

Ecosystem Science for Policy & Practice



D2.4 Lessons Learned & Targeted synthesis

D2.5 Decision trees





Ecosystem Science for Policy & Practice



D2.4 Lessons Learned & Targeted synthesis

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Diversity of Exemplars

Meta-Analysis to help identify opportunities – comparing our exemplars with ES studies

- 100% of exemplars integrate stakeholders: 38% of studies (systematic review)
- 60 % of Exemplars intend to provide uncertainties 30% quant; 20% qual (systematic review)

(M2.11 Exemplar Interim Report)



2.4 Lessons learned - Targeted Synthesis

• The focus of D2.4 becomes

How robust evidence and systematic stakeholder involvement influence policy and practice impacts



The blueprint: Vehicle to collect lessons learned



Purpose and design of Exemplars

	Was it straight-forward to	Respo		
		Yes	No	NA
	understand the ES concept and its terminology?	58%	12%	0%
	widen your perspective in ES using the blueprint?	25%	33%	42%
	define a primary/main study objective ?	58%	ł2%	0%
Purpose & design	define the scope of the project? (e.g. find out who wants the ESA and which management options it should address)	58%	25%	17%
	delineate the study system (e.g. geographica range, historical range, sectors of industry)?	75%	7%	8%
	use your existing way of thinking to implemen research in the ES domain?	67%	25%	8%
	design the biophysical and social domains to your study?	50%	17%	33%
	decide which stakeholder to involve?	67%	25%	8%

10

Execution and Implementation

	Was it straight-forward to	Responses					
		Yes	lo	NA			
	identify key implementation constraints (fund, resources, expertise, time)?	42%	19	6 17%			
	engage with stakeholders?	42%	3%	6 25%			
	use the ES approach in a way that encouraged open discussion between parties? (Researcher and/or stakeholders)?	42%	3%	% 25%			
Execution	limit/prioritize the number of ecosystem services to be assessed?	58%	7%	6 25%			
Implementation	find and collect suitable indicators for ES?	50%	3%	6 17%			
	find/collect sufficient data to support a quantitative assessment?	33%	2%	<mark>6</mark> 25%			
	find/collect sufficient data to support a qualitative assessment?	17%	3%	6 50%			
	to robustly quantify ES indicators (data, analysis) and predict to scenarios?	42%	5%	6 33%			
	identify realistic (meaning feasible, legal, economically viable) management options?	33%	8%	6 58%			

Outputs and Interpretation

	Was it straight-forward to …	Responses					
		Yes	No	NA			
	interpret and verify the results (review of assumptions, methodology, validity uncertainties, trade-offs, off-site effects, demand/supply,)?	8%	34'	5 8%			
	are your result robust enough to guide policy implementation?	25%	17	5 8%			
Outputs Interpretation	identify winner (beneficiaries) and/or losers of your management options?	8%	9	5 83%			
interpretation	agree with your stakeholders on (policy or management) solutions based on the results?	0%	0	5 100%			
	formulate governance recommendation for the management options (incentive scheme/regulations)?	0%	0'	5 100%			
	design a monitoring scheme to examine the effect of any further development?	8%	9'	83%			



Embedding results into decision making

	Was it straight-forward to …	Responses						
	to identify a target audience	41%	17'	þ	42%			
Embedding results into	to operationalise the ES concept ?	17%	33'	þ	50%			
decision-making	to identify groups to build awareness across targeted audiences	8%	17'	Ď	75%			
	to identify groups to create ownership across targeted audiences	0%	25'	þ	75%			



The final blueprint: Unique opportunity to synthesise experience from all Exemplars.

Final Blueprint OPERAs		• •	\$	SEND	: 6
	MA STREET				
Sector 1	QUESTIONS RESPONSES				
	Section 1 of 31	×	:	0	
	ODEDAs Final Plusprint Protocol			Tr	
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	Lead Authors: Genevieve Patenaude, James Paterson, Tommaso Locatelli Contributing Authors: Carsten Dormann, Sven Lautenbach, Marc Metzger, Kimberly Nicholas, Stefan Schmidt, H Schoonover, Ariane Walz	leather			
	Welcome to the final version of the OPERAs project's BluePrint (BP) protocol. Filling this blueprint is a must to or of the OPERAs project. In this version, you will be asked about the outcomes of your Exemplar, and about its im Some questions from the previous blueprint remain. These are important as they allow us to explore the chang your project.	deliver D2. Ipacts. Jes made i	.4 n		
	There are 8 sections: 1. Summary 2. Purpose 3. Scope	e	:		
	 4. Design 5. Stakeholder Engagement 6. Analysis and assessment 7. Results and Recommendations 8. Impacts 				
	NOTE: If your Exemplar is broken down into several studies, spanning different purposes, locations, scales etc. select one of these studies (preferably that closest to a research project). Please specify which study you sele entering the name of the Exemplar.	, you may ct, when			0



https://goo.gl/forms/IW3gGorOj9qhMQyv1





Analytical Framework

Evidence robustness assessed based on hierarchy of scientific evidence

(Mupepele et al. 2016).





Analytical Framework

BiodivERsA STAKEHOLDER ENGAGEMENT Handbook



Stakeholder engagement process evaluated using BiodivERsA Stakeholder Engagement standard.



Analytical Framework

Policy Impact: quantity and nature of impact outcomes listed in the blueprint protocol

Based on our impact definition (Larocca 2014).



Literacy

Practice

https://goo.gl/forms/IW3gGorOj9qhMQyv1





Ecosystem Science for Policy & Practice

D2.5 Decision trees

Genevieve Patenaude, James Paterson, Diana Tuomasjukka, Anita Bayer, David Barton, Martin Karlson, Anders Madsen

2.5 Decision Trees

Cross Projects, Cross WP working group

Decision Trees Working Group

2 Oct 2015	Creation of WG
28 Oct 2015	Summary of guidance planned
Nov 2015	Discuss plan for collaboration
8 Jan 2016	Input to Oppla strategy Working Group meeting
June 2016	Working version of suite of guidance tools
Nov 2016	Final deadline for all tools fully operational
Mai 2017	BBN on OPPLA Lab

3 questions to answer

3. Which Selection Criteria?

Decision Support tool

2. Which Decision Support Tool?

Elected Tool or Instrument

1. Which Tools & Instruments?

Instruments and Tools

Selection of tools and instruments given different situations:

Instruments: ' A means of pursuing an aim' (Oxford dictionaries). A term for a *framework, concept or approach*

E.g. Regulation, payments for ecosystem services, subsidies,

Tools: 'A device or implement [...], used to carry out a particular function. (Oxford dictionaries). A term for **concrete executible or software based** means that can be used to **support the implementation of instruments**

Which Instruments and Tools

- 51 Instruments and Tools (19 OPERAs, 33 OpenNESS)
- 5 Management Instruments (e.g. PES), 18 Information tools (Our Ecosystem), 29 Decision support tools (e.g. MCDA)

	Examples of	
	Biophysical methods included (12)	
	 (i) mapping using spreadsheet/GIS approaches; (ii) ESTIMAP (Europe and downscaled versions); (iii) QUICKScan; (iv) BBNs; (v) State-and-Transition models (STMs) (vi) InVEST; (vii) Species distribution models; (viii) MapNat smartphone app; (ix) PUSLE crossion model; 	
	(x) blue-green factor scoring;	
0	(xi) photo-series analysis; (xii) Eco-chain.	

3 questions to answer

What matters to users:

Guidance must be 'Easy to use' and produce 'communicable outputs'

Most important characteristics	of
guidance	

Easy to use

Communicable output

Accuracy

Precision

Quick to use

Easy to access

Accessible language

Visual appeal

Transparency

Exit points

Use of graphics

Ligitimacy

Stability

Statistical probability

Data Requirements

Based on what our stakeholders told us, we evaluated a suite of 6 decision support tools

Decision trees, MCDA, BBNs, Scenarios, CBA, CEA...

MCDA and BBNs scored top, with important differences between them

OPERAs Radar chart comparing MCDA & BBN on 14 criteria

3 Steps in design of decision trees

Understanding how tools and instruments are selected?

- 1. Questionnaires and focus groups at
 - 1. Userboard meetings
 - 2. Users conferences (Escom May 7th-8th 2015)
 - 3. OPERAs consortia (covering all WPs)
- 2. Context analysis based on articles and findings of the Meta-Analysis
- 3. And input from OPERAs WP4 & OpenNESS

From Focus Groups and Surveys: Expertise required and financial resources are key in selecting tools and instruments

For selection of ES instruments	For selection of ES tools
Financial resources required	Expertise required
Human power required	Financial resources required
Expertise required	Application setting
Social implications	Scale of application
Amount of bureaucracy	Human power required
Scale of application	Social implications
Time for implementation	Time for implementation
Application setting	 Amount of bureaucracy
Buy-in	Buy-in
Geographical context covered	Policy area covered

From meta-analysis literature (n=57):

Contextual factors visualised in 8 network diagrams

Data matrix for OPERAs and OpenNESS ecosystem service method classification

Tools, methods, instruments			Decisio	an context - purpose			Scale		Bata required	Data	Data type				"provide" (1) 13 indicators	eri tosi output provide			teses	Tessecos			Tatal economic value				TERvalues			IPESS values				
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The final product

Online BBN

http://openness.hugin.com/oppla/ValuationSelection

HUGIN OpenNESS Resources - Case Studies - About

Using a Bayesian Belief Network for classifying valuation methods

By: David Barton, Anita Bayer, Genevieve Patenaude, James Patterson, Martin Karlsen, Anders L Madsen and Diana Tuomasjukka November 4, 2016

Highlights

Bayesian Belief Networks (BBNs):

- · organise expert judgement on valuation method characteristics
- used as an expert system classification tool
- · capture fuzzy expert judgement can be represented using probabilities
- · show methods relative likelihoods of satisfying criteria instead of binary yes/no
- · show portfolios of methods satisfying multiple-selection criteria
- · ideal for identifying method complementarity
- · can be used to easily validate method classification by third parties

Introduction

Oppla is an online platform offering advice on selection of ecosystem service appraisal methods. This note demonstrates the use of a Bayesian belief network (BBN) as an *expert system* to support method selection.

Online BBN

Context	Scale	Data	ES	Resources	TEV	BBN	Tools	5
Resou	rces						OPERA n	nethods
> Exp	ertise						OpenNES	SS methods
Rese	earchers o	own field other field					Spread	ESTIMAP
○Non ○(non	e of the al	o stakeho bove)	lder				BBN	STM
> Soft	ware_Lice	ense					QUICKS	InVEST
> Soft	ware_Adv	anced_K	nowledg	ge				
> Stuc	dy_Length						Species	ECOPLAN
> Bud	get						RUSLE	BG
							Manhlat	-

Online tool: oppla lab

Ecosystem Science for Policy & Practice

Thank You

