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Open access database and web tool

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Summary

Part of BESAFE's aim was to unlock the project's results for stakeholders in a usable and user-friendly way. BESAFE's results were summarised in a number of 'toolkit' briefs described in deliverable D5.2. For this deliverable, the briefs were stored and categorised in a WordPress database. The web tool that is also part of this deliverable is a shell around this database offering background information and structured access to the summary briefs. The tool was developed in close cooperation with BESAFE's stakeholders and is available at tool.besafe-project.net.

1. Introduction

The general objective of BESAFE set out in the Description of Work (DoW) was to *'help to innovate and improve biodiversity protection by providing a framework that summarises the observed and potential effectiveness of the alternative ways to argue the case for biodiversity protection, **and to make this framework easily accessible and usable through a publicly accessible database and associated user-friendly web tool**'*.

The development of the database and web tool was incorporated in the project as Task 5.5 in Work package 5:

Unlocking the information for stakeholders: developing a user interface to a public access database and associated user-friendly web tool through an interactive 'trial and error' process in which key stakeholders will be involved.

The developed system should be based on the 'toolkit' summary (produced in the other tasks of WP5 and consisting of a series of briefs summarising the project results. See deliverable D5.2) and be usable to convincingly demonstrate the value of biodiversity to policy makers and to provide them with guidance on the use and effectiveness of the various arguments in a range of situations.

2. The interactive development

First ideas about possible ways to unlock the BESAFE information to stakeholders were presented at the first stakeholder workshop WS1 (see D2.2).

During a plenary discussion after the presentation the stakeholders as well as in the final brainstorm of the workshop, stakeholders came up with ideas for the tool. These are listed on pages 12 to 14 of D2.2. One of the main outcomes was that the tool should not offer 'black box' solutions, but should present the users with information on the various options for argumentation so they can make their own choices.

There was almost unanimous willingness among present stakeholders to cooperate in the development of the web tool.

More advanced ideas, based on an inventory of existing web tools, were presented at the second stakeholder workshop, WS2 (see D5.1).

The initial design of the web tool was created both using a SpicyNodes (www.spicynodes.org) format (see figure 1) and as a wiki (www.wikispaces.com) (see figure 2). Each format allows users to navigate through the information, with a certain amount of information presented on-screen, and links to more detailed BESAFE 'briefs' and to external sources. The SpicyNodes format (selected in part because it was used successfully in the SPIRAL project) provides a visual web of links among different topics and gives limited space for on-screen text – it is designed primarily to guide users through a complex area to the specific information they need. The Wikispaces format (figure 2) allows more on-screen information, at the expense of losing the visual overview of links.

Figure 1: Screenshot from 'SpicyNodes' version of web tool



Figure 2: Screenshot from 'Wikispaces' version of web tool

Case	Partner	Topic	Description	Report
Invasive species strategies, Germany, Europe	UFZ	Management of invasive species	The study analyses the arguments in the implementation of a strategy on invasive alien species into European law against the background of the discourse on invasive alien species and existing values for biodiversity	BESAFE_brief_Invasives.pdf Details Download 276 KB
Large mammals in Norwegian wild-lands	NINA	Management of large carnivores	The study focuses on the debate on a policy to manage large carnivores in Norway; it investigates different stakeholders' perceptions the management of carnivores	
Water company uses of valuation evidence in investment planning	eftec	Use of economic instruments	The study explores how ecosystem services information can be used alongside customer preference surveys to justify the large scale of investment in water treatment technologies that protect the environment	BESAFE_brief_WATER_2014_04_28.pdf Details Download 196 KB
Nestled Socio-Ecological Systems in the Romanian Lower Danube River Catchment	UMBUC	Sustainable management planning	The study focuses on the conflicts between objectives of sectoral policies and those aimed at biodiversity conservation and analyses arguments for sustainable use of natural capital in management of Lower Danube River Catchment	
Public controversies surrounding the return of red fox and wild boar to Flanders, Belgium	IBO	Controversy and conflict	The study focuses on the ongoing dispute about the rapid spread of foxes and wild boars in Flanders, Belgium, illustrating how different views and arguments are associated with institutional and cultural biases	
An underwater tidal electricity turbine; Northern Ireland	PLUS	Investment versus biodiversity	The study explores the arguments involved in conflicts of interest (energy provision and biodiversity) brought by different stakeholders in case of the establishment of the world's first commercial scale open stream tidal turbine	
Bialowieza Forest conflict, Poland	SLU	Controversy and conflict	The case describes conflict between forest management and conservation and evaluates arguments used in the conflict, showing which arguments were most effective and how they transferred between governance levels	BESAFE_brief_Bforest.pdf Details Download 159 KB
National Strategy for Mires and Peatlands; Finland	SYKE	Sustainable use natural resources	The study analyses both the implementation process of the National Strategy for Mires and Peatlands and investigates the various arguments used in public debate on the different uses of peatlands	BESAFE_brief_Peatlands.pdf Details Download 150 KB
Management plans for the Andalusia national parks, Spain	UOIF	Sustainable management planning	The study analyses the importance people attribute to alternative arguments for protected areas, ecosystem services and conservation, and investigates whether the ecosystem service approach is incorporated into conservation strategies	BESAFE_brief_Andalusia.pdf Details Download 245 KB

One set of comments focused on the user-friendliness of accessing specific information. Although it was recognised that the SpicyNodes framework aimed to provide a logical 'click-through' way to guide users to the information they need, it was also suggested that if too many clicks were needed to get through to that information, some people might switch off, or feel lost if it's not obvious at the start which 'branch' they should follow.

In particular, it was suggested that a search engine feature would be very useful. This could take the form of a classic text-search with Boolean logic, and/or a list of checkboxes for topics covered in the toolkit (allowing users to pick out examples matching specific criteria, for example combining successful conservation, agriculture, and water supply). The key questions of interest are likely to be "what has been effective in a particular situation", and "in which situations has a particular argument been effective", and it is important that the toolkit should make the answers easily accessible.

There was no general agreement on a single specific format that would be 'best', however. Some liked the SpicyNodes format; others commented that this design appealed to 'young people' and favoured a more traditional text-based arrangement. In fact, after some discussion, it became generally agreed that different ways of providing the information should be made available.

There were, however, common themes that should be adopted across all methods, including very clear instructions at the front-end / entry point explaining exactly how the tool structures and treats the information, and how users can find what they need. The front page needs to be less 'cluttered' and provide a clear map. The 'target audience' and the 'sector' are the key elements to stress – the 'who to contact' box is not useful at this level.

Main recommendations from the stakeholders concerning the web tool were:

- 1) Ensure that the web tool is designed to be user-friendly for a range of stakeholder types to enable them to access appropriate information efficiently.
- 2) Increase the use of stakeholder feedback and take measures to use their input to greatest advantage for the next (final) stakeholder workshop.

Further steps

Following these suggestions, WP5 contacted BESAFE partners and stakeholders to seek further views on the development of the BESAFE web tool. Respondents were asked for their opinions on a list of 10 example tools (presented in table 1) which had been selected by WP5 from a longer list of about 70 candidates. The rationale behind the process was to obtain their general impressions, an idea of what they thought did and did not work well, and an evaluation of the suitability for adaptation to the BESAFE web tool. Specific questions covered the following categories:

- General appearance of the website;
- Search and filtering facilities
- Ease of navigation;
- Level of detail in information presented
- Fit to a policy audience;
- Overall assessment, including what people like or dislike most about a particular web tool, what changes they would suggest, whether they would recommend it to a colleague working in the area addressed, whether they thought it was a useful model for a BESAFE web tool on arguments for biodiversity.

This then led to a series of questions for each category, about what the BESAFE tool should aspire to:

- General appearance of the website: “what would you like to see”?
- Search and filtering facilities: “what options should be included”?
- Ease of navigation: “what methods / features would you like to see”?
- Level of detail in information presented: “single format, multiple formats, length, referencing...”?
- Fit to a policy audience: “what are the key aspects we need to prioritise”?
- General comments about BESAFE tool requirements / development.

Due to a low response rate to the detailed questionnaire, and indications from consultees that the task was too onerous, a shorter list of web tools (identified in bold italics in Table 1) was sent to non-respondents and additional stakeholders, along with a shorter version of the questionnaire mentioned above. The questions included in the shorter questionnaire related to the categories below.

- General appearance of the website;
- Navigation and search;

- Level of detail in information presented;
- Overall assessment, including what people like or dislike most about a particular web tool, and whether they thought it was a useful model for a BESAFE web tool on arguments for biodiversity.

Table 1: List of tools reviewed by BESAFE partners and stakeholders for the second phase of the BESAFE webtool development

Webtool	Developer	Main site address	Purpose
Biodiversity Indicators Partnership (BIP)	UNEP World Conservation Monitoring Centre	http://www.bipnational.net/IndicatorToolkit	Designed to be a one-stop-shop for indicator practitioners, offering easy access to guidance, help and support
<i>Biodiversity toolkit</i>	Association of Local Government Ecologists (ALGE)	http://www.biodiversityplanningtoolkit.com/default.asp	The Biodiversity Planning Toolkit is aimed at helping users to incorporate biodiversity into the planning system and new development
FishBase	WorldFish Center	http://www.fishbase.org	Global information system with information about fish
Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)	IUCN	http://www.ipbes.net/	Mechanism proposed to further strengthen the science-policy interface on biodiversity and ecosystem services, and add to the contribution of existing processes that aim at ensuring that decisions are made on the basis of the best available scientific information on conservation and sustainable use of biodiversity and ecosystem services.
<i>Methods for integrating ecosystem services into policy, planning, and practice</i>	GIZ and UFZ	http://aboutvalues.net/	ValuES is a global project that aids decision-makers in our partner countries in recognizing and integrating ecosystem services into policy making, planning and implementation of specific projects.

(ValuES)			
National Ecosystem Approach Toolkit (NEAT)	Birmingham City University	http://neat.ecosystemsknowledge.net/payments-ecosystem-services-tool.html	The aim of the project was: to mainstream the Ecosystem Approach in policy and decision-making processes across the built and natural environment. The NEAT Tree provides guidance for selecting and using a suite of nine tools that have been adapted to incorporate the 12 principles of the Ecosystem Approach.
Science for Environment Policy	Directorate-General Environment, European Commission	http://ec.europa.eu/environment/integration/research/newsalert/index_en.htm	Provides quality environmental research for evidence-based policy
Spiral	7th Framework Programme	http://www.spiral-project.eu/	The overall aim of SPIRAL is to enhance the connectivity between biodiversity research and policy making in order to improve the conservation and sustainable use of biodiversity
Research to Action	Research to Action (R2A)	http://www.researchtoaction.org/	Research to Action (R2A) is an initiative catering for the strategic and practical needs of people trying to improve the way development research is communicated and utilised.
The Collaboration for Environmental Evidence	CEE	http://www.environmentalevidence.org/	The Collaboration for Environmental Evidence is an open community of scientists and managers working towards a sustainable global environment and the conservation of

			biodiversity. CEE seeks to synthesise evidence on issues of greatest concern to environmental policy and practice.
VECTORS	Plymouth Marine Laboratory	www.marine-vectors.eu	This website provides access to the research results of the VECTORS project, which can be used to support marine management decisions, policies and governance as well as future research and investment. VECTORS was a large scale project that brought together more than 200 expert researchers from 16 different countries. It examined the significant changes taking place in European seas, their causes, and the impacts they will have on society.

Note: webtools in **BOLD** included in the shorter list of webtools (VECTORS was a new introduction, following a stakeholder suggestion).

Due to a low response rate to the detailed questionnaire, and indications from consultees that the task was too onerous, a shorter version of the questionnaire was sent to non-respondents and additional stakeholders, along with a shorter list of web tools, including:

1. [Biodiversity Planning toolkit](#), aimed at helping users to incorporate biodiversity into the planning system and new development.
2. [VALUES](#), methods for integrating ecosystem services into policy, planning, and practice.
3. [National Ecosystem Approach Toolkit \(NEAT\)](#), aimed at mainstreaming the Ecosystem Approach in policy and decision-making processes across the built and natural environment.
4. [VECTORS](#), which provides access to the research results of the VECTORS project, which can be used to support marine management decisions, policies and governance as well as future research and investment.
5. [Research to Action \(R2A\)](#), for the strategic and practical needs of people trying to improve the way development research is communicated and utilised.

Stakeholders were asked to score these five tools using the template presented in Annex 1. The 15 respondents expressed a clear preference for VALUES, VECTORS, and NEAT.

What stakeholders most liked about web tools:

- A simple, 'clean' site that nevertheless goes down to detail
- Instruction video or animated instruction
- Explanations about aim, user groups, way of use right at the start
- 'Visual' navigation, i.e. navigation guided by graphics
- Intuitive navigation
- Finding what you want in only a couple of clicks
- Explanations about aim, way of use right at the start
- Links to (downloads of) detail information at the first page
- Cross links between themes

What they did not like:

- Styling getting in the way of functionality
- Extensive and complicated menu's (although on this point there seemed to be a difference between stakeholders from scientific and other backgrounds)
- Getting lost due to lack of or confusing structure,
- Too much on one page, redundancy of buttons, menu's and information
- Information too many clicks away

- Getting stuck down the tree of one subject, without the option of going sideways to another one

Taking the stakeholder's remarks and preferences into account as much as possible, a first version of the web tool was build and tested with BESAFE partners and stakeholders (who had contributed previously); opinions on the web tool were also collected directly at the BESAFE / BIOMOT final conference in Brussels, 10-11 June 2015. The main remarks were:

- positive regarding the general appearance of the web tool and ease of navigation;
- that greater synthesis and simplification would be beneficial, on the information aspect. Stakeholders were almost unanimous in their remark that texts (on reference pages) were often too long and complicated.

These remarks were incorporated in the final web tool. After that, the tool was released online at tool.besafe-project.net.

3. The final web tool and database

The BESAFE toolkit briefs described in deliverable D5.2 form the base of the BESAFE web tool. The intention of the tool is to unlock the project's findings on the effectiveness of arguments for biodiversity to stakeholders in a user friendly way.

Technical requirements for selecting the platform to develop the tool on were that it should have a database and a configurable search and filter facility to access the information in it. As the database could be a relatively simple one, these requirements could be met by a Content Management System. Several open source varieties of such systems are freely available and relatively easy to set up and host.

The web tool was set up using the WordPress platform, one of the most commonly used public domain Content Management Systems. Due to the use of this common system transferring the tool to other hosts and/or other parties willing to maintain and manage it after the end of the project is in principle relatively simple.

The main content of the tool are the BESAFE toolkit brief which are stored the database that is a standard feature of each WordPress site. Taken up in the database is also additional information from the BESAFE deliverables. The surrounding 'shell' of WordPress web pages offers a guiding system with a search and filter facility.

The major added value of the tool is in the addition of background information, a guidance system and a categorisation system for the information in combination with the search and filter facility. This enables stakeholders to select, access and

understand the information of interest for their particular aim easier, and also facilitates them to place it in the proper context more easily.

The BESAFE web tool is set up both as a means to unlock the project results for application by stakeholders and researchers, and as a demonstration tool for unlocking information about biodiversity argumentation. It is not meant to be finished at the date of delivery, but should ideally be taken over, further developed and kept up to date by other parties after the project's end. At the time of submission of this deliverable it is quite probable that the tool will be part of, or taken over by, the OPLA platform set up by the OPERA's and OpenNESS projects.

4. Use

The web tool offers three ways or 'entrances' (see figure 3) for exploring BESAFE's results: through the case studies, through the policy and decision making processes and directly through a 'search and filter' system. This makes the system suitable for browsing by inexperienced stakeholders with little prior knowledge of biodiversity policy making and argumentation, as well as for focussed searching by experienced users.

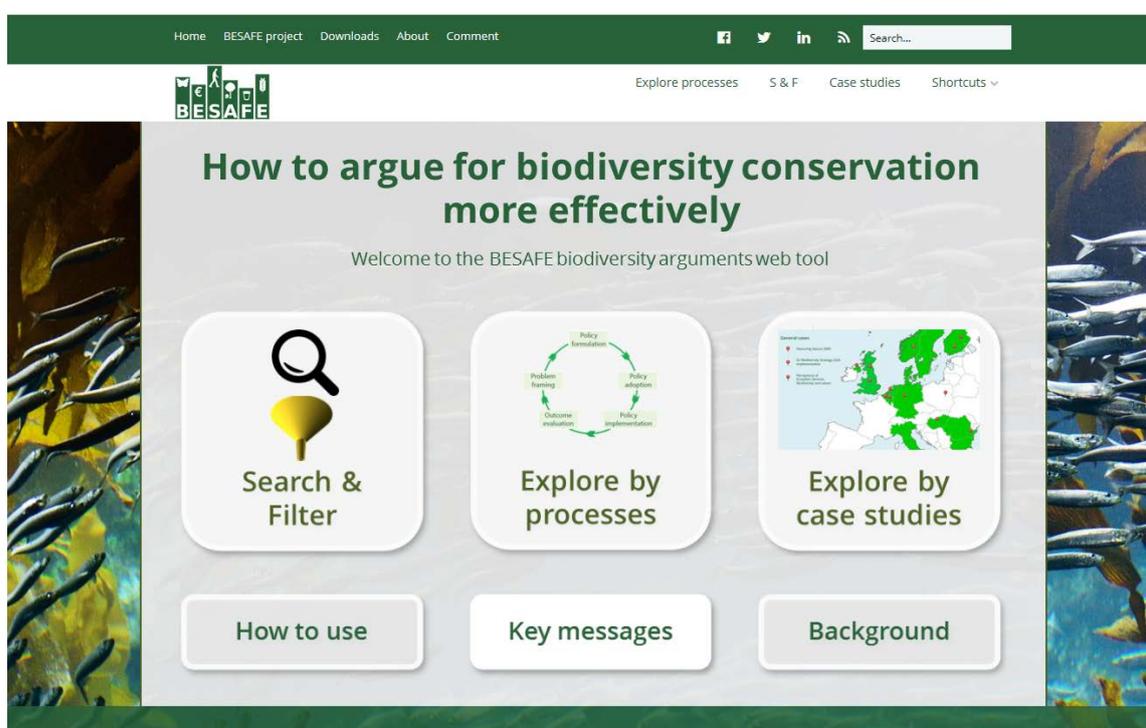


Figure 3. The opening screen of the BESAFE web tool, showing the three basic starting options.

5. Promotion and uptake

Promotional Campaign:

- A dedicated press release was published via the largest science news distributor, EurekAlert AAAS, as well as EU’s project news dissemination service CORDIS Wire. The press release generated 2,084 views on EurekAlert alone.
PRESS RELEASE: How to argue for biodiversity conservation: 2 simple guides - [EurekAlert](#) | [CORDIS](#)
- A dedicated final newsletter was also disseminated to the project subscribers, a total of 343 recipients, of which 117 opened the newsletter, more than half of which actively engaged with BESAFE tool by clicking the relevant link and exploring the contents.
- A social media campaign was launched to promote the tool, where [Facebook post](#) was seen by more than 1,890 people, shared 14 times and liked by 14 users. [Twitter post](#) generated 373 impressions, and a total of 10 engagements.

Uptake

(Period: 1 Nov 2015 – 5 July 2016)

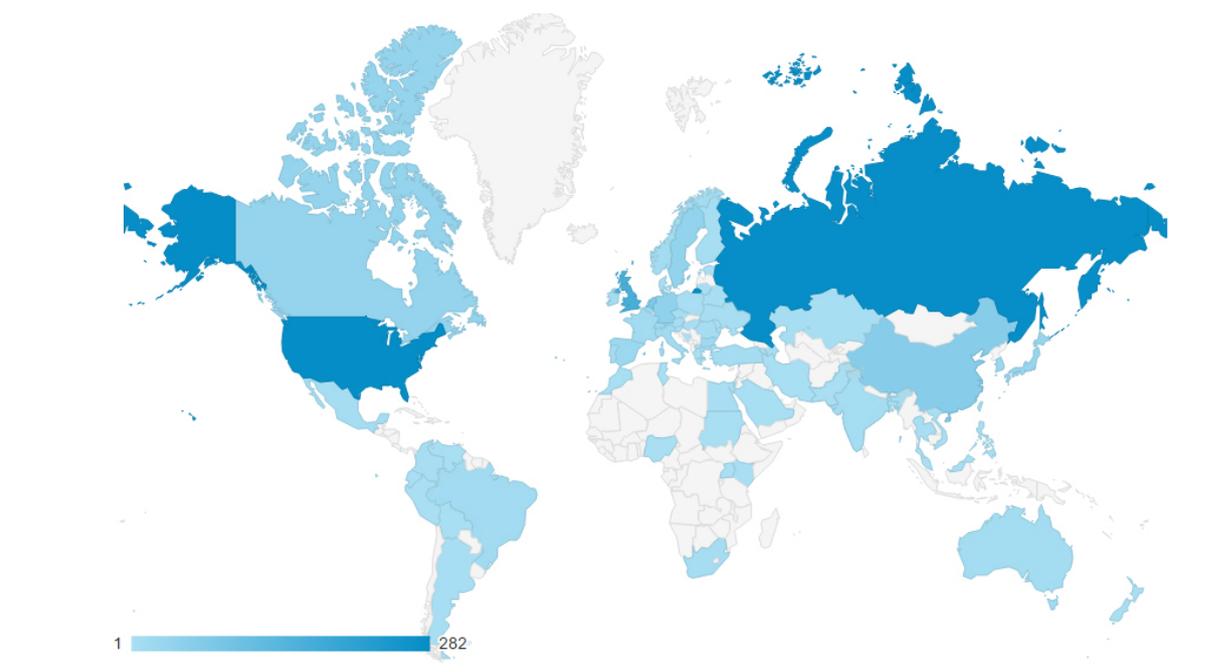
General:

Sessions:	Users:	Page views:	Page depth:	Sessions duration:
1,601 sessions (avg. 200 sessions/month)	1,156 users (832 new/323 returning)	3,027 views (avg. 378 view/month)	Avg. 2 pages per session	Avg 02:05 min. per session

For the 8 months of its existence the tool has attracted a total of 1,156 users, more importantly 323 of which returning visitors, indicating a longer engagement of these users with the tool, and their returning back to it to access and look for more information. The average page depth of 2 sessions indicated that users generally engage beyond opening the homepage, looking further into the tool’s contents, where returning visitors are expected to demonstrate considerably deeper engagement.

By Country:

The tool received worldwide interest from users within Europe, Russia, the USA, Canada, and South East Asia countries.



United States	282	Germany	46
Russia	278	Sweden	40
United Kingdom	167	Canada	37
The Netherlands	74	Japan	32
China	61	Spain	25

Annex1. Scoring template for web tools

	E	F	G	H	I	J	K	L
1	Please enter brief free text in columns E onwards to give your answers/impressions for each question. For the overall scores, please score from 1 [very poor] to 5 [very good].							
2	General appearance of the website	General comments (are menus clear, speed of navigation, overall clarity of site structure, is it easy to find specific content, etc)	Navigation and search	Score for navigation and search	What do you like most about this webtool?	What do you DISLIKE most about this webtool?	Is this a useful model for a BESAFE webtool on arguments for biodiversity?	Score overall
3	Score for general appearance	Score for general appearance	Score for general appearance	Score for navigation and search	Score for navigation and search	Score for navigation and search	Score for navigation and search	Score for navigation and search
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