Report on the first OPERAs Userboard Workshop

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Prospex

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OPERAs

Ecosystem Science for Policy & Practice

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Executive Summary

Background

The first OPERAs Userboard was held in Brussels on the 27-28 November 2013. The function of the Userboard is described in the description of work (sub-task 5.2.2.).

"Ongoing, close collaboration with existing and future users and clients of ES/NC valuation is key to the ultimate success of OPERAs. OPERAs will create a Userboard as a continuous instrument for inputs and exchanges with key stakeholders that will practice ES/NC evaluation and those that potentially request and buy these services".

Fifteen members of the Userboard participated in the first meeting and additional members will be identified and added to future Userboard meetings in the coming months. From the OPERAs consortium, each of the work packages and key areas of activities were represented[1].

Objectives of the First Userboard

The aim of the first Userboard was to identify and map the needs stakeholders have for operationalizing ES/NC in their work and to see if these were being covered by OPERAs.

Userboard needs for operationalizing ES/NC

The Userboard was asked to list the biggest challenges they faced in operationalizing ES/NC. These were clustered under seven headings that are identified in the table below.

1. Understanding process, tipping points, social, biophysical	2. Awareness and education at all levels	3. Common standards, data, indicators and metrics
– Finding data of biophysical impacts or changes – Competing demands for open spaces – Eco-footprint calculations – Trade-offs between different uses of recreational areas – Common understanding of the challenges and benefits by people living in the relevant areas – Social aspects (sociology) of ecosystem services	– Communication: embed it in mainstream – Lack of awareness of relevance – Lack of basic e-learning tools for different audiences – Curriculum at all levels – Communication: What to communicate? (alternative versions) – Change communication to arguments that go beyond money – Education on ecosystem services – Transfer of knowledge to a broad public	– Lack of globally agreed standards and metrics from researchers/ regulators – Cohesion in approaches within the organization – Development of indicators of ecosystem services – Reliable input data (time series) – Agreement on what are ecosystem services and natural capital
4. Comprehensive, holistic trade offs, evaluation and assessments	**5. Disconnect between knowledge and decision making & between scales, contexts and beneficiaries**	**6. Ecosystem services: What is the added value?**
– Lack of information for informed trade-offs	– Synchronisation of processes – Values are different at different	– What is new? Is science just reinventing itself?

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[1] WP1 Mark Rounsevell, WP2 James Patterson & Meriwether Wilson, WP3 Astrid van Teeffelen, WP4 Diana Tuomasjukka, WP5 Lisa Ingwall-King, WP6 Marc Metzger.

– How to measure, monitor and pay for public goods land owners provide? – Values of ecosystem services related to hunting – Value the restoration activities of hunters to the ecosystem services – What are the thresholds and tipping points so you can prioritise your efforts – Trade-offs between business and environment	scales – Conflicting policy priorities between health, safety and environment – Disconnect between people who know well about ecosystem services and those who manage the ecosystem system	
7. COMMUNICATION (overarching theme)		

The members of the Userboard worked on the six main clusters and identified tools, knowledge and other resources that they would need to meet these challenges. Based on these outputs the OPERAs team reviewed the needs and paired the clusters with the work packages as follows:

Groups of identified stakeholder needs	OPERAs work programme
1. Understanding process, tipping points, social, biophysical	Knowledge
3. Common standards, data, indicators and metrics	Instruments
4. Comprehensive, holistic trade offs, evaluation and assessments	
5. Disconnect between knowledge and decision making, between scales, contexts and beneficiaries	Practice
2. Awareness and education at all levels	Communications
6. Ecosystem Services: What is the added value?	

The OPERAs team and Userboard members then worked together to clarify the needs and examine them in-depth. Each of the needs was evaluated to see how they might be addressed in OPERAs using a colour scheme:

- Green reflects a need that OPERAs is already planning to address.
- Blue reflects a need that OPERAs can consider.
- Red reflects a need that OPERAs cannot address at this stage.

For in-depth analysis on the needs and how OPERAs can respond, please see the full report. However, from the summary table below it is clear that OPERAs is designed to meet many of the needs expressed by Userboard members.

Topic	Green dots	Blue dots	Red dots	
Knowledge	24	1	-	
Instruments	15	2	-	
Practice	17	3	-	
Communications	21	2	5	
Total (in%)	85%	9%	6%	

Next Steps

The final session of the Userboard looked at how the members will interact with OPERAs during the project cycle. The following issues were discussed:

a) **Physical meetings**: it may be helpful to expand the members of the Userboard, not only to include the Exemplars but also other sectors such as the social sciences, landowners and the private sector. Future meetings of the Userboard might take place in Exemplar regions so that a connection can be made with "practice".

b) **Online engagement**: a platform or forum should be established to allow the OPERAs team to engage the members of the Userboard between physical meetings. The exact purpose and scope of the engagement needs to be further defined but members are willing to invest some time and energy in online exchanges.

c) **Content engagement**: members of the Userboard were open to engaging with OPERAs on the development of knowledge, instruments, practice and communications. Various suggestions were made on how to structure this engagement including options for mid-term reviews and topic specific inputs.

d) **Research engagement**: members of the Userboard were open to receiving questionnaires or other requests from the OPERAs teams. They requested this to be coordinated through the Userboard structure and on single contact point.

e) **Updates & communications**: members of the Userboard requested updates on developments in OPERAs and alerts on any meetings / workshops etc.

Introduction

The OPERAs project is about moving away from what is fundamentally an academic concept (ecosystem services and natural capital = ES/NC) to operationalize it in practice. The project is trying to bring together science, policy and practice communities through the development of tools, methods, instruments, data, best practice guidelines, worked examples, training, educational materials, services, events and other means. The OPERAs project is trying to test all of the different approaches in exemplar studies and is delivering the information through what we call Resource Hub, which is a type of web portal. Most importantly all of this should be developed together with, and for, a community of practice.

Participants

1.1 Userboard members

| Paulo	Bessa	Corticeira Amorim	Sustainabilty Manager
Joanna	Drewitt	Scottish Government – RESAS	Ecological Advisor
Machteld	Gryseels	Brussels Environment	Brussels Environment
Tamar	Hosennen	Regional and Economic Centre Oberwallis AG	Regions- und Wirtschaftszentrum Oberwallis AG
Mikkel	Kallesoe	Royal Dutch Shell	Sensitive Areas Team + Ecosystem Services Working Group
Thierry	Lucas	UNEP	Focal Point for EU Environment Research
Diana	Mortimer	Joint Nature Conversation Committee	Joint Nature Conservation Committee
Nathalie	Olsen	IUCN	Interim Progamme Head of Economics Programme
Tara	O'Shea	Code REDD	Programme Manager
Elena	Pavanel	ENI exploration & production	Environmental Officer
Jan-Erik	Petersen	European Environment Agency	Head of Group-Assessment Methods
Annette	Schneegans	European Commission - DG Agriculture	Research Policy Officer
Charlotte	Simon	European Federation of Associations of Hunting & Conservation	Nature Policy Assistant
Miriam	van Loon	Bond Beter Leefmilieu	National Blue Flag Operator
Agnes	Zolyomi	CEEweb for Biodiversity	Interim Secretary General

1.2 Scientific advisors/resource experts

Mark	Rounsevell	University of Edinburgh	Professor
Marc	Metzger	University of Edinburgh	Lecturer
Meriwether	Wilson	University of Edinburgh	Lecturer
James	Paterson	University of Edinburgh	Postdoc Researcher
Diana	Tuomasjukka	European Forest Institute	Senior Researcher
Thomas	Klein	Eidgenössische Technische Hochschule Zurich	PhD Researcher
Astrid	van Teeffelen	VU University Amsterdam	Researcher
Marc	Gramberger	Prospex bvba	Researcher expert
Lisa	Ingwall-King	UNEP-WCMC	Programme Officer

1.3 Process facilitators

Martin	Watson	Prospex bvba	Lead facilitator
Peter	Vandeveyvere	Prospex bvba	Facilitator
Peter	Rakers	Prospex bvba	Facilitator
Katharina	Zellmer	Prospex bvba	Reporter

Overview of the Workshop

The OPERAs project is working with the idea of an information chain from data to action (see graph below). Where you translate data to information with the help of information tools, information to decision with the help of decision-support tools, and decisions to implementation and uptake with the help of management instruments. On each of these levels OPERAs is trying to develop tool and methods to achieve these translations.
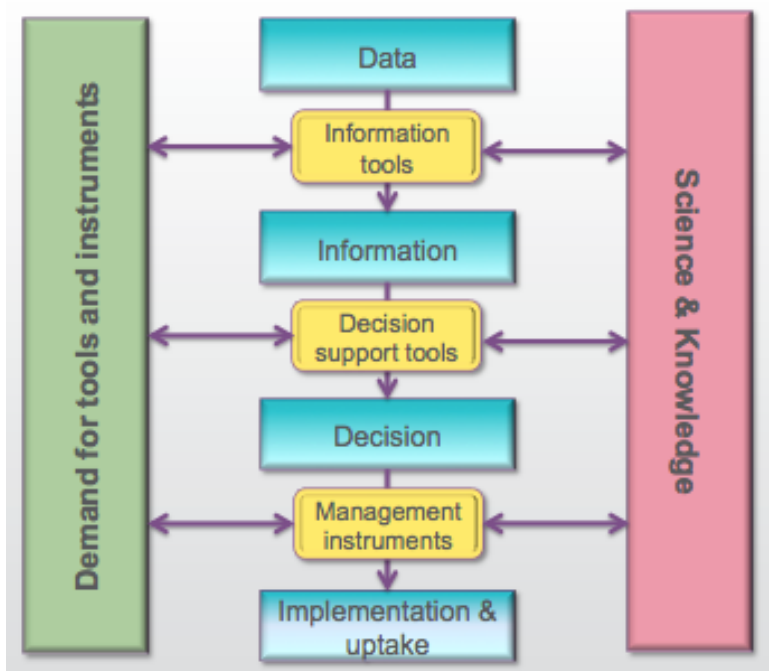
In order to start this process the project needs to establish the demand for tools and instruments and it needs to know what the user needs are at all of the levels (i.e. data, information, decision, implementation & uptake), which is the reason for the project to establishment of the Userboard.

For that the different user groups potentially interested in the tools and instruments need to be defined, followed by an identification of questions those users would like to ask, which will help in defining the functionality and the creation of specific content.

Primary Stakeholder Needs in ES/NC

Question 1: In your work what are the biggest challenges you face in operationlising ecosystem service and natural capital (ES/NC)?

Short note	Additional explanation
Communication: embed it in mainstream	Basically the biggest challenge is the communication, so that in the end of the day everybody has bought into the concept. The target audience can of course be as big as you like, but if you think that all of it is leading towards sustainability then we need to communicate across society and all governance processes. Mainstreaming in itself is another challenge.
Finding data of biophysical impacts or changes	…as a result of investment policies, land use change. How do those activities affect ecosystem structure and function? How they affect the provision of ecosystem services? It is not the valuation we have trouble with because that is often well established, but it is more the biophysical side of the analysis, which is challenging.
Lack of globally agreed standards and metrics from researchers/ regulators	If you operate several different inventories and different regulations for the US Environmental Protection Agency compared to the EU, it is very difficult to communicate to companies what is expected of them. We would need something like an ISO standard for ES, because then people in big companies understand what it is and are willing to endow it.
Cohesion in approaches within the organisation	Shared goal, but different approaches internally within the community. Everybody agrees that carbon storage is important, but there are different approaches on how it should be done. We need cohesion at all project levels to inform policy formation.
Lack of awareness of relevance	This related to the communication challenge and where global standards would come in. How is this relevant to my business or to my state/country?
Lack of basic e-learning tools for different audiences	Related to communication, but it is important to reach different audiences, because what researchers often produce does not match the needs we have to convey the message to ministries.
Development of indicators of ecosystem services	For example a link between ES and the sustainable development goals, without which nobody will contribute or able to report on it.
Curriculum at all levels	Education at all levels, including the global level. There would be a possibility for MOOCs (Massive open online course).
Competing demands for open spaces	The issue becomes more a more difficult because of the growing pressure of urbanization. Also there are good initiatives from local populations to have more urban agriculture putting even more pressure on the urban biodiversity. It is coming from the citizens, so it is often difficult to argue for biodiversity with citizens, but also politicians.
Lack of information for informed trade-offs	After we have identified impacts and dependencies we have with ecosystem services, we come to the point of trade-offs between ecosystem services. We would need a way to manage the decisions and a way to evaluate those different ecosystem services in way that they are

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	comparable.
Reliable input data (time series)	… and staff to process this data (of course nothing OPERAs can really do much about).
Agreement on what are ecosystem services and natural capital	CICES is the EU standard in public processes and it is also referred in the standard of ecosystem accounting. So in a way there is an agreed standard on the public level, but it needs to be tested and it needs to be communicated, because of course there are competing standards around. You need to develop a process that leads to an agreement on what is the final standard.
How to measure, monitor and pay for public goods land owners provide?	The daily challenge is how to put value to a product and through that to the ecosystem, which is recognized for providing some ecosystem services. How should we pay the landowners for those services (public goods) they provide? There has to be a link between management at a local scale and the global ecosystem services. We've tried to evaluate at a local scale how these practices would affect ecosystem services and the value. We also propose to governments because of what can governments can do with their money? And how to measure and monitor with certification schemes.
Synchronisation of processes	Process synchronisation between MAES, IPBES, STEA. I think it would be good to see that we are on the same level and have the same understanding.
Communication: What to communicate? (alternative versions)	Be clear about what we're communicating. Make sure there aren't alternative versions, so no confusion. Who are we communicating to? If you think about farmers trying to get them to accept and understand what we're asking them to do. If we're trying to get them to do something different, have an answer of what will be the difference to them and what we ask them to do?
Values are different at different scales	We need to be careful with scale. It's good to have European or even wider scales perhaps for concepts and definitions, but if we're starting to talk about values, either monetary or non-monetary, then they're very different at different scales. The valuation of ecosystems scales in countries may be different. We have to be careful about who's paying and what their values are.
Values of ecosystem services related to hunting	We have difficulties to put values on ecosystems services linked to hunting, including the difficulty in gathering data from our members about ecosystem services.
Value the restoration activities of hunters to the ecosystem services	We don't know how to make the link between activities of hunters and management and restoration activities. How do the activities contribute to ecosystem services? Also the question is how to value this contribution, both with regard to impacts and positive contributions.
There are no eco-footprint calculations	There are a lot of companies who make their own eco-footprint, but there are no rules how to calculate that eco-footprint. There is no eco-footprint calculation from the scientific community, but we are often asked how to calculate it.
Trade-offs between	In nature parks for example you have drinking water, which is at the same

different uses of recreational areas	time used as water for swimming, causing a conflict between users (e.g. inhabitants vs. tourists). Until now it is not calculated how many people can use this place in one day (carrying capacity).
Conflicting policy priorities between health, safety and environment	Conflicting laws between health and safety and conflicting policy priorities – is it more important to be healthy or have ecosystem services?
Change communication to arguments that go beyond money	We of course want to convince people about a more sustainable management in the tourism sector, but until now our communication always focuses on saving money. That argument is of course true, but if we only communicate around money, we miss valuable arguments, so we need to change the message. How to define our key messages?
Education on ecosystem services	Tourist and management schools don't focus on ecosystem service education. It is often only optional and few students take it.
Common understanding of the challenges and benefits by people living in the relevant areas	There are more people working on ecosystems than those living in them, because most people are living in cities and know how ecosystems should be. However people living in these ecosystems (e.g. forests) don't. In one of our areas there is a forest and agricultural areas and there are several projects now that want to protect ecosystem services. But every project is asking something different and there is no coordination. So there is an issue of linking theory (outside view) and practice (insider's perspective) and conflicting messages about ecosystem services.
What is new? Is science just reinventing itself?	Actually being able to articulate what the data is compared to current practices. This is all about practice projects. People often ask me, how is this different? Is this new or does it just have a different label? What is the added value of data and is it worth for business to consider it?
What are the thresholds and tipping points so you can prioritise your efforts	A lot of research tends to establish what the status and health of an ecosystem is and then try to embed that in the dynamics and functionality. But what business really needs is to know what are the tipping points and thresholds. Make this into something that is real for them.
Disconnect between people who know well about ecosystem services and those who manage the ecosystem system	There often is a disconnection between the people that rely on ecosystem services and that know how to manage them on the one side and those that take decisions about ecosystem services on the other side. It is a multi-stakeholder environment – with people who have the knowledge and experience the impact if ecosystem challenges, and people who make the policy (decision-makers). There is a lack of flow of information. Decision makers don't either understand well how to deal with ecosystems at a local level, or they don't have the data to allow them to make informed decisions about the management of those resources.
Social aspects (sociology) of ecosystem services	It has to do with social ecological systems. Most of the people here are coming from a natural-sciences perspective and don't understand the social aspect. Not many anthropologists involved in this – in Europe that might not be such a problem, but globally there are massive trade offs. By saying, "Let's stop fishing here", you don't understand how that affects a household in Africa, where only women are fishing in that particular area. It will have a social impact, which is why social sciences need to be involved

	(next to natural sciences).
Trade-offs between business and environment	Building on the previous point on linking health and environment, we should also look at the link between development, business and environment. Especially looking at trade offs and the complexity of linkages.
Transfer of knowledge to a broad public	What we miss is a number of tools and different approaches we can use to communicate with different sectors. Usually we just use our own skills. It's all about reusing what we have done.

1.4 Grouping of Challenges

1 Understanding process, tipping points, social, biophysical	2 Awareness and education at all levels	3 Common standards, data, indicators and metrics
– Finding data of biophysical impacts or changes – Competing demands for open spaces – Eco-footprint calculations – Trade-offs between different uses of recreational areas – Common understanding of the challenges and benefits by people living in the relevant areas – Social aspects (sociology) of ecosystem services	– Communication: embed it in mainstream – Lack of awareness of relevance – Lack of basic e-learning tools for different audiences – Curriculum at all levels – Communication: What to communicate? (alternative versions) – Change communication to arguments that go beyond money – Education on ecosystem services – Transfer of knowledge to a broad public	– Lack of globally agreed standards and metrics from researchers/ regulators – Cohesion in approaches within the organization – Development of indicators of ecosystem services – Reliable input data (time series) – Agreement on what are ecosystem services and natural capital
4 Comprehensive, holistic trade offs, evaluation and assessments	**5 Disconnect between knowledge and decision making & between scales, contexts and beneficiaries**	**6 Ecosystem services: What is the added value?**
– Lack of information for informed trade-offs – How to measure, monitor and pay for public goods land owners provide? – Values of ecosystem services related to hunting – Value the restoration activities of hunters to the ecosystem services – What are the thresholds and	– Synchronisation of processes – Values are different at different scales – Conflicting policy priorities between health, safety and environment – Disconnect between people who know well about ecosystem services and those who manage the	– What is new? Is science just reinventing itself?

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tipping points so you can prioritise your efforts – Trade-offs between business and environment	ecosystem system	

7 COMMUNICATION (overarching theme)

Comments:

- I propose to include metrics and indicators in the title of the third group (*note: has been done*).
- What interests me is the connection between these different topics, because issues are overlapping.
- I am a bit anxious about the fact that communication might get lost, because it is not written down and that usually means it is forgotten at some point. So much about OPERAs is about identifying the people the research is done for and how to communicate with them (*note: the word 'communication' is written as an overarching topic under all other topics*)
- It is not only about communication but also about marketing in the sense of key messages to be communicated (*note: it is included in the topic on added value, which is all about showing and communicating the added value*)
- We have not really discussed what kind of data we need to have efficient assessments (*note: this will be covered in the next section*)
- One of the main challenges is that once you got data sets and information, how do you translate that into action? It is decision-support tools, which we are really lacking and we have difficulties developing them for the different users (*note: it was tried to include that in group number 4 that can include decision-support tools*)

Question 2: Looking at these challenges what tools, knowledge or other resources do you need to overcome them?

Note on post-its	Additional verbal explanation
Standardised evaluation models of ecosystem services	What kind of ecosystem service should be evaluated? All the ecosystem services or just public goods? In most cases provision services already have a payment and value associated. How to evaluate and at what scale? It should be standardized because of different tools and models to evaluate things.
LCA of products considering biodiversity ecosystem services	In order to understand impact of a product we need to consider several environmental aspects. We don't have an LCA for the impact of a product on ecosystem services or biodiversity. It can be an important tool to communicate to the consumer something about ecosystem services.
CAP payments of forest ecosystem services	Whenever there is no efficient market, it is the government's task to take care of the citizens needs. In those cases the government should replace the market to take care of the citizens needs. So in this case of ecosystems services there is no efficient market in place so there should be payments for ecosystem services provided by forest land owners in this case.
Biodiversity ecosystem	We are always thinking about a lack of good communication. It's not very

services "ambassador" cf. Al Gore for climate change	original, but we really need an ambassador for biodiversity and ecosystem services, like when Al Gore did his movie on climate change and he reached the whole public. I don't really see an ambassador for ecosystem services and biodiversity, which would be essential for communication.
Concrete data on local examples of ecosystem services ⟷ direct influence citizen	We really need concrete data on local services, e.g. pollination. For example everyone knows the importance of water basins and we have examples, but information on these really local ecosystems and the importance of nature in the city is lacking. Everybody knows that open spaces are important, but when they need space for housing or roads, information and data about local ecosystem services would be the first thing one should find out about.
Convincing arguments for politicians	Using data for communication to really convince politicians. The link between science and policies. How can we turn all of those difficult things into convincing arguments for politicians?
Connecting knowledge bases	We have a lot of knowledge already existing (especially within the NGO sector) but we don't know about the knowledge of the others.
linked tool: Online hubs, meetings and identification of experts	We need online hubs and to have meetings like this and to identify experts to connect to.
Citizens' and different stakeholder understanding	We have to increase this, possibly with interactive communication tools.
Various interactive communication tools	This is very much related to the previous point, because many communication tools already exist, but we just don't know about them. Again, making the connection would be important.
Lack of political will and commitment	I think this is one of the reasons why we are here at this meeting.
Avoidance of monetarisation, linked tool: Careful communication	We have to be clear and simple, when it comes to communication and we need to avoid monetarisation and giving everything a price tag. We have to be careful in our communication and not say this tree costs 200 Euros and then somebody comes along and pays the price. We need to be careful not to say that it is the actual value of something.
Ecosystem wealth indicators	It's about identifying indicators that reflect ecosystem wealth, which important for monitoring in order to be sure than ecosystem services are provided. It is related to monitoring after impacts are appraised.
Quantification of regulating and cultural ES vs. provisioning ES	In order to give a tool to compare them regulation/cultural ecosystem, services against provisioning services.
ES loss management options	In terms of ecosystem services loss, which is something we should deal with in our business, it's important to identify management options, not necessarily monetary compensation. We should find different solutions, also exploring market-based mechanisms. It is about putting some actions in place that could have the opportunity to enhance ecosystem services in our operations. It should not just be about paying money; it should be about finding new development options.

Ecological perspective taking into account the long-term effects	This is something that should be considered. Some management and regulation already exist. This is something we need to account for.
Leadership by business and government	No extra explanation.
Appropriate incentive structures (reward not punish)	Rewarding good behavior, not just punishing bad.
Change accounting framework ("what is measured is being managed")	No extra explanation.
Manage dependence not just impacts	This is a new element of the ES approach. This is part of the delta in current practice. So when we do projects we manage our impacts through an impact assessment process, that's how we deal with our interaction with the land. But understanding dependence of the service as an input to your own process or as supporting local biodiversity of stakeholders is new from the traditional impact assessment way of doing things.
Involve more business (agriculture, fisheries and forestry	For example, primary industries of agriculture and fisheries.
Clear impact chains & causalities (structure, function, supply of ES)	Clear impact chains and demonstrating causality as you move from structured function to the supplier service.
linked to: Linking biophysical changes to socio-economic consequences	That means understanding how biophysical change leads to socio-economic consequences.
Multi-languages materials + e-learning modules	Not only in English, which is important when you are considering the local level.
Training material on indicator and Train-the-trainer	Training of trainers. Partnerships.
Detailed process description (while bridging the gap between knowledge and decision-making)	Descriptions of when it is working and when it's not working – why? If you can detail this we will have a better understanding of how to do this next time. Not just best practices, but also "wrong practices".
Graphs, schemes (for tipping points)	More graphs and things that can be easily understood.
Practical examples broadening the existing catalogue	More practical examples. New examples, not only existing catalogues.
Change processes	Methods and knowledge of change process. How do we support changes?

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(information...)	How can you motivate people to change their behaviour?
Visualisation of complexity ES (translation, reduction)	Easier to communicate for example with comics.
Local key person facilitator (network, peer learning)	A network where you can exchange what you've discovered, what works and what does not work, i.e. peer learning.
Need relevance, Tool: Systematic thinking + integrated reporting, Knowledge: holistic approaches	Relevance – especially challenging for global ecosystem services. Working in REDD+ the first question is often: What is the relevance of forest to my business, my supply chain, my country, or my state. To get to that relevance we need more systemic thinking and common thinking about changing the economic framework for more integrated reporting, and the hope is that this would lead to more holistic approaches. One of the largest corporate private sector actors in REDD+ for example has an environmental profit and loss sheet, because they took this systemic thinking and integrated reporting so they do have their accounting in line with their financial sheets. So they look at REDD+ not just for carbon offset but also a way to balance their balance sheets. Mainstreaming that thinking is very important for awareness and education.
Tools: User friendly interface to weigh trade-offs, knowledge: spatially specific	In terms of visualisation, how do we easily communicate the trade offs through a user-friendly interface so these tools aren't just giving numbers or quantify results, but that a manager who isn't super knowledgeable about natural capital can understand what the trade offs are.
Need: Measure benefits as well as impacts	Working in REDD+ there's a need to understand what the beneficial impacts are for you, if you are involved in something, beyond just mitigating your impacts. It is about having a positive impact.
Credible international process	The whole idea of having common standards, data, indicators and matrix, if it's going to work in a global way then it needs to having something that everyone can subscribe to. How can we actually do this? Well the reason we had IPBES is because people wanted a governmental process on the table beforehand, we didn't need a governmental process but people wanted it so we've got it. So how do we make that credible? What do we need to feed into it to make it a credible process?
Dialogue over common issues	Needs to be before we get to the point of doing things, talking about what it is that affects everybody. As I mentioned earlier, I've come in from a natural sciences perspective but I don't understand anything else that's going on so there needs to be that early dialogue to facilitate what we actually need to do.
Accreditation of practitioners	The accreditation is that they are actually working to a standard that everyone expects.
Accountability of practitioners	If you say that you're actually doing work on behalf of ecosystems services then there's some accountability towards it. Otherwise people are cherry picking what they think is right, but it doesn't necessarily involve everyone.
Tools/models/software & measurement of regulating services and others	I started focusing on ecosystem science and the need for tools, models, software to better understand the content of ecosystems, the different elements and how they function. This is really focusing on the biophysical

	measurement.
Ecosystem assessment + impacts of marginal (small) changes	Look at ecosystem assessments more holistically to get an idea of the impact of marginal changes. How do ecosystems respond to marginal changes, such as land use change, sustainable logging. What are the marginal changes in ecosystem services?
More information on the link between ecosystem and ecosystem services (resilience, thresholds)	Try to improve the science around resilience and thresholds.
Mechanism for local communities to communicate use/values	Getting back to this idea of collecting information from those people who have a day-to-day interaction with ecosystem and nature.
More data on household use and reliance on ES	So this is particularly applicable in developing countries where a lot of land use decisions are made without a good understanding of how the local community is relying on forests and other ecosystems. Also it concerns the relative importance of ES for income (in-kind and cash) in terms of land use strategies.
Data/framework role of ES in livelihood strategies	Again more for developing countries.
Decision-support tools	It's quite important to make apparent the management tools so once you've made a decision, how do you implement it? The development of decision support tools is linked to the availability of management instruments further down that stream.
Valuation tool for ecosystem services and actions	They should be created on the ground and could contribute to ecosystem services.
Methods for gathering data, local level	I'm really talking about the local level and the involvement of local stakeholders, where we have a problem, because the data are really different from one country or area to another.
Good sources of data	The problem at local level is that the knowledge is there but there are no official sources. What do you mean with efficient data? What can we do to make it more official and more recognized? How can we make this data more available?
Credibility	The problem with citizens' data is to be recognized as scientific data, so we need to establish credibility for that.
What do we loose if this ecosystem disappeared?	What is the added value of ES? What do we loose if one particular ecosystem disappears? Could be applicable for industry, for anybody. If this ecosystem disappears, what do we loose?
Tools specific to the group of users	It really is for communication, we need different tools depending on the group of users we would like to reach. Because you can't have the same vocabulary or the same communication, depending if you are talking with local people, environmental NGOs, government, etc.
Technology to lower or create positive eco-impact	This can help ecosystems. In industries for example, we spend a lot of money to develop technologies but we don't use a lot of technology to

	protect the ecosystem and this would be as well to help to lower impacts, also to make standards.
Eco-footprint calculation for free available	This should be available for free or it will not be used because certainly NGOs don't have money but we cannot pay consultants to do this.
Support to SME to implement sustainable use of ecosystem	Because I saw that SMEs are important, but they need support for them. It would help if they had initial support, maybe financial or regulatory from the EU or other sources just to let them start to implement what is coming out of OPERAs. They can also be monitored, it doesn't have to be about giving money all the time.
Increasing awareness of the public by policy-makers about ecosystems	Awareness creation, certainly the case for NGOs, we don't have the money for raising awareness. It should be done on a much higher level for the whole of Europe.
Regulations which 'step up' the current eco-protection	The regulations made a good step a few years ago, but we really need a next step for the regulations to bring environmental sustainability to the next level.
Follow-up on the current regulations on common (EU?) level	Sometimes what we see, we come in, and we do accreditation and auditing, but in most cases the laws are not implemented concerning our environment. Then we come in and we are the difficult ones, because we are auditing, but actually they should have done a lot for following the laws before we come in. So for really important issues there should but more common and independent systems to check if regulations are implemented.
Validated, comparable + documented input data	Without these you can't do an ES assessment and it is a bottleneck for a lot of things we want to do. We know we are at the limits. We know you cannot find them for us.
Processing capacity (staff, IT systems, software)	There is a limit of staff and then of course there is also potential to cooperate with other EU organisations, maybe even research, but it is a bottleneck. In the pilot studies that you are carrying out, with the evidence you have gathered, it might be worth exploring what can we see with the current data that we have, how much more could we say with better data and how much would it cost to compile this data? Then I can say how much is the value added of investing more in better data for better policies. We have multi-billion Euro research budgets, a lot of which goes to environment research. I've been saying if you spend 1.3% of the EU research budget on actually compiling comparable validated data, we would get much more value added out of this research investment because you're not always changing the data and inventing tools that are not always necessary. So the same could go for the CAP, 0.1% would give us data to manage better the research we invest for achieving better management of common public goods. Also some IT systems and software need to be adjusted, you could even develop automated procedures.
Agreeing standards via proposals in public domain, testing in pilots/research, interactive process	You need to have proposed output that comes from recognized bodies; generally it's the UN statistical division for ecosystem accounting. It is the first step to give momentum to things like CISES, but then you need to test it and to bring everyone on board you need to invest in processes (e.g.

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	have meetings like this) where people discuss and reflect on advantages and disadvantages of ecosystems and actually take the decision to merge between public bodies and research projects into one standard. That needs time and effort.
Testing the 'fashionable' hypotheses	The more diverse the ecosystems, the more resilient they are. Natural ecosystems providing lots of ecosystem services. Those statements might be true, but maybe not in all circumstances. There are ecosystems with little species variety and they are very stable and resilient and others that are very fragile even though they have lots of species. Within one ecosystem type it is interesting to look at the relationship with species-diversity, resilience is probably there, but not necessarily between them. There's a number of hypothesis between the whole issues that we need to check and don't hold back if surprising results come out that are maybe a bit disappointing.
Tools for quantifying ES + monitoring, scale from general to local ES (e.g. farms)	We need them for quantifying and monitoring ecosystem services across varies scales, from landscape level down to farming level. So this is crucial.
Benchmarking, scoreboard, good examples	Useful tool always is to do benchmarking or keep scoreboards or good examples, based on data giving incentives on where various regions or settings stay in relation to providing services. Once you have set examples others follow and you have a competitive comparison. If you had regions in Europe, local governments or national governments that had set up good examples on how to promote certain ecosystem services.
Economic benefits of ES (economic incentives)	We need to have more information on the economic benefits, I'm slightly disagreeing with what was said about not wanting to give a price tag, because we need at some point economic incentives based on some kind of quantification of economic benefits.
Partnership with other sectors	For example for energy providers it is so expensive to build a new power plant that they give to the community low energy consumption devices. It is cheaper for them to give consumers a fridge that has low consumption than to build a new power plant. In the water sector it could be similar, and we could say it's more expensive for the water provider to invest in getting more water, so they should give incentives to people (e.g. agriculture) to save water instead of extending the supply of water.
Global/EU governance (economic incentives)	Global governance is a very powerful tool for carbon sequestration and climate services, where started to have them and the funding follows the form. Once the government has the mechanism you get the funding.
EU/national natural capital infrastructures	We need to come to an understanding that we have natural capital infrastructures, which is related to spatial planning and I think this level is often underestimated, the national and EU spatial planning level.
Spatial planning in place	The national and EU spatial planning is a good level to do these kinds of infrastructures that have a hug financial delivery of ecosystem services.
Need: Behaviour change	It is in response to all the incentives, but does it only have to be in

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(responsible use)	response to incentives?
Need: ES mapping/concepts into planning decisions	No additions.
Tool: Guidance on scales for 'valuing' ES (how do people value?)	For evaluation on ES. More bottom-up, how big is their circle?
Tool: targets for ES (would they help?)	If you take biodiversity, there are targets, love them or hate them, and they have engendered quite a lot of action. I'm not promoting that we should have targets, but I am putting a question mark. Would targets help to promote action? If you want to set targets, you really have to justify why you set them, they are different to indicators, you cannot set targets without clear arguments.
When will it be ready to implement? At what point do we have enough knowledge?	Listening to you all, we still think we need more understanding, knowledge, data, education, awareness, etc. When will we be ready to implement? At what point will we have enough knowledge? Because we're never going to have everything. And for me this is the counter argument to leadership and government, because why would we need that if we do not have enough knowledge and if we are not ready?
Standards/guidelines for ES valuation + accounting	I know the issue, the practice of valuation is very hotly debated, and it is appropriate in a number of occasions, but it's not always appropriate. It needs clarity for when and where it's useful and it would be enormously useful to have internationally accepted standards and guidelines for valuation in different contexts.
Integrating policies for biodiversity & ES	This is connected to governance and it is integrated policies for biodiversity and ecosystem services. Sometimes we have different departments, sometimes they have conflicts so sometimes we say the landowner needs more cattle, we give them money for that and then a few years later we give them money to recover the soil. We need an integrated approach.
Beyond GDP evaluated natural capital	If we want to measure the development of a country not only by economic performance but also by ecological performance, we need to have eco-development indicators that go beyond the GDP.

1.5 Organisation of points into the six identified groups

1 **Understanding process, tipping points, social, biophysical**	2 **Awareness and education at all levels**	3 **Common standards, data, indicators and metrics**
– Ecosystem wealth indicators – Ecological perspective taking into account the long-term effects – Clear impact chains & causalities (structure, function, supply of ES) Linked to: Linking biophysical changes to socio-economic consequences – Graphs, schemes (for tipping points) – Tools/models/software & measurement of regulating services and others – Ecosystem assessment + impacts of marginal (small) changes – More information on the link between ecosystem and ecosystem services (resilience, thresholds) – Testing the 'fashionable' hypotheses	– Biodiversity ES "ambassador" cf. Al Gore -> cc – 'Citizens' and different stakeholder understanding – Various interactive stakeholder understanding – Involve more business (agriculture, fisheries and forestry) – Multi-languages materials + e-learning modules – Practical examples broadening the existing catalogue – Local key person facilitator (network, peer learning) – Need relevance, Tool: Systematic thinking + integrated reporting, Knowledge: holistic approaches – Tools specific to the group of users – Technology to lower or create positive eco-impact – Increasing awareness of the public by policy-makers about ecosystems – Need: Behaviour change (responsible use)	– Change accounting framework ("what is measured is being managed") – Training material on indicator and Train-the-trainer – Need: Measure benefits as well as impacts – Credible international process – Accreditation of practitioners – Accountability of practitioners – Methods for gathering data, local level – Good sources of data (what do you mean with efficient data, what could we do to make it more efficient) – Follow-up on the current regulations on common (EU?) level – Validated, comparable + documented input data – Processing capacity (staff, IT systems, software) – Agreeing standards via proposals in public domain, testing in pilots/research, interactive process – Standards/guidelines for ES valuation + accounting
– Visualisation of complexity ES (translation, reduction)		
	– Concrete data on local examples of ES (direct influence citizen)	

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4 **Comprehensive, holistic trade offs, evaluation and assessments**	5 **Disconnect between knowledge and decision making, between scales, contexts and beneficiaries**	6 **ES. What is the added value?**
– Avoidance of monetarisation (= price tags) – Linked tool: Careful communication – ES loss management options – Tools: User friendly interface to weigh trade-offs, knowledge: spatially specific – Valuation tool for ES and actions – Tools for quantifying ES + monitoring, scale from general to local ES (e.g. farms) – Benchmarking, scoreboard, good examples – Economic benefits of ES (economic incentives) – Partnership with other sectors – Tool: Guidance on scales for 'valuing' ES (how do people value?)	– CAP payments of forest ES – Convincing arguments for politicians – Connecting knowledge bases – Linked tool: Online hubs, meetings and identification of experts – Lack of political will and commitment – Quantification of regulating and cultural ES vs. provisioning ES – Leadership by business and government – Detailed process description (while bridging the gap between knowledge and decision-making) – Change processes (information...) – Dialogue over common issues – Mechanism for local communities to communicate use/values – More data on household use and reliance on ES – Data/framework role of ES in livelihood strategy – Credibility (local data to be recognised as scientific data)	– Manage dependence not just impact – What do we loose if this ecosystem disappeared? – Tool: targets for ES (would they help?) – When will it be ready to implement? At what point do we have enough knowledge? – Beyond GDP evaluated natural capital

	- Support to SME to implement sustainable use of ecosystem - Regulations which 'step up' the current eco-protection - Global/EU governance (economic incentives) - EU/national natural capital infrastructures - Spatial planning in place - Need: ES mapping/concepts in planning decisions	
Linked to Group 3: - Standardised evaluation models of ES - LCA Products considering biodiversity ES - Eco-footprint calculation for free available		
- Appropriate incentive structures (reward not punish) - Decision-support tools		

Comments:

- The sixth group is relatively empty, because we are not able to answer the 'so what?' question. Why do we do this? What are we trying to sell to business, governments, etc. to get excited about ecosystem services? So for OPERAs this is an important issue to solve in order to avoid doing research for the sake of research only.
- I have a slightly more optimistic view on why the sixth group is emptier. I think it is because it is a cross-cutting issue. I think the added value is embedded in a number of the point and it is broken down in the previous categories, e.g. what is the added value of decision support tools for ecosystem services?
- Maybe we should merge the fourth and sixth group, because some of the answers to the questions in the sixth group are answered in the fourth.

Mapping stakeholder needs to the OPERAs research programme

The six identified groups of stakeholder needs were put in relation to the OPERAs work programme, resulting in the following relationship:

Groups of identified stakeholder needs	OPERAs work programme
1 - Understanding process, tipping points, social, biophysical	Knowledge
3 - Common standards, data, indicators and metrics	Instruments
4 - Comprehensive, holistic trade offs, evaluation and assessments	
5 - Disconnect between knowledge and decision making, between scales, contexts and beneficiaries	Practice
2 - Awareness and education at all levels	Communication
6 - ES. What is the added value	

Each of the four clusters discussed the identified challenges and needs and how OPERAs could/should address them. The tables below summarise the identified challenges and how the participants think the project could/should respond.

Afterwards the OPERAs team evaluated the feasibility of the each request, as shown in the right column ("OPERAs response"). The response is visualized with coloured dots, where:

- **green** reflects something OPERAs is already planning to do,
- **blue** something that can be considered, and
- **red** something which is at this point not possible to incorporate.

Furthermore, hollow dots symbolise a need for further clarification.

1.6 Knowledge

The group did the clustering rather quickly and then they launched into one of those clusters and started developing a multi-faceted framework. It became a bit like a black hole since every time the framework got bigger it dragged in another group of post-it notes. Eventually, the group clustered all of their post-it notes together into the developed framework.

The group firstly tried to answer the question: Knowledge for whom? From there they decided that they are looking for knowledge around establishing the baseline around the ecosystem, the services, and the users. So it is a lot about stocks and flows, but not as just at this point in time, but also as a function of time and space. The group also looked at it from a project level, trying to zoom in on something and then zoom out again and say, what do we actually need to know to inform the project about knowledge around that issue.

Topic	(Integrated) Frameworks for ES/NC – Integration at Project Level				
Past	**OPERAs Response**	**Current**	**Future**	**OPERAs Response**	
Health	●	Scenarios/ Trends/ Time series		●●●	
Function	●	– Multi-drivers (Risks) (LSTEEP)			
Use	●	– My (project) actions		Prioritise	
↓ Stocks & Flows of ES	● ●	↕ IMPACTS ↕ MITIGATION			
Best/worse case examples of implementation				● ●	
Guidelines of procedures				●	
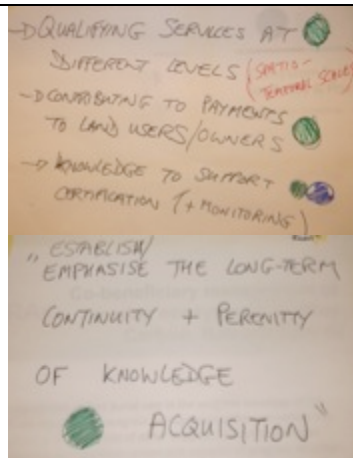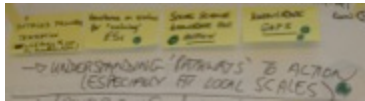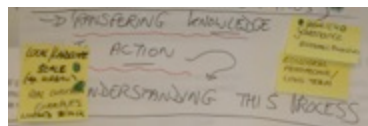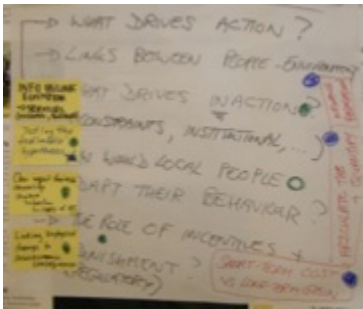
Further explanation by the group:
What we need is information on the health (the integrity, the resilience) of the system itself, what the functions and processes are that it supports and provides and how they are used and hence translated into ecosystem services. We need to understand that looking back in the past, but also current and looking at the future. Also we need to know: What are the drivers? There are multiple drivers, e.g. policy, economic, geopolitical, etc. Those drivers would change the relationship between project actions, impact and mitigation. You can model it for trends and scenarios, but the relationship is going to change over time, so we need to embed that in our analysis. From the project level you could look at what is understood, what is the base line, how is the situation? And then superimpose your activty onto that and see what the link is and how this might impact on the health, function and use of ecosystem (services) from the stock moving to the flow. This will help to prioritise the type of impact that you need to manage and how the mitigation should be designed. This is an iterative process, where we have to go back to the beginning which also monitoring plans, etc. to be put in place. To support all of this the idea is to develop best or worst case examples, from local, regional, global level and across short-term and long-term. We need the whole breadth of it. This should then translate into guidelines of procedures.

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There were also a few ideas that did not sit very neatly in this framework:

Topic	OPERAs Response	
Qualifying services at different levels	🟢	
Contributing to payments to land users/ owners	🟢	
Knowledge to support certification (+monitoring)	🟢🔵	
"Establish/ emphasise the long-term continuity + perenity of knowledge acquisition"	🟢	
Further explanation by the group: We need to quantify and qualify services at the different levels and contribute to payments to land users and owners to be informed by the framework above, and knowledge to support certifcation and monitoring. These points did not quite fit into the framework, but they are still important. Additonally we had this thing that plays into policy as well as into the project: It is about emphasising the long-term continuity and perenity of the knowledge. For OPERAs it is about having an exit strategy: What happens once the project ends? How do you secure the continuation of it?		

Topic	Challenges/needs	OPERAs Response	
Understanding 'pathways' to action (especially at local scales)	Understanding 'pathways' to action (especially at local scales)	🟢	
	Guidance on scales for 'valuing' ESs	🟢	
	Social science knowledge for action	🟢	
	Knowledge gaps	🟢	
Further explanation by the group: This cluster of issues really is about understanding the pathways to action, especially at local scales.			

Topic	Challenges/needs	OPERAs Response	
Transferring knowledge to action?	Local/landscape scale (e.g. urban)	🟢	
	Real ecosystem examples worked through	🟢	
Understanding this process	Global governance (economic incentives)	🟢	
	EU governance (economic incentives)	⚪	
	Ecological perspective/long term		
Further explanation by the group: It is about how to transfer the knowedge, that the framework might give you, into action? You can't just move straight into action, there might be some intermediate steps here and there, which you have to deal with. For example global and EU governance, there is a long-term perspective as well.			

Topic	Challenges/needs	OPERAs Response	
What drives action? What drives inaction?	Influence regulation	🔵	
	What drives inaction? (constraints, institutional,…)	🟢	
	How would local people adapt their behaviour?	⚪	
	The role of incentives and punishment (regulatory)?	🟢	
	Short terms costs vs. long-term gain	🔵	
	Articulate & quantify	🔵	
	Testing the 'fashionable' hypotheses	🟢	
	Clear impact chains & causality (structure, function, supply of ES)	🟢	
	Linking biophysical changes to socio-economic consequences	🟢	

Further explanation by the group:

We talked about this in terms of understanding how do you move within the framework, what drives the action, what are the links between people and the environment, and what are the trade-offs? Can we get the win-wins or is there a cost for conservation? What are the constraints? Are they institutional, organisation or policy-related? How would local people adapt their behaviour? This comes back to the role of incentives.

How do we translate everything that was discussed into something that is actually useable for OPERAs? How can they support this? How can they design and produce things that would actually help us with the framework? The challenge we have is that we need to sell a story that is about have a short-term cost for a long-term gain. Very few people want to step up and take the hit now in terms of the costs. So can OPERAs actually start to quantify what the cost is? Or what is actually needed to make this transition to a more sustainable economy? Articulate it and quantify it? Maybe what we find is that if we compare the amount of resources needed that it is already there, but maybe then it is matter of redesigning subsidies schemes, for example. Maybe there is enough money and resources available, but they are spend in the wrong places.

Topic	Challenges/needs	OPERAs Response	
Knowledge communication	Tools/models/software	🟢	
	Measurement of regulating services + others	🔵	
	Ecosystem wealth indicator	🟢	
	Ecosystem assessments	🟢	
	Impacts of marginal changes	🟢	
	Valuation methods	🟢	
	Graphs, schemes (for tipping points)	🟢	

Comments by the rest of the group on the cluster 'knowledge':

Note: Comments/questions by participant are marked *(p)*, comments/questions by the OPERAs/OpenNESS team are marked *(o)*.

– Q: In our group we had a big discussion on the term mitigation and whether it was sufficient to describe our interaction with ecosystems or maintaining ecosystems. On purpose as one of the objectives of the structured knowledge systems we included the ability to maintain or improve the resilience of ecosystems, because in many places of the world they are very degraded, so we actually would need to upgrade them. I can imagine it would fit into the framework, but I would like to hear your opinion about it. *(p)*
A: It is about resilience and it is about mapping the levels of risk by understanding the biophysical and the social context of the landscape. Therefore, the threat levels absolutely inform the integrity of the resilience of the system and hence you can translate that into risks and needed action. *(p)*

– Q: How do you get the knowledge from other groups? Because a lot of the information within OPERAs will come from something like the calculation of climate change, how will that information get into the framework, so you don't reinvent the wheel? *(p)*
A: We will come back to that tomorrow morning, when we explain a little bit more about the OPERAs project. *(o)*

1.7 Instruments

Looking at the post-its within the cluster, the group decided to cluster them further and treat each of these sub-clusters (=topics) separately.
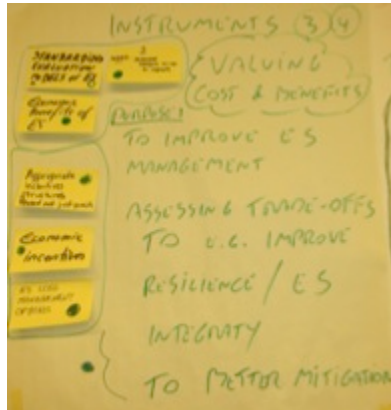
This first topic 'tools' was not specifically discussed, because it is encompassing all of the other four topics discussed below.
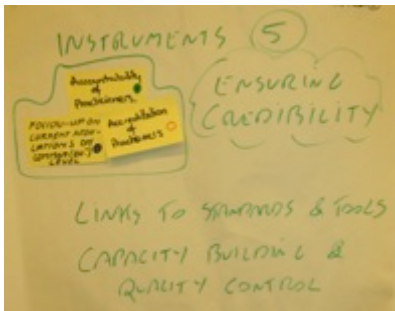
Topic	Challenges/needs	OPERAs Response	
Tools	Agreeing standards via: – Proposals in public domain – Testing in pilots/research – Interactive processes	⬤	
	Tools specific for the group of interest	◯	
	Tools: User-friendly interface to weigh trade-offs	◯	
	LCA of products considering BES	⬤	
	Eco-footprint calculation available (for free ◯)	◯	
	Standards/ guidelines for ES valuation	⬤	
	Valuation tools for ES and actions	⬤	
	Decision support tools	⬤	

The following topics follow the flow of logic that we first need the data (What kind of data we have? What kind of data we need?), then based on the data we quantify and after that we evaluate the date (monetary valuation or other methods) and based on that you can find some management plan or improve it. Lastly, we have all the points that deal with credibility and accountability.

Topic	Challenges/needs	OPERAs Response	
Creating the data foundation Physical processes, human activities	Link to accounting standards	🟢	
	Method for gathering data	🟢	
	Validated, comparable + documented input data	🟢	
	Good sources of data	🟢	
Purpose Supply: Status of ES stocks & flows; Activity of primary sectors Demand: Identify use & beneficiaries			
Further explanation by the group: We need to keep in mind that if you have data for ecosystem services you need to first have the supply (the status of ecosystem services stocks & flows), but you also need to have the demand (who uses those ecosystem services and how much?).			

Topic	Challenges/needs	OPERAs Response	
Developing standardised quantification frameworks Measure what you want to manage	Quantification of regulating/cultural ES vs. provisioning	🟢	
	Change accounting framework "what measured is managed"	🟢	
	Benchmarking/scoreboards, good examples	🟢	
	Tools for quantifying ES & monitoring	🟢	
Purpose – Structuring data – Ensure comparability – Understand the volume of ES flows – Capture ES functions – To improve ES management			
Further explanation by the group: When you have the data you have to quantify it correctly. Before quantifying you have to have an idea about the objective of what you want to manage. Therefore the topic is defined as 'measure what you want to manage'. There are different purposes when quantifying the data, first you need to keep in mind that you need to structure data and that you have data that you can compare. Considering the purpose of understanding the volume of the ecosystem service flows, you also have to be able to explain the functions of those services, always keeping in mind that the final goal is to improve the management of ecosystem services.			

Topic	Challenges/needs	OPERAs Response	
Valuing cost & benefits	Standardised evaluation models of ES	⭕	
	Measure benefits as well as impacts	🟢	
	Economic benefits of ES	🟢	
	Appropriate incentives structures (reward not just punish)	🟢	
	Economic incentives	🟢	
	ES loss management options	🟢	
Purpose – To improve ES management – Assessing trade-offs to e.g. improve resilience/ES integrity – To better mitigation			
Further explanation by the group: When you evaluate the benefits, you can find out about how to improve the management. First you have the valuation of costs and benefits based on that you improve you management, but you also need to assess the different trade-offs keeping in mind you need to improve the resilience and integrity of ecosystems. You also have to keep in mind that you have to improve mitigation.			

Topic	Challenges/needs	OPERAs Response	
Ensuring credibility	Accountability of practitioners	🟢	
	Follow-up on current regulations on common (EU?) level	🔵	
	Accreditation of practitioners	⭕	
Purpose – Limits to standards & tools – Capacity building & quality control			
Further explanation by the group: Based on all of the previous topics, you need to have credibility of your results. In order to gain this credibility you have to link what you do to the different standards and to the different tools that are used. These standards and tools need to be coherent between each other. Then you need to create a system to control what you did, monitor the actions that are put in place, and build capacity and share experience, in order to increase coherence between all the actions conducted in the field.			

Comments by the rest of the group on the cluster 'instruments':

Note: Comments/questions by participant are marked *(p)*, comments/questions by the OPERAs/OpenNESS team are marked *(o)*.

– Q: What we tried in our group was to look at what kind of questions we want OPERAs to answer or explore. So my question is, if we you have presented all issues you want OPERAs to answer or if it is just generally interesting questions? *(p)*

A: We tried to define the needs that were there. We started from the post-its that were on the flipcharts and from there we defined, if this is what we want. So basically, we still want everything, it is still is a Christmas wish list. *(p)*

Additional comment: We basically put together a manual that tried to be comprehensive and logically connected, from which then the OPERAs research team can select what is most suitable to there specific capacities and research interest. It is a manual rather then concrete requests. *(p)*

1.8 Practice

The practice cluster spend quite some time on grouping the issues, which was very useful and resulted in a lot of linkages between groups (see graph below) and it generated quite a lot of debate.
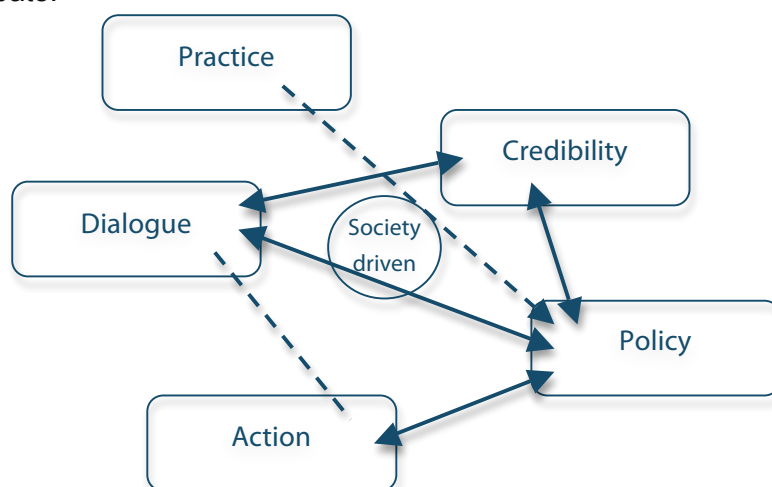
Further explanation by the group:

First there is **credibility** in the way that it means leadership by business and government and the needs to address the political will and commitments, which is one of the drivers of the whole process, because without it is not really attractive. The political will and commitment goes to effective regulations and integrated **policies** for protecting ecosystem services. These policies induce **action** with certain tools, such as spatial planning that is effective, the natural capital infrastructure, certain ecosystem services mapping and planning decisions, and practical examples that could be either good or bad. All of these should feed back into effective **policy** processes at different scales.

Support mechanisms (financial and others), such as support to SMEs to implement sustainable use of ecosystems, which feeds into the **dialogue** over common issues and certain mechanisms for local or other communities to communicate the use and values of ecosystem services. There are other things outside of the flow that still feed into the dialogue, such as changing of processes (information, knowledge, different methods), partnering with others sectors, connecting different knowledge bases at different levels, the need of more data on different levels (e.g. household

use), and how ecosystem services can feed into the local level. These issues all feed into the dialogue, which then in return feeds back into credibility, because if we don't have the dialogue we are not really going to have the political will or the commitment.

There is one more perspective, the **financing mechanisms** that affect the policies and that are of course related to political will. This cluster contains the EU and global governance, economic incentives and the CAP, which was specifically mentioned in relation to payment of ecosystem services.

Looking at the different clusters, he group thought about needs, tools, knowledge and resources, but due a lack of time it is not very deeply evaluated. The main thing is that in order for the idea of ecosystem services to be effective and integrative it has to come from society. It has to be driven by society.

Topic	Challenges/needs	OPERAs Response	
Credibility	Credibility Relevant within OPERAs: Blue Print/ Synthesis	🟢	
	Leadership by business & government Relevant within OPERAs: ESComm	🟢	
	Lack of political will & commitments	🔵	
Key points: – Transparency – Media (independent) = tool – Credibility if change agents (business, politicians) – Creating involvement, commitment – Responsibility			
Further explanation by the group: The most important thing is the political will/credibility/political and business leadership. It has to be transparent, it has to be credible also on a business level and it has to create involvement and commitment. They have to feel responsibility. The tool that we are specifically mentioning is the media, who has to mainstream ecosystem services or other biodiversity related things.			

Topic	Challenges/needs	OPERAs Response	
Policy	Regulations which "step-up" the current eco-protection Relevant within OPERAs: Gov, Ex	🟢	
	Integrated policies for Biodiversity & ES Relevant within OPERAs: Ex	🟢	
Key points: – Integrated policy o Scales o Sectors – Pragmatic – Enabling framework – Incentives – Long term!			
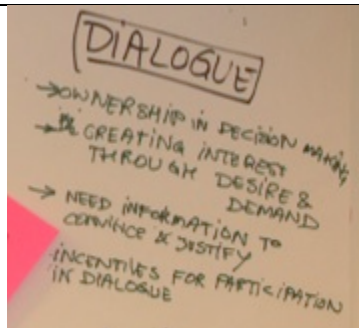
Further explanation by the group:
If we have credibility and dialogue we get integrated policies at different scales and within different sectors. They should be pragmatic and they should involve incentives and proper financial and support mechanims. There should be an enabling framework, one exmple brought forward was from Africa, where they don't have proper policy in place in terms of biodiversity and ecosystem services. We need to have incentives or regulative policies and we have to have a long-term thinking. So it should be sustainable.
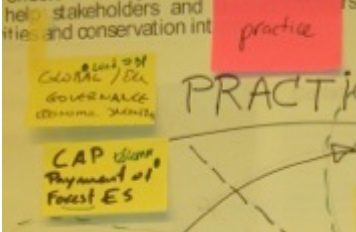
Topic	Challenges/needs	OPERAs Response	
Action	Spatial planning in place Relevant within OPERAs: Ov/Ew I	🟢	
	EU/national capital "infrastructures" Relevant within OPERAs: Dublin exemplar	🟢	
	ES mapping/concepts in planning decisions Relevant within OPERAs: Swiss, etc.	🟢	
	Practical examples (new examples broadening the existing catalogue) Relevant within OPERAs: all exemplars	🟢	
	Scale: from general to local ES (e.g. on farm) Relevant within OPERAs: exemplars	🟢	
Key points: – Manpower, capacity – Supporting infrastructure – Willingness to take risks – Need time to get benefits – Living laboratory			

Further explanation by the group:
In order to realise all of the other topics, we need action and for this we need resources, we need man power, capacity, supportive infrastructure and of course we need money (which is of course also important). For a process like this it is also important to have the willingness to fail, because that is how we learn. It is a living laboratory, so we need to fail and make mistakes, but we also need to learn from the mistakes.

Topic	Challenges/needs	OPERAs Response	
Dialogue	Change processes (information and knowledge about methods) Relevant within OPERAs: Blueprint protocol	🟢	
	Dialogue over common issues Relevant within OPERAs: Resource Hub	🟢	
	Partnering with other sectors Relevant within OPERAs: Tourism, agriculture, fisheries, wine	🟢	
	Mechanism for local communities to communicate use/values	-	
	Connecting knowledge bases Relevant within OPERAs: Blueprint Protocol	🟢	
	More data on household use/reliance in ESS Relevant within OPERAs: TBD	🟢🔵	

	Data/frameworks: role of ESS in livelihoods strategies Relevant within OPERAs: TBD		
	Support to SME to implement sustainable use of ecosystems Relevant within OPERAs: Barcelona		

Key points:
- Ownership in decision-making
- Creating interest through desire & demand
- Need information to convince & justify
- Incentives for participation in dialogue

Further explanation by the group:
The first thing is that we have to have proper data to get engaged and have the ownership to enter into dialogue. We have to create interest and they have to have demand. They have to have incentives, otherwise nobody will enter into dialogues.

Topic	Challenges/needs	OPERAs Response	
Practice (financing mechanisms)	Global/EU governance (economic incentives) Relevant within OPERAs: Lund/ Blue Print Protocol		
	CAP – Payment of Forest ES Relevant within OPERAs: ESComm		
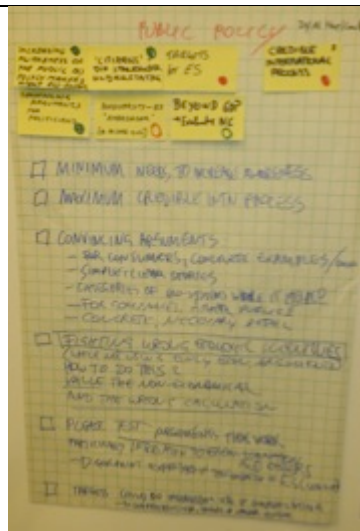
Comments by the rest of the group on the cluster 'practice':
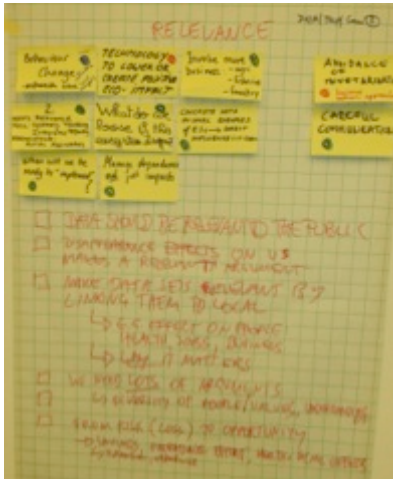
Note: Comments/questions by participant are marked *(p)*, comments/questions by the OPERAs/OpenNESS team are marked *(o)*.
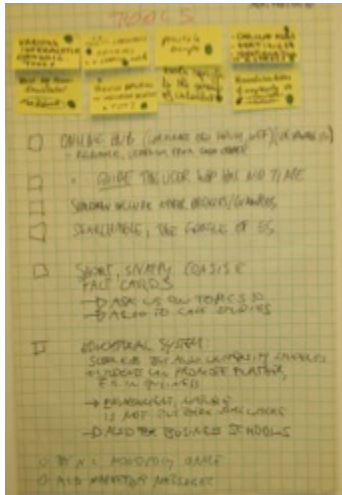
- Q: What do you mean with 'living laboratory'? *(p)*
  A: The idea is that it is okay to make mistakes from time to time, because this is how we learn. So if you fail, it is okay, because it is going to improve the process and the knowledge. *(o)*
- Q: If this is your Christmas wish list, do you hope that OPERAs will fail occasionally? *(p)*
  A: The idea is that you start something and you try something and you expect it to work, but if it doesn't you would be looking at why it failed. Because sometimes it is just as important to look at why things did not succeed. It is not that we are trying to fail, but there should be a more open approach to learning and success. *(o)*
  Additional comment: So the action point for OPERAs is that we make sure that we incorporate the learning of mistakes into our research routine. *(p)*

1.9 Communication

The post-its within the cluster communication were grouped into 3 topics: public policy, relevance, and tools, which were subsequently discussed further.

Topic	Challenges/needs	OPERAs Response	
Public Policy	Increasing awareness of the public by policy makers about eco-systems	🟢	
	'Citizens' + stakeholder understanding	🟢	
	Targets for ecosystem services	🔴	
	Credible international process	🔴	
	Convincing arguments for politicians	🟢	
	Biodiversity/ecosystem system "ambassador" (cf. Al Gore for Climate Change)	⭕	
	Beyond GDP ➔ evaluate natural capital	⭕	

How could/should OPERAs respond to the identified challenges/needs:
- Minimum the project should achieve: Increase awareness of the public and policy makers about ecosystem services (and communicate the concept of ecosystem services)
- Maximum the project could achieve: be the credible international process
- 4 points on how you could achieve that:
1. Create a set of convincing arguments:
    - Exemplars could provide concrete examples of convincing mainstream arguments to use
    - For consumers, concrete examples/cases
    - Simple, clear stories
    - Categories of ecosystems (where did it help to improve ecosystem services) could help everyone to pick the one story that would help to make the argument
    - Different stories for companies, other publics
    - Concrete, necessary detail
2. There are instances, where it makes matters more complicated to only use monetary values to describe ecosystems, which is why OPERAs should fight inappropriate economic incentives (find other non-economic values/arguments)
    - How to do this? How do we value what is valuable? (and not just putting a price to it)
    - How do we value the non-economical?
    - How do we get over using the wrong calculation for GDP?
3. Please test arguments that work, particularly in relation to economic valuation and other types of valuation, by using the numerous exemplars and case studies
    è explore with different stakeholder groups in different countries explore using economic arguments and explore using other arguments for valuation (e.g. footprint expressed in degradation of ecosystem services) and then report back what worked and what did not work

Targets: Could be interesting to use in communicating to bring the message across, if they resonate well with stakeholders (which has to be tested)

OPERAs

Topic	Challenges/needs	OPERAs Response	
Relevance	Behaviour change (responsible use)	🔵	
	Technology to lower or create positive eco impact	🔴	
	Involve more business (agriculture, fisheries, forestry)	🟢	
	Avoidance of monetarization	🔴	
	Need: Relevance Tool: Systematic Thinking Knowledge: Holistic approaches	🟢	
	What do we loose if this ecosystem disappears?	🟢	
	Concrete data on local examples of ecosystem services ⬅➡ direct influence citizen	🟢	
	Careful communication	🟢	
	When will it be ready to "implement"?	🟢	
	Manage dependency <u>not</u> just impacts	🟢	

How could/should OPERAs respond to the identified challenges/needs:
- Relevance is the biggest part of communication, because you want to communicate why this matters to different stakeholder groups and if you give stakeholders arguments they understand and that are relevant for them they start to act
- Data should be relevant to the public (and by extension business and policy-makers)
- The effects of disappearing ecosystems make a relevant argument (e.g. how deforestation in the Amazon is impacting the water supply in California)
- Make data sets relevant by linking them to local levels (could be reflected in exemplars)
  - e.g. effects on people: health, jobs, business
  - <u>Why</u> it matters?
- We need <u>lots</u> of arguments for a lot of different stakeholders involved in ecosystem valuation and management
- Understanding of the diversity of people/values/understandings
- How can we frame the discussion on ecosystem services to move away from risk (loss) narrative to a narrative of opportunities
  - Savings (financial, social and otherwise), operational effort, health and social effects

Topic	Challenges/needs	OPERAs Response	
Tools	Various interactive communication tools	🟢	
	Multi-language materials + e-learning modules	🔵🟢	
	Practical examples	🟢	
	Online hubs, meetings, identification of experts	🟢🟢🟢	
	Local key person facilitator (network)	🟢	
	Training material on indicator development and Training-of-trainers	🟢	
	Tools specific to the group of interest	🟢	
	Visualisation of complexity of ecosystem services (translation, reduction)	🟢	

How could/should OPERAs respond to the identified challenges/needs:
- Online hub (e.g. Corporate Ecoforum have the Online Natural Capital collecting case studies and it will be launched at the World Economic Forum, etc.)
  - Relevance, learning from each other
  - Guide the use, who has no time
- Somehow include other projects/examples
- Searchable = the Google of ecosystem services
- Short, snappy concise fact cards
  - Ask us on topics!
  - Also about case studies and about different ecosystems
  - Targeted on specific groups
- Information should be used in the educational system: school kids, but also university students
  - Students can promote further, e.g. in business
  - Environment (nature is not out there somewhere)
  - Also for business schools
  - Develop training materials (e.g. for MBAs)
- Also invest in marketing messages, because often the communication tools are already there, but people are not aware of them or don't know, where to find them

Comments by the rest of the group on the cluster 'communication':

Note: Comments/questions by participant are marked *(p)*, comments/questions by the OPERAs/OpenNESS team are marked *(o)*.

- Q: Did you discuss at all about training? Does training play a role? *(o)*
  A: The training materials we picked up, when we talked about MBA programmes, so to bring it into business training. If some material from the OPERAs project could contribute towards material for a topic in MBA programmes, the idea was that young people going through the MBA would get as much exposure to the topic as possible. We thought the project could have a standard of producing MBA material for courses. We thought particularly business was interested. *(p)*
- Q: Did you talk about executive education or continued professional education, so the non-university education? *(o)*
  A: I think what we did is that we picked issues that came out as most interesting to the group. *(o)*
  Additional answer: I think some of the ideas can be used to target the audience, so it could be targeted specifically to business people. Of course that means re-writing the cases in

order to tailor it to every target group. This has to be considered already in the beginning, when OPERAs is starting the research they should think about communication and gather data that can be sued later for simplified, scientific communication. The process should not be forgotten during the process. *(p)*

Additional answer: I think these tools can be used by anyone, especially the concise fact cards. But also there is the hope that if we do a good job at communicating and we make it so relevant that it is something that executives and other stakeholders cannot longer see it as something separate from what they are doing, but that it actually is integrated into making processes more efficient or more well managed. We hope to achieve our goals of communicating the relevance and the opportunity. *(p)*

Additional comment: It is not entirely separate, but we were also mindful that OPERAs is about operationalizing not just about educating. *(p)*

− Q: My first point on relevance would be: Be relevant for the public. As I understand OPERAs, the audience they have selected is policy makers and business. And for me, if it is about public, it is about sustainable consumption rather than a lot of the other stuff than we are talking about here. So I was wondering, why you highlight the public or civil society versus the other user groups? *(p)*
A: Who do you think policy makers listen to? It is the public. *(p)*
Additional answer: It is listed first, but we did not dwell on it. What we did dwell on is that there is a number of people and stakeholders that are relevant, including policy and business. *(p)*

− Comment: I have a suggestion for a communication tool, which concerns the educational system: How about reinventing the game 'monopoly' and making it about natural capital and ecosystem services? Or develop an app? *(p)*

− Q: I was getting curious about those fact cards, when you said they are short, snappy and concise. Are you thinking about one paragraph answering one question or highlighting something in five pages? What would be the format? *(o)*
A: It would be interesting to see the topics OPERAs is planning to cover and then we could identify the ones we think should be covered in those fact cards. But in general it should be more focused than a policy brief, because one size does not fit all. *(p)*

− Q: I think it is very important to talk about communication, but I have a suggestion: We should also focus on marketing, because a lot of the time communication tools are already in place, they are already existing, but people don't know about them, because we are lacking marketing or other business mechanisms. *(p)*
Additional comment: Do you mean marketing messages or do you mean marketing ecosystem services? *(p)*
A: I mean, if you have this natural capital monopoly it is great, but you should also sell it to the public. *(p)*

General comments about the first day and expectations for the second day:

− How much knowledge around ecosystems and calculation methods is already available? We should make sure that this existing knowledge finds its way into the project. How do we capture all of the knowledge out there, rather than reinventing it?

− Last week in Edinburgh there was a Natural Capital Forum and about 500 people attended, I am just remembering that they summarized the challenges with regard to natural capital in seven words. I was wondering if it is worth reminding ourselves of those words:
  o Silos (getting rid of silos to integrate knowledge across disciplines)
  o Scale (across space and time, multiple scales needed for engagement)
  o Drivers (including incentives, markets and regulation, drivers for change)
  o Outlay (thinking about who pays = natural capital users and/or beneficiaries)

- o Metrics (don't get caught up in metrics before you take action)
    - o Storytelling (as a powerful tool for raising awareness & making the business case)
    - o Youth (let's not forget the youth)
- – I would be interested in understanding to what degree the OPERAs and OpenNESS project use already existing frameworks, such as expert ecosystem accounting or CICES or other tools? We would be interested in feedback on those tools and I see these two research projects and the many case studies as a key opportunity for creating user experience and feedback with significance beyond the two projects.
- – I know the project runs under a very ambitious European Union time schedule, so will you be as concrete as giving us timetables, milestones and person months?
- – Within the MAES (mapping and assessing ecosystem services at EU level) process there are six pilot projects, four of which have a thematic focus on specific ecosystems (forestry, fresh water, marine, agri-systems) and the two others have a bit longer time frame, so there is potential for engagement. One is linked to the use of data under the Nature directives, so really how to bring biodiversity into assessing ecosystem services and the value of ecosystem services. The second one is about natural capital accounting, which aims to clarify the concept and set out methodological approaches and concrete references for how to go about physical accounting, and how potentially to connect that to monetary valuation. For this we are looking for feedback and potential support.

Response by the OPERAs Project

The response of the OPERAs team was introduced by a presentation of the project structure by Marc Metzger (University of Edinburgh):
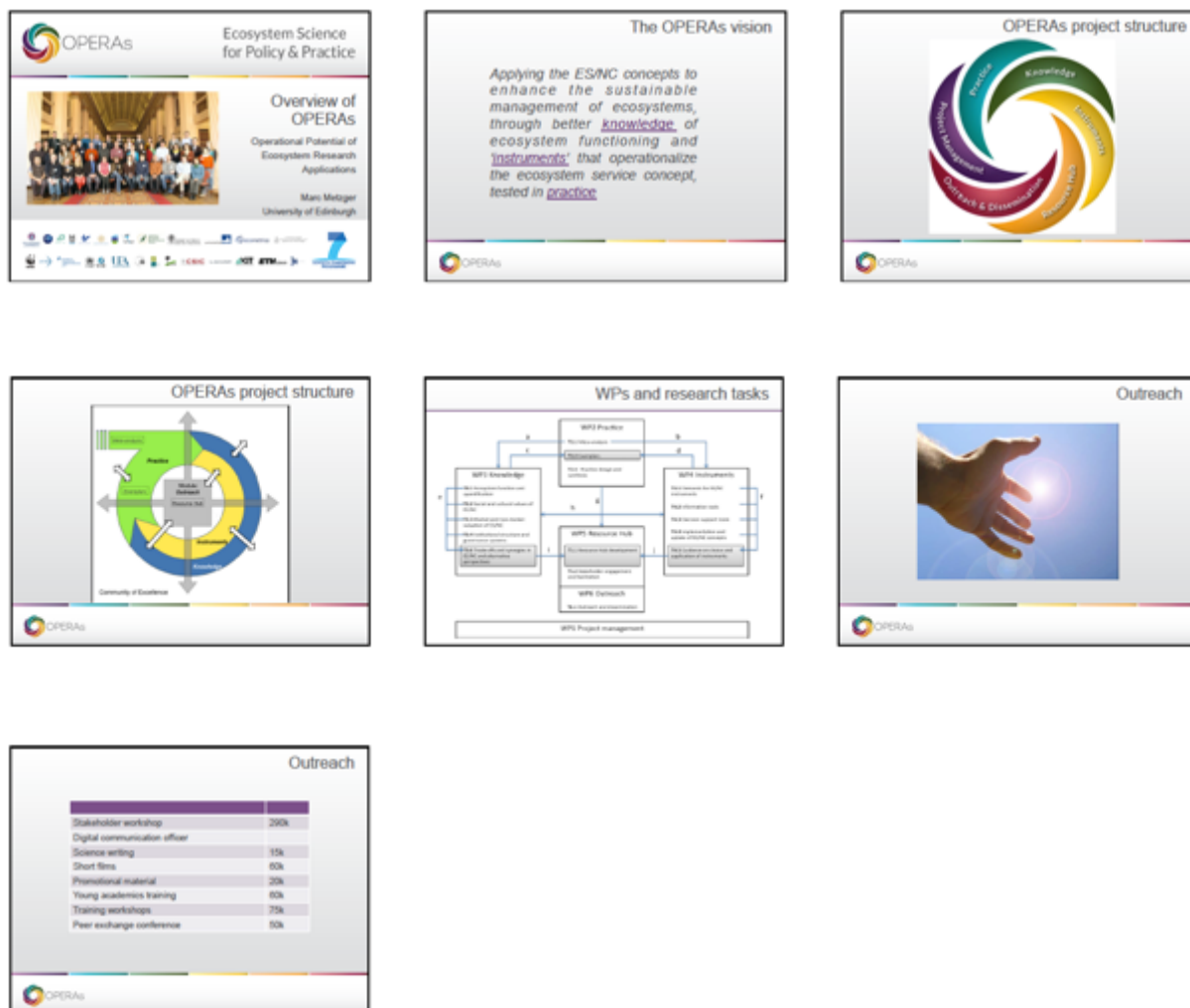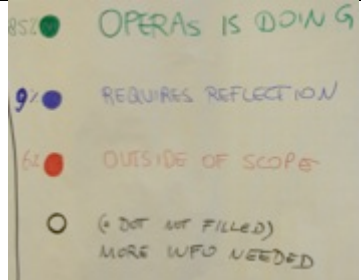
At the end of workshop day 1 the OPERAs team evaluated the feasibility of the each stakeholder request, which was visualized with coloured dots, where:

- green reflects something OPERAs is already planning to do,
- blue something that can be considered, but require some reflection and
- red something which is at this point not possible to incorporate.

Furthermore, hollow dots symbolise a need for further clarification.

The detailed visualisation can be found in section 5, the goal in this section is to give a summary and reflect the discussion around it. First the analysis by break out group:

Topic	Green dots	Blue dots	Red dots
Knowledge	24	1	-
Instruments	15	2	-
Practice	17	3	-
Communication	21	2	5
Total (in %)	85%	9%	6%

Questions and comments with regard to Marc's presentation:

<u>Note:</u> Comments/questions by participant are marked *(p)*, comments/questions by the OPERAs/OpenNESS team are marked *(o)*.

– Q: Have you thought about your target group? I see target groups for research and the intellectual development side of things, but there is of course also the policy making side or the managers of ecosystems and their services. What are your plans in that direction? *(p)*
A: Right now our plans are very broad and we realize that we cannot do everything at a high level. So we are now in a scoping phase, which is something that comes back in the discussion around communication. We have identified some broad communities and within that we will be bringing it down to some smaller communities. This is part of the things the Userboard can guide us in. *(o)*

– Q: One idea: are you going to go for Ann Glover, who is the scientific advisor to president Barroso? By saying this, I just want to encourage you to think big and by establishing some connections, you can increase the impact. Maybe we can help with that. *(p)*

– Q: What is the spread between natural and social scientists? And how do you ensure in the management of the project the coordination between different work packages? Because that was not very clear to me in the way it was presented. *(p)*
A: The management is certainly a challenge, but we have identified ways with the metrics and mind maps to try to figure out, where we can link things up. Another challenge is the bottom-up approach in the exemplars and only now many things become clear and we have to establish the links. It is a challenge that we address through regular meetings, etc. we are trying to put everything in one master plan. There is a whole management structure and there is a lot of interaction in various different levels. *(o)*
For the other question: I don't know the balance by heart, but there are a lot social scientists across all work packages. There are people involved that are experts on governance issues, people involved in social valuation issues, and they are embedded across the whole project. It is something that we were very keen on from the beginning.

– Q: Would it be interesting to link other projects to the tools, etc.? *(p)*
A: I agree that would be a useful thing to do and we have a lot of experts in the project, so for every sub-theme there are experts and they should know what is out there. We still have to look at the trade-off between investing in all the metrics and schemes and trying to get connected to everything that is out there. It is very important to be aware of the other actions out there. *(o)*
Additional comment: We could help you as stakeholders, because we might know where those other projects are happening. It could be joint effort. *(p)*
Additional comment: This could be something where the Resource Hub could be essential, where we could link to other projects. *(o)*
Additional comment: This could mean that the project should start with the hub already designed in this way and don't waste time waiting, because we know that we have to do it anyway. *(p)*

- – Q: In the EU we are quickly moving forward with the MAES and we take decisions, but I would think the OPERAs project gives some real base funding for fundamental outcomes and I am wondering, if the policy process move to quickly to take up those great research results?

  A: In principle you are right, but in practice it is very difficult to coordinate those processes and I would say that the target set by the EU in 2010 has been one of the drivers behind the focus of the recent call for research proposals and that is the reason why there was funding available for ecosystem services research. We can benefit from this work, but there is the need to provide some capacity building at the EU level right now to help the member states to achieve the ambitious targets set out in the EU Biodiversity Strategy. The mapping and assessing of ecosystems is supposed to be done by 2014, which would mean that we are already too late and many member states do not really know how to do it. The UK has done it, some others have data, but many others don't. Things have to be further defined of course later on. In terms of interaction with OPERAs there are opportunities right now and if we get it going now, we will benefit from the knowledge that is created. But as said earlier the entire MAES process (and what member states can do) will be more limited by lack of suitable data than lack of understanding and knowledge by the people involved.

1.10 OPERAs response with regard to 'Knowledge'

Presentation by Astrid van Teeffelen (VU University, Amsterdam) on 'Knowledge' within the OPERAs project:
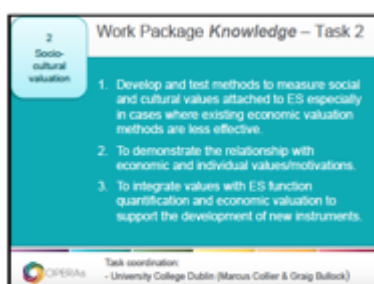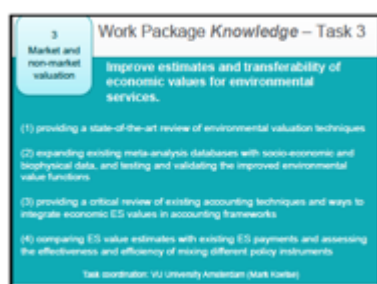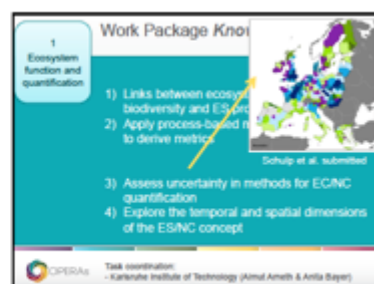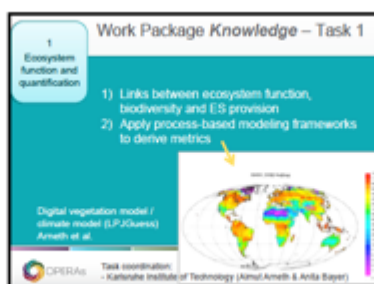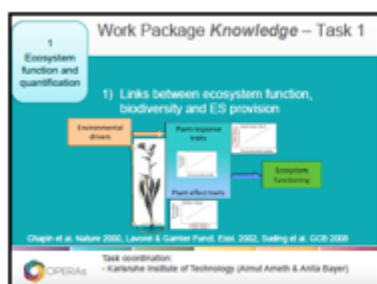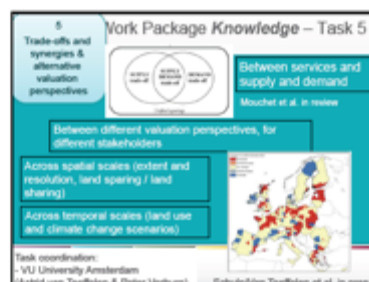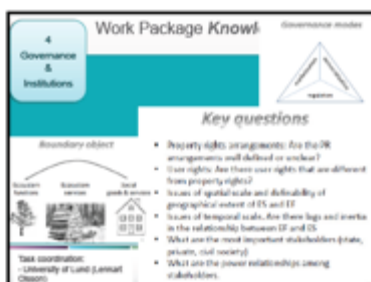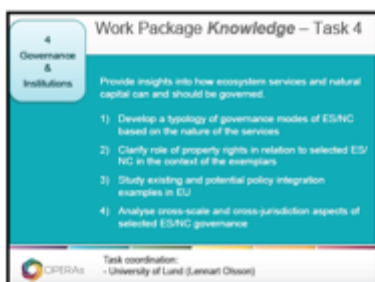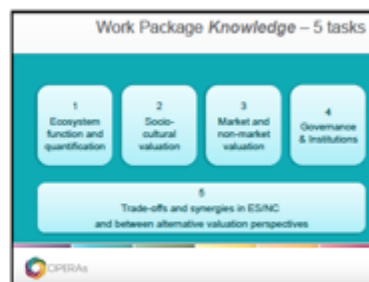
Questions and comments with regard to Astrid's presentation:

– Q: We all know that many studies involving consultation of people and their views are very time consuming and very resource intensive. So what I would find very interesting is, if you could document the time investment and do some estimates of how much it would cost to roll it out for one ecosystem in the EU. Then we can assess if we are ever going to be able to do it, or what amount of money we have to put into it in order to be able to do it.
A: Interesting comment, I don't have a response yet, but we will discuss it in a later session.

1.11 OPERAs response with regard to 'Instruments'

Presentation by Diana Toumasjukka (European Forest Institute) on 'Instruments' within the OPERAs project:
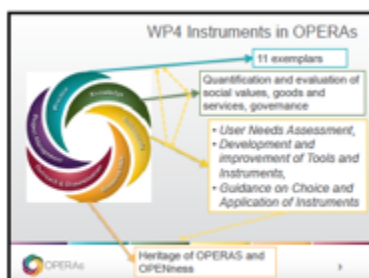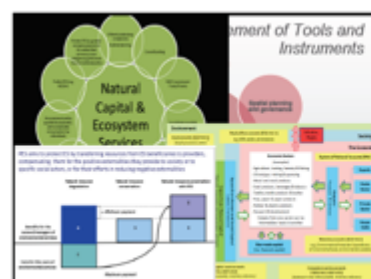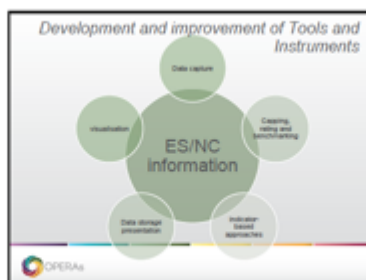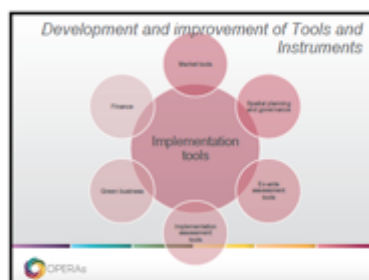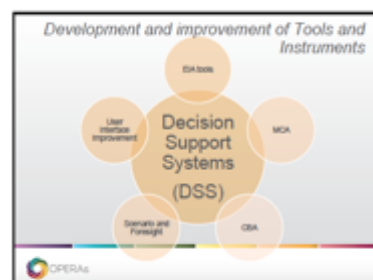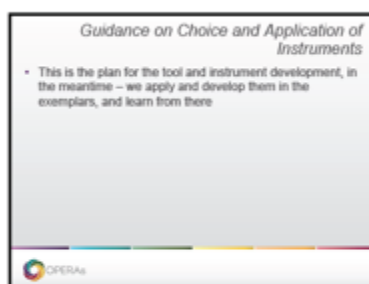
Questions and comments with regard to Diana's presentation:

– Q: When I saw the presentation, including indicators and others, I thought of the ongoing attempt on the EU level as part of the MAES process to come with a first guidance document to member states on the mapping and assessing of ecosystem services. So we have a conceptual one and now the JRC is developing ecosystem focused indicator selections that capture different ecosystem services. Obviously all of this has to be done at high speed and everyone has to learn. I wonder if one of the actions to encourage further contact would be to include the OPERAs project team in the peer review process of the first or second draft.
A: That could be interesting for us.

1.12 OPERAs response with regard to 'Practice'

Presentation by Meriwhether Wilson and James Paterson (University of Edinburgh) on 'Practice' within the OPERAs project:

1.13 OPERAs response with regard to 'Communication'

Presentation by Lisa Ingwall-King (UNEP-WCMC) on 'Communication' and the Resources Hub within the OPERAs project:

Questions and comments with regard to Lisa's presentation:

Note: Comments/questions by participant are marked *(p)*, comments/questions by the OPERAs/OpenNESS team are marked *(o)*.

There are two hollow dots identified, where the OPERAs team needs more explanation:

- Biodiversity – ES 'ambassador':
  - Champions/ambassadors for different audiences/communities *(p)*
  - Keep your audience in mind and allow for all audiences to find a spokes person, whose example they can follow and rely on *(p)*
  - Maybe the IUCN model of influencing international processes actively but also passively as an observer could be an idea to follow for OPERAs? IUCN has been a conduit for collective voices for over 50 years. *(o)*
- Beyond GDP – Evaluate natural capital
  - Indicators that value ecosystem services – not always monetary value *(p)*
  - European Commission has also taken up the idea about alternative measures to GDP and ecosystem services are an essential part of that *(p)*
  - Can we provide an index for ecosystem services across Europe? *(p)*
  - Might be a bit out of focus of OPERAs and it is not clear, if it is worth going there for the project. Better to keep the focus that exists, because we do not fully understand the relations between the status and quality of ecosystems and the services they provide and what are the critical factors to maintain their integrity and their resilience. If OPERAs provides clarity on this point it provides a valuable contribution to understand how to construct the indicators that represent the ecosystems. *(p)*

Other questions/comments related to the presentation:

- Don't forget the Natural Capital Monopoly game *(p)*
- How does OPERAs link to IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services)? *(p)*
  - IPBES is going to discuss a scoping assessment for valuation ("Initial scoping for the fast-track methodology assessment regarding value, valuation and accounting

of biodiversity and ecosystem services") there are a number of in the OPERAs work packages that could directly feed into IPBES process or assessments (one is done in 2014). *(p)*

- o WCMC thinking about info feeds and incorporate these thoughts into the resources hub. *(o)*
- − When will the hub be operational? *(p)*
  - o The full version will be there towards the end of the project, but we are going to start to develop it early on and will regularly update it. Certainly this Userboard will have a role in prompting the development. *(o)*
  - o The networking and outreach functionality should be there early on and then other functionalities could be added as we move forward. *(o)*
  - o The first documentation (mock-ups) on the resource hub will be ready towards the summer of next year. Before that we go through a consultation, planning and design process. Of course we want feedback from users on what works, what does not work, and what we need to change. *(o)*
- − OPERAs has a strong focus on building a community of practice and demonstrate the usefulness of the resource hub to this community. Doing that ignores some other things that are being set out, such as BISE or IPBES, because they have a lot of institutional constraints. But do you think this is an appropriate strategy? *(o)*
  - o Question: How does this relate to the European Green Infrastructure Policy, which is very much related to ecosystem services and that also aims to get knowledge out? *(p)*
  - o There is sympathy for the strategy of keeping independence, but it is important that there is one Clearing House mechanism for all these different resource hubs that are generated from different angles around one knowledge domain. It would be good to use the resources of the two projects and the connection to UNEP-WCMC as an opportunity to connect with some key players around that. *(p)*
  - o There could be a central hub and obviously there have to be sub-hubs in order to react more flexibly, but it should be clear what these sub-hubs should provide and what purpose they have. *(p)*
  - o So we are talking about the "hub of hubs". *(p)*
- − Business model:
  - o Maybe the business model focus could indeed be "how can we become the hub of the hubs", including some more consolidated links and support from those who are contributing and providing information? *(p)*
  - o It makes a difference, if you are going to be linked to the EU or if you are trying to earn money with (e.g. though lectures). So you probably have to think about your institutional links beforehand. *(p)*
- − Why would we go to this hub rather than the other resources that are out there? If you expect the hub to be one click away, how do you ensure that it is your click? *(p)*
  - o That is exactly why we need to hear from the Userboard (and other stakeholders) what would make this hub useful or what are the other websites missing that you would like to see. *(o)*
  - o People should know about it, because otherwise they would not go there. Mainstreaming, marketing and branding are important. (Is taken up by OPERAs already during the design and planning phase) *(p)*
  - o We do not necessarily need the information, but we need to translate it to other people. Speaking to a policy maker about the importance of carbon sequestration for an effective climate mitigation strategy you need a tool to hear from another policy maker who has an effective case study. Or for talking to business you need an example of a business that already values this process. The audience of the hub is not necessarily the people in this room, but people we communicate with. We can

already get a lot of resources, but we cannot tailor the information and make it relevant for specific groups. *(p)*

− What happens to the hub <u>after the project is finished</u>? *(p)*
  o The business plan will detail that (e.g. which entity will maintain it). *(o)*
  o It should not just be a developer maintaining it, but the thinking process has to be involved as well. *(p)*

− The need for <u>convincing arguments</u> could be satisfied by:
  o Different entry points to the hub that would lead to sets of information tailored to a specific group. Would help to get to the right answers quicker. The other thing will be FAQ (which can be collected though a survey already). *(o)*
  o Decision trees are good for people with technical background, but what is still missing is the senior leadership also within companies and they don't want decision trees, they want stories, they want something that is non-technical (e.g. hear from their peer) and there are already hubs out there that capture that (e.g. the Ecosystems Partnership, of which half of the people in room are part). *(p)*

− Specific question to WCMC: The Proteus partnership with industry, where you use the IBAT tool (a global mapping system), do you think to use the Tessa tool and build it into IBAT?
  o There is discussion within WCMC, but there was little interest on IBAT within the OPERAs project, so at the moment it was decided to park the idea. But the users of IBAT might be interested in integrating Tessa and in a later phase of OPERAs this might still be tested. *(p)*

− Will there be a facility for users to <u>upload their own</u> information? *(p)*

− That is something to reflect upon, because it is interesting, but there might be issues of quality assurance (e.g. first upload and then approval for publication). For best practices and exemplars it is definitely the idea to upload information. *(o)*

− In the most recent MAES meeting at the JRC in Ispra we had a presentation from someone at the JRC who was trying to implement this <u>blueprint paper</u> and to develop the resource hub for ecosystem service data. It would be relevant to be comparable to that. *(p)*

− We need the information now. Don't wait too long. *(p)*
  o For now the information will be available on the OPERAs and OpenNESS website and within due time the hub will be created. *(o)*
  o There may be a series of one-page summaries (e.g. policy briefs) already developed now. *(o)*
  o OPERAs and OpenNESS have to develop the plan on pooling resources first and then evaluate to see what we can do (feasibility). Eventually, we might have to prioritize, but everything developed in this workshop is along the lines of what we would like to do. *(o)*

- – Strategic partnerships for pooling online resources (identification and rating done by participants):

Name	URL	Rating *** = very good ** = good * = ok - = poor
UK National Ecosystem Assessment	http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx	*
Ecosystem Knowledge Network	http://ekn.defra.gov.uk/resources/	**
Defra website		*
James Hutton Institute	http://www.hutton.ac.uk/learning	*
Corporate Eco Forum: Natural Capital Initiative (launching business NC hub at World Economic Forum 2014)	http://www.corporateecoforum.com/valuing-natural-capital-initiative/ (launch is indicated at the bottom of this page)	***
UNEP Finance Initiative	http://www.unepfi.org/index.html	**
BSR (Business for Social Responsibility)	http://www.bsr.org/en/	**
Nicholas Institute for Environmental Policy Solutions	http://nicholasinstitute.duke.edu/ecosystem	**
ES Partnership	http://www.es-partnership.org/esp/79124/5/0/50	*
Ecosystem Marketplace	http://www.ecosystemmarketplace.com	**
Earth Condiminium	http://www.earth-condominium.org/en/	*
EEA	http://www.eea.europa.eu	**
TEEB web	http://www.teebweb.org/resources/ecosystem-services/	**

OPERAs

Stakeholder interaction through the Userboard

General question: How will the project and the Userboard continue to collaborate?

Points of discussion:

- – Physical Userboard meetings
- – Online engagement
- – Active in content work
- – Survey and other activities not related to the Userboard

Note: Comments/questions by participant are marked *(p)*, comments/questions by the OPERAs/OpenNESS team are marked *(o)*.

Physical meetings:

- – Q: Should we not consider maybe more users for the Userboard? For example organisations representing landowners, they should be users. *(p)*
  A: There will be more members in the future, because some of the exemplars have not been able to send representatives to this meeting, but there is budget limits to maximum of 22 people. *(o)*
  Additional comment: I think social scientists are also missing, to get the human perspective. *(p)*
  Additional comment: It is the land and forest managers that are really important for this kind of discussions. These are crucial actors in terms of impact and development of ecosystem services. *(p)*
  Additional comment: I agree that landowners or ecosystem service providers are important, but the users are equally important. And from a business perspective, the exemplars are targeting the SMEs, but I think you should target the big companies that have big supply chains and they are the beneficiaries of the services. They also influence the products they want. This could be consumer goods or similar industries, e.g. fisheries. *(p)*
- – Comment: In terms of the physical meeting I would avoid December. *(p)*
  Additional comment: I would probably have a preference for January, because November is also really busy. *(p)*
  Additional comment: In November it should probably be beginning or mid November and not the end. *(p)*
- – Q: Will the meeting always be in Brussels? *(p)*
  A: No, in fact we have been thinking to go to other places. Where would you like to go? *(o)*
  A: I was thinking about Edinburgh and it might be good to piggy-back on meetings, so we could link it to the Natural Capital Forum in Edinburgh in two years (2015). *(p)*
- – Q: What would be you conditions on locations? *(o)*
  A: I mentioned already that Lisbon is a nice place, but I am also mentioning it because it is not too far away from the nice Montado landscape, which is my key point: It would be nice to actually go out into an ecosystem and discuss in the field what does it all mean. What can we say about it and what not? And link up with the exemplars and on the ground stakeholders. I would be happy to spend another day or half a day on it. *(p)*
- – Comment: I would suggest looking at touristic or meeting locations that consider the environment. *(p)*
  Additional comment: One of the suggestions was to look at the Slow Food Movement in Torino in Italy. *(o)*

Online engagement:

- Q: What would be the purpose of online meetings? Is there a particular focus on for examples the exemplars or would they be based around a particular theme or need? *(p)*
  A: Obviously there has to be a specific need for the online meetings, one possibility is to prepare the next Userboard meeting and look at what are the interesting things to discuss, because in that way the researchers could still prepare things to bring along to the physical Userboard meeting. *(o)*
  Additional comment: The development of the hub will be ongoing and a lot will be happening in 12 months time and maybe in six months we will have developed ideas further and it would be useful to get a feedback on those at that point instead of waiting for the next physical meeting. *(o)*
- Comment: It is difficult to say, if there is a need for in-between online meetings, because assuming that in one year's time we will have a solid draft of everything we have talked about, in a way that is already too late if there are things that need to change. Depending on how quickly the deliverables are done, it would be useful to have a mid-way check-in in order to see, if we are on the right track or not and rather than waiting for the finished product. The exact timing of this check depends on the stage of development. *(p)*
- Q: Would it then be okay to spend one or two hours on this? *(o)*
  A: I think that is the way we can contribute, because otherwise what is the point. *(p)*

Active in content work

- Comment: This is an invitation and the project is very open to say that if you want to be involved in any of those things you see, the doors are open. And as far as we can see there are already some ideas for collaboration, which will be followed up. *(o)*
- Comment: We will definitely evaluate this further in the coming weeks to engage more than in those meetings. There is potential for close interaction. *(p)*
- Comment: Maybe in the mid-way check-in we could further evaluate the possibilities for close interaction, because now I don't know enough about the project yet and as time moves on one knows more. *(p)*
- Comment: Could it be an idea to establish a calendar of project events (e.g. symposia) that you could see online and decide, if it would be interesting to join? *(o)*
  A: Yes, and maybe it is an idea to follow these events online, because sometimes we might not know how helpful it is and physically going to the event might not be an option. *(p)*
- Comment: I think the project also needs to check back with the rest of team about what has been discussed and what is feasible, until we know that it is difficult to know to which part we would like to contribute. *(p)*
- Q: Is there a need to have an overview of the breadth of activities during the next physical meeting or the mid-way meeting not just in terms of how your input has been taken up, but also to show the whole breadth of activities? *(o)*
  A: It is a great idea to have short updates.
  Additional comment: Maybe we could share a drop-box or something else that is organized according to the different parts of the project and the project can provide updates in there and there could be a folder of events that people are going to. This way it could be a two-way street of communication in a safe environment. *(p)*
  Additional comment: It is envisioned that the OPERAs website will have a protected section only for the Userboard and it will definitely have interactive elements. On the public website there will be regular blogs on specific topics and there should be more outreach activities from our side. The dissemination strategy will be ready in the coming months. *(o)*

Survey and other activities not related to the Userboard

- Q: What kind of questionnaires are you talking about? *(p)*
  A: There is one example coming up right away, but it could be anything where work packages say they would really like some stakeholder input. *(o)*
  A: The first thing we would like you to answer is a survey about understanding the concept of ecosystem services and we want to follow the understanding as the project progresses. So we will do this questionnaire probably every year and we want to understand how effective we are as the OPERAs team in disseminating and trying to convey the messages. Also suggestions on the questionnaire are welcome. *(o)*
- Comment: The question would be how often we would be contacted for different types of questionnaires. *(p)*
  Additional comment: And also, who would coordinate this, especially considering the OpenNESS project. How can you monitor how often we are contacted and when it maybe becomes too much? *(o)*
  A: This would always go via Prospex so it would not reach you through any other way. *(p)*
- Comment: For me it is probably more relevant on the work package level, because you get the application of learning across the project, rather then individual exemplars. So I would be more interested in the bigger tools and instruments, their tests and the results, rather than the implementation in each exemplar. *(p)*
- Q: How are we to follow the evolution of what is happening in the work packages? Will there be frequent updates on the OPERAs website? Shall we be checking the website regularly? Will there be alerts? *(p)*
  A: We could put the project's Research Implementation Plan into an easier format to show you the milestones and logic of things we work towards. *(o)*
  A: That would actually be really helpful to check when we could best give our input. *(p)*
  Additional comment: We could put it up on the internal part of the website together with the Description of Work, which is fine for you to see, but of course not for the whole Internet community. The temporary version of the protected part will go online next week, but in time there will be a full version. *(o)*
  Additional comment: Maybe you can circulate a notification, when you upload new stuff. *(p)*
- Q: Could I make a request, which is that you think really hard whether stuff has to go on the protected part of the website, so whether it really is so sensitive, because it is much easier for me to share something with my colleagues, if I don't have to go through the password protection. If you want to have impact, you should try to have as much as possible on the open part of the website, and maybe only have stuff that is about us on the internal part of the website. *(p)*
- Comment: I think the level of contribution is very specific to each topic, not every association or organization might be able to help with all of the topics. What I was missing a bit in the discussion is what are the needs of OPERAs? So by explaining what you need we can see, if we can engage on those topics or not. *(p)*
  A: So is it about sending an email explaining, what we are planning to do and asking if you are in or out? *(o)*
  A: Yes, and explaining the objective and what you concretely need, also because small organisations might not have the capacities to engage in all of the requests of OPERAs. *(p)*
- Comment: If that is okay with you we could also be forwarding requests to people in our organization or network that might be more competent to reply to them. *(p)*
  A: That would be great, because we see you as key agents of spreading things further, for example the survey that OpenNESS is preparing for the hub should go as far and wide as possible and you could help spread it to your networks. *(o)*

Feedback

Reactions by Userboard members about the process and if their ideas have been taken up:

- It is the time of promises and we like the promises and we remain to see how much we can help in the process.
- It was a good kick-off meeting and for the next meeting it would be helpful to have preparatory material, which helps us to prepare and even contact people to get more information.
- Keep going like that.
- We are looking forward to this time of promises becoming the time of deliveries, I am sure it will.
- For me it was the first time that I went to a meeting, where I had no idea of how it would be going. It was very well done and I learned a lot more about the topic and the project.
- It was a big adventure, because I am not only working with ecosystem services, it was interesting to see how the group was forming and how the process was managed. It was a nice ecosystem here.

The result of the formal evaluation can be found in Annex II.

Annex I: Agenda

DAY 1 – November 28

from 08.30 Registration for participants

WELCOME & GENERAL INTRODUCTION

09:00   Introduction participants - Martin Watson (Prospex)

09:20   Introduction to the process and the workshop – Martin Watson (Prospex)

09:40   Welcome and overview of the OPERAs project – Mark Rounsevell (University of Edinburgh)

STAKEHOLDER NEEDS

10:20   Identifying primary stakeholder needs in ecosystem services and natural capital - participants (facilitated by Prospex)

10:45   Coffee break

11:15   Analysis and deepening of primary stakeholder needs in ecosystem services and natural capital – participants (facilitated by Prospex)

12:30   Lunch at BBL

14:00   Mapping identified stakeholder needs in ecosystem services and natural capital to OPERAs research program – participants and project partners (facilitated by Prospex)

15:30   Coffee break

16:00   Report back on outcomes

18:00   End of day's work

19:00   Dinner in Brussels

DAY 2 - September 6

09:00   Overview of the day – Martin Watson (Prospex)

RESEARCH RESPONSE

09:10   Presentation on specific activities within OPERAs - project partners

10:00   Integration of specific OPERAs activities with identified stakeholder needs in ecosystem services and natural capital – participants and project partners (facilitated by Prospex)

11:00   Coffee break

COMMUNICATION & RESOURCES

11:30   Resource Hub – presentation by Lisa Ingwall-King (UNEP-WCMC)
followed by an interactive session (facilitated by Prospex)

12:30   Lunch at BBL

13:30   Stakeholder interaction through the Userboard - participants (facilitated by Prospex)

15:00   Wrap-up and workshop feedback

15:45   Closing

16:00   END of workshop

Please note that this is a highly participatory workshop and that timings and content of individual sessions are subject to change.

Annex II: Participant evaluation

OPERAs – 1st Userboard Workshop

1. How do you rate the workshop in general? (n = 12)
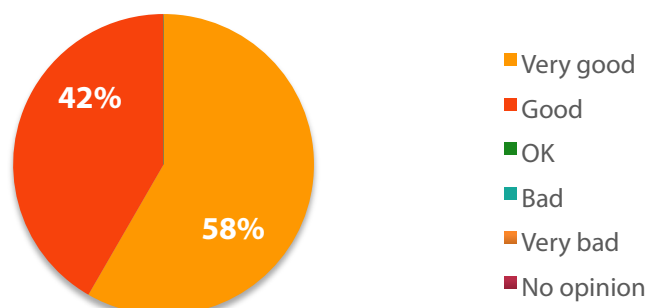
Please mark:
   7 Very good   *5* Good   □ OK   □ Bad   □ Very bad   □ No opinion

Comments - Please write:
   'Good workflow. Something was given back: more ES knowledge! Very interactive (one of the most interactive workshops.'
   'Very good dialogue.'
   'Very open & discussion-based, allowing for multiple inputs & holistic discussions. Could have more business representatives.'

2. How much were you enabled to contribute to the discussion? (n = 12)
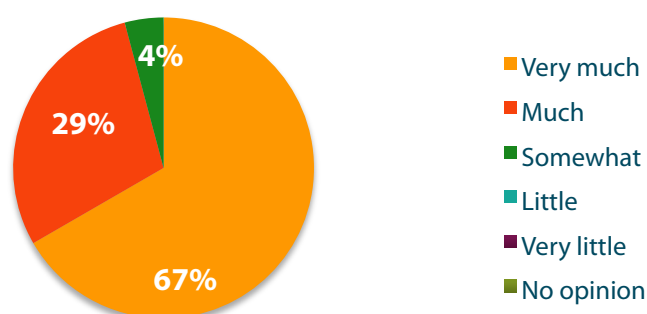
Please mark:
   8 Very much   *3,5* Much   *0,5* Somewhat   □ Little □ Very little   □ No opinion

Comments - Please write:
   'Of course my perception.'
   'Between much and somewhat, very new in the topic so I am still learning.'

3. How do you rate the breath of perspectives by the entirety of participants present at the workshop? (n = 12)

Please mark:

1,5 Very good   *9,5* Good   *1* OK   □ Bad □ Very bad   □ No opinion
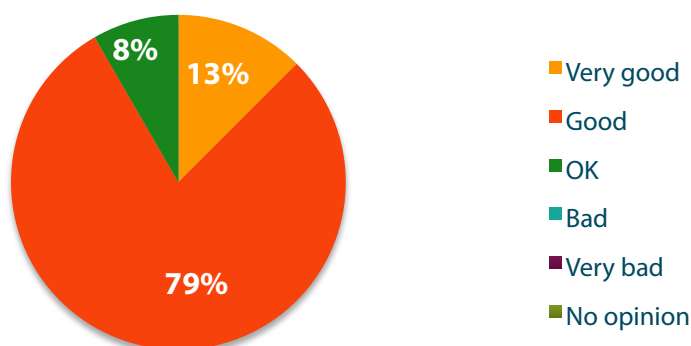
Comments - Please write:

'More managers are needed.'
'See above – could have more business, finance, user perspectives.'
'Involvement of business/with big supply chains is needed.'
'Land users missing…'
'As mentioned it would be good to have some social science xxx. Also if getting into global ES issues then someone from an AID agency or NGO.'
'As probably not all levels where there or not enough.'

4. Did you make any new contacts during the workshop that are useful for your work? (n = 12)

Please mark:

□ Very much   *7* Much   *4* Somewhat   *1* Little   □ Very little   □ No opinion

Comments - Please write:

'Yes, new opportunities for shared learning and partnerships.'
'I don't know yet how interactive we will stay during the course of the project.'

5. In how far were you able to develop insights or knowledge relevant for you and your work? (n = 12)

Please mark:

2 Very much   *7,5* Much   *2,5* Somewhat   □ Little   □ Very little   □ No opinion

Comments - Please write:

'Still some time needed to develop with the int. colleagues.'
'Learning from different stakeholders was very useful.'
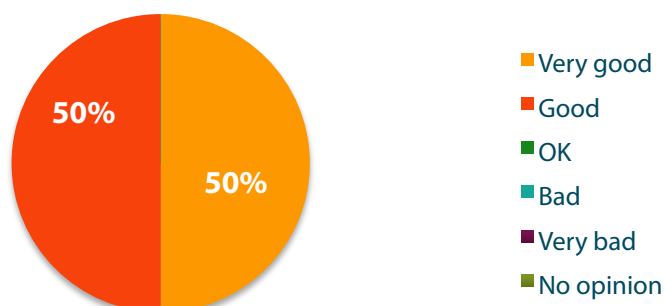'Between much and somewhat, very new in the topic so I am still learning.'

6. How do you rate the process of the workshop? (n = 12)

Please mark:
     6 Very good   *6* Good   □ OK   □ Bad   □ Very bad   □ No opinion

Comments - Please write:
     'I liked that it was open and iterative.'

- Very good
- Good
- OK
- Bad
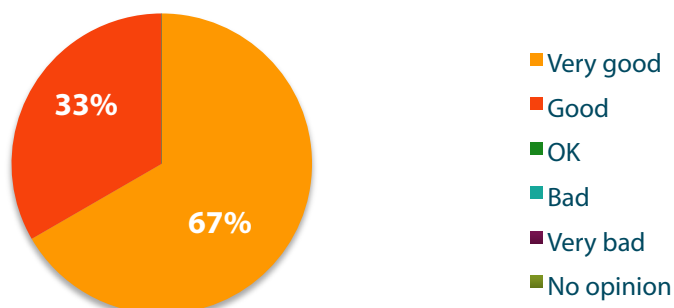- Very bad
- No opinion

7. How do you rate the work of the facilitators? (n = 12)

Please mark:
     8 Very good   *4* Good   □ OK   □ Bad   □ Very bad   □ No opinion

Comments - Please write:
     'Great job facilitating discussions to include all stakeholders.'
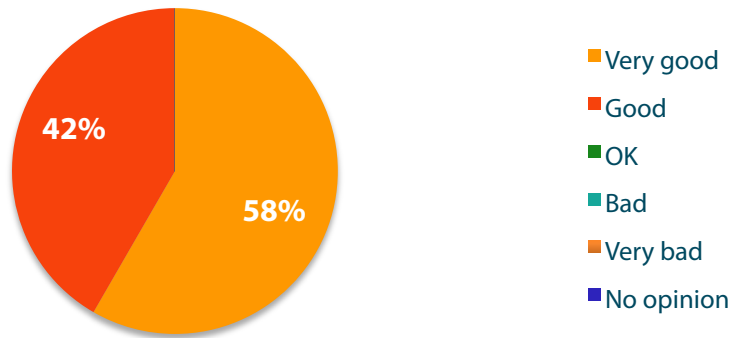

- Very good
- Good
- OK
- Bad
- Very bad
- No opinion

8. How do you rate the work of the resource experts? (n = 12)

Please mark:
     7 Very good   *5* Good   □ OK   □ Bad   □ Very bad   □ No opinion

Comments - Please write:
     'Very good – but again, perhaps more perspective from finance, accounting, etc.'

OPERAs

9. How do you rate the OPERAs presentations at the workshop? (n = 12)

Please mark:
4 Very good   *6* Good   *2* OK   □ Bad   □ Very bad   □ No opinion

Comments - Please write:
'Could have provided more time for this to enable more information to be presented.'
'Sometimes too much info on one sheet and a lot of acronyms.'
'Very helpful in understanding scope and objectives.'

10. How confident are you that your contributions and suggestions will be adequately taken up by the OPERAs project? (n = 12)

Please mark:
3 Very much   *6* Much   *2* Somewhat   *1* Little   □ Very little   □ No opinion

Comments - Please write:
'We are in the very first steps of processes concerning ES, we are still learning. With time we could be able to contribute more.'
'I had the feeling the team was very open to it.'
'The interest is there, the possibilities may be lacking in the end.'
'Very receptive & open-minded! Goal-oriented.'
'There is very strong commitment by the project to fulfill Userboard's needs.'
'However, I recognize the realm of the possible.'
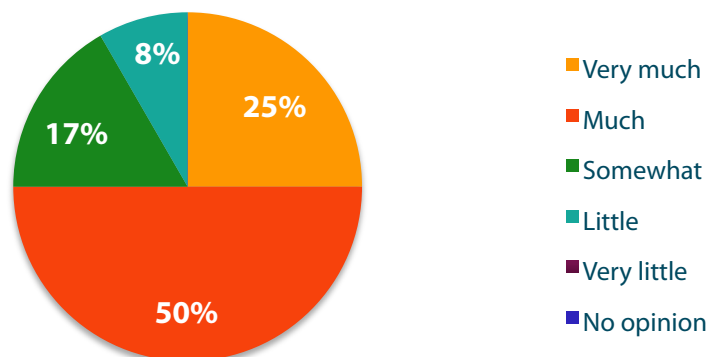
11. In how far do you think the OPERAs project will be able to bridge the gap between ecosystem science and practice? (n = 12)

Please mark:
1 Very much   **6** Much   **4** Somewhat   □ Little   □ Very little   **1** No opinion
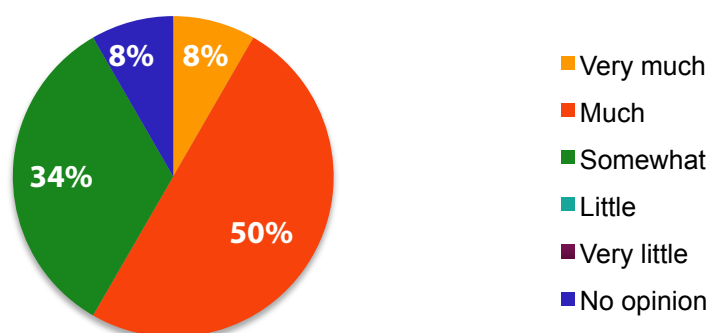
Comments - Please write:
'No idea for the moment. But the idea of the process is really good, keep going and let's see the outcomes.'
'There is very strong commitment by the project to fulfill Userboard's needs.'
'Such an important initiative & doing a great job in bridging the gap from theory to practice.'
'There is a large potential if work plans are followed as ideally planned…'
'There's so much to do – no way could a single (or double with OpenNESS) do everything.'

12. How do you rate the practical arrangement (invitation, travel, venue, hotel, catering? (n = 12)

Please mark:
9 Very good   **2** Good   **1** OK   □ Bad   □ Very bad   □ No opinion

Comments - Please write:
n/a

13. Do you have suggestions for future participants in a workshop of the OPERAs Userboard?

Please indicate suggested name and organisation:
'ELO (European Landowners Organisation), Copa-Cogeca (Farmers), CEPF (Foresters). There is also a European organization for anglers, but I can't remember the name.'
'Professor Allan Buchwell, ELO.'
'ELO (European Landowners Organisation), Friends of Countryside (do not have names to suggest).'
'Sissel Waage – BSR (Business for Social Responsibility). Helen Crawley – Kering (Puma, Gucci, etc. – EP+L), Amy O'Meala - Corporate Ecoforum (Natural Capital Initiative)
'Companies: MAKS, Akzomobel, Dupont (Have to look for the right person, but can find out)'
'As above.'

14. Do you have other suggestions for us for the coming or future workshops in OPERAs?

Please write:
'Give perhaps more material on the topics to be discussed.'
'Please include site visits to non-urban ecosystems…'
'Nice place, good food "concept". Possibility to get more fresh air would have been nice.'
'Select green key hotels & meeting locations to have a reduced eco – fp.'
'Change venue to one of research partners & try to link/piggyback on other relevant meetings.'

15. Any further comments?

Please write:
'Great meeting! Thank you!'
'Great job!'
'Overall a very interesting workshop.'