OpenNESS

Operationalisation of natural capital and ecosystem services: from concepts to real-world applications

Report on
the First Cross-WP Project Workshop and
WP5 case study plans for Nov 2013 to Oct 2014

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18 December 2013

**Participants at OpenNESS Cross-WP workshop, October 21-24 2013, Kinross, Scotland
(Location of the Loch Leven case study)**

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Executive Summary

This report is structured in two sections: (i) report of the first Cross-WP OpenNESS workshop October 21-24 2013 Loch Leven, Kinross, Scotland, and (ii) the 27 individual case study reports and work plans informing on purpose, stakeholder involvement and plan for the next 12 months (November 2013 – October 2014) prefaced by a summary of all 27 case studies.

The aim of the workshop was to match the problems identified in the place-based case studies (WP5) with the tools, methodologies and conceptual frameworks provided by WP1-4. The workshop was a great success with over 90 people attending.   There were representatives from all work packages and from all case studies (except one).

The interactive workshop program fostered direct exchange between case study and work package representatives in order to identify the potential tools and methodologies to be tested in the case studies.
In a next step, the case study representatives were asked to describe the current status of their cases and to formulate a work plan for the next 12 months following a standard reporting and planning format. These work plans are all included in this report, but it has to be acknowledged that these plans are snapshots which are likely to evolve based on further investigation of data sources and interaction with the case study advisory boards (CAB).

From the case study work plans, we can conclude that all the case studies are indeed actual examples where ecosystem services and natural capital concepts (ES&NC) are tested under real-life conditions. To test the relevance of the concepts and tools, all the cases have a type of discussion forum with stakeholders to discuss the issues at stake, the methods to be used, and the results of the research. However, these so-called 'Case study Advisory Boards' (or CABs) take different forms and shapes, depending on the issue, the socio-cultural and political context, and the past cooperation between researchers and practitioners.
The most important reasons reported for the use of the ES&NC concepts and tools were that it is expected to be innovative for integrating nature in planning; that it is a more holistic and dynamic approach than traditional concepts; that it is innovative for identifying community benefits; and that it will make ignored or undervalued ES explicit in planning.

This report is multi-authored with case study leaders and work package leaders contributing material from their own perspectives. These contributions were included in their original form, as standardisation would result in a loss of the full energy and diversity of the OpenNESS consortium. This report is very large (over 250 pages), but material has not been placed in appendices as it is judged that all material is considered equal.

1. First Cross-Work Package workshop

1.1 Introduction

Over 90 OpenNESS partners attended the workshop jointly hosted by OpenNESS partners Kinross Estate Company (KEC) and Natural Environment Research Council, Centre for Ecology and Hydrology, (NERC). KEC is an SME project partner. They also organised all the social components of the event, including Scottish poetry, food and dancing, which greatly helped to facilitate the project integration. The focus of the whole meeting was the interaction of the case studies with the methodological work packages (WP1-4) and consultation with WP6 and WP7. The full programme of the meeting is in Appendix 1, a welcome poem by the organiser, Jan Dick from NERC_CEH is in Appendix 2 and a pictorial of the workshop is in Appendix 3.

1.2 Work package reports from first cross-WP workshop

The leaders of Work Packages provided reports from their perspectives and these are included here without alteration. WP1-5 concentrate on the round robin session and WP6&7 is combined and reflects on their shared session.

1.2.1 Work package 1

By Marion Potschin (UNOTT), Kurt Jax (UFZ), Roy Haines-Young (UNOTT), Hans Keune (INBO), Bálint Czúcz (MTA ÖK)

As preparation for the 1st 'cross work package workshop' we took the interaction between WP1 and WP5 as described in the graph (Fig. 1 below) illustrating the OpenNESS methodological approach as "Conceptual understanding in relation to the 4 key challenges" and "problem definition for case studies".
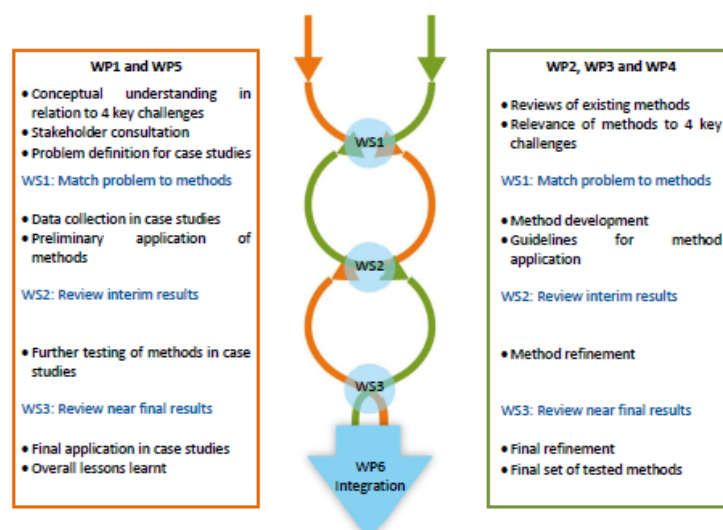
Figure 2. Schema illustrating the overall methodological approach (WS=workshop)

Figure 1.1: Schema illustrating the overall methodological approach (WS = workshop).

The aim of WP1

"Key Challenges and Conceptual Frameworks" is to advance the understanding of Ecosystem Services (ES) and Natural Capital (NC) and to provide operational frameworks for the applications of the concepts in real-world management and decision-making situations. This will be achieved by identifying the potential of the ES and NC concepts in relation to the four key challenges originally identified in the call text, the proposal and finally in the DoW, namely:

➢ Human Well-Being
➢ Sustainable ecosystem management (including biodiversity conservation)
➢ Governance
➢ Competitiveness

WP1 also deals with Ecosystem Service Classifications and Conceptual Frameworks in general – these topics were the focus of different separate events during the Loch Leven Workshop (the "Cascade Session" and the "pop-up session on CICES").

The WP1 Round Robin session concentrated on, and explored research questions related to, the four challenges identified above and especially how they can be examined at scales relevant to the Case Studies.

The following session programme was developed in combination with the second and third overall objectives of WP5:
• To apply and refine the concepts, methods and models developed in WPs 1-4 to the case studies to test their relevance and usefulness in an iterative manner; and,
• To characterise any common lesson that can be learned on the operational potential of the ES and NC concepts across the multi-scale case studies.

The sessions were designed so that both WPs would benefit from it. The expected outcomes were:
• a better understanding of the four challenges;
• the exchange of information between case studies on which Challenges they are focusing on in their work (this will be based on the information on issues provide);
• discussion of some possible research questions; and,
• more information for the case studies so that they are in a better position to prepare their work plan for the coming months.

For the four challenges we asked the Case Studies before the meeting to think about the following questions:
• Are you dealing with these general issues in your case study?
• How are they reflected in your research questions?
• Are there additional aspects to consider such as the scale of study, the stakeholders involved or the location?
• Do you think the questions you have about the Challenges are case cluster specific or general to all ecosystem types?

In a quick first exercise we asked the case study representatives to allocate their research input amongst the four challenges (each dot representing 20% of their research effort). Note we explicitly referred to actual "research input/resource" and not "interest".

Picture 14: Summary of research input of 26 case studies into the four challenges

In the second exercise we asked case study representatives to formulate their "local scale research questions" in relation to the four challenges. As a result the WP1 team was able to see how the Case Studies from different clusters (urban, forested land, multifunctional, watersheds and coastal) look at how conceptual frameworks might be needed to be adapted to different situations. All the material will be worked on further to feed into Milestone 2: "Define and refine research questions related to the key challenges for the specific ES problems" due in Month 24 (11/2014). Further material collected, such as videos and voice recording is for WP1 internal use only. As discussed with participants, if WP1 uses this material any further it will only be done in discussion, collaboration and agreement with the case studies representatives.

1.2.2 Work package 2

By Eeva Primmer, supplemented by Jörg Priess

1. Round robin sessions

The WP2 sessions were run so that Tasks 2.1 and 2.2 used the first half of the session, whilst Tasks 2.3 and 2.4 used the second half. Eeva Primmer started with Task 2.1, and had either Allan Watt or Juliette Young come in with Task 2.2., after which the Task 2.1 questions were left on the screen and discussion was invited:

Please discuss with examples from your case study!
- How do EU regulatory frameworks influence the decision-making in your case?
- Are EU regulatory frameworks in conflict in your case?
- What other institutional factors condition decisions in your case?

There was an attempt to hear all the case studies views, which succeeded to a varying degree in different groups. The general message was that the case studies were welcome to conduct deep institutional analysis if it suited their approaches, even if they had not signed up in the survey beforehand, and that the guidance for deep analysis would be developed in an iterative fashion in collaboration with the case studies.

Task 2.2 invited the case studies to characterize their case study, so that they could organize focus group work in the future.

Tasks 2.3 and 2.4 were introduced by Jörg Priess in the first three sessions and by Jennifer Hauck in the last session. These tasks invited discussion and questions regarding scenario analysis. A good proportion of the questions were about the relationship between umbrella scenarios for general trends and case specific scenarios.

2. Outcome of the discussions

Forest cases:
- 25 Argentina: EU policies do not affect Argentina directly but CAP influences soy bean use in EU and contributes indirectly to deforestation. This also channels money back to biodiversity conservation
- 26 Brazil: EU policies (bioenergy policy in particular) influence ecosystems & ecosystem services through markets by increasing ethanol production. This has not been addressed in policy: the Brazilian Forest Code has not addressed this external driver of land-use change.
- 8 Germany: will address bioenergy renewable energy production & policy coherence in the case study analysis.
- 6 Finland forest case will address the forest policies (and EU renewable energy policies) influencing biofuel use, forest carbon emissions & biodiversity.
- 5 France: national policy sets contradictory goals that the regions need to implement: produce more but preserve biodiversity (contradiction between timber production, biodiversity, carbon storage). Also the loss of agricultural land is an important biodiversity challenge in France, and relevant for forest policy because the conversion is often to forest land.
- 17 Romania: There is a high level national policy commitment to compensation for production losses due to conservation or restrictions based on ESS but this has not been operationalized yet. The case study will develop best management practice guidelines for operationalizing this high level policy.

Remarks from discussion:

- Policies as scenarios will conceptualize some policy development assumptions, some of which are common across case studies (umbrella assumptions) and some would be case study specific. Internal consistency is a key. The scenario team in OpenNESS will contribute to this.
- spatial scenarios would help the stakeholders in thinking the location of the conflicts.
- Science & policy at the UN level
- Scenarios can kick off policy even if they go wrong (e.g. Dynamico Eco).

Water cases

- 20 Netherlands case includes a harbour in Natura2000 area, which is nationally important for transport and locally contributes to economy. Dredging is however not possible because of EU policy (in the N2000 area). ESS analysis allows identifying the value of dredging sludge and its costs and benefits.
- 21 Portugal coastal area includes marine protected area plus land protected area. All the relevant biodiversity conservation, fishing and other natural resource use regulations conflict already at the EU level. The case study looks at new policy instruments (upcoming) for matching regulatory frameworks, in line with existing regulations.
- **16 Scotland**: Water Framework directive and birds & habitats directives are relevant for the case. Conflicts exist but we do not analyse CAP, which is in starkest conflict with other ES. Instead, we look at Royal Charter locally as well as public access regulations and local planning regulations. The conflict is likely to emerge between different level regulations, particularly regarding water supply.
- 11 & 22 UK offsetting with a focus on national/local regulatory frameworks. Most importantly planning law, which is in flux. Some link to EU-level regulations. No net loss initiative in the EU is coming up. Habitats and species laws & N2000 set the boundaries for what can be offset.
- 15 Lombardia case in Italy will analyse infrastructure, water quality, flood risk, with a focus on the trade-offs related to water quality vs. biodiversity conservation. There is new potential for integrating the goals in green infrastructure strategy. We search for WFD & ES synergies. In our case, the regulatory framework coherence can be studied in a compact local setting. In addition to policy goals, conflicts might arise from implementation responsibilities at different levels.
- 17 Danube has almost all of the regulatory frameworks effective. We try to analyse the trade-offs between different regulations and their capacity to provide ecosystem services. There are conflicts between European policies (transport, fisheries, birds…) There is also conflict between EU level and national and local level regulation, e.g. the local council organizes hunting close to strictly protected area -> conflict with habitat directive and birds directive. Most urgent conflict is with renewable energy and hydropower against green corridor and restoring and maintaining existing watershed habitats.

Multifunctional

- 09 Cairngorm national park: The most important policy, rural development policy and CAP, is only emerging and we don't know how it will turn out in the future. Water framework Directive is important. Other important, more local frameworks that might have coherence challenges include Scottish policy, particularly with the natural protection agency and health policy as well as the national park policy and the Cairngorn plan. Conflicts exist also within Natura 2000.
- 10 Sierra Nevada considers CAP, WFD and Rural development. Our important informal institutions are water communities regulating irrigation that are a legacy from the Muslim period. The new restrictive

issues of WFD and introduction of incentives for intensive agriculture generate significant conflicts with the traditional irrigation institutions. The national park is trying to preserve the traditional irrigation channels as well (but does it build on the traditional institutions?)

- 12 Hungary: there are a lot of coordination issues and conflicts in water use because of water shortage/insufficiency. The current water management is a result of institutional evolution, which has been reshaped by the WFD, particularly re the structure of water management and the planning. There is illegal use of water and suspicion among actors regarding illegal extraction. The question is whether the current institutional setup is sufficient for securing sustainable water management and what is needed for closing the gap. Property rights: formally private property but quite much flexibility and ambiguity in the interpretation access rights (which we take as property rights). EU-regulatory frameworks are in conflict with a lot of the national laws. We aim to develop concrete policy recommendations.
- 18 Belgium river basin. In this flood control area that has been designated but not implemented, the main regulation is WFD but also biodiversity policies and CAP have an impact. It looks that conflicts can be managed during implementation. Institutional fragmentation and too many agencies pose a challenge for implementation. Flood control is a public service but land use is private. There is a tradition of distrust between greens (i.e. the political party and the like-minded) and agriculture.
- 19 Doñana wetlands. Habitat directive & biodiversity strategy & birds directive are the most important frameworks because the case is a Ramsar site. Also CAP is important because there is a lot of agriculture. Dredging in the harbour of Seville has led to a court case. WFD has been used by NGOs to announce illegal water extraction to the EU. The area has also mining and gas drilling. The institutional interplay & evolution rest on a long term history formal and informal rules of access to ecosystem services and traditional access rights. Recent erosion of informal institutions and customary rights and traditional knowledge.
- 24 Kenya forest area. The Kenyan and local biodiversity policies & regulations appear to be aligned with the respective European ones, so we don't see conflict. Commodity exports, e.g. tea, and particularly invasive alien species and biocides policies have relevance. Forest Law Enforcement, Governance and Trade (FLEGT) will have impact on Kenyan ecosystem service management.

Urban

EU policies or regulations do not directly address urban planning. But on the other hand, EU level SEA legislation are directly applicable and applied

- 1 Finland Sibbesborg case study considers that the ecosystem service concept is well integrated to policies but that the practitioners need knowledge and knowledge support more than anything.
- The EU-policies are implemented at the national level, through national legislation (e.g. in Finland the Planning Act, which is currently being revised), which is further implemented locally. The local level planning does not need to consider the EU level. On the other hand, the time window for implementing EU legislation is not always synchronized with the EU policy development, and the national legislation might appear outdated, although it influences decision-making more than the sometimes more up-to-date EU-legislation.
- **2 Slovak** case study has already analysed planning guideline documents and looked for e.g., how they address ESS (mostly indirectly) and complexity / multisectoral questions. They have the qualitative data and quantification of the emphases, and are looking forward to having a framework from the EU-level policies to cross-check whether those appear in these locally applied documents.

- **3 Norway**: Local frameworks and traditions define much of what happens in urban planning, and the EU level regulations appear distanced. It is worth looking at how the different types of EU-regulatory frameworks & policies appear to define practice at the case study level, because this is likely to differ importantly.
- **14 Green infra** in five different sites case takes the policy as a positive opportunity to integrate ecosystem services into land-use planning and is looking for synergies between policies, rather than conflicts.

3.   Final remarks after the round robins

The WP2 benefited importantly from the round robin sessions and WP representatives remained with a feeling that the cases benefited as well. The case study level institutional analysis will be supported by WP2 and conducted by the case studies in a fashion that serves the case studies, rather than exhausting their resources. A memo of an ad hoc meeting on institutins, inspired by the round robin sessions, in in Appendix 4.

Regarding what WP2 has to offer, it was obvious that there were a range of different perceptions about what WPs should offer to the case studies. These concern the tailoring of frameworks and products as well as the efforts the case studies need to invest in the products or in adapting them. For task 2.3, we realized that although providing a definition for the term "scenarios" and their envisaged role and function in OpenNESS, several open questions remain, mainly concerning application/applicability in general and a number of methodological questions (e.g. up- and downscaling, driver categories and their local relevance etc.). We found the round robins as a useful platform, indeed contributing considerably to uncovering and to reducing these uncertainties and open issues.

1.2.3 Work package 3

By Paula Harrison (UOXF.AF) and Joachim Maess (JRC)

The WP3 approach to the round robins was relatively structured. The session began with a single slide introducing the six key methods that had been selected as the most likely to be of use to the case studies (from the 61 identified at the WP3 meeting and in the WP3 models database). The slide also identified and introduced the key expert in each of these methods that would act as a point of contact. The case studies were then asked to work through a poster which printed their WP3-relevant responses to the joint questionnaire (Fig. 3). This was done case study by case study with around 10 minutes being available for each. Interaction between the case studies and the method experts from WP3 was stimulated during each session and links between case studies were identified where there were similar problems or where similar methodological approaches were being considered. Where more detailed discussions were needed on particular methods the opportunity was taken to flag the WP3 methodological pop-up sessions that were available.

The key methods and contacts were:
- Simple Spread sheet / GIS methods (Laura Mononen, SYKE)
- Quickscan (Peter Verweij and Michel Van Eupen, Alterra)
- Bayesian Belief Networks (Ron Smith, CEH)

- State and transition models (Graciella Rusch, NINA)
- INVEST and ESTIMAP (Grazia Zulian, JRC)

The poster itself focussed on three areas (Fig. 3). Firstly, the key biophysical components that the case studies were interested in using (in terms of ecosystem services; habitat/land use; species and any abiotic factors of importance) – the priority here was to ensure that WP3 has as good an understanding as possible of the ecosystem services the case studies were likely to model. The second focus was the data that the case studies had available (data availability is a key determinant in terms of which methods/models are potential options). The final column of the poster focused on the method/model that the case-study intended to use. Ensuring that this column was populated was one of the key priorities of the round robins.

Picture 15: Poster with notes collected during the WP3 meeting with the freshwater and coastal group.

Pop up sessions

A number of pop-up sessions were organised on each of the key methods to provide more information for those interested in a particular method. This included combined sessions on ESTIMAP/InVEST and Spreadsheet methods/Quickscan and individual sessions on State and transition models and BBNs. The BBN session was organised as part of the cross-cutting methodologies.

WP3 meeting at Loch Leven

A WP3 breakout group session was organised at the end of the Loch Leven workshop to collect feedback on the event and determine future goals, including organising the training for helping the case studies test and apply the methods/models identified in the round robin sessions.

Feedback

The consensus was that the round robin sessions were intense in terms of the concentration required, but were a very effective means of stimulating discussion and ensuring that WP3 well understood the needs of the case studies. WP3 felt that the structured approach was helpful and working through the poster ensured that the information needed by WP3 could be captured and categorised relatively effectively. The dialogue between WP3 and the case studies seemed open and free-flowing and we hope that having the experts on hand to answer key questions and offer advice was helpful. Feedback on the pop-up sessions was also positive and gave the method specialist a better idea of the people and case studies that might be considering using their method.

Next steps

Poster

The information captured on the posters during the round robin session will be entered into a finalised version of the poster (**early November**) which will be circulated within WP3 for discussion, before then circulating to WP5 with the intention of collecting all feedback by **end of November**.

Method guidelines

WP3 intends to provide a set of more detailed guidelines for the six key methods that include worked examples by the end of January 2014. The examples would be linked to problems/ES relevant to the case studies. A common structure would be used similar to a step-by-step manual prepared for students and will include a point of contact for questions. The guidelines would be uploaded to the extranet before the next full project meeting in Budapest in March 2014 and links would be sent to the case studies identified as interested in the particular methods.

Training

WP3 is considering hosting a question and answer session at the Budapest meeting which would include presentations on each model/method. In addition, WP3 is considering planning a training workshop for case studies (in autumn 2014). This could possibly be organised in conjunction with the WP4 training event on ES demand mapping. Skypes could also be arranged to help case studies between the Budapest meeting and the training workshop.

1.2.4 Work package 4

By David N. Barton (coord.), Erik Gómez-Baggethun (integrative valuation), Eszter Kelemen(non-market valuation), Berta Marin-Lopez(ES demand mapping), Maria García-Llorente (mapping and non-market)

Resource persons: Martin Karlsen (Hugin), Jyri Mustajok i(MCDA), Hans Keune (methodological decision-making)

Structure of the Round Robin Sessions WP4

We prepared a session structure as follows:

1. Valuation methods «teasers»
2. Case study presentations
3. Case questionnaire results – valuation
4. Discussion: valuation work plan 2014

Our main expectation of the Round Robin sessions presented to the respective groups was to generate interest in the methods and identify 'resource persons' with valuation experience that could participate in WP4 training, preparation of briefs, guidelines and mentoring.

We did not have the opportunity to coordinate the agenda with the facilitator of the first two sessions and adjusted the structure to first listening to case studies present, and then presenting our prepared material:

1. Valuation methods «teasers»
2. Case questionnaire results - valuation
3. Discussion: valuation work plan 2014

Personal impressions from Round Robin

Case studies appreciated

- a "refresher" on valuation methods in the 'toolbox'
- feedback on the results from the case study questionnaire
- justifying the valuation training proposals based on the questionnaire
- getting to know task leaders and resource persons in WP4 through presentations of their respective methods (Eszter, Jyri, Berta, Marina shared presentation tasks; Martin shared Q&A)
- specific proposals for training topics, dates, locations and combinations of themes as a starting point for feedback and discussion of alternatives. These were updated between each successive session as we got feedback
- proposal for "twinning" of case studies to distribute mentoring roles among the partners; with WP4 methods task leaders acting as facilitators for interactions and information flow, as a complement to the case study clusters and integrated method champions/clusters.

Lessons learned

- facilitators were helpful with technical issues, but WP4 presenters were able to manage Q&A themselves
- although knowledge of case similarities was appreciated, case studies were soon tired of repeated case information
- when discussion methodological alternatives and criteria for choosing impact and valuation methods dominated the discussion it seemed as if the cases were most engaged

Interaction with Pop-up sessions

David participated in MCDA, BBN and Scenario sessions and updated training proposals based on information obtained. The valuation pop-up session on Wednesday evening summarised experiences from the round robins through a discussion on the integrated valuation framework lead by Erik.

Recommendations from Round Robins and pop-up sessions
- **Annual meeting focus – training and case design**. Make the core of the annual meeting in Budapest about empirical methods training and case study design 'clinics'. Reduce the supporting WP activities and administrative issues to a minimum to be handled prior to the meeting by the Steering Committee. Avoid the idea of training being a 'back-to-back' ancillary activity.
- **WP4 case study support**. WP4 prepare a fact sheet on resource needs for each valuation method to help case studies prioritise approaches relative to budgets. Also, explore the possibility of a valuation methods 'decision tree'.
- **'Integrative' valuation framework**. Based on proposal from the valuation pop-up session WP4 will use 'integrative valuation framework' as a place-holder for further work on the framework combining the notions of "integrated" and "inclusive" valuation methods.
- Is there a need to coordinate information about ES mapping tools used in the project? Consider designating a **methodology champion for ES demand-supply mapping** as integrative methodology.

Main outcomes: Training proposals generated
Training proposals that developed through the Round Robin sessions and which seek to combine methodological topics and coordinate joint topics with WP3, WP2 and WP1.

1. BBN webinars
Launch a webinar series with the aim of facilitating understanding of individual BBN models on the OpenNESS Hugin platform.
Contact: Roy Haines-Young, UNOTT, will coordinate a list of topics and a calendar, with input from the 'BBN team'.

2. **Multi-criteria decision analysis & valuation problem structuring** 'clinic' (January 29-31 2014, Italy or Finland).
Content (tentative):
- Multi-criteria decision analysis as a framework for problem structuring and identifying valuation methods (both non-monetary and monetary valuation methods)
- MCDA software Web-Hipre
- BBN as a MCDA tool.

Instructors are available. Presentations will be filmed and made available online for case studies who cannot participate. Doodle will be circulated to case study coordinators to evaluate demand and availability.
Depending on availability of case studies consider conducting the training as a series of webinars.
Contact: Heli Saarikoski, SYKE, David N. Barton, NINA, Roy Haines-Young, UNOTT and coordinate planning.

3. **Multi-criteria decision analysis & non-monetary valuation methods (Annual Meeting, March 25-27 2014, Budapest).**
Content (tentative):
- Stakeholder identification and involvement; value identification (coordination with WP5)
- Non-monetary valuation methods
- MCDA as a deliberative non-monetary valuation method
- MCDA «Case study clinic» (problem structuring and selection of valuation methods)

Organization: Make the core of the annual meeting in Budapest about empirical methods training and case study design 'clinics'. Reduce the supporting activities and administrative issues to a minimum to be handled prior to the meeting by the Steering Committee. Avoid the idea of training being a 'back-to-back' ancillary activity.

Contact: Eszter Kelemen, ESSRG, David N. Barton, NINA and Heli Saarikoski, SYKE

4. Monetary valuation methods & ecosystem service supply and demand mapping

(early September 2014, location to be decided, avoid conflict with ESP Costa Rica conference)

- Monetary valuation methods
- Ecosystem service supply & demand mapping and modeling (coordination with WP3)
    - BBN
    - QuickScan

Contact: David N. Barton, NINA and Berta Martin-Lopez, UAB (coordination with WP3)

1.2.5 Work package 5

The 27 case studies were distributed between the four round robin sessions in order to combine groups with similar interests e.g. all the urban case studies were assembled in group A. There other groups were not so specific and only loosely grouped in order to give equal numbers to each group see Table 1.1).

Table 1.1 Summary of case studies assigned to one of four groups for the round robin sessions

Group	Case study number						
A	1	2	3	4	14	27	
B	5	6	7	8	25	26	
C	11	15	16	17	20	21	22
D	9	10	12	13	18	19	24

Unfortunately, due to ill health the representatives from case study number 23 'Cash crops driving land-use change in forest mosaic landscapes' had to withdraw from the meeting. They did however send all the briefing papers and completed the WP5 reporting template ahead of schedule.

The round robin session worked well to allow exchange between WP1-4 and the between the case studies within each grouping (Table 1.1). There was however limited opportunity for the case studies to interact with the case studies in the other groups. This was addressed to some extent by the pop-up sessions, where case studies discussed among themselves and knowledge was exchanged. Joint research involving more than one case study was discussed and a specific folder on the OpenNESS extranet has been created to allow open and transparent exchange of material. To date, forest and urban papers have been discussed arising from this first cross-WP workshop

Table 1.2 Details of case studies assigned to one the four round robin sessions

Case study No	Case Title	Country	Dominant ecosystem	Round Robin Group
1	Sustainable urban planning	Finland	urban	A
2	Landscape-ecological planning in urban and peri-urban areas	Slovakia	urban/ peri-urban	A
3	Urban green space plans in and around Oslo	Norway	urban/ peri-urban	A
4	Urban planning in Vitoria-Gasteiz	Spain	urban	A
14	Planning with GI in five linked cases	NL, UK, Belgium	rural to peri-urban (farmland, forest, grassland)	A
27	Sustainable planning in the Barcelona urban area	Spain	urban/ peri-urban	A
5	Regional and national forest management planning	France	forest	B
6	Regional and national forest management planning	Finland	forest	B
7	Forest management in Carpathian Mountains	Romania	forest/ mountain	B
8	Bioenergy production in forest and farmland	Germany	forest/ farmland	B
25	Sustainable forestry in Tierra del Fuego	Argentina-Chile	forest	B
26	Bioenergy production in interior São Paulo state	Brazil	forest	B
11	Restoration Warwickshire	England	heath/ grassland	C
15	Wetland construction and restoration	Italy	freshwater	C
16	Restoration of water resources in Loch Leven	Scotland	freshwater	C
17	Adaptive management plan for Lower Danube River	Romania	catchment area	C
20	Coastal area management in Waddensea	Netherlands	coastal	C
21	Coastal area management Sagres region in Portugal	Portugal	coastal	C
22	Restoration of Essex coast	England	coastal	C
9	Cairngorm National Park management	Scotland	forest and heath/grassland/mountain	D
10	Sierra Nevada National Park management	Spain	farmland/ mountain	D
12	Farmland management in Kiskunság	Hungary	farmland/ grassland	D
13	Development of agro-environmental measures	Belgium	farmland	D
18	Integrated river basin management of Demer River Basin	Belgium	catchment area	D
19	Doñana protected areas management	Spain	marshland, cropland, woodland	D
23	Cash crops driving land-use change in forest mosaic landscapes	India	forest/ cropland/ mangrove	D

| 24 | Sustainable land management in Kakamega Forest & Adjacent Community | Kenya | forest/ cropland/ tea plantation | D |

As specified in the Description of Work the cluster leaders and their role were agreed during the workshop. These are:

- **Sandra Luque** - management of forests/woodlands
- **Kertész Miklós** - management of mixed rural landscapes
- **Tarja Söderman** sustainable urban management
- **Paula Antunes** – coastal area management
- **Bruna Grizzetti** – integrated river basin management
- **David Odee** – commodity export-dominated areas in developing countries

The role of the case cluster coordinator in relation to WP5 (mentoring case study leaders within the cluster and distributing and collating case study information) was agreed at the project steering committee meeting on Monday 21 Oct 2013 (immediately prior to the first cross-WP meeting).

The evaluation of criteria for ecosystem service and natural capital tools and approaches (Milestone 5.1) was discussed during the round robin sessions and formal evaluation of the criteria was obtained *via* a written questionnaire distributed to the case coordinators and collected at the meeting. Details of this milestone are contained in a separate report submitted to the project coordinators (M5.1). In summary the consultation indicated that validated methods, transparency & credibility, and communication capacity were considered the most important criteria; while comprehensiveness was considered as the least relevant of all the proposed criteria.

1.2.6 Work package 6 and 7

Breakout group on communication
Communication activities and the draft communication plan were briefly presented in plenary. Breakout groups on communication were held to focus on two questions of importance to case study leaders and to the role of WP7 in supporting them:
1. What are your main case-specific communication challenges?
2. How can OpenNESS support you to overcome these challenges?

With regard to the first question, a challenge could be the way that case studies communicate about ecosystem services and natural capital, for instance by using images, metaphors or brands (e.g. brown trout as a symbol for clean lake water provided by forested hill slopes and purified waste water around Loch Leven and as a brand to attract tourists).
In the breakout groups all participants were grouped in pairs and they were asked to think for three minutes about the internal as well as external communication challenges they are facing in their cases. Then each of the pairs was asked to name one challenge, which was written down on a flipchart for all participants to see them. All pairs had the chance to list one challenge, after which a second round started to harvest any additional points that were not raised in the first round yet.

Once all the challenges were listed on the flipchart and any clarifications were made where necessary, the participants were asked to individually score the most important challenges from their perspective. For this exercise each individual was asked to assign three points to three different challenges. Once all participants had done their scoring, the priority challenges were easily visible by the number of dots associated with them.

The output of the breakout groups consisted of three sets of case-specific communication challenges on flipcharts, with three different priority scorings. In all three groups the used facilitation method ensured involvement of all participants and because of the relatively short sessions energy levels and group involvement remained high. It is our impression that participants found the exercise helpful. Some additional time would have been useful to discuss the challenges a bit more in depth and allow for immediate responses to some of the key challenges that were raised.

In a next step the WP7 team will compile all listed challenges into an Excel table, discuss potential responses from OpenNESS to each of the challenges, collect these into a combined table including also the issues from the sessions on common platform and on stakeholder involvement, and then sending this combined table to all participants at Loch Leven. In the annual meeting in Budapest an overview will be presented in some form on what has actually happened with the follow-up responses.

1.3 Participant feedback from first cross-WP workshop

This report summaries the initial feedback from OpenNESS partners on the first Cross-work package Workshop held at Kinross, Scotland. The purpose of the survey was to learn what participants liked, disliked and their suggestions to improve for future meetings. There were five questions asked with free text boxes provided for comments via a web-link (Survey Monkey). This summary of the results for each question and an exact copy of all the replies entered into the Survey Monkey where distributed to all OpenNESS partners Thu 28/11/2013.

In total 27 people completed all or part of the survey monkey questionnaire (around one third of the people attending the meeting). A summary of the results for each question are provided here, followed by an exact copy of all the replies entered into the Survey Monkey.

1.3.1 What did you like most during the meeting?

Respondent's specifically appreciating the relaxed, positive, creative atmosphere with around 40% commenting specifically on the overall meeting atmosphere. A similar proportion liked the opportunity to directly interact with other members of OpenNESS and over 25% specifically mentioned the round robin sessions as an aspect of the workshop that they liked. Over 25% explicitly mentioned the social events which contributed to the direct integration and positive atmosphere.

1.3.2 What worked and what did not?

The most voiced comment to this question was that the meeting was too busy, the schedule was too tight and there was not enough time for further individual conversation (60-65% of replies). Several commented that the longer lunch period with pop-up meetings was a good idea, but there were just too many pop-up meetings planned. Several people made positive comments in this section, with around a quarter

complimenting the round robin session and social events. However some 20% commented that better coordination of preparation for the round robins sessions was needed. One person commented that the idea was new and that it needed time for people to become familiar with this way of interacting. The role of the facilitators was mentioned by about 20% of the respondents, some positively and some negative commenting that they were not needed. Some 10% of respondents considered that the meeting did not allow enough time for case studies to interact with each other, commenting that WP5 was unfocused in this respect.

1.3.3 Ideas for improvements for the next meeting?

Around 40% of respondents commented that there should be more free time to make informal connections with several commenting that pop-ups should be part of the formal meeting rather than using lunch and coffee breaks which were needed for informal interaction. One commented specifically that a half day should be left free to allow spontaneous pop-ups. Around 25% requested some form of field trip or study tour.

1.3.4 Feedback on practical arrangements?

Most of the participants liked the practical arrangement with over 60% of respondent's specifically expressing positive comments. Opinion was divided as to splitting the meeting between two hotels was a good idea: some felt it just added to the confusion and time to attend meetings, while others felt this was an opportunity to get fresh air.

1.3.5 How did you like the background material?

Around 70% of the respondents were positive about the background material answering this question with comments like: ok, useful, good, excellent. Nevertheless, several also commented that it would have been better to circulate it earlier, so more time was available to digest before the meeting. Distribution of case study responses to the WP2-3-4 questionnaire prior to the meeting was also suggested in order to facilitate better interaction during the meeting.

1.3.6 Conclusion

In general the feedback was positive and although there was considered to be too many structured meetings the respondents did not offer suggestions of what could have been dropped; this lack of criticism was considered as an indication that all the pop-ups were useful. The high attendance at these optional pop up sessions gave a very good indication of the commitment and dedication of OpenNESS partners.

2. Case study reports

 Each OpenNESS case study leader reported about the purpose of their case study, the use of the ecosystem services and natural capital concepts, the stakeholder involvement and their plans for the coming 12 months.   A standard reporting template was used for all cases. As would be expected, many of the case studies are just commencing their study and have spent the first year formulating the issues to be studied with stakeholders. Following a summary of elements reported across the case studies (2.1), all individual case study reports are included here (2.2). In addition to the 26 case studies described in the Description of Work (DoW), the urban case study 'Sustainable planning in the Barcelona urban area' is included in this report (following formal acceptance of this case study by the Project Steering Committee).

It is important to note that these results reported here are a snapshot from October 2013, and that they reflect the perceptions of one or more case study leaders.

The case studies are ranging from heavily society-influenced landscapes (e.g. urban sites and plantation forestry) to relatively natural landscapes such as national parks.   It also includes a wide range of geomorphological environment ranging from mountain areas to coastal zones. Case studies are spread all over Europe, and in addition, four case studies in emerging countries are included (Figure 2.1).
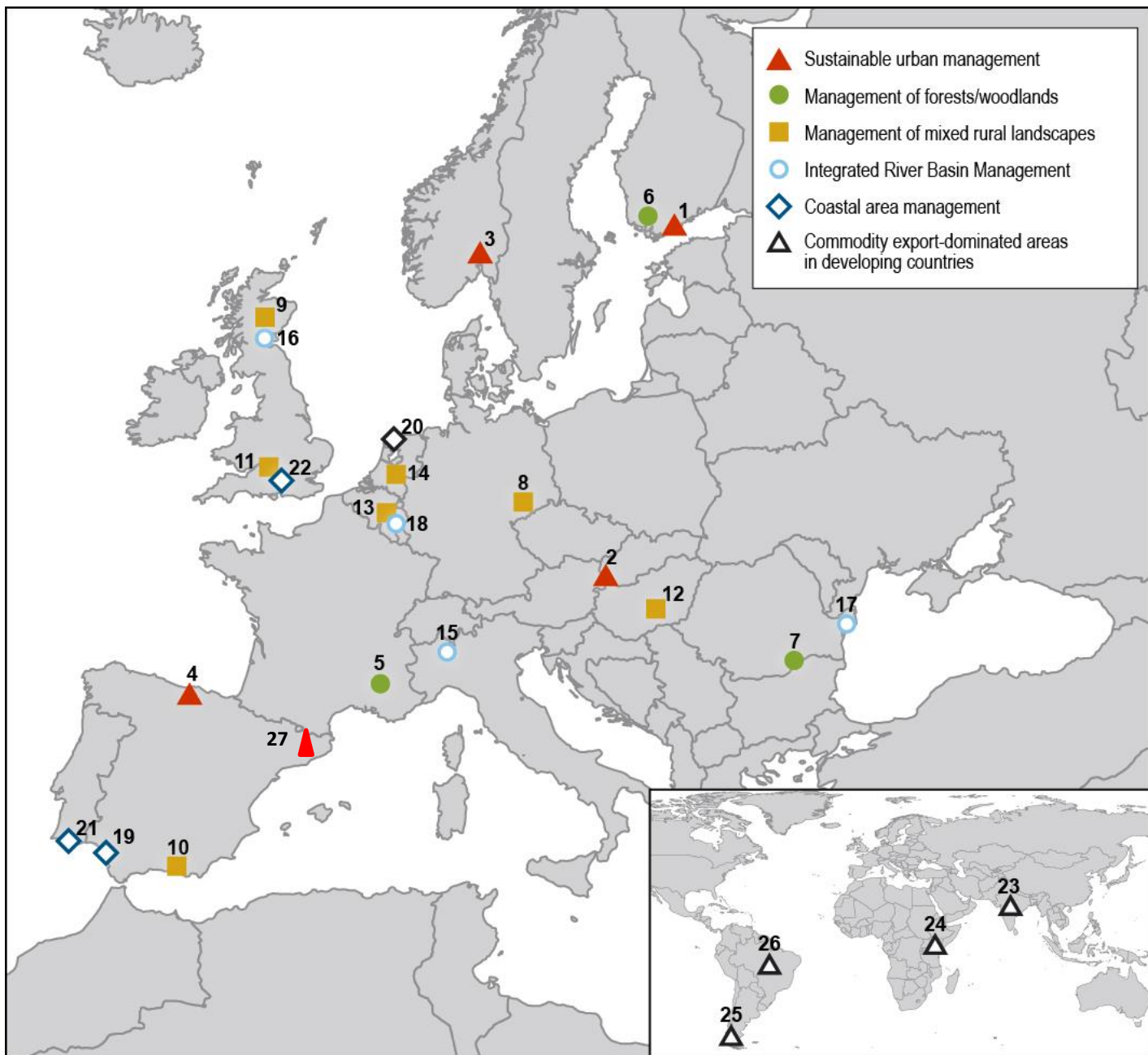
Figure 2.1: Location of OpenNESS Case studies (No=27).

2.1. Summary of stakeholder involvement and use of ES concept in the case studies

Francis Turkelboom, Jan Dick, Wim Verheyden and Hans Keune

The following sections summaries the individual questions as written in the reporting template which was focused in a chronological order. The order has been changed slightly to groups question into subheadings for analysis these are:

2.2.1. Stakeholder involvement in the case studies

2.2.2. Establishment of the CAB

2.2.3. Functioning of the CAB

2.2.4. CAB activities

2.2.5. Use of ecosystem services and natural capital concepts

2.2.6. Expected outputs/deliverable and possible risks

Some of the questions lend themselves to numerical analysis while others are more descriptive. The reader is encouraged to read the complete reports in section 2.2 to obtain a full understanding of each case study.

2.2.1 Stakeholder involvement in the case studies

Q6: In which phase is this sub-project?

1. Starting up	**5. Planning**
2. Identifying stakeholder positions and problem formulation	**6. Implementation**
	7. Evaluation
3. Resource mobilisation	
4. Development of a shared vision	

In total 22% of the case studies reported they were in project phase 1 Starting up; 41% were at project phase 2: Identifying stakeholder positions and problem formulation while 18% reported they were at project phase 4: Development of a shared vision (Fig x). The remaining projects 8 projects reported a range of project phases (Fig x)

The reporting of a range of project phases reflects that currently the ecosystem service a concept is not simply following a stepwise progression with the project phases effectively overlapping.
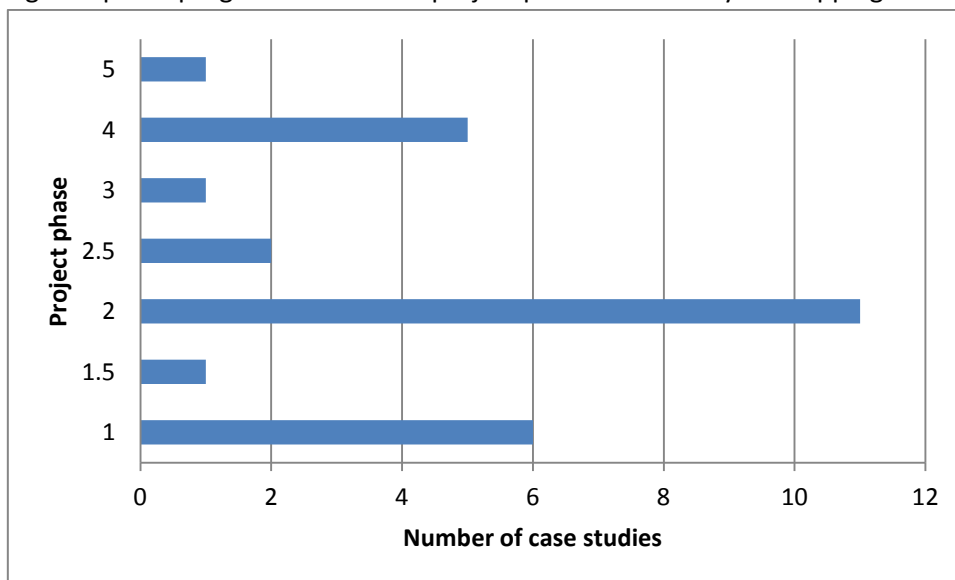

Figure 2.2: Frequency of project phase of the 27 OpenNESS projects on October 2013 (note if more than one project phase reported the mid-point is reported).
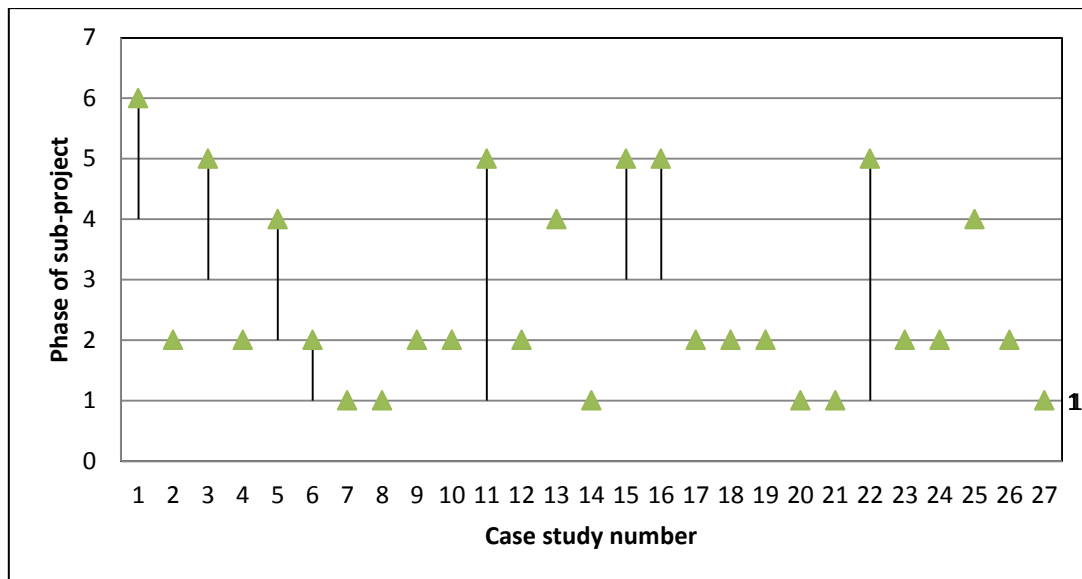
Figure 2.3: Project phase of the 27 OpenNESS projects on October 2013.

Q9: Who will benefit from the results of this sub-project?
Q10: Who will be negatively affected from the results of this sub-project?

Over the 27 case studies, 12 types of affected stakeholder groups could be distinguished. As most projects are in a starting phase, these answers reflect the anticipated effects by the case coordinators.   The most often mentioned beneficiaries are - not surprisingly - natural resources management organizations and local communities.   Typical sectors that make use of the open space are also mentioned, such as agriculture, fishery, forestry, recreation and tourism, conservation organizations, and business.   On the policy level, all levels of policy making were mentioned: local decision- and policy makers, national governments and EU.   Finally, also scientists and consultants were mentioned as a separate beneficiary group. Some explanation on the expected impact on the most important groups is summarized here:

- Local communities: In more than half of the cases, local communities are expected to benefit from the project.   Examples are: nearby communities, downstream communities, water customers, and various user groups. In some cases, local people could also be negatively affected: e.g. people over-exploiting natural capital for short-term gain, people who might dislike changes in the structure of the landscape, or communities who lose access to nature (e.g. by offsetting in other areas).   A special group is the land owners.   Although they might benefit as the rest of the community of the improved ES delivery, they also might face restrictions on their property rights, and/or a decline or increase in the real estate prices.
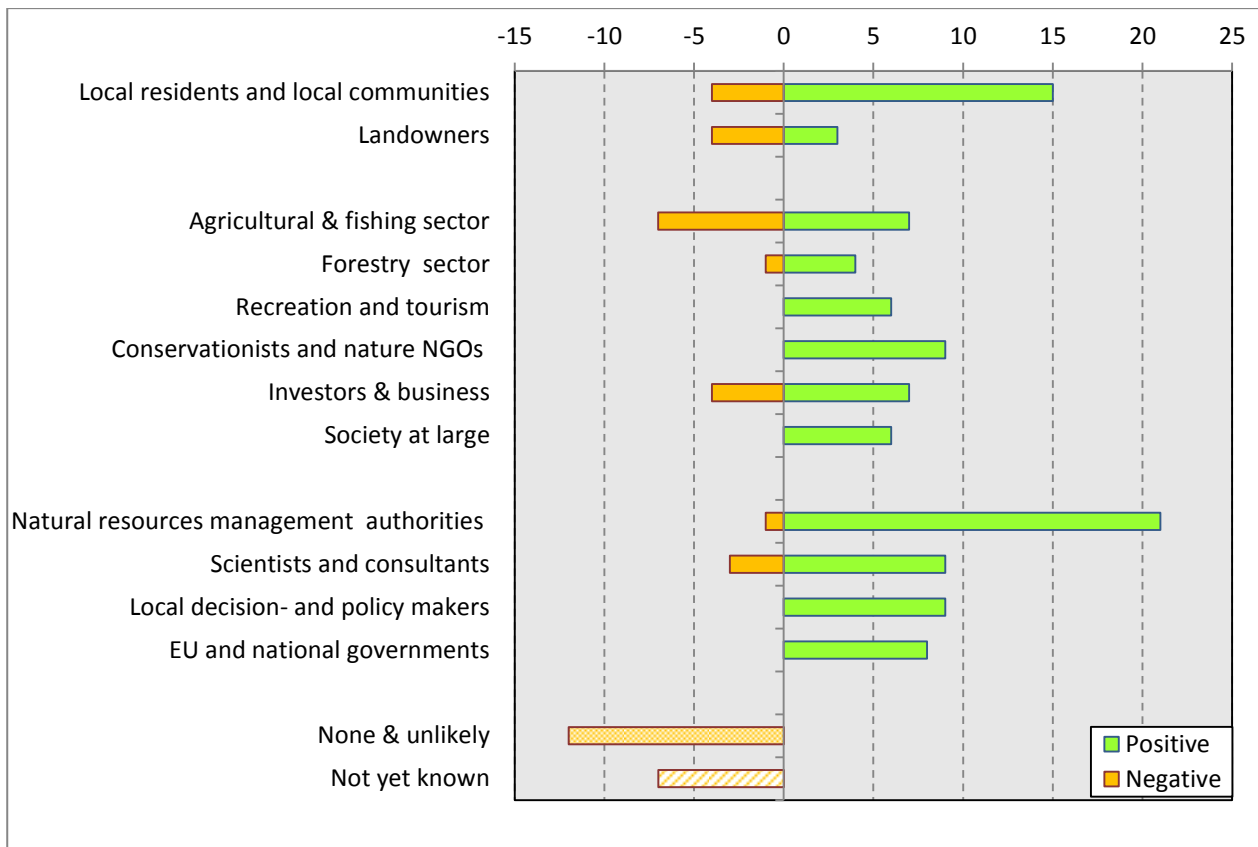
Figure 2.4: Expected positive and/or negative impacts on stakeholders groups in OpenNESS cases, measured on October 2013 (No=27). (One project = 1 counting. Sub-projects were counted separately, if the answers to the question were different for the different sub-projects).

- Agriculture, forestry and fishery: These sectors are expected to be affected both positively and negatively (depending on the case). Farming and forestry sectors could benefit from more sustainable delivery and/or management of ES needed for agricultural production, but could also benefit from alternative opportunities (e.g. shared use of land, agricultural landscape management, certification, payments to generate ES or to create nature on their land). On the other hand, some fragile areas might be taken out of production or some intensively managed agricultural lands could face from some restrictions.

- Investors and business: Opportunities were mentioned for businesses which require a reliable water flow or which are prone to flooding, e.g. the off-setting sector and bio-energy producers. On the other hand, conventional grey infrastructure designers or investors which are seeking benefit from unsustainable use of targeted ES and NC stocks might experience restrictions.

- Society at large: These benefits mainly refer to reduction of carbon dioxide emissions, more cost efficient way of managing nature and landscapes, maintenance of desired ES, and better protection of biodiversity.

- Natural resources management organizations: These include forest administrations, protected area managers, water management bodies, environmental agencies, urban planning agencies… Their benefits are mainly indirect. By more accurate information about the processes, quantity and/or value of ES/NC, these agencies will have better data to base their strategies/plans on, or to justify their protection. In some cases, they are also expected to benefit directly, by better delivery

of desired ES.   On the other hand, agencies which have a very sectorial approach might perhaps be less receptive to the results of the project (mentioned in 1 case).

- Policy support and policy makers at different levels are expected to benefit from more accurate information and better planning tools.

2.2.2. Establishment of the Case Study Advisory Board (CAB)

Q14: What do you expect from involving stakeholders in your CAB?

Expectations from the case coordinators of involving stakeholders in the case studies via a case study advisory board (CAB) in OpenNESS cases can be sub-divided in 4 main categories:

- Problem solving (37%): This is perceived as the most important advantage by the case coordinators. It is expected that better opportunities, wins-wins, conflict solving solutions, better suggestions for planning or policy could be found. In this way, the final research findings are expected to have a higher relevance, credibility, legitimacy, ownership and (institutional and/or public) support from the stakeholders. Finally, it is expected to smoothen the dissemination and implementation of the project results.

- Increased interaction between actors (31% of all the provided answers):   Ten cases mention that one of the major benefits of working together within a CAB will be improved consultation, dialogue, collaboration, deliberation among the main stakeholders and the researchers. This is expected to improve the co-development of knowledge, to raise awareness (regarding sustainable land-use, use of ES concept), to set research priorities, to ensure that the research is close to the actual knowledge needs, and to guide the next steps.

- Support research process (20%): Several case coordinators also see direct benefits to their research activities.   Working with the CAB is expected to provide support for research from the key stakeholders, easier access to data and knowledge, feedback to the research results, and testing and validation of results or proposed policy instruments.

- Diagnosis (12%): Engagement with all involved actors is expected to get a better picture of the issues at stake, such as: policy-making and management, dynamics in the region, complexity, conflicts and underlying values and interests of different stakeholders, constraints related to the operationalization of ES.
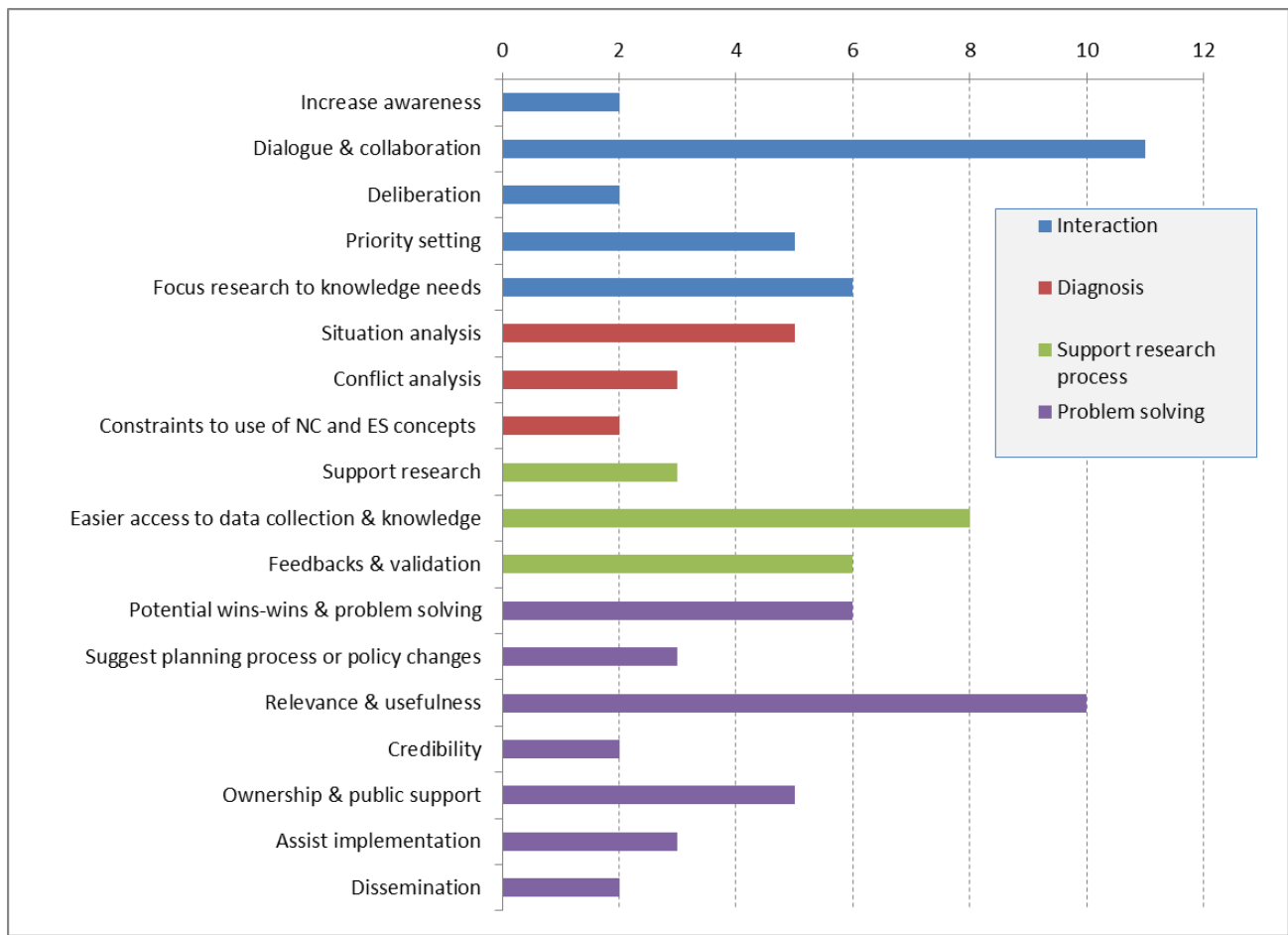
Figure 2.5: Expectation of the OpenNESS case coordinators regarding the involvement of stakeholders via the case-study advisory board (CAB), measured on October 2013 (No=27). (One project = 1 counting. Sub-projects were counted were counted separately, if the answers to the question was different for the different sub-projects).

Q13: Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?

In total 59% of the case studies report that they had not yet formally established a case study advisory board (CAB). However, the majority report that they had already worked with individuals or institutions who they considered would be part of the CAB (see question 16), and are currently in an informal phase of establishing their CAB.

Q1: Role of research leader in relation to the case study

In 15 case studies out of 27, there will be only one research leader. In the other cases, there were 2 persons selected for this role. Most of these research leaders indicated that their role in relation to the case study is that of research coordinator for the case study, and/or for a specific task within the case study (for instance based on specific expertise, especially when there is more than one research leader). In two case studies, the director of the organization is selected as research leader.

Only twice, the tasks of the research leader were described in more detail, such as: the coordination of the case study team, chairmanship of different councils, contacts with relevant stakeholders and the Case Advisory Board (CAB), client-partner-communication in general, dissemination, capacity building, collaboration with WP5 and process documentation.

Q2: Role of case study representative in relation to the case study

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In 20 out of 27 case studies, representatives have been selected. In most cases, this will be one or two persons. Their roles include: *"representation of the Case Advisory Board (CAB), responsible for communication and public relations"* and *"continuous monitoring and support to the execution of the working plan and validation of obtained results"*.

In 3 case studies the contact person has not been chosen yet (for instance because the Case Advisory Board (CAB) was not yet established), or this box was left empty. In two cases, the organization that will deliver this representative was already decided, but specific individual was not yet selected. Another case study mentioned that the selection of a contact person was not relevant because this did not apply to their Advisory Board (which has a dynamic composition), but they also expected that some kind of "leader" might probably arise more naturally after a while.

Q16: Which of the CAB members have you worked with before the start of OpenNESS project?

In total, 89% of all case studies reported that they had already worked with several of the stakeholder who would constitute their CAB. None reported that there was a problem of engaging stakeholders. However, one case (Wadden Sea, The Netherlands, No.20) reported that; *"We have consulted local policy makers involved with the case. Up to now they have not been convinced that including ES is of benefit in their case."*

Q15: Who are the members of your case study CAB i.e. affiliations?

Most cases have already established a Case Advisory Board (CAB), formally or informally. In some of the case studies, the CAB was (partially) based on a pre-existing group or partnership. Nevertheless, almost every case study gave a (first) indication of the partners who are expected or who declared their interest to join the CAB. The exact composition of the CAB was strongly related to the specific focus and/or other criteria. For example, one case study will focus specifically on local and the regional or national level, so their CAB members will be mainly policy makers. Another case explicitly made the distinction between "CAB-members" and "non-CAB contacts" (aiming for instance at direct contacts with high level representatives).

Two cases mentioned that they have a 'distributed CAB': for 'Sustainable forestry in Tierra del Fuego' (No.25) the reason was that their CAB members are spread out all over the county; while for 'Restoration Warwickshire' (No.11) and 'Restoration of Essex coast' (No.22) it was rather because they operate in a business context.

Q17: How were the CAB members selected?

CAB members were selected because of different reasons. Most of the times, CAB-members are representatives from stakeholders groups, which fulfil one more of the following criteria:

Table 2.1: Considered criteria for inviting stakeholders in the CAB of the respective OpenNESS case studies.

Relevant organizations	• Organizations **responsible** for planning and /or management and/or conservation in the area (or in the nearby surroundings) (e.g. water management, forest management, planners, decision makers). • Large **experience** in the topic and/or relevant professional background (especially regarding selection of scientists and policy makers).
Local stakeholders	• **Locally** or regionally embedded organisations. • **Providers** of (specific) ES in the area. • Stakeholders with conflicting interests. • **Users** of (specific) ES in the area, considering the degree to which different groups depend on ecosystem services for their livelihood, income and well-being.
Process-based criteria	• **Power** to influence decisions over ecosystem services management and governance. • Organizations with a known or assumed **interest** in the area, in the theme and/or in the ES/NC-approach. • **Involvement** in (collaborative) structures that have been already established earlier in relation to the project area. • Their **willingness** to cooperate in the project. • **Previous working experience** with particular stakeholders and/or good relationship with the case study research leaders. • **Recommended** by other stakeholders. • **Number**: from minimum 8 and no more than 20 partners

Stakeholder involvement can also vary over time: In one of the case studies, a first selection of both topics and stakeholders was done by the researchers, but during the first CAB meeting the focus of the case study was refined both spatially and thematically. Based on these refinements, new additional stakeholders will now be invited to join the CAB. This is a good example of using the feedback of participants for both problem framing and stakeholder representation. Another case study mentioned that membership will be reviewed annually (based on needs or changing circumstances). One case study has neither a fixed composition nor a fixed number of participants, because this is part of their strategy for the CAB to gain slowly the confidence of all stakeholders. Finally, there is a case study where no real CAB will be set up, but where they will work together with partners to the extent to which these partners are critical to the effective development of the business model.

Interestingly, one case study referred to a specific law which describes how members involved in a participatory process should be selected.

Q18: Is there anyone (or group) not represented? If yes, why?

There is wide range of replies related to absence of stakeholders:

- In some cases, this was answered with a clear "No" or was left blank.
- "We don't know yet" or "Not yet applicable".
- In some cases, it was a deliberate choice to limit the number of stakeholders at the CAB, based on the focus and/or the targets of the project (e.g. representation based on relevance of partners for forest management and biodiversity). Another reason is to limit the CAB into a manageable size.
- Some cases were aware of a problem of under-representation, but they were still working on a solution (for instance by looking for additional representatives).
- Case study leaders mentioned that they could only invite the stakeholders, but they actually did not know if they will show up (on the longer term). Stakeholders groups could decline participation due to lack/loss of interest or due a low "willingness to negotiate and compromise". These are common problems with participatory approaches. In one of the case studies, a stakeholder deliberately chose not be become actively involved, but preferred to stay only a corresponding member at the moment.

It was interesting to see that some of the case study leaders also mentioned a strategy to include a wider group of stakeholders in the project through other ways of involvement (apart from the CAB), so that their opinions can also be integrated.

Q24: How do you perceive the level of trust between the different CAB members?

In 13 of the case studies (48%) the perceived level of trust among stakeholders was high, although some cases realized that the real issues are not yet addressed or that some important stakeholders are not yet included (e.g. stakeholders with direct personal stakes). In this way, it is possible that distrust and conflicts could potentially appear in the future.
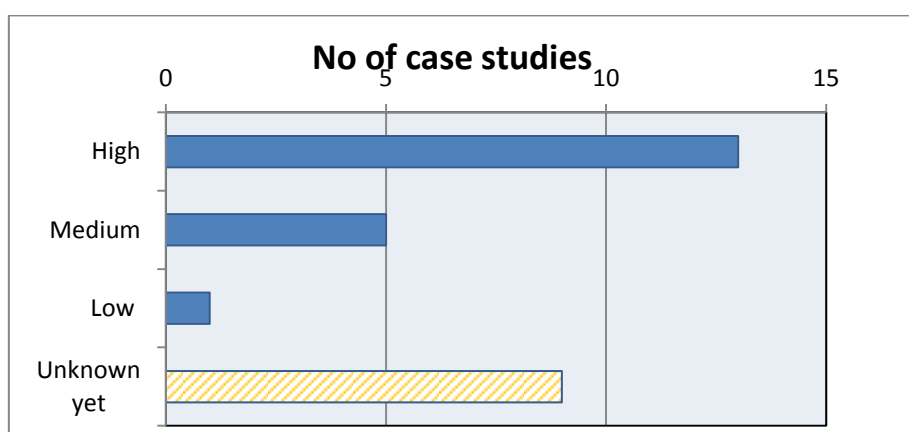

Figure 2.6: Perceived level of trust among the different CAB members in 27 OpenNESS case studies, estimated at October 2013.

In 6 cases, the level of trust was low of medium, mainly due to historical reasons. In one case, there was fear that involvement in a research project might expose some none-compliance related to certain

environmental laws. Two cases mentioned that they will use the help of another organization that can act as a trustworthy mediator in the process. For 9 cases it was still too early to make a judgment about this topic.

2.2.3. Functioning of the Case study Advisory Boards (CAB)

Q25: Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?

There is quite a diversity in the answers. Some are addressing combinations of arguments in their statements. Actor-specific arguments being mentioned concern the relevance or importance to researchers, to planners, to the CAB, and/or to stakeholders (more in general or by several of these groups). In line with actor-specific arguments, connection to current policy practice and/or demand is mentioned several times, as is connection to the OpenNESS goals and expertise.

A second group of reasons are instrumental (goal-related) arguments, which are quite similar as those addressed under question 11 (see below in this document): making ES explicit, uptake in management/planning, awareness raising, conflict resolution, etcetera.

Table 2.2: Arguments for selecting the topic(s) for investigation in the OpenNESS cases (number refers to the frequency this argument was mentioned).

Actor-specific arguments:

Connection to current policy practice/demand/targets	4
Connection to OPENNESS goals and expertise	4
Good opportunity for a project occurring in practice	4
Agreed by the CAB	3
Based on stakeholder consultation	3
Project researchers consider it to be important/interesting/promising	2
Interest amongst the planners to maintain nature/ES	1
Postponed until the CAB is established	1

Instrumental (goal-related) arguments:

Need for awareness raising with respect to the concept	2
To support societal-policy debate on an important current societal issue	2
Need for integration of ES in planning	1
To support conflict resolution	1
Need for more information on these ES	1
Lack of attention for these ES	1
Need for better understanding multi-interest decision making	1

Q26: Who was involved in the selection of this issue/topic?

In most cases, researchers, the case study team and/or the CAB have selected and/or agreed on the topics/issues. In two of the case studies, this choice has been made after a stakeholder-wide consultation process (although we do not know which stakeholders were involved here). Sometimes, also managers and directors were involved in this choice.

Twice, there is a reference made to a previous project, where the needs of managers and local stakeholders were expressed or which responded to national and regional objectives and conflicts.

Q20: How are decisions made within the CAB?

In most cases, there was a clear choice to avoid voting as much as possible. Consensus building (also called "common agreement" or "deliberation") was chosen by almost all the case study leaders as the way for decision-making within their CAB. One stakeholder explained that when a high degree of acceptance is needed, voting has to be avoided, because this would not be a good start for sustainable management in the area. A few procedures for consensus building were mentioned: negotiation between the demand and supply sides of ES, and 'action-support coaching' based on inputs from actors in the CAB (e.g. "territory game").

Only a few case study leaders indicated that a democratic vote was the normal procedure (although many issues are agreed without a formal vote) or that democratic and/or informal votes are expected as alternative procedures for decision making. In some cases, a decision-making-procedure was not yet defined.

It was also mentioned twice that the CAB will not make any real decision at all. The role of the CAB in one case was limited to establish a forum for dialogue and information exchange and to support the corresponding Ministry of Agriculture and Forestry in broad and important forest policy questions. In the other case study, the actual decisions will be made by the relevant planning authorities. Probably, this might be also the same for several of the other cases (considering that the mandate of the CAB is mostly limited to an advisory role - see Q21). So there might be some differences in the interpretation of this question about decision-making: decision about the advice, or decision about the implementation of the advice?

Q21: Does the CAB have an official mandate to tackle the concerned topic?
Q22: Which organization (in or outside the CAB) has the authority to implement the decisions of the CAB?

Only in a few cases, the CAB itself has real implementation power. In most cases (15 out of 27, 55%), the CAB has no (official) implementation power. On the other hand, their advisory role might be crucial, and some of the involved stakeholders do have a mandate to implement specific actions. In that way, there is a wide variety of stakeholders that have a responsibility in the implementation after all. These responsibilities can be very diverse.

However, not all cases are not yet sure what kind of mandate they will have. Some cases mentioned that their implementation power will depend on the results of the investigation and the decided actions.

2.2.4. CAB activities

Q27: What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)

All case studies reported that they had made progress since Dec 2012. This varied between identifying the issues (~90%); the methodology to be tested (~75%); conducting preliminary data gathering and field visits (~25%); to not yet consulting the stakeholders but formulating models considered relevant (~5%).
It was noted that the opportunities to engage with stakeholders was a factor controlling the progress of the work since Dec 2012.

Q19: Dates of meetings with the CAB (representatives)

Several of the case studies reported having several meetings. Four cases have met with their CAB four times, while most had only met once (19 case studies, Figure 2.7). This again reflects the early stage of many of the case studies.
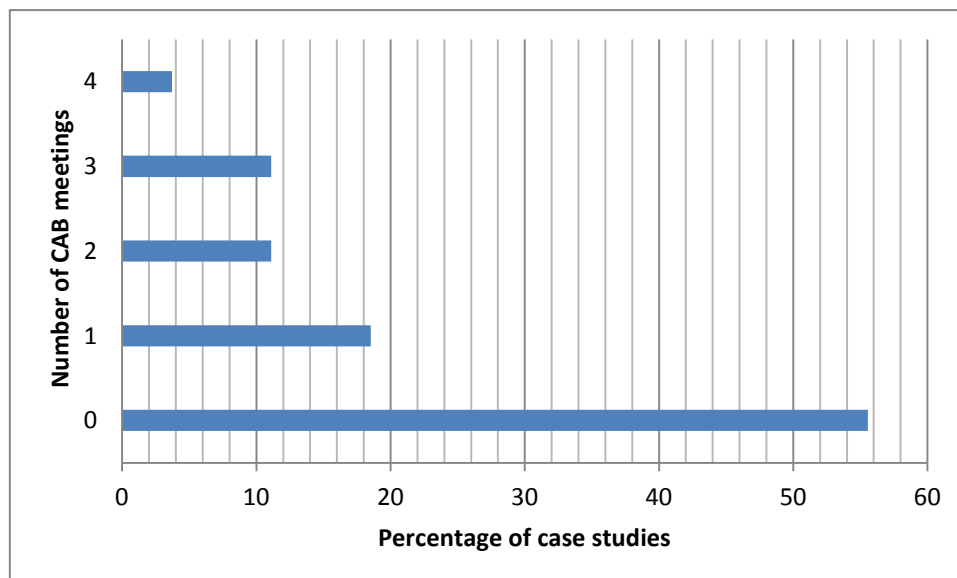
Figure 2.7: Number of the meetings with the CAB in 27 OpenNESS cases, measured on October 2013.

Several case studies have however forecasted that their first meeting will take place by February 2014. A time trend of the occurrence of the first CAB meeting reveals a healthy increase, with around 50% of the case studies having a fixed date of meeting their CAB (Figure 2.8).
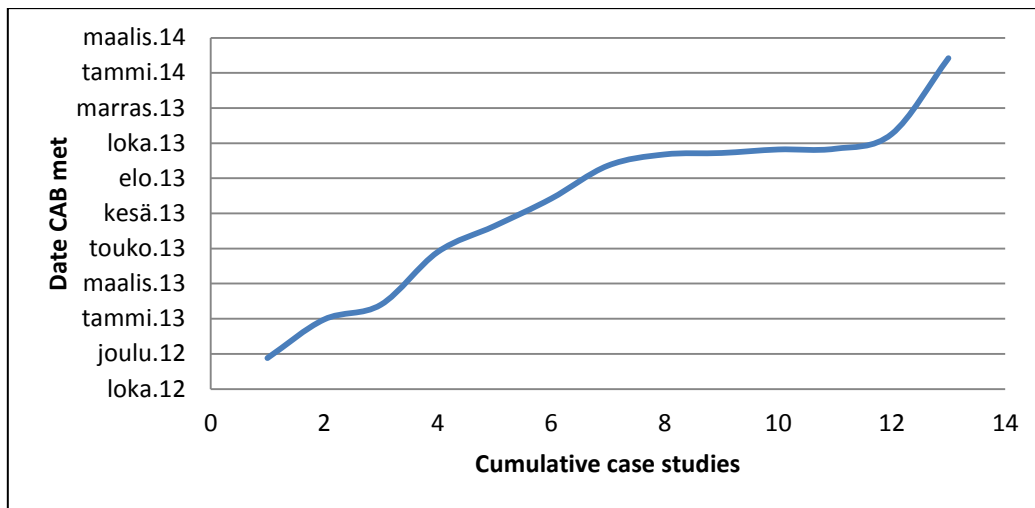
Figure 2.8: The anticipated first CAB meeting of OpenNESS cases (cumulative).

Q31: Planned consultation steps with CAB and stakeholders

92% of case studies will have held some form of CAB consultation within the next 3 months. This shows the progress of the projects.

Q23: How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)

70% of the case studies reported that they will or intend to keep minutes of formal CAB meetings, as a means to record decisions.

2.2.5. Use of ecosystem services and natural capital concepts

Q11: Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?

Clearly usefulness and innovativeness of the concepts for integrating nature in planning/management, as well as the holistic character of the related approach, appeals to most of the respondents. Related to that are the expected capacities that the concepts will: 1) make ES explicit that often are not highlighted or ignored, 2) identifying community benefits, 3) linking societal preferences with land use management options, 4) awareness raising, 5) support to conflict resolution, and 6) to be action-oriented.
Two research perspectives are also mentioned: 1) the need for better understanding of these concepts, and 2) the belief that science based on these concepts can provide objective and/or independent knowledge input in the management/policy process.

Table 2.3: Arguments for using ecosystem service and natural capital concepts in the OpenNESS cases (number refers to the frequency this argument was mentioned).

Expectations of the concept

ES is useful/innovative for integrating nature in planning/management	11
ES is a more holistic, multi-faceted and dynamic approach than traditional concepts	10
ES is useful/innovative for identifying and providing community benefits	6
Make ES explicit, e.g. highlighting services that currently seem ignored or undervalued in planning	5
To link societal preferences and land-use decisions with the use and impacts on natural resources	4
Awareness raising + shared understanding	4
Support conflict resolution	3
Action oriented	1
Objective/independent knowledge input in management/policy process	1
The need for better understanding of these concepts	1

Demand

Stakeholder showed an interest	1

Specific applications

Better understanding of the effects of climate change to biodiversity and ES gains	1
Support a diversity of specific ES applications, such as biodiversity offsetting and PES	1

Q12: What might be (potential) barriers to the use of the ecosystem services approach in your project?

Not all respondents indicate they envisage barriers, but the ones who do, refer to quite a diversity of issues, sometimes in combination. The complexity of the concepts and related approach is mentioned several times. Related to that is the rather abstract character of the concepts, which make it difficult to relate to from every day practice and, partly perhaps because of unfamiliarity, also leads to misunderstandings and miscommunication. Still, even when it is relatively clear what the concepts may bring to practice, practice may not be eager to embrace it. One reason that is referred to several times is a resistance to change, which is common to many practices, including land use management.

Another reason may be the suspicion that the use of the concepts may lead to results that are in contrast with one's own interest (e.g. groups benefiting from destructive harvesting practices). In fact, the approach may also be discredited if only conservationist criteria are taken into account, potentially neglecting other land uses. For nature conservation groups, they may be sceptical to the concepts for other reasons, e.g. the anthropocentric nature of the concept, disregarding the intrinsic value of nature, and financial turn often taken in ES approaches.

Finally, a group of research challenges are mentioned as barriers, such as: contradictory scientific evidence, methodological challenges, problems of limited data, limited availability of resources and time, and lack of historical perspective.

Table 2.4: (Potential) barriers to the use of the ecosystem services approach in the OpenNESS cases (number refers to the frequency this argument was mentioned).

No barriers yet

No barriers detected or envisaged yet	5

Concept (mis)understanding

Complexity of the ES approach	4
Misunderstanding/lack of common understanding stakeholders	4
Novelty of the concept, unfamiliarity with the concept amongst stakeholders	4
ES is abstract, does not seem directly relevant to practice/life	2

Lack of public engagement

Lack of interest/support from stakeholders	4
Lack of public participation	1

Controversy

Anthropocentric character of the concept. Lack of taking into account the intrinsic values is criticized.	3
Resistance to change in current practices: - Incorporate ES into the existing planning tradition which is based on traditional nature elements - Unwillingness for changing existing rules in the planning and in legislation processes - A strong emphasis on timber production	3
Conflicting interests (e.g. parties who profit from (nature) destructive activities)	1
The money component (e.g. regarding financial compensation)	1
Disagreement regarding the role of traditional practices	1
Using only conservationist criteria	1

Research challenges

Lack of data/information	7
Limited availability of resources, time	3
Methodological challenges: Difficulties in establishing the links and relations underlying the 'cascade' model	2
Contradictory scientific evidence	1
Lack of historical perspective	1

2.2.6. Expected outputs/deliverable and possible risks

Q33: Expected outputs/deliverable relevant for the aims and objectives of OpenNESS

While all case studies are ultimately testing the usefulness of the ecosystem service concept, over 50% of the case studies reported this as the expected outputs/deliverable from the project. About 20% expected to deliver a scientific paper, and 3 reported they would deliver a report or demonstration leaflet with the key results and lessons learned.

Q32: Possible risks or obstacles for the planned research

Lack of data was reported as the most likely risk to the delivery of the projects (33% of the case studies). This indicates that several case studies are indeed attempting to tackle risky but realistic issues (and not only the 'low-hanging fruits' which they can guarantee to deliver). Human resources were also highlighted by 25% of the case studies. This covered several aspects including: (i) commitment of the CAB, (ii) as these case studies are working within an active decision making context, there is some fear that there is insufficient human resources to complete the planned studies in time to satisfy CAB.

18% of the case studies reported that they considered it a risk that the CAB would not fully engage, due to perception of too much academic bias, or lack of trust between CAB members.

2.2 Individual case study reports
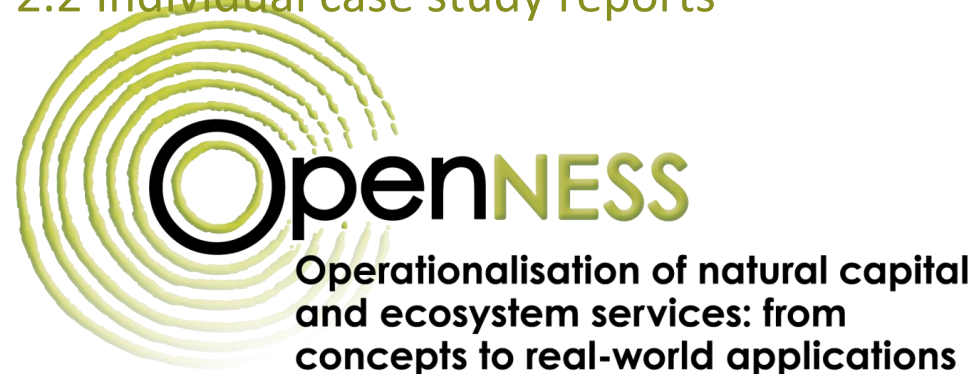
The following pages contain all 27 individual case study reports. Each case study was asked to complete a template following the directions in the WP5 reporting Rationale.

The case studies are combined in the order contained in the Description of work as per the following table.

CS #	Case Title	Country	Case study research leader Institute	Name of case study lead person(s)	Email contact address(s)
1	Sustainable urban planning	Finland	UH	Jari Niemela	niemela@mappi.helsinki.fi
2	Landscape-ecological planning in urban and peri-urban areas	Slovakia	ILE SAS	Zita Izakovičová and Julius Oszlányi	Zita.Izakovicova@savba.sk, julius.oszlanyi@savba.sk
3	Urban green space plans in and around Oslo	Norway	NINA	Henrik Lindhjem	Henrik.Lindhjem@nina.no
4	Urban planning in Vitoria-Gasteiz	Spain	TECNALIA	Efren Feliu	efren.feliu@tecnalia.com
5	Regional and national forest management planning	France	Cemagref-IRSTEA	Sandra Luque	sandra.luque@irstea.fr

6	Regional and national forest management planning	Finland	SYKE	Heli Saarikoski	heli.saarikoski@ymparisto.fi
7	Forest management in Carpathian Mountains	Romania	ICAS	Ovidiu Badea	obadea@icas.ro badea63@yahoo.com
8	Bioenergy production in forest and farmland	Germany	UFZ	Jennifer Hauck Joerg Priess	jennifer.hauck@ufz.de joerg.priess@ufz.de
9	Cairngorm National Park management	Scotland	NERC	Jan Dick	jand@ceh.ac.uk
10	Sierra Nevada National Park management	Spain	UAM	Berta Martín-López	berta.martin@uam.es
11	Restoration Warwickshire	England	EBL	Guy Duke and Pam Berry	movalliduke@skynet.be, pam.berry@eci.ox.ac.uk
12	Farmland management in Kiskunság	Hungary	MTA ÖK	Bálint Czúcz	czucz.balint@okologia.mta.hu kertesz.miklos@okologia.mta.hu
13	Development of agro-environmental measures	Belgium	INBO	Francis Turkelboom	Francis.Turkelboom@INBO.BE
14	Planning with GI in five linked cases	NL, UK, Belgium	ALTERRA	Rob Bugter	Rob.Bugter@wur.nl
15	Wetland construction and restoration	Italy	JRC	Fabio Masi	masi@iridra.com
16	Restoration of water resources in Loch Leven	Scotland	NERC	Laurence Carvalho	laca@ceh.ac.uk
17	Adaptive management plan for Lower Danube River	Romania	UB-DSES	Angheluta Vadineanu	angheluta.vadineanu@cncsis.ro
18	Integrated river basin management of Demer River Basin	Belgium	INBO	Francis Turkelboom	Francis.Turkelboom@INBO.BE
19	Doñana protected areas management	Spain	UAB	Erik Gómez-Baggethun	Erik.Gomez@uab.cat
20	Coastal area management in Waddensea	Netherlands	ALTERRA	Chris Klok	Chris.Klok@wur.nl
21	Coastal area management Sagres region in Portugal	Portugal	CENSE	Rui Santos, Paula Antunes	rfs@fct.unl.pt ; mpa@fct.unl.pt
22	Restoration of Essex coast	England	EBL	Guy Duke and Pam Berry	Guy Duke <movalliduke@skynet.be>, pam.berry@eci.ox.ac.uk

23	Cash crops driving land-use change in forest mosaic landscapes	India	IBRAD	S.B. Roy and Raktima Mukhopadhyay	sbroy_chairman@yahoo.com; raktima2000@yahoo.com
24	Sustainable land management in Kakamega Forest & Adjacent Community	Kenya	KEFRI	David Odee	dwodee@gmail.com
25	Sustainable forestry in Tierra del Fuego	Argentina-Chile	CADIC CONICET	Guillermo Martínez Pastur	gpastur@conicet.gov.ar
26	Bioenergy production in interior São Paulo state	Brazil	UNESP	David M. Lapola, Patricia Pinho	dmlapola@rc.unesp.br ; patricia.pinho@inpe.br
27	Sustainable planning in the Barcelona urban area	Spain	UAB	Francesc Baró, Erik Gómez-Baggethun	francesc.baro@uab.cat erik.gomez@uab.cat

WP5 Reporting Rationale

Why this WP5 reporting format?

There are three main reasons for this common WP5 report which should be completed by all case studies:

1. Reporting our work in WP5 is a project deliverable and therefore standardisation is helpful;

2. The questions are designed to help others to learn from your case study.

3. Set up a baseline for comparative analyses of different case studies related to usage of ES&NC concept & tools and collaboration with stakeholders.

Who should reply?

At this stage, in principle it is sufficient if the case study research leader (who is responsible for the research in the case study) in collaboration with the case study representative (who is responsible/facilitates the implementation of actions in the case study) complete this report. But, others could contribute as well, such as other members of the Case Advisory Board (CAB).

What will be done with the results?

- Within WP5 we will make a synthesis of the reports, as required by Project Deliverable 5.1: *"Report on the first cross-WP project workshop showing the results of the review exercise and a detailed workplan for each case study"* (month 12). We will start the report with a synthesis of the case studies, which will be followed by all the individual case study reports.

- The details of the case studies in this report will be considered as a baseline, and will be used for the final report of your case in Year 4 of the project. The expected results are an overview of the used ES & NC concepts and tools and their evaluation in all OpenNESS case studies. This last deliverable from WP5 (5.4) will be gradually built up over the next 3 years. So the final report of your case will be produced in the most efficient way (i.e. no need to repeat information that was already provided and submitted to the EU).

- It is also hoped that this information will allow mutual learning between the cases, and will assist in setting up comparative analysis between the case studies if appropriate.

Timing

Deliverable 5.1 is due to the EC on 29th Nov 2013 and the completed reports for the 26 case studies will form a substantial element of it. This report therefore needs to be completed and send to the WP5 coordinators **by 1st Nov 2013** (jand@ceh.ac.uk). We expect that you should come with a draft version of this report to the Loch Leven workshop (21-24 Oct 2013), and that it can be completed to a large extent during the workshop.

Questions?

If you have any questions, please contact jand@ceh.ac.uk or francis.turkelboom@inbo.be

WP5 Report

Case Study 1: Sustainable urban planning, Finland

Jari Niemelä, Department of Environmental Sciences, P.O. Box 65, Viikinkaari 1 FI-00014 University of Helsinki FINLAND

Case and respondent's information	
Case study Research Leader	Jari Niemelä
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Panu Lehtovuori
Role of case study representative in relation to case study	CAB chairman, architect who chaired the planning competition for the case study area

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The aim of this case is to **explore the ways in which ecosystem services can be taken explicitly into account in the Sibbesborg urban planning process.** OpenNESS researchers will work together with the Sibbesborg planning team, consisting of architects, consultants and representatives of Sipoo municipality, and support the planners in identifying, measuring, mapping and valuating ecosystem services and the green infrastructure. The aim is also to assess how to benefit from ecosystem services in social and economic terms. A special focus is on green infrastructure and new tools to manage green space as part of urban realm. Distinct themes of the Sibbesborg plan approved by the municipality are local food production and green care, which refers to social, health and educational services relying on natural and agricultural environments. For more information about the area, see http://www.sipoo.fi/en/sibbesborg

1.2. Specific aspects or issues addresses in the OpenNESS project

In your case study, it might be possible that there are more than one specific issue/conflict/ opportunity/desired change which will be studied. In this case, they can be considered as different sub-projects. Please number your sub-projects sequentially and maintain the same numbering system through this report and for future reporting. Please copy boxes for additional sub-projects

Title sub-project 1:

Title and description of sub-project:
At the moment we do not have sub-projects so this section will deal with the entire case study.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

It would be helpful if you could also describe the major components of your sub-project as a systems diagram. This would help people to visualize the topic that you are dealing with. The format of the diagram is entirely open, but for comparison with others it would also be useful if you could indicate the biophysical components of the ecosystem that are most important in your study (i.e. biophysical structures and processes). Also can you identify some of the properties that give rise to the ecosystem services that you are dealing with as well as the services themselves (i.e. show also on the diagram the ecological functions and the services that depend on them)? Finally some idea of the beneficiaries and the values that are assigned to the services would provide further insights. Use arrows to show the causal links between the different system components, and how the various external pressures might impact on the system.

Please don't feel constrained– there are no right answers. The diagram does not have to be a final statement on your problem and it may evolve over time as your work progresses. For convenience you can attach the diagram to the reporting template as a PowerPoint slide. An example of such a diagram is shown below. This was a first attempt to apply 'ecosystem service thinking' to a case study in Finland.

Exploratory case study
– Heli Saarikoski (2013)

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
We are in a phase that includes components of 4, 5 and 6-

What is the desired short-term result (output)?:
Improved collaboration with the planners.

What is the desired long-term result (outcome)?:

Securing of ES and NC along the planning process and holistic implementation to the final plan.
Who will benefit from the results of this sub-project?
Planners, future residents, local businesses, decision-makers.
Who will be negatively affected from the results of this sub-project?
nobody

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The ES approach was considered useful when planning a large residential area in a mainly agricultural and forest-dominated landscape. ES was introduced already at the planning competition stage (in 2011) as one set of criteria used to judge the competition submissions. It was hoped that the ES approach would complement the 'traditional' planning of approach of setting aside valuable nature areas and delineating green spaces etc. ES is a more holistic, multifaceted and dynamic approach than the traditional. Currently the Sibbesborg planning has highlighted on benefits emerged from two ecosystem services: green care and local food. We hope that the ES concept will bring some new innovations to protect nature and its function, while in the same time providing benefits for current and future residents.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
The complexity of the ES approach is challenging as well as its abstract and dynamic nature. It may be challenging to incorporate ES into the existing planning tradition which is based on traditional nature elements.

2. Understanding stakeholder involvement and decision making process

There are usually many different types of stakeholders involved in the case studies but for this report we concentrate on the Case study advisory Board (CAB) described in the Description of Work for the project.

The main idea of a CAB is that OpenNESS researchers can consult and interact with stakeholders in their case studies (= science-practice forum).   This is essential as one of the main goals of OpenNESS is to operationalize and test ES&NC methods and tools in real life.   This is only possible if there is interaction with the people who will experiment and/or use the results of these methods and tools.

To better understand the characteristics of your CAB, we would like you to answer the following questions :

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes, the CAB was established in the autumn of 2012 and had its first meeting in December 2012. We have met several times since then.
What do you expect from involving stakeholders in your CAB?
Interactions between the planners and decision-makers and the Openness researchers. Support for our research and input from our side to the planning process.
Who are the members of your case study CAB i.e. affiliations?
Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land

owner, researcher, policy maker, NGO etc
The members includes 7 persons: chairman of the planning competition jury (architect, chairman of CAB), planner responsible for the planning area, authority from the Uusimaa regional organisation, two political decision-makers from the municipality, planning consultant that won the planning competition, Finnish Forest and Park Services responsible for managing protected areas in and outside the planning area, regional (county) planning office. In most meetings there are also other planners present.
Which of the CAB members have you worked with before the start of OpenNESS project?
Chairman of the CAB, some of the planners.
How were the CAB members selected?
We selected persons that are either professionally involved in the planning (planners, decision-makers), have an interest in the area or are responsible for some functions in our immediately outside the area (Finnish Forest and Park Service, regional planning office).
Is there anyone (or group) not represented? If yes, why?
Residents are not represented. This is somewhat problematic because it is a planning area and we do not know who the future residents are. However, a 'stakeholder group' will be established where the current residents are represented. Local businesses are not represented either but some businesses will be in the 'stakeholder group'.
Dates of meetings with the CAB (representatives)
December 12, 2012: 'kick-off' meeting of the CAB, planning update, presentation of the OpenNESS project, discussion of the role and modus operandi of the CAB. March 22, 2013: OpenNESS issues, planning update (e-g- involvement of OpenNESS researchers in planning meetings), and way forward discussed. August 15, 2013: OpenNESS issues (starting to work on task 5.1., i.e. CABs will identify desired changes and/or conflicts associated with managing ES and NC within their area), planning update, and way forward discussed. October 2, 2013: OpenNESS issues (continued working on task 5.1., i.e. CABs will identify desired changes and/or conflicts associated with managing ES and NC within their area), planning update
How are decisions made within the CAB?   *E.g. democratic vote, consensus building?*
Consensus building.
Does the CAB have an official mandate to tackle the concerned topic?
The CAB will have no implementation power. The power is with the involved organisations who have mandates on specific issues. The role of the CAB is to use its expertise to support the planning process and the interactions between planners and OpenNESS.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Planners and (political) decision-makers.
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings, consultations afterwards.

How do you perceive the level of trust between the different CAB members?
There exists a high level of trust between CAB members.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The incorporation of the ES approach into the planning process of the area is the general topic. It is of interest for the planners of this particular area as they want to maintain as much of the natural area (and ES) as possible. They want to create a unique town with high level of ecosystem services.
Who was involved in the selection of this issue/topic?
Initially ES was included in the planning competition for the area as one goal. Thereafter it has been elaborated in the planning process.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
The CAB has met several times. In addition, Openness researchers have participated in several planning meetings, often open meetings with residents and other stakeholders. A lot of interaction has taken place between the Openness researchers and the planners.
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
No sub-projects exist at the moments but the general goal is to work with CAB on Openness task 5.1. Material from the planners will be received, e.g. questionnaires that have been sent to residents.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
BBN
Expected results:
Support to the planning process, gathering of data, completion of task 5.1.
Timing:
The next 12 months
Responsibilities:
Openness researchers, CAB
Planned consultation steps with CAB and stakeholders:
CAB will meet regularly (next meeting in November 2013)
Possible risks or obstacles for the planned research:
The planning process is advancing rapidly and it is hard for the researchers to follow and allocate

enough time to this project as funding to OpenNESS researchers is very limited (i.e. they are involved in other projects in addition to this to support themselves).
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
Support to the planning process, completion of task 5.1. and preparation of a scientific manuscript.

WP5 Report

Case Study 2: Landscape-ecological planning in urban and peri-urban areas (Model area Trnava, Slovakia)

Peter Mederly[1], Zita Izakovičová[2], Peter Bezák[2]

[1] Regioplán Nitra, Slovakia, [2] Institute of Landscape Ecology SAS, Bratislava, Slovakia

Case and respondent's information	
Case study Research Leader	Zita Izakovičová
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Peter Mederly
Role of case study representative in relation to case study	Management and coordination of case study activities

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The **main objective** of case study is an evaluation of current state of the ES/NC framework implementation in Slovakia and proposal of the appropriate methods for the landscape and spatial planning at local and regional level in urban and peri-urban areas.   **Partial goals** of case study are: • analysis of current state of the ES/NC implementation in Slovakia (legislation, competence and role of authorities),   • review of existing planning and strategic documents,   • proposal for changes in the planning process due to improved implementation of the ES/NC framework in the management and decision-making process,   • evaluation of particularities of the urban and peri-urban areas with respect to the ES/NC framework.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:
Specific goal of case study is aiming at **proposing an enhanced planning process tool/guidelines** with strong emphasis on the ES/NC framework, which will be focused on: • sustainable use of nature resources, • creation of the ecological networks and green infrastructure, • ecological optimization of land use, • elimination of the current environmental problems resulting from omitting ecological principles in landscape management. Achieving of this goal will be based on comparison between present and prospective position of ES/NC framework in the planning and decision process on both local and regional level in Slovakia. Assessment of the role of ES and NC in former studies will be made and the new approach based on ES and NC concept will be proposed. Former studies in region were based mostly on LANDEP methodology and ecological network approaches. Case study will be based on MA framework and CICES classification of ES/NC; possibly some other methodologies will be used. Study will be based mostly on landscape planning (including ecological networks and land parcelling projects) and urban planning processes on local and regional levels. At the first phase we plan to analyse current national legislation tools, sectorial policies and programs, implementation of European directives and schemes in Slovakia with respect to ES and NC framework. For achieving this results the cooperation with stakeholders and testing appropriate research methods used in the OpenNESS project will be necessary.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
A causal chain for Trnava case study will be developed during the following months of the project and will be presented to the stakeholders (see below). *We try to develop the 1ˢᵗ version of the diagram and send to test*
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Phase 2 – Establishing stakeholder body and CAB, analysing of current state of the problem. CAB was established on first meeting on 24ᵗʰ September 2013, when first results of case study were presented for stakeholders.
What is the desired short-term result (output)?:
(Preliminary report is following - the current state of the implementation of the ES/NC framework in the planning process in the model area.) Short-term result is identified as can be presented as follows: - overview of local and regional planning and development documents and processes in the study areas with respect to ES/NC framework

- needs and positions of local and regional stakeholders towards ES/NC framework
What is the desired long-term result (outcome)?:
Development of new methodological approach in the landscape planning process in Slovakia with the implementation of the ES/NC framework and inclusion of stakeholders
Who will benefit from the results of this sub-project?
• decision makers at local and regional level - better planning process would be a strong supporting tool for environmentally sound decision making • natural resources management and nature protection authorities – better information about the value of ES/NC and justification for their protection
Who will be negatively affected from the results of this sub-project?
• investment companies, developers, individual investors – stronger emphasis on the ES/NC protection would lead to additional payments or restrictions • owners of land parcels – restriction of their property rights.

1.3. Use of ecosystem services and natural capital concepts:

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
ES/NC framework could be a comprehensive concept for assessment the quantity and quality of natural resources, their benefits and functions for nature and people. Subsequently this could be an appropriate framework for the landscape and spatial planning process. Current planning process in Slovakia is based mainly on sectorial legislation and rules, that are in some cases contradictory. The ES/NC concept is not considered yet, comprehensive system approach is missing. Preference is given to a partial and individual goals instead of well-balanced planning with consideration of public benefits and functions of EC/NC components too.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
• unwillingness for changing existing rules in the planning and in legislation processes • lack of interest of some stakeholders to communicate , especially policy makers • misunderstanding by some private groups and public.

2. Understanding Stakeholder involvement and decision making process

To better understand the characteristics of your CAB, we would like you to answer the following questions :

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes
What do you expect from involving stakeholders in your CAB?
Main benefits of stakeholders involvement: • feedbacks to the obtained results • consultation in working process (on proposed working steps) • feedback and testing the usefulness of proposed methods.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
• policy makers – Ministry of Environment • regional authorities – Trnava Region Office, Regional Construction Office • local authorities – Trnava Town, other municipalities • NGO – the environmental field • industrial sector – Automotive cluster, Energy cluster • urban and spatial planning companies – regional, local • researchers – Trnava University, other experts in ES/NC topic.
Which of the CAB members have you worked with before the start of OpenNESS project?
Several CAB members were involved in previous projects led by ILE SAS. The majority of the CAB members and stakeholders have experience with planning process and decision making, some of them have knowledge of the ES/NC issue.
How were the CAB members selected?
CAB members were chosen to cover all variety of key stakeholders, they are at least partially informed about the issue of ES/NC framework. (Personal contacts of project participants were also used.) The CAB members were personally contacted, selection was made according to our experience with the particular stakeholders and recent position that is occupied by the stakeholders.
Is there anyone (or group) not represented? If yes, why?
No
Dates of meetings with the CAB (representatives)

24th September 2013
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Not yet applicable. Next decisions will be made by consensus building, not voting.
Does the CAB have an official mandate to tackle the concerned topic?
(No – CAB is an informal body of individual members with advisory role in the project.) No officially, but feedbacks of CAB can partly influence the way how foreseen objectives will be reached.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
The CAB will have no implementation power, it is advisory board.
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings shared via e-mail
How do you perceive the level of trust between the different CAB members?
It is too early to assess this topic.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
ES/NC concept is very little known in Slovakia - it is practically unused in activities of regional and local authorities. This concept has not yet been adapted into legislation. Methodology possibly developed in the case study will be the first attempt to put awareness on this issue in the framework of the planning and decision process on the local and regional level in Slovakia.
Who was involved in the selection of this issue/topic?
Researchers of the case study – approving by the CAB

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
- establishing the research team,   - establishing contacts in the model area – Trnava Town, surroundings municipalities, Trnava Region Office, other organizations concerned,   - review of existing planning and strategic documents reflecting implementation of the ES/NC concept,

- interviews with representatives of focus groups and organizations,

- the first meeting with stakeholders, establishing the CAB.

Planned steps for research in sub-project 1:
If you distinguish sub-projects, please copy this table for each sub-project
Goal:
Building a basis for developing an enhanced planning process tool/guideline based on the ES/NC framework First set of analysis At the first phase we plan to analyse current national legislation tools, sectorial policies and programs, implementation of European directives and schemes in Slovakia with respect to ES and NC framework. For achieving this results the cooperation with stakeholders and testing appropriate research methods used in the OpenNESS project will be necessary.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
WP1 - setting up causal chain of structures and functions of the ES and human well-being (own interpretation of cascade model to the case study) and its testing with the stakeholders WP2 - analysis of current national legislation tools, sectorial policies and programs in Slovakia with respect to ES and NC framework WP3 - Spreadsheet-type method applied in case study based on CORINE Land Cover data and expert judgements WP4 - Application of some non-monetary valuation method in case study (preference assessment, deliberative valuation)
Expected results:
1. Analysis of current state of the NC/ES implementation in Slovakia (legislation, competence and role of authorities), methodologies used for ES/NC assessment - **report** 2. Partial analysis of the ES/NC assessment in the model area – **first part** Results will be based on the work of the research team and meetings with the stakeholders and other relevant persons. Further personal communication, questionnaires and interviews will be done.
Timing:
1.   Until Budapest meeting 03/2014: WP1

2. Until 2.WP workshop 10/2014: WP2, WP3, WP4
Responsibilities:
Research leaders
Planned consultation steps with CAB and stakeholders:
In following 12 month we plan 2 meetings with stakeholders and CAB meetings: 1. after the completion of the 1st step: results relating to WP1 (February – March 2014) 2. after 2nd step: results relating to WP2, WP3 and WP4 (September - October 2014)
Possible risks or obstacles for the planned research:
Obstacles are seen especially when causal chain for WP1 will be tested together with the stakeholders as they might not fully understand links between natural processes and human well-being and the need for their understanding. Further obstacles might appear during judgment of ES benefits provided by CLC classes by the experts (WP3) as this is very difficult and subjective assessment. Minor risks are expected when non-monetary valuation is processed (WP4) due to lack of interest from the stakeholders.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
• report about ES/NC framework implementation in Slovakia – usable for WP1,2 • results of the testing of selected methods for urban ecosystem case study under WP3 and WP4.

WP5 Report

Case Study 3: Valuation of urban ecosystem services in Oslo, Norway – developing a spatially representative blue-green area factor

David N. Barton, Graciela Rusch, Henrik Lindhjem, Erik Stange, Stefan Blumentrath, Vegard Gundersen, Marte Qvenild (all NINA), Rasmus Reinvang (SME Vista)

Case and respondent's information	
Case study Research Leader	David N. Barton (dep. Henrik Lindhjem), Rasmus Reinvang (Vista), communication/dissemination leader.
Role of research leader in relation to case study	Research leader
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Tove Margrethe Dyblie, Agency for Urban Environment, Oslo Municipality
Role of case study representative in relation to case study	Special advisor, Agency for Urban Environment. Contact person of Case study advisory board (CAB)

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
Explore how the ecosystem services concept can inform the future implementation of Green Plan for Oslo.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:
• Subproject 1. Conduct a scenario scoping exercise of total economic value of ecosystem services from blue-green infrastructure in Greater Oslo. • Subproject 2. Further develop a spatially representative blue-green area factor (BGF) classification system, also covering existing urban blue-green space. • Subproject 3. Develop the BGF scoring system to account for differences in ecosystem service values of blue-green structures across the city. • Subproject 4. Demonstrate how to calibrate BGF scores with economic and non-economic valuation of inhabitants' current use and future aspirations for blue-green spaces. • Subproject 5. Develop a map application for evaluation of spatially representative BGF scoring for Oslo.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
3-5

What is the desired short-term result (output)?:
Simple illustration of total economic value of ecosystem services, popularized and communicated to a broad audience.
Scientific papers advancing the methods to operationalize the concepts of ES and natural capital

concept in urban planning, especially in assessment of different types of urban areas.
Inputs to guidelines on planning/prioritization of built/non-built areas. Specifically, support for Oslo Municipality's Green Blue Factor (GBF) planning tool.
What is the desired long-term result (outcome)?:
Better urban green space planning taking account of the preferences of citizens
Who will benefit from the results of this sub-project?
Oslo Municipality Government, research community, Oslo inhabitants
Who will be negatively affected from the results of this sub-project?
Potentially those who are for "fewer hurdles" in the planning process concerning new housing construction.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
Highlighting services that currently seem ignored/lower weighted in current planning. More closely linked with preferences of citizens (as opposed to experts and/or particular stakeholder groups). Extend current planning tools for new urban developments to cover the whole jurisdiction of Oslo's Urban Green Plan (current as well as new green and blue infrastructure).
What might be (potential) barriers to the use of the ecosystem services approach in your project?
Complexity of terminology, hard to graft onto current language/practices/guidelines within the municipal government. Particular methodological challenges in monetary and non-monetary valuation for urban ecosystem services .

2. Understanding Stakeholder involvement and decision making process

There are usually many different types of stakeholders involved in the case studies but for this report we concentrate on the Case study advisory Board (CAB) described in the Description of Work for the project.

The main idea of a CAB is that OpenNESS researchers can consult and interact with stakeholders in their case studies (= science-practice forum). This is essential as one of the main goals of OpenNESS is to operationalize and test ES&NC methods and tools in real life. This is only possible if there is interaction with the people who will experiment and/or use the results of these methods and tools.

To better understand the characteristics of your CAB, we would like you to answer the following questions :

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes in practice, formally not finally settled (1-2 institution representatives within the municipality government not yet formally confirmed).
What do you expect from involving stakeholders in your CAB?
Ownership and anchoring of project, higher relevance and usefulness of research design and results. Easier access to maps and other data. Easier communication/dissemination channels.

Who are the members of your case study CAB i.e. affiliations?   *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Different divisions in the Oslo Municipality Government (environment, water, construction)
Which of the CAB members have you worked with before the start of OpenNESS project?
None
How were the CAB members selected?
Using previous SME (Vista) contacts within Municipality Government, initial contact was made and subsequently formal cooperation was established by sending a formal letter to the appropriate division heads and the Oslo Municipality.
Is there anyone (or group) not represented? If yes, why?
We decided to stick with local government representatives for the CAB. We will have a strategy to involve/include wider stakeholders (e.g. architects, property developers, construction companies etc.) in the project through other fora (e.g. biannual seminars or similar). A wider 'reference group' may also be considered based on interest expressed through these
Dates of meetings with the CAB (representatives)
15. February 2013, at Oslo Municipality government offices   23. April 2013, at NINA office   25. September 2013, at Oslo Municipality government offices
How are decisions made within the CAB?   *E.g. democratic vote, consensus building?*
By consensus building. Because the Cab is constituted of representatives of different Agencies within Oslo Municipality we have not seen a need to establish formal governing rules for the CAB.
Does the CAB have an official mandate to tackle the concerned topic?
Yes
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Oslo Municipal Government
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Short minutes of meetings
How do you perceive the level of trust between the different CAB members?
High

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The topic represented an overlap between OpenNESS goals, NINA/Vista expertise and high interest from the Oslo Municipality. It is based on guidelines for assessing property development using

"blue-green factor" scoring currently under development by the Municipal Government.
Who was involved in the selection of this issue/topic?
Case study team & CAB

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
Preparatory work setting up CAB, development of case study content (policy relevance and research dimensions), consultation with the Ministry of Environment.
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
1. Conduct a scenario scoping exercise of total economic value of ecosystem services from blue-green infrastructure in Greater Oslo.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
"Extreme" scenario of landuse with and without green and blue infrastructure(WP2).   Benefits transfer(WP4)
Expected results:
Total economic value of urban green and blue infrastructure of Oslo.
Timing:
Published June 2014
Responsibilities:
Stefan Blumentrath, landuse scenarios
David N. Barton, valuation of urban blue-green infrastructure
Henrik Lindhjem, valuation of peri-urban forests
Rasmus Reinvang, VISTA, communication strategy
Planned consultation steps with CAB and stakeholders:
Meetings with CAB January 2014 to discuss scenarios.
Possible risks or obstacles for the planned research:
Legitimacy of Total Economic Valuation approach as an "awareness raising" tool
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
- Publication of research paper estimating total economic benefit of ESS in Oslo Municipality, with the aim of increasing awareness and interest for NC and ESS among decision makers in Oslo.

Planned steps for research in sub-project 2:
If you distinguish sub-projects, please copy this table for each sub-project
Goal:
Further develop a spatially representative blue-green area factor (BGF) classification system, also covering existing urban blue-green space.
Approaches and methods:
Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7
Development of GIS classification system incorporating elements of the proposed "blue-green factors" at project scale and remote sensing classification of urban land uses.
Expected results:
A classification system for urban blue-green infrastructure that can be used as a basis for a scoring methodology.
Timing:
December 2014
Responsibilities:
Stefan Blumentrath, NINA,   Vegard Gundersen, NINA,   M.Sc. student
Planned consultation steps with CAB and stakeholders:
Meetings with CAB spring 2014 to discuss compatibility of classification with existing urban planning GIS tools.
Possible risks or obstacles for the planned research:
Resolution of remote sensing data may limit the number of green structures that can be observed to a small subset of the structures currently identified in the blue-green factor methodology.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
Urban land use classification system appropriate for scoring ecosystem services of green and blue landscape elements.

WP5 Report

Case Study 4: Integration of a Green Infrastructure Strategy into Urban Planning in Vitoria Gasteiz Municipality

Gemma García-Blanco[1], Efren Feliu[1], Blanca Marañon[2]

[1] TECNALIA Research & Innovation, Edificio 700 Parque Tecnológico de Bizkaia, 48160 Derio, Spain

[2] Environmental Studies Centre, Casa de la Dehesa de Olarizu, 01006 Vitoria-Gasteiz

Case and respondent's information	
Case study Research Leader	Efren Feliu (Tecnalia) Supported by Gemma Garcia (Researcher at Tecnalia)
Role of research leader in relation to case study	Research coordinator of the case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Blanca Marañon
Role of case study representative in relation to case study	Operationalisation of ecosystem services into the Local Land Use Plan-Environmental Studies Centre (CEA) municipal autonomous body of Vitoria Gasteiz Municipality

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The aim of the OpenNESS case study in Vitoria-Gasteiz is to explore the integration of ecosystem services (ES) approach in the Land Use Planning towards: • a better understanding of the urban dynamics,   • an increase in the provision and quality of ecosystem services in the city, with particular stress on socio-ecosystem services   • improvement of urban management in view of the city challenges   by means of the introduction of management systems in the " urban green spaces" conceived as a unique Urban Green Infrastructure in the Land Use Plan / Master Plan.   **Contextualizing the case...**   Vitoria-Gasteiz, capital city of the Basque Country, has been awarded as European Green Capital

2012, being a very proactive administration since the early 90´ in relation to nature conservation, environmental management and quality of its citizens.

Vitoria-Gasteiz and its peripheral areas (actual surface area: 645 ha.) now comprise a system of urban green spaces: five parks and a further two are planned. It contains Wetlands of International Importance by the Ramsar Agreement and four areas declared SCI areas; these are included within the Natura 2000 Network. There is still however a number of degraded areas around the city that still require a considerable amount of work in order to restore them to their natural state. Moreover, work is still underway on the system that will link these green spaces by means of a number of ecological corridors, strengthening an existing Green Belt.

In the early 90´ Vitoria-Gasteiz started an ambitious project to restore and recover the outlying areas of the city, both from the environmental and social viewpoint, creating a Green Belt: a group of peri-urban parks of high ecological and landscape value strategically linked by means of eco-recreational corridors.

1.2. Specific aspects or issues addresses in the OpenNESS project

Quantification of the current and future potential provision of socio-ecosystem services of several green spaces in Vitoria Gasteiz Municipality

The first aspect in which Vitoria-Gasteiz needs to focus on is exploring the most suitable methods and techniques to quantify the provision of socio-ecosystem services (current provision and potential future ones) in a selection of five different kind of "urban green areas" in the city:

- Per-iurban Park: Salburua (LIC and RAMSAR)
- Communication hub: Rotonda del Hipódromo
- New peri-urban park close to the Green Belt: Parque Salinillas de Buradón
- Inner Urban Park: Plaza de la Constitución
- Urban axis: Calle Los Herrán y Portal de Foronda

Besides, the idea is to quantify such provision of ES in different scenarios of urban intervention (related to management systems, plant selection, irrigation requirements , mowing ...)

Prioritization of the most relevant ES provided in each of the urban green spaces

The second aspect in which Vitoria-Gasteiz needs to focus on is exploring the way to prioritize the most relevant ES provided in each of the selected urban green spaces by means of the following key criteria:

- Their type,
- Their relative location within the city
- The management system currently in place and
- Very important their management potential and actions for improvement

Identification of appropriate objectives, actions and measures

A third aspect is the identification of lessons learned and policy options and messages in form of objectives, actions and measures to improve urban management and to be included in the Land Use Plan /Master Plan, always aligned to the following key urban challenges in Vitoria Gasteiz:

- Integration of landscape and social environmental regulation,
- Climate change mitigation and improvement of adaptation capacity
- Improvement of urban water management, particularly linked to flood risk management
- Promotion of biodiversity in city and urban surrounding areas

- Creation of environments which increase health and overall livability of the city (improving air quality, acoustics, reduced heat island effect...).
- Energy efficiency (to be integrated in the Local Energy...

Sendas urbanas y paseos arbolados, Vitoria-Gasteiz

Humedal Ramsar de Salburua, Vitoria-Gasteiz

Jardín de lluvia, Wissahickon Charter School, Filadelfia

Red de carriles bici y transporte público, Vitoria-Gasteiz

Cauce de avenidas en el río Zadorra, espacios multifunción, Vitoria-Gasteiz

...de aguas pluviales, Portland

...idas del río Zadorra,

HEALTH AND WELLBEING by increase of:
Aesthetic values
Cultural and spiritual values
Sports and outdoor activities resources
Community resources- social cohesion
Identity
Local food production

BIODIVERSITY IMPROVEMENT:
Mantenance, protection and improvement of natural habitats, wildlife and biodiversity
Increase of biocapacity

ENVIRONMENTAL QUALITY IMPROVEMENT:
Air quality
Water quality (purification)
Reduction of noise levels
Improvement of soil conditions for agriculture
Soil erosion control

CLIMATE CHANGE MITIGATION:
CO_2 sequestration
Reduction of traffic emisions
Renewable energy generation (green buildings)
Reduction in energy consumption (due to climate atemperation)

...ANGE ADAPTATION:
...vention
...tion
...quifer water recharge
...tion, reduction of
...fect
...of ecological
...network creation

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
The following diagram developed for Vitoria-Gasteiz case study, focuses on <u>biophysical structures</u> and process, final <u>ecosystem services</u> and the potential <u>benefits</u> expected .

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
2.   Identifying stakeholder positions and problem formulation. A meeting with case study representatives was held on 25th September 2013 (with members of the Environmental Studies Centre of Vitoria-Gasteiz). In such meeting a better definition of the needs and challenges were drawn. On informal conversations on the 4th and 10th October 2013 a more detailed identification of key research questions, methods offered in Openness and preliminary exploration of potential data sources, data quality and availability was done. A further meeting is planned for late November 2013 in order to start 3. Resource mobilisation

What is the desired short-term result (output)?:
Quantification of the current and future potential provision of socio-ecosystem services of the five selected green spaces **Prioritization** of the most relevant ES provided in each of the urban green spaces **Identification** objectives, actions and measures on ES to improve urban management and to be included in the Land Use Plan

What is the desired long-term result (outcome)?:
Integration of a Green Infrastructure Strategy into Urban Planning in Vitoria-Gasteiz Municipality

Who will benefit from the results of this sub-project?
As part the city Land Use Plan the benefits of the project is expected to affect a wide ranging and will include: - the citizens in the first place and their health (physical and mental) - besides it is seen as a way to face the economic crisis in sustainability terms - Water Administrations; - Water customers; - Real Estate (landowners) and other sectors (industrial and commercial) by flood risk reduction; - and all those who benefit from improved habitat including wildlife, countryside users, and other interest groups NGOs Synergies with the following plans and instruments are expected to be materialized somehow: • Climate Change Action Plan and local adaptation strategy • Local Strategy for Biodiversity conservation • Energy Local Plan • Health Plan • Sustainable mobility and public space plan

http://www.vitoria-gasteiz.org/wb021/http/contenidosEstaticos/adjuntos/es/50/71/45071.pdf

http://www.vitoria-gasteiz.org/wb021/http/contenidosEstaticos/adjuntos/eu/00/33/50033.pdf

Who will be negatively affected from the results of this sub-project?
It is unlikely that anyone will be negatively affected by the results of this project.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
Vitoria Gasteiz Municipality has recently launched a Local Biodiversity Strategy. The municipality is facing the following research questions: To what extent the appropriate management of urban green areas (conceived as a Multifunction Green Infrastructure) contribute to maintenance, protection and improvement of natural habitats? To what extent it contributes to increase of the local bio-capacity? How biodiversity does contribute to: water cycle regulation? This will relate to: reduction risk of flooding and urban water management (quality supply/waste water management) Vitoria Gasteiz is considering different green urban areas as a single but multifunction Green infrastructure. How different ES provided by the individual green areas relate? What are the synergies and trade-offs among them? What kind of management systems and action or measures should be necessary to adopt to increase the provision of ES towards a more sustainable urban management?

What might be (potential) barriers to the use of the ecosystem services approach in your project?
The expected barrier could be the lack of a common understanding of the meaning of ecosystem services by all range of stakeholders, and therefore the need for awareness rising, sensibilization and "translation" into planning language.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
The CAB has been first established between Tecnalia Research & Innovation and the case study representative, which is actually one of the key stakeholders in this case study being The Environmental Study Centre of Vitoria-Gasteiz Municipality.
However still open the idea to integrate in the CAB other stakeholders/actors/interest groups: academia, water management bodies, etc. To be defined.
A proper strategy still not formulated.
Cooperation with CITYSENSE project has been also established http://www.citi-sense.eu/ since Vitoria-Gasteiz also participates as case study in this project.

What do you expect from involving stakeholders in your CAB?
On the basis that landscape is the result of the human intervention on its environment, it is remarkably important to integrate not only decision makers but all potential actors, users, consumers of the territory, so we could somehow guarantee having a good picture of the real dynamics taking place on our territory. Simplification of reality is dam challenging-particularly in such cross-sector research topic as ES.   So we expect gaining knowledge on the territory. Also identify conflicts among different interest groups. And very important "operationalize" the concept and approach of ES and NC and increase awareness rising on its benefits for sustainable/ responsible land use management.   Green areas in Vitoria Gazteiz lay under three administrative levels: European (nature 2000 network), Regional (regional ecological network) and local (urban green infrastructure). The integration of several levels of governance is seen crucial in order to see their perspectives, interest and eventually anticipate possible conflicts.
Who are the members of your case study CAB i.e. affiliations?   *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Blanca Marañon, Anne Itziar Velasco   Environmental Studies Centre (CEA)
Which of the CAB members have you worked with before the start of OpenNESS project?
Tecnalia has collaborated with Environmental Studies Centre (CEA) in many initiatives all along the years.
How were the CAB members selected?
The Environmental Studies Centre (CEA) is a municipal autonomous body of Vitoria Gasteiz Municipality whose initial aim was the dissemination of environmental education strategies in Vitoria-Gasteiz. Nowadays its work has extended to other fields, apart form the environmental education and awareness, and they have been involved in the definition of the city Biodiversity Stragegy, managing and developing the Green Belt, taking part in research activities and European and international projects, responsible for the Environmental Information System of Vitoria-Gasteiz, and coordinating mobility related actions, mainly those related to bicycle mobility.
Is there anyone (or group) not represented? If yes, why?
Dates of meetings with the CAB (representatives)
A CAB meeting was held on 25th September 2013 (with representatives of the Environmental Studies Centre of Vitoria-Gasteiz). In such meeting a better definition of the needs and challenges were drawn.   On informal conversations on the 4th and 10th October 2013 a more detailed identification of key research questions, methods offered in Openness and preliminary exploration of potential data sources, data quality and availability was done.
How are decisions made within the CAB?   *E.g. democratic vote, consensus building?*
No formal procedure has been established but as a normal procedure although issues are discussed democratically, consensus building agreement built without a formal vote

Does the CAB have an official mandate to tackle the concerned topic?
No
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
This depends on the results of the investigation
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Records of the consultation and decisions taken are materialized in minutes of the meetings developed by Gemma García (Tecnalia) and available to all members.
How do you perceive the level of trust between the different CAB members?
High

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
It responds to the need for integration of ES approach into Land Use Plan.
Who was involved in the selection of this issue/topic?
All members but final decision by The Environmental Studies Centre on the 10th October 2013

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
- Commitment of Vitoria Gasteiz Municipality to OpenNESS project   - Identification of CAB and starting of collaborative working with Environmental Studies Centre   - Identification of Challenges and Needs   - Selection of five different kind of "urban green areas" in the city: - Peri-urban Park: Salburua (LIC and RAMSAR)   - Communication hub: Rotonda del Hipódromo   - New peri-urban park close to the Green Belt: Parque Salinillas de Buradón   - Inner Urban Park: Plaza de la Constitución   - Urban axis: Calle Los Herrán y Portal de Foronda   - Preliminary identification of evaluation methods to be applied in the case study   - Preliminary exploration of data requirements and data availability in the case study
Planned steps for research in sub-project 1:
If you distinguish sub-projects, please copy this table for each sub-project
Goal: ES provision in different green spaces in the city
1- The evaluation of current and potential future ES provision in the 5 selected green spaces 2- Prioritization of the most relevant ES

3- Identification objectives, actions and measures on ES to be included in the Land Use Plan
Approaches and methods:
Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7
1- For the evaluation of Ecosystem Services we are interested in texting the Bayesian Belief Network in order to integrate the social, environmental and economic aspects of the case study (WP 3 & WP4). Also interesting on State and Transition models, since different alternatives or scenarios of intervention would be analysed. 2- For prioritization MCDA possible (tbc) 3- No method identify for the definition of specific actions and measures
Expected results:
Quantification of the current and future potential provision of socio-ecosystem services of the five selected green spaces **Prioritization** of the most relevant ES provided in each of the urban green spaces **Identification** objectives, actions and measures on ES to improve urban management and to be included in the Land Use Plan
Timing:
No set yet
Responsibilities:
• Provision of quality data • Qualitative interpretation of outcomes/results in the application of the method
Planned consultation steps with CAB and stakeholders:
Next meeting forecasted by the end of November 2013 to define next steps
Possible risks or obstacles for the planned research:
1. Data limitation 2. Resources constraints since Tecnalia has very limited PM in the OpenNESS project
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
The study undertaken in Openness project will demonstrate the benefits of incorporating a system of urban green spaces in the urban planning conceived a single "urban green infrastructure" providing ecosystem services towards sustainable urban management. The outcome could be materialized in form of a leaflet with the key results and lessons learned.

WP5 Report

Case Study 5: Ecosystem Services in Regional and national forest management planning: French Alps - Vercors Mts Range

Sandra Luque, Frederic Archaux, Thomas Cordonnier

Irstea, National Research Institute of Science and Technology for Environment and Agriculture UR EMGR, & UR EFNO, France

Case and respondent's information	
Case study Research Leader	Sandra Luque & Frederic Archaux
Role of research leader in relation to case study	Science coordinator for biodiversity monitoring in the area
Case study representative (i.e. leading member of Case Study Advisory Board)	Thomas Cordonnier
Role of case study representative in relation to case study	The case study leaders work with stakeholders at different levels of decisions making from the public and private sectors.

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary – please just cut and paste into this space

Main (broad) objective
Design of conservation strategies and adaptive management for the Region:
The project responds to National level targets sets on reconciling biodiversity conservation with the increased demands of natural resources in particular of managed forests
Q: **How to simultaneously maintain economically and ecologically sustainable forestry at the landscape scale in the long run?**
Looking at the trade-offs of different objectives that we would like to maximize:

1. Economic values –Timber extraction (*Providing*)

  & Tourism

2**. Ecosystem services** –Forest carbon storage and sequestration (*Regulating*)

3. Ecological values – biodiversity (focal species, connectivity) Habitat provision for wildlife

4. **Cultural & patrimonial values** - Recreation in scenic landscapes (*Cultural services*)

1.2. Specific aspects or issues addresses in the OpenNESS project

Title and brief description:
Conflicts: *Timber vs Carbon Storage vs Biodiversity*   **Related services trade offs:**   Analysis of trade-off/synergy in relation to loss of traditional practices (pastoralism) and tourism (ski resorts); impact of afforestation and suburban sprawl - Temporal analysis to understand changes, shifts, pressures and plan trajectories for the whole landscape (scenario analysis: business as usual vs. stakeholders perception, visions and needs in 50 years time)   Identification of Pressures and conflicts in relation to key regulatory frameworks: GI, FP, RE, HD, BS, WFD, Natura 2000
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
In which phase is this sub-project 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
2. Identifying stakeholder positions and problem formulation. System understanding   see diagram
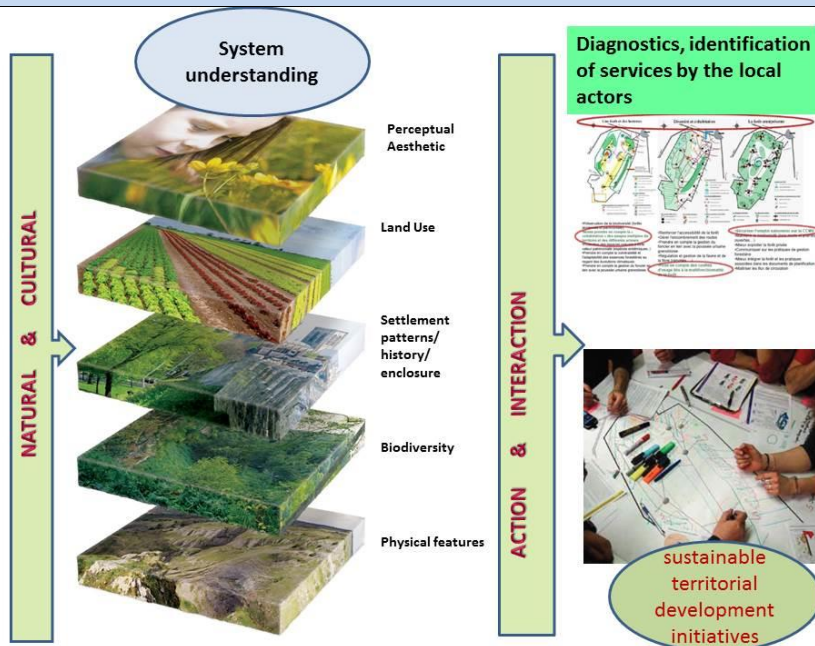
3. Resource mobilisation: we held one advisory board meeting the 25th January 2013, where 21 representatives from Institutions, communal level, private and public sectors, participated. Thus, the meeting and workshop allowed the identification of problems and formulation of scenarios.

4. Development of a shared vision: we mobilize resources and develop a share vision based on the past history and pressures. Combining the past with the present conflicts and vision for the future we develop scenarios.

A workshop and meeting in early autumn will allow to test the scenarios as an interactive process in order to adjust and improve them in the light of the stakeholders needs and visions

What is the desired short-term result (output):

Diagnostics, identification of services by the local actors

Identify sustainable territorial development initiatives based on Local actors inputs:

Evaluation of the first diagnostic at the regional level via action-support coaching (participatory method, Angeon & Lardon 2008). Reach targets on management based on scenario analysis:

1	**BIO**	Reconciling biodiversity conservation with the increased demands of natural resources
2	**BAU**	Business as usual, recommended management →selection harvesting - Increase forest surface
3	**URB**	Urban pressures - Constrained Increase on artificial surfaces

Integrative forest adaptive management measures were discussed with our stakeholders in order to reach the planning phase

What is the desired long-term result (outcome):

➢ Experience gained in this area is target towards improvement of our understanding on how forest biodiversity impacts ecosystem function and the provision of forest ecosystem services.

➢ Production of scenarios based not only on biophysical changes but also on knowledge on pass landscape trajectories within a participatory framework with actors and stakeholders in the region.

➢ Provide concrete answers to the stakeholders based on the perceptions and vision of the landscape towards the future

➢ Trade-offs in between artificialization, afforestation and traditional practices will be assessed to be considered in future regional planning measures

➢ Results will serve to transfer knowledge and operationalize concrete actions to assist forest owners and managers, policy makers and society at large that benefit from the goods and services provided by forests

Who will benefit from the results of this sub-project and who will be affected?

Forest owners and managers, policy makers and society at large in the region

Who will be negatively affected from the results of this sub-project?

This will be assessed with scenario analysis impacts and constraints (method: Bayesian WofE)

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The concept is helping to provide a holistic understanding of the system function based on the analysis of past and present drivers and pressures. The concept helps to assess the impacts and links to regulating, provisional and cultural services. The challenge ahead will be to develop the appropriate evaluation scheme to respond to the societal and economic expectations and needs. See the figure bellow as illustration of the whole conceptual framework as implemented so far in the light of the adaptive management cycle
What might be (potential) barriers to the use of the ecosystem services concept in your project?
No barriers to the use of the ecosystem services concept are envisaged at this time.
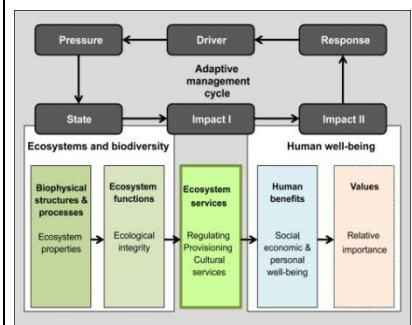
2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes
What do you expect from involving stakeholders in your CAB?
The CAB identifies the pressures and conflicts. They work together on the bases of conflict solution interests that we should provide within the framework of this project. Thus, within the interactive and participative consultation process that we initiated, at the end, they will determine the usefulness of the results at the end.
Who are the members of your case study CAB i.e. affiliations? Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc

All partners in the CAB have been active in the management of the area for a significant time prior to establishment of the group in 2012.

Institutions involved :

Association Départementale des Entrepreneurs de Travaux Forestiers d'Isère

(ADETFI), Association de Formation des Ruraux aux Activités Touristiques (AFRAT), Association des professionnels des Grandes Traversées du Vercors (G.T.V), Communauté de Communes du Massif du Vercors,

Société coopérative – COFORET, Commune d'Autrans, Commune de Corrençon en Vercors , Commune de Lans en Vercors, Commune de Saint-Nizier de Moucherotte, Centre Régional de la Propriété Forestière (CRPF), Institut national de Recherche en Science et Technologie pour l'Environnement

et l'Agriculture (IRSTEA - CEMAGREF), Conseil Général d'Isère, Fédération de la chasse d'Isère, Groupement des sylviculteurs des Quatre-Montagnes, Habitant - propriétaire forestier , Maison de l'emploi des Quatre-Montagnes, Office National des Forêts (ONF), Société civile forestière - La Cordelière, Syndicat national des accompagnateurs en Montagne du Vercors, FCBA : Federation of Botanical Conservatories

Which of the CAB members have you worked with before OpenNESS ?
The case study research leader (Sandra Luque) has had joint projects or actively worked with ONF, FCBA, Fédération de la chasse d'Isère, administration Parc de Vercors. Thomas Cordonnier, leading the participatory work had previous work experience with all the partners in the past within the framework of a project financed by the National Research Council in France that finished early 2013.
How were the CAB members selected?
Based on our previous work experience and the conflicts and interests in the area. The Vercors Park Authority also considered the relevance of the group not just for OpenNESS but to reach a good diagnostic and solutions for the region.
Is there anyone (or group) not represented? If yes, why?
The CAB is focused on forest and biodiversity then is restricted to this representation
Dates of CAB interaction
October 2012 different groups/persons were contacted 25 January 2013 – Public launch of group (OpenNESS presented and participatory work launched) Oct 2013 second consultation – CAB updated & participatory workshop
How are decisions made within the CAB? Democratic vote, consensus building.
Action-support coaching based on actors inputs (CAB): 'territory game' + Democratic vote when needed on consultation
Does the CAB have an official mandate to tackle the concerned topic?
No – they have a strategic advise role not a delivery mandate.

Which organisation (in or outside the CAB) should implement actions related to the issues you are studying?
This depends on the results of the investigation. Conseil de l'Isère, Park authorities, national level authorities A management Plan for the area is revised every 5 years with a scientific and Management Board where IRSTEA has a role as adviser. In terms of governance the area has a scientific board and a Management board, from those boards we invited participants to the CAB
How will you maintain records of all the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
We directly input decisions into scenarios. We also produce a document in French for the stakeholders to sum up key issues and work progress
How do you perceive the level of trust between the different CAB members?
Medium to High

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The formulation of the problem respond to a national level demand as explained. Key issues and the regional level as explained were identifies by common work with stakeholders participating in the CAB
Who was involved in the selection of this issue/ topic?
Was based on the problems identified within the project financed by ANR FORGECO that ended in early 2013 and responded to national and regional objectives and conflicts

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
See the aforementioned details: 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision,
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sun-project.*
Goal:
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
Linking WP2 & WP3

Finnish Spatially explicit simulation model of landscape dynamics that presents multi-scale vicinity-based transitional functions (*Transition probabilities*)

> ➢ Understanding landscape structural changes (landscape indicators - (fragstats))

> ➢ Considering the intensity of different pressures

> ➢ Considering Local spatial dynamics (Nucleation vs. extension)

Develop Constraint models (Model calibration & Validation) (DINAMICA EGO)

> ➢ framework of reference for assessing patterns and processes as indicators of complex processes and related forest services.

Exploratory Phase : 3 different management options (work with stakeholders)

> ➢ Trade-offs in between artificialization, afforestation and traditional practices will be assessed

Selection of socio-economic variables (CCA, DCA …)

Link with WP4 : Coupling natural, cultural and socio-economic variables for analysis

Methods needs to be selected towards the main goal of Spatial mapping of ecosystem services supply and demand

Under consideration:

> ➢ contingent valuation
> ➢ priority-setting methods: including Benefit-Cost Analysis, Multi-Criteria Analysis etc.

Expected results:

> ➢ Improvement of our understanding on how forest biodiversity impacts ecosystem function and the provision of forest ecosystem services.

> ➢ Production of scenarios based not only on biophysical changes but also on knowledge on pass landscape trajectories within a participatory framework with actors and stakeholders in the region. Provides answers to the stakeholders based on the perceptions and vision of the landscape towards the future

> ➢ Trade-offs in between artificialization, afforestation and traditional practices will be assessed to work on conflicts of different ES

> ➢ Begin I Phase work towards the main goal of Spatial mapping of ecosystem services supply and demand
> ➢ A technical session on forest related ES is planned for the IUFRO WC 2014 to share experiences at international level

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Timing:

End 2014 for the aforementioned goals

Responsibilities:

Experience gained in this case study serves to support Forest Cluster activities

It is expected to perform common work based on aforementioned methods with other case studies based on the conflict identified during the Loch Leven pop up forest workshop: ***Timber vs Carbon Storage vs Biodiversity***

Planned consultation steps with CAB and stakeholders:
Autumn 2013 & autumn 2014
Possible risks or obstacles for the planned research:
A post-doc needs to be hired in 2014. Key work on the study case depends on the availability of a suitable candidate
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
End 2014: • **Special Issue** Integrating Ecosystem Services in Landscape Planning and Decision-Making Practice. *CASES* • **synthesis paper**: Ecosystem services in community based land-use planning Authors: Christine Fürst, Paul Opdam, Dawn Cassandra Parker, Sandra Luque, Luis Inostroza , Adrienne-GrêtRegamey • **Special Issue**, Landscape Ecology: Ecosystem Services in Changing Landscapes. *Landscape Ecology* • Organisation **Thematic session IUFRO WC** 2014: The benefits of introducing the ecosystem service concept in forest management and planning at different spatial scales

WP5 Report

Case Study 6: Integrating ecosystem services into forest policy and management in Finland

Heli Saarikoski, Eeva Primmer, Jyri Mustajoki, Sanna-Riikka Saarela, Jari Liski, Anu Akujärvi, Petteri Vihervaara, Laura Mononen, Susanna Sironen & Pekka Leskinen

Finnish Environment Institute

Case and respondent's information	
Case study Research Leader	Heli Saarikoski & Eeva Primmer, Finnish Environment Institute
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	CABs are not yet established
Role of case study representative in relation to case study	see above

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The main objective is to look at the potential for and problems in integrating the notion of ecosystem services and natural capital into regional and national forest policy making and management in Finland, with a special focus on topical question of forest bioenergy production

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1: Forest bioenergy production

Title and description of sub-project:

At the national level, we will focus on the increasing demand for biofuel production from logging residue to comply with EU Renewable Energy targets (Directive 2003/30/EC). While the purpose is to reduce carbon emissions, removal of organic material from forests can have a major impact on soil carbon sequestration capacity hence perversely increase atmospheric CO_2 emissions. The removal of logging residue from forest soils might also have impacts on forest biodiversity and soil water purification capacity.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
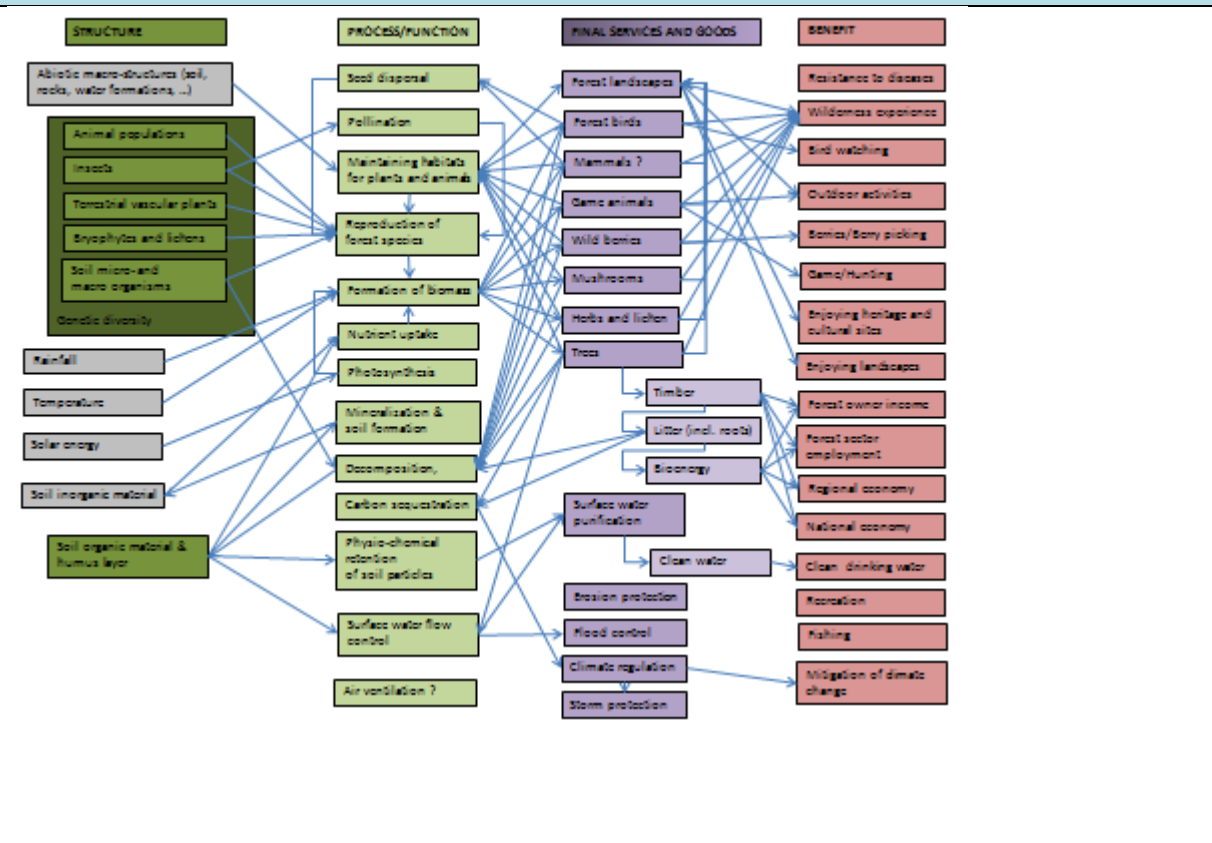
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)

We have identified the policy problem (using logging residue as source of biofuel), decided the case study area (Vanajanvesi watershed), and strated structuring the problem along the principles of MCDA process, i.e., identified and defined alternative biofuel strategies and defined the criteria (such a s carbon sequestration, water quality, recreation) in the light of which the alternatives will be evaluated. We have also decided to invite the advisory board of Vanajanvesi Centre, consisting of regional stakeholder organisations, as a CAB for the case study. We also hope to engage (some) members of a national level stakeholder forum called National Forest Council to the case study.

What is the desired short-term result (output)?:

A process and methods that help forest policy-makers to consider the trade-offs related to forest bioenergy protection, including the capacity of forest ecosystems to sequester carbon and hence mitigate climate change.

What is the desired long-term result (outcome)?:

National biofuel policies which are not counterproductive and violate the provision of other types of forest ecosystem services.

Who will benefit from the results of this sub-project?
The society at a large, in form of forest and biofuel policies which contribute to reduction of carbon dioxide emissions
Who will be negatively affected from the results of this sub-project?
Individual forest owners if the markets for logging residue will decline

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The notion of ecosystem services can make visible the role of forest soils as a carbon sink and hence help counteract short-sighted biofuel policies. The role of forest in providing timber and also recreational services is widely recognised but the less obvious ecological structures and functions such as the capacity of forest biomass to absorb atmospheric carbon often go unnoticed both by policy makers and the general public.
What might be (potential) barriers to the use of the ecosystem services approach in your project?

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Not yet but we have decided to invite the Advisory Board of Vanajanvesi Centre as a CAB. It took some time to decide the case study area.
What do you expect from involving stakeholders in your CAB?
We hope to facilitate dialogue and debate on the scientific results and other knowledge-claims concerning the impacts of forest-based biofuel policies among the CAB members and scientists and explore the common ground and open questions and/or factual disagreements concerning the issue.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Regional municipalities, environmental authorities, ENGOs and producer organisations.
Which of the CAB members have you worked with before the start of OpenNESS project?
SYKE Freswater Centre has worked with Vanajanvesi Centre on earlier projects.
How were the CAB members selected?
Is there anyone (or group) not represented? If yes, why?

We will supplement the CAB consisting of the members of the Advisory Board of Vanajanvesi Centre with forest management actors
Dates of meetings with the CAB (representatives)
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Does the CAB have an official mandate to tackle the concerned topic?
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
we will write minutes of the meetings with the CAB and keep a logbook
How do you perceive the level of trust between the different CAB members?

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The question of biofuel production from logging residue is a timely issue in Finland: the forest sector is keen to increase biofuel production while researchers have cautioned of the possible counterproductive impacts on CO_2 emissions. We want promote policy dialogue on the issue with key national level stakeholders and initiate a joint fact finding process on the pros and cons of the policy
Who was involved in the selection of this issue/topic?
The SYKE research team

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
Jari Liski's team has started modelling forest biomass carbon sequestration capacity. The SYKE team has decided on the case study area and strated structuring the problem along the principles of MCDA process, i.e., identified and defined alternative biofuel strategies and defined the criteria (such a s carbon sequestration, water quality, recreation) in the light of which the alternatives will be evaluated.
Planned steps for research in sub-project 1:

If you distinguish sub-projects, please copy this table for each sub-project
Goal:
To facilitate policy dialogue, or a joint fact finding process, of the feasibility of the plans to use logging residue as a source of biofuel and to bring scientific knowledge on the issue to the debate
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
We will develop a cascade model of forest ecosystem services by the end March (WP1) and apply MCDA methods (WP4) to structure the problem and impact evaluations and to elicit stakeholder preferences. The value tree with the alternatives and criteria will be ready by the end of February, and the impact assessments will be carried out by June 2014. The first meeting with the CAB will take place in March-April; in that meeting we will reconsider the initial value tree (the alternatives and the evaluation criteria) with stakeholder representatives and modify it if need be. We will carry interactive decision analysis interviews, which are part of the MCDA process, in autumn 2014 (WP4). We can also consider monetary evaluation of the ecosystem services. Furthermore, we might construct Bayesian Belief Networks to handle the uncertainties in some of the impact evaluations (WP3). Finally, we will carry out institutional analysis of the factors that enable and constraing consideration of forest ecosystem services (WP2), including carbon sequestration, and the regional and national level; this analysis will cover EU Renewable energy targets.
Expected results:
An improved understanding of the trade-offs related to forest bioenergy policies
Timing:
see above
Responsibilities:
Heli Saarikoski will coordinate the case study work together with Eeva Primmer and Sanna-Riikka Saarela. Jari Liski and his team will provide the scientific evidence on the impacts of forest bioenergy usage for forest carbon sequestration as well as on water quality. Petteri Vihervaara and Laura Mononen will look at the impacts of forest biodiversity. SYKE Environmental Policy Centre will be in charge of the socio-ecolomic analyses and Eeva Primmer is responsible for the institutional analysis. Jyri Mustajoki is in charge of the MCDA application and the possible BBN analysis.
Planned consultation steps with CAB and stakeholders:
We will consult the CAB at least four times: First when structuring the analysis, next on the impact assessments, third on the preferences and finally on the results of the analysis.
Possible risks or obstacles for the planned research:
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
Improved models on soil carbon sequestration capacity
Better understanding of forest bioenergy impacts on biodiversity
Better understanding of ecosystem services provide by forest among regional and national level forest policy makers

Policy recommendations concerning renewable energy policies at the national and EU level

Title sub-project 2: Integrating ecosystem services into forest management in private lands

Title and description of sub-project:
In this sub-project, we will explore the ways in which the concepts of ecosystem services and natural capital can add value to regional level forest management planning in privately owned forests. The case study site is the jurisdiction South-Western Finland office of the Finnish Forestry Centre. A special focus in this regional level case study is the tensions between timber production and other forest ecosystem services such as recreation and species protection, as well as the role of biodiversity in provision of forest ecosystem services. We will construct alternative forest management scenarios and evaluate their impacts on ecosystem service delivery.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
see sub-project 1
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
We have ideantified the case study area, defined the forest management scenarios (BAU, maximum logging scenario and scenario which optimized biodiversity protection) and identified the criteria to be used in the evaluation. We have also received an access to zonation data, which delineates the most important areas for biodiversity protection in the case study area. Susanna Sironen will use that data as well as Finnish Forest Inventory Data to look at the impacts on wood production in the different scenarios. The other analyses such as water quality and landscape impacts are still under consideration. We will establish a CAB in the spring and carry out a participatory MCDA process with them.
What is the desired short-term result (output)?:
A process and methods that support forest policy-makers and managers in identifying ecosystem services and evaluating the trade-offs between different ecosystem services
What is the desired long-term result (outcome)?:
To advance informed and adaptive governance of multiple forest ecosystem services.
Who will benefit from the results of this sub-project?
The regional forest policy actors.
Who will be negatively affected from the results of this sub-project?

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?

We are interested to see whether the concept of ecosystem services adds value to the on-going forest policy processes, which already take into account recreational services and biodiversity considerations, at least to some extent. We assume that it will be helpful in uncovering the less obvious regulating ecosystem services.

What might be (potential) barriers to the use of the ecosystem services approach in your project?

A strong emphasis on timber production at the expense of other ecosystem services; it might be difficult to open up the forest policy agenda and bring in alternative elements to the forest policy scenarios

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?

No, we will contact regional forest policy actors in the jurisdiction of South-Western Office of the Finnish Forestry Centre in the spring 2014.

What do you expect from involving stakeholders in your CAB?

The aim is to discuss the role of forest ecosystems in providing a variety of services and identify genuine knowledge needs stemming from the new policy, and further to deliberatively analyse and weigh the import of these services for different beneficiaries. We do not expect to reach an agreement on the preferences for different forest management alternatives but we hope to clarify the underlying values and interests and make them explicit.

Who are the members of your case study CAB i.e. affiliations?

Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc

key forest policy actors such as forest owner organisations, forestry workers' associations, forest industry, forest managers, environmental authorities and non-governmental organisations, etc.

Which of the CAB members have you worked with before the start of OpenNESS project?

We have on-going collaboration with regional level forest policy and biodiversity conservation stakeholders under EU/FP7 projects (e.g. POLICYMIX)

How were the CAB members selected?

they are not selected yet

Is there anyone (or group) not represented? If yes, why?

Dates of meetings with the CAB (representatives)

How are decisions made within the CAB?

E.g. democratic vote, consensus building?

Does the CAB have an official mandate to tackle the concerned topic?
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Meeting memoranda and additional notes will be kept in the SYKE OpenNESS folder. The memoranda will be shared with the CAB members.
How do you perceive the level of trust between the different CAB members?

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The most debated question in Finnish regional level forest policy is how to balance the traditional orientation towards timber production with multifunctional uses of forest so we assume the ecosystem service issue will build on this issue and hope the concept will allow new arguments and ways of using information in the process.
Who was involved in the selection of this issue/topic?
The SYKE research team. The CAB will further specify the broader question

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
We have decided the case study site and the focus on the analysis and started developing the cascade model of forest ecosystem services.
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
see below
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*

We will further refine the forest ecosystem service cascade model (WP1) and test it with the CAB (in the autumn 2014). We will carry out the impact assessments by may 2914 and test the ability of different problem structuring and valuation methods such as multi-criteria decision analysis in enabling an explicit analysis of the trade-offs between the multiple services of forest ecosystem services (WP4). The decision analysis interviews will be carried out in the autumn 2014. We also aim to organise deliberative valuation workshops with the CAB members to analyse the differences between individual preference elicitation and value articulation though group deliberation (WP4), this will take place towards the end of the year 2014.

We migh experiment BBNs to deal with uncertainties in the analyses (WP3).

Furthermore, we will look at the ways in which the policy-makers, stakeholder and managers receive the biophysical and value information concerning ecosystem services and the role this information has in decision-making and management practices (WP2). We will also address the institutional conditions for operational applications of the notion of ecosystem services in forest policy, paying attention to the regulative framework consisting of the forest legislation and the informal administrative, professional and cognitive-cultural norms and values, which enable or constrain consideration of ecosystem services in the design and implementation of forest policies (WP2).

Expected results:
A better understanding of the trade-offs between the different ecosystem services and benefits provided by forest ecosystem services
A better understanding of the values and beliefs underlying different stakeholder organisation's preferences
Plural and conditional conclusions on the preferability of alternative courses of action (as opposed to a single optimal solution)
A better understanding of the usefulness of MCDA method as well as group deliberation in articulating ecosystem service values in regional forest policy processes, from the perspective of different actors involved in the process
In the long run, broadening the regional forest policy agenda to include also other ecosystem services than timber provisioning services
Timing:
see above

Responsibilities:
Heli Saarikoski will coordinate the case study work. Susanna Sironen is responsible for the impact assessment and Jyri Mustajoki will carry out the MCDA process. Eeva Primmer is responsible for the institutional analysis and facilitating the stakeholder dialogue.
Planned consultation steps with CAB and stakeholders:
see above
Possible risks or obstacles for the planned research:
the commitment of the CAB members in the process
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
A better understanding of problem structuring and valuation methods that are helpful in consideration of ecosystem services for the key actors in regional forest policy processes A better understanding of the human well-being aspects provided forest ecosystem services An analysis of the role of biodiversity in forest ecosystem service provision Empirical evidence on the role of group deliberation in value articulation

WP5 Report

Case Study 7: Forest management in Carpathian Mountains

Ovidiu Badea[1], Horia Iuncu[2]

[1] Forest Research and Management Institute

[2] Bucegi Natural Park Administration

Case and respondent's information	
Case study Research Leader	Ovidiu BADEA (ICAS)
Role of research leader in relation to case study	Research coordinator for the case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Horia Iuncu (Director of Bucegi Natural Park Administration)
Role of case study representative in relation to case study	Coordinator of the strategic project

1. Purpose of your case

1.1. Main (broad) objective of working in the study area?

Main (broad) objective
Identifying the ES and their connections to biological diversity, forest ecosystem functioning for supporting of local communities and their traditional activities.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:

Title: Payment for production losses due to restrictions imposed on forested land use in protected areas.

Description: Through functional zoning of forests, based on their conservative value, including their protective role, partial or total restrictions on timber and other non-wooded products harvesting are imposed, by specific laws and regulations. The aim of these restrictions that the following ES to be assured: water regulation, soil protection against erosion process, carbon sequestration, landscape conservation, climate regulator, conservation of biodiversity etc.

In order to really apply the protected area management plan (management plans in other mountain forests), the scientifically founded determination of compensations due to these restrictions is necessary. In this way, these compensations is expected be accepted and applied both by forest owners and administrators and by ES beneficiaries (local communities, water resources administrators, tour-operators, etc.)

Issue visualized in a systems diagram (preliminary)
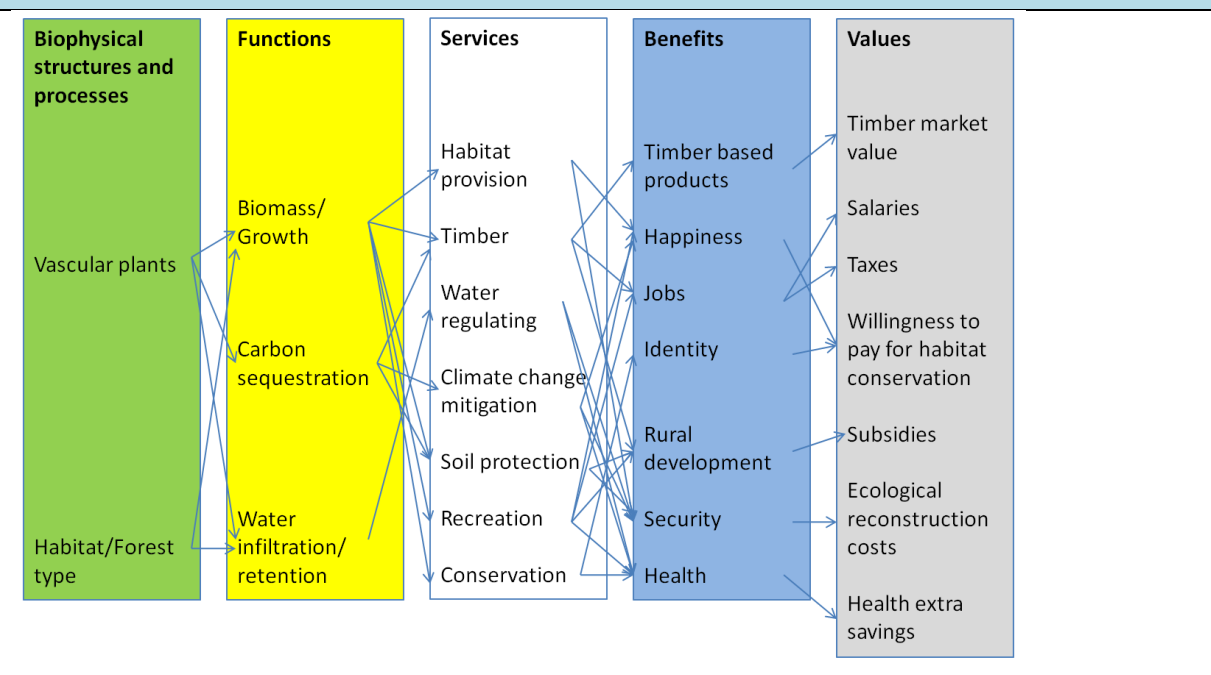
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)

Starting up

What is the desired short-term result (output)?:

Identification of ecosystem services and of methods/models toolbox to be used in the case study

What is the desired long-term result (outcome)?:

Evaluation and inclusion in forest management planning of ES and NC concepts

Who will benefit from the results of this sub-project?

Natural Park Administration, local communities, SMEs (forestry sector, tourism, agriculture, water management etc.)

Who will be negatively affected from the results of this sub-project?

-

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The concepts of ES and NC are not enough understood and implemented in forest management planning; these concepts are the basis of assuring human wellbeing, through providing goods and benefits.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
The complexity and novelty of ES and NC concepts. Possible resilience of stakeholders to these new concepts.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes
What do you expect from involving stakeholders in your CAB?
To support the realisation of the case study and to implement its results.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Romanian Academy, "Transilvania" University of Brasov, University of Bucharest, Romanian Agricultural and Forestry Sciences Academy, National Forest Administration, research institutes representatives, local land owners, municipalities representatives, Environmental Agency representatives, SMEs, NGOs, policy makers (representatives of different ministries)
Which of the CAB members have you worked with before the start of OpenNESS project?
We worked with the representatives of Scientific Council, forestry SMEs, Universities, Academy, Bucegi Natural Park Administration, National Forest Administration.
How were the CAB members selected?
The CAB members were selected form structures already established in relation with Bucegi Natural Park (Scientific Council and Consultative Council) and scientists and policy makers with large experience in this field.
Is there anyone (or group) not represented? If yes, why?
No
Dates of meetings with the CAB (representatives)
2013: 17 September

How are decisions made within the CAB?
E.g. democratic vote, consensus building?
Consensus building
Does the CAB have an official mandate to tackle the concerned topic?
Yes
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
The Scientific Council, Bucegi Natural Park Administration, Natural Forest Administration, private forest owners
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings
How do you perceive the level of trust between the different CAB members?
Good

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
This topic was selected because it is a highly debated issue at national level and can possibly solve, through concrete solutions, the conflicts between timber production and biodiversity conservation, aiming at an increased wellbeing.
Who was involved in the selection of this issue/topic?
CAB and the project team

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
Analysis of possible research questions to be answered in OpenNESS.   Evaluating the suitability of the chosen issue for OpenNESS research.
Planned steps for research in sub-project 1:   *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
1. Analysis and adoption of ES classification through comparison of typologies used in *Common International Classification of Ecosystem Services* (CICES) and those specific for MA and TEEB   2. Identification of main ES offered by the forests in Bucegi Natural Park in relation to human wellbeing, sustainable management (including biodiversity conservation), governance and competitiveness   3. Analysis of regulatory frameworks at EU, national and local level   4. Identification of available data, measures variables and derived indicators for selection of ES mapping methods modeling models.   5. Analysis of the ES evaluation methods toolbox and selection of best methods for achieving

the objective of the case study
Approaches and methods:
For steps 1 and 2 we will use the definitions and classifications provided by WP1
For step 3 – the list of EU regulatory frameworks, the results of document analysis and literature review
Step 3 – methods toolbox provided by WP3, especially spread sheet-type method and QUICKScan
Step 4 – methods toolbox provided by WP4, especially hybrid and monetary valuation methods
Expected results:
Identification of ecosystem services and of methods/models toolbox to be used in the case study
Timing:
1. Months I-II 2. Months II-IV 3. Months II-IV 4. Months V-VIII 5. Months IX-XII
Responsibilities:
All the planned steps will be accomplished by ICAS research team, with the help of Bucegi NP Administration representatives
Planned consultation steps with CAB and stakeholders:
Two meeting are planned: - March 2014 for discussing aspects related to the first 4 steps - September 2014 – discussions related to step 5
Possible risks or obstacles for the planned research:
Lack of information compatible with the methods/models which we want to select.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
Identifying possible conflicts between EU framework legislation and national legislation Clarifying the ES concepts, specific for forest ecosystems.

WP5 Report

Case Study 8: Bioenergy-related synergies and trade-offs in ESS provision in Central Germany

Jörg A. Priess[1], Jennifer Hauck[1], Thomas Koschitzki[2], Daniel Wurbs[2]

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[2] Geoflux, Goethestr. 31, 06114 Halle, Germany

Case and respondent's information	
Case study Research Leader	Jennifer Hauck and Jörg Priess
Role of research leader in relation to case study	Science coordinator for the assessment of regional land-use change in Saxony
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Daniel Wurbs
Role of case study representative in relation to case study	SME representative responsible for environmental modelling

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary – please just cut and paste into this space

Main (broad) objective
The objective of this case study is to explore synergies and trade-offs of bioenergy production with other ecosystem services using the federal state of Saxony as a case study.
The added value of analysing bioenergy production and competing other land uses within the ESS and NC framework is that (i) it goes beyond conventional instruments such as ecological audits or environmental risk assessments, and (ii) enables the analysis of trade-offs and synergies between ESS in biophysical units and possibly in terms of human well-being.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title and brief description:
Bioenergy-related synergies and trade-offs in ESS provision in Central Germany   Based on the EU Renewable Energy Directive (2009/28/EC) and Fuel Quality Directive (2009/30/EC) the German government passed a law amendment for the Renewable Energy Law, coming into force in January 2012. The new law aims at an increase of renewable energy provision up to 35% in 2020. A large fraction of this energy will be provided by wind parks and other sources. Yet the German government also assumes a doubling of the area for energy plants for energy production from 2 Mio ha to 4 Mio ha in Germany.   These developments raise concerns with respect to further increase of large intensive monocultures, nutrient- and GHG-fluxes, decreasing biodiversity, aesthetic changes in the landscapes and negative impacts on recreation and tourism.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
No diagram developed so far.
In which phase is this sub-project 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
1   Starting up   We held three project meetings since January 2013. In these meetings we discussed   • the types of ecosystem services to be assessed   • the general approach, methods and models to be used in this study   • data availability and demands for additional datasets   • identification and pre-selection of potential members of the CAB
What is the desired short-term result (output):
A list of ecosystem services to be assessed in this study, including the methods, models and data required to study them.   Establishment of CAB
What is the desired long-term result (outcome):
Understand the impacts of land-use / land-use change on the provision of ecosystem services in the agricultural sector on ecosystem services, with a focus on potential trade-offs and synergies between bio-energy production and other services.
Who will benefit from the results of this sub-project and who will be affected?
State agency of Saxony (and other states) for Environment, Agriculture and Geology; regional planners; regional association of bio-energy producers; scientists;   Eventually, we could identify stakeholders with our research, who are affected negatively by bio-energy production, i.e. suffer from trade-offs that are not obvious at first hand. Such stakeholders could, for example, be citizens who feel affected by the change in landscape aesthetics.
Who will be negatively affected from the results of this sub-project?
It is too early and unhelpful at this point to speculate.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
Because the ESS/NC concept is best suited to link societal preferences and land-use decisions with the use and impacts on natural resources. More specifically, assess and simulate the impact of the production of energy plants on the provision of ecosystem services. For this purpose, the team intends to apply a combination of policy analysis, land-use – and biophysical modelling.
What might be (potential) barriers to the use of the ecosystem services concept in your project?
Serious data and information shortage especially concerning cultural services as well as information on societal preferences. Further, many stakeholders are not familiar with the concepts and associated terminology. Also, the concepts are often perceived to not take the intrinsic value of biodiversity into account, sometimes triggering objections by stakeholders.

2. Understanding Stakeholder involvement and decision making process

There are usually many different types of stakeholders involved in the case studies but for this report we concentrate on the Case study advisory Board (CAB) described in the Description of Work for the project.

The main idea of a CAB is that OpenNESS researchers can consult and interact with stakeholders in their case studies (= science-practice forum). This is essential as one of the main goals of OpenNESS is to operationalize and test ES&NC methods and tools in real life. This is only possible if there is interaction with the people who will experiment and/or use the results of these methods and tools.

To better understand the characteristics of your CAB, we would like you to answer the following questions :

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Not yet. So far we contacted potential CAB members from the list of stakeholders, trying to keep a balance between public and private institutions and different types of expertise complementing the expertise of the case study team.
What do you expect from involving stakeholders in your CAB?
On the one hand we would like to ensure and increase usefulness of research results, applicability and credibility of the envisaged approach. Additionally, we hope to get support in data retrieval by the involved stakeholders.
Who are the members of your case study CAB i.e. affiliations? Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc
Federal state agency for Environment, Agriculture and Geology; NGO; regional association of bio-energy producers; scientists
Which of the CAB members have you worked with before OpenNESS ?

Federal state agency; NGO; scientists
How were the CAB members selected?
The CAB members were selected by the case study team addressing representatives of organizations with a known or assumed interest in the case study focus and ESS / NC.
Is there anyone (or group) not represented? If yes, why?
The selection of CAB members was focused on bio-energy related issues in Saxony, aiming at the level of (representatives of) institutions, not considering individuals or citizens unrelated to the topic.
Dates of CAB interaction
Annual meetings are envisaged and have been communicated to the invited members. The 1st meeting is planned for early 2014.
How are decisions made within the CAB? Democratic vote, consensus building.
Consensus is preferred by the case study team, but democratic and/or informal votes are expected as alternative procedures for decision making. The general decision making process within the CAB will be discussed during the first meeting.

Does the CAB have an official mandate to tackle the concerned topic?
Concerning the case study they are an advisory board to the case study in Saxony. They have a strategic advisory role not a mandate. However, it is one of the responsibilities of the Federal State Agency for Environment, Agriculture and Geology to investigate the trade-offs of bio-energy production especially concerning potential negative environmental consequences. The regional association of bio-energy producers in turn derives its mandate from its members to represent their interests.
Which organisation (in or outside the CAB) should implement actions related to the issues you are studying?
All organisations represented in the CAB could use case-study outcomes either directly (e.g. develop recommendations for members of an association and/or policy) or indirectly (e.g. identify knowledge gaps or trigger further research).
How will you maintain records of all the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
The case study team will produce minutes of the CAB meetings.
How do you perceive the level of trust between the different CAB members?
Currently unknown as CAB will be established later in 2013.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Since the CAB is not established yet there are no topics for further investigation identified yet.
Who was involved in the selection of this issue/ topic?
Since the CAB is not established yet there are no topics for further investigation identified yet.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
The project team has met thrice and discussed the general research strategy, core and optional objectives, potential methodological approaches, the establishment of the CAB and other options of stakeholder involvement and responsibilities of the participating parties and scientists.
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project* •
Goal:
Explore synergies and trade-offs of bioenergy production with other ecosystem services in Saxony.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
- Policy analysis guided by WP2, Task 2.1   - Adapting the EU scenarios produced by WP2, Task 2.3 to case study level   - Starting the biophysical modelling guided by WP3
Expected results:
- Report on policy analysis   - Adapted scenario storylines   - 1st version of the modelling framework adapted to the case study region, including 1st test-simulations of land-use change and impacts on ESS.
Timing:
We expect to deliver results until October 2014.
Responsibilities:
Policy analysis: UFZ   Scenario adaptation: UFZ   Simulation tool: UFZ, Geoflux
Planned consultation steps with CAB and stakeholders:
Annual CAB meetings starting early 2014.
Possible risks or obstacles for the planned research:
Data availability; technical problems related to adapting the modelling framework to the case study region and setting up the land-use model; problems in identifying all policies and regulations and / or quantifying the effects on land-use decisions; problems in identifying societal preferences on

federal state level.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
- Report on policy analysis. This policy analysis will contribute to Challenge 3 of WP1.   - Adapted scenario storylines   - 1st version of the modelling framework adapted to the case study region, including 1st test-simulations of land-use change and impacts on ESS.

WP5 Report

Case Study 9: Cairngorms National Park Management

Jan Dick[1], Andy Wells[2], Martin Price[3], Beth Wells[4] Lee Innes[4] and Andy Ford[5]

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[2] The Crown Estate, 6 Bell's Brae, Edinburgh, EH4 3BJ, Scotland, UK

[3] Centre for Mountain Studies, Perth College UHI, Crieff Road, Perth, PH1 2NX, UK

 [4] Moredun Research Institute, Pentlands Science Park, Bush Loan, Penicuik, Midlothian, EH26 0PZ, UK

[5] Cairngorms National Park Authority, 14 The Square, Grantown on Spey, PH26 3HG, UK

Case and respondent's information	
Case study Research Leader	Jan Dick
Role of research leader in relation to case study	Science coordinator for the a long term monitoring site in the area
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Andy Ford Martin Price
Role of case study representative in relation to case study	Andy Ford - Cairngorm National Park Authority, responsible for the operationalisation of ecosystem services related to nature within the park Martin Price – chairman of the Case study Advisory Board

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary – please just cut and paste into this space

Main (broad) objective
To enhance management of the Cairngorms National Park.   The four aims of the park set out in the National Parks (Scotland) Act 2000 are: 1. To conserve and enhance the natural and cultural heritage of the area 2. To promote sustainable use of the natural resources of the area 3. To promote understanding and enjoyment (including enjoyment in the form of recreation) of the

special qualities of the area by the public

4. To promote sustainable economic and social development of the area's communities (http://cairngorms.co.uk/park-authority/about-us/)

These are broad aims and so specific researchable questions were identified with the Case study advisory board (CAB)

1.2. Specific aspects or issues addresses in the OpenNESS project

Title and brief description:
Payment for ecosystem service (PES) to enhance local environment and water quality.

This sub-project is in collaboration with The Crown Estate (owners of the Glenlivet Estate within the Cairngorms National Park) and Moredun Research Institute and is based on establishing the environmental (water, livestock and wildlife) prevalence of *Cryptosporidium* species in selected catchment area(s) in the Cairngorms National Park and identifying actions and payment to enhance the ecosystem services of such landscapes given a set of agreed scenarios.

Cryptosporidium parasites are a major cause of enteric disease in neonatal livestock and are also major contaminants of the environment and water supplies in particular. The parasites can survive for 18 months to 2 years in water and are a source of infection for people. Normal water treatments such as chlorination are not effective against *Cryptosporidium* and the parasite is a major issue for water companies. The main aim of this research is to examine whether interventions within catchment areas will improve the quality and safety of water supplies by minimizing contamination with zoonotic pathogens such as *Cryptosporidium*. An additional benefit of proposed catchment area intervention is the creation of riparian woodland and resultant increased biodiversity. In addition, participating farmers will benefit from the latest management and disease prevention advice allowing them to reduce *Cryptosporidium* incidence in their livestock thereby improving animal health and welfare, benefitting production, food security and water quality.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

It would be helpful if you could also describe the major components of your sub-project as a systems diagram. This would help people to visualise the topic that you are dealing with. The format of the diagram is entirely open, but for comparison with others it would also be useful if you could indicate the biophysical components of the ecosystem that are most important in your study (i.e. biophysical structures and processes). Also can you identify some of the properties that give rise to the ecosystem services that you are dealing with as well as the services themselves (i.e. show also on the diagram the ecological functions and the services that depend on them)? Finally some idea of the beneficiaries and the values that are assigned to the services would provide further insights. Use arrows to show the causal links between the different system components, and how the various external pressures might impact on the system. Please don't feel constrained– there are no right answers. The diagram does not have to be a final statement on you problem and it may evolve over time as your work progresses. For convenience you can attach the diagram to the reporting template as a PowerPoint slide. An example of such a diagram is shown below. This was a first attempt to apply 'ecosystem service thinking' to a case study in Finland.

Biophysical Structure or process

Farmland

Water courses

Wild land

Final ecosystem services

Meat Production

Cultural enjoyment of farmed land/animals

Save drinking water

Cultural enjoyment of wild animals

Goods and Benefits

Food

Save drinking water

Human well-being from personal enjoyment or 'existence value' of wild and farmed lands and animals

Value

Commercial value of food

Commercial value of water purification or alternative supply

Commercial tourist value associated with wild and farmed lands and animals

Existence value associated with wild animals
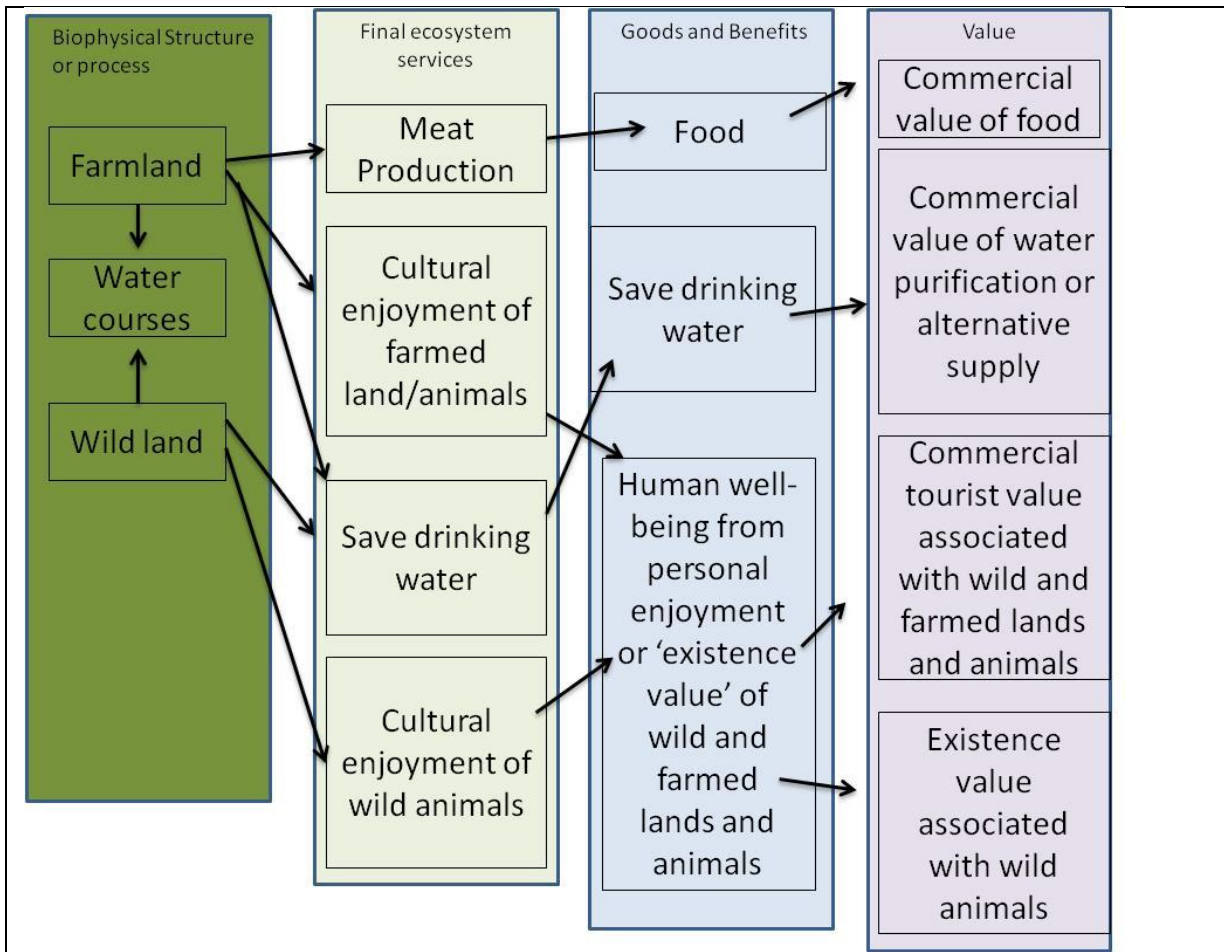
In which phase is this sub-project 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)

2. Identifying stakeholder positions and problem formulation.

A CAB meeting was held on 24th June 2013 (with representatives of the Cairngorms National Park) which identified this as worthy topic of investigation. On 7th June 2013 a further meeting was held between key partners (The Crown Estate and researchers from the Moredun Research Institute) to identify a project framework. . On 30th Aug 2013 an additional meeting was held with Scottish Water to explore potential data sources, key research/land management issues and p PES funding opportunities. A further meeting is planned for late autumn.

What is the desired short-term result (output):

To establish the prevalence of *Cryptosporidium* species in the Livet catchment area; identify the species involved to establish the sources of the parasite burden on the catchment area and provide livestock management advice leading to the reduction of the parasite burden and increase in animal health and welfare. Human health will also benefit through improved water quality of a local public water supply, which has historically and presently a problem with *Cryptosporidium* contamination.

What is the desired long-term result (outcome):
To better understand the sources of Cryptosporidium species infection in water supplies within the River Livet catchment and inform opportunities for a PES scheme (potentially funded by Scottish Water or alternatively through public grant schemes) to support changes in land use which reduce parasite contamination of the public water supply. It is anticipated that this would include fencing off livestock and/or wildlife from the water source, with potential long term benefits of riparian woodland creation and increased biodiversity. In addition this will improve species diversity in the river, which in turn benefits fish stocks which are important to the rural economy of the CNP area.
Who will benefit from the results of this sub-project and who will be affected?
If the research evidence supports the desired short and long term outputs, the benefits of this project will be wide ranging and will include Scottish Water; Scottish Water customers who use this water supply; the Crown Estate (landowners) and the participating tenant farmers (through improved animal health and productivity); and all those who benefit from improved habitat including wildlife, countryside users, the local fishing industry and conservationists.
Who will be negatively affected from the results of this sub-project?
It is unlikely that anyone will be negatively affected by the results of this project. If livestock are found to be the major contributors to the catchment parasite load, the farmers may be asked to surrender some of their land, but this is likely to be a relatively small area and they, on balance, will receive more benefits in terms of decreased disease incidence due to reduced parasite burden, increased productivity and have the benefits of increased field shelter if riparian woodland is planted and a secure, clean water supply for livestock in the form of water troughs and hard standing.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The supply of clean, safe water is a provisioning service largely dependent on land management practices within water catchment areas. Environmental factors and agricultural land use can have significant impacts on water quality, yet these factors and their impacts are not entirely understood particularly in relation to certain zoonotic parasites such as Cryptosporidium species. Potential mitigating actions to help improve water quality in response to these factors (such as woodland and buffer zone creation) can add to a range of ecosystem service functions, adding value to provisioning, regulating, supporting and cultural aspects within a given land area. This issue was identified as a potential project to utilise the ES concept because it is multifaceted and there is a need to better understand the issues in relation to this particular parasite, to inform decision making and prioritise land management activities and the respective 'trade- offs' between ES functions within the catchment. The project has the potential to help inform wider land management decisions in relation to riparian woodland and buffer zone establishment in other catchment areas, helping to increase natural capital.
What might be (potential) barriers to the use of the ecosystem services concept in your project?

No barriers to the use of the ecosystem services concept are envisaged at this time.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes
What do you expect from involving stakeholders in your CAB?
The CAB has decided the topic/issue investigated. They will determine the usefulness of the results
Who are the members of your case study CAB i.e. affiliations? Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc
Our CAB is an established group with the Cairngorm National Park. The group also referred locally as 'Cairngorms Nature Partnership' was established in 2012 to bring together key conservation delivery bodies in the Park to collaborate on project delivery and to guide conservation priorities and policy. It is chaired by an academic (Prof Martin Price, University of the Highlands and Islands) and is composed of 7 members representing (i) conservation organisations: Royal Soc Protection Birds (Pete Mayhew) & National Trust for Scotland (Shaila Rao), (ii) government agencies: Scottish Natural Heritage (Debbie Greene) Forestry Commission Scotland (Giles Brockman), (iii) land users: Scottish Land and Estates (Andy Wells); National Farmers Union Scotland (Ian Wilson); Dee Fisheries Board (Mark Bilsby); George MacDonald (Scottish Gamekeeper Association; Nick Mardall (community development officer). All partners have been active in the management of the area for a significant time prior to establishment of the new partnership.
Which of the CAB members have you worked with before OpenNESS ?
The case study research leader (Jan Dick) has not had joint projects or actively worked with any of the CAB members before but has known the Chairman professionally for number of years. Several of the CAB members have worked together in the past.
How were the CAB members selected?
The CAB members were selected by the Cairngorms National Park Authority who considered that rather than establish a CAB specifically for OpenNESS this group had a relevant remit.
Is there anyone (or group) not represented? If yes, why?
The CAB is focused on biodiversity of the park and so is restricted to this representation
Dates of CAB interaction
18 May 2013 – Public launch of group (OpenNESS presented http://www.openness-

project.eu/node/30)

7th June 2013 formal meeting OpennESS issues/ topics discussed and way forward agreed

25th Oct 2013 formal meeting – CAB updated following Loch Leven meeting

How are decisions made within the CAB? Democratic vote, consensus building.
Democratic vote is the normal procedure although many issues are agreed without a formal vote

Does the CAB have an official mandate to tackle the concerned topic?
No – they are an advisory board to the Cairngorms National Park Authority. They have a strategic advise role not a delivery mandate.
Which organisation (in or outside the CAB) should implement actions related to the issues you are studying?
This depends on the results of the investigation. Scottish Water is ultimately responsible for providing clear and safe water to its customers. The Crown Estate as landowner has an influence on land management practices within the proposed study area, subject to the legal status of agricultural tenants who are the principle decision makers regarding land use management within their holdings.
How will you maintain records of all the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings are produced by Andy Ford (Cairngorm National Park Authority)
How do you perceive the level of trust between the different CAB members?
High

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Four initial ideas were formulated by CEH which fostered discussion in the CAB. The topic detailed above was agreed by the CAB to be taken forward first. The other topics were held as possible follow on projects .
Who was involved in the selection of this issue/ topic?
The whole CAB at a meeting on 7th June 2013.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
CAB has met and decided on the issue/topic to be investigated as indicated above. Several meetings with the representative of the land owner and Morden Institute have taken place and one meeting with Scottish Water. The Chairman of the CAB attended the first day of the WS1 meeting at Loch Leven.
Planned steps for research in sub-project 1:   *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
To establish the prevalence of *Cryptosporidium* species in the Livet catchment area; identify the species involved and establish the sources of the parasite burden on the catchment area; provide livestock management advice leading to the reduction of the parasite burden and increase in animal health and welfare; explore the PES approach to fund mitigation
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
If farmed livestock or wild animals are found to be the major contributors to the catchment parasite load tools relevant to stakeholder engagement will be needed. QuickScan (WP3) a spatially explicit planning and conflict resolution tool will be parameterised in conjunction with Marta Pérez-Soba, Peter Verweij and Michiel Van Eupen, after the data on *Cryptosporidium* species has been collected and analysed by the Moredun Research Institute (summer 2014).   Bayesian Belief Network will be constructed in order to integrate the social, environmental and economic aspects of the case study (WP 3 & WP4). This will combine both the biophysical components with monetary and non-monetary evaluations.   A summary policy analysis will be undertaken to determine the regulatory obligations of the various actors involved (WP2).
Expected results:
Report on the utility of QuickScan from the stakeholder's perspective. Draft BBN co-constructed with relevant stakeholders and depending on data availability parameterised and used to explore various scenarios.
Timing:
The CAB approved the general plan on 26 Oct 2013. It was agreed that the next step was a series of meetings with researchers at Morden Institute, estate personnel and local farmers to update them on the project and introduce them to the tools which have been selected for testing. These meetings should take place before 20th Dec 2013.   A draft BBN should be constructed by January 2014 following the consultations before Christmas and parameterised by spring 2014; the source of the *Cryptosporidium* species in the water should

be known in early summer 2014, and stakeholder workshop utilising the QuickScan tool held in summer/autumn at a convenient time for the farmers and all OpenNESS partners.
Responsibilities:
The following people are responsible for specific tasks but these will not be completed in isolation – all of the named personnel will work in partnership as a project team
Jan Dick - coordinating the project and producing reports –identifying ecosystem services in the study area
Ron Smith – co-create BBN with project team and stakeholders -run scenarios and report as appropriate
Beth Wells and Lee Innes – identify the source of the *Cryptosporidium* species
Andy Wells – liaison with the estate and farmers – provide data to parameterise the BBN
Martin Price and Andy Ford – liaison with the CAB
Planned consultation steps with CAB and stakeholders:
The CAB will be updated at their next meeting planned for January 2014 (exact date yet to be determined)
Possible risks or obstacles for the planned research:
While unlikely it is possible that the source of the *Cryptosporidium* species cannot be determined and/or the farmers refuse to discuss with the project team. These risks cannot be pre-judged but the project team are aware of them.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
We aim to demonstrate the utility of the ecosystem service concept by analysing and hopefully solving a specific spatially and temporally bound societal problem by working in partnership and utilizing the tools and know-how of WP3 and WP4 (QuickScan and BBNs). This work will be co-designed with stakeholders and all results (successful and unsuccessful) will be reported back via stakeholder and CAB meetings, written reports and if appropriate a scientific peer-reviewed paper.

WP5 Report

Case Study 10: Ecosystem Services in Multifunctional Mediterranean Landscapes — Sierra Nevada protected area case, southeast Spain

Berta Martín-López[1] & Marina García-Llorente[1,2]

[1]Social-Ecological Systems Laboratory, Department of Ecology, Universidad Autónoma de Madrid, 28049 Madrid, Spain
[2]Sociology of Climate Change and Sustainable Development research group, Department of Social Analysis, University Carlos III, Madrid, Spain

Case and respondent's information	
Case study Research Leader	Berta Martín-López
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Javier Sánchez
Role of case study representative in relation to case study	Protected Area Director

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The aim of this case is to explore the ways in which ecosystem services can be taken explicitly into account in the management of protected area, as the tools and strategies used. OpenNESS researchers will work together with the Protected Area staff, with the aim to identify and assess the delivery of ecosystem services as well as to explore their importance to local stakeholders' wellbeing in terms of non-monetary and monetary values. Analysing how conservation strategies can promote the delivery of those ecosystem services that contribute to local stakeholders' wellbeing will be object of special focus. In fact, we aim to explore whether the ecosystem service approach is incorporated in the conservation strategies of the protected area, as well as whether it is used as a tool for facing the protected area problems: i.e. rural abandonment, urbanization, and social conflicts. This could be summarize in four main objectives: 1. To identify and assess the delivery of ecosystem services as well as to explore their importance to local stakeholders' wellbeing in terms of non-monetary and monetary values. 2. To analyse how conservation strategies could promote the delivery of ecosystem services that contribute to local stakeholders' wellbeing will be object of special focus.

3. To promote participatory techniques to enrich the dialogue among stakeholder groups that reconcile conservation and rural development objectives.

4. To use the ecosystem service approach as a tool for facing the current problems of the Sierra Nevada Protected Area: i.e. rural abandonment, agricultural intensification, and social conflicts emerging because strict conservation practices inside the National Park

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project: Ecosystem service social assessment
We will identify which are the most important services detected by the main stakeholders in the area for maintaining their wellbeing. In order to proceed we will first conduct a stakeholder analysis to identify and characterize the different social groups involved. Later, information from questionnaires and workshops would be used in order to explore how the ecosystems and biodiversity of protected area contribute to their wellbeing.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Currently, the focus is on phase 2: a more detailed problem formulation + a more in depth identification of stakeholder positions. The next step would be to go forward step 4, development of a shared vision.
What is the desired short-term result (output)?:
An ecosystem service assessment and the analysis of the ecosystems' contributions to human

wellbeing.
What is the desired long-term result (outcome)?:
To understand the values attached to the different ecosystem services on the basis of the different contributions of nature to human wellbeing. The final aim would be to have an integral vision of the issue and to use the ecosystem service trade-offs and synergies to promote those conservation strategies in the protected area have also in mind social wellbeing.
Who will benefit from the results of this sub-project?
Because of better conservation policies in the protected area, local people could benefit from this project. Also the protected area managers as having a new tool to communicate the importance of conservation beyond intrinsic values. People interested in nature in a professional (researchers) or recreational (nature tourists) way would also benefit.
Who will be negatively affected from the results of this sub-project?
None.

Title sub-project 2:

Title and description of sub-project: Mapping ecosystem services
We will identify which are the areas where the ecosystem services are supplied and where the beneficiares are demanded them in order to (1) identify the main ecosystem services flows; (2) to explore the role of the protected area as ecosystem services provider, and (3) to rise useful information for landscape planning.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Currently, the focus is on phase 2: problem formulation (some preliminary results are already obtained)

What is the desired short-term result (output)?:
A map representing the ecosystem service providers' hotspots and the benefitting areas.
What is the desired long-term result (outcome)?:
To understand the flows of ecosystem services in terms of spatial analysis. The final aim would be to have useful information for landscape management.
Who will benefit from the results of this sub-project?
The protected area staff as they will have information for landscape planning in terms of ecosystem services.
Who will be negatively affected from the results of this sub-project?
None.

1.3. Use of ecosystem services and natural capital concepts:

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The ecosystem service concept has potential to provide a common language. This concept may make locals aware of benefits they can get from protected areas and, on the other hand, may assist both the managers and policy makers in understanding the role of locals and their practices in maintenance of multifunctional landscapes.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
Considering humans as external elements, using just conservationist criteria, lack of historical perspective or public participation, and disagreement regarding the role of traditional practices.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
We have already identified which could be the main affiliations to get involved. In this sense, we have been working in the area since 2008 and several contacts are established since then.
In middle Nov we have a meeting with the protected area director, who will discuss with us the best option for the CAB. Around Feb-March we hope to have a formal CAB established.
What do you expect from involving stakeholders in your CAB?
To create a participatory process that will help to legitimise the whole process of the Openness project. We also think that the CAB will help us to define better our objectives and to be closer to their actual needs. In this sense, we consider this step as one major advance in the operationalization of ecosystem services.
Who are the members of your case study CAB i.e. affiliations?
Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc

We will follow the guidelines proposed by the Spanish Law 3/1999 for which the National Park was created, in which some of the members named to conform the participation organism group are: National, Regional and Local government staff, researchers from the Granada or/and Almeria Universities, land owners inside the park, Environmental NGOs, Andalusia hiking association member, Agrarian groups, Director-conservator of the National Park, and a member of the field-staff inside the park.
Which of the CAB members have you worked with before the start of OpenNESS project?
Researchers, park managers, cultural NGOs, farmers, livestock breeders and enterprises on tourism facilities and enterprises working in the social development of the area.
How were the CAB members selected?
We will follow the guidelines proposed by the Spanish Law 3/1999 for which the National Park was created and the suggestions of the Director of the National Park (Javier Sánchez).
Is there anyone (or group) not represented? If yes, why?
Not yet applicable
Dates of meetings with the CAB (representatives)
Nov 2013: meeting with the Protected Area Director and Protected area Conservationist.
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Not yet applicable
Does the CAB have an official mandate to tackle the concerned topic?
Not yet applicable
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
The participation organism created for the Park when it was designed.
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings.
How do you perceive the level of trust between the different CAB members?
Not yet applicable

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Because we consider crucial to integrate the ecosystem services into protected areas management in the Mediterranean context. We will really work on finding solutions for the development of rural regions in mountain areas in the Mediterranean Basin in coherence with its ecological values and cultural values.
Who was involved in the selection of this issue/topic?
The involved researchers and the needs expressed by managers and local stakeholders in previous

projects.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
Involvement in the study area to understand the main issues and the main stakeholders, gathering information, and evaluating the issue for its suitability for OpenNESS research.
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
To identify the most important services detected by the main stakeholders in the area for maintaining their wellbeing
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
WP2: To explore the main drivers affecting WP4: To analysis of the non-monetary values of ecosystem services
Expected results:
To understand the values attached to the different ecosystem services on the basis of the different contributions of nature to human wellbeing.
Timing:
Nov.- Dec. 2013: To explore the members to conform the CAB Feb-March 2014: To formalise the CAB. Jan-March 2014: to explore the usefulness of different non-monetary valuation techniques – methodological framework April-June 2014: to explore the usefulness of different non-monetary valuation techniques – data analysis July-Oct: to explore the usefulness of different non-monetary valuation techniques – writing a first draft report or manuscript
Responsibilities:
The UAM partner (Marina García-Llorente and Berta Martín-López) with other members of the Social-ecological systems laboratory (Irene Iniesta-Arandia; Ignacio Palomo; Ana P. García-Nieto) will develop the previous tasks.
Planned consultation steps with CAB and stakeholders:
At least one meeting per year.
Possible risks or obstacles for the planned research:
Involve stakeholders just for a scientific purpose; this should imply an actual transformation for them.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
One manuscript exploring the non-monetary values of ecosystem services expressed by different stakeholders (WP4 and WP5).

Planned steps for research in sub-project 2:
If you distinguish sub-projects, please copy this table for each sub-project
Goal:
Spatial identification of the ecosystem services supply and demand.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
WP3: mapping the supply of ES   WP4: mapping the demand of ES
Expected results:
To understand the flows of ecosystem services in terms of spatial analysis.
Timing:
Nov.- Dec.2013: To perform a focus group for deliberative mapping of ecosystem services.   Jan-June 2014: to analyse the data of the focus groups regarding the deliberative mapping of ecosystem services (both supply and demand).   July-Oct 2014: to start writing a draft manuscript regarding the results of deliberative mapping.
Responsibilities:
The UAM partner (Marina García-Llorente and Berta Martín-López) with other members of the Social-ecological systems laboratory (Irene Iniesta-Arandia; Ignacio Palomo; Ana P. García-Nieto) will develop the previous tasks.
Planned consultation steps with CAB and stakeholders:
At least one meeting per year.
Possible risks or obstacles for the planned research:
Involve stakeholders for a scientific purpose and landscape planning.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
One manuscript exploring the role of focus groups with different stakeholders as a source of knowledge regarding the ecosystem services mapping.

WP5 Report

Case Study 11: Biodiversity Offsetting in Warwickshire

Guy Duke[1] and Pam Berry[2]

[1] Environment Bank Ltd, Rue Copernic 6G, 1180 Brussels, Belgium

[2] Environmental Change Institute, Oxford University Centre for the Environment, South Parks Road, Oxford, OX1 3QY, UK

Case and respondent's information	
Case study Research Leader	Guy Duke
Role of research leader in relation to case study	Director Europe & Research, Environment Bank Ltd
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	(1) Louise Martland and (2) Dave Lowe
Role of case study representative in relation to case study	(1) Warwickshire, Coventry and Solihull Biodiversity Offsetting Project Officer, Environment Bank Ltd; (2) Principal Ecologist, Warwickshire County Council.

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The main objective of the Warwickshire Case study is to explore the use of ES and NC concepts in the context of biodiversity offsetting. Biodiversity offsetting is an innovative financial instrument and a means to deliver no net loss of biodiversity (or even net gain), in cases where housing, infrastructure and other developments cause negative impacts on biodiversity. We will document the operationalization of biodiversity offsetting in Warwickshire, explore the potential of offsetting to deliver a range of ecosystem services, and explore the resilience of offsets to climate change.
Loss of biodiversity and the related decline of ecosystem services and natural capital are global problems on a par with that of climate change, and may even have earlier impacts. To address this, new global and EU targets have been set for the period to 2020. This includes global and EU targets that focus on the need for restoration of degraded ecosystems. In this connection, the EC adopted in 2012 a strategy for green infrastructure (GI) and will propose, by 2015, a 'no net loss' (NNL) initiative. The NNL initiative is expected to promote biodiversity 'offsetting' across the EU, as a key mechanism to compensate for impacts of development and thereby contribute to NNL. This case

study is therefore expected to be of particular interest to the Commission and Member States as they consider expanded use of offsetting. Moreover, offsetting can contribute to economic growth by streamlining development permitting and stimulating a range of new businesses, thereby contributing to EU competitiveness.

The UK Government indicated an interest in exploring the potential of biodiversity offsetting in its 2011 Natural Environment White Paper. The Department for Environment, Food and Rural Affairs (Defra) has carried out substantial work on the issue, including the development of principles and metrics, research on demand and supply, and the establishment of pilot projects. EBL is involved in 2 of the 6 official Defra pilot projects which have been selected as OpenNESS case studies: Warwickshire (this case study) and Essex (Case study 22).

In March 2013, the high-profile, business-led UK Ecosystem Markets Task Force (EMTF), set up by Defra, submitted recommendations to Government on opportunities for business that protect and/or value nature, and identified as one of the top opportunities a move to a national, mandatory approach to biodiversity offsetting. This recommendation was underpinned by research led for the EMTF/Defra by the current Case Study Research Leader, Guy Duke, which identified the potential for a regulated offsetting market worth £100-500 m in England, and € multi-billion for the EU.

Catalysed by the EMTF recommendation, the UK government published in September 2013 a Green Paper on biodiversity offsetting, to consult on various policy options to expand the use of offsetting in England. The government is simultaneously gathering evidence on costs and savings for business arising from offsetting. The outcome of the consultation and research will inform the government's decision on the preferred policy option and may lead to legislation in 2014/15. The Warwickshire case study on biodiversity offsetting will thus place OpenNESS at the leading edge of critical emerging policy.

The Warwickshire, Coventry and Solihull sub-region was chosen by Defra in 2012 as one of six national pilot areas to trial biodiversity offsetting. Developers in pilot areas required to provide compensation for biodiversity loss under planning policy can choose to do so through biodiversity offsetting.

The Warwickshire, Coventry and Solihull sub-region has some important wildlife areas, but these are often quite fragmented. Biodiversity offsetting provides a great opportunity to explore mechanisms for joining up these areas and enhancing the overall biodiversity of the region's natural environment.

Defra has produced guidance for the pilot areas on how a biodiversity offsetting scheme could operate. The Warwickshire, Coventry and Solihull Biodiversity Offsetting Pilot has adopted these guidelines and modified them into a local biodiversity offsetting strategy to suit the sub-region's particular requirements.

The Warwickshire, Coventry and Solihull local biodiversity offsetting strategy is being enacted through the sub-regional Green Infrastructure Strategy (currently in preparation) and is supported by the Coventry, Solihull and Warwickshire Association of Planning Officers.

The Environment Bank Ltd (EBL), the leading company for biodiversity offsetting in England, employs a biodiversity offsetting project officer who sits within the Ecological Services offices of the County Council and advises on the use of offsetting within the planning system. Led by Ecological Services at Warwickshire County Council (WCC) in partnership with the Environment Bank, the Defra pilot for Warwickshire, Coventry and Solihull is being run with the support and involvement of all Local Planning Authorities (LPAs) within the sub-region.

To date the biodiversity offsetting pilot has been progressing well, with biodiversity offsetting included as an annex within the new *Green Infrastructure Strategy*, soon to be adopted across the

sub-region. During consultation of this document feedback on the offsetting strategy was very positive and was endorsed across consultees.

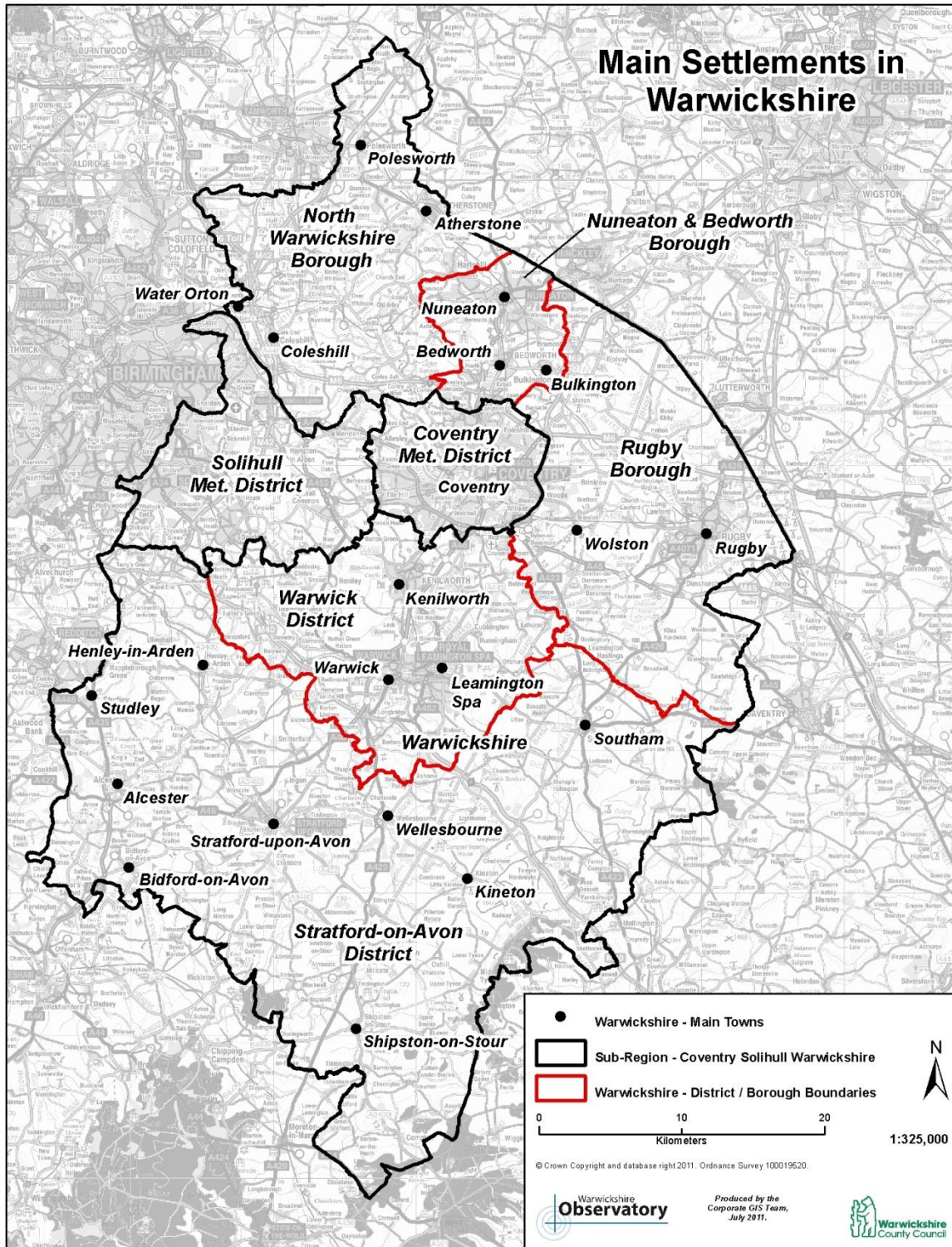The map below shows the area covered by the Warwickshire, Coventry and Solihull pilot.

Figure 1: map of the case study area.

EBL and WCC are encouraging and training local ecological consultants to apply the Defra offsetting

metric in line with their existing development-related survey work. In parallel, LPAs are moving towards a requirement that the application of the Defra metric is required to determine biodiversity impacts of all planning applications for larger developments. In other words, they are moving towards a more mandatory approach within the planning system, where the necessity of offsetting for each application is clearly understood by the developer, well in advance of planning determination. This should encourage the acknowledgement and valuation of biodiversity at an earlier stage in the development process, enabling developers and planners alike to find the optimal mix of mitigation and off-site compensation and reducing delays in the system.

Implementation and understanding of biodiversity offsetting has been promising in Warwickshire, with use of the Defra offsetting metric becoming widespread, and interest from ecological consultants, developers and providers across the sub-region. The EBL project officer (our Case Study Representative) is now working to further the considerable work to date of LPAs in Warwickshire, which includes analysis of the offsetting opportunities and policy foundations, with production of guidance, support and training across users and those involved throughout the system.

EBL anticipates the Defra offsetting pilot in Warwickshire will help lead to:

(1) strengthened requirement for offsetting in Warwickshire, applied to a greater proportion of developments;
(2) enhanced engagement of demand side (developers) and supply side (offset providers) in offsetting;
(3) enhanced expertise among planners and ecological consultants in use of the Defra offsetting metrics; and
(4) a strengthened and flexible market approach to offsetting, involving third party private sector brokers (such as EBL).

Over the longer-term, we anticipate that a thriving biodiversity offsetting market in Warwickshire would deliver a significant improvement over current planning approaches to biodiversity, including no net loss of biodiversity (or, where possible, net gain), improved conservation of related natural capital and ecosystem services, and significant opportunities for business, delivering a net gain to the economy.

1.2. Specific aspects or issues addressed in the OpenNESS project

We plan 3 research sub-projects in the Warwickshire case study. Each of these is most closely linked to WP3 Biophysical control of ecosystem services, but the three sub-projects also have relevance to WPs 1, 2 and 4. These linkages and their relevance are outlined below.

Title sub-project 1: Biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.

Title sub-project 2: The potential of biodiversity offsetting to deliver biodiversity and other elements of natural capital and other ecosystem services

Title sub-project 3: The resilience of biodiversity offsetting to climate as a driver of change

These sub-projects are discussed together in the boxes below (given that the answers to many of the questions are the same or very similar for each of the three sub-projects) – however, where relevant, we provide separate text for each sub-project.

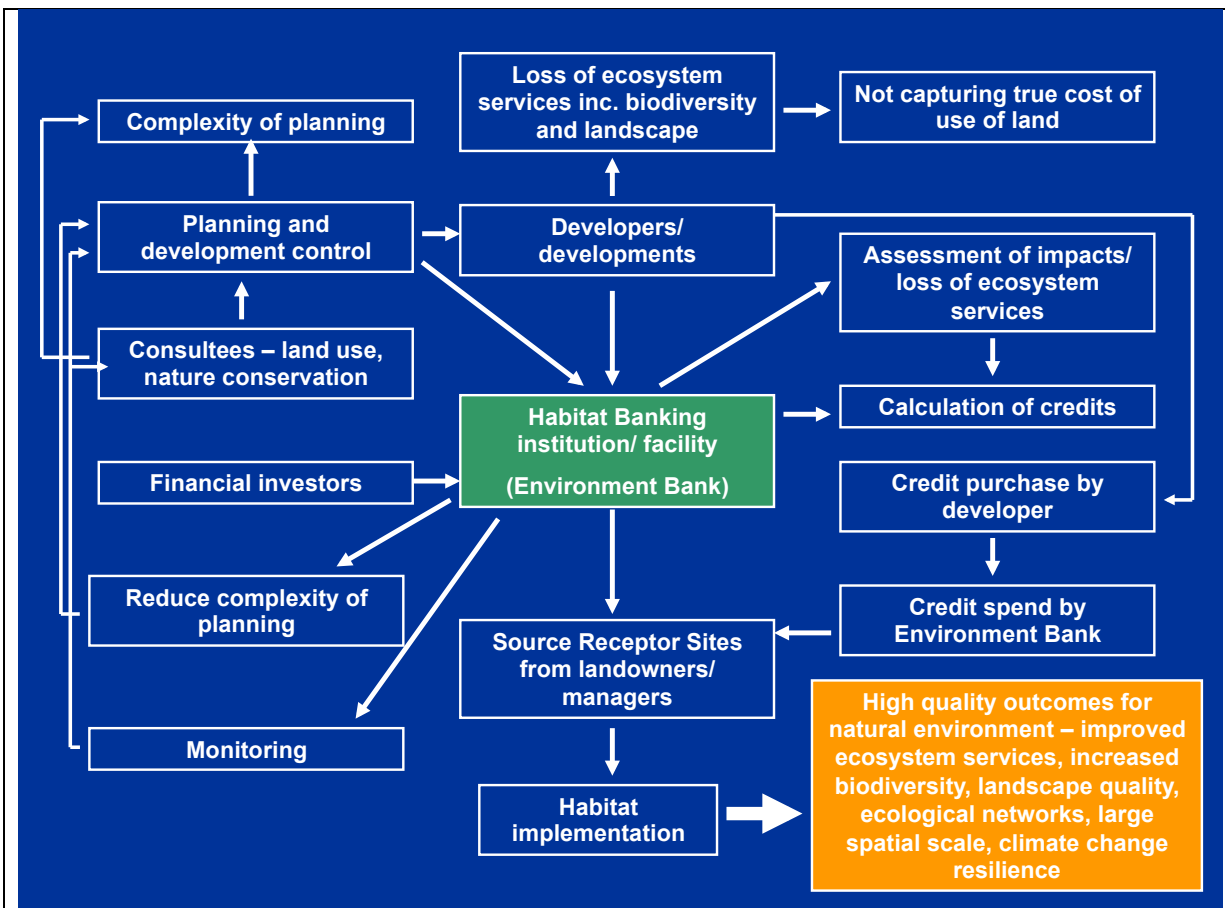| Title and description of the three sub-projects: |
| --- |
| The project will explore the following three areas: |
| 1. **Biodiversity offsetting as an innovative mechanism for the operationalization of the** |

concepts of natural capital and ecosystem services. This research sub-project will involve research to document and analyse the operational model for biodiversity offsetting in Warwickshire and how this might be extended to operationalize offsetting of other ecosystem services. The operational model in Warwickshire has been developed by Warwickshire County Council in partnership with the Environment Bank Ltd, within the context of an official UK government offsetting pilot. This research will support transfer of knowledge on offsetting as a highly policy-relevant approach to the operationalization of the concepts of natural capital and ecosystem services, and will inform the emergence of expanded offsetting markets in the EU. The research will include consideration of the costs and savings for developers arising from offsetting, the broader business opportunity arising from offsetting, and the net change in the value of ecosystem services arising from offsetting.

2. **The impact of biodiversity offsetting on the delivery of natural capital and other ecosystem services**. This research sub-project will aim to quantify where possible the impact of biodiversity offsetting on stocks of natural capital and flows of ecosystem services. The method will focus on a number of key ecosystem services as identified as most appropriate within the context of the study area and the available data. It will serve to quantify and compare NC/ES losses from developments with NC/ES gains arising from offsets and thereby build knowledge on the potential contribution made by biodiversity offsetting to sustain/enhance NC/ES and inform the possible development of offsetting markets that stack or bundle these NC stocks and/or ES flows.

3. **The resilience of biodiversity offsetting to climate change**. Research in the UK has suggested the offset market may be worth up to £500 m per year and could deliver 300,000 ha of offsets over 20 years. This represents a very significant investment in newly created and restored sites for nature. The question arises as to how resilient this investment will be to climate change. If there is a substantial shift in the climate space of key habitats and species for which offsets are provided, will these offsets lose ecological viability over time? Or will offsets help reduce fragmentation and strengthen resilience to climate change? This research sub-project will look at how the climate space might change for selected key species for key habitats addressed by offsetting in Warwickshire.

NB: We will be conducting parallel research sub-projects in *Case Study 22 Biodiversity Offsetting in Essex*. Essex offers a differing human- and bio-geographical setting for offsetting to that of Warwickshire. This includes differences in governance arrangements, in strategic approaches, in key stakeholders, and in habitat types. Notably, Warwickshire is a land-locked whereas Essex is coastal. Moreover, climate change projections differ for these two areas of the UK. The application of the same research sub-projects in the two case study areas will allow us to draw out similarities and differences in terms of the factors that facilitate and inhibit the implementation of ES/NC concepts in the two contexts which share a national political context, but are different in terms of the data they have available and their local priorities (sectoral and institutional). The intention is that by studying the two case studies in tandem common lessons and key messages will be identified, and a greater understanding of the transferability of results, to other locations in the UK and elsewhere in the EU, will be achieved.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)

All three research sub-projects are currently active over phases 1-5 above. Some work has already done on identifying stakeholder positions and problem formulation, as reflected in this document. Resources have provisionally been allocated to the three sub-projects by EBL and by Oxford Environmental Change Institute (ECI) who will be the principal research partner in these case studies. The current document reflects the shared vision of EBL and ECI for these sub-projects and the initial research planning.

What is the desired short-term result (output)?:

The output of the three research sub-projects will be, respectively:

1. A paper/report on biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.
2. A paper/report on extent to which offsetting can deliver selected elements of natural capital and ecosystem services, in addition to biodiversity.
3. A paper/report on the resilience of biodiversity offsets to projected climate change to 2050.

What is the desired long-term result (outcome)?:

The desired long-term results of the three research sub-projects (taken together) are:

1. **Knowledge transfer** on effective governance arrangements for biodiversity offsetting, on the cost-benefits of offsetting, on the potential contribution of offsetting to maintenance/restoration of natural capital and ecosystem services, and on the resilience of

offsets to climate change, resulting in better informed key stakeholders (EU and national governments, planning authorities, developers, offset suppliers, etc.) and consequently better designed offset regimes in the EU.

2. **Enhanced offset market development** including enhanced potential for development of offset markets for a range of ecosystem services (biodiversity, nature-based carbon, water retention by habitats, etc.); these may be separate markets or may be markets which stack or bundle various ecosystem services.

Who will benefit from the results of this sub-project?

Enhanced knowledge on offsetting governance, costs and benefits, contribution to natural capital and ecosystem services, and resilience of climate change, can support the effective and cost-efficient design and expansion of offsetting markets across the EU. A wide range of stakeholders stand to benefit from this, including:

(1) **EU and national governments**, which can use the research findings to inform development of offset policies and regulation.

(2) **Planning authorities**, which will benefit from research findings to guide more strategic siting of offsets to optimise NC/ES outcomes and resilience to CC.

(3) **Developers**, who may benefit from an expanded use of offsetting by the EU and/or national governments (e.g. through reduced costs of off-site compensation, reduced permitting delays, fewer blocked developments arising from biodiversity concerns, reduced long-term liabilities, increased net developable areas).

(4) **Farmers and other landowners** (including environmental NGOs) offering offset sites who may benefit from the expansion of offsetting markets offering payments to create/restore nature on their land, including for long-term management (thereby contributing also to growing the wider rural economy);

(5) **Service businesses** which would benefit from the expansion of offsetting markets, including offset brokers (such as EBL), ecological consultants (applying the metrics), delivery agents (who create/restore nature), and companies involved in monitoring and verification (growing the knowledge economy).

Who will be negatively affected from the results of this sub-project?

A number of stakeholders may be negatively affected by the expansion of biodiversity offsetting (which may be facilitated as a result of this research). These include:

(1) *Some local communities*: offsetting may potentially have negative impacts on some local communities who experience development activities in their neighbourhood, in particular in cases where it is not possible to offset locally and where local communities therefore do not benefit from the offset. For example, in such cases, these communities may experience a loss of access to nature (though in most cases they probably did not have access to nature on the sites proposed for development as they may be under private ownership).

(2) *Landowners selling land for development* may experience a slight reduction in the price they can obtain from developers, as developers may legitimately accommodate the cost of offsets by affecting the residual land value, i.e. the amount they pay for the land. However, as such landowners typically experience a very significant uplift in land value (e.g. from £20000/ha to £2 m/ha) as a result of permitting for development, this slight reduction in price is not expected to be a major issue.

(3) *Ecological consultants*: many ecological consultants and related businesses, such as those supplying netting for great crested newts, may stand to lose business if offsetting proves to be more efficient in dealing with biodiversity impacts. However, these same businesses should have opportunities to move in to new business areas in support of offsetting, such as offset delivery, monitoring and verification.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
Biodiversity may be regarded variously as an element of natural capital, as a contributor to ecosystem function and the flow of ecosystem services, and as an ecosystem service itself. A key issue for biodiversity offsetting is the extent to which it may not only secure no net loss (or better, net gain) of biodiversity, but also maintain and enhance these other ecosystem services. We hope to throw light on this. There is growing UK and EU interest in trading these other 'asset classes' including nature-based carbon, water retention capacity and nutrient cycling (N, P) and greater understanding of the impact of offsetting on these asset classes/ecosystem services would therefore be valuable. We are equally interested in the extent to which gains for biodiversity and other ecosystem services may be resilient to climate change. This has not been much considered to date, but it is clear that species and habitats located in offsets, in the same way as species and habitats located in protected areas, will be affected by shifting climate spaces and that this will affect the value of these sites for these habitats and species in future.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
A potential barrier relates to the availability of sufficient data on both biodiversity and other ecosystem services.

2. Understanding stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
We have not established a CAB *per se*, but, as should be evident from the above, are already deeply involved with a wide range of stakeholders in the case study area. We would expect to engage the most relevant of these stakeholders in OpenNESS research in the case study area.
What do you expect from involving stakeholders in your CAB?
We expect to obtain support from key stakeholders, including provision of relevant data and expert opinion, to pursue those areas of research that appear to offer most practical benefit for the advancement of offsetting in Warwickshire.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
As mentioned above, there is not a CAB *per se*. However, the following organisations/groups are involved as key partners in our offsetting case study: • The Environment Bank Ltd (EBL) • Ecological Services, Warwickshire County Council (WCC). • Local Planning Authorities (LPAs) • Developers • Farmers and other landowners (including NGOs) offering offset sites • EBL National Advisory Board

• National policy makers

Which of the CAB members have you worked with before the start of OpenNESS project?

All of the above.

How were the CAB members selected?

Again, we have not set up a CAB *per se*, but work with partners in Warwickshire based on the extent to which they are critical to the effective development of EBL's business model.

Is there anyone (or group) not represented? If yes, why?

No obvious omission.

Dates of meetings with the CAB (representatives)

Potential areas of research relating to OpenNESS WP3 were discussed at a meeting involving the Case Study Research Leader and Case Study Representative with the WP3 lead (Oxford ECI) in September 2013.

How are decisions made within the CAB? *E.g. democratic vote, consensus building?*

Not applicable as there is no CAB *per se*. Decisions on the expansion of biodiversity offsetting in Warwickshire are made by the relevant planning authorities (WCC, LPAs) and in negotiation with both the demand and supply sides, with the advice and support of EBL.

Does the CAB have an official mandate to tackle the concerned topic?

Not applicable as there is no CAB per se. However, WCC and LPAs have a legal duty under the National Planning Policy Framework (NPPF) to minimise impacts on biodiversity and provide net gains of biodiversity (where possible). Warwickshire is a designated Defra pilot area for the application of biodiversity offsetting within the context of the NPPF. WCC contacted the Environment Bank Ltd to form a partnership in this offsetting pilot.

Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?

Again, there is no CAB *per se*; planning decisions are made by WCC and LPAs which have authority to implement these decisions. EBL has authority to advise on offsetting and to implement related research and development, having been formally appointed to advise on the Warwickshire offsetting pilot by WCC.

How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)

We keep records of all key consultation with our partners in Warwickshire.

How do you perceive the level of trust between the different CAB members?

Again, we do not have a CAB *per se*, but there is generally a very high level of trust between EBL and our key partners in Warwickshire.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?

Biodiversity offsetting is EBL's core business and was selected as a suitable topic for investigation in

OpenNESS as it is one of the most promising innovative mechanisms by which the EU can operationalize natural capital and ecosystem services concepts, both in terms of the potential benefits to nature and in terms of the potential market scale.
Who was involved in the selection of this issue/topic?
EBL directors, ECI OpenNESS participants.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound).

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
- Gathering and review of background information on the case study area.   - Discussion with WP3 on focus of WP3 research in the case study area.   - Substantial expansion of EBL business activity in the case study area including identification of specific demand side developments to pilot offsetting, identification of numerous supply side offerings and their posting to EBL's trading platform (Environmental Markets Exchange).   - Significant new research (non-OpenNESS) relating to offsetting at the national level, including the EMTF research and recommendations mentioned above, and ongoing Defra research on costs and savings for developers.   - Significant growth in political momentum towards a national biodiversity offsetting scheme, including government publication of a Green Paper consulting on policy options, with a view to legislation in 2014/15.   - Advances in European Commission consideration of offsetting including conclusion of a Working Group on No Net Loss.
Planned steps for research in sub-project 1
Goal:
Biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*

1. Document the operational model for biodiversity offsetting in Warwickshire, including:
   o The policy/legislative framework at national (England) level;
   o The planning framework at county (Warwickshire) and local planning authority level;
   o The development context, including projected development pressure and related level of demand for offsets in Warwickshire;
   o The institutional arrangements for offsetting;
   o The offsetting process and the roles of the various players;
   o The approach taken to guide the strategic location of offsets to optimise biodiversity outcomes;
   o The metrics used for calculation of the unit/credit value of residual damage (demand side) and of offset provision (supply side);
   o The legal arrangements to secure offsets, including documentation of offset requirement (demand side), offset provision including long-term management (supply side), covenants (for 'in perpetuity' offsets), credit purchase & sale;
   o Market infrastructure (registry of offset site, trading platform);

o The provisions for monitoring and verification.
2. Analyse strengths and weaknesses of the model in relation to NC and ES and in relation to the costs and benefits, including consideration of:
   o the net change in the value of ecosystem services arising from offsetting.
   o costs and savings for developers arising from offsetting;
   o the broader business opportunities arising from offsetting;
   o impacts on the administrative burden of addressing biodiversity considerations in development permitting;
   o impacts on local communities (e.g. access to nature).
3. Compare the Warwickshire model with models developed elsewhere, including those in Germany, the US and Australia, and analyse the applicability of the Warwickshire model to other EU Member States.

This research sub-project links in particular with WP2 Regulatory frameworks and drivers of change, with WP3, Task 3.3B *Effectiveness of Mechanisms and Instruments for Sustainable Management of Ecosystems,* and with WP7 *Impact & Dissemination* (given the potential relevance of the results for policy and business end-users). The research will also be of relevance to the governance and competitiveness challenges being addressed by WP1.

Expected results sub-project 1:
• A paper/report on biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.

Timing sub-project 1:
• Document operational model [Mar 14] • Analyse strengths and weaknesses [Jun 14] • Compare to models elsewhere [Nov 14] • Final report [Mar 15]

Responsibilities sub-project 1:
This research sub-project will be lead by EBL (Guy Duke) with input from EBL staff.

Planned consultation steps with CAB and stakeholders sub-project 1:
We will consult with EBL's key partners in Warwickshire on: • the research plan [Nov-Dec 13] • the findings of the documentation of the operational model [Mar 14] • the findings of analysis of strengths and weaknesses [Jun 14] • the final report [Mar 15]

Possible risks or obstacles for the planned research sub-project 1:
Some elements of the operational model may be confidential and therefore not available for public review. However, as both the Case Study Research Leader and the Case Study Representative are EBL staff, they have privileged access to EBL proprietary information and, if necessary, can review this without disclosing confidential information.

Expected outputs/deliverable (sub-project 1) relevant for the aims and objectives of OpenNESS:
A paper/report on lessons learnt from the Warwickshire Case Study on the operationalization of biodiversity offsetting in England and factors to take in to account in applying these lessons to other EU Member States.

Planned steps for research in sub-project 2: *The potential of biodiversity offsetting to deliver biodiversity and other elements of natural capital and other ecosystem services*
Goal, sub-project 2:
To explore the impacts of biodiversity offsetting in terms of ecosystem service delivery through the quantification of selected ecosystem services provided by developed and proposed development areas and their offsets and proposed offsets. If practical, we will explore the impacts of future offsetting management scenarios.
Approaches and methods: *Please make clear reference to tools and approaches of WP1, 2, 3, 4, 6 & 7*
It is very likely that BBNs will be used as the main structure, however the approach followed may also entail the use of GIS/spread sheet methods and potentially STMs. In terms of data sources the approach will be tailored to the case study and draw on available bio-physical, land use and habitat data as well as expert knowledge, literature review and interview data where appropriate.   This sub-project links with WP3 *Biophysical control of ecosystem services*, notably Task 3.1 *Contribution of NC stocks to ES flows*. There is also a link to WP7 *Impact and Dissemination* as the findings are likely to be of strong interest to policy end-users. The research will also be of relevance to the sustainable management of ecosystems challenge being addressed by WP1.
Expected results, sub-project 2:
Quantification of ecosystem services pre/post offset (June 2015).   Potentially scenario outputs and if possible spatial patterns of ecosystem service provision (September 2015).
Timing, sub-project 2:
24 months   • Identify datasets & data requirements [Mar 14]   • Construct initial model (most likely BBN) [Sep 14]   • Final quantification of ES [Jun 15]   • (Scenario/Spatial outputs, if feasible) [Sep 15]   • Sub project write-up [Oct 15]
Responsibilities, sub-project 2:
UOXF (Pam Berry, Rob Dunford) lead, in collaboration with EBL (Guy Duke, Louise Martland, Tom Tew)
Planned consultation steps with CAB and stakeholders, sub-project 2:
EBL and EBL partners in Warwickshire will need to be consulted for data and to ensure that the BBN constructed reflects the key issues as they perceive them. It is also likely that these stakeholders will also be asked to contribute their expert opinions.
Possible risks or obstacles for the planned research, sub-project 2:
Data availability will dictate the approach taken in many places. This is not so much an obstacle as an issue that needs to be taken into consideration during the process.
Expected outputs/deliverable (sub-project 2) relevant for the aims and objectives of OpenNESS
• Paper exploring the contribution of offsetting to ecosystem service delivery (potentially with reference to future scenarios and climate change)   • Practitioner exposure to ES concepts

- It is early days for biodiversity offsetting, practitioner experience embedding ES concepts in offsetting at this stage is quite significant in terms of operationalizing the approach.

Planned steps for research in sub-project 3: The resilience of biodiversity offsets to climate as a driver of change

Goal, sub-project 3:

To assess the resilience of selected habitat offsets to climate change.

This sub-project links with WP3 *Biophysical control of ecosystem services*, notably Task 3.1 *Contribution of NC stocks to ES flows*. There is also a link to WP7 *Impact and Dissemination* as the findings are likely to be of strong interest to policy end-users. The research will also be of relevance to the sustainable management of ecosystems challenge being addressed by WP1.

Approaches and methods, sub-project 3:

Species which are dominant, of functional and/or conservation importance and sensitive to climate change will be selected from key habitats which are frequently offset [by Feb 14].

The impacts of climate change on these will be modelled using ecological niche modelling, available through WP3 partner (UOXF), who are involved in this case study. [by Oct 14]

Actions for beyond the 12-month period:

The resilience of the biodiversity offset will be assessed based on the selection of species maintaining suitable climatic conditions in the area. [by Feb 15]

The resilience of ecosystem services will be assessed based on the impacts of climate change on key functional components of that service. [by May 15]

Expected results, sub-project 3:

Maps of the impacts of climate change on the selected species. [by Oct 14]

Expert opinion on the resilience of biodiversity offsets and selected services to climate change [by Aug 15]

Timing, sub-project 3:

20 months

Responsibilities:

UOXF (Pam Berry) lead, in collaboration with EBL (Guy Duke, Louise Martland, Tom Tew).

Planned consultation steps with CAB and stakeholders, sub-project 3:

EBL partners for data (habitat maps and species selection) and expert opinion.

Possible risks or obstacles for the planned research, sub-project 3:

Higher resolution county level species data would be good nesting within modelling, but suitable resolution data will be freely available from National Biodiversity resolution too.

Expected outputs/deliverable (sub-project 3) relevant for the aims and objectives of OpenNESS

An understanding of the importance of climate change as a driver on the resilience of biodiversity offsetting and its impact on ES.

WP5 Report

Case Study 12: Living on the edge in a drying region – Case Kiskunság, Central Hungary

Réka Aszalós[1], Bálint Czúcz[1], Györgyi Bela[2], Ágnes Kalóczkai[2],   Eszter Kelemen[2], Miklós Kertész[1], György Pataki[2] [1]MTA ÖK, [2]ESSRG

Case and respondent's information	
Case study Research Leader	(Mr.) Miklós Kertész (MTA ÖK), (Ms.) Ágnes Kalóczkai (ESSRG)
Role of research leader in relation to case study	Science coordinator for the a long term monitoring site in the area, Coordinator of previous empirical social science research activities and conflict mediation processes in the case study area
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	(Ms.) Krisztina Márta
Role of case study representative in relation to case study	Representation of the CAB, responsible for communication and public relations at the Kiskunság National Park Directorate

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
Kiskunság Sand Ridge is an 8300 km^2 semi-arid lowland region with large extents of inland sand dunes and shallow alkali lakes in Central Hungary. Traditional land-uses were pastures and grazing, as well as small-scale arable fields, vineyards, and orchards. In the last 50 years, drainage, intensive farming and timber plantations have profoundly transformed the landscape, leading to shifting patterns of abandonment and cultivation, as well as depopulation of the rural areas. As a result, the region's vulnerability to external socio-economic and ecological drivers (especially to global climate change) increased. This heterogeneous, dynamic, and policy-sensitive landscape of the Kiskunság region provides an ideal setting to study the complex interlinkages between regulatory environment, land-use, biodiversity, ecosystem services, and human well-being. Changes in some key ecosystem services will be assessed based on extensive biodiversity and environmental monitoring data. Non-monetary valuation methods will be used to estimate the social value of key ecosystem services. Participatory methods will be applied to study and resolve the potential conflicts between farmers, forest managers, nature conservation, and water authorities. Based on the results of this interdisciplinary research process, actual land-use patterns could be restructured to better reflect the importance of ecosystem services. Moreover, results may also be used as inputs to a participatory renegotiation of local and regional land-use plans in the case study area.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:
Water conflicts: Developing land-use alternatives in a process of regional water planning As one of the key problems of the Kiskunság region is groundwater table drop, water resupply is seen as a necessary action to prevent the loss of ecosystem services. A water resupply project initiated by the Kiskunság National Park Directorate (KNPD) and implemented by the General Directorate of Water Management has started in the northwest border of the study area that aims to reconstruct the habitats (burying several drainage channels and constructing the infrastructure necessary for water resupply and retention) in order to restore alkali lakes and meadows. Due to this project, the improved status of biodiversity, better water availability, and increasing drought resistance of the region are expected. However, conflicts may emerge between farmers, forestry managers, water authorities, and the KNPD due to the trade-off between locally important provisioning (e.g. animal keeping) and regionally important regulating (water regulation) services. The main goal of our sub-project is to identify these potentially emerging conflicts, analyse them in terms of ESs flows, associated costs and benefits, and resolve the problems in a participatory way as much as possible.

Issue visualized in a systems diagram
Diagram for decision-making process in Kiskunság Case Study

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
We have already started the problem formulation phase, although it is still in progress. Key stakeholder groups were identified in spring 2013 and contacted. The first CAB meeting was held on 19 September 2013 with the participation of 3 stakeholders and 4 scientists trying to identify the key topic of the investigation. As some of the most important stakeholders could not participate at this meeting, most of the key decisions were postponed until the next CAB meeting

(planned for December 2013)
What is the desired short-term result (output)?:
The most important short-term results of the subproject are expected as follows: • decrease in conflicts during the implementation of the water retention project • a better involvement of local and regional stakeholders into the implementation of the project and the subsequent water management regimes • a broader acceptance of the project among stakeholders • a land-use plan developed in a participatory way that guarantees the most important ecosystem services and their maintenance
What is the desired long-term result (outcome)?:
Expected long-term results are more sustainable land-use and water management practices in the region.
Who will benefit from the results of this sub-project?
Beneficiaries of the water retention project of the KNPD will be all stakeholders who benefit from more secure water availability, higher water tables, increased biodiversity and/or increased drought-resilience, including: • the Kiskunság National Park Directorate and other nature conservation organisations at regional and national level; • farmers who need more water; • forest (or timber plantation) managers, owners of timber plantations • those who are interested in tourism, ecotourism, recreation activities/industries Beneficiaries of our contribution (the "water conflicts" subproject -- optimizing the main project by modelling ESs flows and participatory conflict resolution) will include all the previous ones plus all stakeholders who can benefit from deeper involvement and enhanced conflict resolution.
Who will be negatively affected from the results of this sub-project?
• Farmers who intend to do arable farming in low-lying areas • Any land owners whose rights to use their land will be constrained by the project

1.3. Use of ecosystem services and natural capital concepts:

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
We recognise these concepts as a tool that can help to make the land users aware of the importance of sustainable land-use management. Communicating in terms of ESs and NC might improve stakeholders' recognition of both their dependence on well-functioning ecosystems and the impact of their actions upon them. It is also expected that by making ESs flows in the region explicit, and revealing hidden cost and benefit distribution among stakeholders, we can also contribute to local/regional conflict resolution, ensuring more acceptable land-use management options (in terms of ESs flows) and a better acceptance and perpetuity of the project achievements.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
The concept is not well-known among stakeholders, rather abstract, and has no direct relevance for local people's lives.

2. Understanding Stakeholder involvement and decision making process

There are usually many different types of stakeholders involved in the case studies but for this report we concentrate on the Case study advisory Board (CAB) described in the Description of Work for the project.

The main idea of a CAB is that OpenNESS researchers can consult and interact with stakeholders in their case studies (= science-practice forum). This is essential as one of the main goals of OpenNESS is to operationalize and test ES&NC methods and tools in real life. This is only possible if there is interaction with the people who will experiment and/or use the results of these methods and tools.

To better understand the characteristics of your CAB, we would like you to answer the following questions :

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
CAB in Kiskunság case study has already been established. At present the CAB has 6 stakeholder members, but we still plan to invite 5-6 additional members representing other stakeholder groups.
What do you expect from involving stakeholders in your CAB?
Our expectation is that involving stakeholders in our CAB will help us to make our research relevant and problem-oriented, responding to local needs. Different backgrounds and knowledge of stakeholders provide us with the opportunity to integrate many points of view and interests that are important for understanding the complexity of land-use management problems. The main issues and the possible research topics were identified together with the CAB. It is also expected that the CAB will help to integrate the results into the existing decision making processes.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
CAB members already involved: a forestry manager; a water management expert; a communication expert of KNPD; the director of the KNPD; a local agricultural expert (former head of the regional chamber of agriculture); and a representative of a local community development CSO. Representatives of the following sectors/organizations are planned to be invited to the CAB: local tourism sector; education expert; local farmer; local nature conservation NGO; and regional and/or national level decision makers.
Which of the CAB members have you worked with before the start of OpenNESS project?
The National Park Directorate; the local agricultural expert; and the representative of the local community development CSO.
How were the CAB members selected?
The most relevant stakeholder groups were identified in a two-step process. First, the research partners identified a few general issues relevant to the Kiskunság region. Then, a small set of regional stakeholders were identified who were invited to the first CAB meeting. The current members of the CAB represent those stakeholder groups. During the first CAB meeting, the focus of the case study was refined both spatially and thematically (subproject 1), and based on these refinements new, additional stakeholders will be invited to join the CAB. For the selection of CAB members, three criteria were taken into account: their professional background, their local and regional embeddedness (whether they have Kiskunság-specific knowledge, experience and relationships) and whether we have already had a good relationship and working experience with them.

Is there anyone (or group) not represented? If yes, why?
There are 6 important stakeholder groups (local farmers, local tourism sector, local teachers, local nature conservationist NGOs, local mayors, the General Directorate of Water Management) that are not represented, yet. Before the selection of any representatives of these groups, the exact focus and location of the case study area will be specified. Even though these have been specified recently, and are explained among our research plans (sub-project 1), some time is needed to search for and make contact with the appropriate people.
Dates of meetings with the CAB (representatives)
28/05/2013: meeting with the director of KNPD 28/08/2013: meeting with the water expert 19/09/2013: first CAB meeting
How are decisions made within the CAB?   *E.g. democratic vote, consensus building?*
Consensus building
Does the CAB have an official mandate to tackle the concerned topic?
The main role of the CAB is to provide a strategic advice to the research process. There is no official mandate in the administrative sense.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Kiskunság National Park Directorate, Hungarian water authorities, General Directorate of Water Management, Ministry of Rural Development
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings sent via an e-mail list; written operating regulations
How do you perceive the level of trust between the different CAB members?
Current CAB members do not have direct personal stakes related to the aim of the project, therefore, level of trust is high between them. If later CAB will have members who have direct interests regarding land-use management (farmers, water authorities), it is possible that the level of trust will decrease. General rules for the operation of the CAB were established in order to provide equal rights and opportunities to all CAB members and to reduce incidental power inequalities among the members.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The issue of drought in the Kiskunság region has become serious in the last 50 years, and water resupply, retention, and sustainable land-use management gained significant emphasis. A water resupply and retention project, which has been started recently, provides us a good opportunity to study the impacts of higher water availability at a local scale.
Who was involved in the selection of this issue/topic?
The Hungarian OpenNESS research partners and the current CAB members.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
- preliminary decisions of the thematic and spatial focus of the case study   - a preliminary stakeholder analysis   - first meeting of the CAB   - refinement of the research questions and spatial focus
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goals:
- Identifying relevant ecosystem status and service indicators based on the WP3 tools   - Identifying land-use alternatives (scenarios) for the case study area   - Understanding institutional drivers of land use change   - Generating a baseline habitat map and a few selected ESs maps for the case study area   - Identifying potential conflicts among stakeholders generated by trade-offs between ESs   - Analysing the conflicts in terms of ESs flows, associated costs and beneficiaries
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
- WP1: Testing/rebuilding the cascade model with stakeholders (using discourse-based and visualizing methods to understand how stakeholders conceptualize the relationship between ecosystem functions, services, benefits, and values)   - WP2:   - Institutional analysis of legislative/regulatory frameworks relevant to the case study (Natura 2000, CAP, regional forest plans, Water Framework Directive, Habitat Directive) and study the conflicts among them   - scenario building with stakeholders on land-use alternatives (input for the MCDA)   - WP3:   - tools (e.g. Estimap, Biome-BGC, Invest, spread sheet methods) used for quantifying relevant ecosystem status and service indicators   - GIS: database management, indicator mapping +modelling   - WP4: multi-criteria decision analysis combined with deliberative techniques as integrated methodology (individual method(s) will named after the MCDA training in January)
Expected results:
- Baseline habitat map and maps for selected ESs indicators for the case study area   - Basic land-use alternatives for the case study area   - Conflict map and analysis of ESs trade-offs
Timing & Responsibilities:

Milestone 1
Delivery date: 31 December 2013
(Responsible partner for each step is identified in brackets)
 	
    MS 1.1 Final delineation of the study area (MTA ÖK)
 	
    MS 1.2 Generating primary habitat map (CLC) (MTA ÖK)

MS 1.4 Analysing the set of tools available and identify tools useful and applicable for the biophysical research of Kiskunság (MTA ÖK)

MS 1.5 Identifying relevant ecosystem status (NC) indicators (biodiv, connectivity, WFD and other status indicators) (MTA ÖK)

MS 1.6 Identifying the set of ESs and their indicators (potential supply indicators) relevant for Kiskunság (MTA ÖK)

MS 1.7 Detailed stakeholder analysis to identify all relevant stakeholder groups within the narrower CS area, their main stakes and interests, existing and/or latent conflicts between them (ESSRG)

Milestone 2

Delivery date: 30 April 2014

MS 2.1 Testing BiomeBGC for estimating ESS indicators for selected habitat types (MTA ÖK)

MS 2.2 Selection of the priority set of NC and ESS indicators (MTA ÖK)

MS 2.3 Identifying the set of ESs which has key importance in relation to the well-being of the local community (non-monetary valuation method, most likely preference assessment will be used) (ESSRG)

MS 2.4 Compiling priority NC and ESS maps for baseline (MTA ÖK)

Milestone 3

Delivery date: 30 September 2014

MS 3.1 Compiling priority NC and ESS maps for land use alternatives (MTA ÖK)

MS 3.2 Policy/institutional analysis at the case study level in order to identify contradicting policies (ESSRG)

MS 3.3 Identifying land-use alternatives for the Kiskunság case study area (ESSRG)

Milestone 4

Delivery date: 31 December 2014

MS 4.1 Defining a set of relevant criteria for sustainable land-use of the CS area (combining deliberative tools and ecological expertise) (ESSRG)

This plan will be discussed with the CAB, therefore some changes are possible.

Planned consultation steps with CAB and stakeholders:

Enlarging the CAB with key stakeholders who were identified after delineating the research area of the subproject.

Consultation with the CAB about the detailed research plan and the individual methods we propose to use. This meeting will also discuss/rebuild the cascade model together with stakeholders.

Land-use alternatives will be consulted with the CAB before June 2014

Criteria for land-use will be discussed with the CAB before December 2014

Possible risks or obstacles for the planned research:

- Difficulties with the involvement of all stakeholders groups, especially decision makers from regional and national levels.
- Integration of the results (e.g. land-use management plan) into the existing regulatory frameworks and approaches.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS

- Development of a land-use management plan based on the sustainable water management and ESs use

- Defining possible win-win solutions based on the ESs concept
- Testing the ESs concept as tool to develop land-use management plans
- Rebuilding the cascade model building upon the local knowledge of stakeholders (potentially relevant to WP1)
- Highlighting contradicting policies at the case study level (if contradictions will be found between EU policies, results may be potentially relevant to WP2)
- Testing non-monetary valuation methods (preference assessment) (potentially relevant to WP4)
- Testing a deliberative use of MCDA (potentially relevant to WP4 but also to the MCDA cross-cutting methodology)

WP5 Report

Case Study 13

Landscape management of green infrastructure

in an intensively-used agricultural land (Case De Cirkel, Belgium)

Wim Verheyden, Francis Turkelboom (INBO) and Ward Andriessen (RLHV)

Case and respondent's information	
Case study Research Leader	Wim Verheyden & Francis Turkelboom (Institute of Nature and Forest Research, INBO)
Role of research leader in relation to case study	Research coordinators for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Wim Vandenrijt – Flemisch Land Agency (VLM) Ward Andriessen – Regionaal Landschap Haspengouw & Voeren (RLHV)
Role of case study representative in relation to case study	VLM: Process owner RLHV: Process facilitation

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The project "De Cirkel" is part of a comprehensive farm land consolidation project in which the reorganization of parcels enabled a more efficient agricultural activity in the area of "Jesseren". The total project area (1825 ha) stretches out over 3 municipalities (upper catchment of the Mombeek stream). On the other hand, thanks to the regrouping of agricultural parcels, there is also some % of the farm land which will be developed into 'nature' (150 ha in total). There is a high priority for the extension of woodland and for the development of Calcareous grasslands (or limestone grasslands) and *Violion caninae* grasslands (Nardetea). Developing vegetation buffer strips nearby streams will be beneficial for water-related ecosystem services as well the natural value of this area. Recreational opportunities will be enhanced with the development of a network of walking and cycling routes.

The plan is that several partners will be involved in the management of this extra nature area (e.g. nature and forest agency, NGO's, but also farmers)

1.2. Specific aspects or issues addresses in the OpenNESS project

Description of sub-project:
In this sub-project, the goal is to come up with an instrument that to manage the natural zones, the holding basins and the landscape elements in this area is a common agreed way. Landscape perspective and sustainable management are important criteria. Within 2 years (end of 2015), a management plan should be in place, and responsibilities should be clear.   As a result, it is expected that the environmental quality and quality of life in three municipalities will be increased, the regional economy will be stimulated and the local collaboration between landowners and land managers will be strengthened.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
Will follow later (will be made together with partners).
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Stakeholders have been contacted and informed. Some of the stakeholders have signed an "intention agreement" a few months ago. There is already a general vision available that spells out the aims and the approach of the project "De Cirkel" (available in a brochure).   At the moment, they are at the beginning of Phase 4 (= start of a vision development).
What is the desired short-term result (output)?:
2015: The instrument should be operational (including a landscape management plan, management group,…)
What is the desired long-term result (outcome)?:
➢   The sustainable management of the nature in this area.   ➢   Stimulating social economy (e.g. nature management by farmers).   ➢   Sustainable use of alternative energy sources (biomass).
Who will benefit from the results of this sub-project?
-   The agricultural sector: New opportunities for agricultural landscape management and because of shared use of land for both natural and agricultural purposes.   -   Nature organizations: Access to new land for nature development. Development of an integral vision and management plan on landscape level, in which nature will benefit.   -   People living in the municipalities nearby the project area: New opportunities for recreation.   -   Water managers and environmental organizations: Vegetation along nearby streams will lead to a better water quality in this area.   -   Society in general: A more cost efficient way of managing nature and landscapes with different partners.
Who will be affected from the results of this sub-project?
None, although some farmers might still have some negative feelings by the fact that some of their land was confiscated during the process of farm land consolidation.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts? What do you hope to achieve differently compared to earlier concepts/approaches?
- The ESS concept is expected to result in a multifunctional vision of the 150ha for nature development. - Stakeholder analysis of different involved parties. This will allow to build on different argumentations for developing the instrument. - The collaboration with objective/impartial research partners (INBO) is interesting, because they can have some 'weight' during the process.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
At the moment we don't expect specific barrier towards this ES-approach in this project.

3. Understanding Stakeholder involvement and decision making process

Establishment and working procedures of the CAB:

Have you already established a CAB? If not please explain your strategy over the next 12 months?
There has not been established a formal CAB yet, but the Flemish Land Agency (VLM) and the RLHV will have an important role in the coordination of the project. The exact structure of the collaboration network and the CAB has not been decided yet. Probably there will be worked with two levels: - A steering committee: For stakeholder consultation - A planning working group: With key stakeholders only
What do you expect from involving stakeholders in your CAB?
We expect that by involving the stakeholders, that everyone will discuss constructively, they support the integrated management plan, and that they are willing to work together on this new and alternative approach for nature development.

Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Process facilitators: The Flemish Land Agency (VLM), RLHV Stakeholders (to be decided): Province, Agency of Forest and Nature, Demer Catchment Coordination Committee, Agriculture, Municipalities Kortesem and Borgloon …. If possible and preferable, not only the Farmers Union (Boerenbond) will be invited, but also individual farmers will be actively involved (because farmers might have a different opinion from the Farmer Union as they are farmers might directly benefit from the project).
Which of the CAB members have you worked with before the start of OpenNESS project?

RLHV has worked together with most of the partners in other projects. Because of recent municipal elections, there will be new local policy makers involved.
How were the CAB members selected?
A formal CAB has to be selected soon. They will be selected on their relevance for the area. Eventually, VLM will decide upon the exact composition of the CAB.
Is there anyone (or group) not represented? If yes, why?
Normally, everyone will be represented.
Dates of meetings with the CAB (representatives)
- June 2013: Official start-up meeting - Key stakeholders have already signed an "intention agreement" (who?).   - 5 November 2013: Identification of purpose sub-project with RLHV, Demer coordination committee and INBO.
How are decisions made within the CAB?   *E.g. democratic vote, consensus building, chairperson casting vote?*
There will be negotiations until a consensus is reached in order to raise a maximal support for the instrument that will be developed. As a high degree of acceptance is needed, therefore a voting has to be avoided (because this would not be a good start for sustainable management in the area).
Does the CAB have an official mandate to tackle the concerned topic?
Since 04/11/2013 there is an official mandate for the Flemish Land Agency (VLM) and the RLHV to start with the project. The steering committee has only an advisory role to VLM.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
As soon as decisions are made by VLM, they will be in the lead for implementation (as they have money for implementation). The involved stakeholders are expected to take responsibility for specific actions for implementation (within their own mandates).
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings (VLM – Responsible: Wim Vandenrijt).
How do you perceive the level of trust between the different CAB members?
Key stakeholders have already signed an "intention agreement" a few months ago, so this is a first encouraging step.   But there still need to be worked on increasing mutual trust between some of the partners. With the new approach that is envisaged in this project area, some of the privileges that some of the partners had in previous similar projects will no longer be the same. Farmers and nature NGO's distrust each other. Among the farmers there will probably be two different opinions: some of them will focus on the decreasing amount of farmland in the entire project area of "Jesseren", but some of the local farmers will also have benefits from the new approach in this project (for instance because of possibilities for better land management). The RLHV will be an

important mediator ("bridge builder") between different stakeholders and to create win-win-situations.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Because a very interesting opportunity to try out a new approach for nature management in an agricultural area, where an ES-approach could be helpful in developing the different scenarios.
Who was involved in the selection of this issue/topic?
RLHV, VLM, Demer Coordination Committee and the Research Institute for Nature and Forest (INBO).

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
There has been an official start-up meeting in June 2013 and key stakeholders have signed an "intention agreement".
Planned steps for research in sub-project 1:   ➔ *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
The goal of the project is to come with a common agreed instrument that enable to manage the natural zones, the holding basins and the landscape elements in the land consolidation project "Jesseren". Landscape perspective and sustainable management are important criteria. This process should be aided by using an ES-approach and by conducting stakeholder analysis.
Approaches and methods: ➔ *Make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*

Planned process:
 - 28th November 2013: A workshop with the steering Committee to discuss planning steps with stakeholders.
 - Beginning of 2014: Start of 2 half day stakeholder workshops. Expected outputs:
   ➢ achieve support for the general approach
   ➢ decide on planning steps.
 - Later stages:
   o An inspiration map for the project area.
   o Building blocks for a shared vision on the future of the area (and the landscape management plan).
   o Analysis of implementing instruments.
 INBO will assist in the following (draft):
 2014:

- An institutional and stakeholder analysis (resulting in some sort of stakeholder matrix which can give new insights in stakes and possible incentives to engage different stakeholders) (WP6).   - Building an overview of (potential) supply and demand for ecosystem services (WP4)   - Potential trade-offs and win-wins for multifunctional use of green areas (WP1).   - (Wooden hedgerows: ESS and feasibility of energy use (?))   2015:   - Evaluation of used ES tools (WP5).
Expected results:
Building blocks for a shared vision on the future of the area (and the landscape management plan).
Timing:
See above
Responsibilities:
Will be decided on 28/11/2013
Planned consultation steps with CAB and stakeholders:
Will be decided on 28/11/2013
Possible risks or obstacles for the planned research:
See question related to trust. Additional risk is if the farmer lobby continue to challenge the nature designation of the 150 ha.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
- Stakeholder analysis (WP6)   - Assessing ESS demand: Testing of non-monetary valuation tools (WP4).   - Defining possible ES&NC win-win-solutions and opportunities in De Cirkel for well-being, sustainable land management and governance (WP1).

WP5 Report

Case Study 14: Planning with GI in five linked cases

Rob Bugter[1] and Eveliene Steingröver[1]

[1]Alterra, Wageningen University and Research

Case and respondent's information	
Case study Research Leaders	Eveliene Steingröver, Rob Bugter
Role of research leader in relation to case study	Coordinator of the GIFT-T! interreg project, the Alterra part of this project is the base of this OpenNESS case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	To be appointed
Role of case study representative in relation to case study	To be identified

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
Planning with GI in five linked cases
The OpenNESS cases study is based on the Alterra part of the GIFT-T! project, which is an Interreg IVB project that started in Sept 2011 and runs for three years. In it, partners from three countries - Great Britain, The Netherlands and Belgium - develop a method for robust, informed planning of Green Infrastructure (GI) and innovative implementation in five live case studies. These cases cover a gradient from peri-urban via agriculture dominated landscapes to landscapes with a large percentage of nature. In all 5 cases the economic, ecological and social drivers and the differing planning cultures are assessed. Partners then develop a planning methodology, apply it in the cases and observe and measure impacts. For all five cases, GI Business Plans based on community based vision making, diagnosis and design for developing GI to their benefit are developed. Alterra coordinates GIFT-T! and is responsible for methodology development, its scientific basis, investigating the potential effect of GI implementations on improving the connection between N2000 sites and monitoring the learning process of planning with GI in all the case studies.
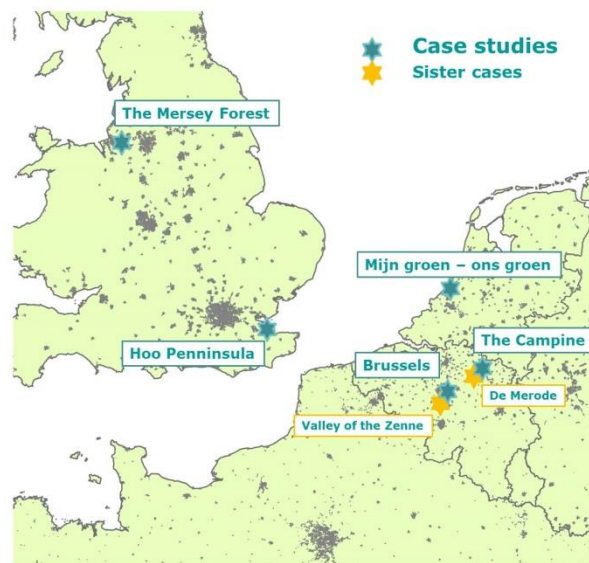
Particularly relevant for OpenNESS is that the stakeholders will be specifically made aware of the benefits (meaning: Ecosystem Services) they can obtain from GI and how they can optimize those by incorporating GI in spatial planning. The aim of GIFT-T! as an OpenNESS case is therefore 1) to follow and learn from the de facto operationalizing of ES in GI planning, and 2) to create added value for both projects through the use or testing of models and/or tools to assess the contribution of GI to biodiversity goals.

1.2. Specific aspects or issues addressed in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:
Apart from the general objectives mentioned above (mentioned under 1) in section 1.1), one specific sub-project is envisaged at the moment (mentioned under 2) in section 1.1):   **1) Assessing the contribution of GI to biodiversity goals**   Apart from supporting (the biodiversity required for) services like pollination and natural pest control, regional GI also contributes to biodiversity in a general sense by providing habitat for numerous species and by improving the connectivity of habitat networks. One of the specific goals of the OpenNESS case study is to investigate the effect of implementations of different GI configurations on biodiversity and connectivity in general, and on the contribution of GI to N2000 and EU biodiversity goals in particular.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
1
What is the desired short-term result (output)?:

- Agreement on a method to use and possibly develop further, in order to analyse the contribution of the GI in the 5 cases to biodiversity as well as to connectivity between the N2000 sites in the applicable cases.
- A work plan for the analysis and possible development mentioned above

What is the desired long-term result (outcome)?:
- A tested method / instrument to analyse the contribution of different GI configurations to biodiversity and connectivity   - An analyses of the possible contributions of planned GI configurations in the 5 cases to Biodiversity 2020 and N2000 goals
Who will benefit from the results of this sub-project?
- The OpenNESS partners (through improved knowledge)   - Science (through method development and results)   - The GIFT-T! project and its stakeholders because the results will provide them with better data to base their plans on.   - Regions (through the GIFT-T! deliverables: even more improved knowledge on getting the most out of their GI, improved competitiveness)   - EU: (through both OpenNESS and GIFT-T! deliverables): improved knowledge on how to assess and increase the contributions regions can make to biodiversity and N2000 goals as well as the effects of those on competitiveness, through GI planning.   - Society: a better protection of biodiversity
Who will be negatively affected from the results of this sub-project?
No-one

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
Because highlighting the value of GI (in ES and/or NC) enables its pro-active use in planning, as an asset instead of a hindrance. Earlier concepts have never been able to achieve that.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
None identified yet

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
No. A CAB will be installed asap
What do you expect from involving stakeholders in your CAB?
The same as from the active involvement of stakeholders in planning in the GIFT-T! project: they will much easier see the value and commit themselves to the goals if they are common goals in which there is a clear advantage for them as well.

Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
The CAB needs to be formed yet, so not yet known
Which of the CAB members have you worked with before the start of OpenNESS project?
Not known yet
How were the CAB members selected?
Not yet applicable
Is there anyone (or group) not represented? If yes, why?
Not know yet
Dates of meetings with the CAB (representatives)
Not known yet
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Not known yet
Does the CAB have an official mandate to tackle the concerned topic?
Not known yet
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Not known yet
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Not known yet
How do you perceive the level of trust between the different CAB members?
Not yet applicable

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Because the contribution of regional GI to EU biodiversity goals (i.e. Biodiversity 2020 and N2000 goals) is very relevant for operationalizing the use of ES generated by GI. The GIGT-T! Interreg project, which is in fact doing this operationalizing, presented the opportunity of an extra investment in tool and method development, enhancing the results and outputs for both projects. For regional planning and EU regulations these results can be of considerable importance, because they can make crucial contributions to the development of for instance the GI strategy and future Agro-environmental payment schemes.
Who was involved in the selection of this issue/topic?
Alterra together with the OpenNESS partners

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
The options for the use of existing and available instruments and models were assessed prior to Loch Leven case study meeting
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
To assess the contribution of GI to biodiversity goals
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
To be decided. The choice and possible development will be part of WP3 activities
Expected results:
Short term: choice of instruments / models for use and possible further development. Long term: a tested method / instrument to analyse the contribution of alternative GI configurations on biodiversity and connectivity, the results of the application of this method / instrument on possible GI configurations in the 5 planning cases, general conclusions about the possible contribution of regional GI to EU biodiversity goals
Timing:
2013: choice of method(s) / instrument(s). 2014: tool development and application in the 5 planning cases. End of 2014: Evaluation and further planning
Responsibilities:
Responsibilities for choices lie with the case study leaders and WP3 leaders.
Planned consultation steps with CAB and stakeholders:
1) Establishment of CAB - 2013 2) Consulting CAB on methods / instruments and application – first half of 2014
Possible risks or obstacles for the planned research:
Lack of interest from stakeholders
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
To be decided

WP5 Report

Case Study 15: Wetland construction and restoration (Gorla, Italy)

Bruna Grizzetti[1], Giulio Conte[2], Fabio Masi[2]

[1] European Commission Joint Research Centre, Ispra (VA), Italy

[2] IRIDRA, Florence, Italy
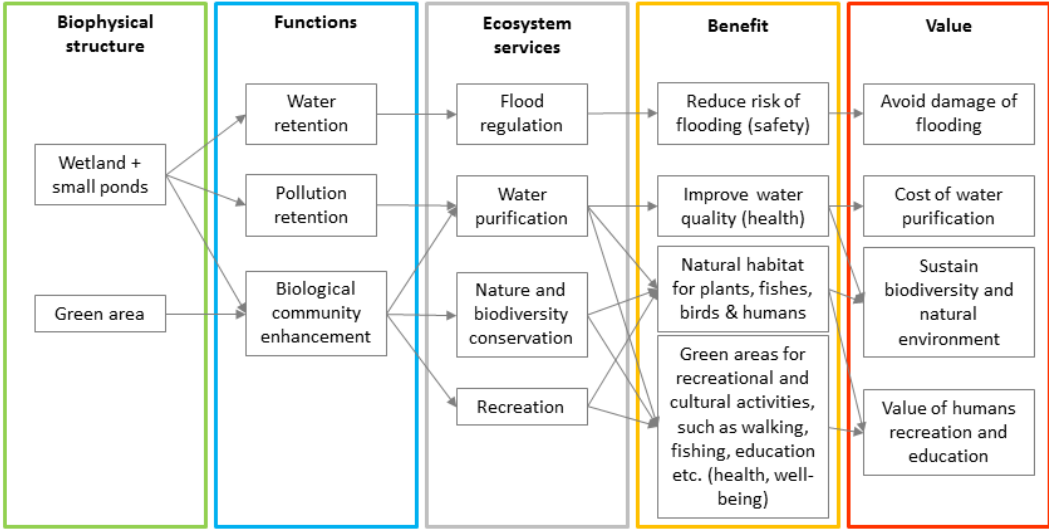
Case and respondent's information	
Case study Research Leader	Bruna Grizzetti (EC JRC)
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Fabio Masi and Giulio Conte (IRIDRA)
Role of case study representative in relation to case study	IRIDRA is the engineering company that designed the wetland

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The case study will explore the ecosystem services provided by an artificial wetland constructed in Gorla (Lombardy Region, Northern Italy) for treating the effluent of a Combined Sewer Overflow (CSO). In particular, the research aims are: 1. to assess the ecosystem services provided by the new ecosystem: water purification, flood regulation, recreation and natural habitat; and compare the green infrastructure (the constructed wetland) with conventional grey infrastructures generally used for combined sewer overflow, for pollution control and flood prevention.   2. (long-term objective) to explore the possibility to integrate the ecosystem service evaluation in the ordinary administrative procedures of decision making concerning water pollution control and flood prevention.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title and description of sub-project:

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

Ecosystem Service Cascade Model, Case study Gorla - Grizzetti B., Conte F., Masi F. (version 30/10/2013) |

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
We organised a stakeholder meeting (CAB meeting) on 16/10/2013 where the interests of the stakeholders and a possible work plan were discussed. Data are necessary to assess the ecosystem services of interests and we are now preparing a monitoring plan for the year 2014.

What is the desired short-term result (output)?:
In the short-term we aim at collecting monitoring data on the constructed wetland and achieving a complete stakeholder involvement.

What is the desired long-term result (outcome)?:
The expected outcome in the long-term is to gather information on the performance and cost of a green infrastructure (assessing the "added value" of the ecosystem services provided) compared to a grey one; and to explore the possibility to integrate the ecosystem service evaluation in the ordinary administrative procedures of decision making concerning pollution control and flood prevention.

Who will benefit from the results of this sub-project?
We expect that the local authorities responsible for implementing the urban and water management plans will benefit from this research. The project will also raise awareness on Combined Sewer Overflow and on the synergies between green infrastructure and land and water management plans.

Who will be negatively affected from the results of this sub-project?
Grey infrastructure designers, "conventional" construction companies.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The local stakeholders expressed interest in the concept of ecosystem service because it is mentioned by recent policies, but they consider they lack tools to practically implement and test the concept. They think that ecosystem services can help in providing a comprehensive view of the benefit of a green infrastructure.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
Lack of understanding or clarity of the concepts.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes, we have already established a CAB for the Case study.
What do you expect from involving stakeholders in your CAB?
Feedback, contribution to formulate and focus research questions, support in the data collection, co-building of knowledge for the Multi Criteria Analysis, knowledge of the local system and policy context.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
At the moment the members of the CAB are: - Regione Lombardia (regional authority)   - AATO Varese (local water management authority)   - ARPA Lombardia (environmental protection agency, technical authority)   - Comune di Gorla Maggiore (municipality)   - WWF Lombardia (environmental NGO)   - Legambiente (environmental NGO)   - IRIDRA (SME and partner of OpenNESS)   - EC JRC (research centre and partner of OpenNESS)   The following entities declared their interest in following the activity of the CAB: - Po River District Authority   - CARIPLO Bank Foundation (a private foundation that finances innovative environmental solutions)
Which of the CAB members have you worked with before the start of OpenNESS project?
IRIDRA has already worked with Regione Lombardia and the Commune of Gorla.
How were the CAB members selected?

We organised a meeting with the stakeholders that IRIDRA knew already from previous projects (Regione Lombardia and Commune of Gorla) to identify other possible stakeholders to involve in the OpenNESS project.

Is there anyone (or group) not represented? If yes, why?
Local manager of water supply, the NGO Lipu, and representatives of possible conflicting interests.
Dates of meetings with the CAB (representatives)
The first CAB meeting was held on 16-10-2013 (the pre-meeting to identify additional stakeholders was held on 12-09-2013).
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Consensus building.
Does the CAB have an official mandate to tackle the concerned topic?
Yes, some members of the CAB.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Mainly Regione Lombardia (in the CAB) and the Italian government (not in the CAB).
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of the meetings.
How do you perceive the level of trust between the different CAB members?
Good, but the actual composition of the CAB does not probably represent all local conflicts.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The topics of research were selected because they are relevant for the local stakeholders involved (members of the CAB).
Who was involved in the selection of this issue/topic?
IRIDRA and JRC prepared a proposal for the research in the Case study (also on the basis of input from the stakeholders) that was discussed in the first CAB meeting on 16/10/2013.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
• We organised a meeting with the local stakeholders, Regione Lombardia and Comune di Gorla, on 12/09/2013 to explore their needs/interests and identify other important stakeholders to be involved in the CAB.   • We prepared a preliminary proposal of research to be discussed with the stakeholders.

• We established the CAB and held the first CAB meeting on 16/10/2013.

Planned steps for research in sub-project 1:
If you distinguish sub-projects, please copy this table for each sub-project

Goal:
1. Develop the monitoring plan and collect the necessary data.   2. Assessment of the ecosystem services (if the data will be available).

Approaches and methods:
Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7

1. For the monitoring, we will build on the initial monitoring plan established for the constructed wetland. For the analysis we rely on ARPA, while for the data on biodiversity we count on the WWF and Legambiente. They are all members of the CAB and offered their support.   2. For the assessment of the ecosystem services in the Case study we intend to use the Multi-Criteria Analysis (WP4).

Expected results:
1. Data on water quantity and quality entering and leaving the system for 2-3 rain events over the year (Dec 2013-Nov 2014). Some data on biodiversity with the help of the NGOs in the CAB. If possible, we will collect information also on the recreational use of the area.   2. We will prepare a framework on the application of the Multi-Criteria Analysis in the Case study.

Timing:
• 12 months

Responsibilities:
1. JRC and IRIDRA will coordinate the data collection. The support of the CAB will be essential in the data collection. In fact, Regione Lombardia and Comune di Gorla provide the access to the information. ARPA is responsible for the water quality analysis. The NGOs could support the collection of information on biodiversity. In addition, JRC and IRIDRA with the Commune of Gorla will organise the collection of information on the recreational use of the area.   2. IRIDRA and JRC will develop the framework for the application of the Multi-Criteria Analysis. The contribution of the CAB will be crucial to identify the criteria and assign the relative weights.

Planned consultation steps with CAB and stakeholders:
1. Bilateral consultations with the members of the CAB will be necessary to organise and carry out the data collection in the case study.   2. A stakeholder meeting will be organised when the data of the monitoring are available (probably in 12 months) to develop the Multi-Criteria Analysis.

Possible risks or obstacles for the planned research:
• Delay in the collection of data (or qualitative analysis), unavailability of CAB members to provide the support offered in the first meeting for data collection.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
1. Quantitative information on the performance of a green infrastructure providing different ecosystem services.   2. A framework for the application of the Multi-Criteria Analysis in the Case study.

WP5 Report

Case Study 16: Consequences of EU Water Policy (Water Framework Directive) on the Delivery of Ecosystem Services. A Case-study of Loch Leven, Scotland

Laurence Carvalho[1], Linda May[1], Helen Woods[1], Ian Winfield[2], Jamie Montgomery[3] & Grazia Zulian[4]

[1]Centre for Ecology and Hydrology (CEH Edinburgh), Penicuik, UK

[2]Centre for Ecology and Hydrology (CEH Lancaster), Lancaster, UK

[3]Kinross Estates Company, Kinross, UK

[4]Institute for Environment & Sustainability, EC Joint Research Centre, Ispra, Italy

Case and respondent's information	
Case study Research Leader	Laurence Carvalho
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Jamie Montgomery (Kinross Estates Company)
Role of case study representative in relation to case study	Responsible for the provision and management of some ecosystem services (e.g. recreational angling and tourism) in and around Loch Leven. He will help provide data on these services for the case-study and contribute to project meetings as a partner.

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
To investigate the consequence of EU water policy (Water Framework Directive - WFD) on the delivery of Ecosystem Services.
More specifically, our mains tasks will be to:
(1) quantify the links between WFD ecological status and the provision of ecosystem services at the loch (angling, water supply, tourism/recreation and nature conservation).
(2) consider the value of the services provided by the loch, and the impact of loch regulation for ES

on water-dependent downstream industries.

(3) explore impacts of future change scenarios (including climate) on ecological status and ecosystem service provision.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:
The consequence of EU water policy (Water Framework Directive - WFD) on the delivery of Ecosystem Services at Loch Leven, Scotland, UK. We will focus on conflicts and synergies among a few ecosystem services at the loch: • water supply to downstream industries • recreational angling • tourism & general recreation • nature conservation
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
We held the first CAB meeting in September 2013 and are currently doing the following: 3 Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation
What is the desired short-term result (output)?:
A finalised work plan to circulate to stakeholders.
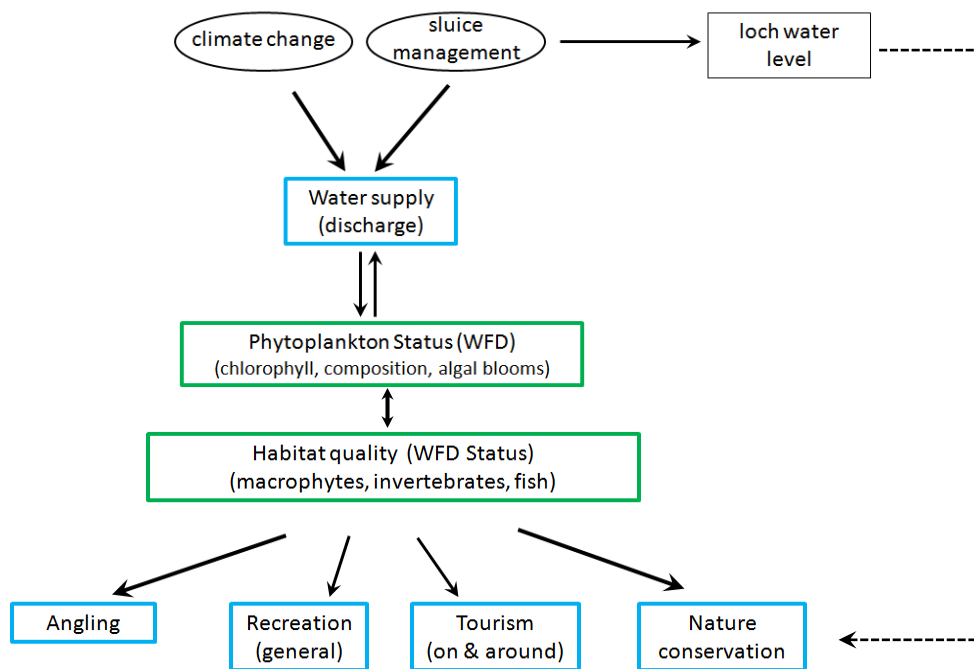
A collated dataset.
What is the desired long-term result (outcome)?:
An improved understanding of how WFD status relates to ecosystem service delivery and a greater appreciation of conflicts and synergies between stakeholders.
Who will benefit from the results of this sub-project?
EU (DG Env), national and local regulatory and conservation bodies. Local businesses and lake users.
Who will be negatively affected from the results of this sub-project?
It is too early to speculate on this, but we aim to explore win-win situations.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
Earlier work focused on water quality and ecological targets. We now aim to broaden our approach to include the stakeholder dimension, i.e. the use of the lake as a resource to deliver ecosystem services and the wider benefits derived.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
Availability of suitable data. Limited suitability of existing tools and methods for measuring and valuing service provision (particularly over time)

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes. We held the first CAB meeting in September 2013.
What do you expect from involving stakeholders in your CAB?
Ability to link academic research to real world problems. Constructive discussion and problem solving amongst different users.   Stakeholder engagement in helping to provide data on ES demand/usage.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
1.   Julia Martin-Ortega, James Hutton Institute [researcher in environmental economics] 2.   Laurence Carvalho, Centre for Ecology & Hydrology [researcher, case-study lead] 3.   Jamie Montgomery, Kinross Estates Company [land owner, case-study representative] 4.   Michael Wilson, Loch Leven Fisheries [fisheries manager] 5.   Simon Lennox, Historic Scotland [government tourism manager] 6.   Grant Simpson, Blyth & Blyth Consulting on behalf of River Leven Trustees [engineer – sluice

operations]
7. Karen Mitchell, SNH [government conservation agency]
8. John Harris, SEPA [government regulatory agency]
9. Uwe Stoneman, Tayside Reserve Manager including RSPB Loch Leven [NGO]
10. Steve Ireland, Green Hotel Golf & Leisure Resort [General Manager of Resort; Chair of Loch Leven Tourism Forum]

Which of the CAB members have you worked with before the start of OpenNESS project?

CEH have had regular contact with Jamie Montgomery (3) & Loch Leven fishery (4) for decades in relation to long-term monitoring at Loch Leven. CEH have worked with representatives from 7, 8 & 9 as part of the Loch Leven Catchment Management Group, and 3, 4, 7 & 8 in relation to the Fisheries Management Group. Organisations 7 & 8 have funded CEH research at Loch Leven. Laurence Carvalho (2) has met Julia Martin-Ortega (1) at other ES meetings in Scotland & Brussels. Data for a wide range of previous research projects at this site have been provided by the following organizations: 3, 6, 7, 8.

How were the CAB members selected?

They represent the main ES providers and users in and around Loch Leven, and key regulatory and conservation bodies responsible for maintaining water quality and biodiversity at the site.

Is there anyone (or group) not represented? If yes, why?

Scottish Water (company) – they preferred to be a corresponding member (at least initially)

Users of agricultural & forestry land within the catchment – no services delivered by the lake to these users.

Dates of meetings with the CAB (representatives)

Annual meetings, beginning Sep 2013.

How are decisions made within the CAB?

E.g. democratic vote, consensus building?

 Probably by consensus building, but this has not been tested.

Does the CAB have an official mandate to tackle the concerned topic?

No.

Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?

Different stakeholders, depending on the decision.

How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)

Minutes of meetings.

How do you perceive the level of trust between the different CAB members?

 Differences of opinion exist between CAB members (e.g. angling vs conservation of fish-eating birds), but regular communication and meetings allow opinions to be shared.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Achieving good ecological status is a key policy target for the EU and, more recently, "sustaining ecosystem services" has become an EU2020 biodiversity target. Understanding the relationships between WFD status and the sustainable delivery of ES is, therefore, an important challenge in relation to implementing EU policy. We hope to understand where there are synergies or conflicts between these two policy goals.   We specifically chose the four services listed because we felt that they were more dependent on the ecological status of the lake, than catchment characteristics. CAB members also hold data on these services that will add significant value to CEH's data on water quality and ecological status.
Who was involved in the selection of this issue/topic?
CEH & JRC, originally, but the topic has recently been discussed by the CAB (and informally approved, given that no major concerns were raised)

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
CEH project team have met several times to discuss and develop the workplan.
The case study has been discussed with stakeholders on several occasions, including the first CAM meeting with the Cascade model was populated by stakeholders with guidance.
Some collection of new data has been initiated to fill knowledge gaps (e.g. angler catch returns).
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
To understand better the effect of EU water policy implementation (Water Framework Directive - WFD) on the delivery of Ecosystem Services, in terms of: (1) links between WFD ecological status and the provision of ecosystem services at the loch (angling, water supply, tourism and nature conservation) (2) place some value on the services provided by the loch, and the impact of loch regulation on water-dependent downstream industries (3) impacts of future change scenarios (including climate) on ecological status and ecosystem service provision
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
Detailed work plans have been developed for specific services (water supply, angling and tourism/recreation) and this work will be put into the context of the nature conservation interests at the site (a supporting service? Cultural service?). Then, relationships among services will be compared where linkages can be established. The cascade model was used at the 1st CAB meeting to establish a common framework of understanding of ES terminology and for CAB members to identify the key links or processes along

the cascade from their own perspective.

Relationships between ecological status and ES will be explored, using existing datasets and statistical analysis where possible.

Where more qualitative data are a key component of the analyses, or expert opinion is involved, we plan to use BBN methodology.

For predicting the impact of future change scenarios, we aim to use process-based lake models (e.g. PCLake or PROTECH).

The method that will be used to explore synergies/conflicts is currently undecided.

Expected results:
Too early to be sure.

Timing:
Some outputs by Oct 2014, remaining outputs by Oct 2015.

Responsibilities:
Angling – Ian Winfield (CEH)   Water supply – Laurence Carvalho (CEH)   Tourism & recreation – Helen Woods (CEH) & Grazia Zulian/Joachim Maes (JRC)   Future predictions (modelling) – Linda May (CEH)   Valuation: Bruna Grizzetti or colleague (JRC) – to be confirmed   Synthesis – All of the above & Ron Smith (CEH) for BBN modelling   Coordination: Laurence Carvalho (CEH)

Planned consultation steps with CAB and stakeholders:
CAB consultation every 6-months; other stakeholders as required

Possible risks or obstacles for the planned research:
Data availability.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
Test of methodologies for ES communication (e.g. Cascade model) and ES valuation (e.g. BBNs).

WP5 Report

Case Study 17: Adaptive management plan for Lower Danube River

Angheluta Vadineanu, Elena Preda, Relu Giuca

University of Bucharest, Romania

Case and respondent's information	
Case study Research Leader	Angheluta Vadineanu
Role of research leader in relation to case study	-Researcher at UB-DSES; -Chairman of the Scientific Council of Danube Delta Biosphere Reserve; -Chairman of the Scientific Council of Islands of Braila Natural Park / Inland Danube Delta; -Member of the Scientific and Technical Advisory Council for WFD implementation
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	1. Elena Tuchiu 2. Edward Bratfanof 3. Radu Moisei
Role of case study representative in relation to case study	1. Director for River Basin Management Planning, Romanian Waters Administration 2. Governor of Danube Delta Biosphere Reserve 3. Director of the Islands of Braila Natural Park/ Inland Danube Delta

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
To enhance effectiveness of the integrated and adaptive management planning and implementation in the Lower Danube River Wetlands System (Romania) - LDRWS(RO) by mainstreaming the improved understanding and operational tools regarding the concepts of NC and ES.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:

Title: Assessment of relationships between biophysical structure and functions of LDRWS(RO) (NC stock) and supplied Ecosystem Services

The current structural configuration of Lower Danube River, consisting in more than 50% of mono-functional agricultural ecosystems, lead to severe reduction of its former major functions and services, among which – provisioning functions and services (e.g. fish catches, reed or reed-mace biomass); regulation functions and services (e.g. nutrient retention and release; water quality regulation, river pulse regulation); information functions and services (e.g. recreation, tourism), and supporting services (e.g. species and habitat diversity).

The aim of the sub-project is to improve the exploration and interpretation of relationships between long term dynamics of the biophysical structure and functions of LDRWS(RO) (NC stock) and the supplied and used ES with a focus on current status.

Issue visualized in a systems diagram (optional)

The conceptual framework for understanding relationships between biophysical structure and functions of LDRWS(RO) and supplied Ecosystem Services
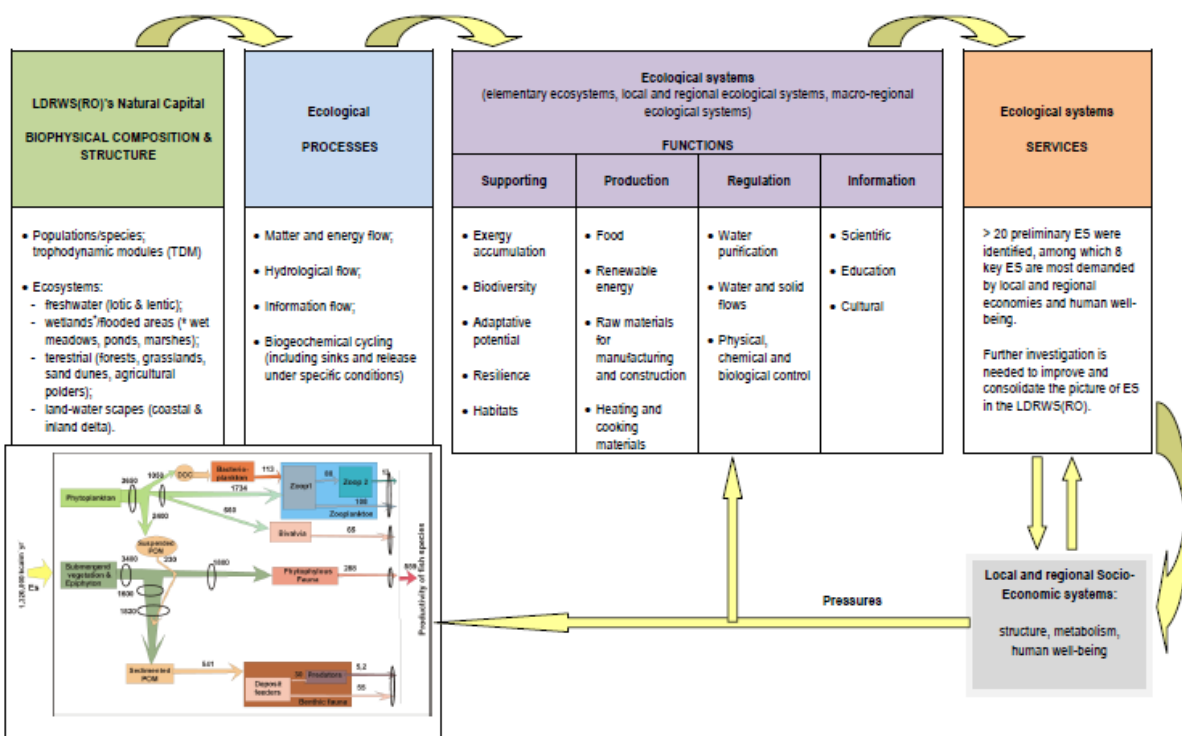
Example of a lentic ecosystem biophysical composition & structure and the energy flows

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)

3. Resource mobilisation :

Gathering the existing data and information related to biophysical structure and functions of NC in the selected area (Coastal Danube Delta and Inland Danube Delta)

What is the desired short-term result (output)?:
Better understanding of relationships between long term dynamics of the biophysical structure and functions of NC and the supplied ES.
What is the desired long-term result (outcome)?:
Supporting stakeholders decision by including the outputs of this sub-project (e.g. ES mapping).
Who will benefit from the results of this sub-project?
Stakeholders at different levels: decision makers, water managers, protected areas managers, local communities.
Who will be negatively affected from the results of this sub-project?
_

Title sub-project 2:

Title and description of sub-project:
Title: Assessment of conflicts and trade-offs of sectoral and multilevel relevant policies objectives for improvement the management plan of Lower Danube River Watershed (RO) The aim of sub-project is to identify and assess the trade-offs of sectoral and multilevel (local, regional, national and European) policy objectives, instruments and institutional arrangements (e.g. inland navigation, hydropower production, food production, water quality, flood protection, biodiversity conservation and restoration of biophysical structure and multi-functionality of NC) reflected in the management plan.
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
1. Starting up
What is the desired short-term result (output)?:
Management of conflicts among different sectoral policies .
What is the desired long-term result (outcome)?:
-maintaining and restoring of longitudinal and lateral connectivity of Lower Danube River Wetlands System, which is expected to recover conditions for migration, spawning and feeding of birds and fishes (e.g. sturgeons)
Who will benefit from the results of this sub-project?
Stakeholders at different levels: decision makers, water managers, protected areas managers, local communities
Who will be negatively affected from the results of this sub-project?
Those stakeholders which promote sectoral policies/ projects (e.g. hydropower generation and water transport)

Title sub-project 3:

Title and description of sub-project:
Title: Enhancement of the operational capacity for assessment and valuation of the key ES The aim of sub-project is to enhance the operational capacity for better assessment (in quantitative and/or qualitative terms) and valuation (in monetary and non-monetary terms) of the key ES and their trade-offs and benefits.
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
1. Starting up
What is the desired short-term result (output)?:
Provisioning stakeholders with an operational package of methods and tools for the assessment and valuation of ES
What is the desired long-term result (outcome)?:
Enhancing the stakeholders operational capacity to assess ES.
Who will benefit from the results of this sub-project?
Stakeholders at different levels: decision makers, water managers, protected areas managers, local communities
Who will be negatively affected from the results of this sub-project?
-

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The conceptual models applied in the case study have been changed progressively, in the last 40 years, from local and particular type of ecosystems towards sub-regional and regional socio-ecological systems. Internal and external drivers and pressures (including EU, national and regional policies and regulatory frameworks) impacted biophysical structure and functions of Natural Capital (at different spatial scales) as well as key ecosystem services flows. These concepts are being more and more used in the official documents of strategies, policy and regulatory frameworks. The involvement of stakeholders in the process of understanding and operationalisation of NC and ES seems to be the most effective way towards integration of these concepts into management and decision making process. The understanding of ES and NC can also improve the effective use of natural resources (e.g. in agriculture, fisheries, forestry). The concepts are relevant also to business investment decisions because a poor management of NC can affect business costs and risks and, consequently, opportunities to improve the competitiveness of enterprises, regions and countries. Based on that, we consider that LDRWS(RO) case study is an extensive and effective operational platform where the concepts of NC and ES can be successfully applied.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
No barriers to the use of the ecosystem services concept are identified yet.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes.
What do you expect from involving stakeholders in your CAB?
Improvement of stakeholders participation in building and assessment of alternative scenarios, and building and implementation of integrated and adaptive management plan for Lower Danube River.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
CAB members are representative of key stakeholders groups in the study area: - *Danube Delta Biosphere Reserve* Management Board (Governor, Executive Director, Projects Unit Director); - *Small Island of Braila Natural Park* Director; -*NGOs* representatives; -*fish farmers* representative; -*tourism* operators (2 representatives); -*local authorities* (majors of 5 localities, two from Inland Delta and three from Coastal Delta); - *Danube Delta Research Institute* Director; - *Forest Authority* representatives; - *National Administration "Romanian Waters"* local unit representative; -*fishermen's associations* representative.   Non-CAB contacts There are also direct contacts with high level representatives of Ministry of Environment and Climate Change, Ministry of Transport, Ministry of Waters and Forests, National Administration "Romanian Waters".
Which of the CAB members have you worked with before the start of OpenNESS project?
Danube Delta Biosphere Reserve Administration Small Island of Braila Natural Park Administration National Administration "Romanian Waters" Forest Authority Local authorities
How were the CAB members selected?
Based on their involvement and interest in the area
Is there anyone (or group) not represented? If yes, why?
No

Dates of meetings with the CAB (representatives)
16th July 2013- presentation of Openness project and launch of collaboration framework 3rd and 4th October 2013- formal meetings with groups of CAB members. Hot topics for the area have been discussed in order to be included in the work plan for next 12 months.
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Common agreement
Does the CAB have an official mandate to tackle the concerned topic?
No
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Danube Delta Biosphere Reserve Administration Small Island of Braila Natural Park Administration National Administration "Romanian Waters"
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings
How do you perceive the level of trust between the different CAB members?
High

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The overall aim of the case study work is to enhance effectiveness of the integrated and adaptive management planning and implementation in the LDRWS(RO) by mainstreaming the improved understanding and operational tools regarding the concepts of Natural Capital and Ecosystem Services. In order to achieve this goal it has been established four specific objectives: A) improvement the exploration and interpretation of relationships between long term dynamics of the biophysical structure and functions of Lower Danube River Wetlands System/Romania (NC stock) and the supplied and used ES with a focus on current status; B) identification and assessment of the trade-offs of sectorial and multilevel (local, regional, national and European) policy objectives, instruments and institutional arrangements reflected in the first LDRWS(RO) management plan; C) enhancing the operational capacity for better assessment (in quantitative and/or qualitative terms) and valuation (in monetary and non-monetary terms) of the key ES and their trade-offs and benefits; D) restoration and conservation of biophysical structure and multi-functionality of the NC, and the resilience of the ES in the LDRWS(RO) aiming to assure people's wellbeing, adaptation to climate changes and sustainable development in the region. Because of case study characteristics (large scale/ micro-regional level and high complexity), three of these objectives has been selected to be investigated in different sub-projects (one sub-project per objective). The outcomes of these sub-projects will be further used to fulfil the last proposed

objective, in the next phase of the OpenNESS.
Who was involved in the selection of this issue/topic?
The topics have been emerged from the discussions with CAB related to their interest and the mission of the OpenNESS project.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
The general framework of the Openness project has been analysed in order to correctly locate the outcomes from our case study. Also, discussions have been held with stakeholders groups at different levels (local, regional, central/national) in order to match as better as possible the Openness work with their needs. The CAB has been established, but still other stakeholders are connected with our work (especially those from national level, responsible for implementation of EU regulatory frameworks and policies in Romania). CAB and our project team agreed upon the proposed objectives.
Planned steps for research in **sub-project 1: Assessment of relationships between biophysical structure and functions of LDRWS(RO) (NC stock) and supplied Ecosystem Services**
Goal:
- to improve the exploration and interpretation of relationships between long term dynamics of the biophysical structure and functions of LDRWS(RO) (NC stock) and the supplied and used ES with a focus on current status
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
In order to fulfil the aim of the sub-project the following activities have been proposed: a. analyzing the existing biophysical long term data sets and information   a. identifying the diversity, quality and density flows of most critical present ecosystem services.   b. mapping of ecosystem services   The analysis of long term data sets will be made using the framework and concepts proposed within WP1 (e.g. cascade model). Mapping of ecosystem services will be made using the input from WP3.
Expected results:
Understanding of relationships between long term dynamics of the biophysical structure and functions of NC and the supplied ES.
Timing:
Analyzing the existing biophysical long term data sets and information – by March 2014   Identifying the diversity, quality and density flows of most critical present ecosystem services- by July   Mapping of ecosystem services- by October 2014
Responsibilities:
Case study research leader will coordinate the activities within sub-project and will be permanently

in contact with case study representatives and CAB and will communicate the partial results.
Planned consultation steps with CAB and stakeholders:
We planned meetings with CAB every 6 months (April 2014, October 2014), but also other CAB meetings/ bilateral discussions will be considered if needed.
Possible risks or obstacles for the planned research:
Possible risks are related to data availability and suitability.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
The expected results of this sub-project will contribute to objective 1 (to advance conceptual understanding of ES and NC and provide operational frameworks for application of the concepts in real-world management and decision-making situations), objective 3 (to develop and refine approaches for mapping and modelling the biophysical control of ES that can be used to assess the effectiveness of mechanisms, instruments and best management practices for sustaining ES delivery in the face of multiple uncertain drivers whilst conserving biodiversity) and objective 5 (to apply the concepts and methods developed and refined in the project to concrete, place-based case studies in a range of social-ecological systems with stakeholders and analyse the implications of local, regional and EU level decisions on ES flows and use in other parts of the world) of OpenNESS.

Planned steps for research in **sub-project 2**: **Assessment of conflicts and trade-offs of sectorial and multilevel relevant policies objectives for improvement the management plan of Lower Danube River (RO)**
Goal:
The aim of sub-project is to identify and assess the trade-offs of sectoral and multilevel (local, regional, national and European) policy objectives, instruments and institutional arrangements (e.g. inland navigation, hydropower production, food production, water quality, flood protection, biodiversity conservation and restoration of biophysical structure and multi-functionality of NC) reflected in the management plan.
Approaches and methods:
Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7
Activities:
a. identifying and assessment of key policies which potentially impact NC
b. identifying the conflicts between different sectoral policies objectives and their impact on NC and provision of ES (e.g. building of a new hydropower station downstream Iron Gates 2; new hydro-technical works in order to enhance the waterway transport along Lower Danube stretch; maintenance the established agricultural polders and intensification of food and bio-energy crops)
c. trade-offs assessment of selected policies
An in-depth analysis of policies and regulatory frameworks which have the greatest direct or indirect impact on ecosystems, ecosystem services, and natural capital (those relevant for our case study) will be made following the WP2 proposed frame. We will focus on identification of potential synergies and trade-offs between regulatory frameworks/ policies.
Expected results:
Identification of potential synergies and trade-offs between sectoral regulatory frameworks/ policies aiming a better integration in future management plan of Lower Danube River Watershed/

RO.
Timing:
Identification and assessment of key policies which potentially impact NC- by February 2014
Identification of conflicts between different sectoral policies objectives and their impact on NC and provision of ES – by July 2014
Trade-offs assessment of selected policies – by September 2014
Responsibilities:
Case study research leader will coordinate the activities within sub-project and will check the approach with stakeholders responsible for policy/ regulatory framework implementation in Romania.
Planned consultation steps with CAB and stakeholders:
We planned meetings with CAB every 6 months (April 2014, October 2014), but also other CAB meetings/ bilateral discussions will be considered if needed.
Possible risks or obstacles for the planned research:
No answer and support from representatives of certain regulatory framework (e.g. transport, energy)
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
The expected results of this sub-project will contribute to objective 2 (to examine how existing and forthcoming EU regulatory frameworks can enhance or restore the benefits derived from ES and NC using multi-scale scenario approaches) and objective 5 (to apply the concepts and methods developed and refined in the project to concrete, place-based case studies in a range of social-ecological systems with stakeholders and analyse the implications of local, regional and EU level decisions on ES flows and use in other parts of the world) of OpenNESS.

Planned steps for research in **sub-project 3**: **Enhancement of   the operational capacity for assessment and valuation of ES**
Goal:
The aim of sub-project is to enhance the operational capacity for better assessment (in quantitative and/or qualitative terms) and valuation (in monetary and non-monetary terms) of the key ES and their trade-offs and benefits
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
Activities: a. analysis and identification of proper sets of complementary methods and tools for social analysis: stakeholders mapping, stakeholders perceptions and values related to BD and ES b. analysis and identification of complementary methods package for extensive monetary and non-monetary valuation of ES c. testing and validating the selected methods for valuation of key ES The methods and tools provided by WP4 will be used as background information. An analysis of the advantages and disadvantages, data sets needed, suitability for specific issues/ ecosystems/ spatial scales will be made for all methods, and the most effective will be selected. Taking into

consideration the time frame of this sub-project, methods testing and validation will be possible only for certain key ES. These will be selected together with CAB, following their needs.

Expected results:

Capacity building for identification, assessment and valuation of key ES.

Timing:

Analysis and selection of proper sets of complementary methods and tools for social analysis- by February 2014

Analysis and selection of complementary methods package for extensive monetary and non-monetary valuation of key ES- by May 2014

Testing and validation of selected methods for valuation of key ES- by October 2014

Responsibilities:

Case study research leader will coordinate the activities within sub-project.

Planned consultation steps with CAB and stakeholders:

We planned meetings with CAB every 6 months (April 2014, October 2014), but also other CAB meetings/ bilateral discussions will be considered if needed.

Possible risks or obstacles for the planned research:

Data availability

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS

The expected results of this sub-project will contribute to objective 5 (to apply the concepts and methods developed and refined in the project to concrete, place-based case studies in a range of social-ecological systems with stakeholders and analyse the implications of local, regional and EU level decisions on ES flows and use in other parts of the world) and objective 4 (to develop hybrid methodologies that address trade-offs, synergies, and conflicting interests and values in the use of ES through a combination of monetary, non-monetary and deliberative methods within multi-criteria and Bayesian approaches to decision support) of OpenNESS.

WP5 Report

Case Study 18: Scenario's for the Stevoort flood control area

(Demer valley, Belgium)

Wim Verheyden, Francis Turkelboom (INBO) & Jan Van Velk (VMM)

Case and respondent's information	
Case study Research Leader	Wim Verheyden & Francis Turkelboom (Institute of Nature and Forest Research, INBO)
Role of research leader in relation to case study	Research coordinators for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Jan Vanvelk (Demer Catchment Coordination Office, Flemish Environmental Organisation, VMM)
Role of case study representative in relation to case study	Coordinators of the strategic project Herk & Mombeek

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The main objective of the Demer catchment development plan is to protect, rehabilitate and improve the natural dynamics of the water system, and to combine it with the needs of the society. The strategy is based on the EU Water Framework Directive. By considering the local needs and circumstances, it results in a spatial adaptation and fine-tuning of the European water policy. More information (in Dutch): http://www.integraalwaterbeleid.be/nl/bekkens/demerbekken/bekkenbeheerplan/9_DEMER_BBP_LR.pdf

The project Stevoort – a flood control area with sediment catch – is part of the wider water management program of the Demer catchment. After years of research and policy preparation, the objective and the boundaries of the flood control area of Stevoort were agreed. Now it is time to bring all this work into practice. Therefore, concrete action plans for the design of the different zones within this valley area will be developed soon. The goal of Stevoort flood control area is to design the river, river banks and surrounding areas in order to:
- catch flood water;
- trap sediment;
- improve water quality;
- stimulate ecological recovery of typical ecosystems in this valley (via corridor function);
- develop green and blue services; and

- link to recreational routes. The project will link to local initiatives and will work with active involvement of the nearby communities, while considering the local environmental and spatial policies. The case study representative considers it as a challenging and complex project.
Size: About 150 ha

1.2. Specific aspects or issues addresses in the OpenNESS project

Title and description of sub-project:
The aim of the OpenNESS case study in Stevoort is to explore the ways in which the ecosystem services (ESS) approach can help to support the planning process and how communication based on this ESS-approach can be facilitated. In search of different scenario's, we will look at potential win-win-solutions, which are based (among others) on: flood prevention and safety, climate adaptation (buffers), water quality improvement, increase of ecological quality, recreation and regional development.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
Not yet available, will be developed with partners in the near future.
In which phase is this sub-project? 1. <u>Starting up, 2. Identifying stakeholder positions and problem formulation</u>, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Although they have started thinking about the different possibilities for this project area since 2008, this process has developed rather slowly because of the complexity of some of the issues involved. Currently, the focus is on phase 2: a more detailed problem formulation + a more in depth identification of stakeholder positions.
What is the desired short-term result (output)?:
Reaching with the stakeholders an agreement on a framework (Phase 4: Development of a shared vision), which will enable to start up the planning phase.
What is the desired long-term result (outcome)?:
Implementation of the most appropriate scenario, and achieve societal benefit and win-win situations in the field.
Who will benefit from the results of this sub-project?
Because of better water management (e.g. flood prevention), people living downstream and adjacent to the valley will surely benefit. Also people in nearby communities (including the cities Hasselt and Genk that are located respectively approximate 2 and 7 kilometres away from this project area) will benefit from new possibilities for recreation. People interested in nature and nature development will also benefit.
Who will be negatively affected from the results of this sub-project?
Agriculture was affected earlier, when the decision was made to officially designate this project area as a flood control zone. Because of this decision, there was a legal possibility for affected farmers to get a payment for the decrease in value of their property.

1.3. Use of ecosystem services and natural capital concepts:

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
This ES approach is expected to bring a leverage that is needed to develop a holistic vision and to get things moving on the ground (which seems not to be possible with a sectorial approach).
What might be (potential) barriers to the use of the ecosystem services approach in your project?
➢ The complexity of the ESS-approach is challenging (and also risky to some degree).   ➢ Availability of resources.   ➢ The priorities by the involved administrations.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Currently, there is only a consultation forum at catchment scale. For the Stevoort case, there is no formal CAB established yet (although there are already long-term informal contacts with some of the partners). At the beginning of 2014, a CAB will be established.
What do you expect from involving stakeholders in your CAB?
➢ To get a better view on the potential wins-wins and possible challenges of the implementation of the flood control area.   ➢ To increase institutional and public support for implementation of future actions.
Who are the members of your case study CAB i.e. affiliations?   *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Possible stakeholders that are considered: representatives from water management sector (e.g. VMM catchment coordinator), Regionaal Landschap Haspengouw en Voeren (RLHV, NGO for sustainable landscape development), the Agency for Nature and Forests, Natuurpunt (Nature NGO), the city council administration, agriculture representative), local nature organizations, etc…
Which of the CAB members have you worked with before the start of OpenNESS project?
The case coordinators have been working with several of the CAB members in other projects, but not specifically for the Stevoort-project, nor for a project based on the ESS-approach.
How were the CAB members selected?
CAB members will be selected by the case study representative, and they will be selected based on relevance of stakeholders for the case study.
Is there anyone (or group) not represented? If yes, why?

Private land owners will not be part of the CAB.   The reason is that generally they represent themselves than the group they supposed to represent. Other strategies will be used to elucidate their opinions.
Dates of meetings with the CAB (representatives)
2013: Preparatory meetings with the Demer basin coordinator. 10/9/2013: Field visit with the Demer basin coordinator + representative of the Regionaal Landschap. 7/10/2013 + 5/11/2013: Planning meeting with the Demer basin coordinator
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Not yet applicable… (but decisions will be made by consensus building, not voting).
Does the CAB have an official mandate to tackle the concerned topic?
The purpose is that the CAB will be recognized as a legitimate forum for consultation for issues related to Stevoort.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
The CAB will have no implementation power by itself. The power is with the involved organisations who have mandates on specific issues.
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of the meetings and consultations.
How do you perceive the level of trust between the different CAB members?
There exists a good level of trust between different involved administrations. The sector of agriculture will probably be rather cautious (because of previous decisions for designating agricultural land to a flood control zone). Some of the nearby inhabitants might also be cautious (depending on their individual situation and property-issues). By focussing on win-win-solutions, we will try to overcome possible barriers based on mistrust.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
➢ It is a challenging problem with the potential for very good results. There is the possibility to come up with creative solutions. ➢ There is a development potential (which sofar could not yet be materialized). ➢ If this project will be successful, it could be a model for similar projects in the future.
Who was involved in the selection of this issue/topic?

Demer catchment coordinator (VMM) and staff of Regional Landschap

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
➢ Gathering information on this project area.   ➢ General framing of the problems.   ➢ Evaluating the issue for its suitability for OpenNESS research.   ➢ A field visit to the project area.
Planned steps for research in sub-project 1:   *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
• To characterize the problems and opportunities of the area (via SWOT analysis).   • To identify possible scenarios for the Stevoort project area + select the most preferred option together with stakeholders.   • To define the role of ES approaches and tools for the Stevoort flood control area.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
The following process step are envisaged for Year 1:   1. Obtaining a mandate from key stakeholders to work on a scenario's for Stevoort + agree on border conditions (VMM).   2. Establishment of a Stevoort CAB + formalize role of the different partners (VMM).   3. Institutional & stakeholder analysis: Identify stakeholders and their stakes (WP1 & WP6), social preferences for ESS and other services, and potential trade-offs and win-wins for multifunctional use of flood areas (WP1, WP4) (INBO)   4. Stakeholder workshop No1 (WP6): Designing building blocks for a vision development based on possible and desired ecosystem services and nature goals (VMM +RLHV + INBO)   **The following process step are envisaged for Year 2:**   5. Scenario's development based on the vision elements (VMM + RL + INBO)   6. Stakeholder workshop No2: Building consensus + choice of a scenario aided by multiple criteria analysis (MCA, WP4)   7. Summary and analyze results + identification of possible implementation instrument (VMM + RL + INBO)   8. Evaluation of the use ES&NC tools (WP5) (INBO)
Expected results:
Year 1:   - Institutional and stakeholder analysis   - Agreed building blocks for a vision for Stevoort flood area
Timing:

See above
Responsibilities:
See above
Planned consultation steps with CAB and stakeholders:
Two process steps are foreseen: 1) Bringing together a smaller workgroup with key stakeholders for an in-depth preparation of this project, such as developing an appropriate process strategy, identify potential scenarios and uncertainties, etc… 2) A wider participatory approach, which will include all relevant stakeholders involved in the project area, and which will focus on the development of a concrete scenario.
Possible risks or obstacles for the planned research:
➢ If individual and sectorial stakes would still dominate the discussions. ➢ There might still be some mistrust with some of the stakeholders (esp. those that were negatively affected by the difficult decisions made earlier). ➢ A lot of the land of Stevoort flood area are privately owned.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
For year 1: • Defining possible ES&NC win-win-solutions and opportunities in Stevoort for well-being, sustainable land management and governance (WP1). • Testing of non-monetary valuation tools (WP4). **For year 2**: • Development of scenario's which are aimed at operationalizing multifunctional use of the project area (WP2?). • Testing of MCDA for selecting scenarios (WP4). • Evaluation of the used ES&NC tools in the Stevoort planning process (WP5) • Stakeholder analysis from ESS perspective and participatory stakeholder involvement (WP6)

WP5 Report

Case Study 19: Ecosystem Services in land sparing planning: Case of Doñana in South Western Spain

Erik Gómez-Baggethun & Ignacio Palomo (University of Barcelona)

Case and respondent's information	
Case study Research Leader	Erik Gómez-Baggethun & Ignacio Palomo
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	To be chosen
Role of case study representative in relation to case study	

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The aim of this case is to analyse effects of different drivers of change operating at the study area in ecosystem service supply, and to explore the ways in which ecosystem services can be explicitly incorporated in the management of the protected areas of Doñana and the surrounding landscape. The case study will therefore test the application of a socio-ecological systems approach to the management of protected areas. In order to identify opportunities for the implementation of the ecosystem services approach in decision-making processes, OpenNESS researchers involved in this case study will work together with local stakeholders, including the Doñana protected area management team and other stakeholders affected by landscape planning, like farmers, grazers or tourism operators. We will also look at environmental conflicts over access to ecosystem services and benefits and how different stakeholders can contribute to the protection and sustainable use of biodiversity and ecosystem services.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:
To develop a comprehensive, ecosystem service-specific, data base of stakeholders at the study area and to constitute a local advisory board, to engage them in the project and to identify with them the opportunities to integrate the ecosystem service approach in the management and policy making of the case study institutions (i.e. the protected area, research centres, NGO, etc.)
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
To be developed soon.
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Although research on ecosystem services has already been conducted by the group in the study area, this sub-project is in phase 2: Identifying stakeholder positions and problem formulation. A focus group is planned in early 2014 for this aim.
What is the desired short-term result (output)?:
Start building the social capital needed among advisory group members. Achieving consensus among advisory group members on goals to achieve and a time-line for this (towards the implementation of ecosystem services).
What is the desired long-term result (outcome)?:
The ecosystem services approach has a stronger influence in the management and governance at the study area and to engage stakeholders towards this aim.
Who will benefit from the results of this sub-project?
Management institutions at the study area will hopefully get important insights and broader understanding on sustnable management of ecosystem services
Who will be negatively affected from the results of this sub-project?
If a multi-functional landscape mosaic is promoted, intensively managed agricultural lands could suffer from some restrictions, as an integrated assessment will most likely show there is a trade-off between food production in intensively managed lands and the sustainable use of regulating and cultural services. If a social-ecological related research was implemented in the area, the traditional research domain (more linked to biological sciences) might lose power and influence in the area.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
We use the ecosystem service concepts in order to address landscape planning with an holistic approach that allows visualizing trade-offs between ecosystem services and associated values, including potential conflicts between beneficiaries with diverging interests at multiple scales
What might be (potential) barriers to the use of the ecosystem services approach in your project?
Some stakeholders might see a shift towards an anthropocentric framework (i.e. ecosystem services) as negative for biodiversity conservation.

The current priorities of administrations
The lack of funding given the economic crises in Spain

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
An advisory board related to the OpenNESS project has not been established yet. However, multiple participatory research activities have been conducted with local stakeholders over the past years. Beginning 2014 the CAB will be contacted for a kick-off meeting.
What do you expect from involving stakeholders in your CAB?
To better understand policy-making and management in the area and to identify the opportunities these bring for the implementation of ecosystem services.   To increase institutional support for further actions
Who are the members of your case study CAB i.e. affiliations?   *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Stakeholders we aim to engage in the CAB include protected area managers, farmers, cattle rangers, NGO members, environmental agencies, business representatives and researchers.
Which of the CAB members have you worked with before the start of OpenNESS project?
Most of the members that will be part of CAB have worked in previous ecosystem service based projects of the research group
How were the CAB members selected?
Criteria used to select the stakeholders include degree to which different groups depend on ecosystem services for their livelihood, income, and well being; power to influence decisions over ecosystem services management and governance relevance, and willingness to cooperate in the project.
Is there anyone (or group) not represented? If yes, why?
Not yet applicable
Dates of meetings with the CAB (representatives)
We plan to have the first meeting with the CAB by the beginning of 2014
How are decisions made within the CAB?   *E.g. democratic vote, consensus building?*
Not yet applicable, but in principle decisions will be mostly made by consensus building. Voting may be used tpo unblocking situations after available tools for building consensus have been exhausted.
Does the CAB have an official mandate to tackle the concerned topic?
Not yet applicable

Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
The CAB will most likely not have implementation power as such, among other reasons because every constituting member, including those that are disempowered from decision making in the study area, will have equal voice and voting power
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of the meetings and consultations (interviews, surveys)
How do you perceive the level of trust between the different CAB members?
Not yet applicable but Doñana has traditionally been a conflictive area due to diverging interest between resource users and conservation authorities

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Because we need to better understand management and decision making under the view of different stakeholders in order to better manage ecosystem services and prevent conflicts
Who was involved in the selection of this issue/topic?
The involved researchers

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
Progress in evaluating and completing the database of local stakeholders
Analysis of trade-offs across ecosystem services values
Analysis of conflicts of access over ecosystem services
Identification and characterization of drivers of change and data analysis on land use change
Planned steps for research in sub-project 1:   *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
To create a CAB that allows a deeper understanding of management and policy making and that allows identifying the opportunities for improved ecosystem services management
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
To be completed
Expected results:
To be completed
Timing:

To be completed
Responsibilities:
To be completed
Planned consultation steps with CAB and stakeholders:
A continuous space for dialogue will be constructed for the CAB. For that a kick off meeting and workshop will take place at the beginning of 2014. Skype meetings or trips to the study area may be organized to continue the interaction with CAB between workshops.
Possible risks or obstacles for the planned research:
Lack of economic funding from the involved institutions Mistrust of the ecosystem service framework by some institutions
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
Identification of the opportunities for the implementation of ecosystem services in management and policy making

WP5 Report

Case Study 20: Ecosystem Services in Coastal management—Case Wadden Sea the Netherlands

Chris Klok, IMARES, part of Wageningen UR Bevesierweg 41781 CA Den Helder, The Netherlands

| Case and respondent's information	
Case study Research Leader	Chris Klok
Role of research leader in relation to case study	Science coordinator for application and mapping of ecosystem services in the case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	To be appointed
Role of case study representative in relation to case study	To be identified

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary – please just cut and paste into this space

Main (broad) objective

The objective in this case study is how to manage on-going economic activities (deposition of harbour maintenance dredging sludge) within a Natura2000 area.

Currently an Ecosystem services evaluation is not included in the case study

Whereas, at first glance depositing sludge may negatively impact Natura2000 goals, reuse may also benefit ecosystem services.
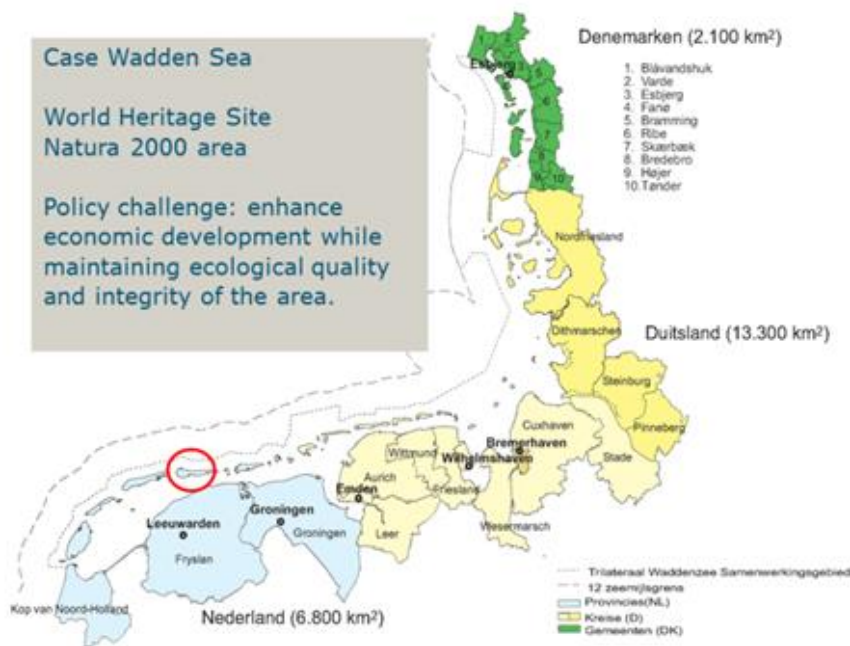
1.2. Specific aspects or issues addresses in the OpenNESS project

Title and brief description:
The Dutch Wadden Sea has a World Heritage status and is part of a large Natura 2000 network. In this area economic development of the harbours fringing the Wadden Sea is encouraged by government and local politicians to enhance their international competitiveness. The biggest policy challenge for the Wadden Sea, therefore, is to enhance economic development while maintaining ecological quality and integrity of the area. This case study zooms in on maintenance dredging in the marina of the Wadden Isle Schiermonnikoog "Jachthaven Schiermonnikoog". The objective of this case study is how to manage dredging sludge within a Natura 2000 area. Whereas, at first glance depositing sludge may negatively impact Natura 2000 goals, reuse may also benefit ecosystem services. In the case study an inventory is made on the influence of different scenarios of depositing dredging material on the ecosystem services of the area. This case study is part of the TEEB-NL analysis.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
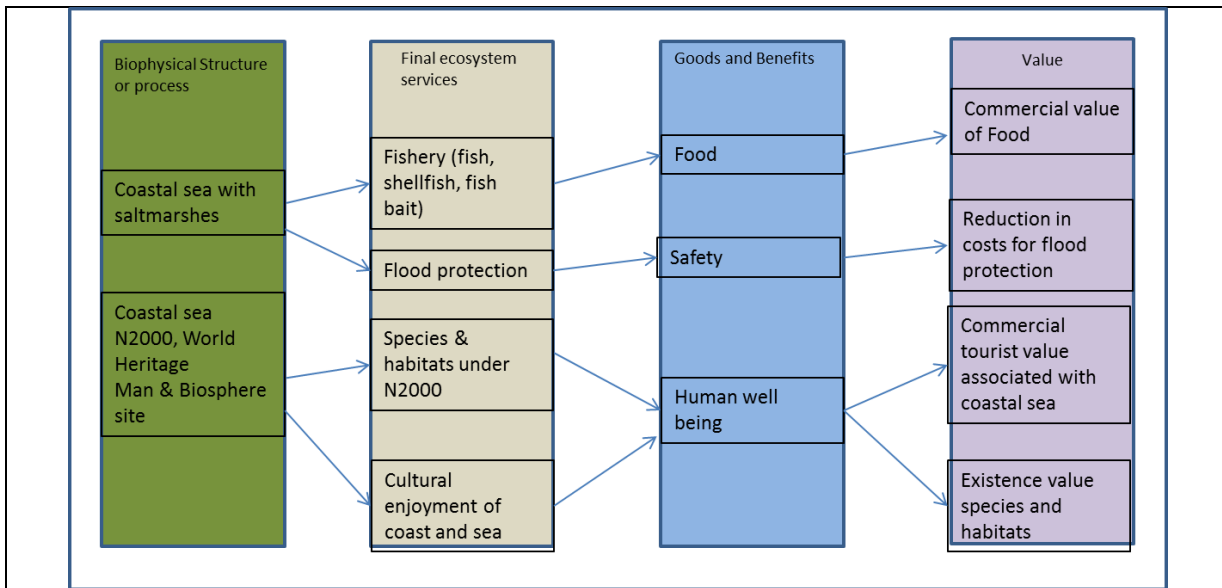
In which phase is this sub-project 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
1
What is the desired short-term result (output):
To analyse if applying Ecosystem services mapping and valuation results in an enhancement of solutions to manage economic activities within the context of a N2000 area.
What is the desired long-term result (outcome):
Awareness raising of the potential of using ES in planning.
Who will benefit from the results of this sub-project and who will be affected?
The OpenNESS partners (knowledge sharing)   The local, national and EU policy makers   Society by better protection of biodiversity
Who will be negatively affected from the results of this sub-project?
Not foreseen

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
To raise awareness on value of biodiversity for society
What might be (potential) barriers to the use of the ecosystem services concept in your project?
Data availability, money and time

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
We have consulted local policy makers involved with the case. Up to now they have not been convinced that including ES is of benefit in their case.
What do you expect from involving stakeholders in your CAB?
Reflection on the use of Ecosystem services and mapping of ES. This case study is involved in TEEB NL and in the EU project MESEU on mapping of ecosystem services.
Who are the members of your case study CAB i.e. affiliations? Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc
Policy makers at local and governmental level
Which of the CAB members have you worked with before OpenNESS ?
We do not yet have a CAB established
How were the CAB members selected?
We are focusing on policy makers
Is there anyone (or group) not represented? If yes, why?
We are focusing on policy makers
Dates of CAB interaction
Not relevant yet
How are decisions made within the CAB? Democratic vote, consensus building.
Not relevant yet

Does the CAB have an official mandate to tackle the concerned topic?
Not relevant yet
Which organisation (in or outside the CAB) should implement actions related to the issues you are studying?
Not relevant yet
How will you maintain records of all the consultation steps and decisions taken in relation to the

CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Not relevant yet
How do you perceive the level of trust between the different CAB members?
Not relevant yet

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
- One of the few case studies concerning marine issues.   - Included in TEEB NL.   - Potential application of ES in N2000 area.
Who was involved in the selection of this issue/ topic?
Alterra together with the OpenNESS partners

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound)?

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
A scoping study was conducted to assess possible options of dealing with harbour sludge
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
To apply the Ecosystem services concept and mapping in the case study
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
Not decided yet. One of the issues in mapping of marine ecosystem services it the absence of baseline habitat data such as available in the Corine database. Similar data based for marine do not exist. We will explore the potential use of QuickScan (WP3). Possible also Bayesian Belief Networks will be useful (to be explored) multicriteria methods.
Expected results:
Scientific ms. To be decided if approaches are chosen
Timing:
By February 2014 decision on use of methods. By end of 2014 scientific ms

Responsibilities:
Responsibilities for choices case study leader and WP3 leaders
Planned consultation steps with CAB and stakeholders:
Development of a CAB not decided yet
Possible risks or obstacles for the planned research:
Lack of interest from stakeholders
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
We aim to demonstrate the usefulness of the ecosystem service concept by mapping and valuation aiming at increasing the scope of possible options of economic activities such that biodiversity is protected. We further aim to use tools available within the OpenNESS forum to better map and value ecosystem services in the case study .

WP5 Report

Case Study 21: Natural capital and ES for sustainable livelihoods in Costa Vicentina, Portugal

Paula Antunes, Rui F Santos, CENSE, FFCT, Universidade Nova de Lisboa

Case and respondent's information	
Case study Research Leader	Paula Antunes/Rui Santos
Role of research leader in relation to case study	Coordination of the case study team; responsible for contacts with relevant stakeholders and CAB; articulation with WP5 and project coordination.
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Not defined yet. Contacts have been established with the President of the Institute for Nature Conservation and Forests that will designate the leading representative.
Role of case study representative in relation to case study	Continuous monitoring and support to the execution of the workplan and validation of obtained results. Facilitation of contacts with other relevant stakeholders and help to steer the CAB.

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The aim of this case is to explore the ways in which ecosystem services concept can be used to support the development and implementation of policy instruments to ensure the delivery of selected ES and promote local stakeholders well-being.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title and description of sub-project:
Using NC and ES concepts to design instruments for sustainable management of living resources (algae, shellfish and fish) and promotion of sustainable nature based tourism in Costa Vicentina area. This sub-project is focused in: • Establishing the link between marine natural capital stocks (e.g. bottom algae, shellfish populations) and associated ecological processes and functions with ES provision. • Exploring the perceptions of local stakeholders and decision makers about ES and NC and assessment of their use in current management and planning practice; • Evaluate the importance of NC to local stakeholders' livelihoods and assess monetary and non-monetary value of selected ES. • Assessing different policy instruments and governance arrangements (e.g. certification schemes, quotas, no-take zones,…) to ensure sustainable management of NC stocks and promote well-being in the case study area.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

Natural Capital stocks
Algae
Shellfish
Fish
Natural landscape
(beaches, waves,
wind, birds, scenic
views…)

Ecosystem services
Algae collection
Shellfish collection
Fishing
Carbon sequestration
Water purification
Nutrient cycling
Tourism and
recreation (nature
trails/surfing/
windsurfing/diving)

Benefits and beneficiaries
Income - shellfish
collectors, fishers and
algae collectors
Local economic activities
Blue carbon value

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Starting-up

What is the desired short-term result (output)?:
-   Promote the engagement of stakeholders in the process; promote awareness and potential of NC and ES concepts in interested actors, and the potential of the concepts to inform policy formulation processes. -   Demonstrate the value of NC and ES in the area, their role in sustaining local livelihoods.

What is the desired long-term result (outcome)?:
-   Demonstrate operationalization of the use of the NC and ES concepts in the case study area -   Test evaluation methods and serve as a replicable example -   To influence policies and practices in the case study area.

Who will benefit from the results of this sub-project?

- Nature Conservation policy.
- Local communities.
- Users of ES.

Who will be negatively affected from the results of this sub-project?

- Potentially some urban and tourism developers, and other non-sustainable activities based on the targeted ES and NC stocks.

1.3. Use of ecosystem services and natural capital concepts:

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?

- ES and NC concepts are central to the management of the selected case study area, which is a protected area.
- A more structured and systematic approach that clearly establishes the links between the elements of the natural system (processes, functions, ES…) and well-being.

What might be (potential) barriers to the use of the ecosystem services approach in your project?

- Poor uptake of the ES and NC concepts by relevant actors.
- Difficulties in establishing the links and relations underlying the 'cascade' model.
- Lack of adequate data and knowledge to capture the main elements (limited resources to gather new data).

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?

Not yet. Contacts have been established with the President of the Institute for Nature Conservation and Forests that will designate the leading representative

What do you expect from involving stakeholders in your CAB?

We expect that they will contribute with relevant knowledge and experience about the case study area and also that they will contribute to the validation and implementation of the proposed policy instruments. We also expect to get an improved understanding of the main difficulties and constraints to the use of NC and ES concepts in their management decisions.

We also expect to raise their awareness regarding the usefulness of ES concept for sustainable management of protected coastal areas.

Who are the members of your case study CAB i.e. affiliations?

Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc

Our plan is to have representatives from the Natural Park administration, environmental NGOs, local authorities and representatives of major economic activities (e.g. fishermen organizations, shellfish collectors associations, representatives from tourist and recreational activities).

Which of the CAB members have you worked with before the start of OpenNESS project?

Members of the Portuguese Institute for Nature Conservation and Forestry (ICNF).
How were the CAB members selected?
We will select them based on stakeholder analysis and referral by other CAB members.
Is there anyone (or group) not represented? If yes, why?
The CAB has not been established yet and we plan to involve representatives of the most relevant actor groups.
Dates of meetings with the CAB (representatives)
Not yet established
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Deliberation and consensus building.
Does the CAB have an official mandate to tackle the concerned topic?
No.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Depend on the decisions, but the ICNF will be the leading interested authority.
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings.
How do you perceive the level of trust between the different CAB members?
By participant observation in meetings and interviews.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Who was involved in the selection of this issue/topic?

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
• Gathering information on the area, in particular the baseline studies for the land-use management plan for the Natural Park of Sudoeste Alentejano e Costa Vicentina. • General framing of the problems. • Evaluating the issue for its suitability for OpenNESS research. • A visit to the project area. • Meeting with the President and officials from the Portuguese Institute for Nature Conservation and Forestry

Planned steps for research in sub-project 1:
If you distinguish sub-projects, please copy this table for each sub-project
Goal:
• To design a survey aimed at identifying stakeholders' perceptions about ES in the study area • To develop a systems diagram linking NC stocks, ecological functions, ES and benefits in the area and discuss it with stakeholders in a participatory systems mapping exercise • To start gathering relevant information regarding selected ecosystem services • To identify main policy instruments (at the EU, national and local level) with impact in the area and selected ES and their interactions.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
To be completed
Expected results:
To be completed
Timing:
Responsibilities:
Planned consultation steps with CAB and stakeholders:
We plan to organize CAB meetings and workshops during the process.
Possible risks or obstacles for the planned research:
The major risks are related with difficulties in gathering relevant data and lack of engagement of stakeholders.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS

WP5 Report

Case Study 22: Biodiversity Offsetting in Essex

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Case and respondent's information	
Case study Research Leader	Guy Duke
Role of research leader in relation to case study	Director Europe & Research, Environment Bank Ltd
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Gemma Hallam
Role of case study representative in relation to case study	Essex Project Officer, Environment Bank Ltd.

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The main objective of the Essex Case study is to explore the use of ES and NC concepts in the context of biodiversity offsetting. Biodiversity offsetting is an innovative financial instrument and a means to deliver no net loss of biodiversity (or even net gain), in cases where housing, infrastructure and other developments cause negative impacts on biodiversity. We will document the operationalization of biodiversity offsetting in Essex, explore the potential of offsetting to deliver a range of ecosystem services, and explore the resilience of offsets to climate change.
Loss of biodiversity and the related decline of ecosystem services and natural capital are global problems on a par with that of climate change, and may even have earlier impacts. To address this, new global and EU targets have been set for the period to 2020. This includes global and EU targets that focus on the need for restoration of degraded ecosystems. In this connection, the EC adopted in 2012 a strategy for green infrastructure (GI) and will propose, by 2015, a 'no net loss' (NNL) initiative. The NNL initiative is expected to promote biodiversity 'offsetting' across the EU, as a key mechanism to compensate for impacts of development and thereby contribute to NNL. This case study is therefore expected to be of particular interest to the Commission and Member States as they consider expanded use of offsetting. Moreover, offsetting can contribute to economic growth by streamlining development permitting and stimulating a

range of new businesses, thereby contributing to EU competitiveness.

The UK Government indicated an interest in exploring the potential of biodiversity offsetting in its 2011 Natural Environment White Paper. The Department for Environment, Food and Rural Affairs (Defra) has carried out substantial work on the issue, including the development of principles and metrics, research on demand and supply, and the establishment of pilot projects. EBL is involved in 2 of the 6 official Defra pilot projects which have been selected as OpenNESS case studies: Essex (this case study) and Warwickshire (Case study 11).

In March 2013, the high-profile, business-led UK Ecosystem Markets Task Force (EMTF), set up by Defra, submitted recommendations to Government on opportunities for business that protect and/or value nature, and identified as one of the top opportunities a move to a national, mandatory approach to biodiversity offsetting. This recommendation was underpinned by research led for the EMTF/Defra by the current Case Study Research Leader, Guy Duke, which identified the potential for a regulated offsetting market worth £100-500 m in England, and € multi-billion for the EU.

Catalysed by the EMTF recommendation, the UK government published in September 2013 a Green Paper on biodiversity offsetting, to consult on various policy options to expand the use of offsetting in England. The government is simultaneously gathering evidence on costs and savings for business arising from offsetting. The outcome of the consultation and research will inform the government's decision on the preferred policy option and may lead to legislation in 2014/15. The Essex case study on biodiversity offsetting will place OpenNESS at the leading edge of critical emerging policy.

The Essex Biodiversity Offsetting Pilot has a strong partnership involving the County Council, District and Borough Councils, developers environmental NGOs and national environmental bodies. This partnership helped to develop the Essex Pilot Offsetting Strategy ensuring that the correct offsets could be delivered in the right areas (see map, below). The Essex Offsetting Strategy uses the Wildlife Trust's Living Landscapes and the Greater Themes Marshes Nature Improvement Area as strategic areas, if an offset is placed outside of one of these areas an extra multiplier is used within the metric effectively reducing the number of credits created per hectare and meaning a larger area will need to be created.

The Essex Pilot uses Environment Bank as its only broker, this allows for a consistent and impartial approach to be taken for calculations at both the development site and the offset receptor site. Under this system when a development is submitted to a Local Planning Authority within the pilot, it's suitability for offsetting will be assessed. Within the Essex pilot only developments with a significant impact on biodiversity are being considered for offsetting because this is in line with the National Planning Policy Framework. If a development is deemed suitable for offsetting the details will then be sent to the Project Officer who will undertake a calculation to quantify the development's ecological impact.

The Defra metric is being tested in the Essex pilot in its original format with only a minor change to allow for Local Wildlife Sites to be given a higher value. A number of areas for improvement have been identified during the pilot. One of the pilot's partners is a PhD research student who is undertaking a detailed study into the metric and how it values habitats.

During the pilot, eftec (Economics for the Environment Consultancy) have undertaken a research study to identify the potential offset market in Essex. The initial phase of this study identifies the land available for offsetting in each of the Essex districts and then begins to ascertain the affects of low or high offset availability.
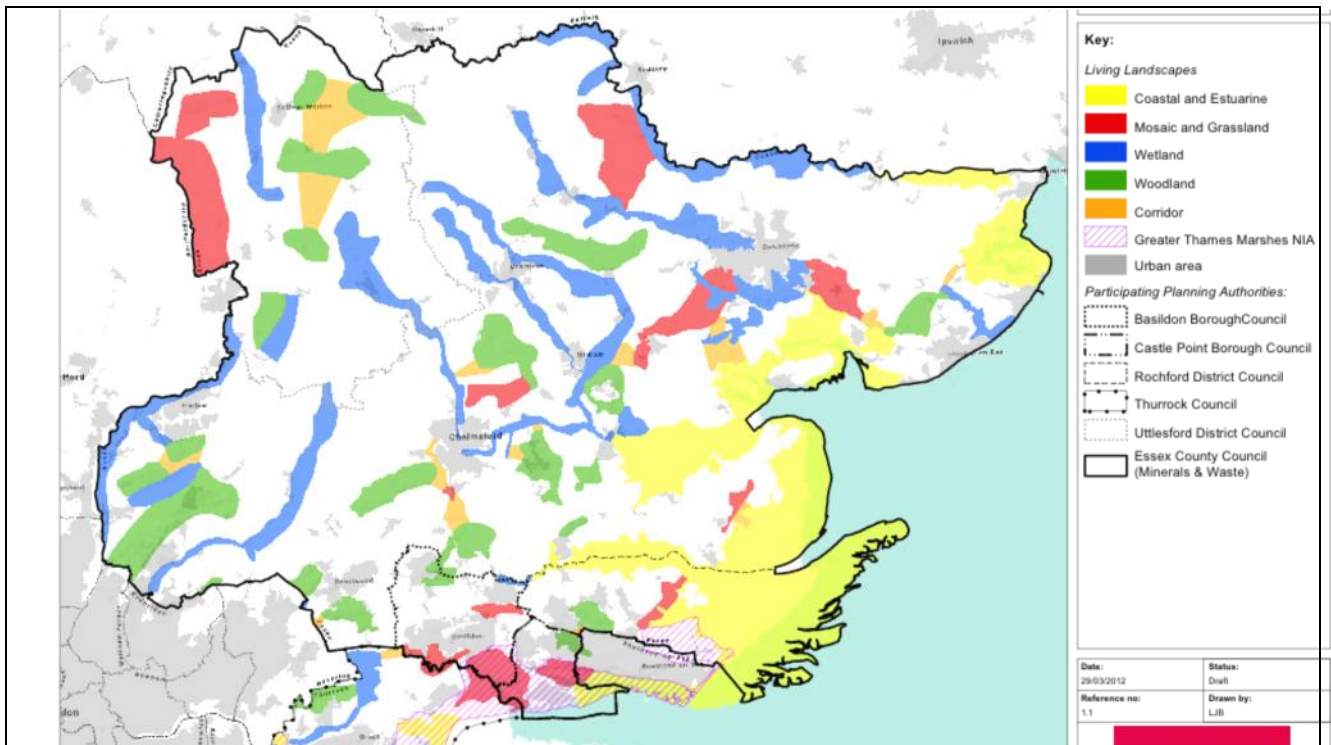
Figure 1: map of the case study area.

EBL anticipates the Defra offsetting pilot in Essex will help lead to:

(5) strengthened requirement for offsetting in Essex, applied to a greater proportion of developments;
(6) enhanced engagement of demand side (developers) and supply side (offset providers) in offsetting;
(7) enhanced expertise among planners and ecological consultants in use of the Defra offsetting metrics; and
(8) a strengthened and flexible market approach to offsetting, involving third party private sector brokers (such as EBL).

Over the longer-term, we anticipate that a thriving biodiversity offsetting market in Essex would deliver a significant improvement over current planning approaches to biodiversity, including no net loss of biodiversity (or, where possible, net gain), improved conservation of related natural capital and ecosystem services, and significant opportunities for business, delivering a net gain to the economy.

1.2. Specific aspects or issues addressed in the OpenNESS project

We plan 3 research sub-projects in the Essex case study. Each of these is most closely linked to WP3 Biophysical control of ecosystem services, but the three sub-projects also have relevance to WPs 1, 2 and 4. These linkages and their relevance are outlined below.

Title sub-project 1: Biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.

Title sub-project 2: The potential of biodiversity offsetting to deliver biodiversity and other elements of natural capital and other ecosystem services

Title sub-project 3: The resilience of biodiversity offsetting to climate as a driver of change
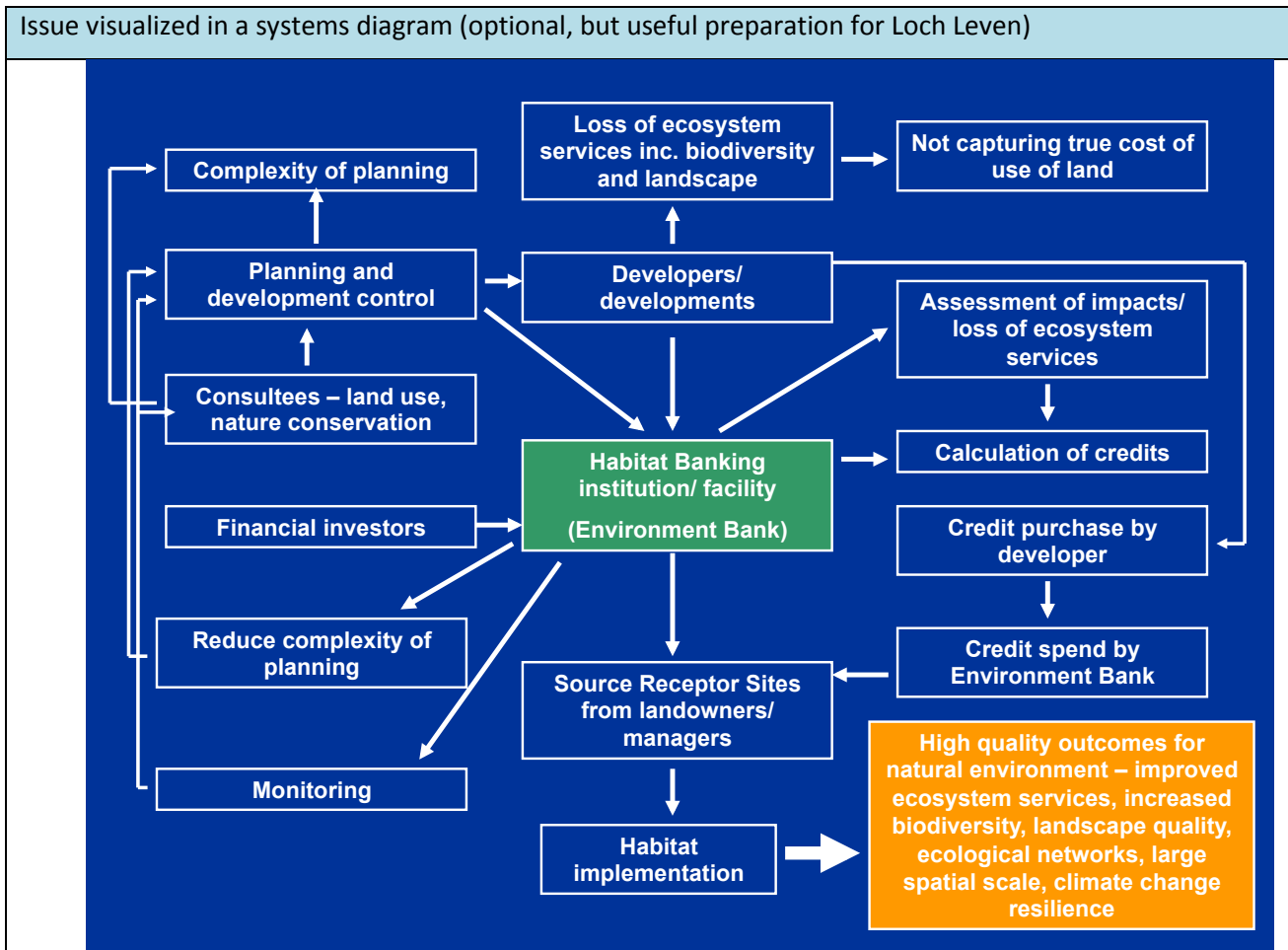
These sub-projects are discussed together in the boxes below (given that the answers to many of the questions are the same or very similar for each of the three sub-projects) – however, where relevant, we provide separate text for each sub-project.

Title and description of the three sub-projects:

The project will explore the following three areas:

1. **Biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services**. This research sub-project will involve research to document and analyse the operational model for biodiversity offsetting in Essex and how this might be extended to operationalize offsetting of other ecosystem services. The operational model in Essex has been developed by Essex County Council in partnership with the Environment Bank Ltd, within the context of an official UK government offsetting pilot. This research will support transfer of knowledge on offsetting as a highly policy-relevant approach to the operationalization of the concepts of natural capital and ecosystem services, and will inform the emergence of expanded offsetting markets in the EU. The research will include consideration of the costs and savings for developers arising from offsetting, the broader business opportunity arising from offsetting, and the net change in the value of ecosystem services arising from offsetting.

2. **The impact of biodiversity offsetting on the delivery of natural capital and other ecosystem services**. This research sub-project will aim to quantify where possible the impact of biodiversity offsetting on stocks of natural capital and flows of ecosystem services. The method will focus on a number of key ecosystem services as identified as most appropriate within the context of the study area and the available data. It will serve to quantify and compare NC/ES losses from developments with NC/ES gains arising from offsets and thereby build knowledge on the potential contribution made by biodiversity offsetting to sustain/enhance NC/ES and inform the possible development of offsetting markets that stack or bundle these NC stocks and/or ES flows.

3. **The resilience of biodiversity offsetting to climate change**. Research in the UK has suggested the offset market may be worth up to £500 m per year and could deliver 300,000 ha of offsets over 20 years. This represents a very significant investment in newly created and restored sites for nature. The question arises as to how resilient this investment will be to climate change. If there is a substantial shift in the climate space of key habitats and species for which offsets are provided, will these offsets lose ecological viability over time? Or will offsets help reduce fragmentation and strengthen resilience to climate change? This research sub-project will look at how the climate space might change for selected key species for key habitats addressed by offsetting in Essex.

NB: We will be conducting parallel research sub-projects in *Case Study 11 Biodiversity Offsetting in Warwickshire*. Essex offers a differing human- and bio-geographical setting for offsetting to that of Warwickshire. This includes differences in governance arrangements, in strategic approaches, in key stakeholders, and in habitat types. Notably, Essex is a coastal county whereas Warwickshire is land-locked. Moreover, climate change projections differ for these two areas of the UK. The application of the same research sub-projects in the two case study areas will allow us to draw out similarities and differences in terms of the factors that facilitate and inhibit the implementation of ES/NC concepts in the two contexts which share a national political context, but are different in terms of the data they have available and their local priorities (sectoral and institutional). The intention is that by studying the two case studies in tandem common lessons and key messages will be identified, and a greater understanding of the transferability of results, to other locations in the UK and elsewhere in the EU, will be achieved.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

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Complexity of planning

Loss of ecosystem
services inc. biodiversity
and landscape                →   Not capturing true cost of
                                  use of land

Planning and
development control   →   Developers/
                          developments        →   Assessment of impacts/
                                                    loss of ecosystem
                                                    services

Consultees – land use,
nature conservation                                Calculation of credits

Financial investors       Habitat Banking
                          institution/ facility    Credit purchase by
                          (Environment Bank)        developer

Reduce complexity of
planning                                           Credit spend by
                                                    Environment Bank

                          Source Receptor Sites
Monitoring                from landowners/          High quality outcomes for
                          managers                  natural environment – improved
                                                     ecosystem services, increased
                                                     biodiversity, landscape quality,
                          Habitat                   ecological networks, large
                          implementation      →     spatial scale, climate change
                                                     resilience
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In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
All three research sub-projects are currently active over phases 1-5 above. Some work has already done on identifying stakeholder positions and problem formulation, as reflected in this document. Resources have provisionally been allocated to the three sub-projects by EBL and by Oxford Environmental Change Institute (ECI) who will be the principal research partner in these case studies. The current document reflects the shared vision of EBL and ECI for these sub-projects and the initial research planning.
What is the desired short-term result (output)?:
The output of the three research sub-projects will be, respectively:

4. A paper/report on biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.
5. A paper/report on extent to which offsetting can deliver selected elements of natural capital and ecosystem services, in addition to biodiversity.
6. A paper/report on the resilience of biodiversity offsets to projected climate change to 2050.

What is the desired long-term result (outcome)?:
The desired long-term results of the three research sub-projects (taken together) are:

3. **Knowledge transfer** on effective governance arrangements for biodiversity offsetting, on the cost-benefits of offsetting, on the potential contribution of offsetting to maintenance/restoration of natural capital and ecosystem services, and on the resilience of offsets to climate change,

resulting in better informed key stakeholders (EU and national governments, planning authorities, developers, offset suppliers, etc.) and consequently better designed offset regimes in the EU.

4. **Enhanced offset market development** including enhanced potential for development of offset markets for a range of ecosystem services (biodiversity, nature-based carbon, water retention by habitats, etc.); these may be separate markets or may be markets which stack or bundle various ecosystem services.

Who will benefit from the results of this sub-project?

Enhanced knowledge on offsetting governance, costs and benefits, contribution to natural capital and ecosystem services, and resilience of climate change, can support the effective and cost-efficient design and expansion of offsetting markets across the EU. A wide range of stakeholders stand to benefit from this, including:

(6) **EU and national governments**, which can use the research findings to inform development of offset policies and regulation.

(7) **Planning authorities**, which will benefit from research findings to guide more strategic siting of offsets to optimise NC/ES outcomes and resilience to CC.

(8) **Developers**, who may benefit from an expanded use of offsetting by the EU and/or national governments (e.g. through reduced costs of off-site compensation, reduced permitting delays, fewer blocked developments arising from biodiversity concerns, reduced long-term liabilities, increased net developable areas).

(9) **Farmers and other landowners** (including environmental NGOs) offering offset sites who may benefit from the expansion of offsetting markets offering payments to create/restore nature on their land, including for long-term management (thereby contributing also to growing the wider rural economy);

(10) **Service businesses** which would benefit from the expansion of offsetting markets, including offset brokers (such as EBL), ecological consultants (applying the metrics), delivery agents (who create/restore nature), and companies involved in monitoring and verification (growing the knowledge economy).

Who will be negatively affected from the results of this sub-project?

A number of stakeholders may be negatively affected by the expansion of biodiversity offsetting (which may be facilitated as a result of this research). These include:

(4) *Some local communities*: offsetting may potentially have negative impacts on some local communities who experience development activities in their neighbourhood, in particular in cases where it is not possible to offset locally and where local communities therefore do not benefit from the offset. For example, in such cases, these communities may experience a loss of access to nature (though in most cases they probably did not have access to nature on the sites proposed for development as they may be under private ownership).

(5) *Landowners selling land for development* may experience a slight reduction in the price they can obtain from developers, as developers may legitimately accommodate the cost of offsets by affecting the residual land value, i.e. the amount they pay for the land. However, as such landowners typically experience a very significant uplift in land value (e.g. from £20000/ha to £2 m/ha) as a result of permitting for development, this slight reduction in price is not expected to be a major issue.

(6) *Ecological consultants*: many ecological consultants and related businesses, such as those supplying netting for great crested newts, may stand to lose business if offsetting proves to be more efficient in dealing with biodiversity impacts. However, these same businesses should have opportunities to move in to new business areas in support of offsetting, such as offset delivery, monitoring and verification.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
Biodiversity may be regarded variously as an element of natural capital, as a contributor to ecosystem function and the flow of ecosystem services, and as an ecosystem service itself.   A key issue for biodiversity offsetting is the extent to which it may not only secure no net loss (or better, net gain) of biodiversity, but also maintain and enhance these other ecosystem services. We hope to throw light on this. There is growing UK and EU interest in trading these other 'asset classes' including nature-based carbon, water retention capacity and nutrient cycling (N, P) and greater understanding of the impact of offsetting on these asset classes/ecosystem services would therefore be valuable.   We are equally interested in the extent to which gains for biodiversity and other ecosystem services may be resilient to climate change. This has not been much considered to date, but it is clear that species and habitats located in offsets, in the same way as species and habitats located in protected areas, will be affected by shifting climate spaces and that this will affect the value of these sites for these habitats and species in future.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
A potential barrier relates to the availability of sufficient data on both biodiversity and other ecosystem services.

2. Understanding stakeholder involvement and decision making process

There are usually many different types of stakeholders involved in the case studies but for this report we concentrate on the Case study advisory Board (CAB) described in the Description of Work for the project.

The main idea of a CAB is that OpenNESS researchers can consult and interact with stakeholders in their case studies (= science-practice forum).   This is essential as one of the main goals of OpenNESS is to operationalize and test ES&NC methods and tools in real life.   This is only possible if there is interaction with the people who will experiment and/or use the results of these methods and tools.

To better understand the characteristics of your CAB, we would like you to answer the following questions :

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
We have not established a CAB *per se*, but, as should be evident from the above, are already deeply involved with a wide range of stakeholders in the case study area. We would expect to engage the most relevant of these stakeholders in OpenNESS research in the case study area.
What do you expect from involving stakeholders in your CAB?
We expect to obtain support from key stakeholders, including provision of relevant data and expert opinion, to pursue those areas of research that appear to offer most practical benefit for the advancement of offsetting in Essex.
Who are the members of your case study CAB i.e. affiliations?   *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*

As mentioned above, there is not a CAB *per se*. However, the following organisations/groups are involved as key partners in our offsetting case study: Environment Agency, The Environment Bank, Essex County Council, Essex Biodiversity Project, Essex Wildlife Trust, Minerals Products Association, Natural England, Pond Conservation, South Essex Greengrid Network, The Land Trust, University of Essex, Basildon Borough Council, Castle Point Borough Council, Chelmsford Borough Council, Colchester Borough Council, Epping Forest District Council, Harlow District Council, Rochford District Council, Thurrock Council, Uttlesford District Council.

Which of the CAB members have you worked with before the start of OpenNESS project?

All of the above.

How were the CAB members selected?

Again, we have not set up a CAB *per se*, but work with partners in Essex based on the extent to which they are critical to the effective development of EBL's business model.

Is there anyone (or group) not represented? If yes, why?

No obvious omission.

Dates of meetings with the CAB (representatives)

Potential areas of research relating to OpenNESS WP3 were discussed at a meeting involving the Case Study Research Leader and Case Study Representative with the WP3 lead (Oxford ECI) in September 2013.

How are decisions made within the CAB?   *E.g. democratic vote, consensus building?*

Not applicable as there is no CAB *per se*. Decisions on the expansion of biodiversity offsetting in Essex are made by the relevant planning authorities (ECC, LPAs) and in negotiation with both the demand and supply sides, with the advice and support of EBL.

Does the CAB have an official mandate to tackle the concerned topic?

Not applicable as there is no CAB per se. However, ECC and LPAs have a legal duty under the National Planning Policy Framework (NPPF) to minimise impacts on biodiversity and provide net gains of biodiversity (where possible). Essex is a designated Defra pilot area for the application of biodiversity offsetting within the context of the NPPF. ECC contacted the Environment Bank Ltd to form a partnership in this offsetting pilot.

Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?

Again, there is no CAB *per se*; planning decisions are made by ECC and LPAs which have authority to implement these decisions. EBL has authority to advise on offsetting and to implement related research and development, having been formally appointed to advice on the Essex offsetting pilot by ECC.

How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)

We keep records of all key consultation with our partners in Essex.

How do you perceive the level of trust between the different CAB members?

Again, we do not have a CAB *per se*, but there is generally a very high level of trust between EBL and our key partners in Essex.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Biodiversity offsetting is EBL's core business and was selected as a suitable topic for investigation in OpenNESS as it is one of the most promising innovative mechanisms by which the EU can operationalize natural capital and ecosystem services concepts, both in terms of the potential benefits to nature and in terms of the potential market scale.
Who was involved in the selection of this issue/topic?
EBL directors, ECI OpenNESS participants.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

Action plans for the project are expected to be "SMART" (specific, measurable, acceptable, realistic and time-bound).

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
• Gathering and review of background information on the case study area. • Discussion with WP3 on focus of WP3 research in the case study area. • Substantial expansion of EBL business activity in the case study area including identification of specific demand side developments to pilot offsetting, identification of numerous supply side offerings and their posting to EBL's trading platform (Environmental Markets Exchange). • Significant new research (non-OpenNESS) relating to offsetting at the national level, including the EMTF research and recommendations mentioned above, and on-going Defra research on costs and savings for developers. • Significant growth in political momentum towards a national biodiversity offsetting scheme, including government publication of a Green Paper consulting on policy options, with a view to legislation in 2014/15. • Advances in European Commission consideration of offsetting including conclusion of a Working Group on No Net Loss.
Planned steps for research in sub-project 1
Goal:
Biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*

4. Document the operational model for biodiversity offsetting in Essex, including:
    ○ The policy/legislative framework at national (England) level;
    ○ The planning framework at county (Essex) and local planning authority level;
    ○ The development context, including projected development pressure and related level of demand for offsets in Essex;
    ○ The institutional arrangements for offsetting;
    ○ The offsetting process and the roles of the various players;
    ○ The approach taken to guide the strategic location of offsets to optimise biodiversity outcomes;
    ○ The metrics used for calculation of the unit/credit value of residual damage (demand side) and of offset provision (supply side);
    ○ The legal arrangements to secure offsets, including documentation of offset

requirement (demand side), offset provision including long-term management (supply side), covenants (for 'in perpetuity' offsets), credit purchase & sale;
- o Market infrastructure (registry of offset site, trading platform);
- o The provisions for monitoring and verification.
5. Analyse strengths and weaknesses of the model in relation to NC and ES and in relation to the costs and benefits, including consideration of:
    - o the net change in the value of ecosystem services arising from offsetting.
    - o costs and savings for developers arising from offsetting;
    - o the broader business opportunities arising from offsetting;
    - o impacts on the administrative burden of addressing biodiversity considerations in development permitting;
    - o impacts on local communities (e.g. access to nature).
6. Compare the Essex model with models developed elsewhere, including those in Germany, the US and Australia, and analyse the applicability of the Essex model to other EU Member States.

This research sub-project links in particular with WP2 Regulatory frameworks and drivers of change, with WP3, Task 3.3B *Effectiveness of Mechanisms and Instruments for Sustainable Management of Ecosystems,* and with WP7 *Impact & Dissemination* (given the potential relevance of the results for policy and business end-users). The research will also be of relevance to the governance and competitiveness challenges being addressed by WP1.

Expected results sub-project 1:
• A paper/report on biodiversity offsetting as an innovative mechanism for the operationalization of the concepts of natural capital and ecosystem services.
Timing sub-project 1:
• Document operational model [Mar 14] • Analyse strengths and weaknesses [Jun 14] • Compare to models elsewhere [Nov 14] • Final report [Mar 15]
Responsibilities sub-project 1:
This research sub-project will be led by EBL (Guy Duke) with input from EBL staff.
Planned consultation steps with CAB and stakeholders sub-project 1:
We will consult with EBL's key partners in Essex on: • the research plan [Nov-Dec 13] • the findings of the documentation of the operational model [Mar 14] • the findings of analysis of strengths and weaknesses [Jun 14] • the final report [Mar 15]
Possible risks or obstacles for the planned research sub-project 1:
Some elements of the operational model may be confidential and therefore not available for public review. However, as both the Case Study Research Leader and the Case Study Representative are EBL staff, they have privileged access to EBL proprietary information and, if necessary, can review this without disclosing confidential information.
Expected outputs/deliverable (sub-project 1) relevant for the aims and objectives of OpenNESS:
A paper/report on lessons learnt from the Essex Case Study on the operationalization of biodiversity offsetting in England and factors to take in to account in applying these lessons to other EU

Member States.
Planned steps for research in sub-project 2: *The potential of biodiversity offsetting to deliver biodiversity and other elements of natural capital and other ecosystem services*
Goal, sub-project 2:
To explore the impacts of biodiversity offsetting in terms of ecosystem service delivery through the quantification of selected ecosystem services provided by developed and proposed development areas and their offsets and proposed offsets. If practical, we will explore the impacts of future offsetting management scenarios.
Approaches and methods: *Please make clear reference to tools and approaches of WP1, 2, 3, 4, 6 & 7*
It is very likely that BBNs will be used as the main structure, however the approach followed may also entail the use of GIS/spread sheet methods and potentially STMs. In terms of data sources the approach will be tailored to the case study and draw on available bio-physical, land use and habitat data as well as expert knowledge, literature review and interview data where appropriate. This sub-project links with WP3 *Biophysical control of ecosystem services*, notably Task 3.1 *Contribution of NC stocks to ES flows*. There is also a link to WP7 *Impact and Dissemination* as the findings are likely to be of strong interest to policy end-users. The research will also be of relevance to the sustainable management of ecosystems challenge being addressed by WP1.
Expected results, sub-project 2:
Quantification of ecosystem services pre/post offset (June 2015). Potentially scenario outputs and if possible spatial patterns of ecosystem service provision (September 2015).
Timing, sub-project 2:
24 months • Identify datasets & data requirements [Mar 14] • Construct initial model (most likely BBN) [Sep 14] • Final quantification of ES [Jun 15] • (Scenario/Spatial outputs, if feasible) [Sep 15] • Sub project write-up [Oct 15]
Responsibilities, sub-project 2:
UOXF (Pam Berry, Rob Dunford) lead, in collaboration with EBL (Guy Duke, Louise Martland, Tom Tew)
Planned consultation steps with CAB and stakeholders, sub-project 2:
EBL and EBL partners in Essex will need to be consulted for data and to ensure that the BBN constructed reflects the key issues as they perceive them. It is also likely that these stakeholders will also be asked to contribute their expert opinions.
Possible risks or obstacles for the planned research, sub-project 2:
Data availability will dictate the approach taken in many places. This is not so much an obstacle as an issue that needs to be taken into consideration during the process.
Expected outputs/deliverable (sub-project 2) relevant for the aims and objectives of OpenNESS
• Paper exploring the contribution of offsetting to ecosystem service delivery (potentially

with reference to future scenarios and climate change)
    • Practitioner exposure to ES concepts
    • It is early days for biodiversity offsetting, practitioner experience embedding ES concepts in offsetting at this stage is quite significant in terms of operationalizing the approach.

Planned steps for research in sub-project 3: The resilience of biodiversity offsets to climate as a driver of change
Goal, sub-project 3:
To assess the resilience of selected habitat offsets to climate change. This sub-project links with WP3 *Biophysical control of ecosystem services*, notably Task 3.1 *Contribution of NC stocks to ES flows*. There is also a link to WP7 *Impact and Dissemination* as the findings are likely to be of strong interest to policy end-users. The research will also be of relevance to the sustainable management of ecosystems challenge being addressed by WP1.
Approaches and methods, sub-project 3:
Species which are dominant, of functional and/or conservation importance and sensitive to climate change will be selected from key habitats which are frequently offset [by Feb 14]. The impacts of climate change on these will be modelled using ecological niche modelling, available through WP3 partner (UOXF), who are involved in this case study. [by Oct 14] *Actions for beyond the 12-month period*: The resilience of the biodiversity offset will be assessed based on the selection of species maintaining suitable climatic conditions in the area. [by Feb 15] The resilience of ecosystem services will be assessed based on the impacts of climate change on key functional components of that service. [by May 15]
Expected results, sub-project 3:
Maps of the impacts of climate change on the selected species. [by Oct 14] Expert opinion on the resilience of biodiversity offsets and selected services to climate change [by Aug 15]
Timing, sub-project 3:
20 months
Responsibilities:
UOXF (Pam Berry) lead, in collaboration with EBL (Guy Duke, Louise Martland, Tom Tew).
Planned consultation steps with CAB and stakeholders, sub-project 3:
EBL partners for data (habitat maps and species selection) and expert opinion.
Possible risks or obstacles for the planned research, sub-project 3:
Higher resolution county level species data would be good nesting within modelling, but suitable resolution data will be freely available from National Biodiversity resolution too.
Expected outputs/deliverable (sub-project 3) relevant for the aims and objectives of OpenNESS
An understanding of the importance of climate change as a driver on the resilience of biodiversity offsetting and its impact on ES.

WP5 Report

Case Study 23: Cash crops driving land-use change in forest mosaic landscapes in East Godavari district, Andhra Pradesh, India

S. B. Roy and Raktima Mukhopadhyay

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Case and respondent's information	
Case study Research Leader	Professor S. B. Roy and Raktima Mukhopadhyay
Role of research leader in relation to case study	Research coordination, client – partner communication, capacity building for field testing of the concept developed on NC and ES, process documentation.
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Ramesh Kalaghatgi
Role of case study representative in relation to case study	Additional Principal Chief Conservator of Forests, Administration - Overall responsible for policy making and implementation of sustainable forest conservation and management

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
- To understand the community institutional and public governance mechanism affecting the conservation of NC that changes the ES   - Documenting existing community institutional practices for harvesting the NC and effect of institutions   - Mapping the status of interacting and interdependent components of flora and fauna (NCs) forming the designated forest mosaic landscape   - Identify the drivers of land use changes and   - Develop framework for criteria and indicators for assessing sustainability of NC and community institutions

1.2. Specific aspects or issues addresses in the OpenNESS project
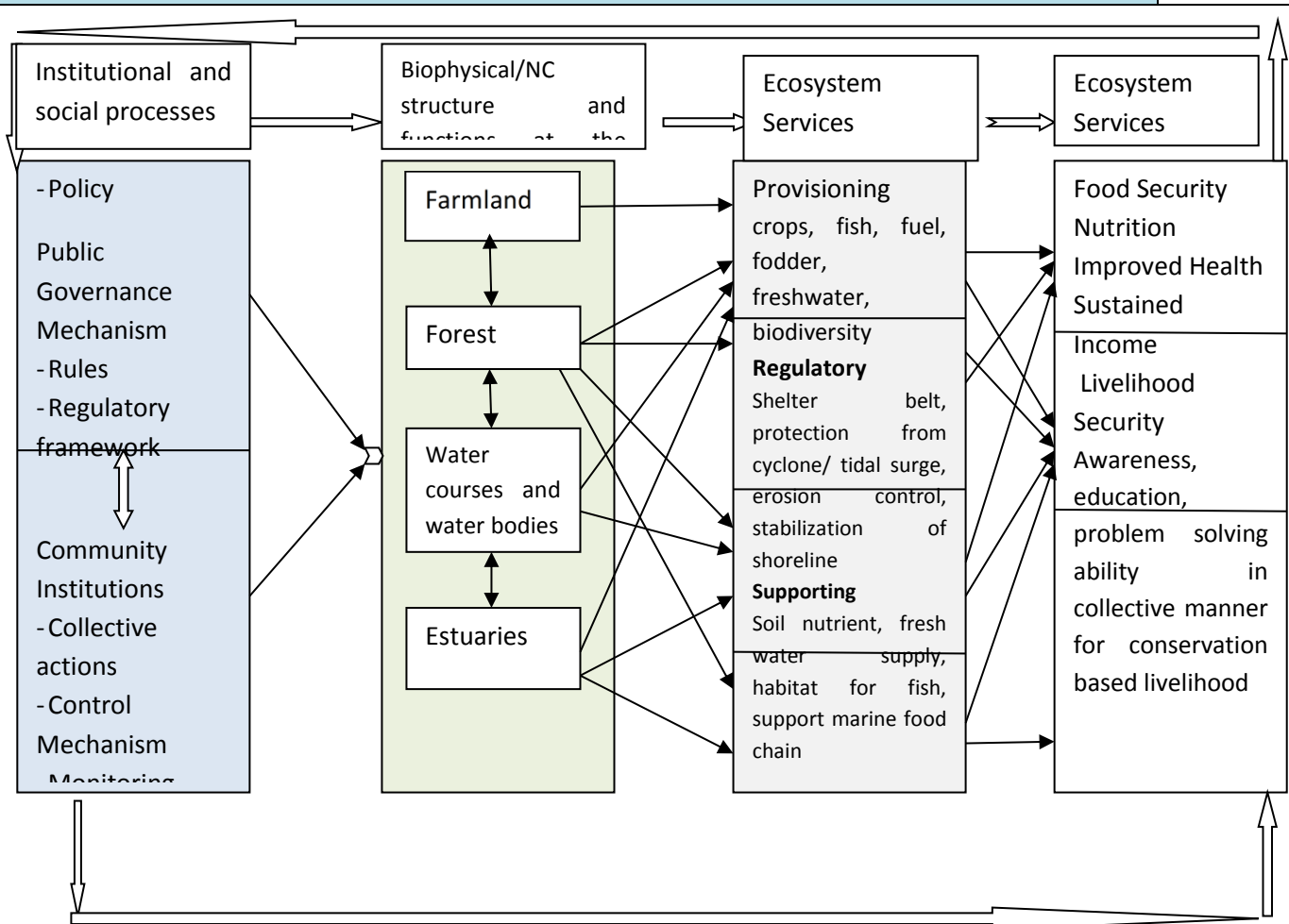
Title sub-project 1:

Title and description of sub-project:

Examine the process of effectiveness of community institution which favours NC conservation to improve ES at Coringa and compare it with three different forest ecosystems

The coastal and offshore environment of Coringa, EGREE (East Godavari River Estuarine Ecosystem) region supports rich biodiversity of which 77 globally threatened coastal and marine species, 277 benthic organisms, 540 fish species, 239 bird species, 26 reptile species including three marine turtles, six species of Whales and Dolphins, 18 coastal and terrestrial mammals and six Cetacean species are recorded. The landscape includes, in addition to mangrove, agricultural land and scrub forest. The scrub forest landscape of the study area appears to have received very little attention compared to other classes of forest in the country

Challenges

The estuarine area is facing the challenges of erosion of coast line, degradation of mangrove ecosystem, climate change, increasing salinity and lesser precipitation, change in biodiversity and species migration.

The main economic/ activities in the study area are fisheries, aquaculture, salt pans, shell collection and burning, tourism, manufacturing activities (e.g., oil and natural gas, fertilizers, edible oil, rice products), and ports at Kakinada.

East Godavari records the maximum fishermen population forming 23% in the total. The advent of mechanisation of fishing craft and introduction of mechanised fishing vessels has brought significant changes in the marine fishing industry of Andhra Pradesh. The introduction of Shrimp culture practices changed the landscape. The district has the largest number of drag nets, gill nets used for over exploitation of fish. Similarly the forest community at Chattisgarh, Madhya Pradesh and Andhra Pradesh have been facing degradation of NC and reduced flow of ES.

Process

Effectiveness of the community institution depends on level of awareness on the drivers of degradation and capacity in maintaining the regulatory mechanism for NC conservation and sustainable harvest for improved ES in the framework of public policy. The communities residing in 44 villages in the EGREE area largely depend on natural capital of mangrove ecosystem and marine resources as the main source of income and food security, although direct and indirect interaction continue with the main lands.

Better understanding of the interconnections between the social-community institutions and the ecological systems will help understanding of the resilience. Therefore a social ecological framework of analysis will be used to generate the key research questions for this inquiry.

It is observed that some of the human groups as community institution out of 44 Eco Development Committee (EDC), community institution (Joint Forest Management Committee/JFMC) responsible for conservation of the forest area, in the same geographical context have developed their own regulatory mechanism and social sanctions for identifying the drivers of degradation and have been successful to arrest the process of degradation. The case study will reveal what are the perception of the community towards ES and their relation with their own well being, how and why some groups conserve NC and others cannot. We will examine the factors and conditionality which have favoured

the successful groups to conserve NC.

Once the approaches and conditionality are understood for the processes of effectiveness of the successful institutions, we will try to create awareness and build capacity to test our methods at the area of less effective community institutions as simplified functional model and further refine for cascading the model of making effective community institutions for conservation of NC and improved ES.

The methodology for assessing the functioning of institutions or ecosystem requires tools, methods and approaches based on scientific principles and concepts related to functioning of social system and ecological systems. It would be desirable to develop criteria and indicators, which are scientifically rigorous and quantitative. Therefore, both qualitative and quantitative criteria and indicators will be developed in understanding the level of functioning of institutions and its impact on the status of ecosystem or biodiversity in Coringa and Seoni and other forest.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify) :

   2. Identifying stakeholder positions and problem formulation

We had conducted meetings with the senior most Forest department officials (Principal Chief Conservator of Forests, Principal Chief Conservator of Forests - Wild Life, Additional Principal Chief Conservator of Forests – Administration) responsible for policy decisions at the state level to discuss

on the issues and problem formulation on the 20th June 2013.
We also had conducted meetings with the Field Forest Officials of Coringa Wild Life Sanctuary and the project officials of EGREE region on 13th June 2013
Community consultation was held on 13th and 14th June 2013 to identify the issues, challenges and problems in Coringa Sanctuary area as well as the scrub forest areas under the broader landscape.

What is the desired short-term result (output)?:
The researcher will identify some factors which enables community institutions to be effective in NC conservation

What is the desired long-term result (outcome)?:
The methods to reverse the ineffective community institutions into effective one will result into conservation based use of NC and ES

Who will benefit from the results of this sub-project?
Community will be benefitted first and also other stakeholders in the surroundings whose livelihood depends upon the NC and ES

Who will be negatively affected from the results of this sub-project?
Some of the members of the community who are over exploiting the NC for short term gain.

Title Sub Project 2

Title and description of sub-project:
Examine the effectiveness of Public Policy and Governance system which supports NC conservation and improved ES There are many National Policies/Act of India like Indian Forest Act 1927, Wild Life Protection Act 1972, Wildlife Conservation Act 1980, Biological Diversity Act 2002, Forest Right Act 2006. The researchers will identify how some policies are effective and others are not. Policy implementation will not be effective unless the public governance system is made effective. The researcher will identify the process of public governance and its impact on NC conservation and ultimately on human well-being. In Indian forest management often a tension exists between the authority of the science-based knowledge systems of the state-run Forest Department (FD) and the knowledge of local forest users. Some kind of adaptive capacity is reduced when community knowledge is discouraged and/or restricted from influencing management systems. Therefore IBRAD propose to have orientation workshops with the partners from the beginning itself through participatory process. IBRAD will develop communication strategy to disseminate the project's results to relevant end-users in operationalizing the concepts of ES and NC; and demonstrate the capacity building approaches for the community and public field functionaries through workshop and field demonstrations. IBRAD got formal arrangement to involve forest officials as the case study partners. Thus it will be based on stakeholder participation of community as well as state officials to ensure that the conceptual frameworks are 'co-produced' and relevant for the end users.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
As above
In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify):
1. Starting up We have started the process of reviewing and analysing different policies and Acts relating to the project area and its implications on conserving the NC and ES.
What is the desired short-term result (output)?
Analysis of existing policy, finding the gaps and suggest for new policy, if needed.
What is the desired long-term result (outcome)?
More effective public governance and appropriate policy will be in place, will be implemented for action.
Who will benefit from the results of this sub-project?
Forest Department, Wildlife conservation wing, local self government and finally community members
Who will be negatively affected from the results of this sub-project?
Those who are exploiting for short term gain

Title Sub Project 3

Title and description of sub-project:
Refining the framework developed for participatory criteria and indicators for sustainable biodiversity conservation and ES If community as a stakeholder and the forest field staff monitors the changes in the status of biodiversity and other NC and drivers of degradation, they can take corrective actions and arrest the degradation process for improved flow of ES. When NC becomes scarce and are experienced by the community as a resource crisis, they have a number of options - they can do nothing and see if the system recovers, they can actively manage the system to a "desired stability domain" provided they have been monitoring the change and got data to relate with cause. Participatory monitoring measures progress and is defined as 'the systemic recording and periodic analysis of information that have been gathered and recorded by insiders with the help of outsiders' (FAO 1990). Community Participation is the prime criterion for sustainable management of forest resources. There have been encouraging results of forest regeneration, monitoring and evaluation through community participation. IBRAD with the foresters along with the villagers carried some experiments with forest resources to build knowledge and to develop techniques of better forest management in order to get maximum benefit by optimum utilization of resources Systematic interventions of participatory monitoring of the forest resources can make people aware and this could help to conserve biodiversity on the one hand and the sustainable livelihood opportunities could be developed on the other.

The activities will include :

- ➢ Identify the target species like REET for conservation
- ➢ Identify other species which can be utilized for generating sustainable livelihood,
- ➢ Develop mechanism for non-destructive harvesting methods of such resources so as to ensure perennial sources of supply of raw materials.
- ➢ Explore options for processing and value addition of the NTFPs to capture the niche market and price premium from the products as well as developing marketing linkages to increase the bargaining capacity of the people and free them from the clutch of the exploitative local middlemen.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
As above

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
4. Planning We have discussed the participatory methods of monitoring with the field level officials, have conducted initial field work to test and refine the method.

What is the desired short-term result (output)?:
Develop participatory methods, criteria and indicators for periodic monitoring of biodiversity and NC by involving the community and public forest field staff

What is the desired long term result (outcome)?:
Arrest degradation, develop biodiversity conservation plan, take corrective action in the field for eco restoration

Who will benefit from the results of this sub-project?
Community and public forest department, researchers

Who will be negatively affected from the results of this sub-project?
Those who are over harvesting the NC for short term gain

Title Sub Project 4

Title and description of sub-project:
Testing the methods of sustainable harvesting practices of NC Often flora and fauna are harvested by the community without knowing the critical level of harvesting. There are many critical issues where activities like fragmentation of the landscape, harvesting of rare, endangered and threatened species, disturbing the species guild and demographic profile of flora and fauna degrade NC, causing ecological imbalance and ultimately lowering the supply of ES. The case study will have experimental sites where fixed permanent experimental plots will be laid down in mangrove forest areas and studies will be conducted to assess the impact of conservation and controlled harvesting.

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)
As above

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
5. Planning
What is the desired short-term result (output)?:
Developing strategy of conservation of Rare, endangered and threatened species
What is the desired long-term result (outcome)?:
Lessons learned will be applied for habitat conservation for biodiversity
Who will benefit from the results of this sub-project?
Community, researchers, forest department, policy makers
Who will be negatively affected from the results of this sub-project?
Not sure

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The above mentioned issues were identified as potential sub projects to utilise the ES and NC concept because the sustainable management of the forest mosaic landscape including the mangrove forest area of East Godavari River Estuarine areas and the scrub forest areas in the upper reaches faces multidimensional challenges and drivers of degradation. The causal linkages are not linear. The livelihood of the people depends greatly upon the harvesting of provisioning services in terms of fish, shells and various other flora and fauna. The adjoining agriculture/farm lands and the human habitation gets protected through the regulatory services through creation of shelterbelts by the mangrove forest, the cultural services provided by the forest and its associated mangrove habitats promote ecotourism potential. But the mangrove forest ecosystem is getting disturbed due to various forces including the changes in land use pattern in the areas adjoining the forest for example shrimp cultivation, over withdrawal of river water for irrigation purposes, pollution of the river water due to industrialisation in the upstream areas on the one hand and over harvesting of biodiversity resources under the force of uncontrolled market forces on the other. The uncontrolled harvesting practices are having high negative impact on both the target and non-target species and also destruction of mangrove habitat and species migration. As such the livelihood of the people becomes high risk prone and vulnerable causing more damage to the natural capital stock and its associated ES. Thus it will be important to use the research findings to develop capacity of the community and the public governance system to explore options for eco compatible livelihood options through sustainable utilisation of NC and ES and integrate the ES and NC concepts to develop conservation strategies.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
A section of the community, local business men, traders and middle men who are involved in destructive harvesting practices of the NC for short term gain may create problems as their interests would be compromised. They may create problems to sabotage the process of bringing desired change.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
We have already initiated the process of establishment of CAB for our case study area. Meetings are held with the representatives of forest department, researchers and the community members. Forest department is under the process to formalise the CAB.
What do you expect from involving stakeholders in your CAB?
The problems/issues are/will be identified in consultation with the CAB. They will help in testing the methods, review the usefulness of the results and finally would suggest for policy changes.
Who are the members of your case study CAB i.e. affiliations? *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
The proposed members are from the Forest Department (Territorial), Forest Department (Wild Life wing), Professor from Andhra University, Researchers from EGREE project and local land owners/community members represented by the VSS (Van Samrakshan Samity) and EDC (Eco Development Committee).
Which of the CAB members have you worked with before the start of OpenNESS project?
We have worked with the forest department since 1992 and have helped them in operationalising the project on Joint/Community Forest Management in the state. We have also worked with the Professor of the Andhra University as a part of the National Level Ecological and Economic Research Network formed to support Joint Forest Management program in the country.
How were the CAB members selected?
The CAB members are proposed by the forest department who will actually be using the methods and tools for improving the forest management system.
Is there anyone (or group) not represented? If yes, why?
The CAB will be focussed on biodiversity conservation issues in the public managed forest areas and so will be represented accordingly.
Dates of meetings with the CAB (representatives)
20th June 2013 meeting with the PCCF, PCCF Wild Life, APCCF Administration to discuss on Research opportunities and issues 13th June 2013 meeting with the Range Forest Officer Coringa Sanctuary, Field staff of Coringa Sanctuary, Researcher of EGREE project, Community representatives to understand the problems and challenges and also conducted FGD with the community members on 13th and 14th June 2013 at Coringa and Rekhavanipallam.
How are decisions made within the CAB? *E.g. democratic vote, consensus building?*
Decisions will be made mostly through consensus building.
Does the CAB have an official mandate to tackle the concerned topic?
The forest department, the community and also the EGREE project researchers have the mandate to

ensure sustainable management of the forest areas.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Forest Department has the authority and regulatory role to implement the decisions.
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings will be maintained
How do you perceive the level of trust between the different CAB members?
High

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The sub projects were selected based on the degree of challenges and importance of issues identified through stakeholder consultation involving the forest department, EGREE project personnel and the community members. The issues have both immediate and long term relevance for the project area
Who was involved in the selection of this issue/topic?
Stakeholders including the forest department and community members

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
• Organised stakeholder consultation meeting • Field work to identify the issues • Identification of issues, challenges, problem formulation and sub project formulation as mentioned above • Initiation of the process to formalise the CAB • Identification of capacity building needs among the community and the forest field staff for sustainable management of NC and ES • Policy review • Discussion with other state forest departments to test the methods in designated forest landscape to refine the tools and methods through multi spatial applications • Meeting at National level with the Director General of Forests to test the methods to test it under Green India Mission that has a mandate for ES improvement under the context of climate change. • Engagement and orientation of field researchers • Initiation of field work to identify the existing practices, issues and challenges
Planned steps for research in sub-project 1: *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
Examine the approaches and conditionality that influences the processes for effectiveness of the community institution which favours NC conservation to improve ES, develop functional model to create awareness and build capacity of the stakeholders in the less effective institutions to test the

methods and further refine for cascading the model of making effective community institutions for conservation of NC and improved ES.

Approaches and methods:

Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7

Understanding the perception of the community of different occupational groups in the same landscape about their wellbeing and how they perceive the NC and ES influences their well-being. We will apply the model of Bilateral Matching Institutions (BMI – Roy, 1992) to study the institutional and governance issues, Participatory Vegetation Monitoring (Roy et al 2004, 2000) for assessing forest resource and trend analysis involving the community, Biodiversity conservation through participatory monitoring (Mukhopadhyay et al 2012)

Bayesian Belief Network may be constructed in order to integrate the social, environmental and economic as well as well-being aspects of the case study (WP3 & WP4). We may also use Ecosystem Services demand mapping method and preference assessment methods (WP3 & WP4)

Expected results:

The functional models developed for conservation of NC and ES would help developing effective community institutions, improved NC and flow of ES to ensure food and livelihood security of the people in the long run by the end of the project.

Timing:

The plan is approved by the Forest Department and the prospective CAB members are identified. The CAB will be formalised by December 2013.

The next step will be to hold series of meetings with the stakeholders including the

- forest department functionaries,
- community members,
- researchers to understand the present state of community institutions and public governance system in place for conservation of NC, assess the level of understanding about the ES, the existing condition of structure and functions of the forest mosaic landscape and associated practice of NC use within April 2014.

Once the conditionalities of the effective institutions are understood, training modules would be developed to create awareness and build capacity of the non-effective institutions to test the models and apply them on pilot basis within July 2014.

First level of orientation of the forest department staff on the model of making effective community institutions and also on tools like ES demand mapping to influence the policy decisions within September 2104.

Prepare case studies and training materials for awareness building, replication of the models and information dissemination within October 2014.

Responsibilities:

The following people will be responsible for specific tasks but they will be working as a project team.

S. B. Roy – overseeing and coordinating the project, developing functional models to develop effective community institutions, test the models through training of the stakeholders, coordination with the CAB, prepare reports

Raktima Mukhopadhyay – ES demand mapping with the project team and stakeholders, land use mapping and issues in forest mosaic landscape, test the methods through training, prepare report as appropriate

Research Associates (three in numbers) – study community institutions and forest structure and function

Planned consultation steps with CAB and stakeholders:
The CAB meeting will be planned in December/January to update them about the project and methods.

Possible risks or obstacles for the planned research:
The region is facing natural disasters since October 2013 (cyclone Phailin followed by severe cyclonic rain) that had disrupted the communication facilities and had caused severe damage to the crops. These had caused huge damage and loss to the people. The area is also facing political disturbances that are disrupting the normal life of people. All these may create problem in maintaining the planned schedule and deadlines of the project. However, the testing of the tools and approaches can be tried in other forest ecosystems in Chattisgarh, Madhya Pradesh and West Bengal.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
The model of effective community institutions for NC conservation and effective utilization of ES will be appreciated by the community and government functionaries.
Visible improvement in the well-being of the community will be noticed in the pilot area where baseline has been documented by IBRAD.

Planned steps for research in sub-project 2:
If you distinguish sub-projects, please copy this table for each sub-project

Goal:
Examine the effectiveness of Public Policy and Governance system which supports NC conservation and improved ES in the project area

Approaches and methods:
Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7
We will study the relevant policy, acts and rules of the government that affects NC conservation. A summary policy analysis will be undertaken to determine the regulatory obligations of the various actors involved (WP2).We will try to relate the EU framework (forest strategy, climate change adaptation strategy and sustainable development strategy – WP 2) with the case study area.

Expected results:
Through analysis of existing policies and public governance mechanism the gaps would be identified and suggest for new policy, if needed, to develop a more effective public governance system.

Timing:
Policy analysis, gap analysis and stakeholder consultation within June 2014.
Stakeholder orientation and consultation for policy changes within October 2014.

Responsibilities:
The following people will be responsible for specific tasks but they will be working as a project

team.

S. B. Roy – overseeing and coordinating the project, stakeholder consultation, policy recommendations

Raktima Mukhopadhyay – Policy and gap analysis, stakeholder meetings

Research Associates (three in numbers) – Help in analysis, prepare case studies

Planned consultation steps with CAB and stakeholders:
The CAB meeting will be planned in December/January to update them about the project and methods.

Possible risks or obstacles for the planned research:
The region is facing natural disasters since October 2013 (cyclone Phalin followed by cyclonic rain) that had disrupted the communication facilities and had caused severe damage to the crops. These had caused huge damage and loss to the people. The area is also facing political disturbances that are disrupting the normal life of people. All these may create problem in maintaining the planned schedule and deadlines of the project.
It may take time to convince people in the government at different levels to change the policy and take more time to meet the deadline than expected.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
The dynamic policy that takes care of making effective community and government institutions for NC conservation and considers including the ES perspective in terms of designing benefit sharing arrangements and entitlements would help in achieving the goal of conservation of NC and securing well being of the people in the long run.

Planned steps for research in sub-project 3:
If you distinguish sub-projects, please copy this table for each sub-project
Goal:
Refining the framework developed for participatory criteria and indicators for sustainable biodiversity conservation and ES
Approaches and methods:
Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7
We will apply the methods of Participatory Vegetation Monitoring (Roy et al 2004, 2000) and Framework of criteria and indicator for SFM (CIFOR) by involving the community for biodiversity conservation and ES to refine the framework and standardise the methods of participatory biodiversity conservation.
Expected results:
The participatory methods, criteria and indicators that would be developed for periodic monitoring of biodiversity and NC by involving the community and public forest field staff would help in arresting degradation through development of biodiversity conservation plan, taking corrective action in the field for eco restoration and conservation of REET species
Timing:
Once the model of effective community institutions will be developed then would test the method with them starting from October 2014

Responsibilities:
The following people will be responsible for specific tasks but they will be working as a project team.
S. B. Roy – overseeing and coordinating the project, framework development, stakeholder consultation, reporting
Research Associates (three in numbers) – involving community, collection of data, analysis of data and report preparation

Planned consultation steps with CAB and stakeholders:
The CAB meeting will be planned in December/January to update them about the project and methods.

Possible risks or obstacles for the planned research:
The region is facing natural disasters since October 2013 (cyclone Phalin followed by cyclonic rain) that had disrupted the communication facilities and had caused severe damage to the crops. These had caused huge damage and loss to the people. The area is also facing political disturbances that are disrupting the normal life of people. All these may create problem in maintaining the planned schedule and deadlines of the project.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
The participatory monitoring method would help both the forest department and the community to have periodic assessment of the forest area, track the changes and take timely corrective action.

Planned steps for research in sub-project 4:
If you distinguish sub-projects, please copy this table for each sub-project

Goal:
Testing the methods of sustainable harvesting practices of NC by the community

Approaches and methods:
Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7
We will apply the tools of assessing the effectiveness of community institutions for sustainable harvesting of NCs (Roy,2012) and BMI (Roy 1992).
We will also test the tools of preference assessment to understand the non destructive harvesting practices followed by the community.

Expected results:
Based on the learnings of sustainable NC harvesting practices followed by the community for strategy of conservation of Rare, endangered and threatened species would be developed by the forest department and also by the community that would help in habitat conservation for biodiversity

Timing:
It would be tested along with the process of understanding and testing effective community institutions.

Responsibilities:
The following people will be responsible for specific tasks but they will be working as a project

team.
S. B. Roy – overseeing and coordinating the project, institutional analysis and reporting
Research Associates (three in numbers) – involving community, collection of data, analysis of data and report preparation

Planned consultation steps with CAB and stakeholders:
The CAB meeting will be planned in December/January to update them about the project and methods.

Possible risks or obstacles for the planned research:
The region is facing natural disasters since October 2013 (cyclone Phailin followed by cyclonic rain) that had disrupted the communication facilities and had caused severe damage to the crops. These had caused huge damage and loss to the people. The area is also facing political disturbances that are disrupting the normal life of people. All these may create problem in maintaining the planned schedule and deadlines of the project.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
The sustainable harvesting method if followed systematically would help in Conservation of the NC and sustained flow of ES for improved well-being of the people, by the end of the project period.

WP5 Report

Case Study 24:Kakamega Forest Ecosystem Management

David Odee[1] et al.

Proposed key stakeholder representation (numbers/proportion): Kenya Forest Service (1), Kenya Wildlife Service (1), Community Forestry Associations & constituent interest groups (5), Kakamega Environment and Education Program (1), Kenya Tea Development Authority (1), Kenya Tourism Board (1), Kakamega County Government/Environment Officer (1), Nature Kenya, National Environmental Management Authority (1), Moi University (1), Masinde Muliro University of Science & Technology (1), Maseno University (1), Eco2librium LLC- Carbon Offset (1).......

[1]Kenya Forestry Research Institute, P.O. Box 20412-00200, Nairobi, Kenya

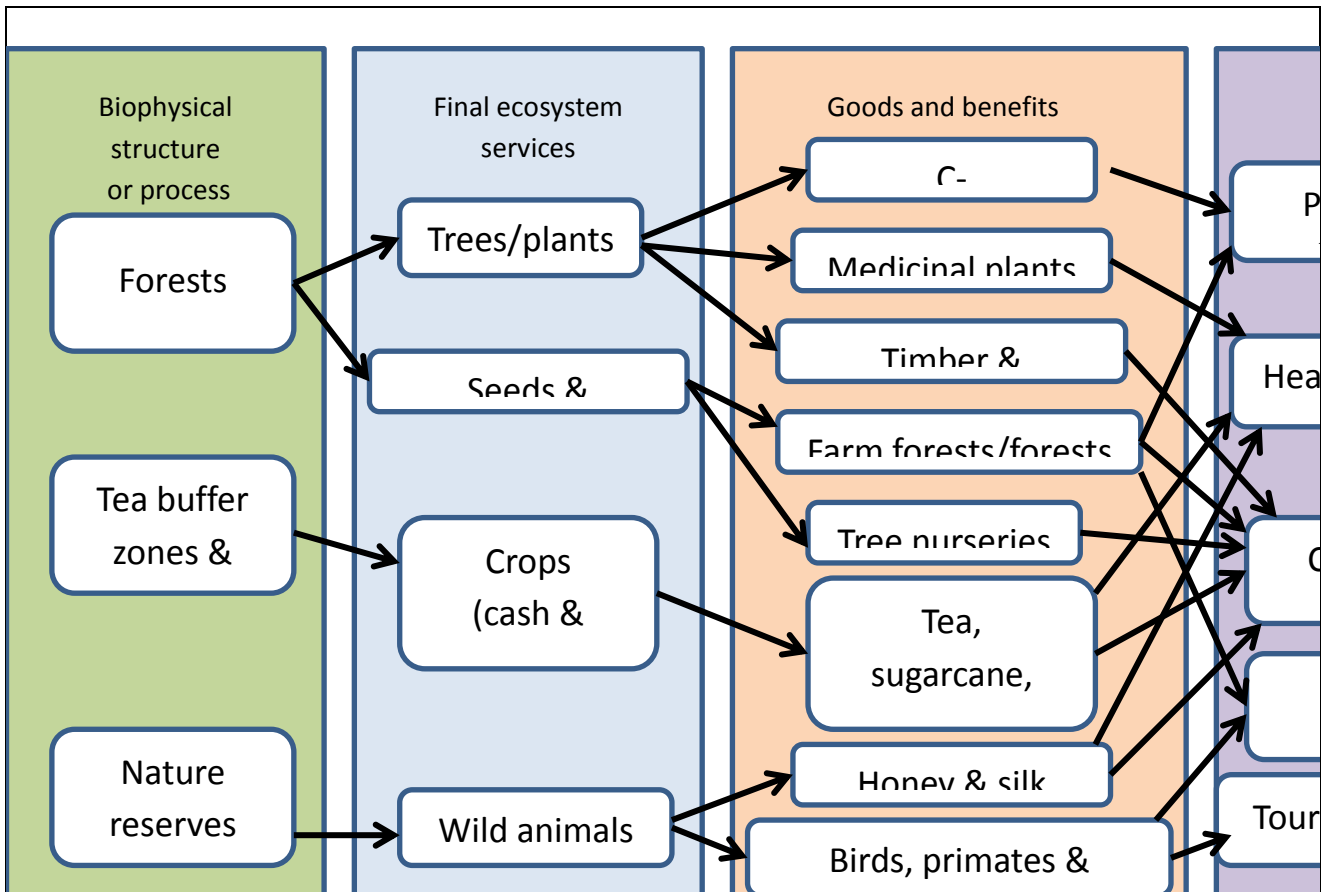| Case and respondent's information	
Case study Research Leader	David Odee
Role of research leader in relation to case study	Coordinator of the Research work/studies of the Case Study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	To be decided; the most important stakeholder is Kenya Forest Service (KFS). We will most likely nominate, select or elect a Manager from the KFS.
Role of case study representative in relation to case study	KFS is part of the National Government Department in-charge of the management and conservation of the Forest Ecosystems, and the lead authority in the implementation of the Kakamega Forest Ecosystem Management Plan. In this Case Study, it will be responsible for the operationalisation of ES in Kakamega Forest Ecosystem.

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary – please just cut and paste into this space

Main (broad) objective
The main is to contribute to the overall goal of the proposed Kakamega Forest Ecosystem Management Plan, which is to conserve and enhance the unique biodiversity of the forest, and improve the livelihoods of the forest adjacent communities through sustainable management and utilisation of ES/NC. OpenNESS will strive to mainstream the ES/NC concept at multiple levels (land-use and landscape) across the forest-agricultural landscapes continuum. It will actively engage the active participation of the stakeholders through representation in CAB and 'open' activities, including farmers, public and private managers of natural resources, policy makers and various interest groups. The following issues have been identified as critical in mainstreaming ES/NC in Kakamega Forest Ecosystem: • Mapping and valuation of ES. • Impact of Regulatory Frameworks (EU, National & Local) on tea as export commodity (ES) to the EU. • Governance mechanisms (national and local) and their effects on management of ES.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Description of sub-project:
Mapping and evaluation of ES/NC There are a multitude of ecosystem services that are accessed, used or enjoyed by stakeholders in this Case Study. Beacuse it would not be feasible to assess, map and evaluate all of them, we will need to prioritise a manageable number of ecosystem services (~3-4) to be studied. Preliminary face-to-face consultations with major stakeholders indicates multitude of ecosystem services (see the CASCADE diagram below). We will map and evaluate supply and demand of the priority ecosystem services in terms of present and future scenarios as dicated by predetermined drivers (e.g. changes in policy & regulatory frameworks, governance, population, climate, land use etc.). The other two issues (i) impact of Regulatory Frameworks (EU, National & Local) export commodity the EU, and (ii) governance mechanisms (national and local) and their effects on management of ES/NC will constitute part of the activities of the overall mapping and evaluation of ecosystem services. Tea is an important cash crop in the Case Study region adopted by many farmers for income generation, and is also our Case Study flagship export commodity to the EU. Thus tea will form the basis for assessing the impact of Regulatory Frameworks (EU, National & Local) export commodity the EU. The forests have complementary, if not competing, governance structures at the Case Study level, e.g. protected forests (National/Nature Reserves) versus Kenya Forest Service-led Community-based forest participatory Management approaches. Since biodiversity conservation is at the core business of either governance structure, we will analyse what impacts it has on biodiversity and sustainable management of the ecosystem.

Biophysical structure or process	Final ecosystem services	Goods and benefits	
Forests	Trees/plants	C-	P
	Seeds &	Medicinal plants	Hea
		Timber &	
Tea buffer zones &	Crops (cash &	Farm forests/forests	C
		Tree nurseries	
		Tea, sugarcane,	
Nature reserves	Wild animals	Honey & silk	Tour
		Birds, primates &	

In which phase is this sub-project 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)

Identifying stakeholder positions and problem formulation

A series of face-to-face consultations with major stakeholders (namely; Kenya Forest Service, Kenya Wildlife Service, Muileshi Community Forest Association, Malava Community Forest Association, Nyayo Tea Zone (Kenya Tea development Authority), Mudete Tea Factory, Nature Kenya, Kenya Environment and Education Programme and Eco2librium were made in the month of August where a range of challenges, needs and opportunities were discussed. CAB formation, problem formulation and prioritization of key ecosystem services to map and evaluate will constitute the main activities to be undertaken in the next 12 months.

What is the desired short-term result (output):

To document and present spatially explicit maps (as visual aids) and values (monetary and non-monetary) of the three main ecosystem services (Fuelwood/timber, tea production and recreation) to the stakeholders of Kakamega Forest Ecosystem.

What is the desired long-term result (outcome):

To better understand the drivers and dynamics of ecosystem supply and demand within the ecosystem thereby informing sustainable management strategies by the stakeholder (user groups, policy makers, regulators etc.) for improved biodiversity conservation and the livelihoods of the forest adjacent

communities.
Who will benefit from the results of this sub-project and who will be affected?
All the stakeholder-ranging from the Kenya Forest Service, Kenya Wildlife Service, various user groups to the downstream communities within the Lake Victoria Basin through potential flood regulation.
Who will be affected?
All the stakeholders are likely to be positively affected.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts? What do you hope to achieve differently compared to earlier concepts/approaches?
Firstly, it instils the sense of value (monetary/non-monetary), and therefore making some of the intangible ecosystem services appreciated by the user groups. Secondly, it informs the stakeholders on interrelationships and interdependencies of the various ecosystem services/natural capital, processes and functions (as in the CASCADE MODEL), thus creating awareness on the need for collective responsibility rather than on single commodity, product or ecosystem service for sustainability.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
Perhaps communication barriers, for instance use, translations and dissemination of the ES/NC terms 'jargons' to local users. It is envisaged that WP6 will provide support and guidelines to remove this (potential) barrier.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a CAB? If not please explain your strategy over the next 12 months?
No, but Case Study Leader have undertaken an initial face-to-face consultations with a cross-section of the stakeholders. My strategy is constitute a CAB and nominate or elect our Chairman guided by the results of stakeholder analysis (e.g. along the power-interest/dependence spectrum) and priority ecosystem services/natural capital being studied. A letter of invitation will be sent to the potential CAB (by January 2014) ; a meeting will be held on site to formally introduce OpenNESS, confirm or modify priority issues and ES/NC to be addressed in the Case Study, elect/nominate Chairman, and develop a work plan/programme for consultative meetings (by 30 June2014).

Case study advisory board

Who are the members of your case study CAB i.e. affiliations? Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc

The CAB membership will be drawn from the Kenya Forest Ecosystem Management listed stakeholders, and will include Community Forest Associations, smallholder farmers, private sector (e.g. tea & sugar factories), researchers, Government agencies (e.g. Kenya Forest Service, Kenya Wildlife Service), policy makers (local/county government), institutions of primary & higher learning and a range of non-governmental organisations (e.g. Nature Kenya). The composition of the CAB will also be mindful of gender and youth representation. The membership will range from 8 and no more than 20. Membership will be reviewed annually as needs arise or dictated by circumstances.

Which of the CAB members have you worked with before OpenNESS?

The Case Study leaders has not worked with any of the stakeholders, although the regionally-based KEFRI Scientists have had long-standing interaction and working relationships with some of the potential CAB members.

How were the CAB members selected?

See above- the intention and strategy for selecting/electing CAB members. If, for any reason, the Kenya Forestry Management Plan committee has a mandate from its membership and decides to also act as CAB, then it will take precedence.

Is there anyone (or group) not represented? If yes, why?

The composition of the proposed CAB is will be based on the key ES/NC being studied

Dates of CAB interaction

CAB consultative meetings will be held at least once every year on dates that will be decided after the first meeting.

How are decisions made within the CAB? Democratic vote, consensus building, chairperson casting vote

 Will be decided by the first sitting.

Does the CAB have an official mandate to tackle the concerned topic?

It is envisaged that they will only have an advisory role to the relevant government or institutional authorities to execute their mandate.

Which organisation (in or outside the CAB) should implement actions related to the issues you are studying?

Kenya Forest Service, Kenya Wildlife Service, Kenya Tea Development Authority, Kakamega Forest Ecosystem Management team.

How will you maintain records of all the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)

Minutes of meetings.

How do you perceive the level of trust between the different CAB members?
Not applicable; will be assessed after constituting the CAB.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The topics were formulated by Case Study Leader and his KEFRI team after consultations with representatives of stakeholders and synthesis of a draft management plan for the ecosystem. The needs, challenges and opportunities articulated during the face-to-face consultations informed the choice of topics. Essentially, the topics (mapping and evaluation) represent the starting point of the process for mainstreaming ES/NC concepts through creation of awareness.
Who was involved in the selection of this issue/ topic?
Case Study Leader and his team following a stakeholder-wide consultation process.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
Case Study Leader had face-to-face consultations with a cross-section of the stakeholders in the month of August, 2013. They were held one-on-one and not as groups of stakeholders. This approach was conducive to candid and open deliberations without fear of 'competing' interests.
Planned steps for research in sub-project 1: ➔ *If you distinguish sub-projects, please copy this table for each sub-project* ➔ *Make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
Goal: To create awareness of the ES and NC available and provided by the ecosystem to the user groups and stakeholders by mapping and evaluating the present and the future of scenarios of supply and demand. The findings will be disseminated to review management strategies biodiversity conservation, and improvement of the livelihoods and wellbeing of the forest adjacent communities through sustainable management and utilisation of ES/NC.
To map and evaluate ecosystem services
Approaches and methods:
The Kakamega Forest Ecosystem provides a multitude of ES to the local communities. Initial face-to-face consultations with a cross-section of stakeholders and user groups revealed high heterogeneity of interests from forest based ES (fauna & flora) as illustrated in the CASCADE diagram (above). Three key tools/methods have been identified and are intended to be applied in the course of the project: QUICKScan, Multi-Criteria Decision Analysis (MCDA), Bayesian Belief Network (BBN) and InVEST. The biophysical and data requirements have been discussed (in WS1, Loch Leven) and targeted training sessions are planned for these tools. The primary activity will be to source, collate and create a database for use in parameterisation for mapping and valuation. As a pilot to test the tools and methods, we will start by targeting one small group (a subset) of stakeholders, the Malava Community Forest Association 450 members dependent on the Malava forest (718 ha) for various EC, which is the smallest among the three forest fragments managed under a participatory arrangement with the Kenya Forest Service; others are protected (Nature Reserves).

Expected results:
-Biophysical database, including maps. -Report on the utility of QUICKScan, MCDA, InVEST and BBN from Malava Forest Association perspective. -Refined objectives and prioritisation of ecosystem services to be studied (~3-4 ecosystem services)
Timing:
-Attend training workshop (MCDA) 29-31 January 2013 -A preliminary database (biophysical and maps) for Malava Community Forest Association will be done by 30 April 2014. -Malava Stakeholder's workshop trialling QUICKScan held by 30 September 2014.
Responsibilities:
David Odee- Case Study Leader, Coordinating the KEFRI, liaising and reporting to WP5 Leader. Charles Ndege (KEFRI)-Liaison with stakeholders, and facilitator stakeholder engagements. Stephen Kiama-Mapping and database John Ochieng- logistics & field data collection. -CAB stakeholder representative- will be named after CAB formation
Planned consultation steps with CAB and stakeholders:
-Letters of invitation to join CAB sent out by January 2014) -Formal introduction of OpenNESS to CAB members, nomination/election of Chairman, and development of a work plan/programme for consultative meetings by 30 June2014.
Possible risks or obstacles for the planned research:
-Unforeseen conflicts might make some stakeholders unwilling to participate in CAB or wider consultations. However, the tools for stakeholder engagement will be used to minimise or remove such conflicts..
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
-The piloted tools & methods for stakeholder engagement, and mapping and evaluation of ecosystem services/natural capital are refined for application in the wider Kakamega Forest Ecosystem to assess their effectiveness for conserving biodiversity conservation and sustainability.

WP5 Report

Case Study 25: Retention forestry in Southern Patagonia to improve biodiversity conservation and ecosystem services in managed landscapes

Guillermo Martinez Pastur, Pablo Luis Peri

CONICET

Case and respondent's information	
Case study Research Leader	Dr. Guillermo Martinez Pastur
Role of research leader in relation to case study	Research coordinator for case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	1) For. Eng. Eduardo Manghi 2) For. Eng. Fabián Jaras 3) Eng. Juan Ruiz 4) For. Eng. Ricardo Vukasovic 5) Lic. Marie Jensen
Role of case study representative in relation to case study	1) Represent National Forest Office 2) Represent Forest Office of Tierra del Fuego Province 3) Represent Forest Office of Santa Cruz Province 4) Represent private professional sector 5) Represent forest companies

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
Our mains tasks are: (1) quantify economic, biodiversity and ES values at regional levels. (2) quantify the impacts of traditional management over biodiversity and ES values. (3) monitoring these effects in a long-term plots in the framework of large scale operations (ranches and sawmills). (4) develop new forest management strategies using the variable retention approach.

1.2. Specific aspects or issues addresses in the OpenNESS project

Title and description of sub-project:
Everything is designed in one main project.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Some research included in the study case started several years ago (e.g. oldest permanent plot started in 1960), but some topics included in the project has only started with the project. So, these last ones are in development stage.
What is the desired short-term result (output)?:
Short-term results are related to the development of maps and models of ecosystem services at regional level, e.g. (1) biodiversity quality maps, (2) primary productivity maps, (3) beaver impact, (4) grazing impact, and (5) carbon storage. Bring these outputs to the attention of the main stakeholders.
What is the desired long-term result (outcome)?:
Implementation of different management scenarios, and implement of one ES model at regional level. Develop tools based on these outputs for the main stakeholders.
Who will benefit from the results of this sub-project?
The benefit will be received mainly by ranch owners and sawmill owners (e.g. certification processes and improvement of management methods), as well as technicians of the main regional institutions (e.g. forest and agricultural agencies), and secondary the national government. Local people and NGOs interested in nature will also benefit from better holistic management of the forest and grassland.
Who will be negatively affected from the results of this sub-project?

We will implement more sustainable management methods in farmlands and forests. It could be possible that ranch owners and sawmills can be affected due to harvesting levels or cattle stocking rate can be modified.

1.3. Use of ecosystem services and natural capital concepts:

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
The ES approach gives a holistic approach and allows to the ranch and sawmill owner to link theoretical and practical concepts. Beside this, this approach provides the use of multifactor analysis by incorporating several land uses and conflict of interest.
What might be (potential) barriers to the use of the ecosystem services approach in your project?
The major barrier in Patagonia is the data availability and in consequence the quality of the outputs at smaller spatial scales. Beside this, no constrains to the use of the ecosystem services concept are found.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Yes.
What do you expect from involving stakeholders in your CAB?
They will determine the usefulness of the results and distribute -the outputs of the project.
Who are the members of your case study CAB i.e. affiliations?   *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Dr. Guillermo Martínez Pastur (CADIC CONICET)   PhD. Pablo Peri (INTA)   Ing. Ftal. Eduardo Manghi (National Forest Office)   Ing. Ftal. Fabián Jaras (Head of Forest Office of Tierra del Fuego Province)   Ing. Juan Ruiz (Head of Forest Office of Santa Cruz Province)   Dr. Marcelo Barrera (La PLata National University)   Ing. Ftal. Lucas Monelos (Southern Patagonia National University)   Ing. Ftal. Ricardo Vukasovic (represent private professional sector)   Lic. Marie Jensen (represent forest companies)
Which of the CAB members have you worked with before the start of OpenNESS project?
Dr. Guillermo Martínez Pastur (CADIC CONICET) has worked together in several research projects during the last 10 years, for example with: PhD. Pablo Peri (INTA)

Ing. Ftal. Fabián Jaras (Head of Forest Office of Tierra del Fuego Province)
Dr. Marcelo Barrera (La PLata National University)
Ing. Ftal. Lucas Monelos (Southern Patagonia National University)
Ing. Ftal. Ricardo Vukasovic (represent private professional sector)
Lic. Marie Jensen (represent forest companies)
How were the CAB members selected?
CAB members were selected by the case coordinator and the project team based on their relevance as stakeholders within their roles (e.g. private companies, institutions and government offices).
Is there anyone (or group) not represented? If yes, why?
Yes, for example, the ranch owners, because the forest management was under the sawmill responsibility. This last group is under analysis to be included.
Dates of meetings with the CAB (representatives)
CAB representatives' lives at Buenos Aires city, La Plata city (Buenos Aires province), Rio Gallegos city (Santa Cruz province), Rio Grande city and Ushuaia city (Tierra del Fuego province). We organize partial meetings along the year during other events. For example, last partial meeting were conducted at El Calafate city (Santa Cruz province) (May 2013) and La Plata city (August 2013) during forest conferences organized by the case study leaders.
How are decisions made within the CAB? Democratic vote, consensus building.
By consensus.
Does the CAB have an official mandate to tackle the concerned topic?
No.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
National Government of Argentina and Provincial Governments (Tierra del Fuego and Santa Cruz).
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
We not implemented formal records during the CAB meetings.
How do you perceive the level of trust between the different CAB members?
We believe in the trust of the CAB is high in a wide range of social groups, due to, several institutions are involved in the project.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
There is a lack of information about these ES, and those selected are related to the ranch and sawmill productive activities.
Who was involved in the selection of this issue/topic?
Responsibility of the study case leader, and with the agreement of the CAB members.

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)

We selected the most important ES, which will be expanded to a regional level during the project.

We contacted and invited some specialists in the key topics to be involved in the project (e.g. Dr. Stefan Schindler – University of Vienna and Dr. Ricardo Diaz Delgado – CSIC).

We obtained preliminary outputs for the selected topics, and were presented to the CAB members.

Finally, we prepared two draft papers and some communications to congress with the obtained results, and we will send them to consideration during next months.

SOLER ESTEBAN, R; G MARTÍNEZ PASTUR; S SCHINDLER; MV LENCINAS; PL PERI. Aggregated and dispersed retention in *Nothofagus pumilio* forests: A meta-analysis to assess ecological impacts in Tierra del Fuego.

GAMODÉS MOYANO, I; G MARTÍNEZ PASTUR. Reshaping forest management in Southern Patagonia (Argentina): A qualitative assessment.

Congress: The project team attended several congress and presented the project and have two presentations planned for 2014

2014. SCHINDLER, S; R SOLER ESTEBAN, MV LENCINAS;G MARTÍNEZ PASTUR; PL PERI. Effects of variable retention forest management on richness and abundance of plants, insects and birds in *Nothofagus pumilio* forests in Tierra del Fuego (Argentina).XXIV IUFRO World Congress. Salt Lake City (USA) 5-11 Octubre.

2014. MARTÍNEZ PASTUR, G; R DÍAZ DELGADO; MV LENCINAS; G KREPS; K GUILLOZET; CBANDERSON; PL PERI. Decreasing of terrestrial net primary production (NPP) in Southern Patagonia (Argentina) during the period 2000-2012.XXIV IUFRO World Congress. Salt Lake City (USA) 5-11 Octubre.

2013. PERI, PL; S ORMAECHEA; G MARTÍNEZ PASTUR; MV LENCINAS. Inventario provincial del contenido de carbono en bosques nativo de ñire en Santa Cruz.I-120. IV Congreso Forestal Argentino y Latinoamericano. Iguazú, 23-27 Septiembre.

2013. LENCINAS, MV; G MARTÍNEZ PASTUR; E GALLO; JM CELLINI. La retención variable como herramienta para disminuir el impacto de la cosecha sobre las comunidades de insectos de los bosques de lenga. Pp 6-7. V Seminario de *Nothofagus*: Silvicultura, manejo y conservación. La Plata, 15-16 Agosto.

2013. LENCINAS, MV; G MARTÍNEZ PASTUR; E GALLO; JM CELLINI. Variable retention improves insect diversity conservation in South Patagonian *Nothofagus pumilio* forests. III Congreso Latinoamericano de IUFRO. San José (Costa Rica) 12-15 Junio.

2013. PERI, PL; G MARTÍNEZ PASTUR. Silvopastoral management in *Nothofagus antarctica* forests: The challenge to implement forest plans at landscape level scale.III Congreso Latinoamericano de IUFRO. San José (Costa Rica) 12-15 Junio.

2013. ANDERSON, CB; JP ZAGAROLA; G MARTÍNEZ PASTUR; C LORENZO; A VALENZUELA. El concepto de servicio ecosistémico y su utilidad para el manejo y la conservación en la Patagonia Austral. Pp 80. II Jornadas Forestales de Patagonia Sur y II Congreso Internacional Agro-forestales Patagónico. Calafate, 16-17 Mayo.

2013. LENCINAS, MV; R SOLER ESTEBAN; G MARTÍNEZ PASTUR; CB ANDERSON. Estrategias de conservación aplicadas en el manejo forestal de Patagonia Sur y de otros bosques templados del mundo. Pp 78.II Jornadas Forestales de Patagonia Sur y II Congreso Internacional Agro-forestales Patagónico. Calafate, 16-17 Mayo.

2013. MARTÍNEZ PASTUR, G; MV LENCINAS; R SOLER ESTEBAN; JM CELLINI; PL PERI; CB ANDERSON; M BARRERA. Herramientas para la conservación: mapas de nicho ambientales y heterogeneidad natural de los bosques a distintas escalas de paisaje en Tierra del Fuego. Pp 76. II Jornadas Forestales de Patagonia Sur y II Congreso Internacional Agro-forestales Patagónico. Calafate, 16-17 Mayo.

2013.MARTÍNEZ PASTUR, G; S SCHINDLER; MV LENCINAS; PL PERI; R SOLER ESTEBAN; I GAMONDÉS MOYANO; G KREPS. Conservation value of *Nothofagus* forests in Tierra del Fuego: Differences between maps defined by niche factor analysis and Government polices. A-23.VII Southern Connection Congress. Dunedin (New Zealand) 21-25 Enero.

2013. LENCINAS, MV; G MARTÍNEZ PASTUR; PL PERI; Ch ANDERSON; R SOLER ESTEBAN; JM CELLINI; M BARRERA; I GAMONDÉS MOYANO. Landscape scales to evaluate conservation as a component of sustainable forest management: The case of *Nothofagus pumilio* forests in Tierra del Fuego. A-24.VII Southern Connection Congress. Dunedin (New Zealand) 21-25 Enero.

2013.GAMONDES MOYANO, I; R MORGAN; G MARTÍNEZ PASTUR. Changing attitudes: Towards a more sustainable forest management. A-12.VII Southern Connection Congress. Dunedin (New Zealand) 21-25 Enero.

Planned steps for research the project:

If you distinguish sub-projects, please copy this table for each sub-project

Goal:

We want to obtain final outputs for the selected ES at landscape level, for example, biodiversity value in the forests, net primary productivity in different vegetation types over the last 10 years, beaver impact in different vegetation types, and carbon content in natural grasslands with different cattle uses. Meetings (see below) with CAB and other stakeholders.

Approaches and methods:

Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7

Tools and approaches were discussed mainly in the framework of Forest Group. The sampling includes long-term research data, and new surveys (summer 2013) for the analyses. We will also use the Biomapper software, Arcview software, Fragstats software and others for the analyses (WP3 & WP4).

Expected results:

Maps and analyses (tables and statistical comparisons) for the selected ES at regional level.

Timing:

NOV2013 = biodiversity value in the forests maps.

MAR2014 = primary productivity net in different vegetation types along the last 10 years

JUN 2014 = beaver impact in different vegetation types analyses

JUN 2014 = carbon content in natural grasslands maps

Meetings (see timing below)

Responsibilities:

1) biodiversity value in the forests maps (Guillermo Martinez Pastur, Maria Vanessa Lencinas, Pablo Luis Peri, Stefan Schindler).

2) primary productivity net in different vegetation types along the last 10 years (Guillermo Martinez Pastur, Ricardo Diaz Delgado)

3) beaver impact in different vegetation types analyses (Guillermo Martinez Pastur, Maria Vanessa Lencinas, Jon Henn, Stefan Schindler)

4) carbon content in natural grasslands maps (Pablo Luis Peri)

Meetings (all participants).

Planned consultation steps with CAB and stakeholders:

We are planning partial meetings at: (1) Tolhuin city in November 2013 and Ushuaia city in January 2014 (Tierra del Fuego province); (2) Rio Gallegos in November 2013 and April 2014 (Santa Cruz province); and (3) Buenos Aires city (not defined yet, but probably during March-April 2014).

Possible risks or obstacles for the planned research:

No threats have been detected for the planned research; however, the implementation will depend on the outputs and a wide range of stakeholders.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
Preliminary models and maps of the studied ES.
Papers and communications.
Testing the usefulness of the finalized outputs with selected stakeholders.

WP5 Report

Case Study 26:Biofuel farming and mandatory native vegetation areas in the state of São Paulo, Brazil

David M. Lapola[1], Rafaela A. Silva[1], Patricia Pinho[2], Jörg Priess[3]

[1]Earth System Science Lab, Department of Ecology, São Paulo State University - UNESP, Rio Claro – SP, Brazil

[2]Center for Earth System Science – CCST, National Institute for Space Research – INPE, São José dos Campos, Brazil

[3]Department of Computational Landscape Ecology, Helmholtz Centre for Environmental Research - UFZ, Leipzig, Germany

Case and respondent's information	
Case study Research Leader	David M. Lapola
Role of research leader in relation to case study	Scientific coordinator
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Does not apply to our Advisory Board (which has a non-static composition, though a "leader" may arise naturally in the Board with time)
Role of case study representative in relation to case study	

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary – please just cut and paste into this space

Main (broad) objective
To identify and valuate relevant ecosystem services (ESS) inside sugarcane farms in the state of Sao Paulo, Brazil, and to propose mechanisms for operationalization of these ESS – preferably monetary compensation – with the support of environmental modeling, and considering socio-economic impacts.

1.2. Specific aspects or issues addresses in the OpenNESS project

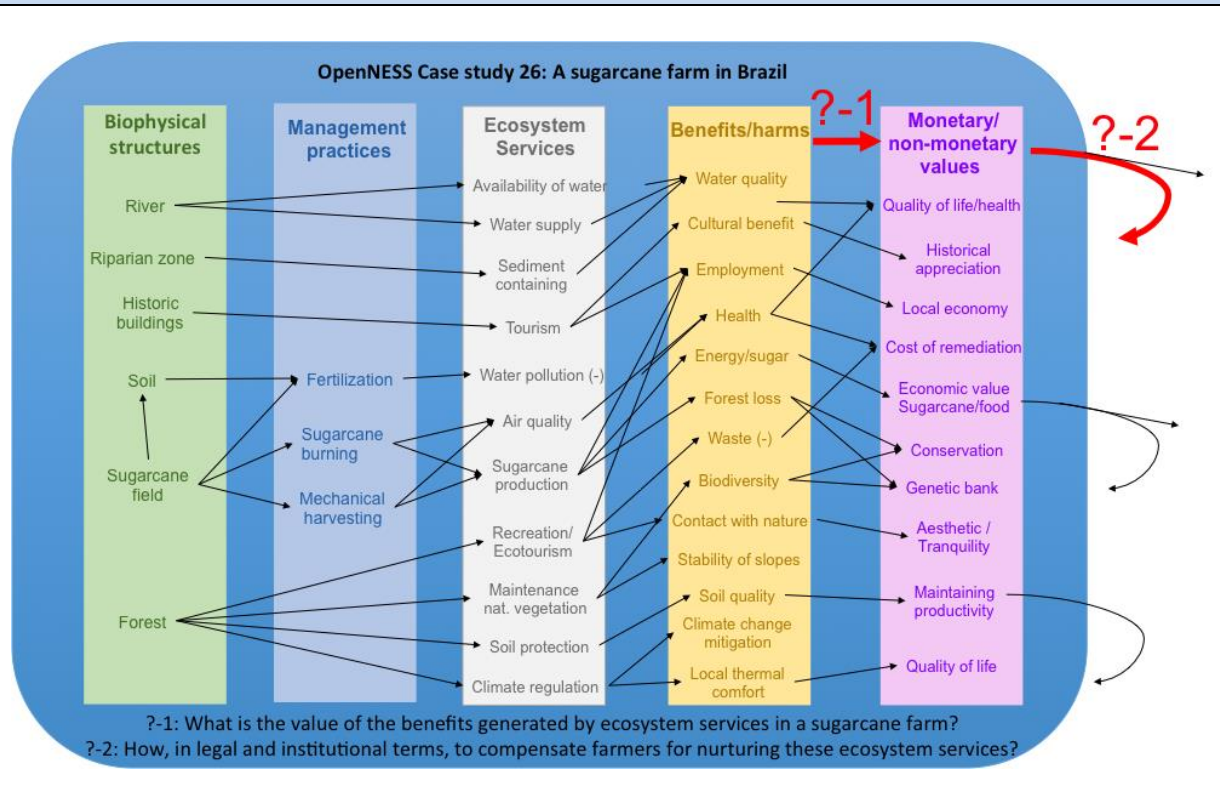| Title and brief description: **Assessing the potential for operationalization of ecosystem services inside sugarcane farms in interior São Paulo** |
|---|
| This project aims at:
• Building up a comprehensive list of all existing ESS inside sugarcane farms
• Identifying, from that list, three ESS that most promising for operationalization |

- Objectively propose legal and institutional mechanisms through which this operationalization could take place
- Implement the modelling of ESS into a land-use change modelling platform to support the operationalization process

These objectives shall be pursued with strong participation of stakeholders.

This project is coordinated by Prof. David M. Lapola, with the participation of Dr. Jörg Priess (case study 8), Dr. Patricia Pinho (INPE, Brazil) and will make up the PhD thesis of Ms. Rafela A. da Silva (supported with a scholarship by the Brazil's Higher Education Council -CAPES).

Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

OpenNESS Case study 26: A sugarcane farm in Brazil

?-1: What is the value of the benefits generated by ecosystem services in a sugarcane farm?
?-2: How, in legal and institutional terms, to compensate farmers for nurturing these ecosystem services?

In which phase is this sub-project 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)

2. Identifying stakeholder positions and problem formulation.

We are at the moment identifying sugarcane farms/farmers that will serve as exemplary cases in this sub-project. We are also in touch with the Rural Union of our study region, to have it acting as a facilitator for the dialogue between researchers and farmers. On the other hand, the research team is attending meetings of the regional Catchment Management Committee, which has a specific commission dedicated solely for the discussion of payments for ecosystem services – which is highly relevant for this project. In addition, two local politicians (city councillors) have been informally approached about the project and demonstrated interest on participating. The first meeting with the CAB will happen in February 2014.

What is the desired short-term result (output):

To build up a comprehensive list of all identifiable ESS that occurs inside sugarcane farms in the study region. And, to select from that list the most promising ESS for operationalization within these farms, following a series of objective and pre-defined criteria (e.g. easiness for ESS identification and quantification) for that selection.

What is the desired long-term result (outcome):

To propose legal/institutional mechanisms for the operationalization of the selected ESS;

To incorporate the identification and quantification of these ESS, and their compensation mechanisms, in a land-use change modelling platform as a way to support the ESS operationalization.

Who will benefit from the results of this sub-project and who will be affected?
If operationalization mechanisms are successful, sugarcane farmers will benefit (monetarily or not) based on a logic of compensation for nurturing ESS. But in a broader sense the society in general will also benefit from the maintenance of the ESS in question.
Who will be negatively affected from the results of this sub-project?
It is part of our goals to investigate who or what (activities/institutions) could be negatively affected by such a compensation scheme.

1.3. Use of ecosystem services and natural capital concepts :

Why do you use the ecosystem service and natural capital concepts in your project? What do you hope to achieve differently compared to earlier concepts/approaches?
In the state of São Paulo farms must keep 20% of its area preserved as native vegetation, in addition of the riparian vegetation alongside water streams and steep slopes, as mandated by the Forest Code federal law. The recent revision of that law raised the question of the relevance of these mandatory areas of native vegetation for farmers. There is basically no doubt about the importance of these areas for society in general and for the environment because. However, what benefits farmers could have in maintaining or improving the quality of these mandatory native vegetation areas? Could they obtain any compensation for it? The revised Forest Code innovatively addresses the payments for ES as an instrument to support and encourage the conservation, as a form of retribution conservation activities and improving ecosystems that generate ES. But the text does not mention legal and institutional frameworks in which these payments could be implemented and operationalized. It is worth mentioning that no research on the occurrence and identification of ESS has ever been conducted in this region before. Other important points to be surveyed refer to possible improvements generated by ESS in the sugarcane plantations, and the aggregation of value to biofuels derived the compensation for ESS.
What might be (potential) barriers to the use of the ecosystem services concept in your project?
Making stakeholders understand the value of ESS may be a little challenging, especially in the case of ESS that are not easily perceived or quantified. A more serious problem may arise with the operationalization of ESS when we will discuss the sources of money or other forms of compensation.

2. Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?

Partially. We have involved half a dozen of people but still in an informal basis since, in our case, there is a lot of suspicion from farmers about their involvement in a research that may expose the illegalities inside their farms in light of Brazilian environmental laws. Anyhow, our strategy for the CAB, at least for now, is to not have a fixed composition nor a fixed number of participants, as a way of slowly gaining their confidence. As mentioned before, we are trying to have the regional Rural Union to act as a mediator in the process.

A first "formal" meeting involving approximately 20 stakeholders (which we call our CAB) will take place in February 2014.

What do you expect from involving stakeholders in your CAB?

- From farmers: a vision of reality from the point of view of rural producers, be it either a big or small farmer – difficulties faced, their perception of ESS, opportunities, and pitfalls to be avoided in the operationalization of ESS, feedbacks on the practicality of proposed methods for identification and quantification of ESS;
- From policy makers and governmental agencies: ways to construct local/regional legal or institutional mechanisms that could operationalize the compensation for ESS
- From scientists: advice on methods for identification, quantification and valuation of ESS

Who are the members of your case study CAB i.e. affiliations? Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc

Farmers, city councillors, watershed commissioner, rural union chief, scientists

Which of the CAB members have you worked with before OpenNESS ?

Some of the scientists and one of the city councillors

How were the CAB members selected?

In a very pragmatic manner: we are trying to envision who (or what group representative) will be needed to achieve our ultimate goal which is the proposition of legal/institutional mechanism(s) that operationalize the compensation for ESS kept by the farmers.

Is there anyone (or group) not represented? If yes, why?

A representative of "the society in general" would be highly desirable and was not included yet because we could not find who could more properly represent that sector – will keep trying.

Dates of CAB interaction

Informal meetings with separate CAB members are happening on a demand-basis (basically every month).

A formal meeting involving all already contacted as well as new stakeholders will take place in February 2014 and will happen at least once per year.

How are decisions made within the CAB? Democratic vote, consensus building.

Not defined because first group interaction is yet to happen (see above).

Does the CAB have an official mandate to tackle the concerned topic?

Probably, though not sure yet.

Which organisation (in or outside the CAB) should implement actions related to the issues you are studying?

City council or watershed management committee.
How will you maintain records of all the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of meetings is being taken in every meeting with CAB members.
How do you perceive the level of trust between the different CAB members?
Highly variable at the moment, but with a perspective of levelling that (at a high level of trust) with time.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
The main reason for having this topic investigated in OpenNESS is that it tries to conciliate human activities with environmental conservation in a quite pragmatic manner, which seems to be a motto for OpenNESS.
Who was involved in the selection of this issue/ topic?
Only scientists

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
- Separate meetings with CAB members for presenting the project and obtaining their commitment to participate in the project. With that we had the opportunity to understand some of the difficulties faced by the farmers in regard to compliance to environmental laws Policy makers and also to learn that there is already a will in the local policy circles to implement compensation mechanisms for ESS in the region   - Visits to farms for preliminary identification of ESS: we could make recognition of the structures inside biofuels farms, preliminarily identify opportunities for ESS
Planned steps for research in sub-project 1:   *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
1. To build up a comprehensive list of all identifiable ESS that occurs inside sugarcane farms in the study region.   2. To select from that list the most promising ESS for operationalization within these farms, following a series of objective and pre-defined criteria (e.g. easiness for ESS identification and quantification) for that selection.
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
1. General identification of the ESS: check the presence or absence of the ESS based on field visits in selected farms, biophysical data and existing literature. We plan to use a cell phone App developed by case study #8 (Germany) for mapping ESS.   2. Selection of relevant ESS: from the list of ES occurring, check if those most relevant, based on pre-determined objective criteria, which require different analytical approaches to outline

those more easily identifiable (soil erosion, quantification of carbon stock), the most related to the cultivation of sugarcane (technical adopted agricultural and related impacts), which do not alter either the routine of the farm (technical visits to forest areas). This phase evaluates, through interviews, the degree of relevance of service to local actors. The method of valuation of the opportunity cost of alternative land uses will take into account the market value would be paid either by the cultivation of sugarcane at the time of analysis.

Expected results:

A comprehensive list of ESS that occur in sugarcane farms – this list will be completely new since it has never been attempted in the study region and will serve as baseline not only for this study but also for other studies in the topic. This list will also comprise practical information about the ESSs aiming at their operationalization (e.g. in terms of easiness of identification, relation to sugarcane fields, etc.)

Timing:

Goal 1 – Accomplished by May.2014

Goal 2 – Accomplished by Sep.2014

Responsibilities:

Primary responsible for achieving these goals are David M. Lapola and Rafaela A. Silva.

Jörg Priess and Patricia Pinho act as collaborators for that.

Planned consultation steps with CAB and stakeholders:

A formal CAB/stakeholder meeting is planned by February 2014.

Informal separate meeting are subject to happen in a demand basis.

Possible risks or obstacles for the planned research:

We believe that the main obstacle in the project is related to the source of funding for a potential monetary compensation for the relevant ESS. But is something to be solved together with the CAB along the project duration.

Expected outputs/deliverable relevant for the aims and objectives of OpenNESS

Operationalization of ESS in a commodity export region of tropical agriculture.

WP5 Report

Case Study 27:Sustainable urban planning in the metropolitan region of Barcelona

Erik Gómez-Baggethun; Francesc Baró; Johannes Langemeyer

Institute of Environmental Science & Technology (ICTA), Autonomous University of Barcelona (UAB)

Case and respondent's information	
Case study Research Leader	Erik Gómez-Baggethun & Francesc Baró
Role of research leader in relation to case study	Research coordinators for the case study
Case study representative (i.e. leading member of Case Study Advisory Board) not a researcher	Carles Castell (Head of the Unit for Planning and Territorial Analysis of the Barcelona Regional Council ; *Diputació de Barcelona* – www.diba.cat)
Role of case study representative in relation to case study	Responsible for integrating the ecosystem service approach within the SITxell decision-support tool (www.sitxell.eu)

1. Purpose of your case

1.1. Main (broad) objective of working in the study area? Please note this can be same as the text requested by the OpenNESS coordinators prior to the Loch Leven meeting i.e. the one page summary. In that case, please just cut and paste into this space

Main (broad) objective
The general aim of this case study is to integrate the ES approach into landscape and urban planning processes within the metropolitan region of Barcelona. Specific objectives are described as follows:

• To develop spatially explicit ES indicators which can be mainly derived from available socio-ecological data, obtaining a comprehensive range of ES maps in the case study area.

• To integrate ES maps in an existing public decision-support tool (called SITxell, see www.sitxell.eu), providing a platform for well-informed ES assessments which can be relevant for landscape and urban planners.

• To identify ES synergies and trade-offs in order to assess current regional and local planning conservation objectives. |

1.2. Specific aspects or issues addresses in the OpenNESS project

Title sub-project 1:

Title and description of sub-project:
Barcelona Metropolitan Region is one of the most densely populated urban areas in Europe (approx. 5 million inhabitants in 3.242 Km^2). Despite urban pressures, forest and agricultural ecosystems are very relevant in the region (approx. 60% and 20% of land cover respectively, see figure 1), including a network of protected natural areas. Although a large amount of socio-ecological data is available to support landscape and urban planning at the local and regional levels, the ecosystem services approach is not explicitly taken into account in spatial assessments (e.g. Strategic Environmental Assessment). SITxell spatial database and tools (www.sitxell.eu) can provide both a source of spatial data for the development of ES maps and also a tool to integrate the ES approach in landscape and urban planning processes.
Issue visualized in a systems diagram (optional, but useful preparation for Loch Leven)

Fig. 1. Framework for the development of supply and demand spatial indicators which can support landscape and urban planning processes in the Barcelona metropolitan region. Based on van Oudenhoven et al. (2012) and Haines-Young and Potschin (2010).

In which phase is this sub-project? 1. Starting up, 2. Identifying stakeholder positions and problem formulation, 3. Resource mobilisation, 4. Development of a shared vision, 5. Planning, 6. Implementation, 7. Evaluation, 8. Other (specify)
Starting up. We are identifying available socio-ecological data for the case study area, selecting which ES will be quantified / modelled and mapped in the first place and which methods / tools will be applied to this end.
What is the desired short-term result (output)?:
The development of a first set of ES maps (at least one from the main categories of ES: provisioning, regulating, supporting and cultural), mainly based on the quantification/modelling of current ES provision in the case study area (see also Appendix I).
What is the desired long-term result (outcome)?:
The desired long-term outcome is to develop a comprehensive, reliable and accurate set of ES maps for the metropolitan region of Barcelona, including both the quantification/modelling of current ES

provisioning areas (supply side) and also the current benefiting areas (demand side). The ES maps will be integrated in the SITxell tool and will be publicly available online. Further, based on these results, we aim to identify ES synergies and trade-offs in order to assess current regional planning conservation objectives.

Who will benefit from the results of this sub-project?
Local and regional public authorities with competences in landscape, environmental and urban planning and management. Also practitioners, experts and other stakeholders involved in land-use change projects and environmental assessments.
Who will be negatively affected from the results of this sub-project?
A priori, nobody will be negatively affected from the results of this project, since the aim is to provide a decision-support tool which enables the integration of ES approach in landscape and urban planning processes.

2.Understanding Stakeholder involvement and decision making process

Establishment of the CAB:

Have you already established a Case study Advisory Board (CAB)? If not please explain your strategy over the next 12 months?
Not completely. He have already signed an agreement of collaboration with the Barcelona Regional Council (Unit for Planning and Territorial Analysis) to set the objectives and expected outputs for the next 12 months. In the coming months we will invite other stakeholders such as local experts and institutions already involved in the SITxell project to join the CAB.
What do you expect from involving stakeholders in your CAB?
Mainly expert advice, data provision, and priority setting in ES selection. Also we expect from the CAB a quality assessment of the results (in terms of usefulness to support landscape/urban planning) and guidance for next steps/stages.
Who are the members of your case study CAB i.e. affiliations?   *Naming individuals is not necessary rather we need to report the 'type' of member e.g. local land owner, researcher, policy maker, NGO etc*
Researchers from Institute of Environmental Science and Technology (ICTA), including case study leaders.
Technical officers from the Unit for Planning and Territorial Analysis of Barcelona Regional Council (Head and case study representative: Carles Castell).
Researchers and experts in landscape / urban ecology and ES (e.g. Prof. Jaume Terradas from CREAF, expert in urban ecology, or Dr. Ignacio Palomo, expert in ES mapping from Autonomous University of Madrid).
Practitioners (e.g. urban planners) and some local authorities are also expected to join the CAB.
Which of the CAB members have you worked with before the start of OpenNESS project?
We have not worked before with case study representatives (i.e. Barcelona Regional Council), but we have worked with some of the experts already involved in the CAB (e.g. CREAF researchers, Ignacio Palomo).
How were the CAB members selected?

The CAB members are selected by the Barcelona Regional Council and ICTA researchers based on their relevance and expertise on the topic in the metropolitan region of Barcelona.

Is there anyone (or group) not represented? If yes, why?
Taking into account the characteristics of our project, we think that we have the necessary stakeholders represented. Obviously, in the metropolitan region of Barcelona there are a high number of other stakeholders that could also be relevant for the case study, but we need to limit the CAB into a manageable size.
Dates of meetings with the CAB (representatives)
7 May 2013: First contact with case study representative and draft of collaboration agreement.   4 July 2013: Final version of collaboration agreement and preliminary proposal of ES selection and methodological approaches (stage 1 – next 12 months).   25 September 2013: Signature of collaboration agreement for the next 12 months.   18 November 2013: Meeting for data collection and final proposal of ES selection and methodological approaches
How are decisions made within the CAB?   *E.g. democratic vote, consensus building?*
Not yet defined, but decisions will be made by consensus building rather than voting.
Does the CAB have an official mandate to tackle the concerned topic?
No. The signed agreement sets the expected outputs for the next 12 months, but there is not an official mandate.
Which organisation (in or outside the CAB) has the authority to implement the decisions of the CAB?
Barcelona Regional Council has the authority to integrate the ES outputs in the existing decision support tools like SITXELL (www.sitxell.eu) and SITMUN (http://sitmun.diba.cat).
How will you maintain records of the consultation steps and decisions taken in relation to the CAB and wider stakeholder engagement? (e.g. logbook, minutes of meetings,…)
Minutes of the meetings and consultations.
How do you perceive the level of trust between the different CAB members?
High.

Choice of topic for investigation (framing):

Why was the topic(s) for further investigation in OpenNESS selected (i.e. the sub-project)?
Although the large amount of socio-ecological data available to support landscape and urban planning at the local and regional levels (e.g. in SITxell), the ecosystem services approach is not explicitly taken into account in spatial assessments in the case study area. The OpenNESS project brings the opportunity to provide the conceptual and methodological requirements to address the ES approach in this context.
Who was involved in the selection of this issue/topic?
Barcelona Regional Council and ICTA-UAB researchers

3. What do you plan to do over the next 12 month (November 2013 – October 2014)

What has already happened since the beginning of OpenNESS (i.e. since Dec 2012)
- Signature of a collaboration agreement between Barcelona Regional and ICTA-UAB for the next 12 months (defining objectives and expected outputs).   - Draft proposal / blueprint of ES selection and mapping methodological approaches (see Appendix I)   - Gathering information on the case study area (e.g. spatial datasets)
Planned steps for research in sub-project 1:   *If you distinguish sub-projects, please copy this table for each sub-project*
Goal:
The development of a first set of ES maps (at least one from the main categories of ES: provisioning, regulating, supporting and cultural), mainly based on the quantification/modelling of current ES provision in the case study area (see also Appendix I).
Approaches and methods: *Please make clear reference to tools and approaches of WP1,2,3, 4, 6 & 7*
See Appendix I
Expected results:
See Appendix I
Timing:
All maps proposed in Appendix I are expected to be produced before November 2014
Responsibilities:
ICTA-UAB Team: expertise in ES services and mapping methods. Production of ES maps.   Barcelona Regional Council: Data collection and expert advice.   Other stakeholders: Data collection and expert advice.
Planned consultation steps with CAB and stakeholders:
- Data collection meeting and methodological approach (18th November)   - Other meetings will be held periodically on data collection; methodological approaches and dissemination of results.
Possible risks or obstacles for the planned research:
- Data availability constraints.   - Lack of expertise with some models/methods.
Expected outputs/deliverable relevant for the aims and objectives of OpenNESS
- Testing of specific ES&NC approaches and tools.   - Development of ES mapping to be operationalized in landscape and urban planning.

1. Appendix

First Cross-WP workshop program

Rationale of Loch Leven workshop 21-24 Oct 2013

Below is the programme for the first cross work package meeting (WS1). There was much discussion about all the activities which ideally could be fitted into the programme. But as there was limited time, the Project Steering Committee has taken the decision to focus the meeting on the interaction of the case studies with the methodological work packages (WP1-4). The programme below is a compromise between allowing enough one-to-one and small group interaction between the case studies and the work package 1-4 teams, while also allocating time for the other WPs to interact among themselves, and a session on identification of ecosystem services.

We had originally many other potential sessions, but if we included more sessions we would have to increase the length of the working day or reduce the time for the planned sessions. We were reluctant to take either of these options as 'meeting fatigue' can set in, and we were aware of the differences in the biological clocks of some of the participants. We had also tried to minimise the number of breakout rooms and the number of days when in order to reduce costs.

The timetable below runs from the Monday night (21 Oct 2013) to Thursday (24 Oct 2013) lunch, but we provided the possibility for case cluster leaders and work package leaders to organise sessions on the Thursday afternoon. The day length in Scotland in October is short, so we have developed the programme with a 2 hour break in the middle of the day and lengthened the working day to 18:00. This effectively allowed an activity break during daylight hours or time when ad hoc or pop-up meetings could be scheduled.

Pop-up meetings are informal meetings where interaction occurred on a certain topic. Pop-up meetings were open to anyone who was interested and felt s/he could contribute to the session. A big planning scheme to guide participants through all the scheduled pop-up meetings was prepared by Wing (see below). Some meetings were pre-notified but many were arranged during the workshop by popular demand. Examples of pop-up meetings are: representatives of a case study that met together to discuss specific suggestion for their site, demonstration of a specific tool or methodology (e.g. QuickScan).

OPENNESS WS1 PROGRAMME, Loch Leven, Kinross, Scotland 21-24 Oct 2013

Objectives of Workshop 1:
1. Clarify demand for tools and supply of OpenNESS expertise, and produce work plan for each case study for the coming 12 months [Deliverable D5.1].
2. Agree a set of evaluation criteria to judge the merits of the concepts and methods tested in the case studies [Milestone 5.1].
3. Ground-testing conceptual frameworks [Deliverable D1.1].
4. Familiarization and trust building between OpenNESS (& Opera) members.

Oct 21 – Monday
14:00-18:00   Project Steering Committee (PSC) meeting
Other partners arrived so that we could start next morning, a fieldtrip for those who arrived in the afternoon.
19:00   Dinner and evening programme at Macmillan suite – Folk group

Oct 22 –Tuesday
Getting organized (Chair Kurt Jax)
9:00-9:30   Welcome, objective of WS1, programme and practicalities (Jamie Montgomery and Jan Dick)
9:30-10:00   News from the PSC meeting (Eeva Furman)
10:00-10:30 OPERAs presentation (Mark Rounsevell)
10:30-11:00 Coffee break

Round Robin session (RRS, Chair Jan Dick)
Aim was to link WP1, 2, 3, & 4 with each of the case studies (grouped in 4 groups due to time constraints). The allocation of the case studies to one of the 4 groups can be found from the attached table.

Group	RR Session 1	RR Session 2	RR Session 3	RR Session 4
A	WP1	WP4	WP3	WP2
B	WP2	WP1	WP4	WP3
C	WP3	WP2	WP1	WP4
D	WP4	WP3	WP2	WP1

The round-robin session required the case study groups (A-D) to sit in one of the 4 available rooms and the WP1, 2, 3, & 4 representatives to rotate around the rooms. These sessions made use of the documents that described the case studies, which were completed prior to the meeting. These sessions were designed (90 min) to allow sufficient time for each case study representative to present their study site to each of the other case studies in their cluster and WP representatives.   Case studies were also requested to formulate specific issues related to WP1, 2, 3 & 4 for each of the separate round robin sessions. The WP representatives then suggested potential tools/methodologies etc. specific to that group of case studies and to discuss issues that could be useful for the case study work-plans for the coming 12 months. Afterwards, a draft work plan was produced by each case study.

11:00-12:30   Round Robin Session 1
12:30-14:30   Lunch – activity break and pop-up meetings
14:30-16:00   Round Robin Session 2
16:00-16:30   Tea Break
16:30-18:00 Round Robin Session 3

18:00-19:00   Free time – pop-up meetings
19:00   Dinner and evening programme at Macmillan- Scottish Dance

Oct 23 -Wednesday

09:00-10:30   Round Robin Session 4
10:30-11:00   Coffee break

Ground-testing the Cascade model (Chair Heli Saarikoski)

11:00-12:30   Four breakout groups (grouping yet to be determined possibly same groups as first day) in main hall
12:30-14:30   Lunch – activity break and pop-up meetings
14:30-15:00   Reporting of Ground-testing the Cascade model (5 min per group 10 min discussion) (Chair Heli Saarikoski)

15:00-16:00   *Two simultaneous sessions*
1. Writing plans of cases + Collation of evaluation criteria to judge the merits of the concepts and methods tested in the case studies and agreement on final list (main hall)
2. WP 1-4 session to ensure work package synergies (Leven Room)

16:00-16:30   Coffee
16:30-18:00   Two simultaneous sessions to be continued
18:00-19:00   Free time –pop-up meetings
19:00   Dinner evening programme at Macmillan Suite – Whisky tasting

Oct 24 – Thursday
WP6/7 session (Chair Tarja Söderman)
9:00-10:30   Session to develop work-plan for:
                      (i) Common platform
                      (ii) Stakeholder involvement
                      (iii) Communication strategy

Session started with joint presentation by Tarja Söderman, Marta Perez-Soba, Joost Tersteeg and Ben Delbaere. After that there were 3 breakout groups – with WP6&7 representatives stationed in three rooms and both case study representatives and WP1-4 members moved between rooms so that all WS1 participants gave their inputs to each of the three sessions. Two sessions (30 min per session) before coffee break and one after it.

10:30-11:00   Coffee break
11:00–11:45   Third WP6/7 session
11:45-12:30   Reporting back from WP6/7 sessions:
Wrap-up, next steps and closing
12:30-13:30   Lunch
13:30   Time for WP core team meetings/ and cluster meetings (if required)

Pop-up Sessions

Tuesday October 22 2013 Lunch time

12.30-13.30   WP1 CICES- questions & answers – open to all (Marion Potschin & Roy Haines-Young)

Participants were asked to prepare themselves by reading the paper about the Classification of Ecosystem Services and the link about the translation of CICES into TEEB, MA and NEA: http://openness.hugin.com/example/cices

13.30-14.30   'OpenNESS key words' for the review database: Introduction & interactive discussion (Marta Perez Soba)

The meeting was interesting for those who want to be sure that their 'OpenNESS key words' are in the database. They could then obtain information such as 'what are the most common trade-offs between a particular ecosystem service and the rest and in which geographical areas?' based on our review.

Tuesday October 22 2013 Early evening

18.00-19.00   MCDA methodology: Principles of MCDA methods, questions and discussions of MCDA methods in the case studies and/or ecosystem service research (Heli Saarikoski, with contribution of Jyri Mustajoki)

18.00-19.00   Modeling water quality and ecosystem service delivery in standing waters- example from the Loch Leven study, descriptions of lake models available to the project & discussion (Linda May, with contribution of Laurence Carvalho, Jan Janse, Ron Smith, Alex Elliott)

Deliverable: Summary of the various approaches in terms of project requirements.

Overview of gaps that may need to be addressed (e.g. catchment nutrient delivery models; social science perspective).

This meeting was of interest to any participants that are interested in modeling water quality and ecosystem service provision in standing waters.

Wednesday October 23 2013 Coffee time

10.30-11.00   An interactive pop-up session on two of the modeling approaches being suggested by WP3. Interesting for particular case studies to be identified in the round robin sessions! (Grazia Zulian)

Wednesday October 23 2013 Lunch time

12.30-13.30   WP1: BBN- questions & answers (Roy Haines-Young)

Background information: Bayesian Belief Networks Cross Cutting briefing Note vs. 2 and the link: http://openness.hugin.com/example/cain_yield

13.30-14.30   Forestry in your case study? Let's talk about data distribution, models and scenarios! (Sandra Luque)

For a brainstorming on forest data applications within OpenNESS come along to develop together a holistic approach on forest related ecosystem services. The meeting was important for all of those that will look into forest related services and/or have forest in their case study and are not sure how to work with the data and/or derived variables. We discussed about key related services, data distribution, models and methods. Other key issues: NFI data or other type of plot level measures vs. Forest LC data, spatial distribution of the data, typology, variables measures on the ground and derived indicators.

13.30-14.30   Scenario methodology - introduction, presentation and discussion (Jörg Priess and Jennifer Hauck)

The meeting was important for all case studies interested in the OpenNESS framework scenarios. Deliverables: list of key drivers of change including resolved open issues of scenario questionnaire responses

Wednesday October 23 2013 Early evening

18.00-19.00 Monetary and non-monetary valuation methods- questions and answers (David Barton)

Participants: case study representatives tasked with valuation methods in their case studies. We hope this includes at least on representative from each case study.

18.00-19.00 Stakeholder analysis and involvement methods- questions and answers

Francis Turkelboom with Jan Dick, Joost Tersteeg, Charlot Teng, Hans Keune and Wim Verheyden

This session was important when you wanted to learn about stakeholder analysis and methods for stakeholder involvement in the case studies. Especially interesting for case studies that have to form their Case study Advisory Board.
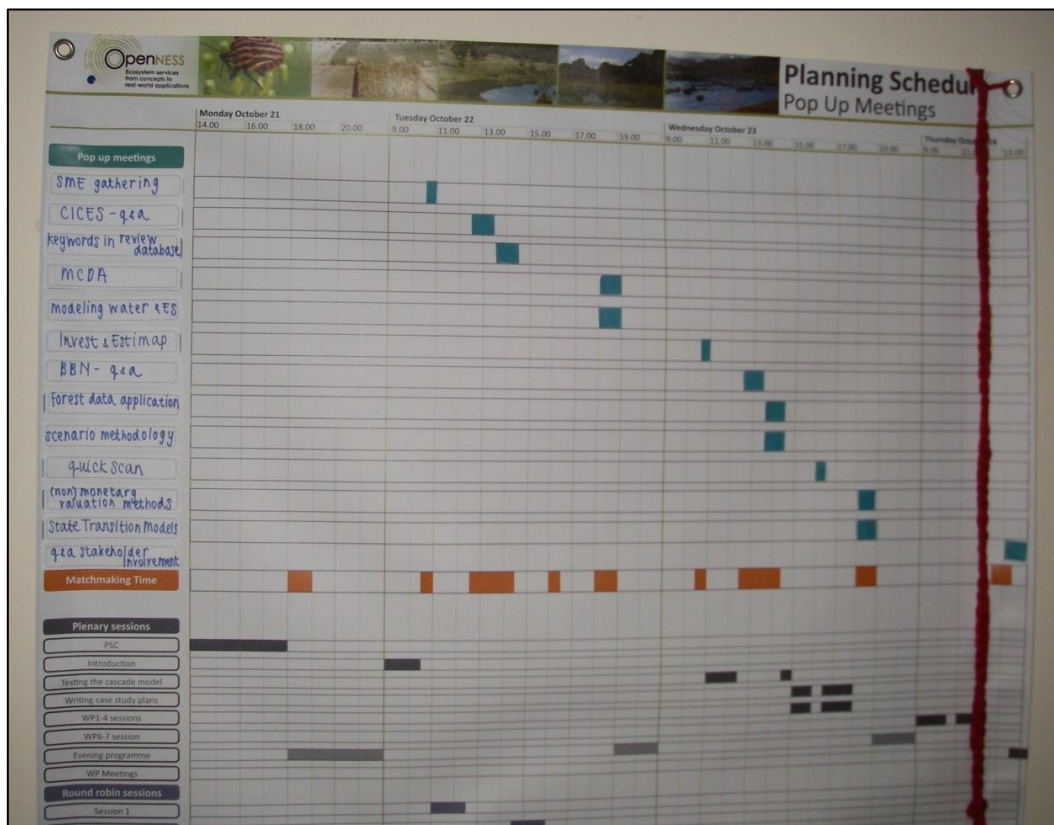
Picture 1: Pop-up Program which was constantly updated by WING partners during the meeting with the red rope which was moved daily to guide the used to the correct day

2. Appendix

Welcome poem

The workshop commenced with an entertaining welcome from Jamie Montgomery (KEC) and Jan Dick (NERC). Rather than simply repeating the full program which all participants already had been sent a poem was recited.

Welcome poem OpenNESS program on the shores of Loch Leven (Oct 2013)

We are here on the lovely shores of Loch Leven,
To operationalise Ecosystem Services and even
Natural capital of habitats around the world.
Lots of new knowledge to be unfurled
In two and half fun filled days
We hope this program will amaze

First it's Eeva our gorgeous project coordinator
She shows us the way - an amazing communicator
She'll report from our Project Steering Committeeeeee,
A lively bunch with personalities from the brilliant to the witty

Then we'll hear about OPERAs plans
They also have case studies and many topics span.
Mark, you have case studies devoted to the ecosystem services of wine
and I am keen to work in partnership so we can align
Because with climate warming it might be risky
To relay on only the ecosystem services of whisky

Then time for a coffee and a blether,
That's an old Scots word that rhymes very nicely with weather
Which I must admit is a favourite topic of Scottish idle conversations
And I rather fear that it may also be when you return to your home nations

Then we're off to the first Round Robin Session,
Where I hope we will all share our impression
of how the tools from Work packages one two three or four
can be useful for the case studies, and then with a swing of the door
The next work package rep will come to delight and impress
And we hope that everyone will soon acquiesce

For the rest of the day the swing door revolves
And we hope your task list for the coming year will evolve.

You can learn about CICES and Key words at the lunch break
then back to Round Robins No 3 - hopefully fed & awake

At six in the evening another pop-up session
Lakes and Multi-criteria decision analysis – no chance of depression
Then on to dinner and the cèilidh, which according to the bibliography
is a form of social dance involving groups of couples following predetermined choreography

Wednesday starts with the final Round Robin
by now we should all know the drill and be bobbin.
After coffee we'll - 'Ground-test the Cascade model'
when into different breakout groups we will toddle
At the midday session we can learn almost in stereo
About Forest, BBNs and of course the odd scenario

In the afternoon from three until six we should have some sport,
the case study leaders should write their reports
and work package reps should ensure work package synergies,
But if all the home work is done why not sample the local distilleries
Or go walking, swimming, playing tennis or even a game of golf
But beware the cold climate or you'll have a nose red like Rudolf.

Then sharp at 7:00, we'll have an education
Whiskey tasting –there will be no graduation
but in the duty free shop on your homeward journey
You should know the difference between a Glenlivit and a McBurney

On Thursday morning we start sharp at nine
Focusing on WP6 & WP7, we race to the finishing time.
A final lunch at twelve thirty and then some go off home,
others to work package meetings and others simply to roam
around Scotland with family and friends.
Nothing left to do now but pick up all the loose ends

We hope by the time Thursday afternoon does come
you will have your questions answered and found new chums.
This meeting can only really deliver if we all work hard,
we respect each other, and treat all with equal regard
The program is designed to be fun - but this does not mean slacking
So finally the time has come - let's get cracking

3. Appendix

Pictorial report of first cross-WP workshop

The interaction between participants was excellent and the following images give an impression of the atmosphere of the meeting.

Picture 2: Case study leader Francis Turkelboom explains his case study to fellow case study leaders and representatives of WP4 in first round robin session of Group D.


Pictorial report of first cross-WP workshop
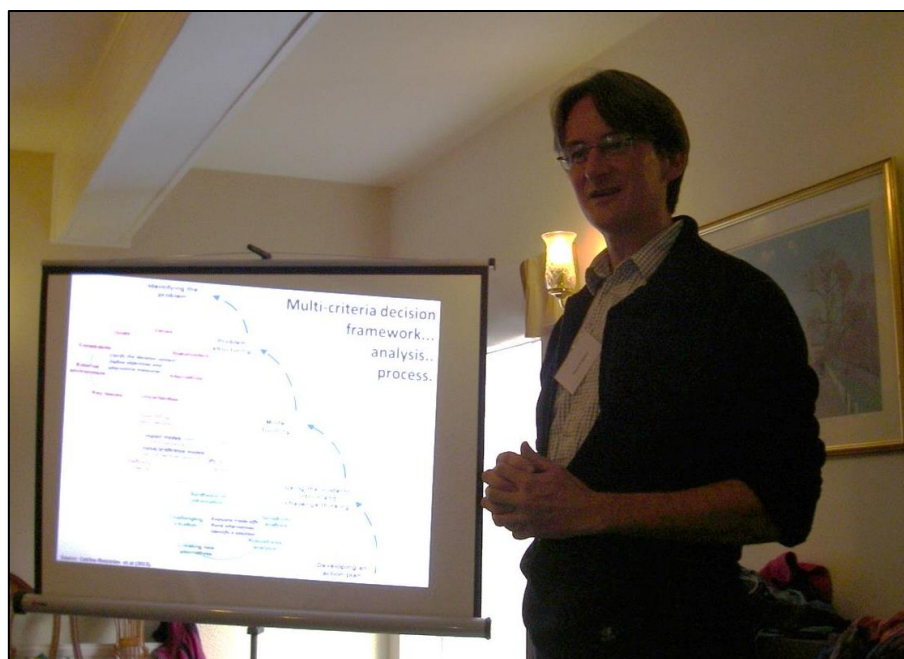
Picture 3: David Barton, Leader WP4, explains potential valuation methodologies available for testing in the case studies.

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Picture 4: Allan Watt explains the strategy of WP2.2.

Picture 5: Left to right - Eszter Kelemen, ESSRG, Martin Price, Chairman of the Case study Advisory Board (CAB) for case study management of Cairngorm National Park (no. 9) listen intently next to Chris Andrews and Bernie Dudley (NERC).
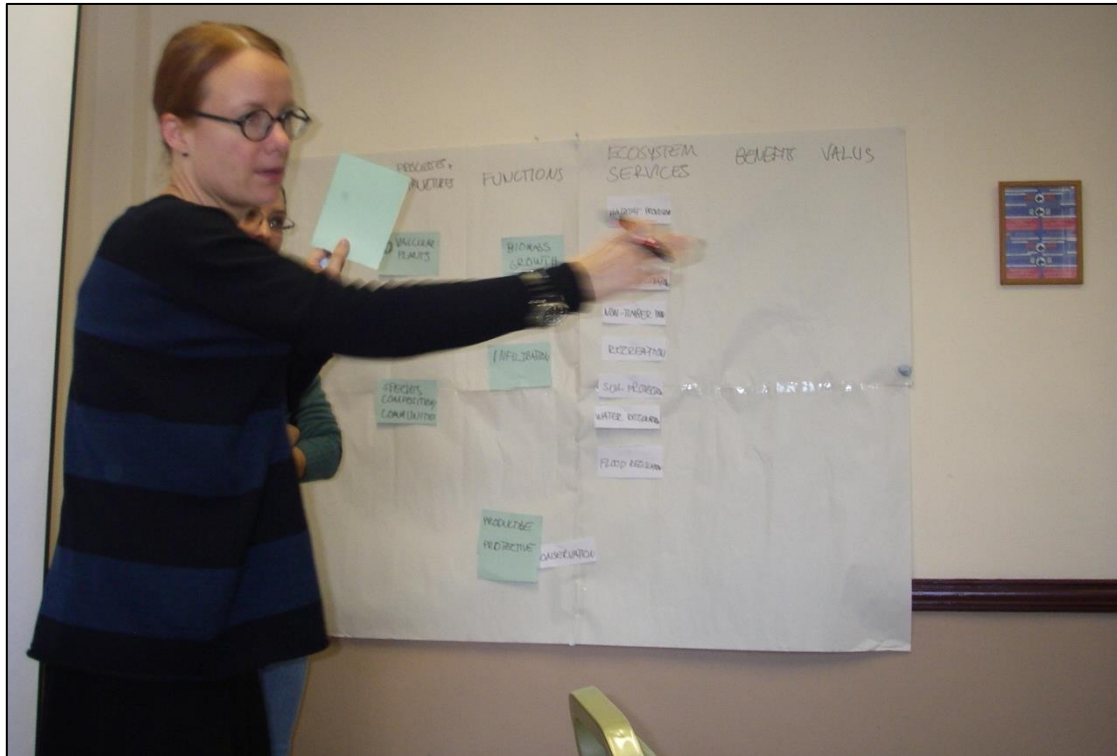
Picture 6: Eeva Primmer facilitates the group 'ground-truthing the cascade model'.

Picture 7: Ovidiu Badea case study leader the Forest management in Carpathian Mountains case study (no. 7) discusses his impression of the cascade conceptual framework while Horia Iuncu, Director of Bucegi Natural Park Administration and chairman of the case study advisory board sitting next to him listens intently.

Picture 8: Guillermo Martínez Pastur, case study leader of Sustainable forestry in Tierra del Fuego case study (no. 25) joins the discussion on the cascade conceptual framework.

Picture 9: Erik Gómez-Baggethun explains monetary and non-monetary valuation methods in a questions and answers format during the Wednesday evening pop-up session.

Picture 10: Participants listen to instructions for the WP6 & WP7 sessions.

Picture 11: Marta Perez-Soba explains the results obtained from the WP6 breakout groups.

Picture 12: Participants contribute to the question and answer panel session for WP6 & WP7

Picture 13: Kinross band entertain the participants of the OpenNESS First Cross-work package workshop in fully Highland dress.

4. Appendix

Messages from a quick ad hoc meeting on institutions

Wednesday 23.10 (Eeva Primmer, Irene Bouwma, Hans Keune, Dieter Mortelmans & Györgyi Bela):

Start the guideline immediately
- We could draft just a skeleton and circulate it among the WP2 partners and then soon with the case studies.
- Do this in November.

Build bridges between EU policy and case studies
- How does the policy trickle down hierarchically in theory and how is this "EU ideal" reflected in practice?
  - Many cases raise multi-level governance questions.
  - Some are tuned to looking at friction between high-level and local level policies
  - Others are looking for opportunities for integration and opeartionalization
- Look at the mechanisms by which policies & regulations generate impact (theoretical or in reality) and pay attention to local and often informal institutions
  - some cases have high capacity to look at informal traditions or planning practices
- At the level of theory, we identified examples of types if mechanisms:
  - Rules & implementation and sanction mechanisms
  - Incentives
  - Property rights
  - Access to land
  - Transaction costs
- **Dieter** will send a table on mechanism types from a work he's done before (The classification was used in a project where French Ministry assigned a study to look at how ecosystem service production steered)
- **Anselma** in Alterra is doing literature review on the regulatory frameworks already identified, she will send an endnote facility to all WP2 partners soon (Ecosystem services & the directives, the initial observation is that the topic is new and – the content will be manageably narrow)
- **Irene** has overlapping projects: Protected area managers' survey on how they can address ESS; Netherlands state of the environment: analysis of how ecosystem services are regulated in, mechanisms such as market based, legal, voluntary. (All of this rests on who has the rights: property rights, use rights)

Consider to what degree we need to include
- Stakeholder analysis
- How power structures influence decisions
- How informal norms influence decisions
- How science and ecosystem service constitute new institutions

PRACTICAL: Place survey results in Extranet
- Place all shared material in extranet under WP2!

Start by booking two SKYPE meetings for WP2:

- one soon for developing WP2 operational plans and case study guidance
- A second one in December for planning how to proceed to Budapest and what to do there with the case studies/other work packages