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Ecosystem Science for Policy & Practice

Update from Work Package 2: Practice

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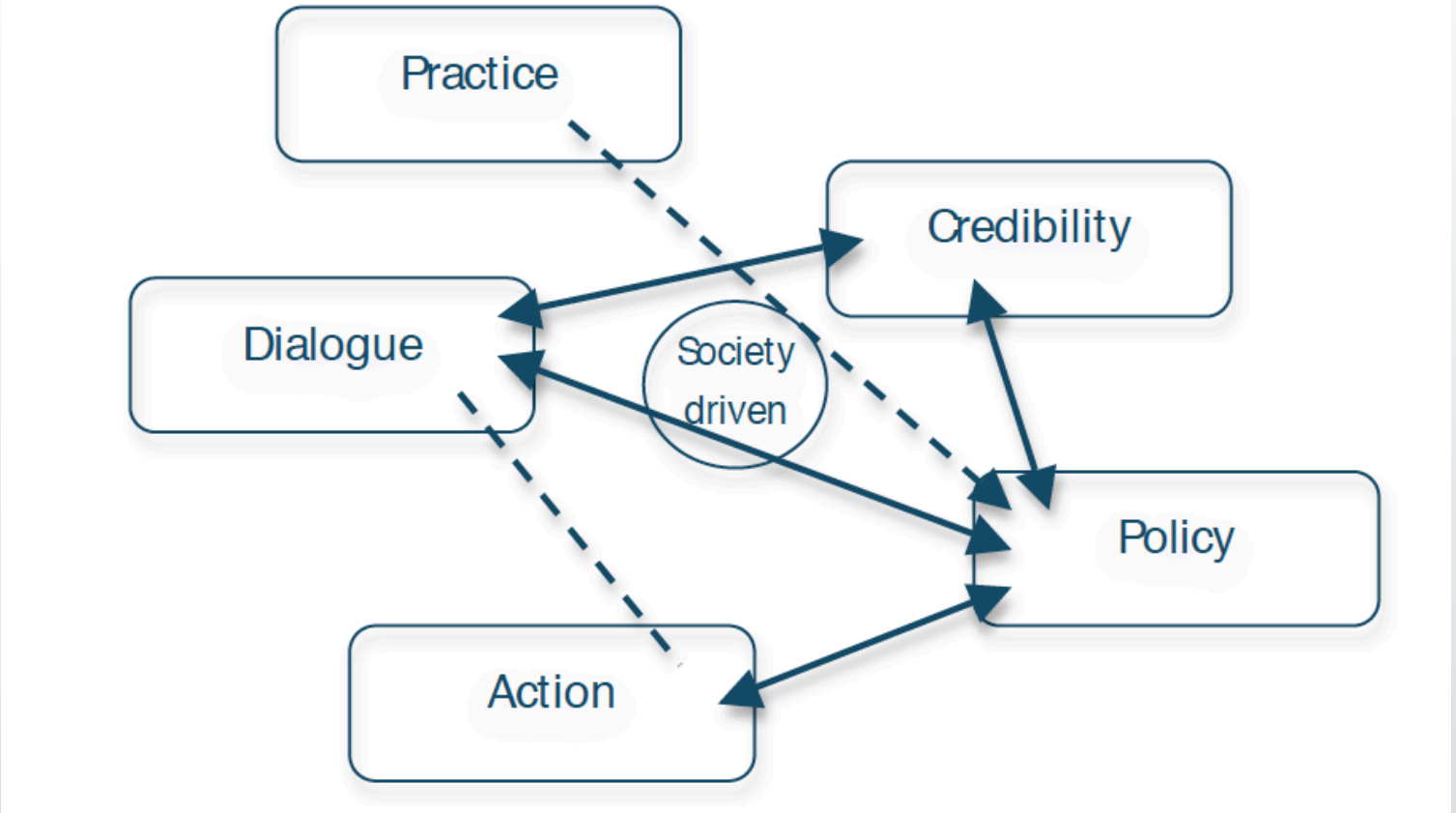
SEVENTH FRAMEWORK PROGRAMME

UserBoard Recommendations for WP2



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Deliverables from WP2

#	Title	Lead	Due
D2.1	Description of Exemplar Study Design	Kim Nicholas, Lund U	February 2014- Done
D 2.2	Report on standardized metrics for monitoring ES efficiency	Stefan Schmidt, Helmholtz-Centre for Environmental Research (UFZ)	November 2014- in progress
D 2.3	Compilation of exemplar reporting for synthesis	Kim Nicholas, Lund U	March 2017
D 2.4	Lessons learned from meta-analysis and Exemplars	Edinburgh U	May 2017
D 2.5	Decision trees for users to decide on tools	Edinburgh U	May 2017

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Overview of Current Focus for WP 2: Practice

- Task 2.1: Meta-analysis (Lead: Ralf Seppelt)
  - Integrate evidence, efficiency, & effectiveness for ES
- Task 2.2: Exemplars (Lead: Kim Nicholas, with Ariane Walz & Meriwether Wilson)
  - Exemplar Study Design & Implementation
- Task 2.3: Design & Synthesis (Lead: U Edinburgh)
  - BluePrint Protocol

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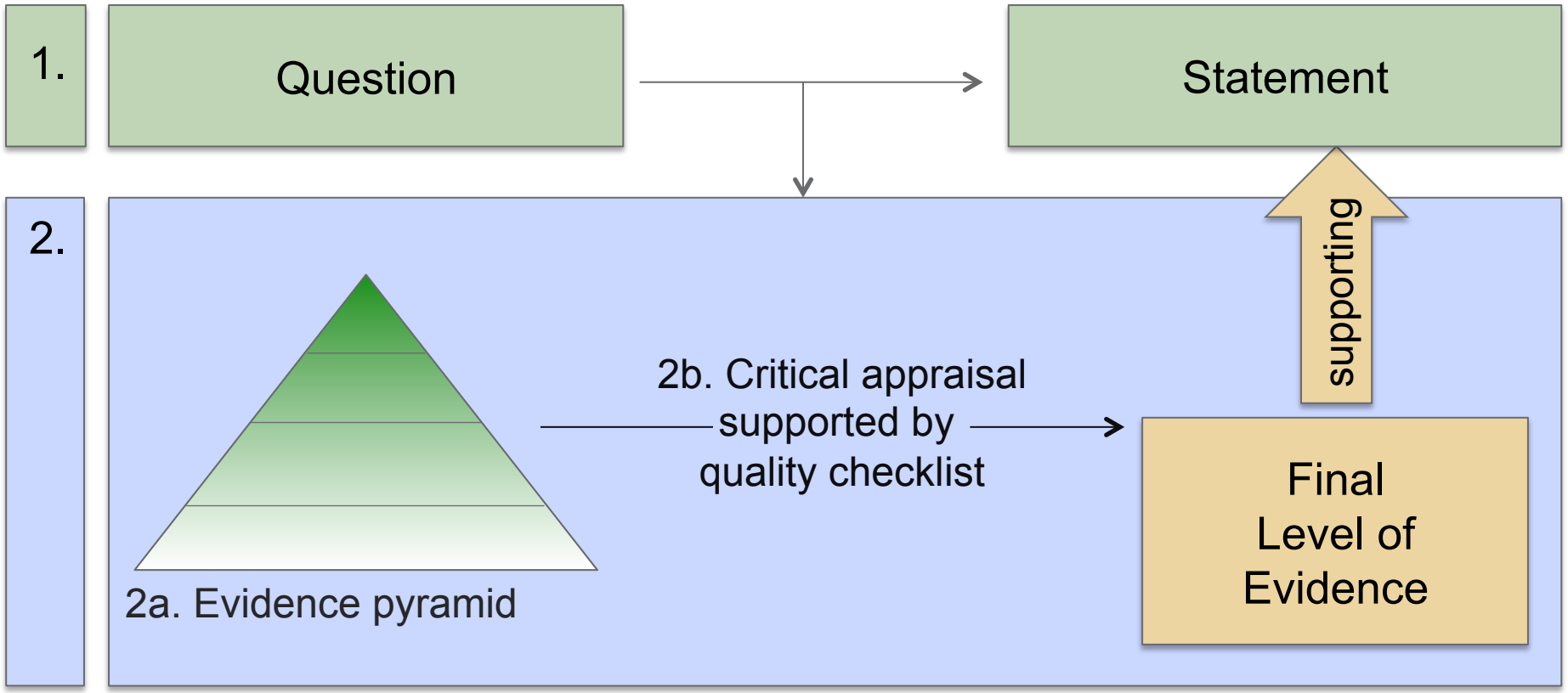
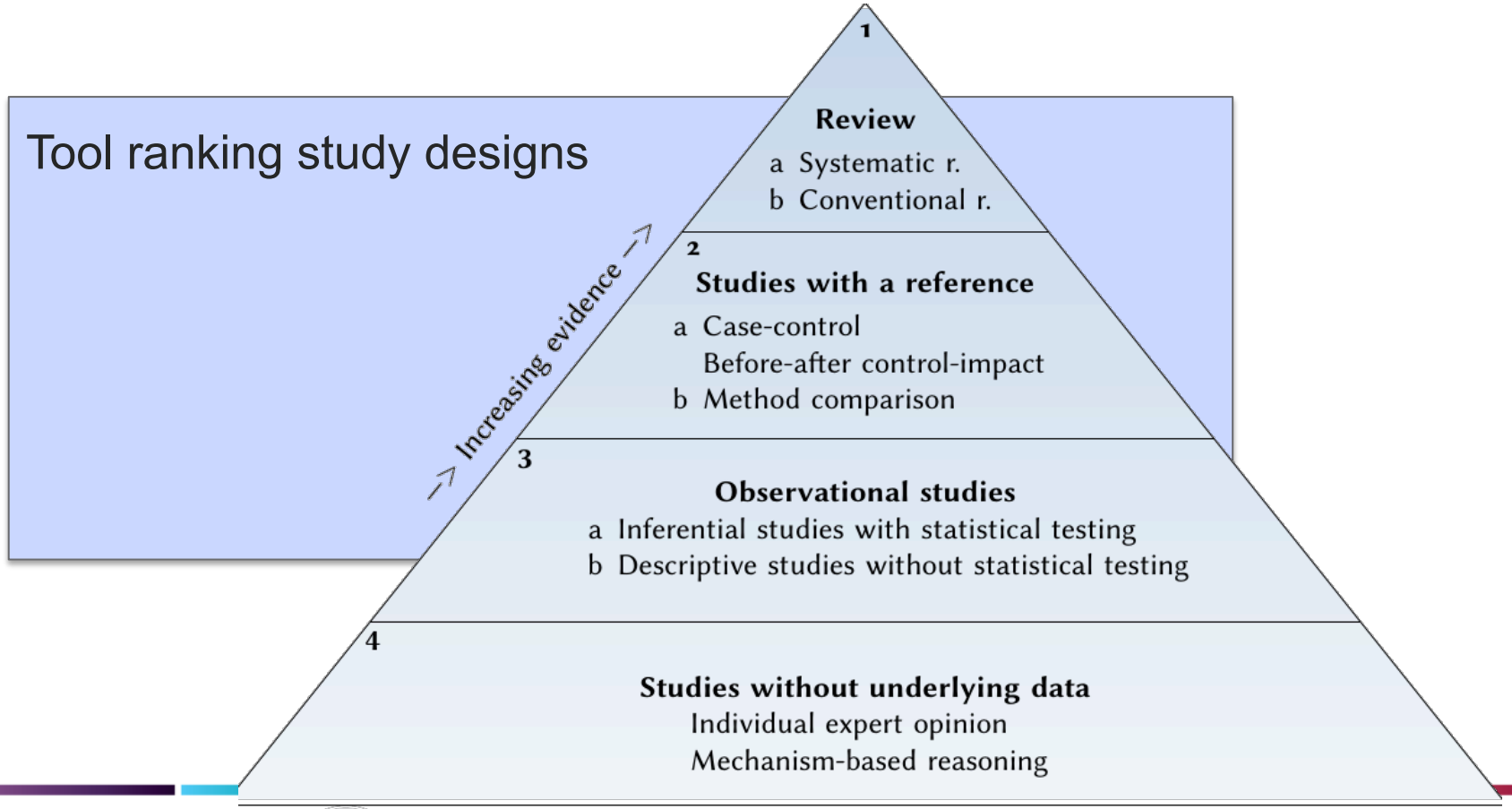
Effectiveness, Efficiency and Evidence

1. Evidence-based practice in ecosystem services



1. Evidence-based practice in ecosystem services



Relevance for Community

Who should use this approach in evidence-based practice?

Level-of-evidence pyramid and quality checklist are valid for all environmental science

1. Scientists conducting their own studies
2. Scientists advising decision-makers
3. Consortia and international panels, such as IPBES or Ecological Societies -> Guidelines (Dicks et al. 2014 in Conservation Letters)

These slides are based on the manuscript:

Mupepele & Dormann (2014)
http://dx.doi.org/10.1101/010140 **on BioRxiv**

Milestone 2.7,
Effectiveness of Measures
Schmidt, Seppelt, & Volk,
2014

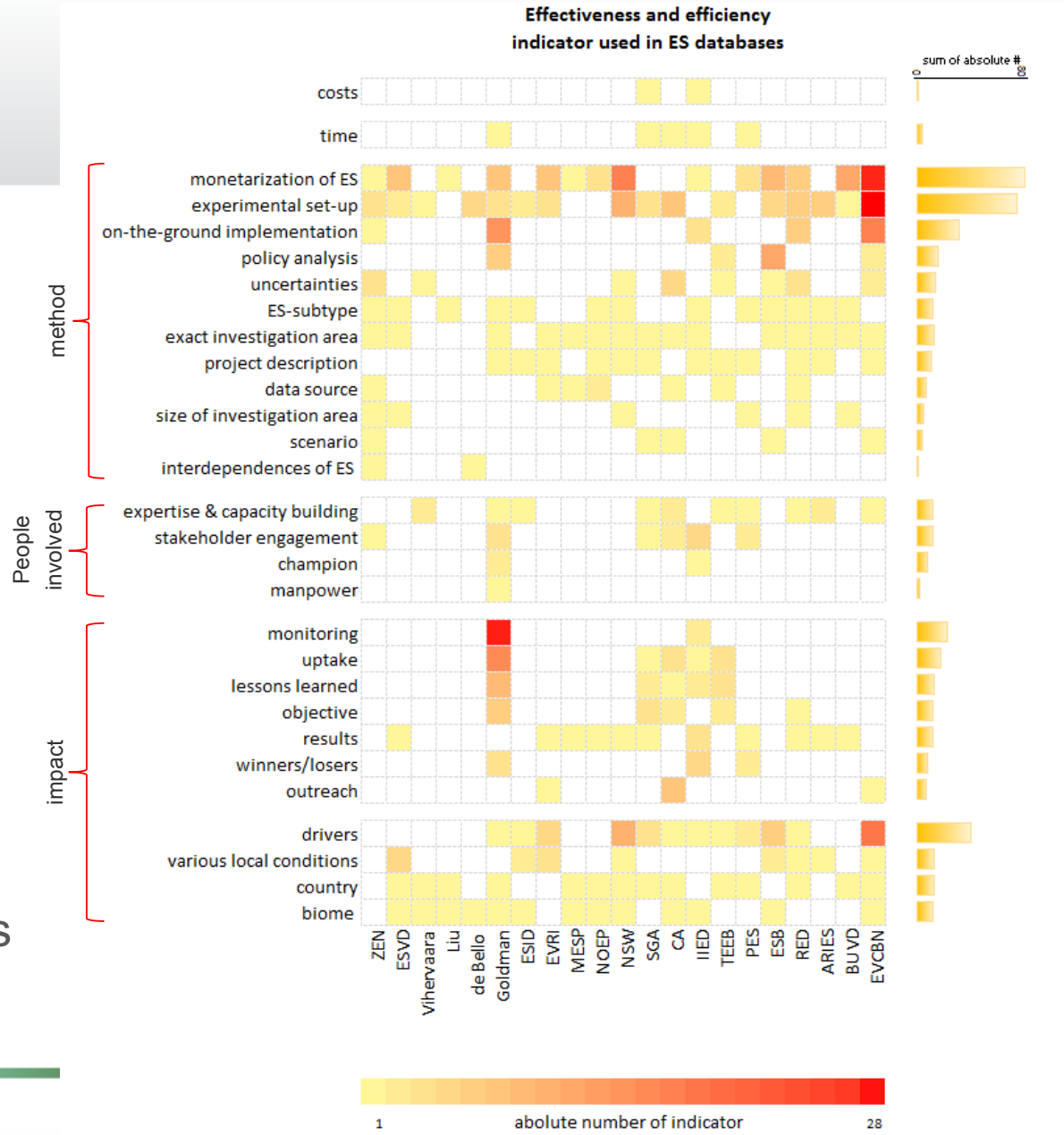
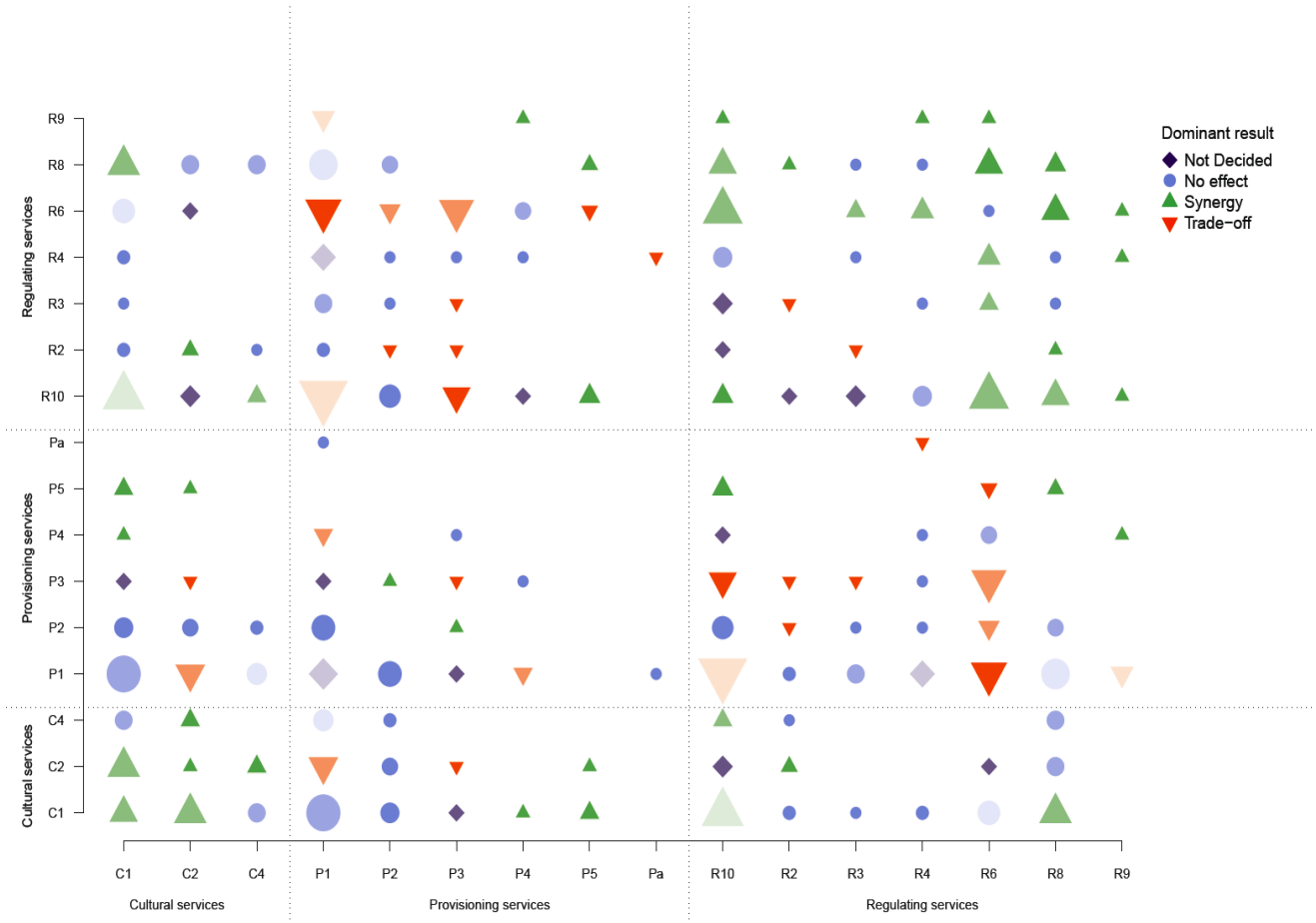


Fig.1: Identification of 29 effectiveness indicators based on 21 global ES databases. The color of the rectangles represents the frequency of effectiveness and efficiency indicators per database. The bar plots (right side) show the summation of indicators across the ES databases (see also Fig. 2 sm).

Tradeoffs between ecosystem services



- Identify ES pairs
- ES categories – CICES
- Darkness of the color represents dominance of main category (trade-off, synergy or no-effect)
- Symbol size represents # of studies

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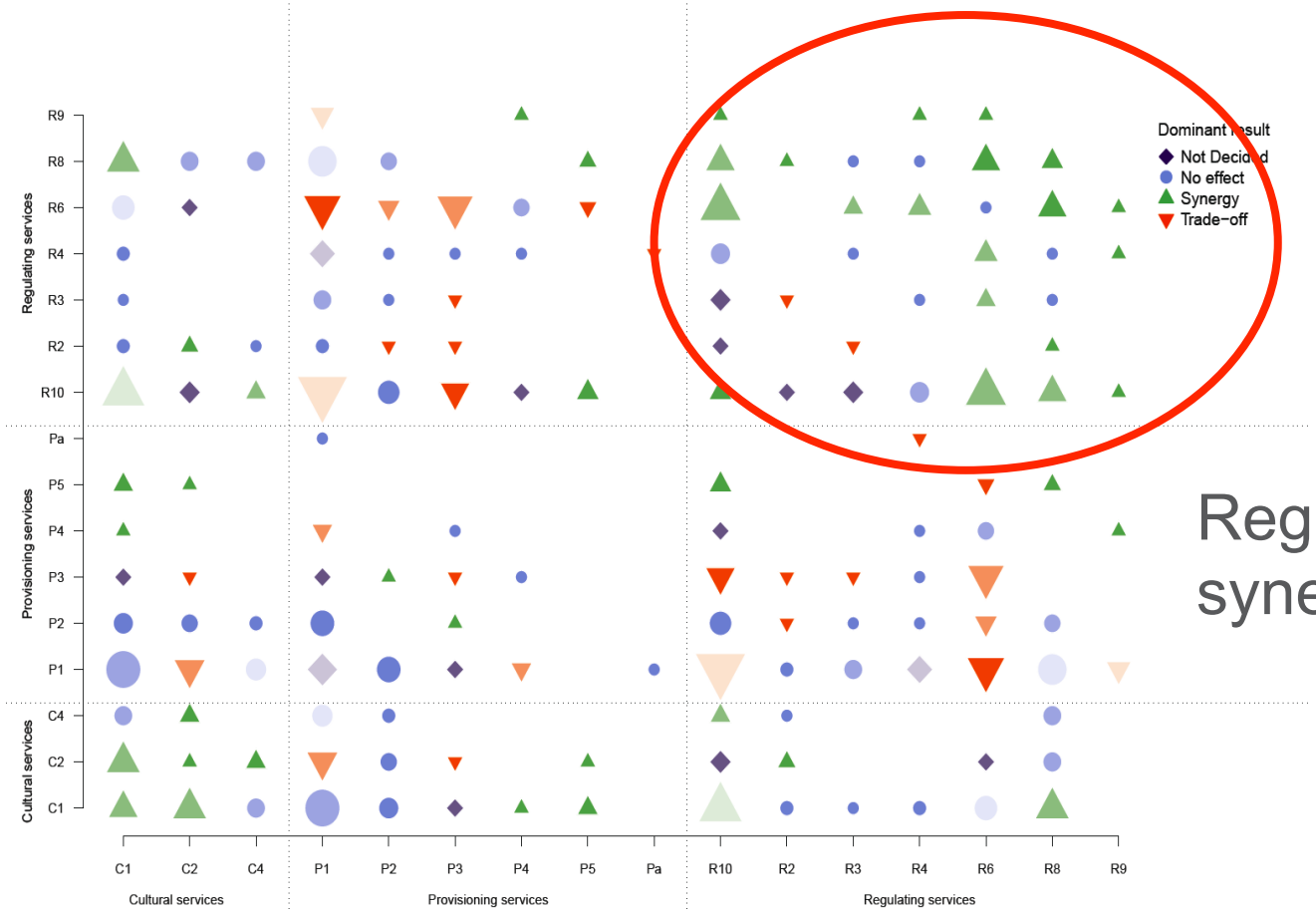
University of Bonn

Tradeoffs between ecosystem services



Regulating services: synergies

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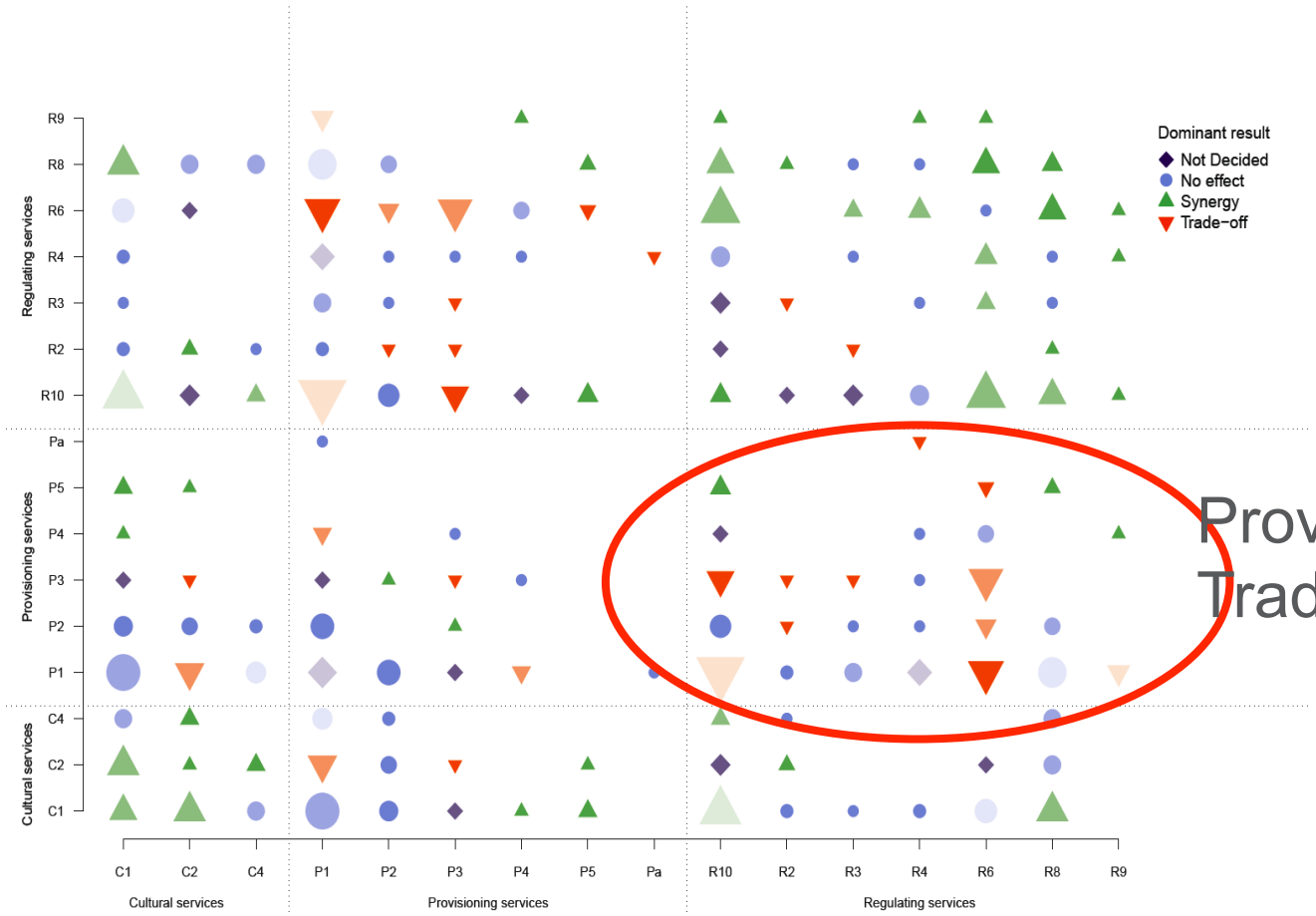
Tradeoffs between ecosystem services



Provisioning-Regulating: Tradeoffs

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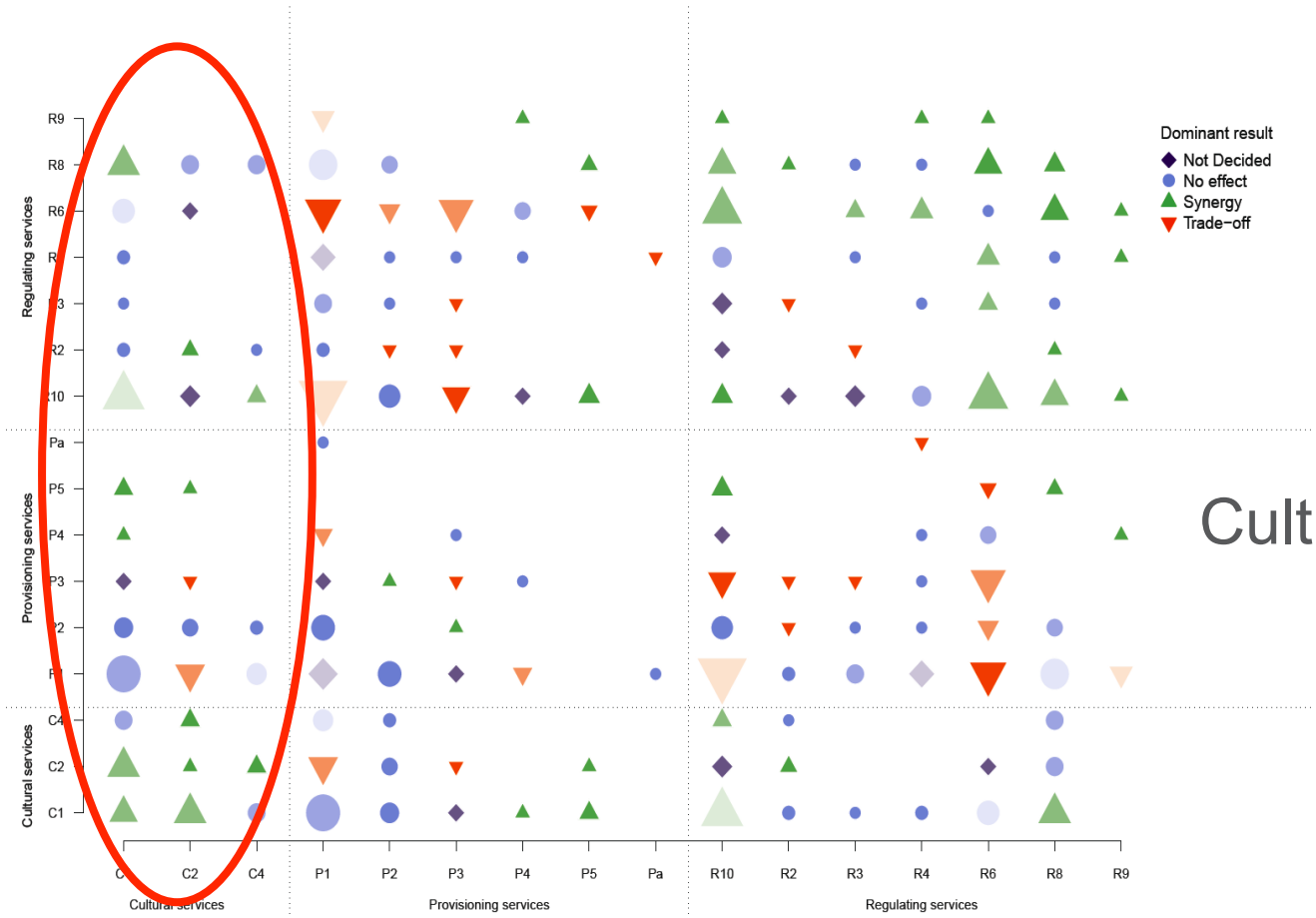
Tradeoffs between ecosystem services



Cultural: 0 to +

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Purpose of Exemplar Study Designs

- Co-develop design
- Follow shared designs
- Produce own outputs
- Feed into synthesis and collaborations

Exemplar Study Designs

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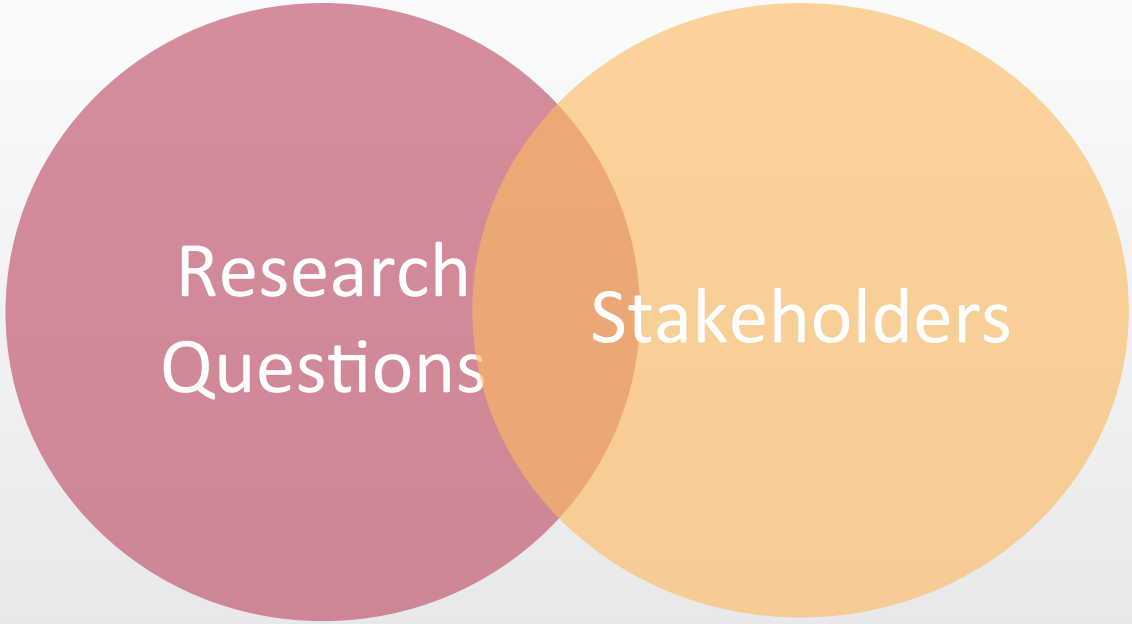
Exemplar Study Designs



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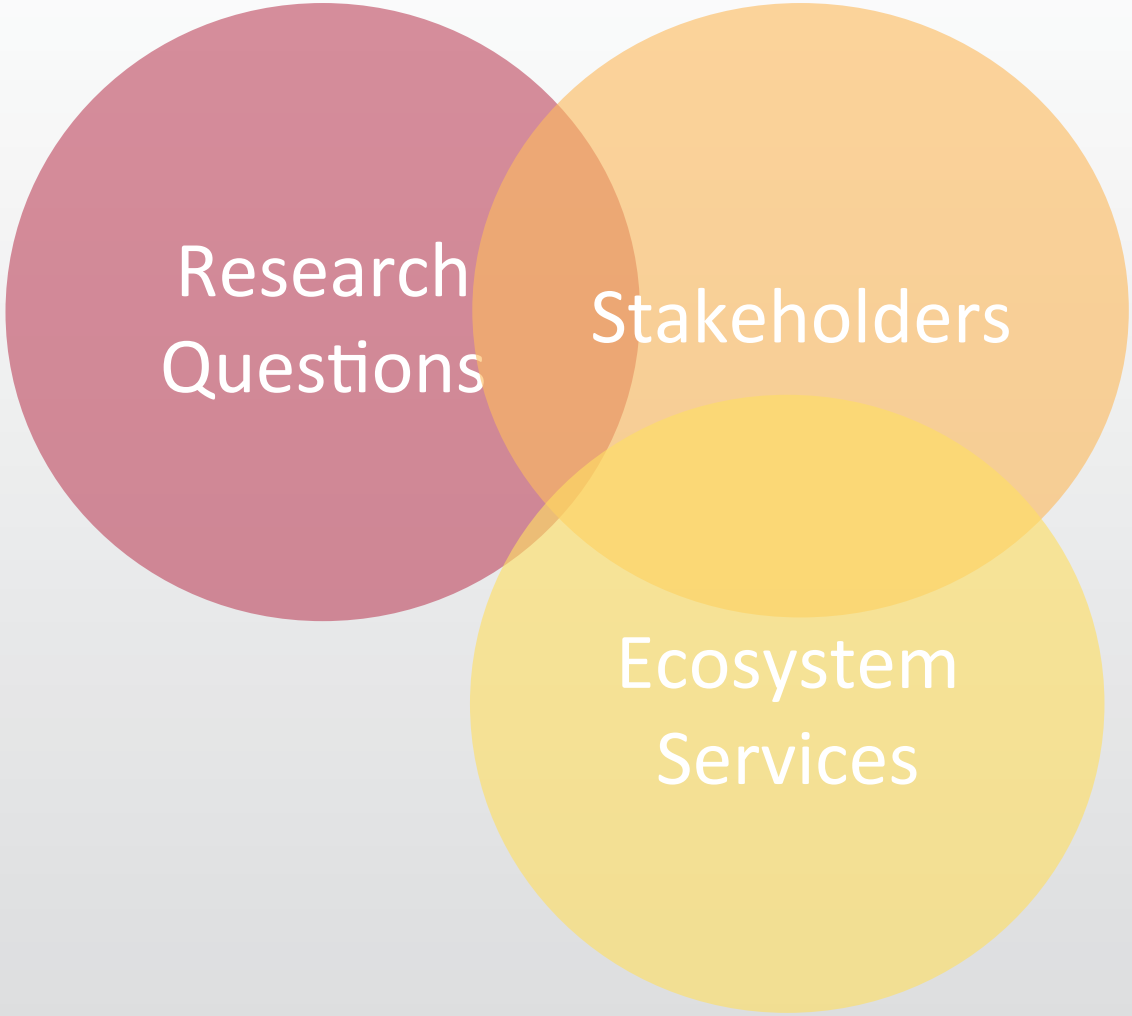
Exemplar Study Designs



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Exemplar Study Designs

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Exemplar Study Designs

Dream Abstract

Study Rationale

Exemplar Selection & Description

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Exemplar Study Designs

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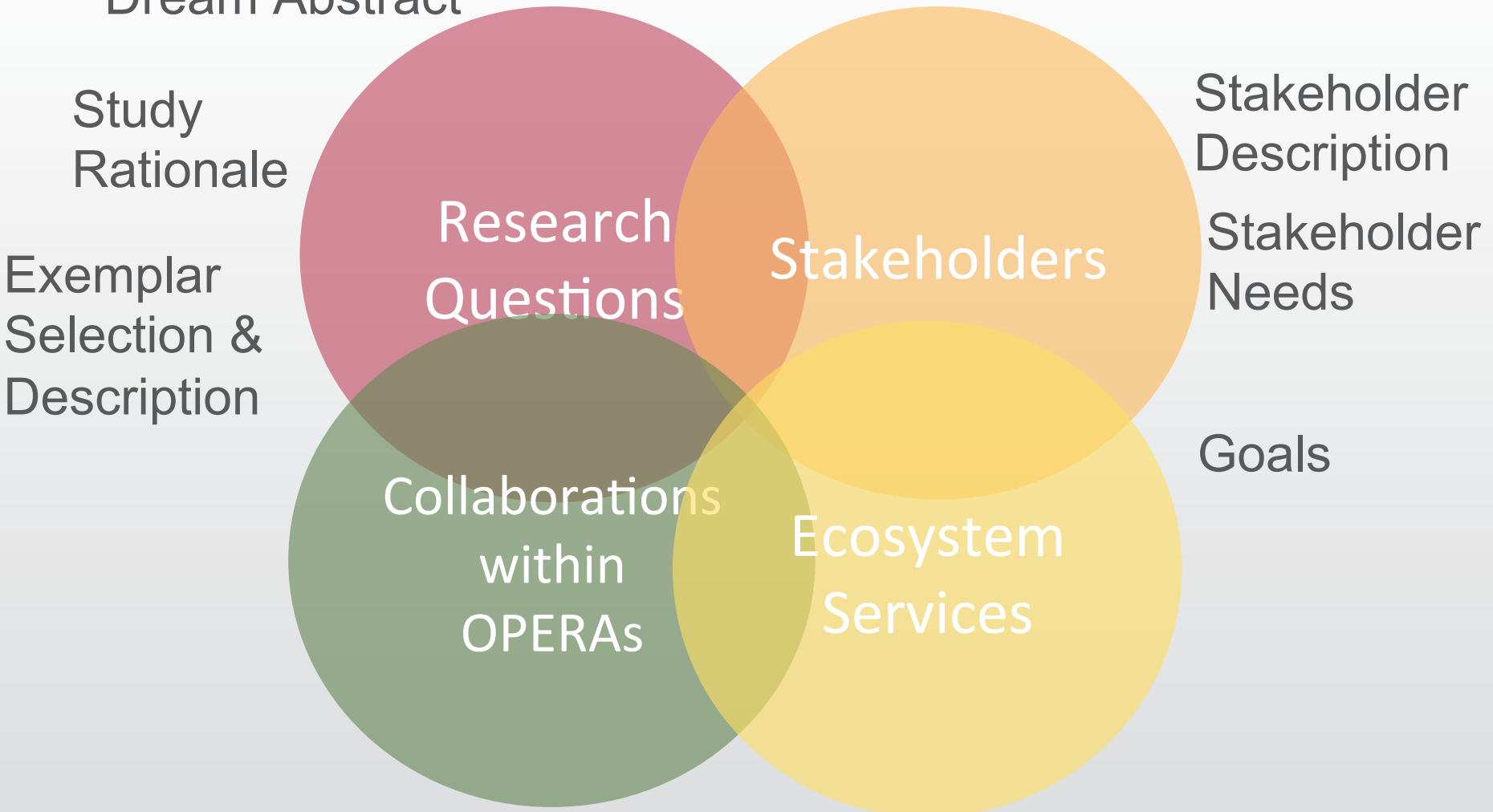
Exemplar Study Designs



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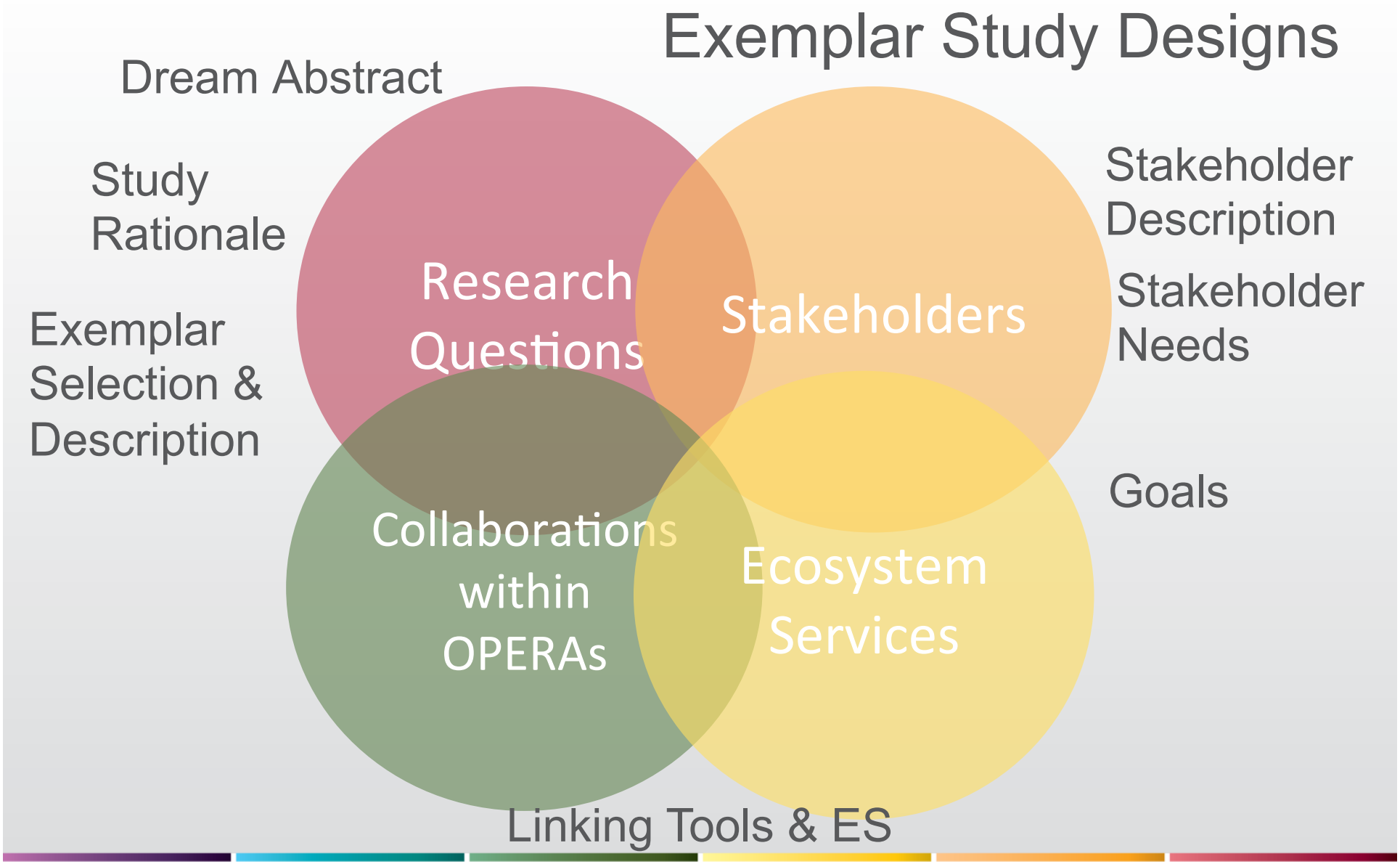
Exemplar Study Designs



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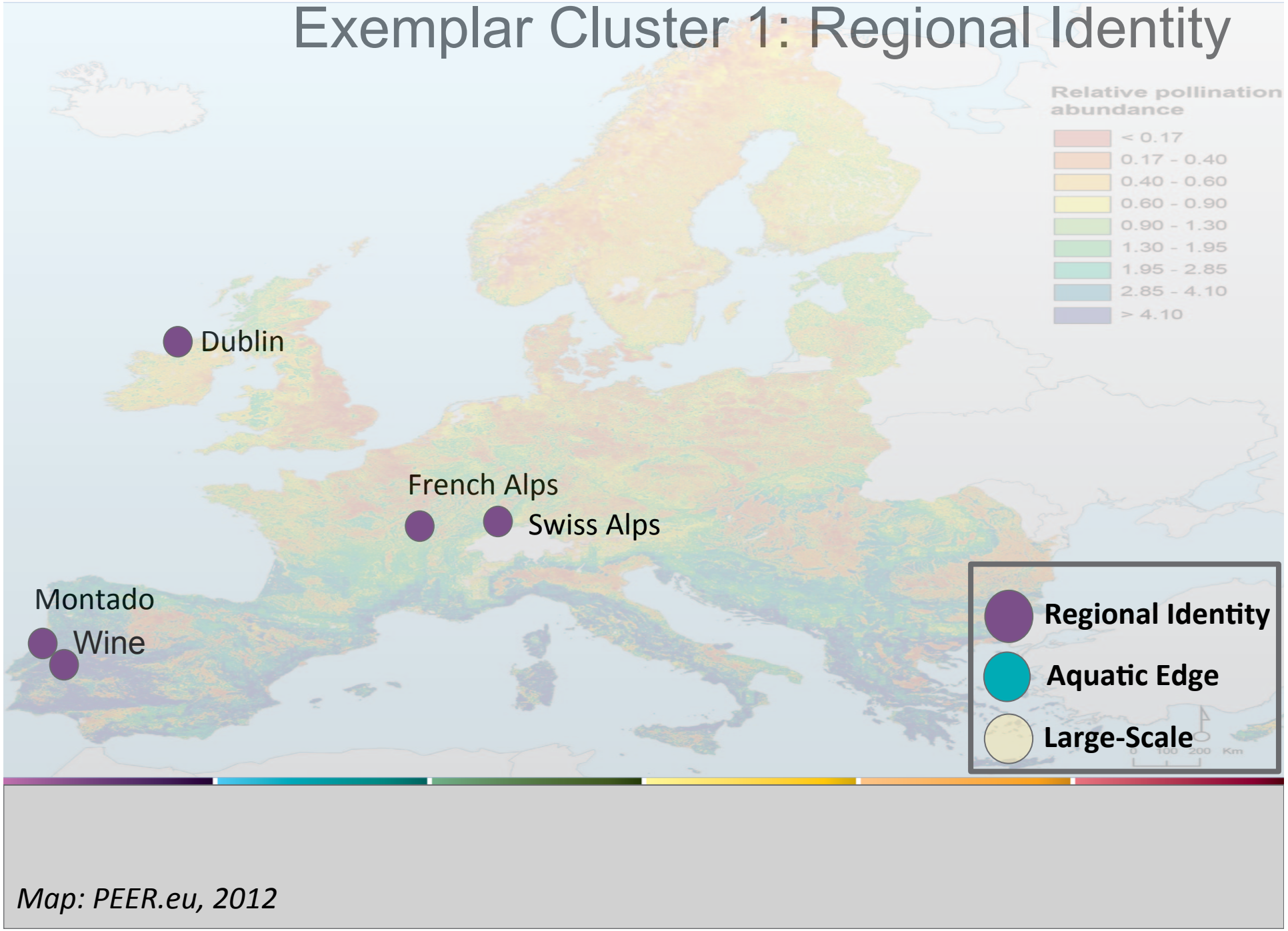
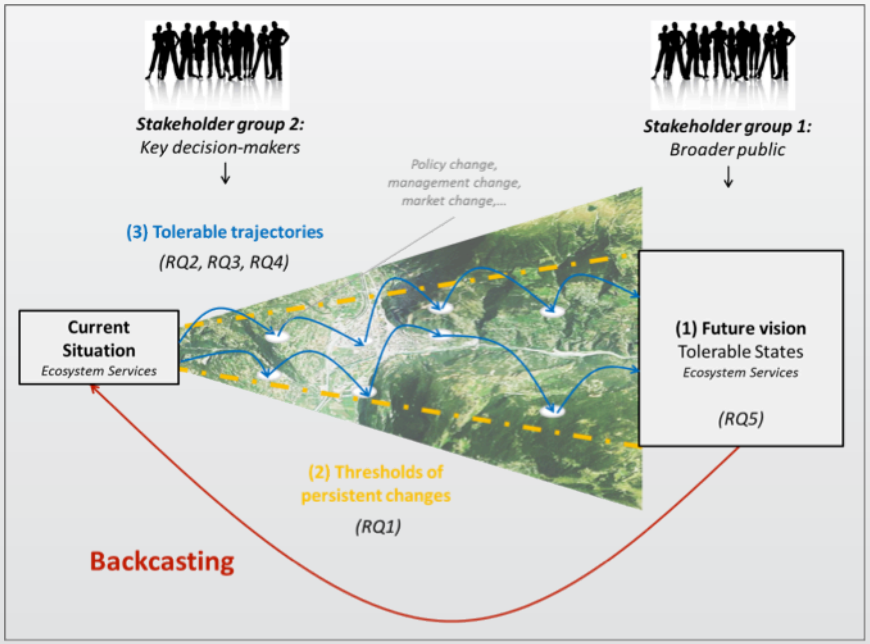

Exemplar Cluster 1: Regional Identity
Relative pollination abundance
< 0.17
0.17 - 0.40
0.40 - 0.60
0.60 - 0.90
0.90 - 1.30
1.30 - 1.95
1.95 - 2.85
2.85 - 4.10
> 4.10
Dublin
French Alps
Swiss Alps
Montado
Wine
Regional Identity
Aquatic Edge
Large-Scale
0 100 200 Km
Map: PEER.eu, 2012

Regional Identity

"…place-based case studies located in iconic natural and cultural landscapes of Europe"

- Valuing ecosystem service provision, quantify ES under various scenarios, identify stakeholder priorities…
- Tools: Q-methodology, socio-cultural valuation, storylines, backcasting, visualization…



Swiss Alps Design
(Grêt-Regamey et al.)

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Exemplar Cluster 2: Aquatic Systems on the Edge

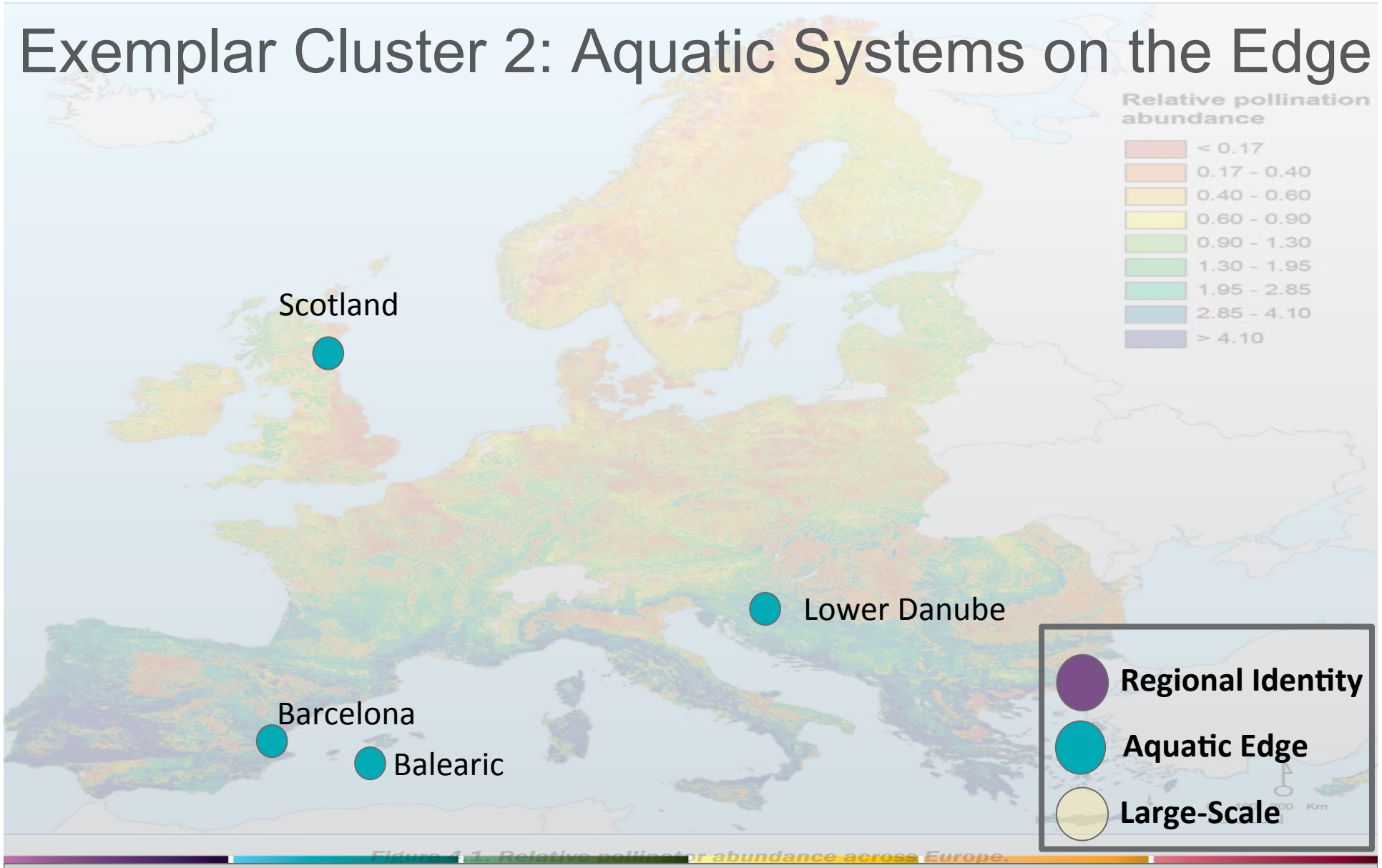
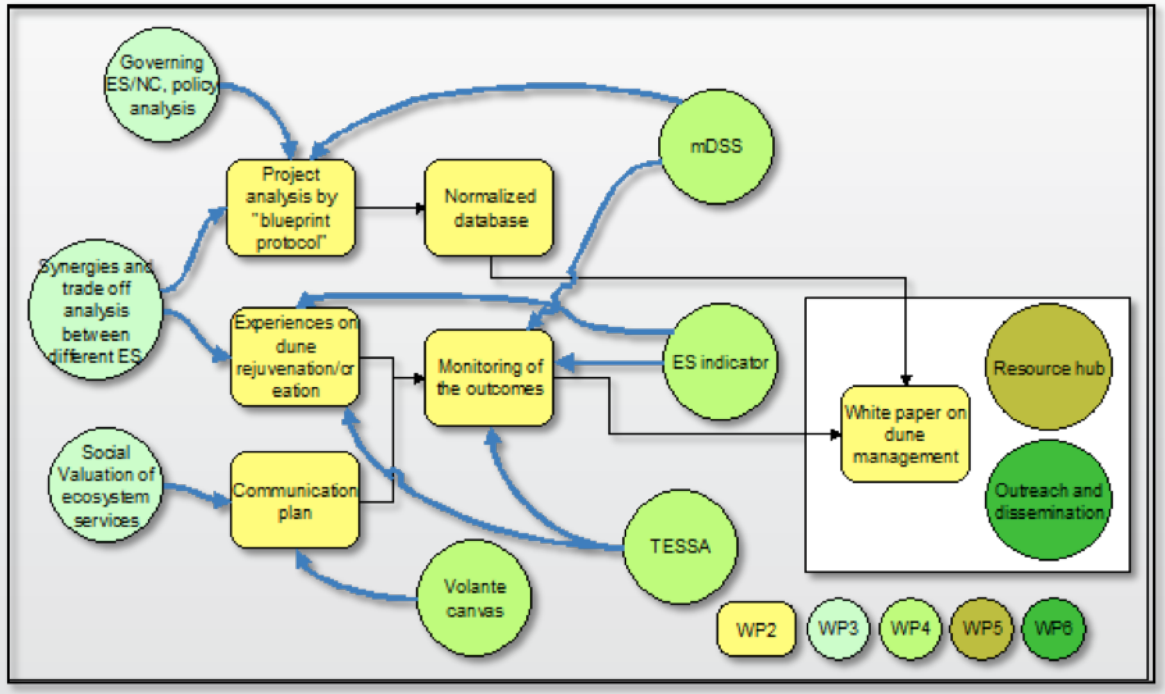


Figure 4.1. Relative pollinator abundance across Europe.

Map: PEER.eu, 2012

Aquatic Systems on the Edge

- Keystone habitats & high biodiversity
- Intense urbanization, habitat fragmentation
- Revitalize ecological corridors and functions
- Analyze tradeoffs and policies



Barcelona Study Design
(Wilson, Lascurain et al.)

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Exemplar Cluster 3: Large-Scale Dynamics

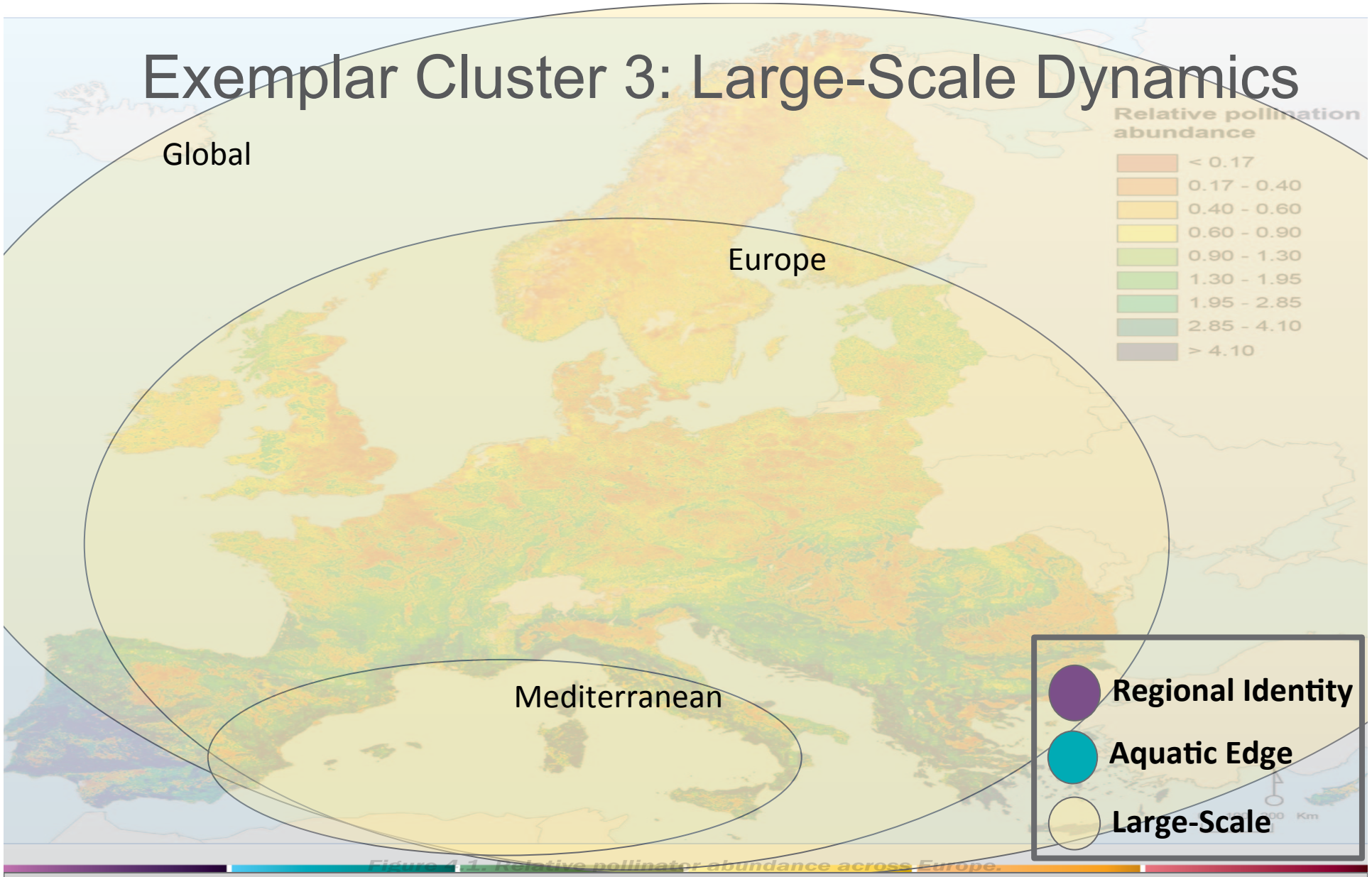
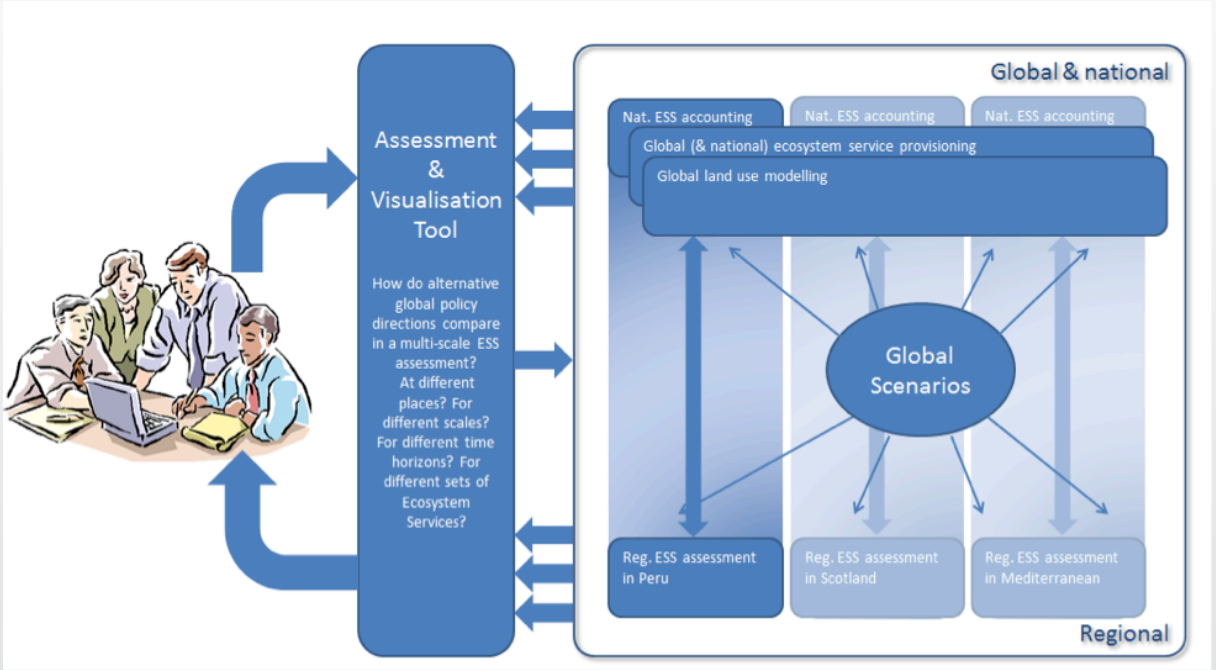


Figure 4.1. Relative pollinator abundance across Europe.

Map: PEER.eu, 2012

Large-Scale Dynamics

- Aim at informing decision-makers
- Information tools (models)- effects of policies on ES
- Communication: workshops, online applications, CoP side events
- Tradeoffs over time and space; encompass other Exemplars
- Difficulties in identifying and/or engaging stakeholders



Global Study Design (Walz et al.)

Challenges & Suggestions

- Communication and coordination between work packages

- Incorporate peer review for Milestones & Deliverables

- Different approaches

- Template!
- Build on strength of diversity – discuss differences

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Recap:
Scope and rationale of the blueprint

- *To develop a standardised methodology (Blueprint Protocol) for the reporting of the OPERAs exemplars, thereby providing a systematic reporting protocol across the practice module
- The OPERAs Blueprint Protocol aims to standardise the:
  - comparison;
  - evaluation; and,
  - synthesis of the exemplars.
  - The blueprint will include additional attributes as new knowledge and insight is gained throughout the project.
  - Close interaction with the exemplars will be used to test the robustness of the protocol and to facilitate improvements.

*Task 2.3, sub-task 2.3.1 OPERAs DoW

Lessons* from Blueprint version 1

- Strengths:
  - Allows for cross- exemplar comparison
  - Facilitate collaboration between exemplars
  - Uniform description of sites for reporting
  - Classification of ecosystem services

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*From MSc study by Lauren LaRocca

Lessons* from Blueprint version 1

- Weaknesses
  - Lack of ability to capture level of stakeholder engagement
  - Difficulty incorporating socio-cultural service values
  - Needs numerical data input
  - Difficulty in capturing multi-scalar projects
  - Some people unclear about its purpose.

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*From MSc study by Lauren LaRocca

Recommendations for Blueprint v2

- Increase inter-activeness between user and protocol to improve data capture
- Define the tools/instruments & how to measure for improved detail
- Increase flexibility of protocol to include progression of project
- Improve capture of stakeholder information including level of engagement
- Improve balance between detail richness and protocol brevity
- Provide access to or a synthesis of completed protocols

Development of Blueprint V2

- Increase inter-activeness between user and protocol to improve data capture: BP now online, easy access.
- Define the tools/instruments & how to measure for improved detail: Greater detail in tool description
- Increase flexibility of protocol to include progression of project: Online version enables easy update to V3 etc
- Improve capture of stakeholder information including level of engagement: More stakeholder categories to fill
- Improve balance between detail richness and protocol brevity: BP now has more 'tick-box' answers
- Provide access to or a synthesis of completed protocols: online version canbe accessed by ANYONE once live

OPERAs Blueprint Protocol Version 2

This new version of the Blueprint is a more comprehensive questionnaire of your exemplar study design. However, it should be an easier process to complete; it also allows you to view of exemplar blueprints. It follows the Scope, Analysis, Recommendations and Monitoring (PSARM) format recommended in Seppelt et al (2012). All references cited in this form can be obtained from james.paterson@ed.ac.uk

Section 1: exemplar study purpose and design

What is the rationale for the study?

What are the objectives and project goals?

Dissemination and education

- [ ] Understand people's knowledge of ecosystem services and how this impacts on values
- [ ] Help raise public awareness of the roles and importance of nature for society which can create support for future policy initiatives
- [ ] Other:

Integrating ecosystem services and economic decision-making

- [ ] Create an evidence base to support Natural Capital Accounting
- [ ] Support commitment to identify, reduce, reform, and/or remove environmental harmful subsidies and pricing to give positive incentives and avoid negative incentives

Ecosystem Services assessed

Which Provisioning Ecosystem Services are you assessing?

Please list the provisioning services: nutrition from biomass

- [ ] 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

Please list the provisioning services: nutrition from water

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

Please list the provisioning services: materials from biomass

- [ ] 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

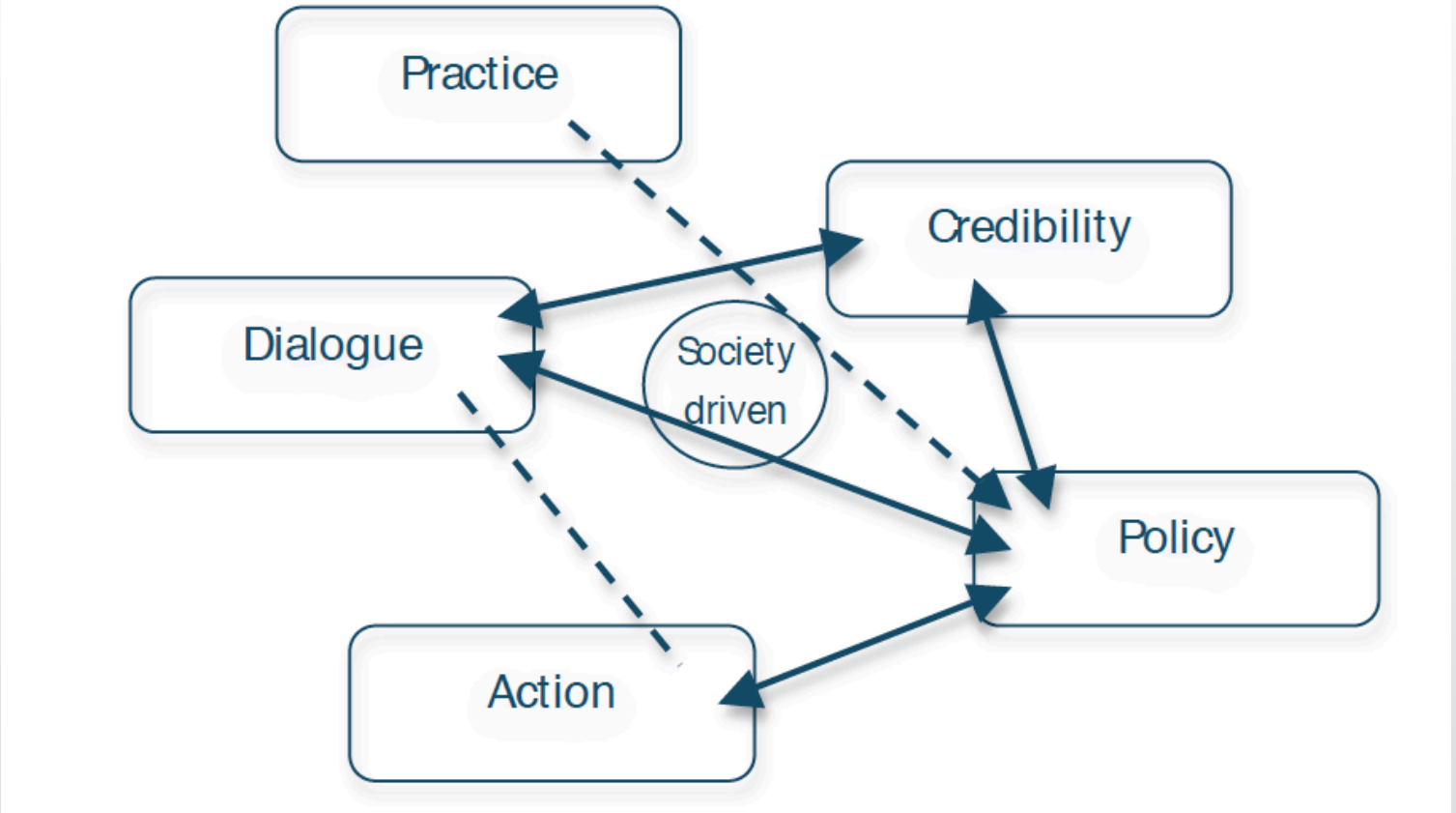
Please list the provisioning services: materials from water

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

Please list the provisioning services: biomass-based energy sources

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

UserBoard Recommendations for WP2



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Thank you!
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