https://www.linkedin.com

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Annex I – Inventory of end user needs

Inventory of questions that might be answered by Oppla ('Clearinghouse') from OpenNESS meeting (21 October, 2013):

- How do ecosystem services help me?
- What impact will a decision have on ecosystem services?
- How can ecosystem services be used to support sustainable development and the green economy?
- How do we measure ecosystem services loss and how do we compensate for this?
- What are the financial benefits of ecosystem services?
- What is the connection of ecosystem services to well-being?
- What is the best mix of policy options to support the delivery of ecosystem services bundles and natural capital?
- What ecosystem restoration measures will yield the most ecosystem services?
- How can I use ecosystem services to maximise my profit?
- How can ecosystem services halt rural land abandonment?
- How can ecosystem services be mainstreamed in policy?
- Who has the same question/problem as me?
- What are ecosystem services and where are they located?
- What are the benefits of using ecosystem services in my policy formulation and implementation?
- How can ecosystem services be integrated into existing policy frameworks?
- Which tools can be used for this purpose?
- Who has used these tools and where?

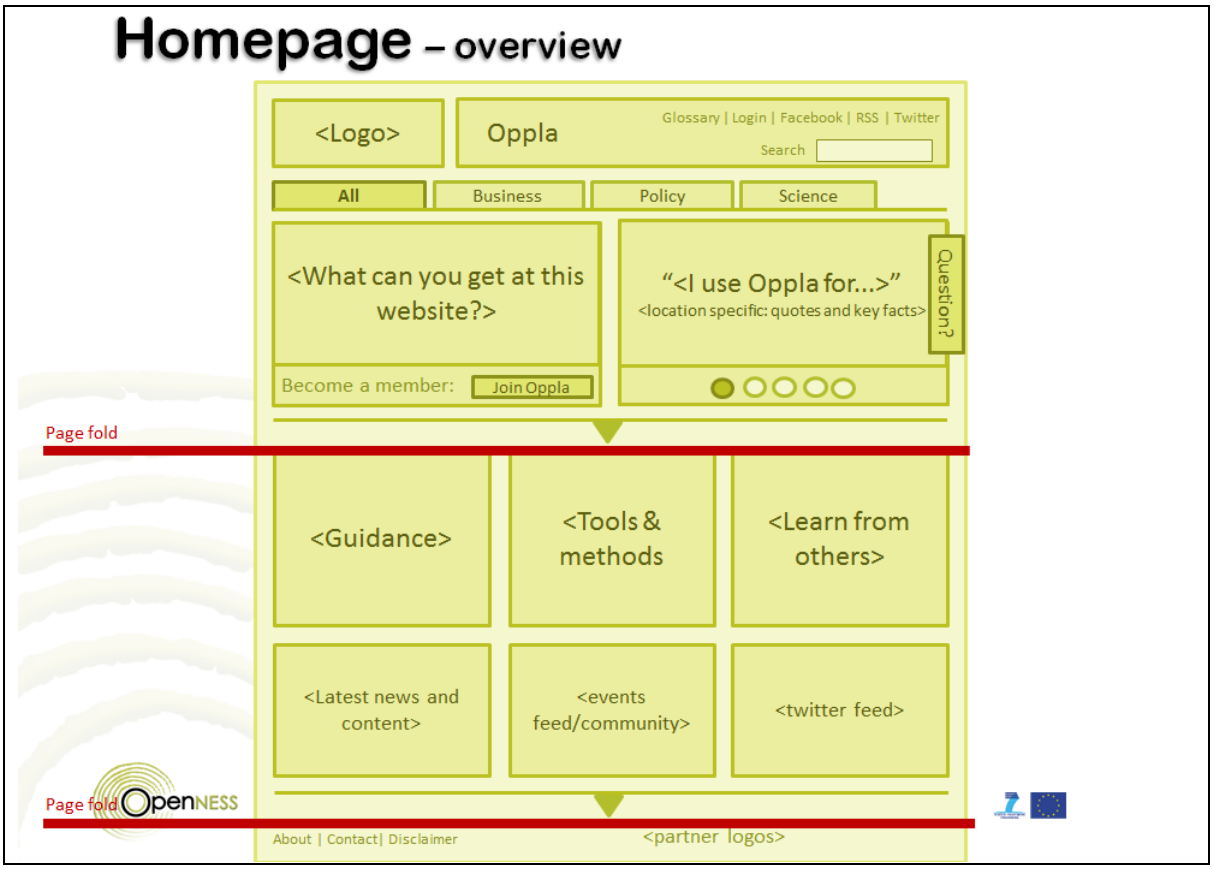
Annex II - Inventory of potential content

Inventory of potential content as developed during the Oppla working group meetings:

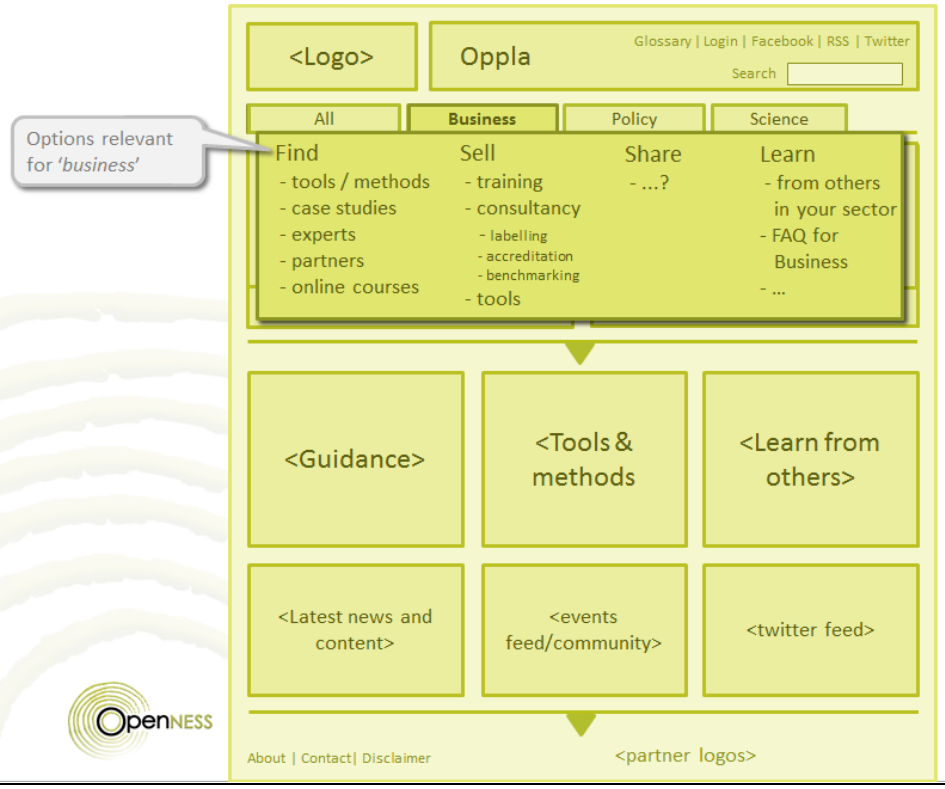
Oppla content	**Examples of how this content may be used**
Documents – best practice, syntheses, popular articles, policy briefs	Documents provide knowledge drawn from the experience of using the ecosystem service (ES)/natural capital (NC) concept in practice for a user who would like to use this approach themselves. Documentation might be provided at varying levels of detail and written in different styles to communicate to the needs of different users.
Cases - worked examples, lessons learned, data/reports, contacts	Users could search documents and data from real world examples that are based on case studies to guide their own work. Access to this information will be through a mapped interface, or 'case study finder', enabling users to filter examples based on case study attributes. The case study database will be augmented over time, evolving into a substantial body of knowledge about the use of the ES/NC concepts in practice.
Tools – DSS, mapping/visualisation, graphics, syntheses, PES/valuation, apps	Tools for exploring the ES/NC concepts might be provided, linked to documentation on how they can be applied and worked examples of their application within case studies. Users might have access to ES mapping and visualisation tools, decision support tools and tools for the monetary and non-monetary valuation of ES/NC, amongst others.
Instruments – labelling, accreditation, benchmarking, offsetting,	Information on various instruments might be provided that could allow users to explore the usefulness of these approaches within their own context. Many of these instruments are methods that go beyond the use of online assessment tools and which are likely to require specific assistance and/or training. For example, offsetting procedures require extensive knowledge of ecosystem processes and of the specific conditions where they are applied. Oppla could provide an explanation with examples of how offsetting works in practice, but also links to organisations that are able to provide specialist training services in this method.
Services - expertise directory, consultancy	The wealth of the potential Oppla online resources could provide many opportunities for SME's to develop complementary services that exploit these resources. For example, an SME offering a scenario development service might use the Oppla 'scenario toolkit', as well as worked examples in real cases with guidance documents. An SME offering environmental consultancy services might use the Oppla accreditation or benchmarking instruments to support their business activities. The 'Ask-Oppla' service will be fundamental in providing the user community with answers to questions that will link users to experts in the field. The provision of SME services will provide one route to future financial support for Oppla.
Training – courses, manuals, networks	Some of the tools and instruments within Oppla could be self-explanatory with guidance documents and worked examples. Others, however, might require additional training for their use in practice. Oppla will provide links to online training materials as well as links to organisations such as SMEs providing face-to-face training services. Again this might provide a potential future funding source.
Education – materials, courses, programmes, networks, schools	Users from the education sector could have access to a wide range of resources that could support educational activities. This could include all educational levels from schools to universities, and provide a high quality set of benchmarked resources derived from state-of-the-art scientific knowledge.
Networking - match-making, data sharing, peer groups, discussion forums, shared learning, mentoring	Users might learn extensively from the experiences of others with similar questions and problems to solve. Hence an important role for Oppla could be in providing networking opportunities through online discussion groups, forums and other means of community engagement. Oppla might provide business-to-business opportunities by linking users requiring assistance with users providing a service.
News & events – feeds, newsletters, blogs	All of the Oppla resources might be supported by different communication approaches to inform the user community.
Videos – popular, showcasing, animations	Methods for visualising the Oppla resources online could support the other communication approaches. Together they might promote Oppla as the ultimate online resource to support ecosystem management.

Annex III - Design structure and content - wire frames

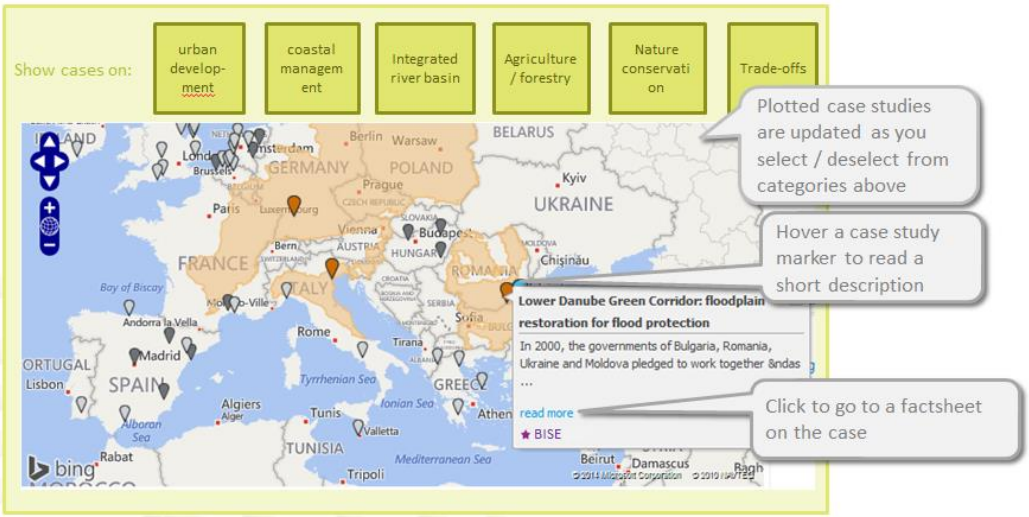
Wire frames were developed incrementally during several workshops and bilateral meetings, most noteworthy are: initial sketches for the case study finder were developed during the OpenNESS kick-off meeting (Helsinki, March 2013); the initial guidance tool was drafted during a bilateral meeting in the first OPERAs user board meeting (Brussel, November 2013) and; the website overview developed during two Oppla core group meetings (Wageningen, April 2014 and Brussel, October 2014).



Homepage – detail '*business*'

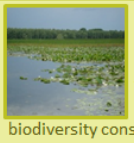


Learn from others (1/2) – filter case studies



Learn from others (2/2) - factsheet

Adaptive management plan for Lower Danube River, Romania



Objective: enhance effectiveness of the integrated- and adaptive management. Balance levels for services such as: timber production, food production, water quality, flood protection, biodiversity conservation and restoration of biophysical structure.

Area characterisation: the area is a regional complex system which includes the Danube River stretch, floodplains, the coastal and inland delta and lagoons (~11.000 km2). This complex includes the Danube Delta Biosphere Reserve and the Small Island of Braila Natural Park.

Actors involved: local/regional stakeholders (e.g. tourism operators, waterway transport operators, fishermen, farmers, managers of protected areas, managers of water resources) and natural capital and Ecosystem Services researchers.

Key messages:
- ....success..... ....
- ....limited by ....

Keywords
- Danube
- integrated management
- river island
- conservation

Scale
- regional

Method/tool
- Identifying and prioritizing ES
- Mapping ES
- QUICKScan
- .....

Publications & reports
- ... .
- ....

Q&A
- ... ... <read more>
- ... ...
.... <read more>

Contact
name@organisation.org

Rating ☆☆☆☆☆

Like Unlike

Methods and tools (1/2) - navigate

Filter by:

Problem formu-lation | Stake-holder engage-ment | ES meaning | ES mapping | ES valuation | Decision Support

Might be additional filtering options (e.g. scale, sector, etc.)

List is updated as you change filter

<image icon> ☆☆☆☆☆ Mapping ecosystem services
....
....
.....<Read more>

<image icon> ☆☆☆☆☆ Tessa
....
....
.....<Read more>

<image icon> ☆☆☆☆☆ QUICKScan
....
....
.....<Read more>

Click to read a factsheet

Methods and tools (2/2) - factsheet

QUICKScan

Area of application
- Mapping of Ecosystem Services (e.g. MAES)
- (Sustainability) impacts of spatial planning
- Nature conservation
- Landscape qualities

Case studies
- Danube Romania, adaptive man... <more>
- Cairngorms UK, park manage... <more>
- Kiskunsag Hungary, drying region... <more>

Preconditions
- clear question to answer
- spatial and statistical data availability must be in line with question

Scale
- Continental
- National
- Regional

Policy area
Environment, climate change and -adaptation, regions, agriculture, forestry, water management, infrastructure, coastal

Description: QUICKScan is a participatory method supported by a software tool to enhance the exploratory dialogue in a facilitated workshop with policy makers, experts and stakeholders. Typically QUICKScan is used to scope, develop and assess alternative policy options and/or spatial plans. During the workshop the impacts of the alternatives are calculated using knowledge and preferences of workshop participants.
QUICKScan has been applied from local to continental scale: Dutch regional studies dealing with agricultural soil suitability; Dutch landscape attractiveness, French timber production, Czech Water retention, several pan-European assessments (Urban sprawl, Green Infrastructure, Ecosystem Services, Natural Capital), but also in Latin America (soybean expansion, ecosystem integrity), Africa (social resettlement) and Asia (wetland conservation).
QUICKScan links participant knowledge and stakeholder interests to spatial and statistical data. This helps to identify conflicts and synergies in the interpretation of management plans and their economic, environmental and social impacts. Trade-offs between indicators are discussed. Iterations are used to converge to an agreement or to arrive at a clear insight at where the differences are.
Advantages: fast and transparent, supports reaching consensus between different views, broad applicability
Disadvantages: limited to spatial explicit issues, no system dynamics

Contact
- name@organisation.org
- http://www.quickscan.pro

Implementations
- Alterra / EEA

Communities
- forum X
- .. ..

Training / consultancy
- .... (by company)
- .....

Publications & reports
- ... .
- .... Doi....

Q&A
- ... ... <read more>
- ... ...
.... <read more>

Rating
Like Unlike

Guidance (1/2) - overview

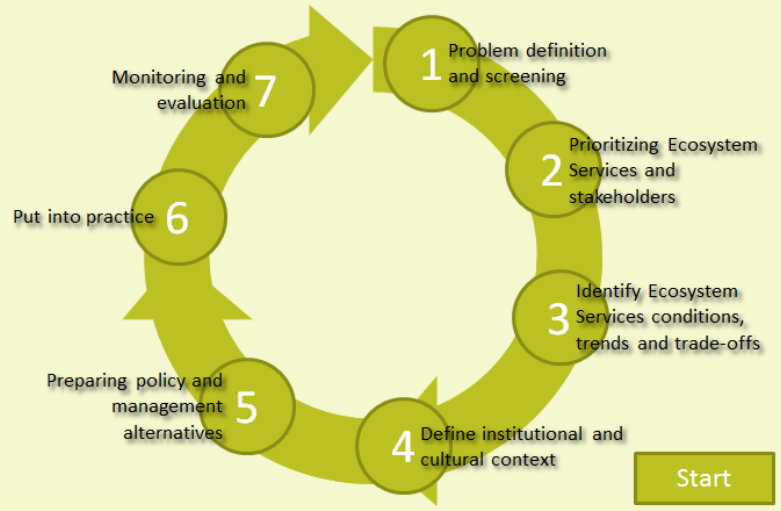
<Logo>

<Title>

Guidance tool

What is it?
It guides you on how to bring ESS into the Impact Assessment process.
It explains the objective and result of each phase and provides access to background info, including practical experiences
.....
.....

How can I use it?
.....
.....
.....



OpenNESS www.openness-project.eu

Guidance (2/2) – detail step 3

3 - Identify Ecosystem Services conditions, trends and trade-offs

Outcomes of this stage

- .....
- .....

.....

.....

.....

.....

.....

.....

Case studies

Methods / tools

- Mapping Ecosystem Services
- QUICKScan
- Tessa

Q&A

- ... ... <read more>
- ... ...

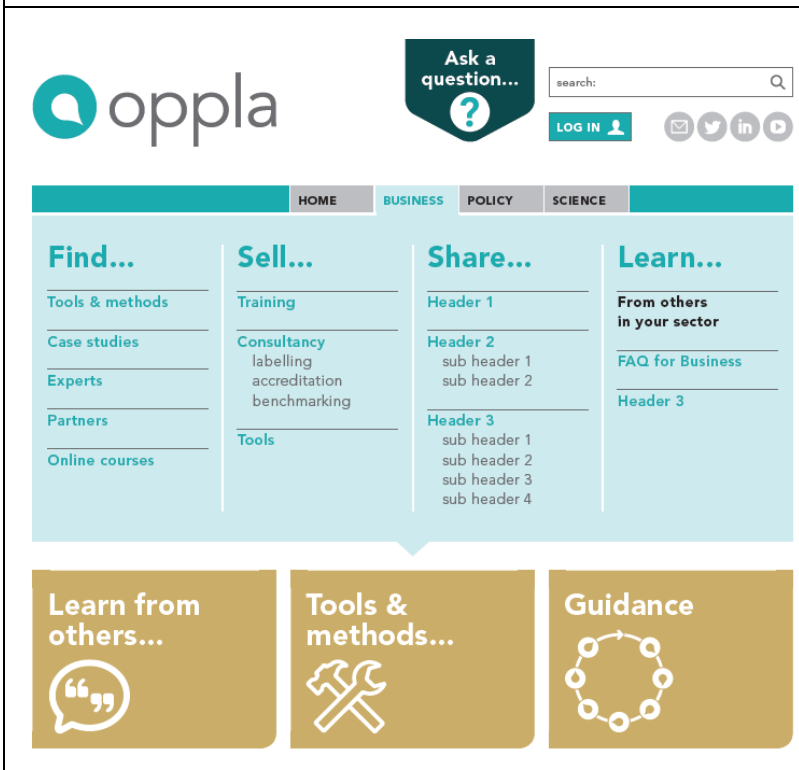
.... <read more>

Documents/graphs/maps

- ... ...
- ... ...

Previous Next

Annex IV - Design aesthetics



HOME | BUSINESS | POLICY | SCIENCE

Business > Learn

Learn from others

Themes:

- ☐ Urban development
- ☐ Coastal management
- ☒ Integrated river basin
- ☐ Agriculture/forestry
- ☐ Nature conservation
- ☐ Trade-offs

Scale:

- ☒ Local
- ☒ Regional
- ☐ National
- ☐ European
- ☐ Global

HOME | BUSINESS | POLICY | SCIENCE

Business > Learn > Learn from others

Adaptive management plan for Lower Danube River, Romania

Objective:

Enhance effectiveness of the integrated – and adaptive management. Balance levels for services such as: timber production, food production, water quality, flood protection, biodiversity conservation and restoration of biophysical structure.

Area characterisation:

The area is a regional complex system which includes the Danube River stretch, floodplains, the coastal and inland delta and lagoons (~11.000 km²). This complex includes the Danube Delta Biosphere Reserve and the Small Island of Braila Natural Park.

Partners involved:

Local/regional stakeholders (e.g. tourism operators, waterway transport operators, fishermen, farmers, managers of protected areas, managers of water resources) and natural capital and Ecosystem Services researchers.

Key messages:

Sample success story as brief text here...

Limitations/challenges as brief text here...

Rating: ★★★☆☆

RATE THIS ☆

Keywords:

Danube | integrated management | river island | conservation

Scale:

regional

Tools & methods:

- Identifying and prioritizing ecosystem services
- Mapping ecosystem services
- QUICKScan

Publications & reports:

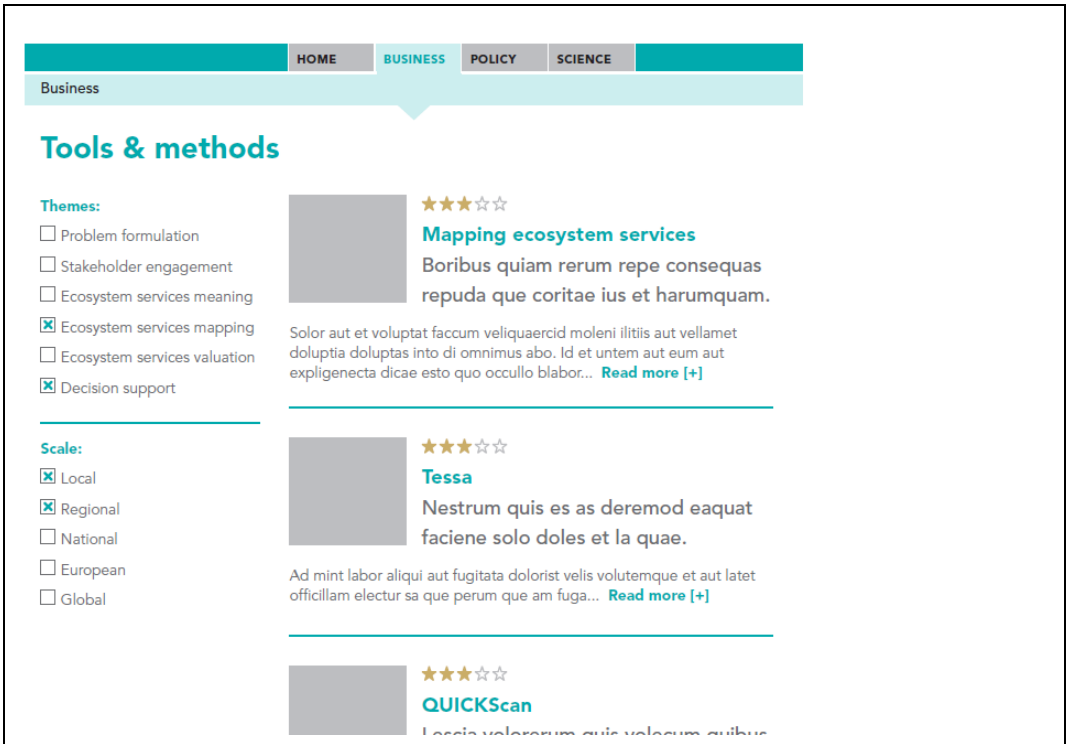
- Sample publication 1
- Sample report 1
- Sample report 2

Community:

Main link

Sample question & answer 1 brief text description with the option to **read more [+]**

Contact:


HOME
BUSINESS
POLICY
SCIENCE
Business
Tools & methods
Themes:
Problem formulation
Stakeholder engagement
Ecosystem services meaning
Ecosystem services mapping
Ecosystem services valuation
Decision support
Scale:
Local
Regional
National
European
Global
Mapping ecosystem services
Boribus quiam rerum repe consequas repuda que coritae ius et harumquam.
Solor aut et voluptat faccum veliquaercid moleni ilitiis aut vellamet doluptia doluptas into di omnimus abo. Id et untem aut eum aut expligenecta dicae esto quo occullo blabor... Read more [+]
Tessa
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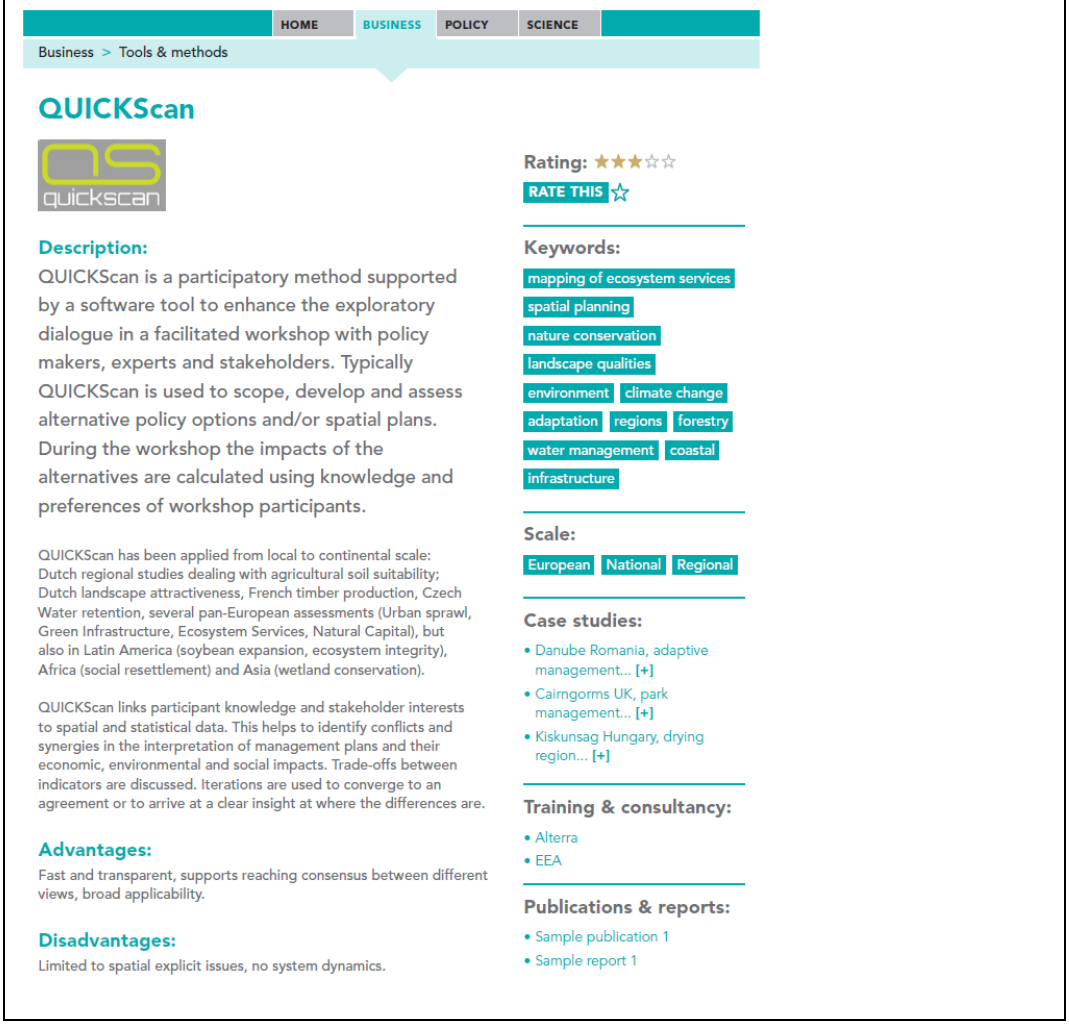
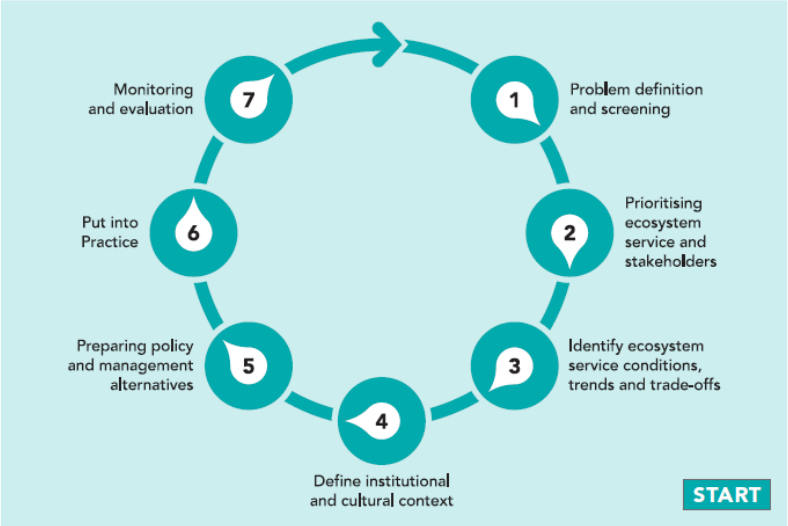
QUICKScan


HOME
BUSINESS
POLICY
SCIENCE
Business > Tools & methods
QUICKScan
quickscan
Description:
QUICKScan is a participatory method supported by a software tool to enhance the exploratory dialogue in a facilitated workshop with policy makers, experts and stakeholders. Typically QUICKScan is used to scope, develop and assess alternative policy options and/or spatial plans. During the workshop the impacts of the alternatives are calculated using knowledge and preferences of workshop participants.
QUICKScan has been applied from local to continental scale: Dutch regional studies dealing with agricultural soil suitability; Dutch landscape attractiveness, French timber production, Czech Water retention, several pan-European assessments (Urban sprawl, Green Infrastructure, Ecosystem Services, Natural Capital), but also in Latin America (soybean expansion, ecosystem integrity), Africa (social resettlement) and Asia (wetland conservation).
QUICKScan links participant knowledge and stakeholder interests to spatial and statistical data. This helps to identify conflicts and synergies in the interpretation of management plans and their economic, environmental and social impacts. Trade-offs between indicators are discussed. Iterations are used to converge to an agreement or to arrive at a clear insight at where the differences are.
Advantages:
Fast and transparent, supports reaching consensus between different views, broad applicability.
Disadvantages:
Limited to spatial explicit issues, no system dynamics.
Rating:
RATE THIS
Keywords:
mapping of ecosystem services
spatial planning
nature conservation
landscape qualities
environment
climate change
adaptation
regions
forestry
water management
coastal
infrastructure
Scale:
European
National
Regional
Case studies:
Danube Romania, adaptive management... [+]
Cairngorms UK, park management... [+]
Kiskunsag Hungary, drying region... [+]
Training & consultancy:
Alterra
EEA
Publications & reports:
Sample publication 1
Sample report 1

HOME | BUSINESS | POLICY | SCIENCE

Business > Guidance

The 7-step Guidance Tool



What is it?

It guides you on how to bring ecosystem services into the Impact Assessment process. It explains the objective and result of each phase and provides access to background info, including practical experiences.

How can I use it

Musciene contaeprem sum lic tem alitatquis

HOME | BUSINESS | POLICY | SCIENCE

Business > Guidance > The 7-step Guidance Tool

STEP 3: Identify ecosystem service conditions, trends and trade-offs

PREVIOUS NEXT

Outcomes of this stage:

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Sample header 2:

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Sample header 3:

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Sample header 4:

- Sample bullet 1
- Sample bullet 2 illustrating a bullet that is slightly longer in length and runs over two or more lines

Case studies:

- Danube Romania, adaptive management... [+]
- Cairngorms UK, park management... [+]
- Kiskunsag Hungary, drying region... [+]

Tools & methods:

- Mapping ecosystem services
- QUICKScan
- Tessa

Community:

Main link

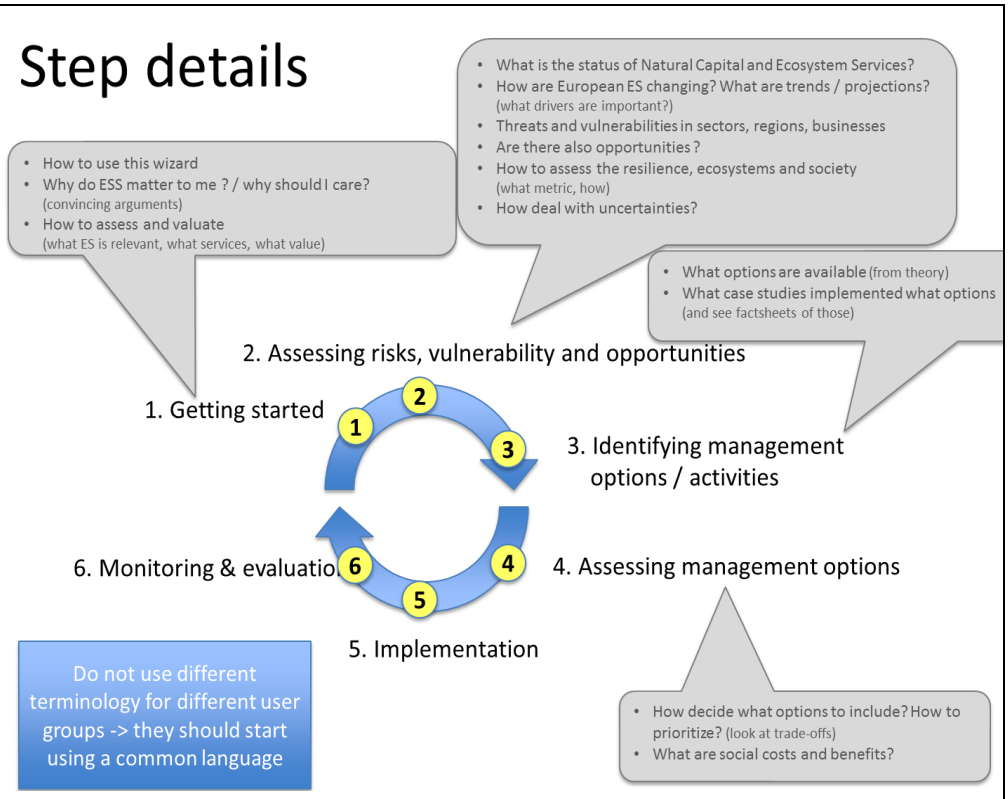
Sample question & answer 1 brief text description with the option to **read more [+]**

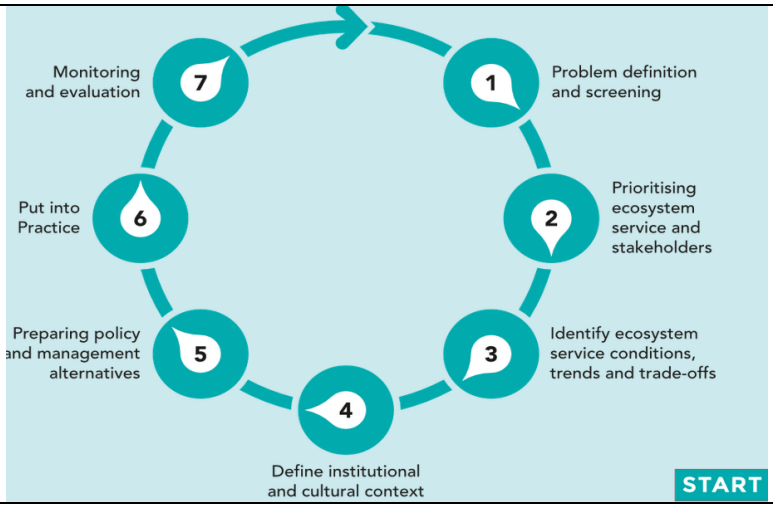
Documents, graphs & maps:

- Sample document link

Annex V - Guidance tool proposals

Several concepts for the guidance tool have been drafted. The table below lists a range of these drafts.

Initial conceptualisation during bilateral meeting with Mikkel Kalesoe (shell) and Nathalie Olsen (IUCN), followed by a bilateral meeting with Leon Braat (Alterra), November 2013.	
www.aboutvalues.net as a source for inspiration for the October 2014 continued drafting	

Drafting based on academic discussion, October 2014	
Continued drafting by Academics, February 2015	1. Getting started, define your needs a. Awareness raising (identify ESS, map ESS, value ESS) b. Priority setting (land use planning, ruban planning, natural resources) 2. Determine the socio-ecological context a. Biophysical and social dimensions, regulatory frameworks and drivers b. Actors and stakeholders 3. Define policy or management alternatives or scenarios 4. Identify ecosystem services a. Identify beneficiaries b. (link to cases and CICES) 5. Evaluate the supply of ecosystem services a. Describe how to measure and map ESS 6. Estimate the importance and meanings of ecosystem services (valuation) 7. Decision making 8. Implementation (design policy instruments) a. E.g. Payments for Ecosystem Services and offsetting Note: Kai et.al. (2012), Where, are cultural and social ecosystem services? A framework for constructive engagement, bioScience 62-8, pp 744-756 Note2: Martinez-Harms et.al., (2015), making decisions for managing ecosystem services, Biological Conservation 184, pp 229-238
Continued drafting with end user from business (Shell), March 2015	The guidance tool guides you on how to bring ecosystem services into the impact assessment process (including insight in the dependency /response relationships) 1. Screening – from what do you want to understand more (e.g. shoreline protection) 2. Scoping – what is the relevance / order of magnitude (e.g. what sites are vulnerable to shoreline) 3. Baseline – understand current situation 4. Impact / dependency identification – how do your actions influence the vulnerabilities (=risk) 5. Evaluate impacts – how important are impacts? Priorities . Reception sensitivity (duration of the impact and the reversibility) 6. Response – 7. Sustaining – put into practice (planning, monitoring and evaluation) Note: Hansen et.al. (2011) describe the Corporate Ecosystem Services review: (1) select the scope, (2)identify priority ESS; (3) analyse trends in priority services; (4) identify business risks and opportunities; (5) develop strategies. Note2:Corporate health is depending on the health of ecosystems because of the risks and opportunities. Businesses care about ecosystem services because they depend on the services (e.g. freshwater for the beverages industry; agribusiness on pollination and soil quality regulation ; insurance companies from coastal protection coral reefs provide) and businesses impact the ecosystems (e.g. the timber industry may impact the ability to sequester carbon).

Annex VI – List of meetings

The table below lists the meetings in which input for Oppla was gathered:

Who from OpenNESS	Where and when	Description
Tarja Söderman, Marta Pérez-Soba, Peter Verweij, all OpenNESS WP6 partners	March 2013, Helsinki	Initial conceptualisation of the website and discussion on possible future (after project) maintenance
Marta Pérez-Soba, Peter Verweij, Dolf de Groot	April 2013, Wageningen	Explore collaboration with Ecosystem Services Partnership (ESP)
Eeva Furman, Marta Pérez-Soba, Tarja Söderman, Paula Harrison, Ben Delbaere, Jan Dick, Allan Watt,	8-9 May 2013, Edinburgh	OpenNESS- OPERAs First Planning Meeting
Marta Pérez-Soba, Tarja Söderman, Paula Harrison, Ben Delbaere, Peter Verweij	4 September 2013, Amsterdam	Joint OpenNESS -OPERAs project meeting on collaboration with the Common Platform
Ben Delbaere , Marta Perez-Soba, Peter Verweij, all of OpenNESS	21 oct 2013, loch leven	Inventory of questions
Marta Pérez-Soba, Tarja Söderman, Eeva Furman, Paula Harrison, Ben Delbaere, Allan Watt, Rob Lokers	12-13 November 2013, Brussels	Common Platform meeting with OPERAs and the EC representatives
Peter Verweij	12 nov. 2013, Copenhagen	Explore potential cooperation with EEA[14] and integration into BISE[15]
Peter Verweij	27-29 November 2013, Brussels	Initial setup of guidance tool during bi-lateral meeting during the OPERAs User Board meeting
Marta Pérez-Soba, Peter Verweij, Claire Brown, Marc Metzger, Joost Tersteeg, Bas VanMeulenbrouk, George Cojocaru, Tim Wilkinson, Hanneke Wijnja	7-9 April 2014, Wageningen	Functional design (the 'wireframe') and technical architecture of the Common Platform
Irene Bouwma, Peter Verweij	Wageningen	End user interviews with Eurosite[16] and Europarc federation[17]: including land owner interests into the case study finder
Marta Perez-Soba, Ben Delbare, Peter Verweij	Budapest, March 2014	OpenNESS annual meeting, further refinement of wire-frames with OpenNESS partners
Marta Pérez-Soba, Eeva Furman, Kurt Jax, Ben Delbaere, Peter Verweij	23-24 April 2014, Copenhagen	Common Platform meeting between OpenNESS, OPERAs and EEA followed by a meeting at

[14] http://www.eea.europa.eu/
[15] http://biodiversity.europa.eu/
[16] http://www.eurosite.org/
[17] http://www.europarc.org/

		GBIF headquarters
Marta Pérez-Soba, Paula Harrison, Guy Duke, Ben Delbaere	3-4 July 2014, Edinburgh	Business Planning Meeting for OPPLA
Marta Pérez-Soba, Peter Verweij, Bas van Meulebroek (Alterra), Heli Saarikoski, Paula Harrison, Guy Duke, Ben Delbaere	20-21 October 2014, Brussels	Common Platform meeting between OpenNESS, OPERAs and Anne Teller and Sofie van de Woestijne. Further drafting of wire frames.
Marta Pérez-Soba, Peter Verweij and Ben Delbaere	5-7 November 2014, Lisbon	OPERAs User Board meeting
Marta Pérez-Soba, Peter Verweij, Bas van Meulebroek (Alterra), Heli Saarikoski, Paula Harrison, Ben Delbaere	23-25 February 2015, Amsterdam	Common Platform meeting between OpenNESS and OPERAs
Marta Pérez-Soba, Peter Verweij	11 March, 2015	Bi-lateral meeting with Shell to get detailed feedback on Oppla, the case study finder and guidance tool

Annex VII – User board feedback on wire frames

During the second OPERAs user board workshop the wireframes of Oppla were presented (see OpenNESS milestone 19 '*Draft wire frames*'). The list below is an excerpt from the workshop minutes[18] resulting from feedback on the presented wire frames and is included within this report for easy reading:

- In need of further clarification and/or specification:
    - Distinction between user types is incorrect and confusing. The user types form no homogeneous groups. Based on the presented user groups:
        - private sector (technical consultants and major land based business),
        - civil society (environmental NGOs, landowners and managers),
        - policy making (national government and government agencies) and
        - academic (researchers aiming to support practical outcomes)
    - Regulations are missing;
    - Templates and checklists are missing;
    - Missing access to data and data sources;
    - Missing data requirements for data manipulation tools.
- The user board appreciates the proposed implementation of:
    - Learn from others via guidance;
    - Learn from others via best practices. Should include cases from existing sources;
    - Access to (descriptions of) tools and methods. Should include tools from existing sources;
    - News and events feed.

[18] Dude, R., Watson, M., (March 2015), '*Report on the 2nd user board workshop*'

Annex VIII – List of frequently used information sources

During the second OPERAs user board workshop users were asked to inform the Oppla team on their practice in using what sources to find what information on ecosystem services and natural capital. Below the users' answers are listed[19] and included in this report for easy reading.

Information source	**What does it provide?**
UN-SA/London Group/eSTAT	Set standards for environmental accounting
WWF; Living Planet	Definition of ESs, their benefits, their assessment ways; case studies; BD loss information
TEEB The Economics of Ecosystems and Biodiversity	Economic values; different stories about different types of ecosystems and their values
World Business Council for Sustainable Development	Tools of assessment of ESs & cases studies; guidance documents; training; overviews and comparisons of tools
DG Environment	Policy updates
Common International Classification of ES (CICES)	Info on different types and classifications of ESs; definitions
World Resources Institute	Tools: maps, data; very good on water and data; guidelines
UK NEA and NEAFO	Methods, case studies, use of ESs; information for the general public
IUCN	Red list of threatened species; case studies; past use of guidelines
Wageningen University newsletter	Overview of developments in different, related fields; starting point for finding information on related issues to ESs
Scientific journals (Elsevier)	To review a certain criterion and get up to speed on the latest academic debates
Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBS)	Catalogue of assessments; networking; global policies; geo-strategies in different countries; conceptual framework
German Federal Agency for Nature Conservation	Identification of stakeholders
Convention on BD	Guidance on safeguards when addressing ESs
WCMC	Good overview of various definitions; data sheets & country profiles
Meetings with colleagues & Spanish Environment Department and regional administrations (web sites)	Easy way to find links & documents in Spanish
Ecosystem Knowledge Network	Guidance for different communities of practitioners/stakeholders
Sub-Global Assessment Network (bulletin)	-
Ecosystems marketplace	-
BeBoP	Analysis on offsetting
Earth Condominium	Different concepts on how to manage various parts of Earth
Ecosystem Services Partnership	-
Natural England; Natural Resource Water; DEFRA	Case studies; ES schemes that are getting active or inactive
Dead Whales	-

[19] Dude, R., Watson, M., (March 2015), '*Report on the 2nd user board workshop*'

DEFRA	-
UK research projects (BESS, ESPA et alia)	Ongoing case studies; methods used; living with climate changes
Google	Just because: easy, handy search tool
Research Gate	To follow up on several research endeavours on ES (e.g. forests)
GBIF	Global data - species-level biodiversity
GEO report	Status check; planet trends
MA	Definition of conceptual framework
ENI – A (Assessment)	-

Note that the Biodiversity Information System of Europe (BISE) is not mentioned by the user board members during the quick brainstorm inventory.

Annex IX – User board feedback on proposed functionalities

During the second OPERAs user board workshop the end users were asked to provide feedback on proposed Oppla functionalities. The table below is an excerpt from the workshop minutes[20] which is included within this report for easy reading.

Section	Valuation	Comment
Community building/match-making	Maybe	• if it's a platform where people can quickly make new contacts and learn other points of view on specific problems
	No	• There are already established EU networks within which we operate. What would be the added value to the already successfully established networks? (including linked-in groups)
	Yes	• Building one's own knowledge network – choosing consultants, exchanging (regional/local) experience.
Training on NC/ES	Maybe	• The Proteus partnership already provides many services. If there is added value my company might use it.
	Yes	• Support for targeted EU level processes (e.g. MAES). Preferably for free. If not possible then assigned after tender • Yes, for national and local stakeholders if appropriate quality is ensured (e.g. expert support services, or training in the field).
Question & Answer (Ask Oppla)	No	• This is already services available (e.g. Proteus Partnership, or linked-in groups) • It hardly ever works • Possible issue of exposure and liability, so don't address it in an open environment.
	Maybe	• Maybe, it depends on who is answering the question and whether I can trust them.
	Yes	• As a discussion forum
Advertising of experts and consultants	No	• No, issues of liability • No to consultants, as they might advertise what they want to do, and quality assurance is tricky • No, I am my own source of knowledge.
	Maybe	• Maybe scientists & experts, but quality assurance is tricky • I'm more likely to advertise projects • it may be useful, but how to ensure they are good? What about advertising for financial support?
	Yes	• -

[20] Dude, R., Watson, M., (March 2015), '*Report on the 2nd user board workshop*'