Operational Blueprint Protocol for Ecosystem Services Studies

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Patenaude G. et al (2017), A Blueprint Protocol for Operationalising Ecosystem Services Studies. Accessed at https://goo.gl/forms/bY0VrKRc4FhhI5j62 on [Insert Date]. Also available on OPPLA marketplace at https://www.oppla.eu/ (A few publications are currently in progress. Please contact genevieve.patenaude@ed.ac.uk for further information).

Welcome to the Blueprint protocol for ecosystem services studies. The aims of the protocol are twofold:
- to act as a thinking tool, at the onset of projects, to help researchers design their studies
- to synthesise complex research projects into a common framework.
Hence, it is more than a questionnaire: it can serve as a modus operandi protocol for the design of ES studies, but also for standardizing the comparison, evaluation and the synthesis of ES studies, their operationalisation and their impacts. This protocol was developed as part of the OPERAs research project (http://www.operas-project.eu/) which aims at putting cutting edge ecosystem science into practice. The project received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration, under grant agreement number 308393.

The blueprint protocol entails 8 sections:
1. Summary
2. Purpose
3. Scope
4. Design
5. Stakeholder Engagement
6. Analysis and assessment
7. Results and Recommendations
8. Impacts

The structure of the blueprint is influenced by the 'Purpose, Scope, Analysis, Recommendation and Monitoring' or PSARM architecture proposed by Seppelt et al. (2012).

* Required

1. **Email address** *

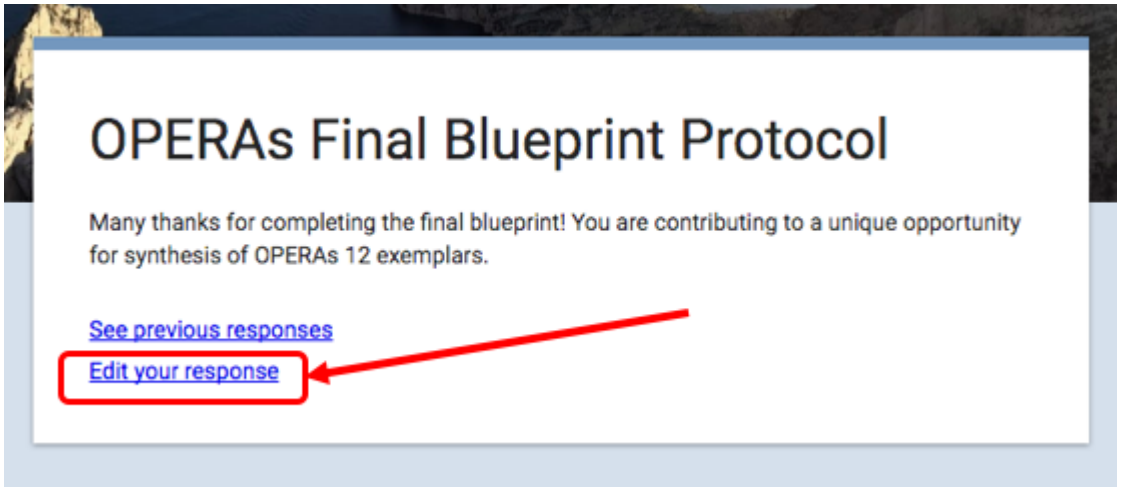
Instructions

The blueprint takes approximately 1hr to complete. To fill in the blueprint, you may need documentation with you. The questions require details of your general aim, indicators of ES, methodology, results and recommendations. Please make sure to have the necessary information accessible before starting.

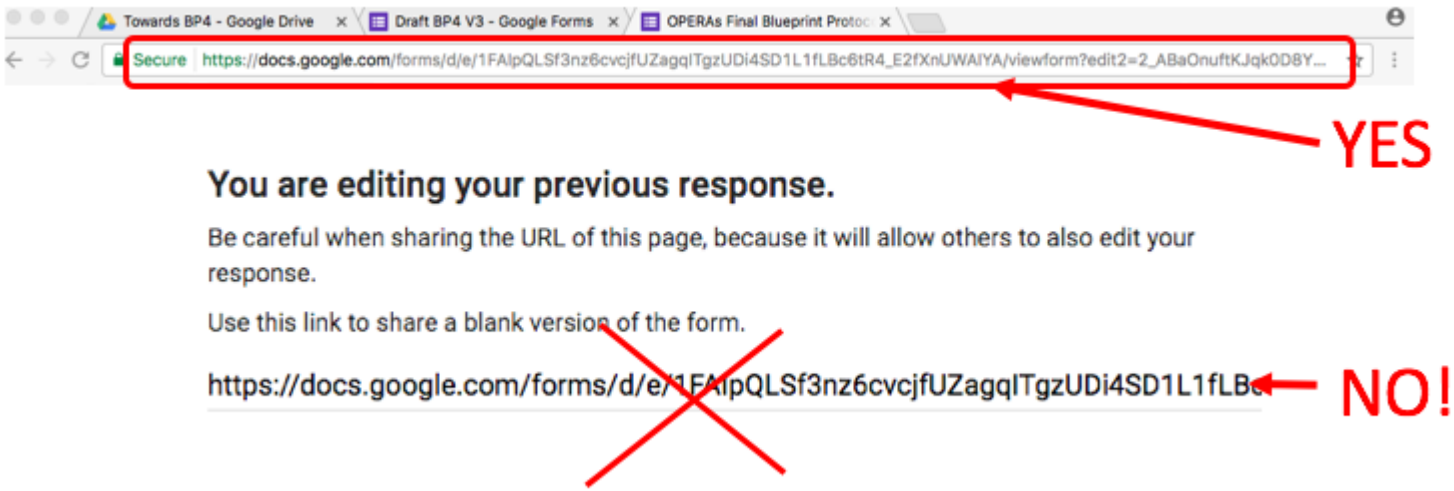
If you use a printed version of this questionnaire, some questions will be duplicated: in the online version, sections can be skipped entirely when they do not apply to a given study. This functionality is not available in the printed version.

IMPORTANT: The form does not allow you to save and return. It does however allow you to complete, then edit your responses. To do so, you must first submit the questionnaire. Hence, we highly recommend that you complete this questionnaire the best you can, in one go. If you need to return to it, please follow the instructions below.

Once the questionnaire is submitted, the following window will appear. Select 'Edit your response'



Your questionnaire, filled in, will open. Save carefully the URL from your internet browser's navigation pane for future reference, NOT the one in the pop up window (which will give an empty questionnaire).



You are now ready to start.

Blueprint Protocol for Ecosystem Services Studies

2. **Would you like to read a summary of the purpose for this blueprint:** *
Mark only one oval.

- ◯ Yes *Skip to "Rationale for the blueprint."*
- ◯ No, skip to next section *Skip to question 2.*

Rationale for the blueprint

Blueprint rationale

Standardised protocols like ours are needed in Ecosystem Service (ES) science to (adapted from Seppelt et al. 2012):

1. Reveal methodological aspects of each studies; this is important for the overall interpretation of results as well as for effective replication .

2. Support robustness and reliability of assessments. This is vital if we are to promote ES as an effective solution for sustainable land and sea management. Successful operationalisation of ES hinges on a strong evidence base for policy formulation and management prescriptions.

3. Structure new assessment studies and monitoring programs. According to the feedback, the BP has already helped refine study designs and it provides a tick-list of essential methodological criteria that may have otherwise been overlooked.

4. Provide a base for comparing and synthesising the results from the ES studies. This is critical for enabling meta-analyses and providing robust scientific conclusion as well as strengthening the evidence-base and promoting ES as a sustainable approach to environmental management.

5. Assist in improving communication and collaboration in trans-disciplinary teams, within and between studies.

6. Provide a base for further implementation of other ES assessments. It will help improve the clarity and transparency of ES research outcomes and assist in justifying the establishment of additional ES assessments.

The Blueprint questionnaire

3. **Short title for study** *

4. **Geographical area covered**

5. **Your name** *

6. **Who is the lead of (or the most knowledgeable person about) this project?**
Mark only one oval.

- ◯ Me
- ◯ Other: _____

Section 1: Study summary

7. **In a few sentences (elevator pitch), what are the main findings from your study?** *

8. **In what way did your study contribute to the operationalisation of the ES concept (either at the EU level or other)?** *

Section 2: Purpose

9. **Briefly, describe the study rationale (what is the problem, why is there a need for this study)?** *

10. **What is the purpose for this study (in an ideal world, what would it lead to)?** *

To achieve the purpose above, your study aimed to:

The aims stated below were derived from the previous blueprint protocols. Please select all that apply, or select Other to specify other aims.

11. **Gain ecological and/or social knowledge on ES by:**
Check all that apply.

- [ ] Understanding people's knowledge of ecosystem services and how this impacts on values
- [ ] Assessing alternative futures of ecosystem service provision
- [ ] Understanding social impacts and dependencies on ecosystem services and biodiversity
- [ ] Understanding ecosystem functioning of the study site
- [ ] Understanding the role of biodiversity in ecosystem service provision
- [ ] Developing methods for calculating ecosystem services
- [ ] Other:

12. **Embed ecosystem services knowledge into policy by:**
Check all that apply.

- [ ] Identifying how ecosystem services can help enhance and develop sectoral policies
- [ ] Contributing to conservation policy
- [ ] Integrating biodiversity and ES into spatial/development planning (e.g. identify potential areas for water, or soil protection but also for natural hazard prevention)
- [ ] Complying with agreements and policy obligations
- [ ] Evaluating the impacts and/or dependencies of different industry sectors on ES (e.g. to inform both regulation and cooperation with industry)
- [ ] Identifying how ecosystem services can improve current land/water management
- [ ] Understanding how ecosystem services can maintain and improve local livelihoods
- [ ] Understanding global/regional/local policy pressures on ecosystem services
- [ ] Other: _____

13. **Embed ecosystem services knowledge to economic decision-making by:**
Check all that apply.

- [ ] Creating an evidence base to support Natural Capital Accounting
- [ ] Supporting commitment to identify, reduce, reform, and/or remove environmental harmful subsidies and pricing to give positive incentives and avoid negative incentives
- [ ] Creating an evidence base to facilitate protected area financing
- [ ] Other: _____

14. **Disseminate and educate by:**
Check all that apply.

- [ ] Helping raise public awareness of the roles and importance of nature for society (which can create support for future policy initiatives)
- [ ] Other: _____

15. **Did you assess whether these aims were achieved?**
Mark only one oval.

- ◯ Yes
- ◯ No

16. **If yes, how did you assess whether these aims were achieved?**
    e.g. number of km2 restored; number of jobs created; number of people educated; hours of park use etc; change in water/air quality

Section 3: Scope

Ecosystem services considered.
We use CICES (http://cices.eu/) as the backbone ES classification system (currently the European standard - e.g. CICES is the classifications used for the European Biodiversity Targets of 2020) : http://cices.eu/content/uploads/sites/8/2015/09/CICES-V4-3-_-17-01-13a.xlsx

To aid in the selection of the appropriate Cultural ES, we provide some practical examples. If you use a different classification system, please match the ES as closely as possible with those provided below.

17. **Which Provisioning Ecosystem Services are you assessing?**
    Please select the provisioning services: nutrition from biomass
    Check all that apply.

- [ ] P1. Cultivated crops
- [ ] P2. Reared animals and their outputs
- [ ] P3. Wild plants, algae and their outputs
- [ ] P4. Wild animals and their outputs
- [ ] P5. Plants and algae from in-situ aquaculture
- [ ] P6. Animals from in-situ aquaculture

18. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service)**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

19. Please list the provisioning services: nutrition from water
Check all that apply.

- [ ] P7. Surface water for drinking
- [ ] P8. Ground water for drinking

20. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

21. Please list the provisioning services: materials from biomass
Check all that apply.

- [ ] P9. Fibres and other materials from plants, algae and animals for direct use or processing
- [ ] P10. Materials from plants, algae and animals for agricultural use
- [ ] P11. Genetic materials from all biota

22. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

23. Please list the provisioning services: materials from water
Check all that apply.

- [ ] P12. Surface water for non-drinking purposes
- [ ] P13. Ground water for non-drinking purposes

24. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

25. Please list the provisioning services: biomass-based energy sources
Check all that apply.

- [ ] P14. Plant based resources
- [ ] P15. Animal based resources

26. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

27. Please list the provisioning services: mechanical energy
Check all that apply.

- [ ] P16. Animal-based energy

28. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

29. Please list the provisioning services: nutritional abiotic substances
Check all that apply.

- [ ] P17. Mineral
- [ ] P18. Non-mineral

30. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

31. Please list the provisioning services: abiotic materials
Check all that apply.

- [ ] P19. Metallic
- [ ] P20. Non-metallic

32. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

33. Please list the provisioning services: abiotic energy
Check all that apply.

- [ ] P21. Renewable abiotic energy sources
- [ ] P22. Non-renewable abiotic energy sources

34. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

35. **Which Regulating Ecosystem Services are you assessing?**
Please list the Regulating Services: mediation of waste, toxics and other nuisances by biota
Check all that apply.

- [ ] R1. Bio-remediation by micro-organisms, algae, plants, and animals
- [ ] R2. Filtration/ sequestration/ storage/ accumulation by micro-organisms, algae, plants, and animals

36. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

37. Please list the Regulating Services: mediation of waste, toxics and other nuisances by ecosystems
Check all that apply.

- [ ] R3. Filtration/ sequestration/ storage/ accumulation by ecosystems
- [ ] R4. Dilution by atmosphere, freshwater and marine ecosystems
- [ ] R5. Mediation of smell/noise/visual impacts

38. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

39. Please list the Regulating Services: mediation of mass flows
Check all that apply.

- [ ] R6. Mass stabilisation and control of erosion rates
- [ ] R7. Buffering and attenuation of mass flows

40. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

41. Please list the Regulating Services: mediation of liquid flows
Check all that apply.

- [ ] R8. Hydrological cycle and water flow maintenance
- [ ] R9. Flood protection

42. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

43. Please list the Regulating Services: mediation of Gaseous/air flows
Check all that apply.

- [ ] R10. Storm protection
- [ ] R11. Ventilation and transpiration

44. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

45. Please list the Regulating Services: lifecycle maintenance, habitat and gene pool protection
Check all that apply.

- [ ] R12. Pollination and seed dispersal
- [ ] R13. Maintaining nursery populations and habitats

46. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

47. Please list the Regulating Services: pest and disease control
Check all that apply.

- [ ] R14. Pest control
- [ ] R15. Disease control

48. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

49. Please list the Regulating Services: soil formation and composition
Check all that apply.

- [ ] R16. Weathering processes
- [ ] R17. Decomposition and fixing processes

50. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

51. Please list the Regulating Services: water conditions
Check all that apply.

- [ ] R18. Chemical condition of freshwaters
- [ ] R19. Chemical condition of salt waters

52. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

53. Please list the Regulating Services: atmospheric composition and climate regulation
Check all that apply.

- [ ] R20. Global climate regulation by reduction of greenhouse gas concentrations
- [ ] R21. Micro and regional climate regulation

54. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
e.g. P4: number of cattle per hectare. If possible, please include physical units (e.g. energy cycling in NPP in gC/m^2/a; carbon storage capacity in tC stored in biomass) and/or a possible qualitative description for some service indicators.

55. **Which Cultural Ecosystem Services are you assessing?**
Please list the Cultural Services: physical interactions with biota, ecosystems, and land-/seascapes
Check all that apply.

- [ ] C1. Experiential use of plants, animals and land-/seascapes in different environmental settings (e.g. in-situ whale and bird watching, diving, snorkeling)
- [ ] C2. Physical use of land-/seascapes in different environmental settings (e.g. wlking, hiking, climbing, boating, leisure fishing, leisure hunting)

56. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
If units can be specified (e.g. photo user days from flickr or Instagram) please provide this information.

57. Please list the Cultural Services: intellectual and representative interactions with biota, ecosystems, and land-/seascapes
Check all that apply.

- [ ] C3. Scientific (e.g. subject matter for research both on location and via other media)
- [ ] C4. Educational (.e.g. subject matter of education both on location and via other media)
- [ ] C5. Heritage, cultural (e.g. historic records, cultural heritage such as those preserved in soils and water bodies)
- [ ] C6. Entertainment (e.g. ex-situ viewing/experience of natural world through different media)
- [ ] C7. Aesthetic (e.g. sense of place, artistic representation of nature)

58. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
If units can be specified (e.g. photo user days from flickr or Instagram) please provide this information.

59. Please list the Cultural Services: Spiritual, symbolic and other interactions with biota, ecosystems, and land-/seascapes
Check all that apply.

- [ ] C8. Symbolic (e.g. emblematic plants and animals, like national or regional symbols such as Polish eagle, English rose, Welsh daffodil, or Scottish thistle)
- [ ] C9. Sacred and/or religious (e.g. spiritual, ritual identity such as those brought about by 'dream paths' of native Australians; holy places, sacred plants and animals and their parts)
- [ ] C10. Existence (e.g. enjoyment provided by wild species, wilderness, ecosystems, land-/seascapes)
- [ ] C11. Bequest (e.g. willingness to preserve plants, animals, ecosystems, land-/seascapes for the experience and use of future generations; moral/ethical perspective or belief)

60. **Please state the indicators used to quantify/ characterise those (leave blank if you did not select a service).**
If units can be specified (e.g. photo user days from flickr or Instagram) please provide this information.

61. **Abiotic outputs from natural systems**
If you are also considering abiotic outputs from natural systems, please list them here, and state the indicators used to quantify/ characterise those

62. **Are you interested in supply or demand of these ES.**
Mark only one oval.

- ◯ Supply
- ◯ Demand
- ◯ Both

Section 3: Scope

Relevant regulatory frameworks

Source: Christian Schweitzer & Christoph Goerg (OpenNESS).

Please note these are EU frameworks. If these do not apply to your study, please use the 'Other' tab to provide information on other relevant frameworks

63. **Which of the following Nature & Biodiversity frameworks are implemented in your study?**
Check all that apply.

- ☐ Biodiversity 2020 Strategy
- ☐ Green Infrastructure Strategy
- ☐ Birds Directive (BD)
- ☐ Habitat Directive (HD)
- ☐ Invasive Alien Species Legal Instrument
- ☐ Other:

64. **Which of the following Air frameworks are implemented in your study?**
Check all that apply.

- [ ] Ambient Air Quality directive
- [ ] National Emissions Ceilings Directive
- [ ] Air Quality Framework Directive
- [ ] Fourth Daughter Directive
- [ ] The Paints Directive
- [ ] Pollutant emissions of light-duty vehicles
- [ ] Pollutant emissions of heavy-duty vehicles
- [ ] Other: _____

65. **Which of the following Water, Energy & Forest frameworks are implemented in your study?**
Check all that apply.

- [ ] Water Framework Directive
- [ ] Marine Strategy Framework Directive
- [ ] Blueprint to Safeguard Europe's Water Resources
- [ ] EU Floods Directive
- [ ] Urban Waste Water Directive
- [ ] Groundwater Directive
- [ ] Bathing Water Directive
- [ ] Renewable Energy Directive
- [ ] Strategy for Biofuels
- [ ] Forest Action Plan (2007-2011)
- [ ] Forest Strategy
- [ ] Other: _____

66. **Which of the following Land Use, Climate & Soils frameworks are implemented in your study?**
Check all that apply.

- [ ] Directive for a framework for maritime spatial planning and integrated coastal management
- [ ] Thematic Strategy on the Urban Environment
- [ ] Environmental Impact Assessment
- [ ] Strategic Environmental Assessment
- [ ] EU Adaptation Strategy
- [ ] Soil Thematic Strategy
- [ ] Soil Framework Directive (proposal)
- [ ] Other: _____

67. **Which of the following Agriculture, Rural Development and Fishery frameworks are implemented in your study?**
Check all that apply.

- [ ] Common Agriculture Policy (CAP) - Council Regulation establishing common rules for direct support schemes for farmers
- [ ] Cross-compliance Regulation
- [ ] Nitrates Directive
- [ ] Biocides Directive
- [ ] Plant Protection Products Regulation
- [ ] Common Fishery Policy (CFP)
- [ ] Rural Development Policy (2007-2013); Regulation on support for rural development by the European Agricultural Fund for Rural Development
- [ ] Cohesion policy (2014-2020)
- [ ] Regulation on Organic Production and Labelling
- [ ] Animal Health Strategy
- [ ] Directive on Protective Measures against the introduction of organisms harmful to plants
- [ ] Regulation on GM Food
- [ ] Other: _____

68. **Are these regulatory frameworks suitable for your study site? Were any conflicts/synergies identified?**
Please briefly describe

Section 3: Scope

State and transitions

69. **What is the scale of your study?**
Check all that apply.

- [ ] Local
- [ ] Regional
- [ ] National
- [ ] Global
- [ ] Other:

70. **Ownership of the study site**
Please select all that apply
Check all that apply.

- [ ] Private
- [ ] State
- [ ] Council
- [ ] NGO
- [ ] Community
- [ ] Other:

71. **Please list the public access rights to your exemplar**

Check all that apply.

- [ ] Open Access
- [ ] Private
- [ ] Rights of Way
- [ ] Voluntary Access
- [ ] Communal
- [ ] Coastal Access
- [ ] Other: _____

72. **Please provide a brief summary of recent changes to the system.**

If there has been no recent change but you expect that the system might be under threat from future developments please indicate. Likewise, please state if the system is influenced by a gradual process over a long time period.

_____

_____

_____

_____

_____

73. **What are the main drivers of change to the system?**

Check all that apply.

- [ ] Habitat change
- [ ] Pollution and nutrient enrichment
- [ ] Resource over-exploitation
- [ ] Climate change
- [ ] Invasive species
- [ ] Other: _____

74. **What are the major land use transitions?**
Check all that apply.

- [ ] Loss of agriculture to urban development
- [ ] Loss of semi-natural habitat to urban development
- [ ] Forest to agriculture
- [ ] Forest to urban
- [ ] Abandonment
- [ ] Semi-natural habitat to agriculture
- [ ] Other: _____

75. **What is the timing of these transitions?**
Check all that apply.

- [ ] Recent (less than 10 years)
- [ ] Between 10-20 years
- [ ] >20 years.
- [ ] Other: _____

Section 4: Design

76. **How was the investigation set up?** *
Mark only one oval.

- ◯ As an intervention, case/control study with 'Before/After' assessment *Skip to question 76.*
- ◯ As an observational study *Skip to question 85.*
- ◯ Combining elements of intervention and observational design *Skip to question 80.*
- ◯ As a systematic review *Skip to question 89.*

Section 4: Design

These questions are aimed at studies with a reference/control

77. **Is your sample (area or other) representative of the population(s) under scrutiny?**
Mark only one oval.

- ◯ Yes, there were no constraints in the design of this component of the experiment
- ◯ No, constraints existed in getting a representative sample

78. **How was the sample size determined?**
Please provide a short answer (e.g. by calculating the required power of the chosen statistical tests)

_____

79. **Was probability/random sampling used for constructing the sample(s)?**
Mark only one oval.

- ◯ Yes, by using EQUAL probabilities (e.g. all forests within an area have equal probabilities of being sampled)
- ◯ Yes, by using UNEQUAL probabilities (e.g. to avoid geographical clustering or due to accessibility issues)
- ◯ No

80. **If questionnaires were used, were they tested/piloted prior to application to the study?**
Mark only one oval.

- ◯ Questionnaires were not used
- ◯ Yes
- ◯ No

Skip to question 95.

Section 4: Design

These questions are aimed at studies that combine elements of controlled and observational design

81. **Is the sample representative of the population(s) under scrutiny?**
Mark only one oval.

- ◯ Yes, there were no constraints in the design of this component of the experiment
- ◯ No, constraints existed in getting a representative sample

82. **How was the sample size determined?**
Please provide a short answer (e.g. by calculating the required power of the chosen statistical tests)

83. **Was probability/random sampling used for constructing the sample(s)?**
Mark only one oval.

- Yes, by using EQUAL probabilities (e.g. all forests within an area have equal probabilities of being sampled)
- Yes, by using UNEQUAL probabilities (e.g. to avoid geographical clustering or due to accessibility issues)
- No

84. **In case questionnaires were used, were they tested/piloted prior to application to the study?**
Mark only one oval.

- Questionnaires were not used
- Yes
- No

85. **Was it possible to identify confounding factors and to devise strategies to manage them?**
Mark only one oval.

- Yes, confounding factors were anticipated
- Yes, but confounding factors had not been anticipated
- It was not possible
- None were identified

Skip to question 95.

Section 4: Design

These questions are aimed at observational studies without a control

86. **Is the sample area representative of the population(s) under scrutiny?**
Mark only one oval.

- ◯ Yes, there were no constraints in the design of this component of the experiment
- ◯ No, constraints existed in getting a representative sample

87. **How was the sample size determined?**
Please provide a short answer (e.g. by calculating the required power of the chosen statistical tests)

_____

88. **Was it possible to identify confounding factors and to devise strategies to manage them?**
Mark only one oval.

- ◯ Yes, confounding factors were anticipated
- ◯ Yes, but confounding factors had not been anticipated
- ◯ It was not possible
- ◯ None were identified

89. **In case questionnaires were used, were they tested/piloted prior to application to the study?**
Mark only one oval.

- ◯ Questionnaires were not used
- ◯ Yes
- ◯ No

Skip to question 95.

Section 4: Design

These questions are aimed at studies that predominantly focus on producing systematic reviews of a system, single ES or ES bundles, etc.

90. **What were the a priori inclusion/exclusion criteria for single studies?**
Please briefly list the main criteria

_____

91. **How many studies were used?**

92. **Were all studies included or a sample?**
Mark only one oval.

- All studies
- Sample, selected randomly
- Sample, NOT selected randomly

93. **Is a meta-analysis part of the study design?**
Mark only one oval.

- Yes, it is one of the main foci of the project
- Yes, but it is not one of the main objectives of the project
- No, because of lack of resources (e.g. manpower, financial)
- No, because the studies do not provide sufficient quantitative information for a meta-analysis

94. **How were secondary data from the studies used in the review evaluated for quality?**
Please briefly list the methods used and reference the paper on which the approach is based

95. **What is the strength of the evidence of the studies on which your review is based?**
Mark only one oval.

- Only strong evidence studies were used
- Mostly strong evidence studies were used
- The moderate amount of available information dictated that equal amounts of strong and poor evidence studies were used
- The scarcity of available information imposed that studies with low evidence strenght were largely used

Section 4: Design
Foresight or back-casting approaches

96. **Does your study involve foresight or back-casting approaches?** *
Foresight approaches use models together with scenario assumptions to predict future developments of the system while back-casting approaches use models to predict past system states starting from the current system state
Mark only one oval.

- ◯ Foresight *Skip to question 96.*
- ◯ Backcasting *Skip to question 105.*
- ◯ Both *Skip to question 99.*
- ◯ None *Skip to question 108.*

Section 4: Design
Foresight approaches

97. **What is the rationale for using foresight approaches?**
Check all that apply.

- ☐ To explore the consequences of different pathways on ecosystem services
- ☐ To explore unforeseen or shock scenarios
- ☐ To help stakeholders explore system dynamics
- ☐ To highlight problems with current policy of management
- ☐ To illustrate ES synergies and trade-offs
- ☐ Other: _____

98. **Foresight visions and scenarios**
Please choose, if any, which foresight methods are used in this study.
Check all that apply.

- ☐ Explorative scenarios derived from published material (includes IPCC and similar)
- ☐ Explorative scenarios created from stakeholders engagement
- ☐ Normative visions derived from published material (includes IPCC and similar)
- ☐ Normative visions created from stakeholders engagement
- ☐ Other: _____

99. **What timeframe do you use in your forecasts?**

Check all that apply.

- [ ] 2020-2025
- [ ] 2025-2035
- [ ] 2035-2045
- [ ] 2045-2055
- [ ] >2055
- [ ] Other: _____

Skip to question 108.

Section 4: Design

Combining Foresight and Back-casting methods. Both approaches are discussed below

100. **What is the rationale for using foresight approaches?**

Check all that apply.

- [ ] To explore the consequences of different pathways on ecosystem services
- [ ] To explore unforeseen or shock scenarios
- [ ] To help stakeholders explore system dynamics
- [ ] To highlight problems with current policy of management
- [ ] To illustrate ES synergies and trade-offs
- [ ] Other: _____

101. **Foresight visions and scenarios**

Please choose, if any, which foresight methods are used in this study. Explorative begin from the present, and explore where events might take us. Normative begin from the future and explore what is required to get us there.

Check all that apply.

- [ ] Explorative scenarios derived from published material (includes IPCC and similar).
- [ ] Explorative scenarios created from stakeholders engagement
- [ ] Normative visions derived from published material (includes IPCC and similar).
- [ ] Normative visions created from stakeholders engagement
- [ ] Other: _____

102. **What timeframe do you use in your forecasts? (e.g. 2020-2050)**

_____

103. **What is the rationale for using back-casting methods?**

Check all that apply.

- [ ] To explore pathways, strategies, and activities leading to the normative vision(s)
- [ ] To explore undesirable or critical scenarios
- [ ] To demonstrate potential of ES studies to stakeholders
- [ ] To highlight problems with current policy of management
- [ ] To evaluate the flexibility of policy measures aimed at the normative vision(s)
- [ ] Other: _____

104. **The back-casting visions and scenarios are:**
Please tick all that apply
Check all that apply.

- [ ] Based on socio-economic criteria and goals
- [ ] Based on political (i.e. pertaining to governance/policy) criteria and goals
- [ ] Based on environmental desirability criteria and goals
- [ ] Created ad-hoc by research team (with no or minimal stakeholder engagement)
- [ ] Developed via stakeholder engagement
- [ ] Derived from published material
- [ ] Other: _____

105. **Please briefly summarise the desired future normative vision(s) created for back-casting**
Alternatively, please refer to published material

_____

_____

_____

_____

_____

Skip to question 108.

Section 4: Design
Back-casting approaches

106. **What is the rationale for using back-casting methods?**
Check all that apply.

- [ ] To explore pathways, strategies, and activities leading to the normative vision(s)
- [ ] To explore undesirable or critical scenarios
- [ ] To demonstrate potential of ES studies to stakeholders
- [ ] To highlight problems with current policy of management
- [ ] To evaluate the flexibility of policy measures aimed at the normative vision(s)
- [ ] Other: _____

107. **The back-casting visions and scenarios are:**
Please tick all that apply
Check all that apply.

- [ ] Based on socio-economic criteria and goals
- [ ] Based on political (i.e. pertaining to governance/policy) criteria and goals
- [ ] Based on environmental desirability criteria and goals
- [ ] Created ad-hoc by research team (with no or minimal stakeholder engagement)
- [ ] Developed via stakeholder engagement
- [ ] Derived from published material
- [ ] Other: _____

108. **Please briefly summarise the desired future normative vision(s) created for back-casting**
Alternatively, please refer to published material

_____

_____

_____

_____

_____

Skip to question 108.

Section 5: Stakeholder engagement

Stakeholder involvement

109. **Have stakeholders been involved in your study?** *

Mark only one oval.

- Yes *Skip to question 109.*
- No *Skip to question 129.*

Section 5: Stakeholder engagement

Stakeholder involvement

110. **Why have you involved stakeholders?**

Bäckstrand's (2003) three main stakeholder roles

Check all that apply.

- [ ] Participation (citizens engaged in the science process by embarking on participatory practices in the conduct of science - for example data collection)
- [ ] Representation (ensuring that all groups within society are represented; e.g., incl. minorities)
- [ ] Democratisation (society should have a say in the a scientific process that may affect their lives)
- [ ] Other: _____

111. **How were stakeholders identified?** *

If stakeholder groups from previous projects were used, please specify how they were originally selected.

Mark only one oval.

- Ad-hoc, e.g. with an iterative process akin to 'snowball' sampling: new stakeholders identify other new stakeholders *Skip to question 111.*
- Ex-ante, i.e. by identifying stakeholders categories in advance (e.g. public sector, private sector, NGOs, academics, researchers, data users, funders, policy makers, local communities, etc.). *Skip to question 116.*
- A combination of both *Skip to question 113.*

Section 5: Stakeholder engagement

Ad-hoc stakeholder identification

112. **Was the choice of the ad-hoc method due to constraints in the study design?**
Please tick all that apply
Check all that apply.

- [ ] Yes, to reduce complexity
- [ ] Yes, due to resource limitations
- [ ] No, it was chosen because the research group used this approach before
- [ ] Yes, because of the demographics of the study area
- [ ] Other: _____

113. **How did you identify the stakeholders with the ad-hoc approach?**
Please tick all that apply
Check all that apply.

- [ ] Focus groups: a small group brainstormed stakeholders, their interests, influence and other attributes, and categorised them
- [ ] Semi-structured interviews: Interviews with a cross-section of stakeholders to check/ supplement focus group data.
- [ ] Snowball sampling: Individuals from initial stakeholder categories are interviewed, identifying new stakeholder categories and contacts.
- [ ] Convenience sampling: Interviews with readily available stakeholders
- [ ] Brainstorming with other organisations involved in similar activities or working in similar environments
- [ ] Seeking opinions from academics experts in related disciplines and/or habitats
- [ ] Utilising census data and related statistics
- [ ] Promoting stakeholders self-selection by advertising the research and encouraging interested parties to come forward
- [ ] Consulting with local authorities and/or similar organisations active in the territory
- [ ] Other: _____

Skip to question 118.

Section 5: Stakeholder engagement

Please describe the ad-hoc approach first, followed by ex-ante. Note some replication.

114. **Was the choice of the combined 'ad-hoc and ex-ante' methods due to constraints in the study design?**
Please tick all that apply
Check all that apply.

- [ ] Yes, due to resource limitations (e.g. disproportionately large number of stakeholder groups required stratification)
- [ ] Yes, because of the demographics of the study area
- [ ] No, it was chosen because the research group used this approach before
- [ ] No, it was done to explore complexity
- [ ] Other: _____

115. **The ad-hoc approach: How did you identify the stakeholders with this approach?**
Please tick all that apply
Check all that apply.

- [ ] Focus groups: a small group brainstormed stakeholders, their interests, influence and other attributes, and categorised them
- [ ] Semi-structured interviews: Interviews with a cross-section of stakeholders to check/ supplement focus group data.
- [ ] Snowball sampling: Individuals from initial stakeholder categories are interviewed, identifying new stakeholder categories and contacts.
- [ ] Convenience sampling: Interviews with readily available stakeholders
- [ ] Brainstorming with other organisations involved in similar activities or working in similar environments
- [ ] Seeking opinions from academics experts in related disciplines and/or habitats
- [ ] Utilising census data and related statistics
- [ ] Promoting stakeholders self-selection by advertising the research and encouraging interested parties to come forward
- [ ] Consulting with local authorities and/or similar organisations active in the territory
- [ ] Other: _____

116. **The ex-ante approach: How did you identify the stakeholders with this approach?**
Please tick all that apply
Check all that apply.

- [ ] Focus groups: a small group brainstormed stakeholders, their interests, influence and other attributes, and categorised them
- [ ] Semi-structured interviews: Interviews with a cross-section of stakeholders to check/ supplement focus group data.
- [ ] Snowball sampling: Individuals from initial stakeholder categories are interviewed, identifying new stakeholder categories and contacts.
- [ ] Convenience sampling: Interviews with readily available stakeholders
- [ ] Brainstorming with other organisations involved in similar activities or working in similar environments
- [ ] Seeking opinions from academics experts in related disciplines and/or habitats
- [ ] Utilising census data and related statistics
- [ ] Promoting stakeholders self-selection by advertising the research and encouraging interested parties to come forward
- [ ] Consulting with local authorities and/or similar organisations active in the territory
- [ ] Adopting a mind map to identify suitable stakeholders
- [ ] approaching organisations and existing networks which represent specific groups
- [ ] Other: _____

Skip to question 118.

Section 5: Stakeholder engagement

Ex-ante stakeholder identification

117. **Was the choice of the ex-ante method due to constraints in the study design?**
Please tick all that apply
Check all that apply.

- [ ] Yes, to stratify the stakeholders sample
- [ ] Yes, to maximise the use of available resources
- [ ] No, it was chosen because the research group used this approach before
- [ ] Yes, because of the demographics of the study area
- [ ] Other: _____

118. **How did you identify the stakeholders with the ex-ante approach?**
Please tick all that apply
Check all that apply.

- [ ] Focus groups: a small group brainstormed stakeholders, their interests, influence and other attributes, and categorised them
- [ ] Semi-structured interviews: Interviews with a cross-section of stakeholders to check/ supplement focus group data.
- [ ] Snowball sampling: Individuals from initial stakeholder categories are interviewed, identifying new stakeholder categories and contacts.
- [ ] Convenience sampling: Interviews with readily available stakeholders
- [ ] Brainstorming with other organisations involved in similar activities or working in similar environments
- [ ] Seeking opinions from academics experts in related disciplines and/or habitats
- [ ] Utilising census data and related statistics
- [ ] Promoting stakeholders self-selection by advertising the research and encouraging interested parties to come forward
- [ ] Consulting with local authorities and/or similar organisations active in the territory
- [ ] Adopting a mind map to identify suitable stakeholders
- [ ] Approaching organisations and existing networks which represent specific groups
- [ ] Other: _____

Skip to question 118.

Section 5: Stakeholder engagement

119. **How have the identified stakeholders been engaged?**
Please tick all that apply
Check all that apply.

- [ ] Personal contact
- [ ] Initial contact to via email/phone
- [ ] Taken part in meeting
- [ ] Taken part in a workshop
- [ ] Working in other role in project
- [ ] Not yet properly engaged
- [ ] Other: _____

120. **How many different stakeholders were involved over the entire duration of the study?**
Mark only one oval.

- ◯ <10
- ◯ 10-20
- ◯ 20-50
- ◯ 100-200
- ◯ 200+

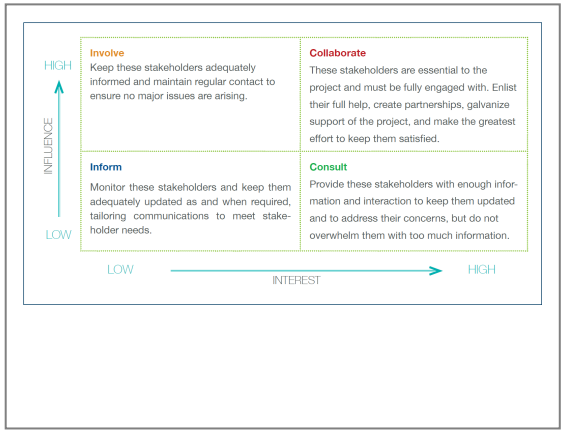
121. **Were stakeholders engaged in the whole project or just certain phases?**
Please tick all that apply
Check all that apply.

- ☐ Project planning
- ☐ Full duration of the project
- ☐ Post-project role (e.g. validation of model runs)
- ☐ Partial engagement but several meetings/workshops
- ☐ Just one workshop/interview
- ☐ Engagement of different stakeholders mapped to different stages of the project's lifecycle
- ☐ Other: _____

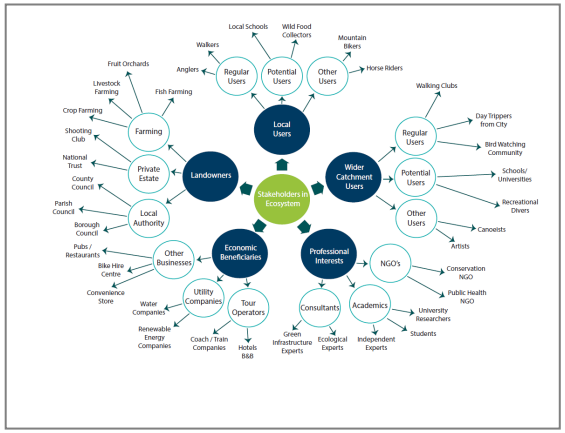
122. **What types of stakeholders were involved**
Please tick all that apply
Check all that apply.

- ☐ Local beneficiaries, such as residents, farmers or local businesses
- ☐ Distant beneficiaries, such as tourists or residents living at distance from the study area
- ☐ Experts, such as scientists or professionals
- ☐ Decision makers
- ☐ Organisations, for example NGOs or industry.
- ☐ Other: _____

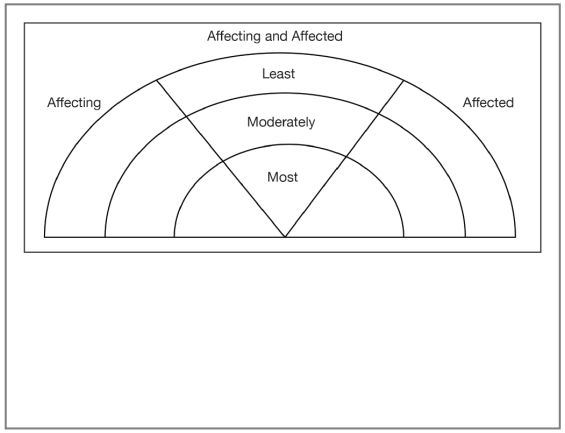
123. **Have the identified stakeholders been conceptually organised in some way?**
Examples taken from the BiodivERsA Stakeholder Engagement Handbook:
Check all that apply.



☐ Yes, by ranking them in terms of their level of interest and influence/relevance (the horizontal and vertical axes in the image)



☐ Yes, using a stakeholder mind map



- [ ] Yes, in terms of the degree the stakeholders can affect or be affected by the study

- [ ] Other:
- [ ] Not for this study

Section 5: Stakeholder engagement

In this section we explore the planned degree of stakeholders involvement in the study

124. **Have stakeholders with opposing views and/or interests in the system been identified/engaged?**
Mark only one oval.

- ◯ Yes, identified AND engaged
- ◯ Identified but not engaged
- ◯ No (cohesive vision of all stakeholders)
- ◯ No, because of lack of available resources

125. **What stakeholder engagement techniques were used?**
Please tick all that apply
Check all that apply.

- ☐ Opening out techniques (e.g. Brainstorming; Metaplan; Venn diagrams; Social media lists; Stations/Carousels techniques)
- ☐ Exploring techniques (e.g. Mind mapping; Problem tree analysis; SWOT analysis; Timelines)
- ☐ Closing down and deciding techniques (e.g. Voting; Ranking; Prioritisation; Multi-criteria decision modelling)
- ☐ Other (e.g. 1-to-1 meetings; Interviews; Questionnaires; Surveys; Knowledge Exchange groups; Workshops; Talks; Practical demonstrations)

126. **How was transparency towards stakeholders ensured?**
Check all that apply.

- ☐ By involving stakeholders in the study design process
- ☐ By regularly reporting the study's progress and/or outcomes to the stakeholders
- ☐ By regularly consulting stakeholders on matters related to the study
- ☐ By keeping the stakeholders informed of the study's limitations and/or uncertainties
- ☐ Other: _____

127. **How would you describe the communication between the research team and the stakeholders?**
Please tick all that apply
Check all that apply.

- [ ] Smooth and productive
- [ ] Engaging
- [ ] Beneficial to the research team
- [ ] Beneficial to the stakeholders
- [ ] Appreciated by the stakeholders
- [ ] Diffcult at times
- [ ] Quite problematic

128. **Were conflicts experienced, with or between stakeholders during the study?**
Mark only one oval.

- ◯ Some conflict arose between different stakeholders
- ◯ Some conflict arose between the research team and some stakeholders
- ◯ No conflict

129. **If conflict was experienced, what was its nature?**
Check all that apply.

- [ ] Cognitive (e.g. when different parties reach different conclusions from the same data/facts)
- [ ] Of objectives/interests (e.g. benefits sharing, allocation of resources, costs)
- [ ] Normative (e.g. differences in views, values, ethics)
- [ ] Of relationships (e.g. due to difficult personalities or challenging behaviours)
- [ ] Over processes (e.g. different approaches to address the same problem)
- [ ] Structural (e.g. related to the structure of society and the relative position and power within it of different stakeholders)
- [ ] Not applicable

Section 6: Analysis and assessment

130. **Were the methods and models used in your study created ad-hoc, taken from existing protocols, or adapted from existing protocols?**
Please tick all that apply
Mark only one oval.

- ◯ Innovative methods and/or models created ad-hoc for the project
- ◯ Methods and/or models taken from previous procedures/studies
- ◯ Methods and/or models adapted from existing procedures/studies (includes parameterisation of existing models, without substantial changes to model architecture)
- ◯ Other: _____

131. **Did you identify bundles of ES in your analysis?**
Please tick all that apply. By bundling, we refer to the spatial or temporal coincidence a range of services (either from a demand or supply side). For examples of ES bundling, see http://www.openness-project.eu/library/reference-book/sp-ES-bundles
Check all that apply.

- ☐ Yes, inside of ES categories (e.g. Provisioning ES)
- ☐ Yes, across ES categories (e.g. Provisionig ES with either Regulating or Cultural ES)
- ☐ Yes, on the basis of their geographical occurrence/effect
- ☐ No
- ☐ Other: _____

132. **Which approach did you use to identify bundles of ES?**
Please tick all that apply. By bundling, we refer to the coincidence a range of services. For examples of ES bundling, see http://www.openness-project.eu/library/reference-book/sp-ES-bundles
Check all that apply.

- ☐ Coldspot/hotspot analysis
- ☐ Correlation
- ☐ Ordination approaches (PCA, CA)
- ☐ Cluster analysis (self organising maps, hierarchical cluster analysis...)
- ☐ Not applicable
- ☐ Other: _____

133. **Did you identify any trade-offs or synergies between ES in your analysis?**
Please tick all that apply
Check all that apply.

- [ ] Yes, within the same category (e.g. Provisioning ES)
- [ ] Yes, across categories (e.g. some Provisioning ES had to be traded with either Regulating or Cultural ES)
- [ ] No, there were no ES trade-offs/synergies in our study
- [ ] No, trade-offs/synergies were not identified
- [ ] Other: _____

134. **Which aspects were considered in the trade-off/synergy analysis?**
Please tick all that apply
Check all that apply.

- [ ] Trade-off/synergies at the demand side
- [ ] Trade-off/synergies at the supply side
- [ ] Trade-off/synergies between beneficiaries
- [ ] Temporal variations in Trade-off/synergies
- [ ] Not Applicable
- [ ] Other: _____

Section 6: Analysis and assessment

135. **How were the data analysed, interpreted and reported in your study?** *
Please tick all that apply
Check all that apply.

- [ ] Data summaries, ranking, frequencies, survey analysis
- [ ] With inferential and correlative statistics (e.g. regression and correlation)
- [ ] With mechanism-based reasoning (e.g. a number of links in an inferential chain to explain outcome from intervention using first-principles)
- [ ] With the aid of expert opinion
- [ ] Other: _____

136. **How was uncertainty in the study's results, numerical or otherwise, reported?** *
Please provide a brief description

137. **When effects were measured and/or reviewed, were they found to be large and significant or insignificant (whether weak or large)?** *
Mark only one oval.

- ◯ Yes, large and significant to one effect
- ◯ Yes, large and significant to more than one effect
- ◯ Insignificant
- ◯ Not applicable to our study

138. **Did you use models for your analyses?** *
Mark only one oval.

- ◯ Yes *Skip to question 138.*
- ◯ No *Skip to question 143.*

Section 6: Analysis and assessment
Use of Models

139. **Mechanistic models: how were the models in your study developed?**
When multiple models were used, please tick all that apply. First principles models are based on established laws of physics rather than based on empirical assumptions or fitted parameters,
Check all that apply.

- ☐ Built on first principles and validated with external data
- ☐ Built on first principles but without the opportunity to be validated with additional data
- ☐ Existing models were used and parameterised/fitted specifically for our study
- ☐ Existing models were used without parameterisation; case study specific input data was used.
- ☐ Not applicable
- ☐ Other:

140. **Statistical models: how were the models in your study developed?**
When multiple models were used, please tick all that apply.
Check all that apply.

- [ ] The model structure is based on established knowledge about the bio-physical relationships (grey box model)
- [ ] The model structure is based on a model comparison between a candidate set of hypothesis based on system understanding (grey-box model)
- [ ] The model structure is based on testing a large set of possible combinations of predictors (fishing, black-box model)
- [ ] Not applicable
- [ ] Other: _____

141. **How was uncertainty quantified?**
When multiple models were used, please tick all that apply
Check all that apply.

- [ ] Standard errors
- [ ] Parameter uncertainty
- [ ] Model structure uncertainty
- [ ] Input data uncertainty
- [ ] Uncertainty was not quantified
- [ ] Other: _____

142. **How was sensitivity assessed?**
When multiple models were used, please tick all that apply
Check all that apply.

- [ ] Sensitivity was estimated for one parameter at a time and/or for specific parameter values
- [ ] Sensitivity was estimated with global methods (e.g. Monte Carlo)
- [ ] Sensitivity had been estimated in a previous study
- [ ] It was not possible to conduct sensitivity analyses

143. **Please provide references for the models used, when applicable**

Section 7: Results & recommendations

144. **Please list as bullet point, the 5 key limitations from your study** *

145. **What are the key recommendations from your study?** *
Please provide a brief description

146. **Were offsite effects or teleconnections considered when specifying recommendations?** *
Off-site effects or teleconnections try to capture effects of decisions made inside the case study region on regions outside of the case study region. (For example the decision to protect local forest might lead to an import from timber from other regions or countries with negative effects on ES)

Impacts on operationalisation

147. **Has your project generated ES awareness and literacy?** *
Mark only one oval.

- Yes
- No
- Maybe

148. **If yes or maybe, please provide evidence of improved ES literacy as a result of your work** *
e.g. Testimonials, Increase use of ES concept in sector specific publications; Use of key concepts in media;Use of ES terminology in policy/regulations; Increased participation and interest by diverse stakeholders and sectors in study. If you do not have evidence, please say so.

149. **Has you project directly impacted policy?**
Mark only one oval.

- Yes
- No
- Maybe

150. **If yes or maybe, please provide evidence of policy impact** *
e.g Evidence of uptake of ES concepts in white or green policy documents; Evidence of shifting priorities (e.g. from development to ES preservation). If you do not have evidence, please say so.

151. **In your opinion, the impact of your project on policy was due primarily to**
Mark only one oval.

- ◯ Robust evidence-base of the research?
- ◯ Stakeholder engagement?
- ◯ Other: _____

152. **Has your project directly influenced practice**
All forms of practice are intended here (incl. management, planning, on the ground etc.)
Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ Maybe

153. **If yes or maybe, please provide evidence of impact on practice**
e.g. Requests for the design of tools and/or measurements; Evidence of tools used beyond research projectsQuantity or quality of resources allocated for ESA increases; Evidence of shifting priorities in management (e.g. from development to ES preservation); Number of new projects emerging where stakeholders take active part or lead. If you do not have evidence, please say so.

154. **In your opinion, the impact of your project on practice was due primarily to**
Mark only one oval.

- ◯ Robust evidence-base of the research?
- ◯ Stakeholder engagement?
- ◯ Other: _____

The BluePrint experience

Just a couple of brief questions to assess the evolution of our BP.

155. **How would you rate the usefulness of the blueprint to help plan and design research (in its current form)?**
Mark only one oval.

	1	2	3	4	5	
Unhelpful	◯	◯	◯	◯	◯	Helpful

156. **How would you rate the usefulness of the blueprint to synthesise research (in its current form)?**
Mark only one oval.

	1	2	3	4	5	
Unhelpful	◯	◯	◯	◯	◯	Helpful

A copy of your responses will be emailed to the address you provided