Kick-off meeting of the projects funded through the Biodiversa and Water JPI 2020-2021 Joint Call on "Conservation and restoration of degraded ecosystems and their biodiversity, including a focus on aquatic systems" (BiodivRestore)

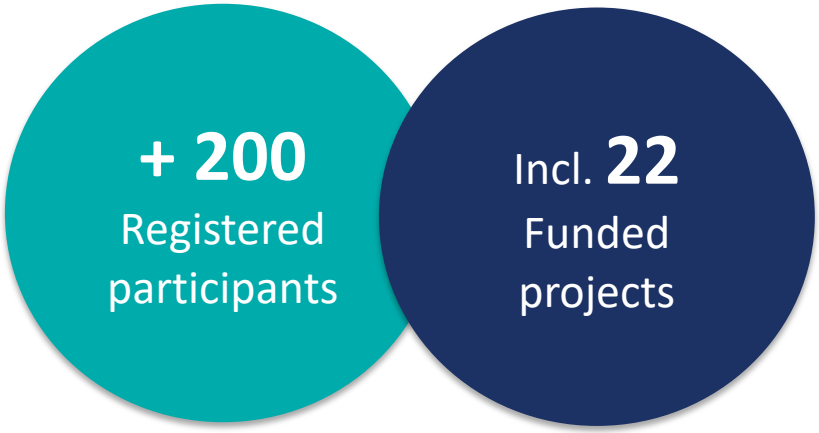
4 May 2022, 13:00-18:00 CEST

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Welcome words

By Maja Kolar, AEI, Spain

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777



Objectives

- ✓ Get to know the 22 funded projects
- ✓ Start interaction between funded projects and with the funding organisations
- ✓ Learn more about Biodiversa and the WaterJPI expectations in terms of reporting, acknowledgment, additional activities etc.

This meeting is complementary with the clustering workshop aiming at fostering collaborative activities among the funded projects which is organized tomorrow (closed event)

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A FEW GENERAL GUIDELINES FOR THE MEETING

1. For your information: the webinar is recorded and will be broadcasted on the Biodiversa & Water JPI websites and Social Media
2. Audio available to the presenters only
3. For any question: USE "Q&A" FUNCTION

BiodivRestore has received funding from the European Union's Horizon 2020 research ar
grant agreement No 101003777

A FEW GENERAL GUIDELINES FOR SPEAKERS

When you are speaking, make sure to :

- **Switch on your camera**
- **Switch on your microphone**
- **Introduce yourself** (what's your name and organisation, and your funded projects if any)
- **Respect the time constraint**

Many thanks in advance!

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Welcome words
in the context of a co-funded Call

By Laura Palomo-Rios, European Research Executive Agency

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Overview of Biodiversa, the Water JPI & the BiodivRestore Action

by Rainer Sodtke, *Biodiversa+ Vice-Chair & BiodivRestore Coordinator, and*
Miguel Ángel Gilarranz, *WaterJPI Chair & Coordinator*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

biodiversa+
European Biodiversity Partnership

Biodiversa+

The European Biodiversity Partnership

By Rainer Sodtke, Biodiversa+ Vice-Chair & BiodivRestore Coordinator

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biodiversa+
European Biodiversity Partnership

Co-funded by the European Union

A well established network, building on Biodiversa

Annual joint calls to support transnational research on biodiversity, ecosystem services and Nature-based solutions

Since 2008

Raised by BiodivERsA Partners and the EC

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

biodiversa+
European Biodiversity Partnership

Co-funded by the European Union

A specific type of research funded…

1.4M€

of funding on average per project

5

Different countries per project on average

Medium-size projects that demonstrate

- **Scientific excellence**
- High **Policy and societal relevance**
- High level of **stakeholder engagement**

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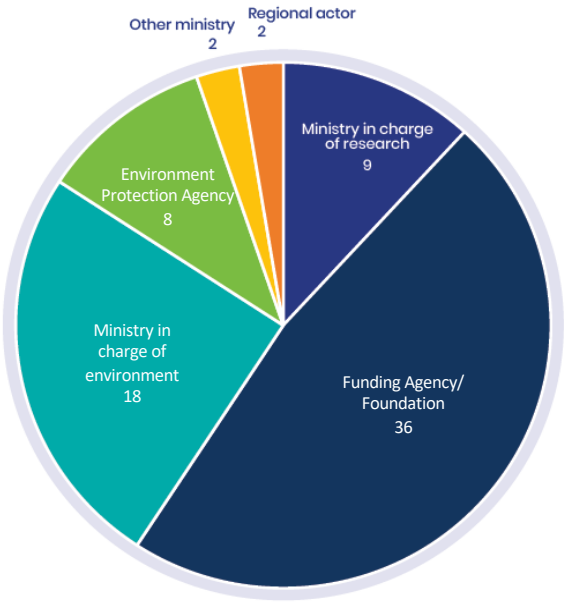
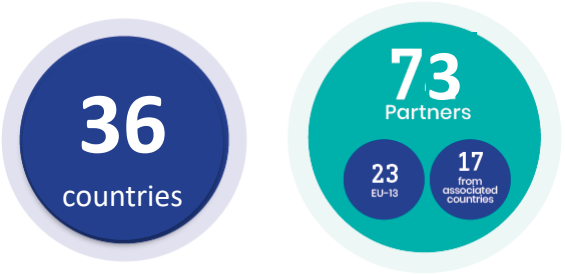
biodiversa+
European Biodiversity Partnership

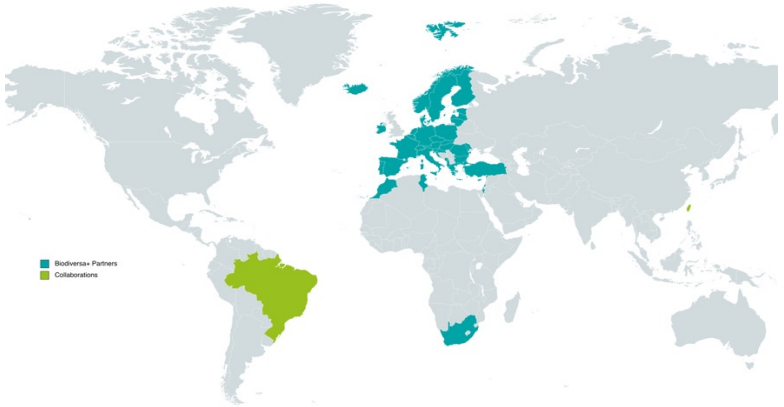
Co-funded by the European Union

Biodiversa+ : the new European biodiversity partnership

Biodiversa+ : a network with a biodiversity focus and an increasing international dimension







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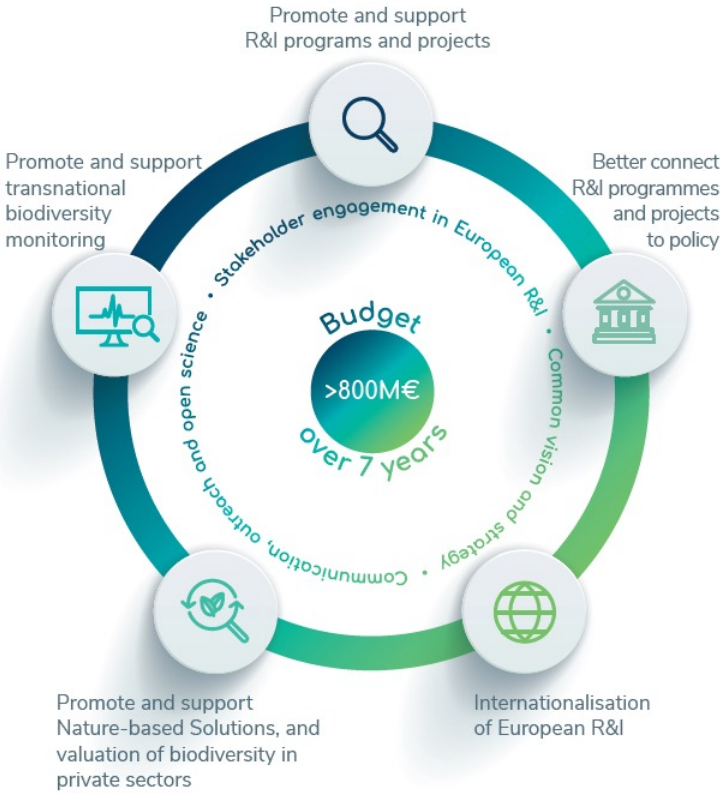
biodiversa+
European Biodiversity Partnership

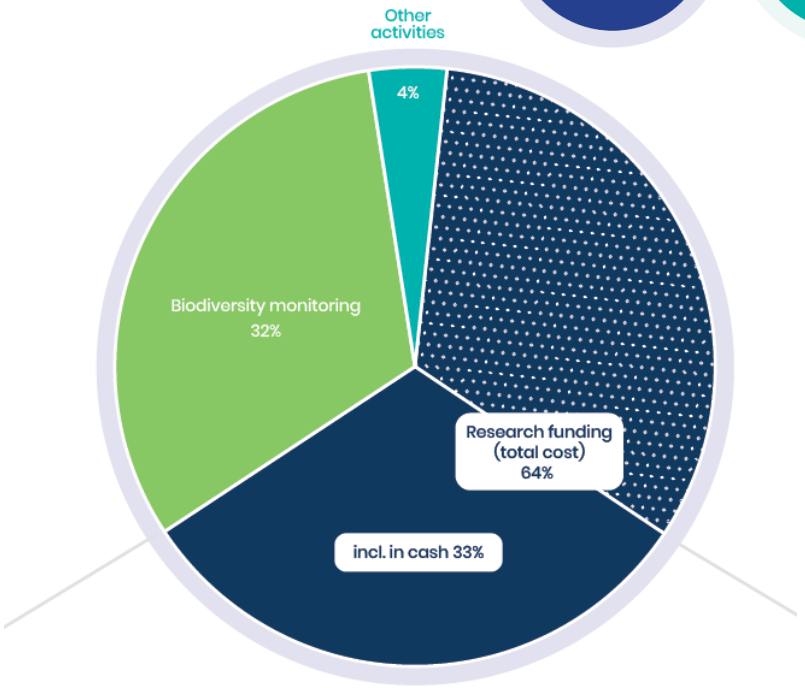
Co-funded by the European Union

Portfolio of activities & budget amplitude…!

6
Calls planned

Typically
>42M€
(in cash) per call





Budget of **>800 Mio € over 7 yrs**, combining in-cash and in-kind resources from its Partners and including 165 Mio € by the European Commission

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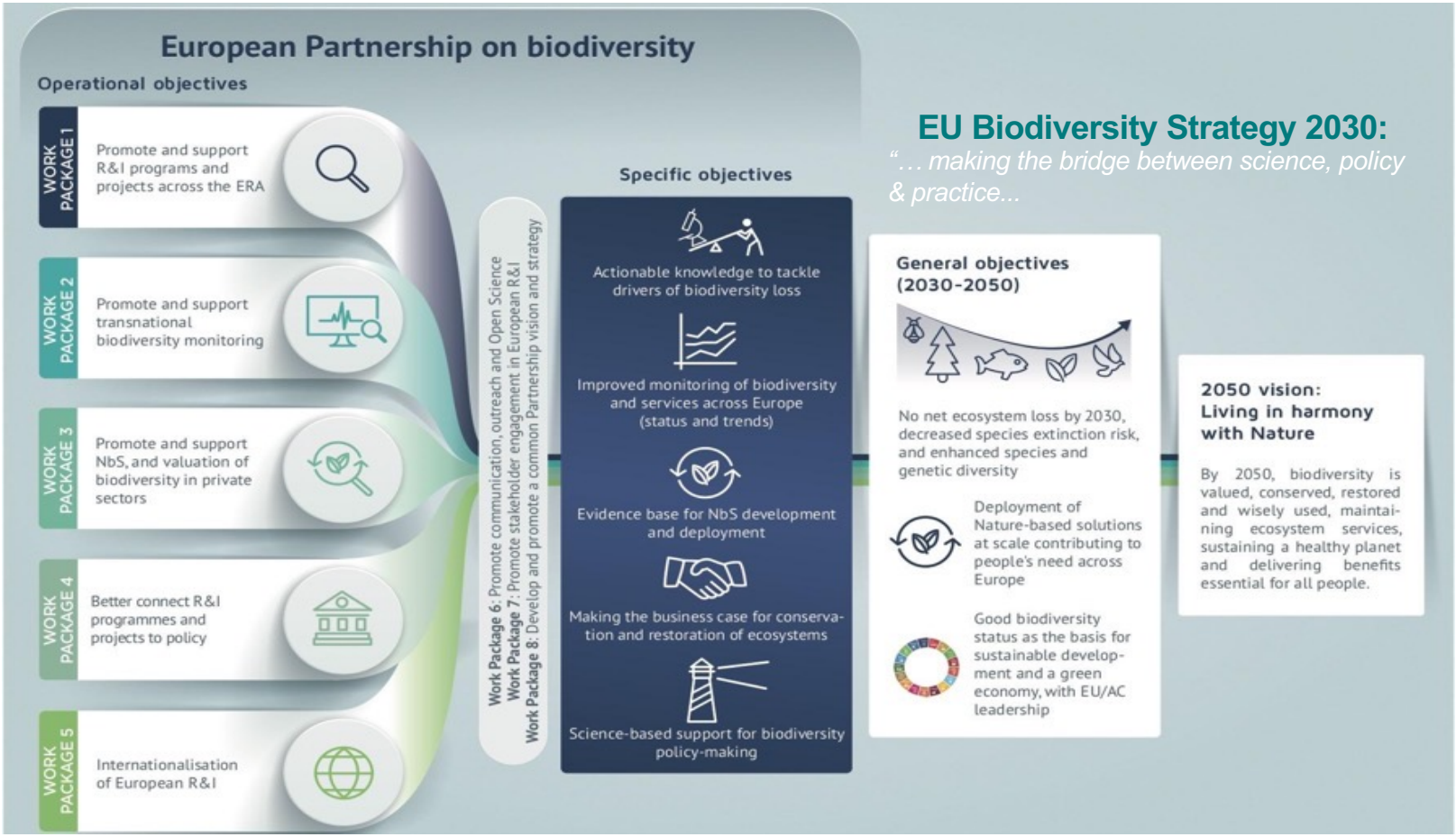
Aligned with the policy context..!



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biodiversa+
European Biodiversity Partnership

Co-funded by the European Union

Learn more on Biodiversa main achievements

https://www.biodiversa.org/1557/download

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Joint Programming Initiative Water challenges for a changing world (Water JPI)

By Miguel Ángel Gilarranz, AEI, Spain
Water JPI Vice-Chair

KICK-OFF MEETING – May 4, 2022 - BIODIVRESTORE 2020-2021 CALL

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What are Joint Programming Initiatives – JPIs?

An initiative of European Member States and the European Commission for tackling Current Grand Challenges with European dimension and global outreach through:

- Identification of common research, development and innovation priorities.
- Launch of Joint multilateral activities e.g. calls for projects, networks of experts, technology transfer.
- Reinforcement of links to various international initiatives.

Ultimate aims

- To make better use of Europe's limited public RDI funding.
- To respond jointly to current challenges.

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10 JPIs since 2008

Water JPI — Water Challenges for a Changing World

JPI Oceans — Healthy and Productive Seas and Oceans

More Years, Better Lives — More Years, Better Lives - The Potential and Challenges of Demographic Change

jpiamr — Antimicrobial Resistance- The Microbial Challenge - An Emerging Threat to Human Health

JPI Climate — Connecting Climate Knowledge for Europe

Urban Europe — Global Urban Challenges, Joint European Solutions

FACCEJPI (Agriculture, Food Security and Climate Change) — Agriculture, Food Security and Climate Change

Cultural Heritage — A Challenge for Europe — Cultural Heritage and Global Change: A New Challenge for Europe

JPI a healthy diet for a healthy life — A Healthy Diet for a Healthy Life

JPND research — EU Joint Programme – Neurodegenerative Disease Research — Alzheimer and other Neurodegenerative Diseases

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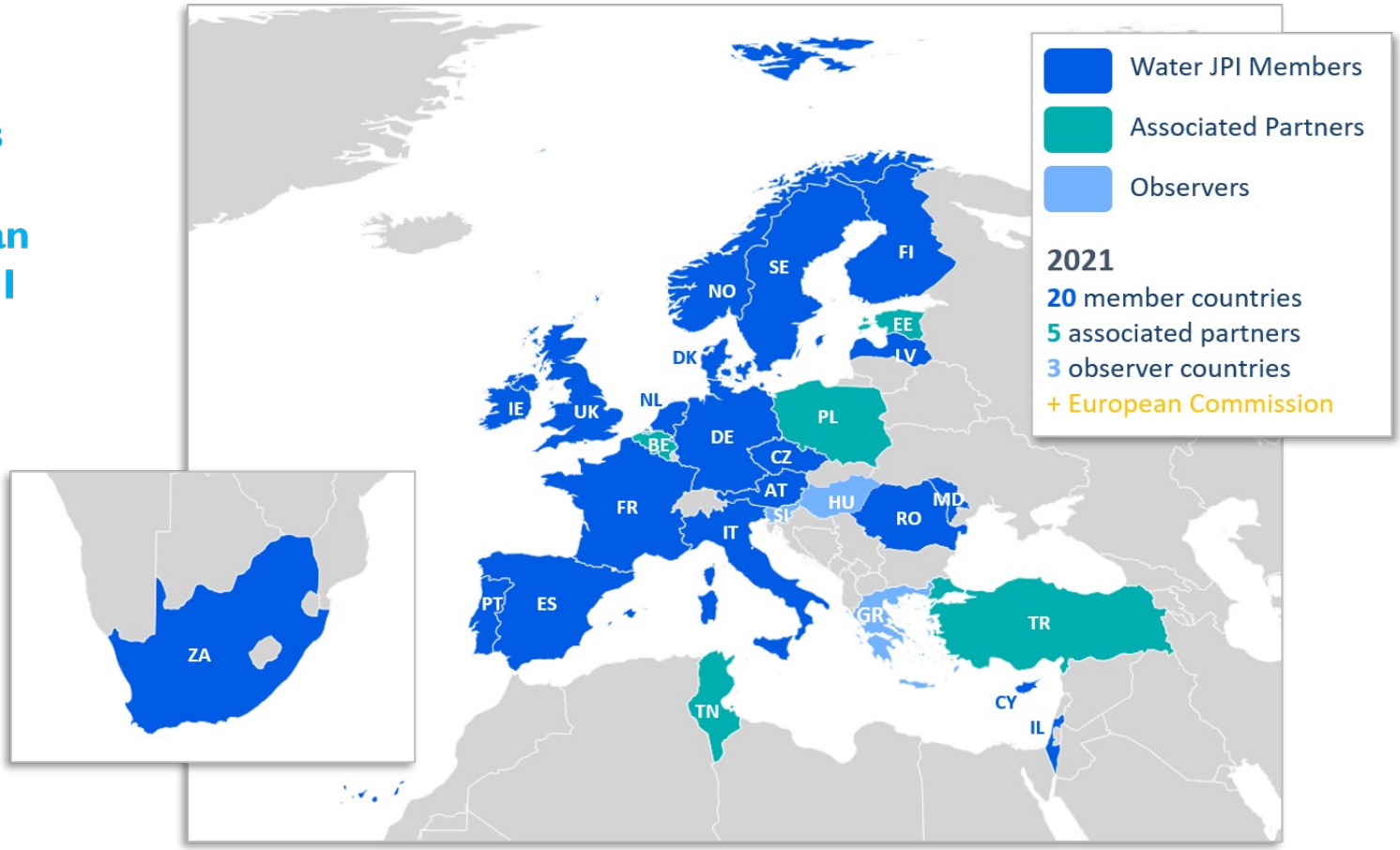
Water JPI Membership

Water JPI partners currently represent **88% of the European National Public RDI** investment on Water



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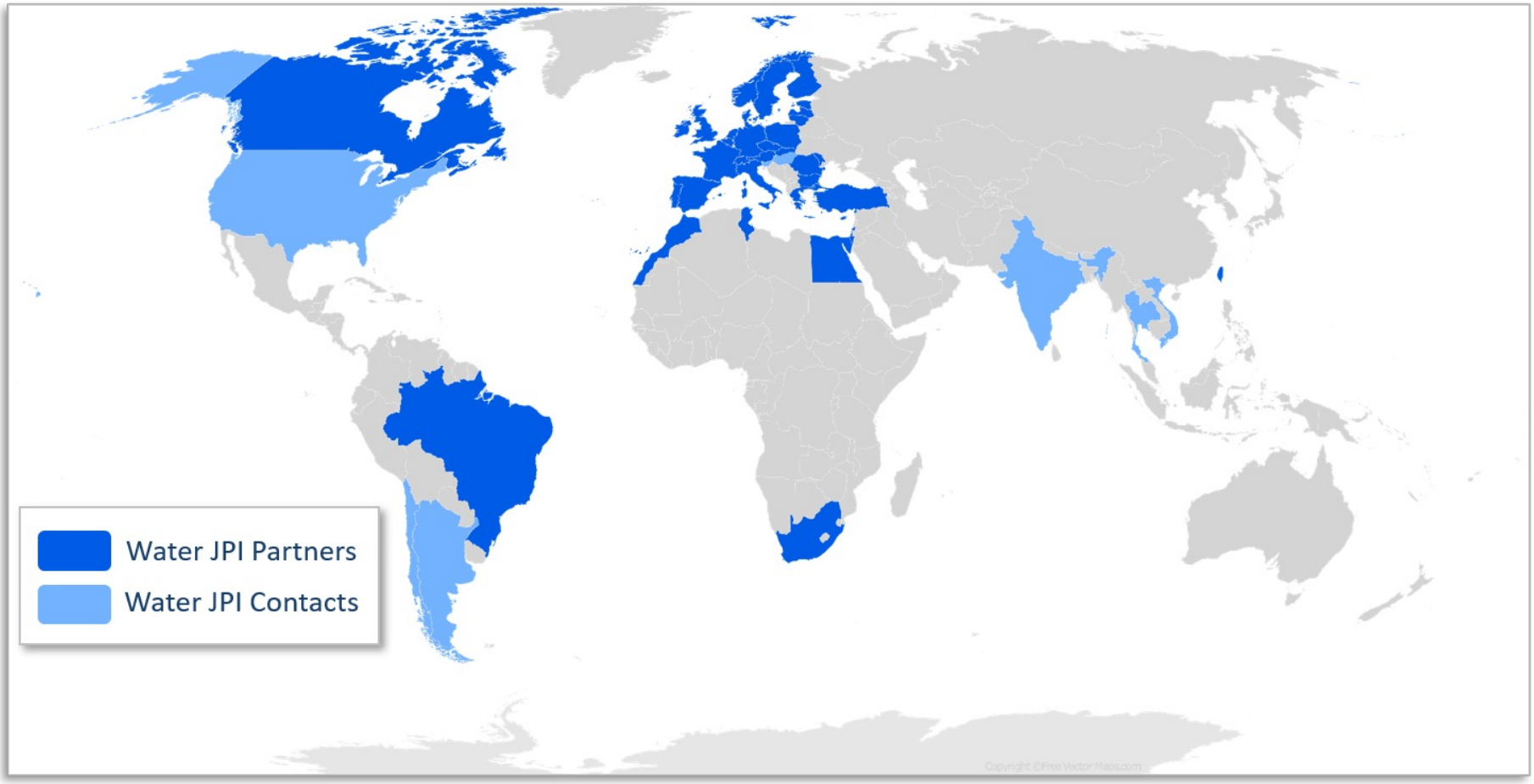
Water JPI Global Partnership



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Water JPI Activities

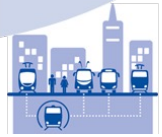
Common Vision

Strategic R&I Agenda

Research Funding Calls, TAP...

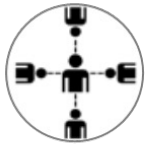
Impact Measures

Knowledge Transfer and Dissemination



Data, Observatories & Infrastructures

Capacity Building



Stakeholders Involvement & Engagement

International Cooperation

Mapping & Foresight Activities

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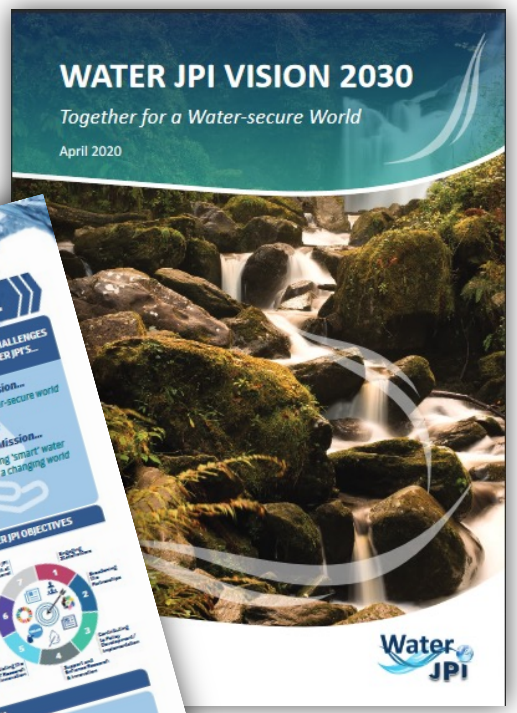
Vision 2030 and SRIA 2025

- Updated in April 2020
- available online



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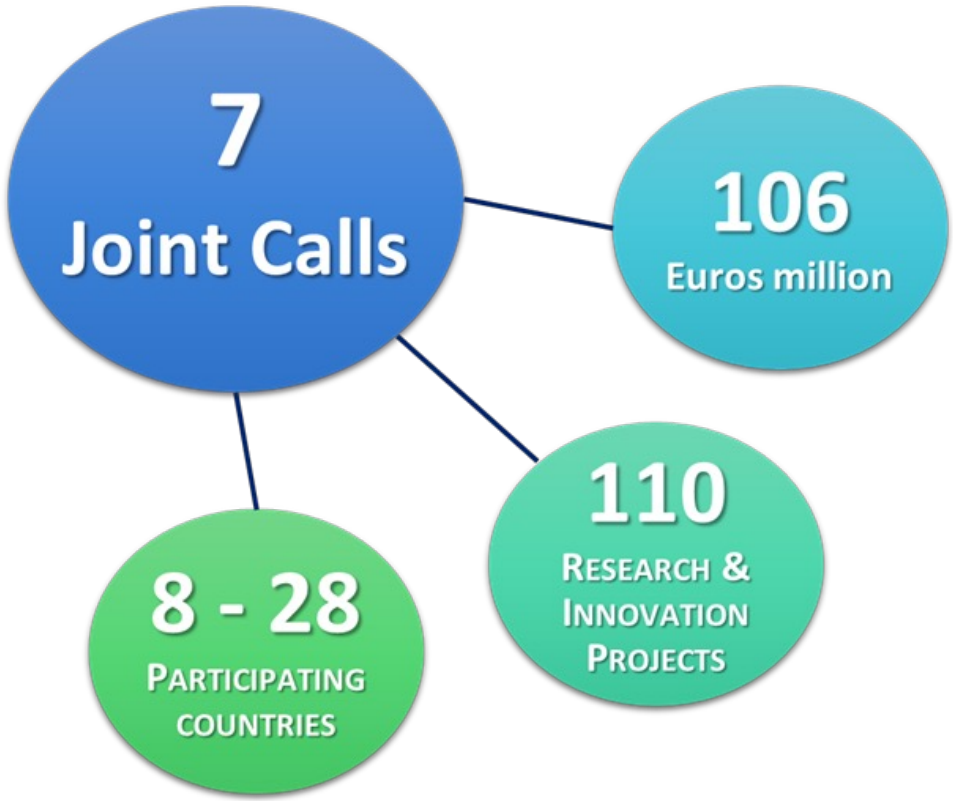
Water JPI Joint Calls:

- 2013 Pilot Call: Emerging Water Contaminants
- 2015 Joint Call: Developing technological solutions for services for water distribution and measurement, wastewater treatment and reuse, desalination, floods and droughts
- 2016 Joint Call: Improving water use efficiency and reducing soil and water pollution for a sustainable agriculture
- 2017 Joint Call: Water resource management in support of the United Nations Sustainable Development Goals (UN SDGs)
- 2018 Joint Call: Closing the water cycle gap - improving sustainable water resources management
- 2020 Joint Call: Risks posed to human health and the environment by pollutants and pathogens present in the water resources
- 2020-2021 Joint Call: Conservation and restoration of degraded ecosystems and their biodiversity, including a focus on aquatic systems



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European Co-funded Partnership Water4All – Water Security for the Planet

Water4All
Water security for the planet

E. Internationalisation

Developing international cooperation agreements
Engaging with UN Water and other international stakeholders
Developing innovative tools for cooperation

B. Research and innovation Development

Joint transnational calls
Thematic annual programming
Young researchers calls
Demo/transfer calls

A. Joint vision & SRIA

SRIA Development
Mapping of programmes and impacts
Development of synergies
Dissemination

D. Demonstrating Solution efficiency

Water Living Labs (LLs) & demos atlas
Network of LLs/demos and roadmap for demonstration implementation
Support to development of new LLs
Market uptake support
Liaising with investors

C. Science – Policy - End-users interface

Knowledge hubs, policy WGs
Support to start-ups creation
PhD scheme; mobility scheme
Vocational training
Capacity building on systemic thinking
Link to research infrastructures
Toolbox for managing water data

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UPCOMING:

Water4All – Water Security for the Planet upcoming 2022 Joint Call on **"Management of water resources: resilience, adaptation and mitigation to hydroclimatic extreme events and management tools ".**

Themes:

1 - Resilience, adaptation and mitigation to hydroclimatic extreme events
2 - Tools for water management in the context of hydroclimatic extreme events
3 - Improved water governance in the context of hydroclimatic extreme events and international contexts

Over 30 Funding Agencies from Europe and abroad participating

Call secretariat: water4all2022_callsecretariat@mur.gov.it
More information: http://www.waterjpi.eu/joint-calls/joint-call-2022-water4all

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For more information…

www.waterjpi.eu

- Website : www.waterjpi.eu
- A Newsletter – Subscribe on line!
- @WaterJPI
- LinkedIn - Water JPI researcher forum group https://www.linkedin.com/groups/8455262
  - Joint Calls announcements & Networking
  - Announcement of events and activities
- A unique contact point
  - waterjpisecretariat@agencerecherche.fr
  - Phone + 33 1 78 09 81 20
- Website: www.water4all-partnership.eu

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The BiodivRestore Cofund Action

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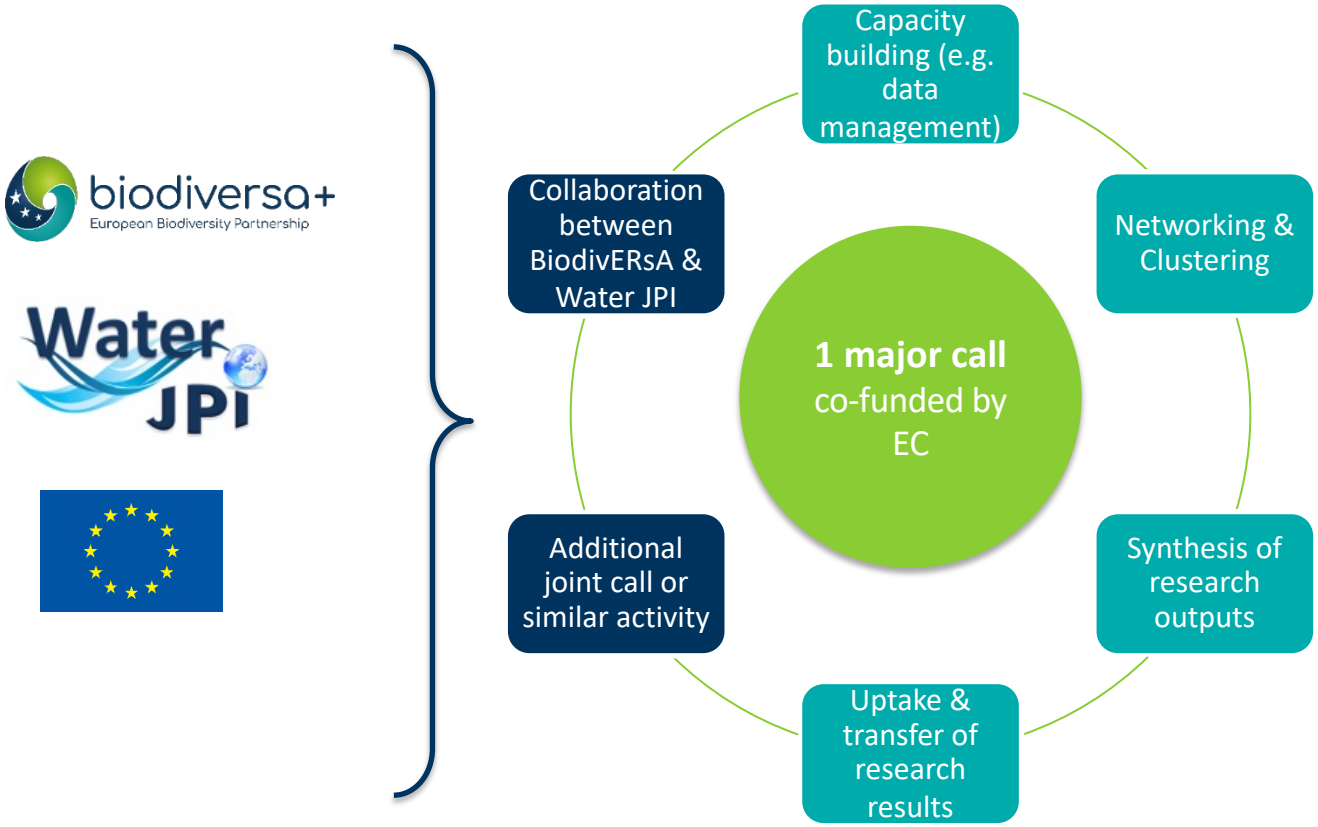
The BiodivRestore ERA Net-Cofund Action



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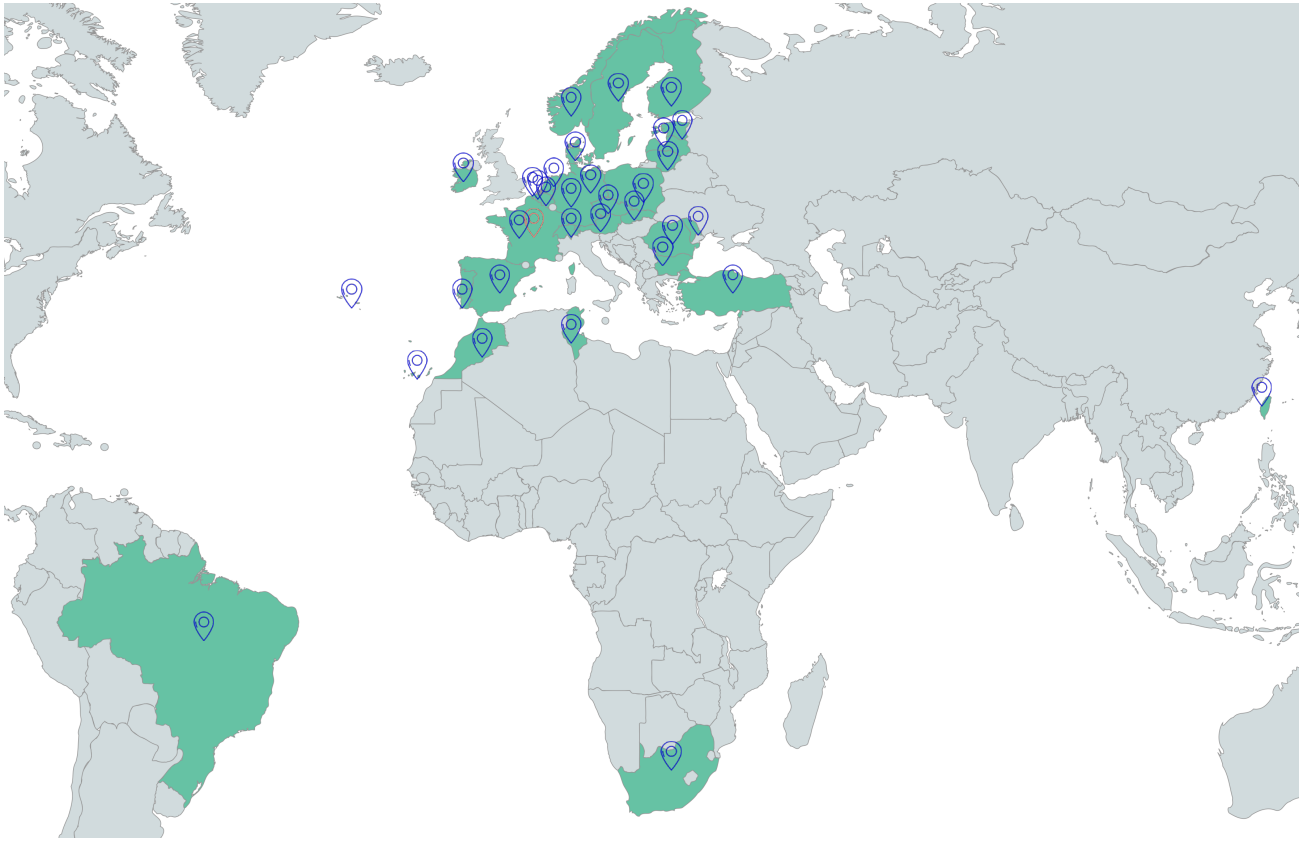
Amplitude of the BiodivRestore research call

31 funding organisations from **27 countries**

Total funding for the Call: **> 21.3M€**



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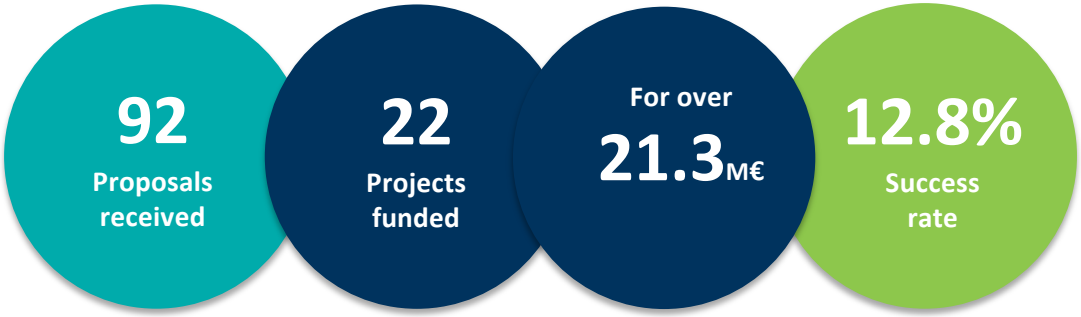
Overview of the BiodivRestore call

Call on **conservation and restoration of degraded ecosystems and their biodiversity, including a focus on aquatic systems**
All ecosystems were eligible



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The success of the call possible thanks to :

✓The Call Secretariat (AEI, in Spain)

✓The funders of the call

✓The European Commission

✓The Evaluation Committee

✓External reviewers

A GREAT THANKS TO ALL!!

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Introduction
General impression on the call and its outputs

***Presented by Judith Fisher (Vice Chair)**, Director Fisher Research Pty Ltd, IPBES Multidisciplinary Expert Panel, IUCN CEM Theme Leader Ecosystems and Invasive Species*

On behalf of the Chair and Vice Chair

***Cara Nelson (Chair)**, Professor of Restoration Ecology (University of Montana, USA); chair of the IUCN Ecosystem Restoration Thematic Group*

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OVERVIEW OF THE 2020-2021 BIODIVERSA AND WATERJPI JOINT CALL ON "Conservation and restoration of degraded ecosystems and their biodiversity, including a focus on aquatic systems"

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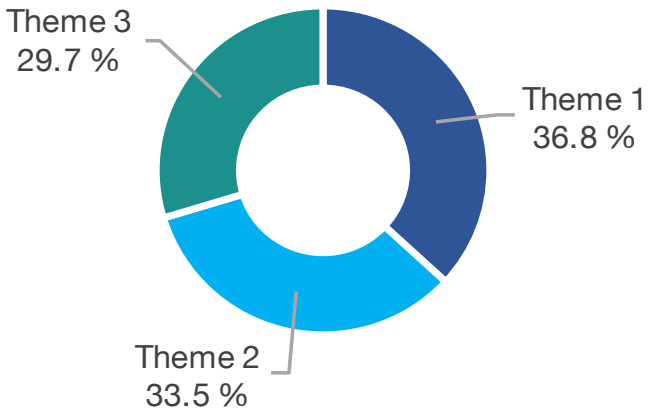
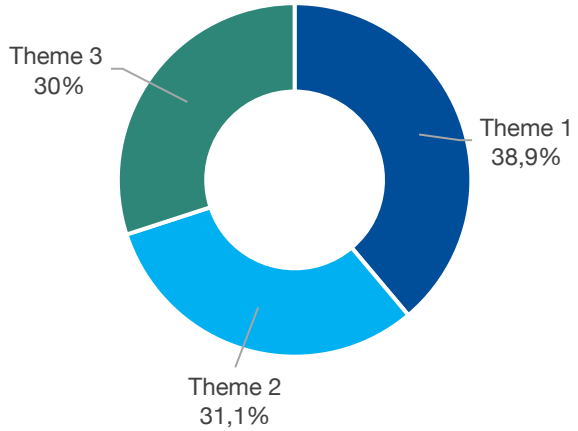
Studied themes

Submitted full proposals



Funded projects



Theme 1 : Studying the biological and biophysical processes at stake for conservation/restoration, and their interactions

Theme 2 : assessing trade-offs and synergies between targets, benefits and policies for conservation and restoration

Theme 3 : knowledge for improving the effectiveness and upscaling of conservation and restoration actions

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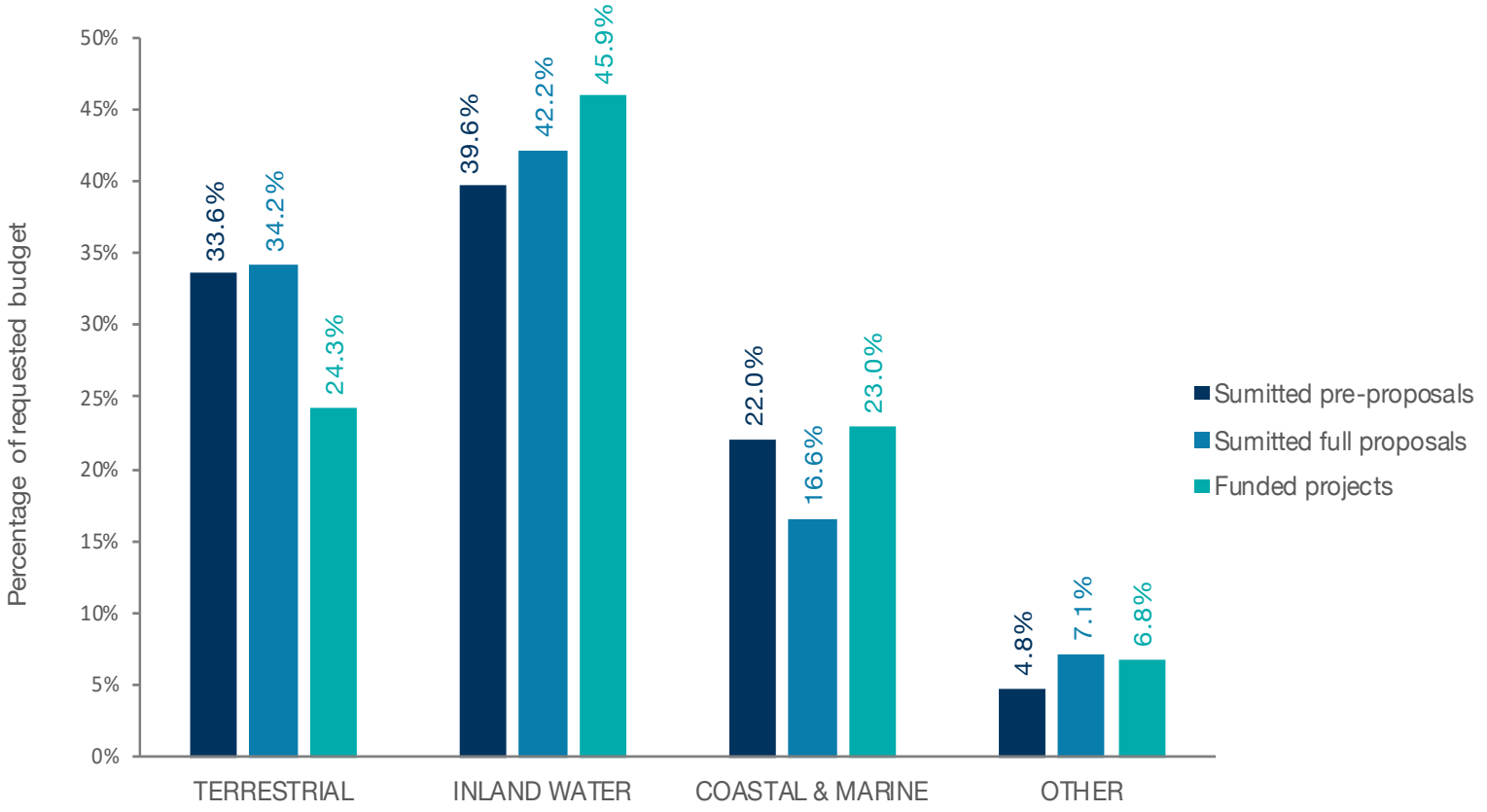
Studied environments



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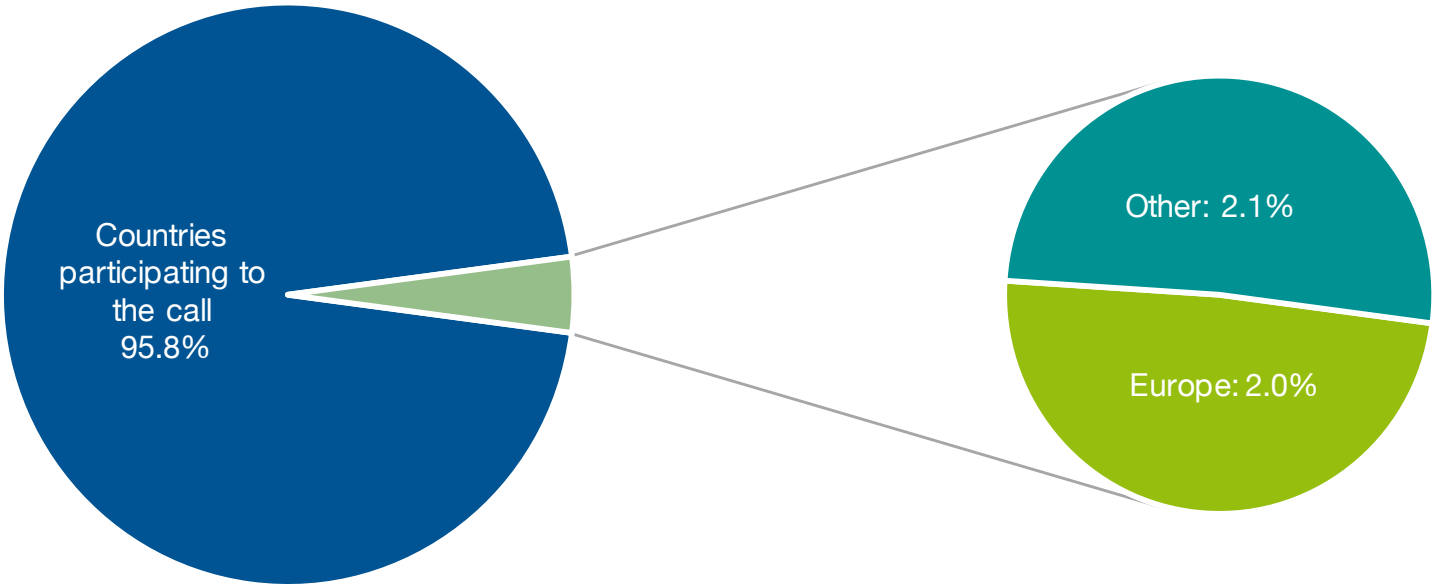
Origin of applicants



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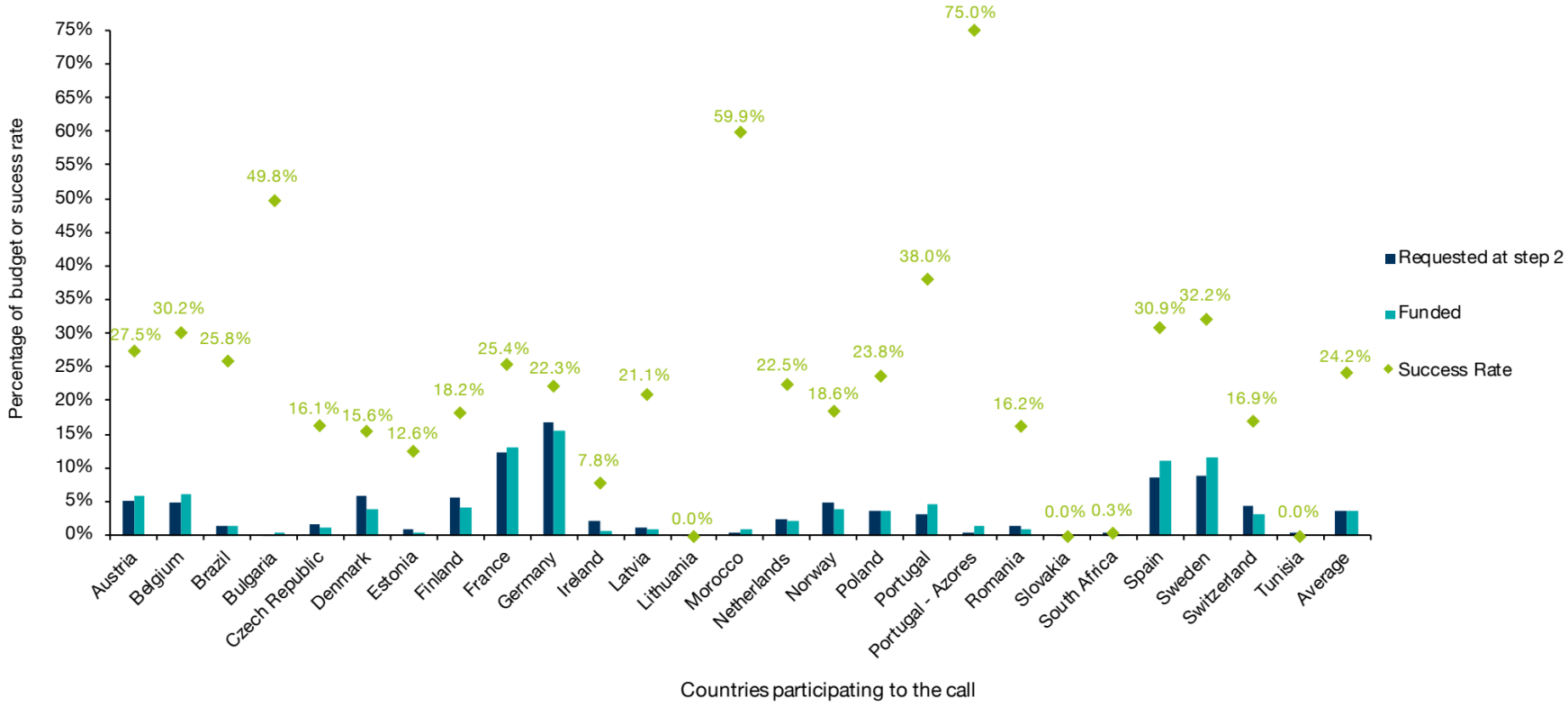
Origin of applicants



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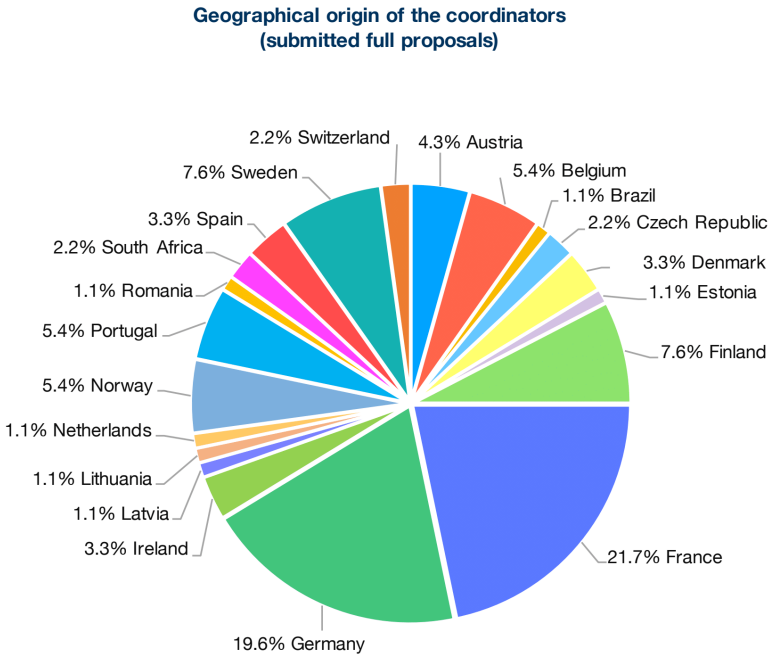
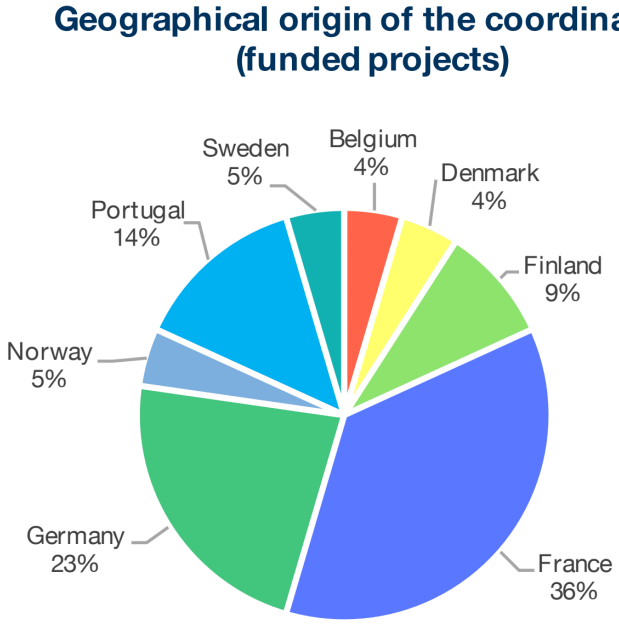
Origin of the coordinators





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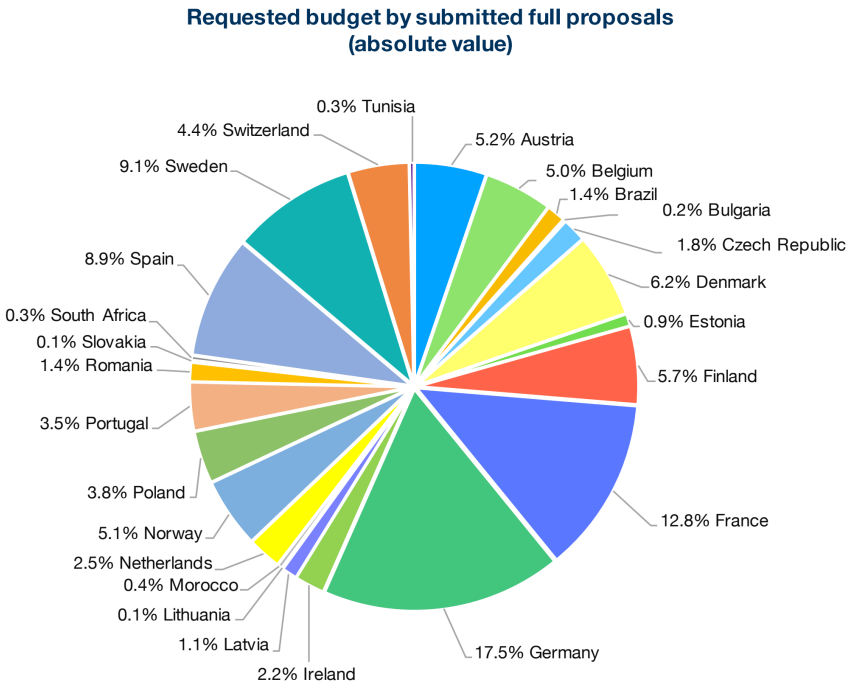
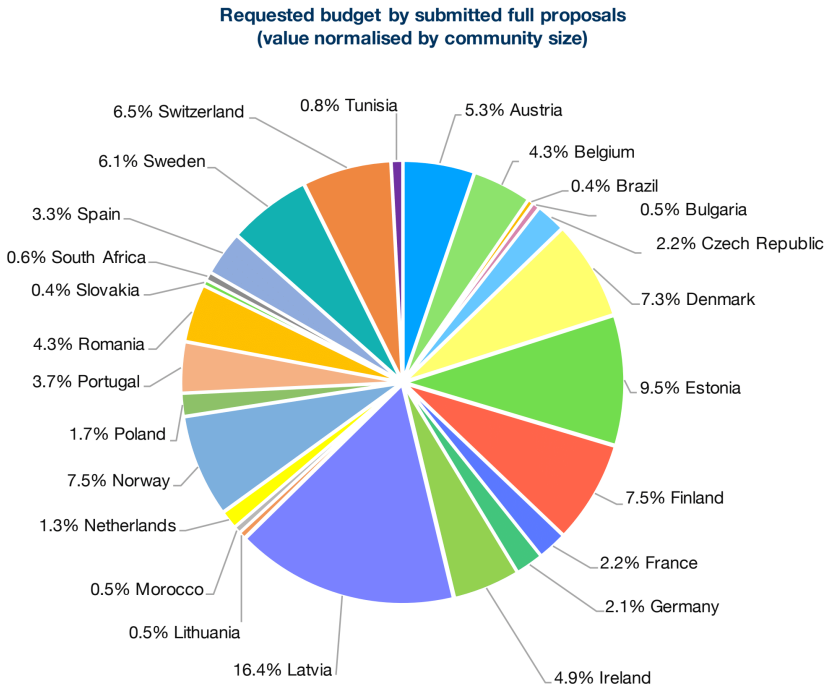
Requested Budget





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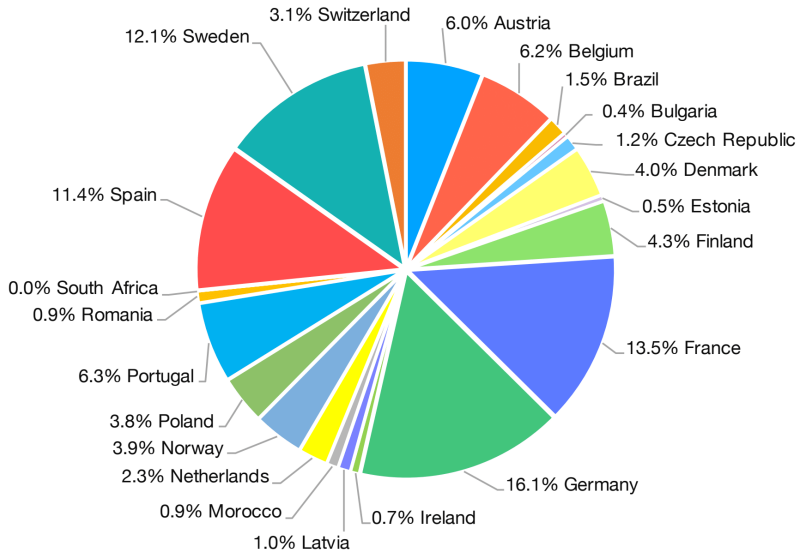
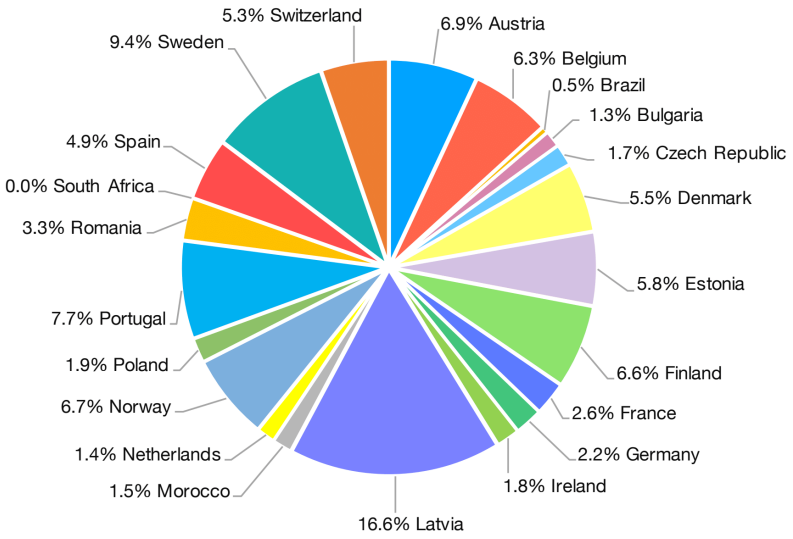
Awarded Budget

Awarded budget to successful proposal (absolute value)



Awarded budget to successful proposal (values normalised by community size)



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OVERVIEW OF THE EVALUATION PROCESS

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Composition of the EvC (Chair: Cara Nelson; Vice-Chair: Judith Fisher)

STEP 1

Scientific experts (21)

Cara Nelson
Asa Aradóttir
Susan Baker
Nana Bolashvili
James Bullock
Michael Brufford
Sarah Clement
Çiğdem Coşkun Hepcan
Carsten Dormann
Myra Finkelstein
Simonetta Fraschetti
Christopher Frissel
Michael Fullen
Jim Hallet
Steven Handel
Antonio Lo Porto
Guillermo Luna Jorquera
Matthew Potts
Bill Slee
Eric Wolanski
Joy Zedler

P/M experts (15)

Judith Fisher
Peter Cochrane
Simon Gardner
Floyd Homer
Colin Hindmarch
Katia Hueso Kortekaas
Manuel Lago
Fernando Magdaleno
Vinod Mathur
Angela Morgado
Ivone Pereira
Jan Plesnik
Sunandan Tiwari
Liette Vasseur
Julia Da Silva Vilela
Sanaa Zebakh

STEP 2

Scientific experts (17)

Cara Nelson
Asa Aradóttir
Susan Baker
Patrick Bohlen
Nana Bolashvili
James Bullock
Michael Brufford
Carsten Dormann
Myra Finkelstein
Adriana Ford
Simonetta Fraschetti
Jim Hallet
Steven Handel
George Kowalchuk
Guillermo Luna Jorquera
Matthew Potts
Bill Slee

P/M experts (11):

Judith Fisher
Peter Cochrane
Simon Gardner
Floyd Homer
Colin Hindmarch
Katia Hueso Kortekaas
Manuel Lago
Fernando Magdaleno
Vinod Mathur
Angela Morgado
Ivone Pereira
Jan Plesnik
Sunandan Tiwari

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STEP 1 :Eligibility check and evaluation

EVALUATION COMMITTEE (EvC)

Each pre-proposal (5-page project description) to be evaluated by :

- **2* scientific members**
- **2* policy/management members**

* one as principal rapporteur and one as secondary rapporteur (reader)

STEP 2 : Eligibility check and evaluation

EVALUATION COMMITTEE (EvC)

Each proposal (16-page project description) to be evaluated by:

- **2* scientific members**
- **2* policy/management members**

* one as principal rapporteur and one as secondary rapporteur (reader)

EXTERNAL REVIEWERS

Each proposal will in parallel be evaluated by external reviewers:

- **2 scientific external reviewers**
- **1 policy/management external reviewer**

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

STEP 1: pre-proposal stage (equal weight)

For Scientific EvC members

- **Fit to the scope of the call (1-5; threshold: 3.5)**
- **Scientific excellence (incl. Novelty and Transnational Added Value) (1-5; threshold: 3)**

For Policy/Management EvC members:

- **Societal and policy impact (incl. contribution to society and/or policy and Transnational added value (1-5; threshold: 3)**

STEP 2: full-proposal stage

For Scientific EvC members and external reviewers

- **Scientific Excellence (1-5; threshold: 3.5) / weight 7**
- **Quality and efficiency of the implementation (1-5; threshold: 3) / weight 3**

For policy/management EvC members and external reviewers:

- **Impact (1-5; threshold: 3) / weight 6**

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Step 1

172 eligible proposals proposals were evaluated by the scientific and policy management evaluation committees

The **discussion was organised in two sub-groups:**

- The scientific EvC members evaluated and scored the proposals following the two criteria "excellence" and "quality and efficiency of the implementation" in one sub-group;

- In parallel the policy/management EvC members evaluated and scored the proposals following the criterion "Impact" in another sub-group

Proposals with high discrepancies of scores between the Rapporteur and the Reader were discussed to allow the appointment of a 3rd reader, where needed, to further discuss problematic proposals

92 proposals were invited to submit a full proposal to the Step 2.

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Step 2 92 Full proposals

Along with the Evaluation Committee

External reviewers reviewed the full proposal with :

- at least 2 scientific external reviewers and
- at least 1 policy/management external reviewer

Each of the 92 proposals were evaluated by 2 scientific evaluation committee members and 2 policy/management evaluation committee members using the same process as Step 1.

On the last day the Evaluation Committee **met in plenary to discuss and agree on the final ranking of projects**

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Outcomes

Reviewers brought a high level of expertise and did a thorough job.

There was a high degree of consistency between rapporteurs and readers in their proposal evaluations for both Scientific and Policy Management Committees.

The call resulted in a large number of exciting, high-quality proposals.

The funded projects have the potential to substantially advance restoration and conservation science and practice.

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Keynote on “Upscaling effective ecological restoration in the EU - Challenges for the scientific community.”

By *Kris Decleer, , Research Institute for Nature and Forest, Belgium*

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Upscaling effective ecological restoration in the EU
Challenges for the scientific community

Kris Decleer

info@ser-europe.org · http://ser-europe.org/

Restoration Resource Center: https://www.ser-rrc.org/

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Legal restoration framework in the EU

Binding restoration targets:

- Birds and Habitats Directive
- Water Framework Directive
- Marine Strategy Framework Directive
- Invasive Alien Species Regulation
- Upcoming: Nature Restoration Regulation
  - Deadlines
  - Area and quality targets for ecosystems
  - Bring nature back to agricultural and urban land
  - Reverse the decline of pollinators
  - Increase the quantity of forests and improve their health and resilience
  - Restore at least 25,000 km of rivers to a free-flowing state by 2030
  - Rewetting of drained peatlands
- Upcoming: Soil Health Directive

Non-binding restoration targets (Biodiversity Strategy 2030)

- Legally protect at least 30% of the EU's land area and 30% of its seas
- Effectively manage all protected areas, defining clear conservation objectives and measures + monitoring

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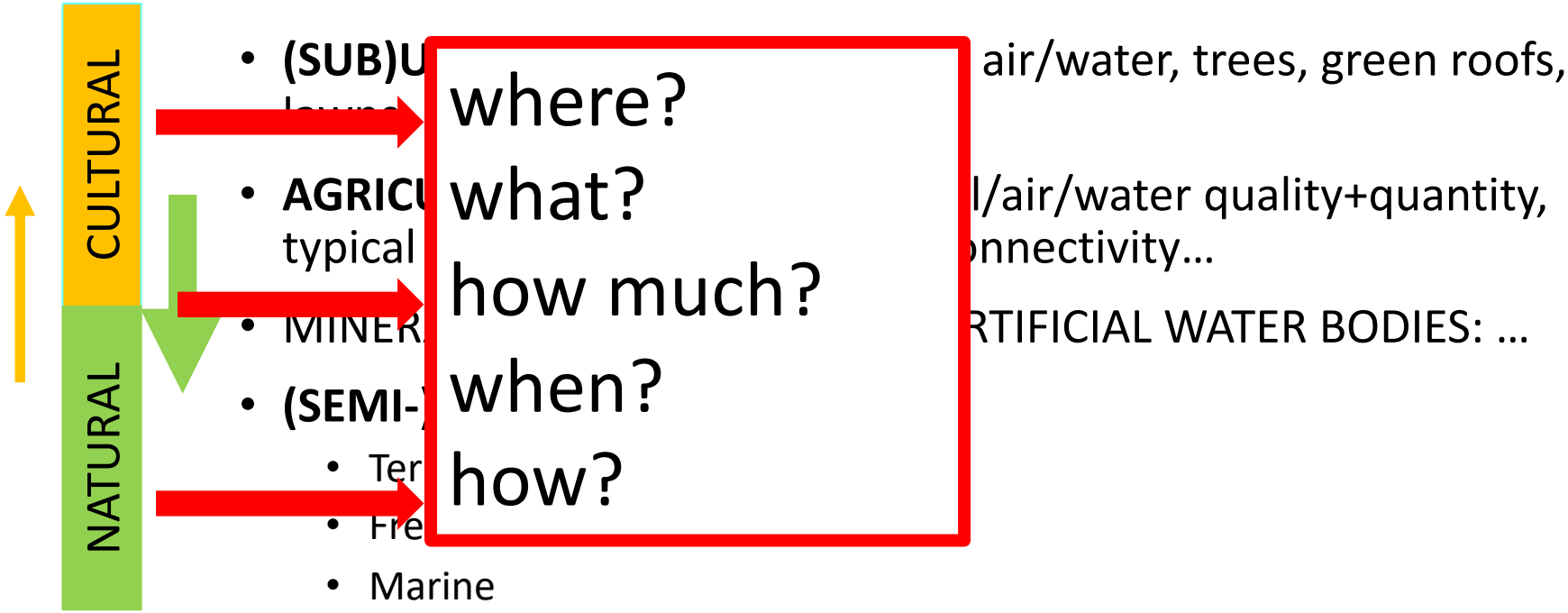
What does it mean for:



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Challenges for the scientific community

1. Quality of restoration

2. Quantity of restoration

3. Monitoring and reporting

4. Knowledge transfer, Training, Awareness

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Challenge 1: Quality of restoration

- Restoration is a continuum
  - Different baselines and ambition levels
  - Assessment of degradation: drivers, pressures, state, impact…
  - Targets: reference conditions (conflicting views!)
- Actions: cost-effective
- Results: sustainable (resilient to climate change + socio-economic context)
- Multidisciplinary approach: reducing barriers for successful ecological restoration

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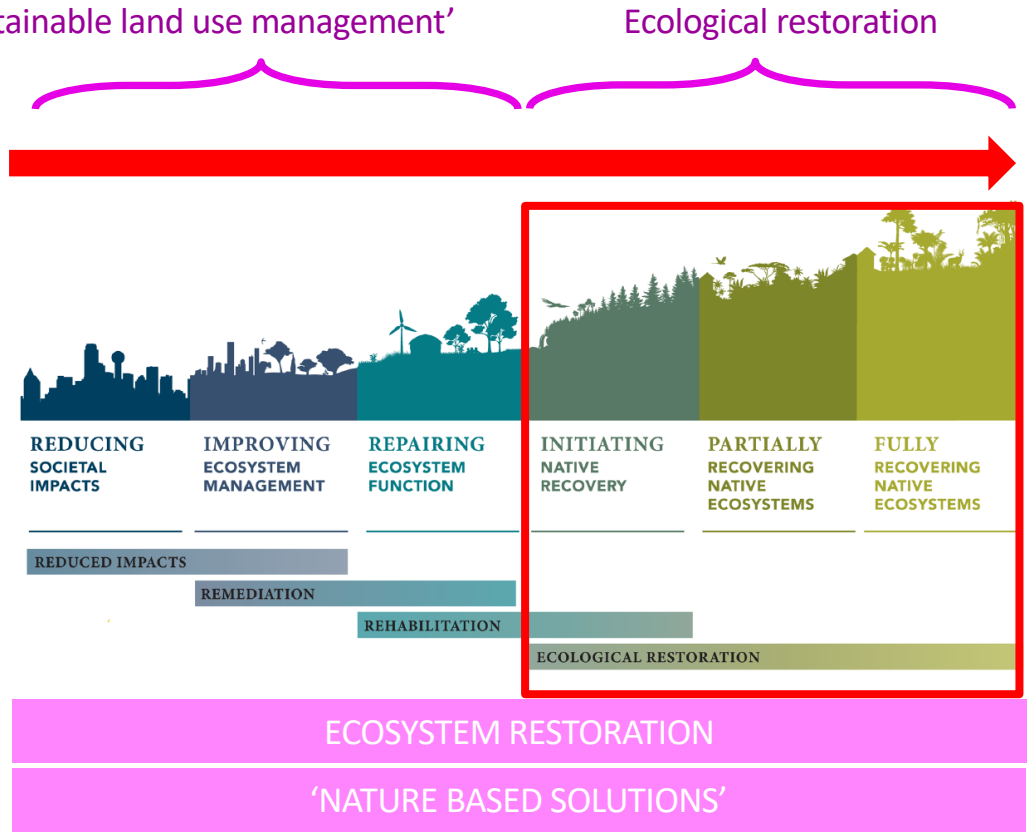
The restoration continuum concept



Ecological Restoration: the **process** of assisting the (full) **recovery of a native ecosystem** that has been degraded, damaged or destroyed.

Remediation: remove sources of degradation

Rehabilitation: reinstate a level of ecosystem functioning where the goal is renewed and ongoing provision of ecosystem services (**rather than biodiversity and integrity of a native reference ecosystem**)

Gann et all. 2019: SER principles and standards for ecological restoration https://www.ser.org/page/SERStandards

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The case of degraded peatlands in the EU
EU is worldwide the 2nd largest emitter of greenhouse gasses due to peatland drainage.

In Germany peatland agriculture causes annually a climate damage of € 3.6 billion and gets € 300 million EU-grants

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Remediation of arable fields on drained peat soil

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Rehabilitation: Paludiculture / Carbon farming (wet agriculture/forestry)

Tobias Dahms, lensescape.org

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Ecological restoration: full recovery of the reference ecosystem (raised bog)

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THE IRISH TIMES

Wed, Nov 20, 2019

NEWS | SPORT | BUSINESS | OPINION | LIFE & STYLE | CULTURE

Environment › Climate Change | Heritage & Habitat

More than half a million trees to be planted on former boglands

The focus will be on native woodland trees such as Downy Birch, Scots Pine and Alder

Wed, Oct 2, 2019, 19:45

Shauna Bowers

Minister for Agriculture Michael Creed and Minister for Climate Action and Environment Richard Bruton announced Coillte and Bord na Móna are collaborating on a project which will see bogs no longer used for peat production transformed into rich native woodlands. Photograph: Julien Behal

More than half a million native woodland trees will be planted on former boglands over the next three years in a bid to tackle carbon emissions, the Department of Environment has announced.

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Alternative trajectory for Ecological Restoration: reference ecosystem = lake

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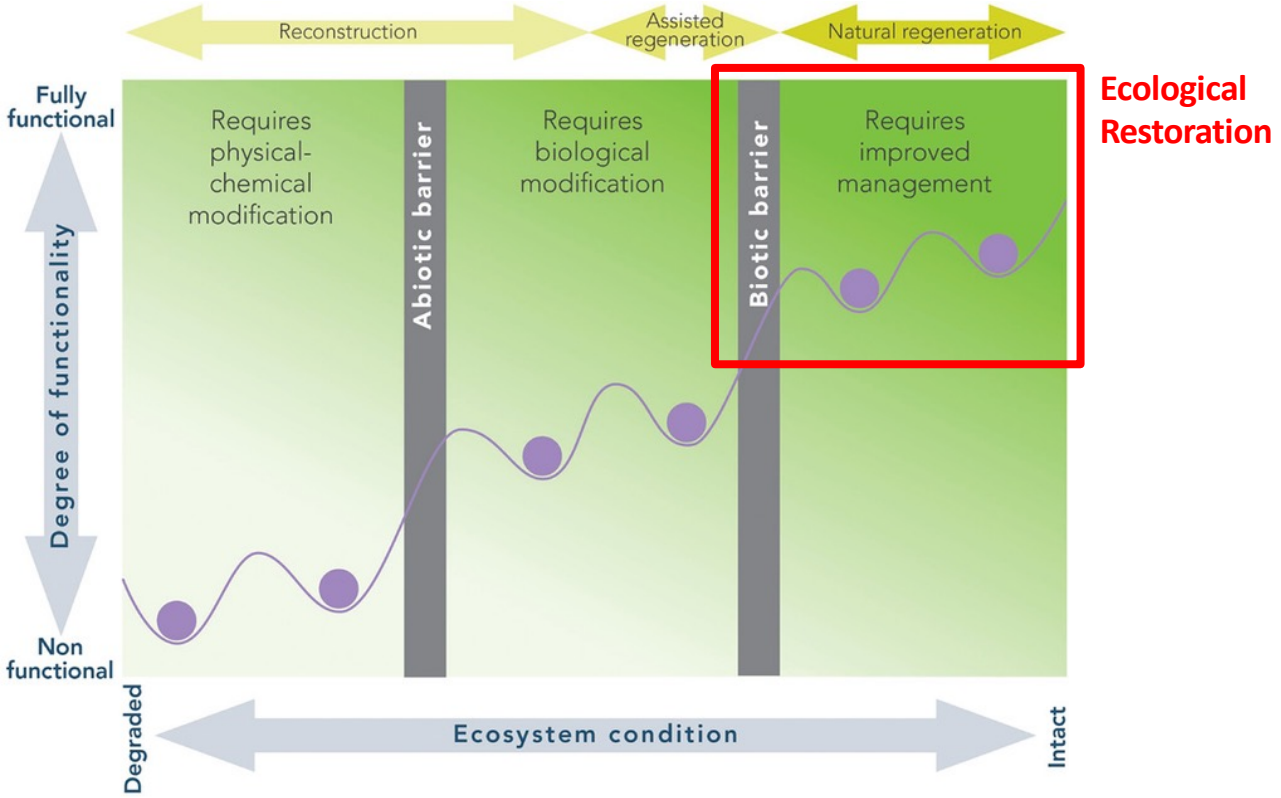

Conceptual model of ecosystem degradation and restoration (Adapted from Keenleyside et al. 2012, after Whisenant 1999, and Hobbs & Harris 2001). The troughs in the diagram represent basins of stability in which an ecosystem can remain in a steady state prior to being shifted by a restoration or a degradation event past a threshold (represented by peaks in the diagram) toward a higher functioning state or a lower functioning state. Note: Not all sites in need of physical/chemical amendment depend upon reintroduction for the return of biota - e.g. if colonization potential in that ecosystem is high.

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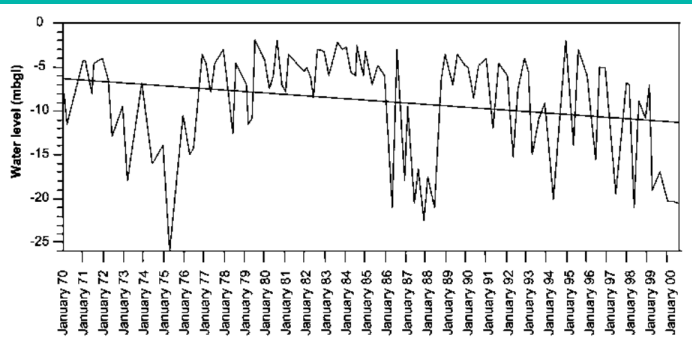
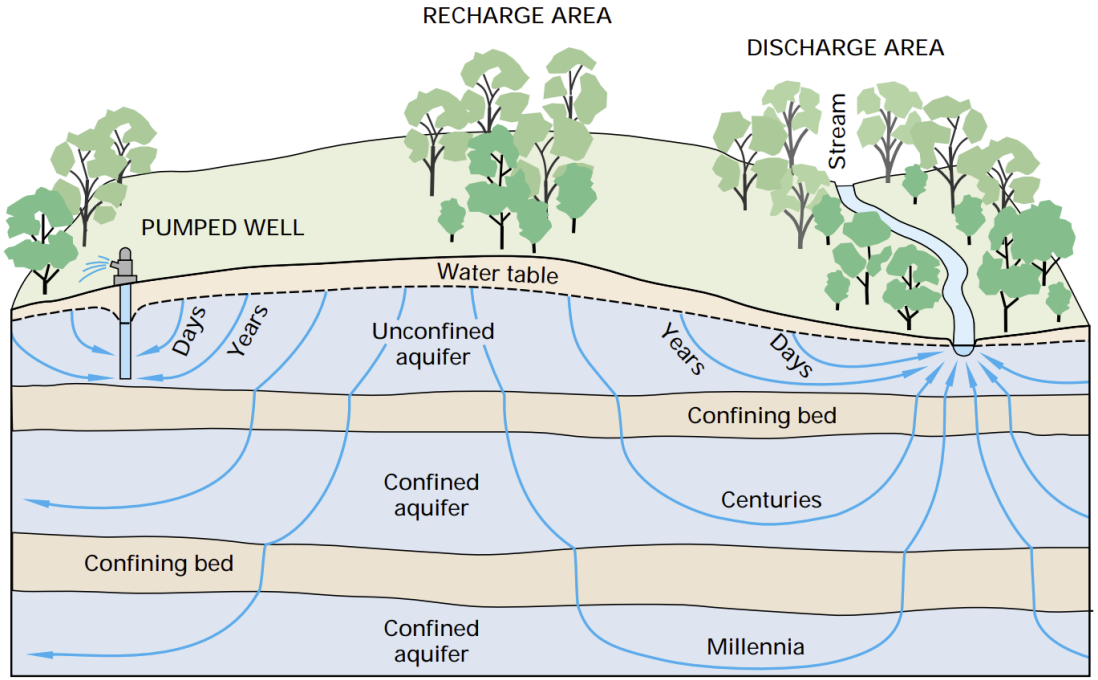
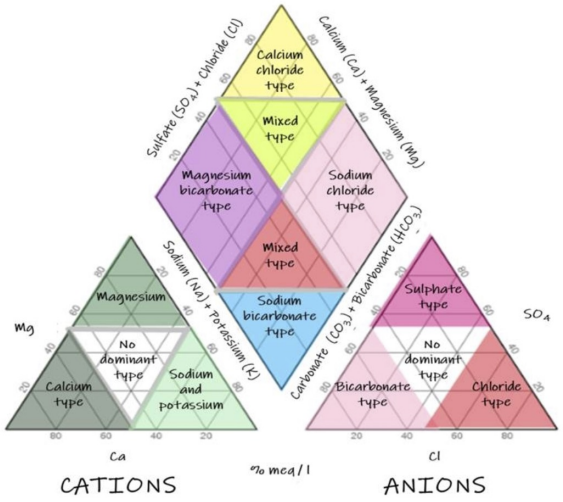
Understanding the landscape-ecological functioning in the PAST and PRESENT







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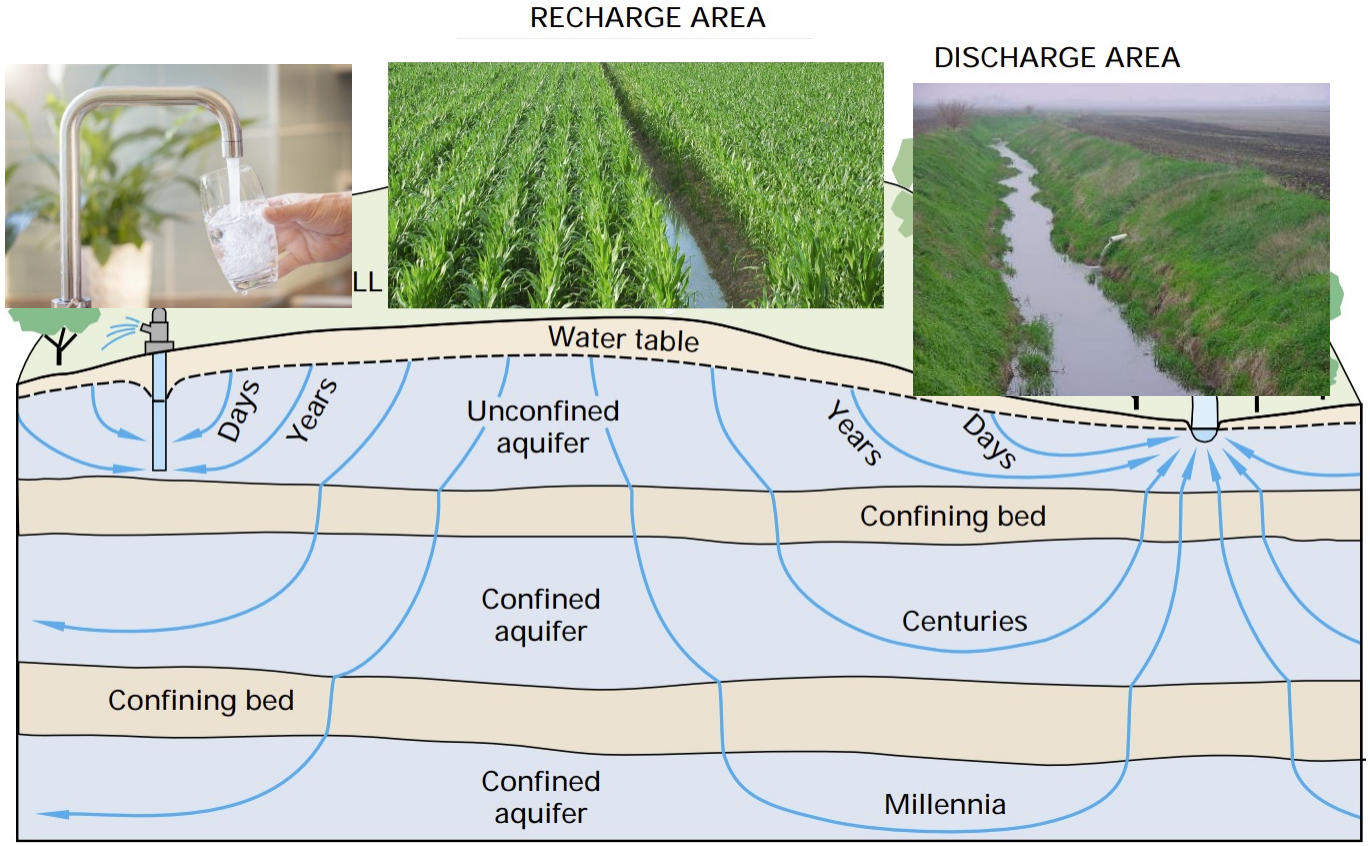
Present degraded state: restoration potential? Restoration measures?



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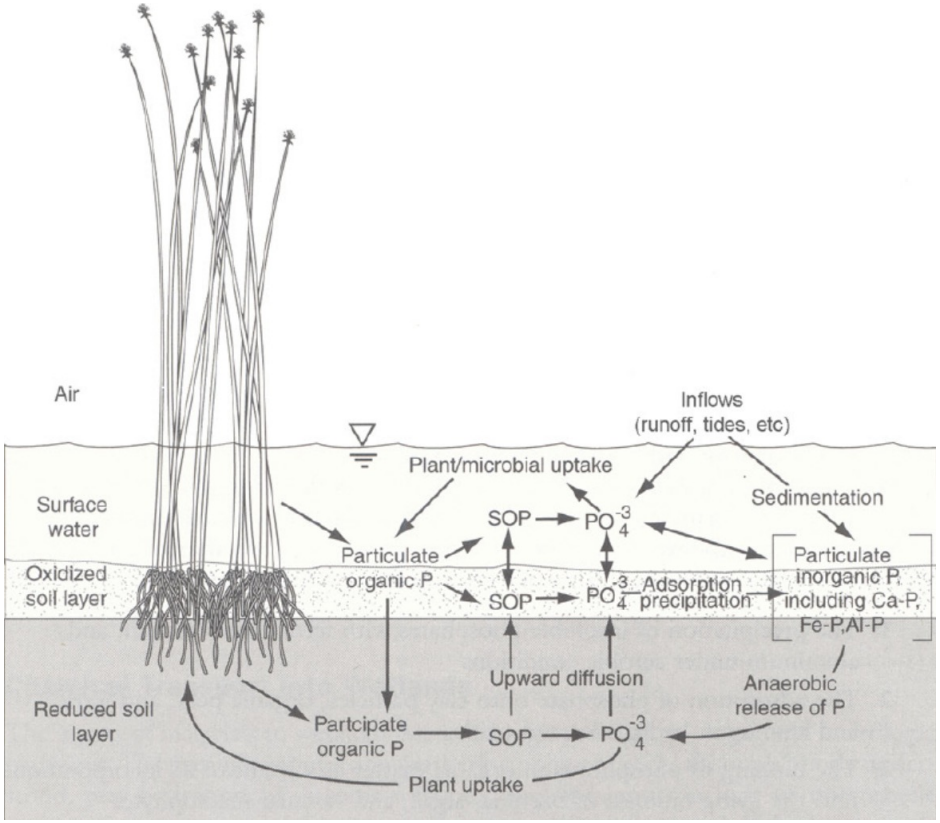
Scientific guidance needed in the design phase of restoration projects



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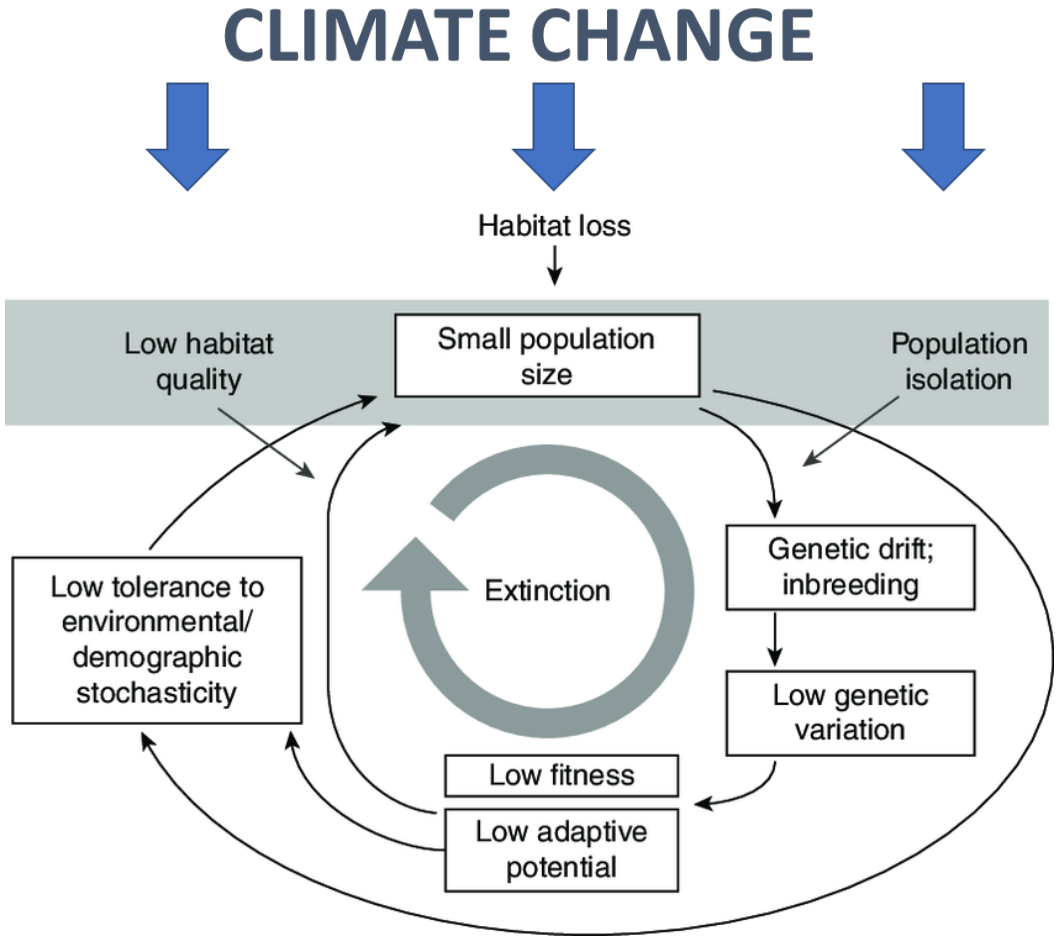

Precautionary measures to establish resilient ecosystems

- Extinction debt
- Ecological trap
- Dark diversity
- Large areas with landscape gradients
- Connectivity
- Maximal reduction of pressures
- Monitoring

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33 reasons (not) to fail

1	**Insufficient funding**	Financial
2	**Conflicting interests of different stakeholders**	Social-cultural
3	**Low political priority for restoration**	Policy and governance
4	**Lack of integrated land use planning**	Legal and ownership
5	**Difficulty in obtaining legal or property rights over the area to implement restoration**	Legal and ownership
6	**Harmful subsidies favouring degradation**	Financial
7	**Lack of collaboration between different stakeholders**	Social-cultural
8	Lack of evaluation, monitoring and documentation	Management planning, implementation
9	**Lack of appropriate compensation and financial returns on restoration**	Financial
10	**Lack of coordination between decision-makers in different domains and administrative departments**	Management planning, implementation
11	**Complexity of the legal framework**	Legal and ownership

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9	Lack of appropriate compensation and financial returns on restoration	Financial
10	Lack of coordination between decision-makers in different domains and administrative departments	Management planning, implementation
11	Complexity of the legal framework	Legal and ownership
12	Unsuitable policies and lack of enabling policy instruments	Policy and governance
13	High level and rate of degradation	Environmental
14	Inadequate implementation of current policies	Policy and governance
15	The timing of restoration projects does not correspond to ecological and social timescales	Management planning, implementation
16	Lack of understanding and collaboration across different aspects of restoration, e.g., ecology, engineering, social sciences, etc.	Social-cultural
17	Constraints due to biotic challenges e.g. concerning species dispersal rates, interspecific interactions, etc.	Environmental
18	Lack of effective knowledge exchange	Social-cultural
19	Lack of motivation in decision-makers to incorporate innovation	Management planning, implementation
20	Lack of prior evaluation, assessment and design	Management planning, implementation
21	Lack of societal awareness and engagement	Social-cultural
22	Lack of involvement of the private sector	Management planning, implementation
23	Lack of relevant ecological knowledge and experience	Management planning, implementation
24	Perceived complexity of implementing restoration	Legal and ownership
25	Constraints due to abiotic characteristics of the area, e.g. climate, topography, water availability	Environmental
26	Unrealistic or unclear project goals	Management planning, implementation
27	Lack of standards against which progress can be measured	Management planning, implementation
28	Lack of quality plant material (including lack of suitable species and genotypes)	Environmental
29	Lack of skilled professionals to perform restoration	Management planning, implementation
30	Lack of knowledge about soils	Management planning, implementation
31	Conflicts between restoration goals, e.g. biodiversity, climate change mitigation, nutrient retention	Environmental
32	Lack of sense of identity, attachment to the landscape	Social-cultural
33	Lack of suitable technology	Management planning, implementation

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Challenge 2: Quantity of restoration

- 30% protected area, 10% strictly protected area per biogeographical region + objectives + actions

- National Restoration Plan for ecosystem groups + Prioritization
- Mitigation and adaptation to climate change
- Connectivity + buffering + cross-border coordination
- ‘Forgotten’ habitats and species

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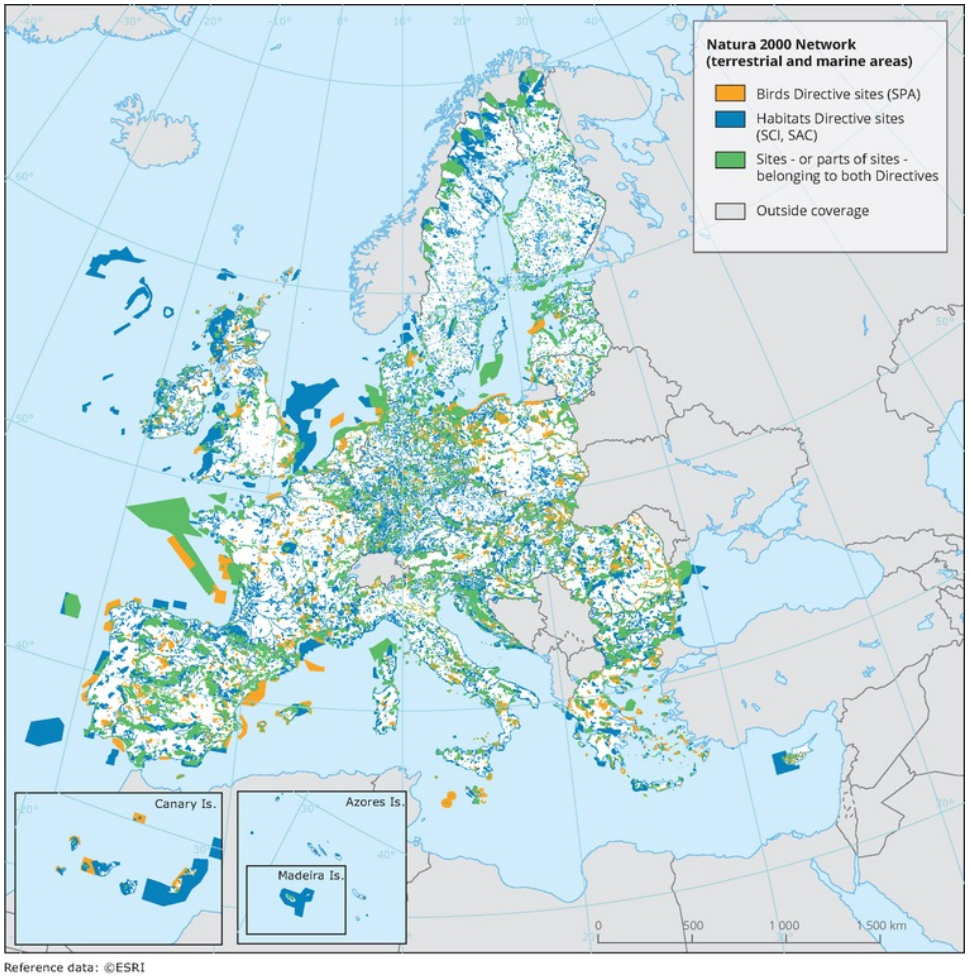

Natura2000:

- 18% of the land
- 8% of marine waters

But:

Each biogeographical area: 30%

https://ec.europa.eu/environment/publications/criteria-and-guidance-protected-areas-designations-staff-working-document_en

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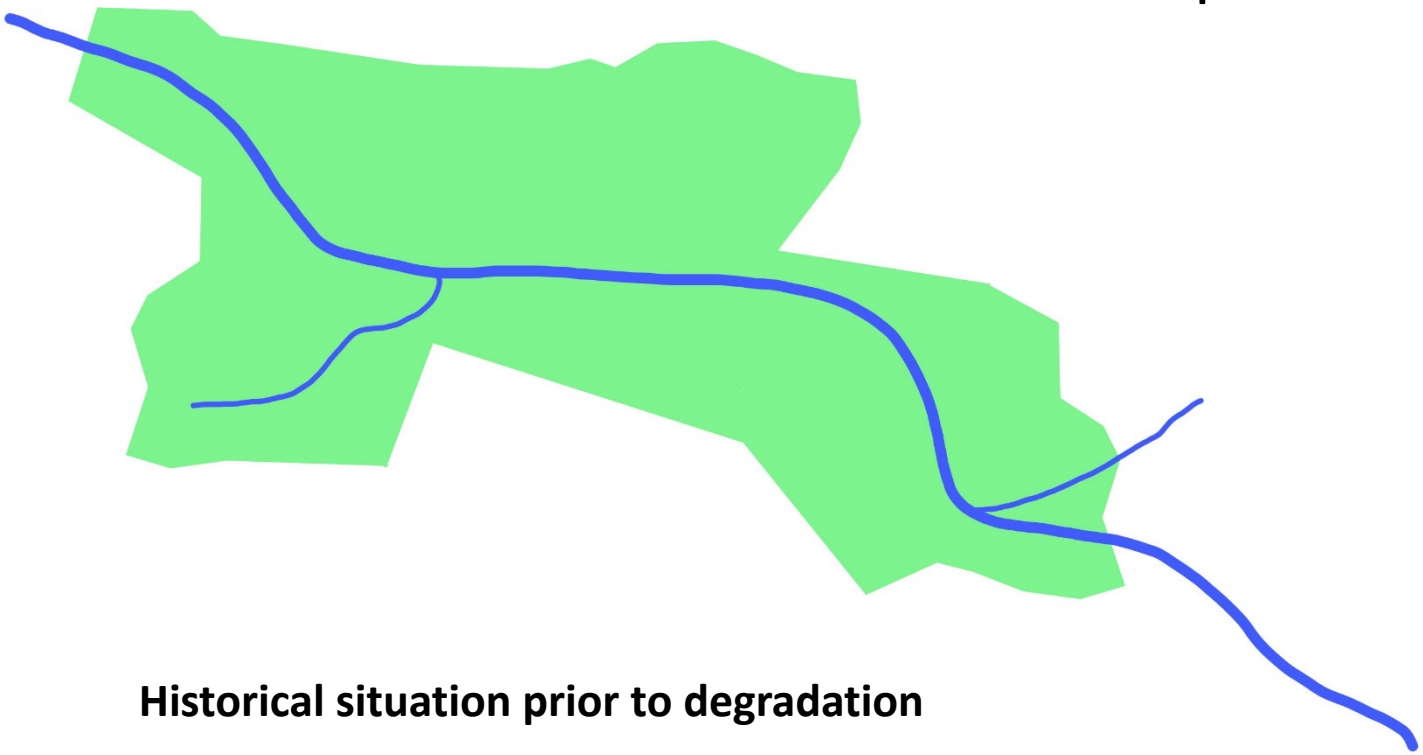
30% PA process



Historical situation prior to degradation

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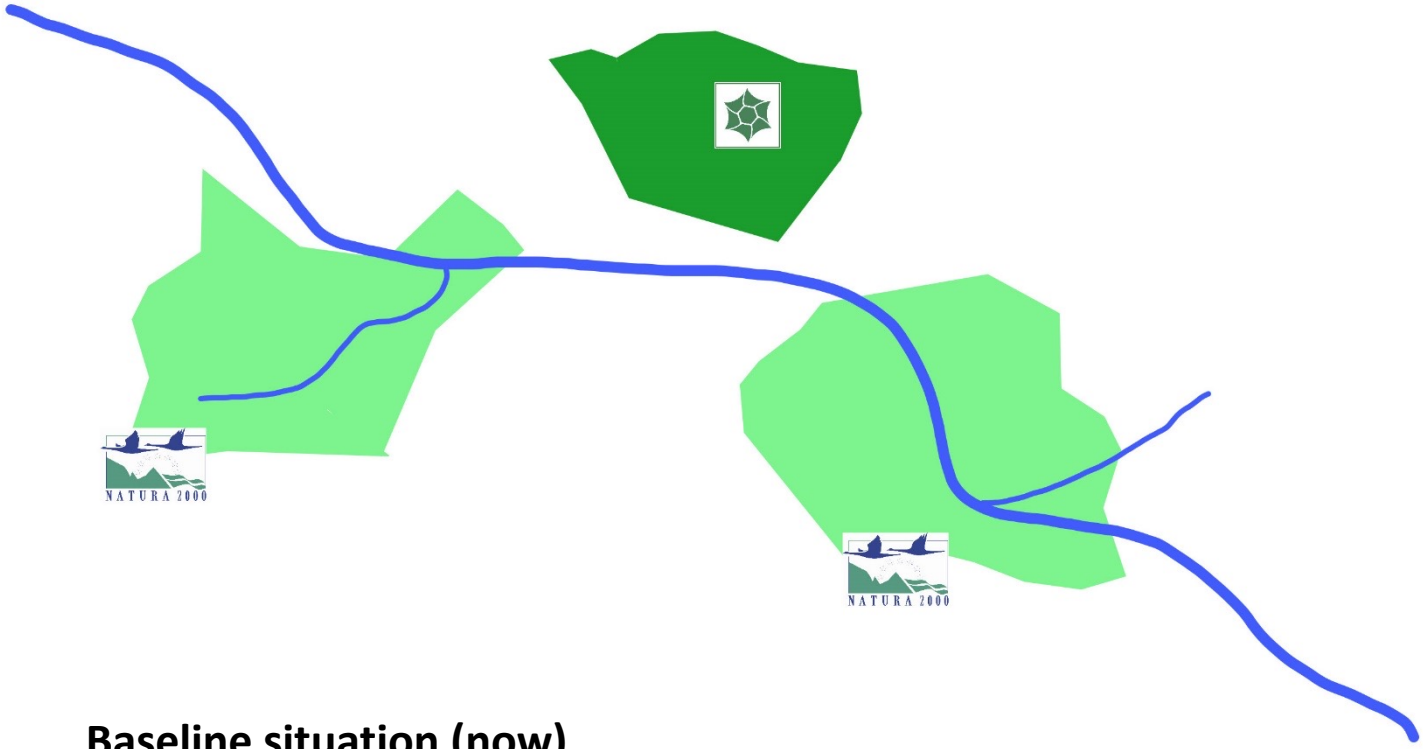
30% PA process



Baseline situation (now)

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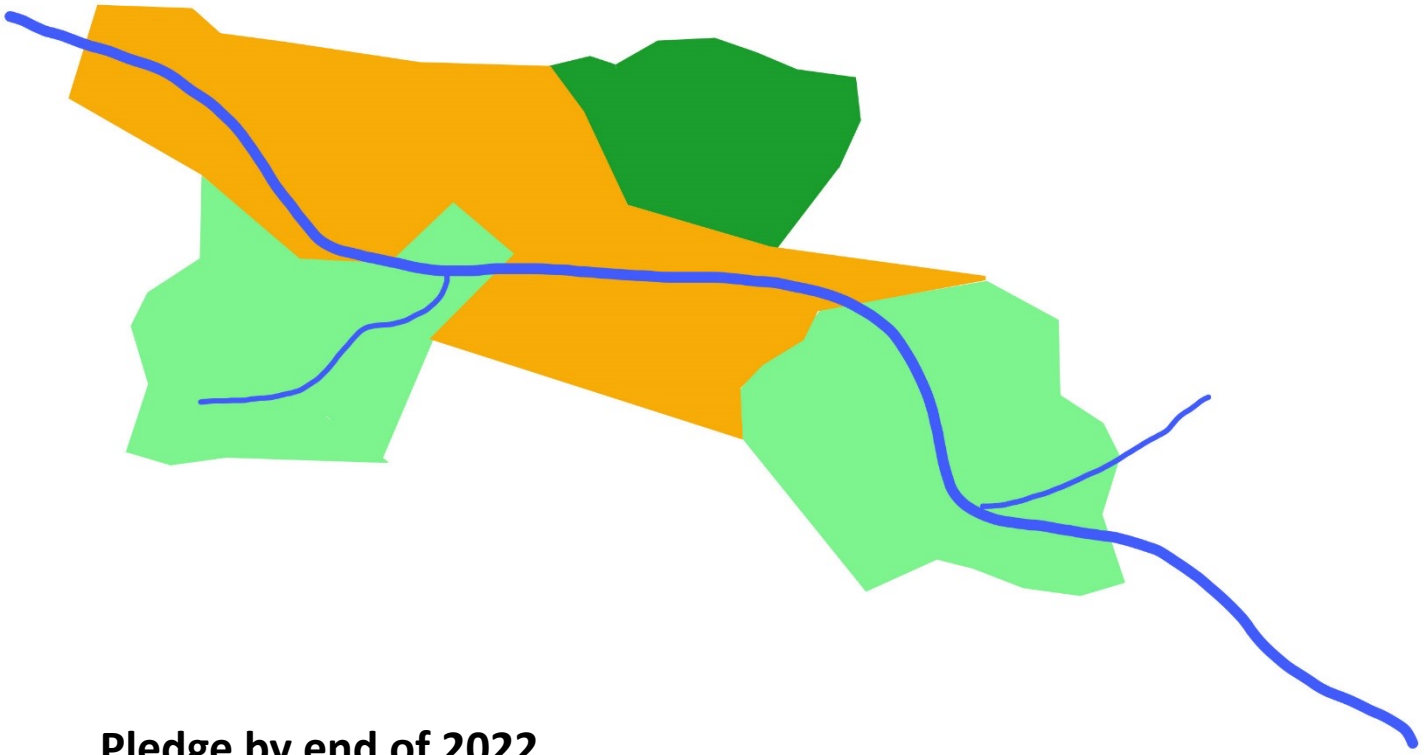
30% PA process



Pledge by end of 2022

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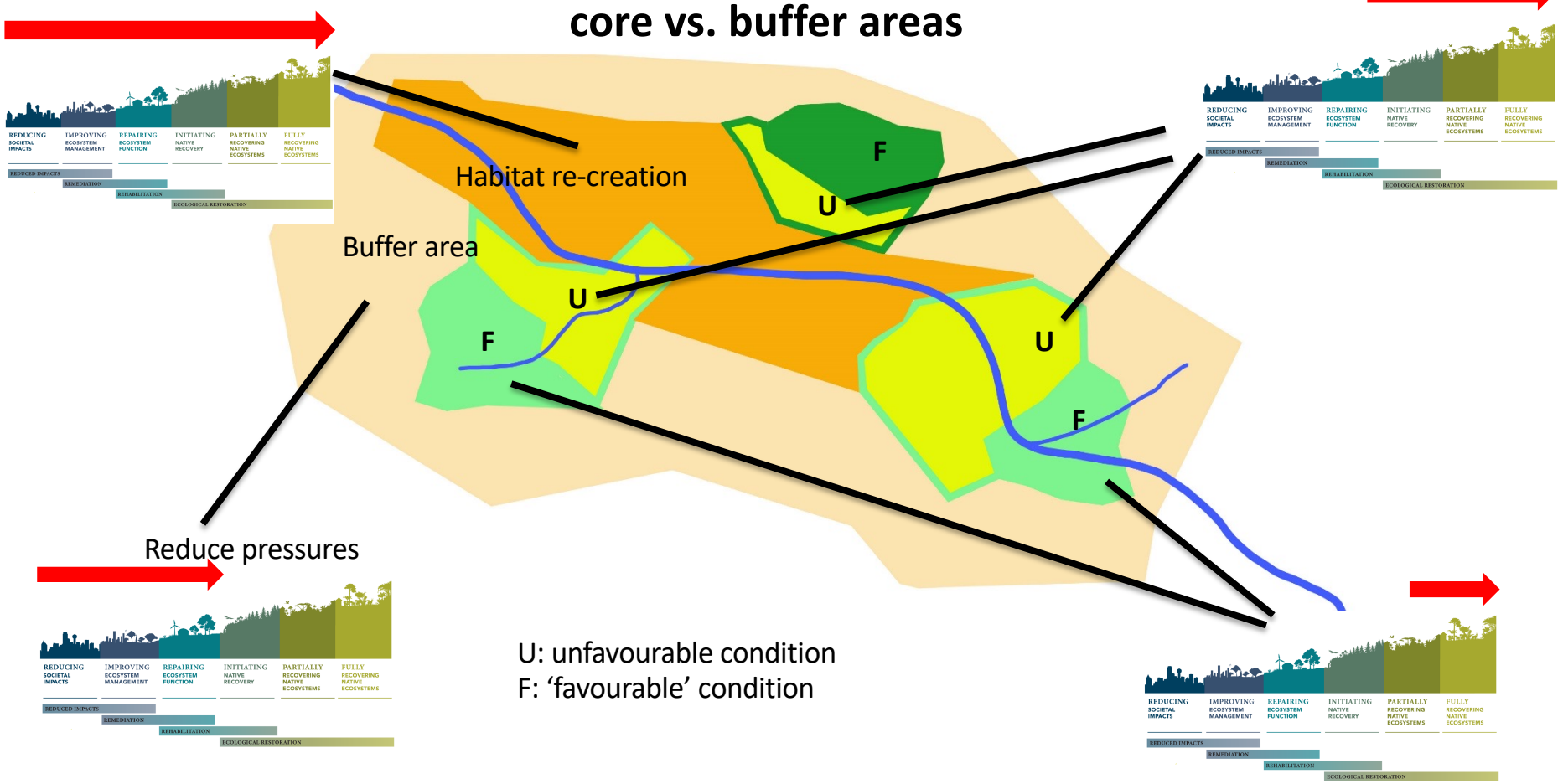
National Restoration Plans: different site-specific objectives core vs. buffer areas



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Case-study

Flanders lost 75% of its wetlands since the 1950-60's

-142.000 ha → agriculture

-37.000 ha → urbanisation

Decleer et al. 2016. Mapping wetland loss and restoration potential in Flanders (Belgium): an ecosystem service perspective. *Ecology and Society* 21(4):46.

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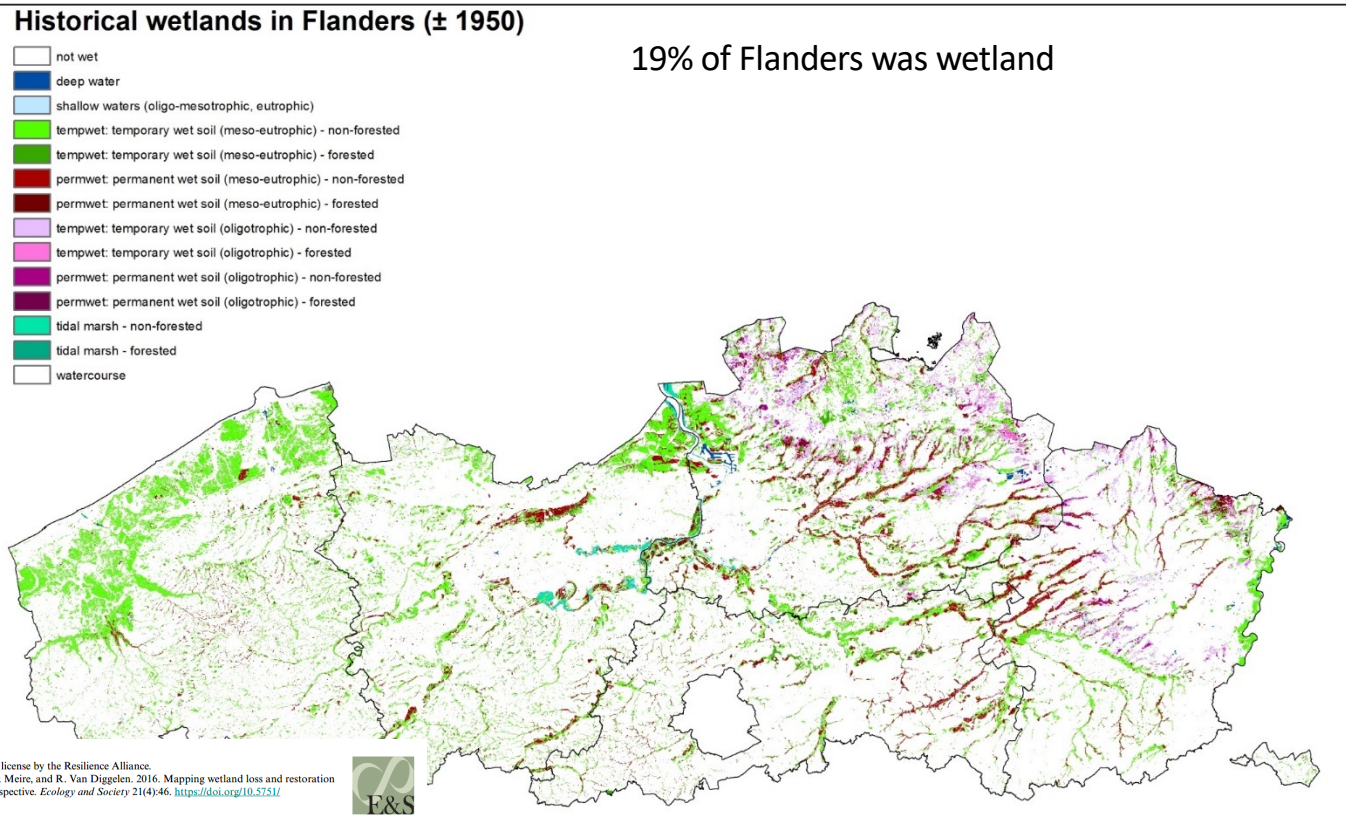
Historical wetlands in Flanders (± 1950)



19% of Flanders was wetland

Decleer, K., J. Wouters, S. Jacobs, J. Staes, T. Spanhove, P. Meire, and R. Van Diggelen. 2016. Mapping wetland loss and restoration potential in Flanders (Belgium): an ecosystem service perspective. *Ecology and Society* 21(4):46. https://doi.org/10.5751/ES-08964-210446

Research, part of a Special Feature on Ecological Restoration, Ecosystem Services, and Land Use

Mapping wetland loss and restoration potential in Flanders (Belgium): an ecosystem service perspective

Kris Decleer [1], *Jan Wouters* [1], *Sander Jacobs* [1], *Jan Staes* [2], *Toon Spanhove* [1], *Patrick Meire* [2] *and Rudy van Diggelen* [2]

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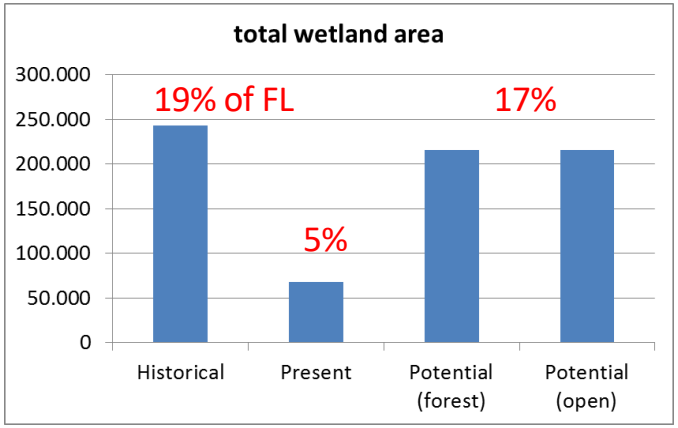
Flanders
State of the Art

Total wetland area in Flanders



- **75% (179,000ha) lost since 1950's: 37,000ha (15%) by urbanisation; rest (85%) by agricultural intensification**
- **At present: still 5% of Flanders is 'wetland' (68,000 ha, but 24,000 ha has no spatial protection)**
- **147,000ha can be restored; 30% (49,000 ha)** has appropriate spatial planning and protection status to justify wetland expansion

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Wetland expansion in Flanders by 2050 as part of Natura2000 policy

	Min-max expansion target (ha)	proportion of 'restoration opportunity' (%)
Temporary wet soil (meso-eutrophic)	3,490-6,275	4-8
Temporary wet soil (oligotrophic)	128	1
Permanently wet soil (meso-eutrophic)	551-775	2-3
Permanently wet soil (oligotrophic)	736-966	19-25
Tidal marsh	2,491	26
Shallow water (oligo-mesotrophic & eutrophic)	1,485-2,366	?
TOTAL	8,892-13,002	?
TOTAL excl. open waters	**7,406-10,636 ha**	**5-7***

* but: **30% (49,000 ha) of 147,000 ha** potential wetland already has appropriate spatial planning and protection status to justify wetland expansion

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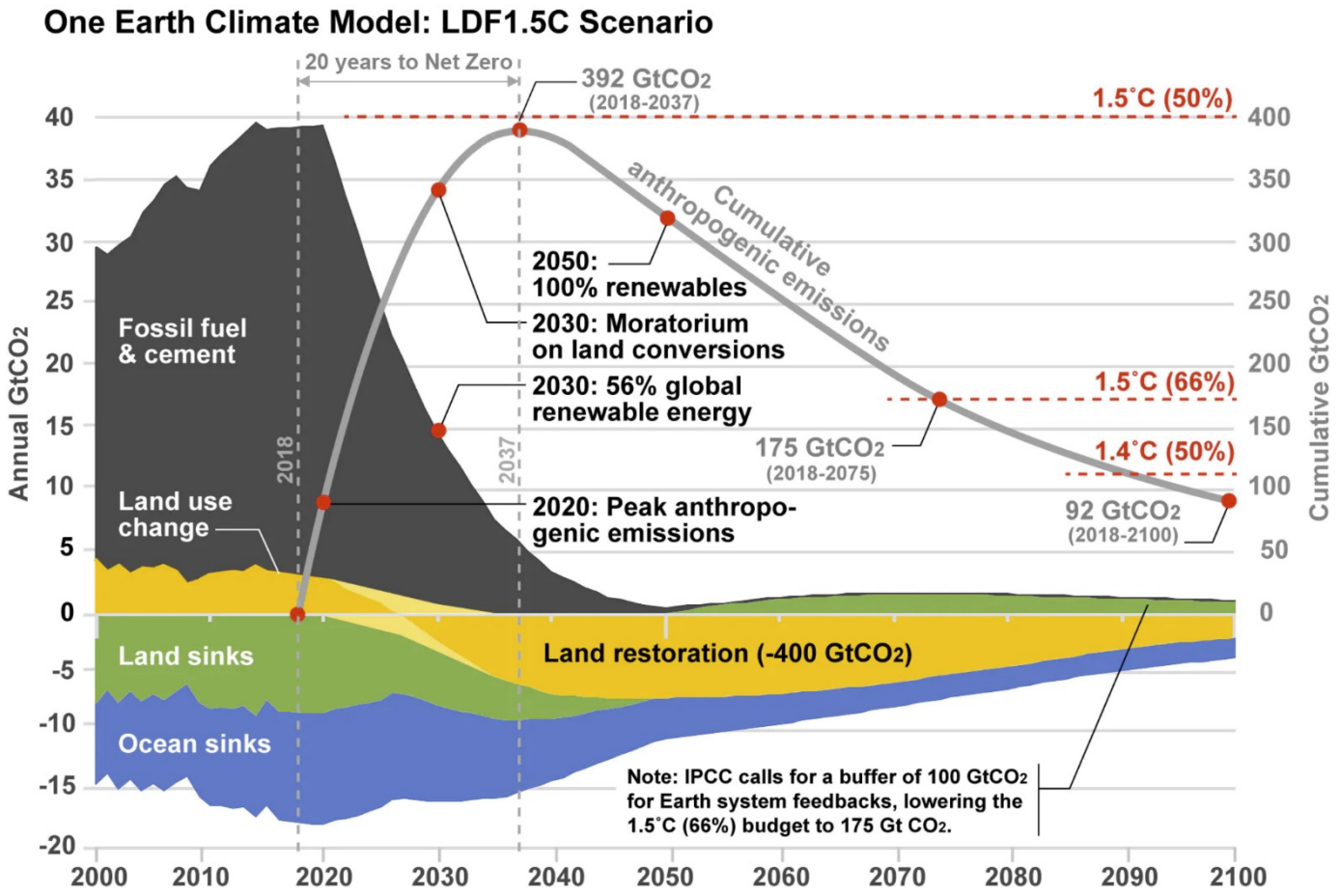

Teske, S. (2019) (ed.)

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Challenge 3: Monitoring and reporting

- Indicator selection
- Thresholds (targets)
- Both project level and national monitoring network
- Baseline situation and distance-to-target
- Evaluation for adaptive management, reporting and communication

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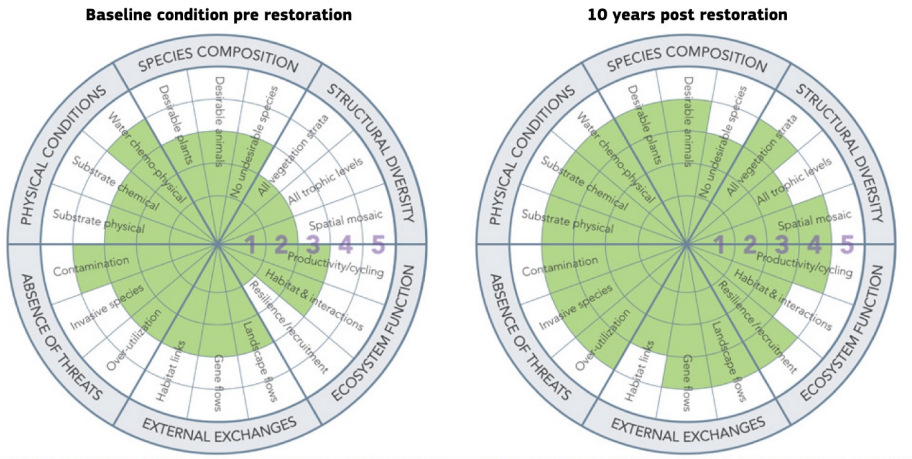
The recovery wheel

Qualitative recovery ranking system (e.g. scale 1 to 5), compared to baseline situation



* Paragraph 5.1 is largely based on *Gann et al.* (2019 section 2 principle 5)

Helpfull for measuring progress at site level:

- objectives & indicator selection
- baseline & distance to target
- reporting
- communication

DOWNLOADS:

- PDF of the blank wheel and data sheet here.
- interactive version online.
- excel version here.
- interactive app for Android, iPhone, and iPad.

You can access a blank version of the Social Benefits Wheel and data sheet here.

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Challenge 4: Knowledge transfer and Training

- Structural collaboration science-policy-practice
- Best practices for restoration of different ecosystem types and habitats of species
- Adjustable over time
- Accessable and understandble for non-scientists in the national language and embedded in local culture
- Site level information (abiotic and biotic quality, landscape ecological functioning)
- Co-financing for scientists to engage in projects
- Networking and meta-analyses

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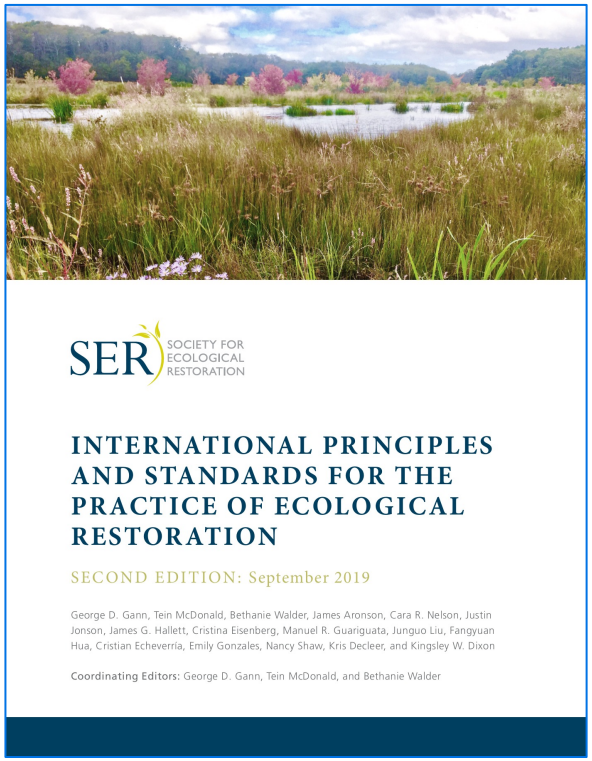
Standards of good practice for planning and implementing ecological restoration



- Planning and design
- Implementation
- Monitoring, documentation, evaluation and reporting
- Post-implementation maintenance

https://www.ser.org/page/SERStandards

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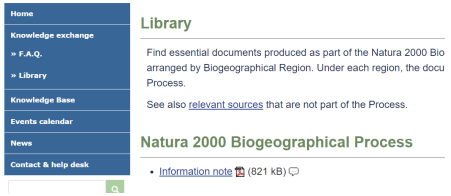
Some international knowledge-sharing platforms

- Endangered Landscapes Programme: http://www.conservationevidence.com and http://www.restorationevidence.org
- LIFE-Nature: https://ec.europa.eu/environment/archives/life/publications/lifepublications/lifefocus/nat.htm
- Natura2000 Communication Platform: https://ec.europa.eu/environment/nature/natura2000/platform/knowledge_exchange/
- European Nature Information System (EUNIS): https://eunis.eea.europa.eu/
- Biodiversity Information System for Europe (BISE): https://biodiversity.europa.eu/
- Eionet Portal: https://www.eionet.europa.eu/etcs/etc-bd/
- Ramsar Convention: https://ramsar.org/resources/ramsar-sites-management-toolkit
- Water Information System for Europe (WISE): https://water.europa.eu/
- Agreement on the Conservation of African-Eurasian Migratory Waterbirds: https://www.unep-aewa.org/

Not in the native language
Lack of interaction (training, learning, discussion)
Lack of integration in the local context and culture
Lack of central coordination and outreach
Lack of sustainable expertise building capacity



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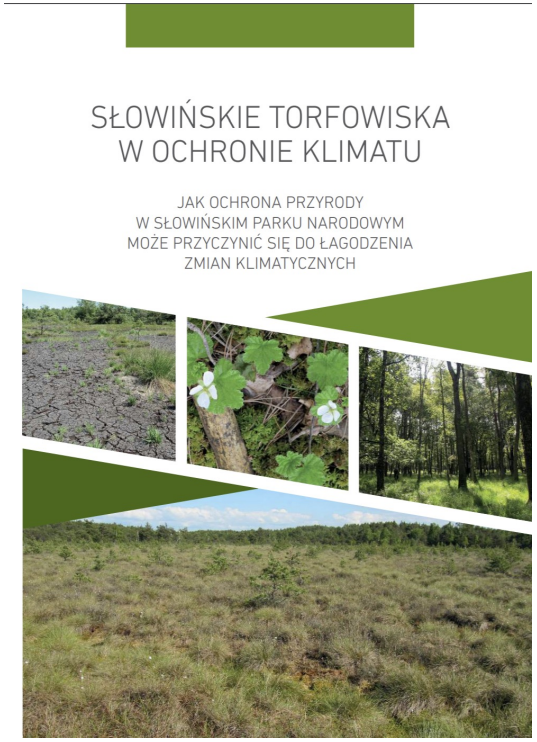
Standards of good practice for planning and implementing ecological restoration



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Towards sustainable science-practice collaboration networks at national and local level

National / Site-level:

- Planning and design
- Implementation
- Monitoring, documentation, evaluation and reporting
- Post-implementation maintenance
- Species protection plans

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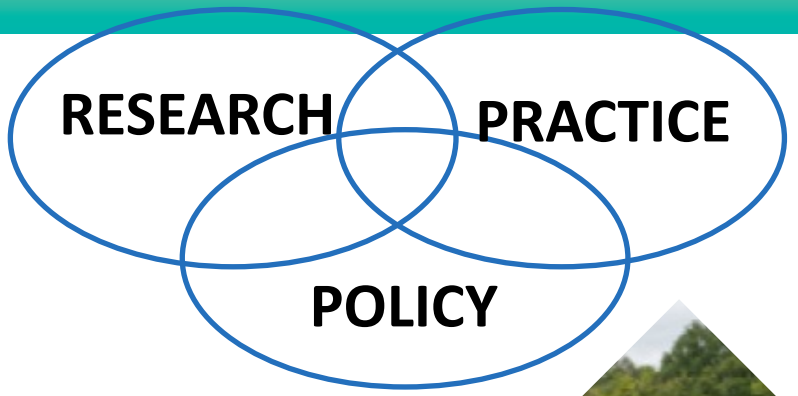
ontwikkeling+beheer natuurkwaliteit

The Dutch Knowledge Network 'OBN' for restoration and management

30 Years Linking scientists - policy makers – practitioners to foster effective ecological restoration



- Platform with different expert teams (landscape types)
- 130 active members of more > 100 organisations
- Different expertise and strong motivation
- Teams: detect knowledge gaps and proposal of applied research/test/review projects
- Advisory committee prioritises research projects, aligned with other knowledge programs
- Steering group decides

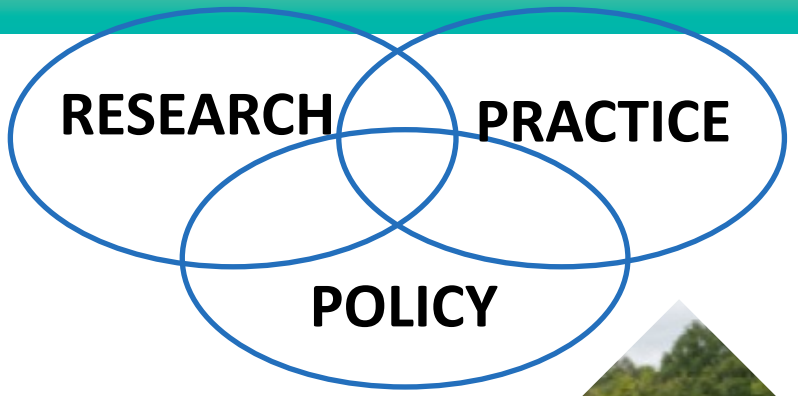
- **Long term knowledge and monitoring agenda**
- **Yearly program for research and outreach activities**
- **Tenders, execution and guiding of research**
- **Financial support c. € 2 million/y**

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

ontwikkeling+beheer natuurkwaliteit

The Dutch Knowledge Network 'OBN' for restoration and management

30 Years Linking scientists - policy makers – practitioners to foster effective ecological restoration



https://www.natuurkennis.nl/

- Easy-to-go online **Documentation Platform** with thematic state-of-the-art best-practice guidance (habitats, restoration measures, species) for both novice and expert practitioners
  - Factsheets, maps, decision support tools, reports, newsletters, brochures, popularizing articles, ppt-presentations, video…
  - Expert policy advice and recommendations
  - PhD's, scientific papers
- Field training events ('train the trainer')
- Workshops and Symposia

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biodiversa+ European Biodiversity Partnership

Water JPI

SER EUROPE

13th SERE CONFERENCE
5th – 9th SEP 2022
ALICANTE, SPAIN

Universitat d'Alacant
Universidad de Alicante

https://www.sere2022.org/

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No time to waste… let's work together …and engage in the challenges

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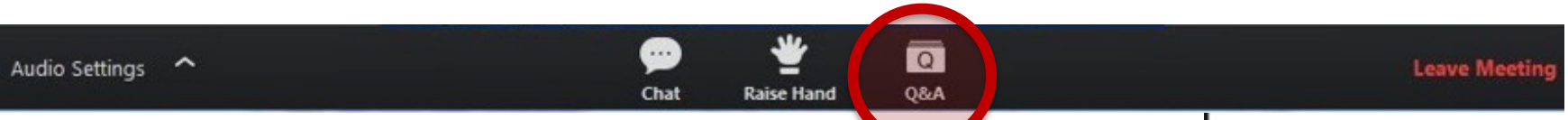
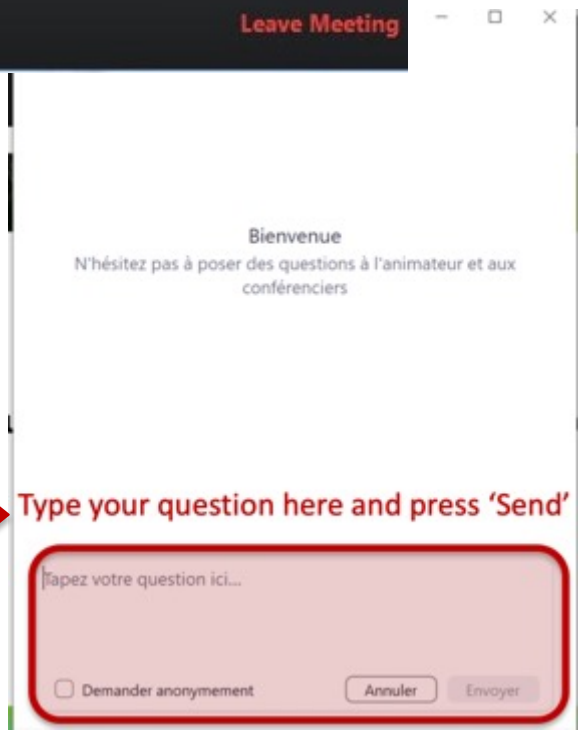
Q&A Session

For any question: USE "Q&A" FUNCTION



Please note that **we may give you the possibility to ask your question orally**. Stay tuned if you have a question & start your question by introducing yourself (name & organisation)



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PRESENTATION OF THE FUNDED PROJECTS
(session 1/5)

FIRST: COAST - COnservation of mArine ecosystems around Santo AnTão, Cabo Verde: implications for policy and society, by *Teresa Amaro*

COSAR - Context-dependence of the societal and ecological outcomes from river ecosystem restoration, by *Jeremy Piffady*

FishME - Social and ecological effects of Fish removal in Mountain Ecosystems, by *Dirk Schmeller*

ForestFisher - Priority areas for conservation and restoration of Amazonian forestfrugivorous fish interactions and associated fisheries, by *Pablo Tedesco*

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PRESENTATION OF THE FUNDED PROJECTS
(session 1/5)

EMYS-R - A socio-ecological evaluation of wetlands restoration and reintroduction programs in favor of the emblematic European pond turtle and associated biodiversity: a pan-European approach, by *Jean-Yves Georges*

Transloc - Translocations of flora and fauna for conservation and restoration: ecological, evolutionary, and socio-economic impacts at multiple scales, by *Francois Sarrazin*

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COnservation of mArine ecosystems around Santo AnTão, Cabo Verde: implications for policy and society

COAST

10 partners, 4 countries, € 1.008.85

Teresa Amaro (coordinator, UAVR, Portugal)

2022-2025

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

Cabo Verde is a country where **Blue Growth** can help to contribute with solutions for high poverty rates, while building on the long tradition of local economical use of the marine environment. However, no valuable baseline knowledge on the environmental status of their marine ecosystems is available, hampering the development of measures, ensuring their sustainable use, management, conservation and restoration.

COAST will provide multidisciplinary understanding about the **biodiversity** and **ecosystem functioning**, as well as **suitable indicators of recovery**, which is the crucial basis to establish sound conservation or restoration measures. This will allow the implementation of **integrated environmental management** actions based on the best scientific knowledge.

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Objectives and project description

- Evaluate the vulnerability of marine communities (habitat mapping, survey of anthropogenic measures, patterns of biodiversity, risk models),
- implement pilot conservation/restoration actions for selected degraded ecosystems based on the previous assessments,
- provide baseline data to inform policymakers, authorities, institutions and practitioners towards effective marine conservation and restoration in these habitats and demonstrate the repeatability of the approach in other regions,
- increase ecosystem resilience to climate change around Santo Antão island.

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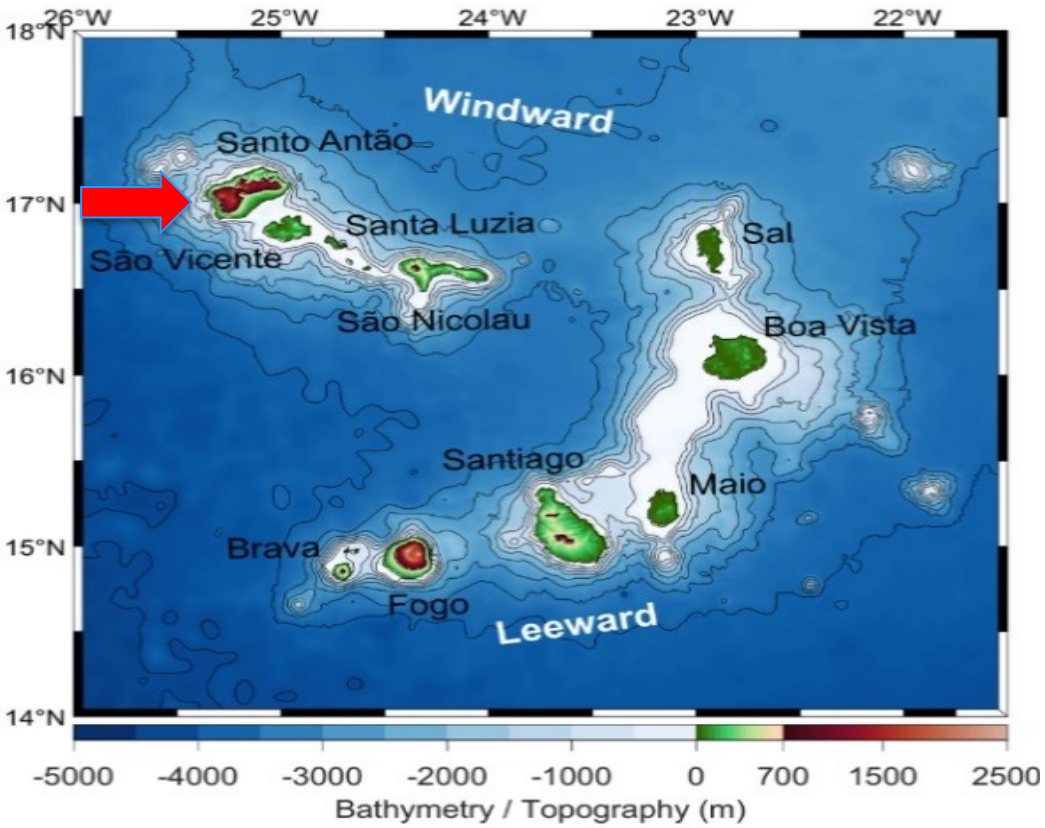
Study area

Santo Antão, Cabo Verde



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Objectives and project description

Project structure

COAST

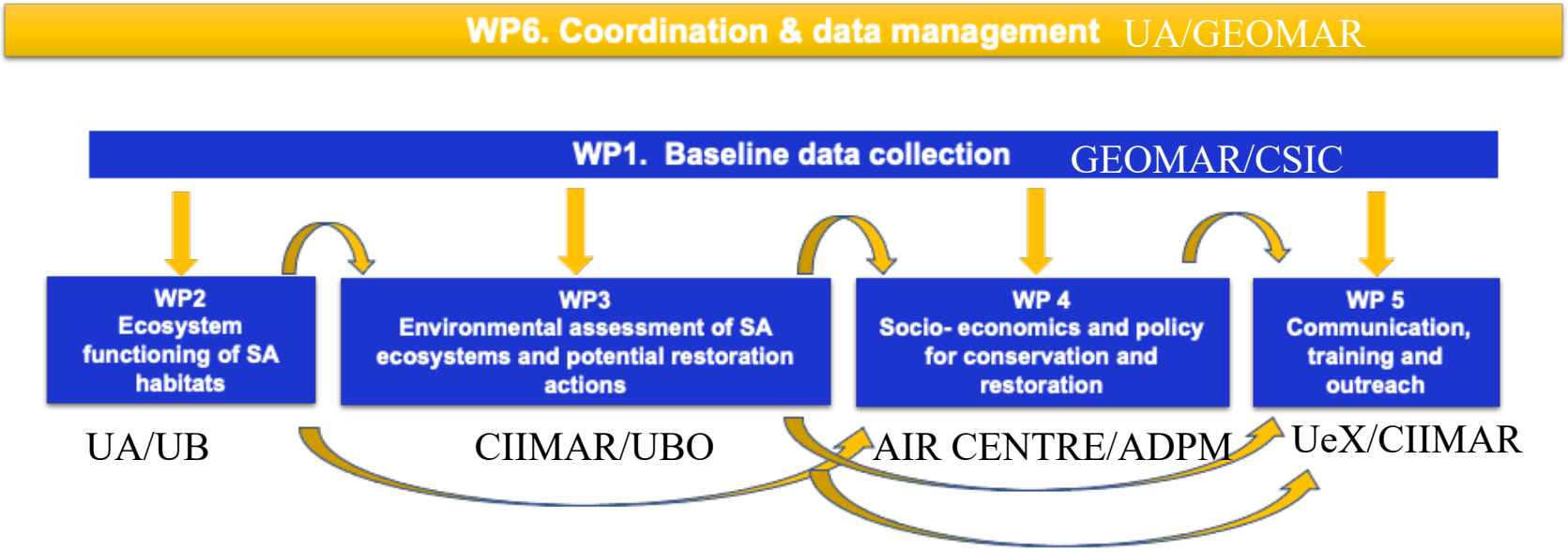

Figure 1 – Structure and flow of the Work Packages.

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Expected Scientific Impact

Improved knowledge on marine Santo Antão habitats.

Provide efficient management recommendations for their sustainable development, along with **mitigation plans for the effects of global changes**, in line with the needs of stakeholders and local communities.

Improve research capacity to collect data and to define baselines for marine ecossystems.

Develop training on new instrumentation operation and maintenance (i.e. underwater remotely operated vehicles - ROVs).

Establish a collaborative environment for the integrated analysis of local data.

Advanced innovative technology and the vulnerability analysis of marine ecosystems in Santo Antão.

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Expected Societal & Policy Impact

COAST aims at contributing to create guidelines and priority conservation strategies to affected ecosystems and to achieve efficient management recommendations, locally and in other islands and coastal African countries.

Key stakeholders involved:
Local environmental authorities (i.e. Port Maritime Agency, Porto Novo City hall) and public agencies (ADPM, Biosfera),
Local community members (fishermen), NGOs (Biosfera),
Universities and research institutions.

COAST will support **translation of science into policy interventions** and contribute to **reducing economic and social disparities**, **linking the needs of the marine ecosystems and the communities.**

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Acknowledgement

Funders

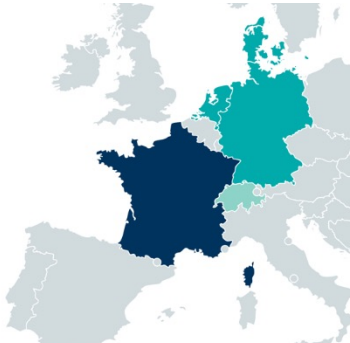
- Fundação para a Ciência e a Tecnologia (FCT), Portugal
- Fundo Regional para a Ciência e Tecnologia (FRCT), Portugal
- Agencia Estatal de Investigación (AEI), Spain
- German Research Foundation (DFG), Germany
- Agence Nationale de la Recherche (ANR), France

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

Context-dependence of the societal and ecological outcomes from river ecosystem restoration
COSAR

Jérémy Piffady *(Coord. – INRAE Riverly Unit / FR)*

E. Tales, A. Jeliazkov, C. Le Pichon, J. Belliard, M. Floury *– INRAE Hycar Unit / FR*
S. Stoll, N. Kaiser, M. Palt *– UCB Environmental Campus Birkenfeld / GER*
P. Verdonschot, R. Verdonschot *– WEnR Wareningen Environmental Research / NL*
C. Weber *– EAWAG / SZ*



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grant agreement No 101003777

Objectives and project description

COSAR aims to produce an operational framework to identify the environmental context features mostly determining both ecological and societal outcomes from physical restoration projects of streams.

Based on an existing 200 restored sites database, COSAR is designed as a 3 step process

- Quantifying restoration ecological and societal outcomes, and the potential synergies
  - Define a set of relevant metrics to assess the ecological (INRAE / WEnR) and the societal (UCB) outcomes
  - Integrate ecological and societal outcomes to assess their interrelationships (INRAE / WEnR / UCB)
- Explaining how these sets of restoration outcomes are influenced by geographical, societal and environmental contexts, considered at different scales
  - Spatial context (INRAE / UCB / WEnR)
  - Legacies effects (INRAE / UCB)
- Predicting expected outcomes of possible restoration projects
  - Co-constructing with stakeholders an operational analysis framework to assess restoration outcomes (UCB / EAWAG / INRAE)
  - Provide guidelines to integrate the context-dependencies in planning future restoration projects, optimising the chances to achieve positive results (All partners)

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Expected Scientific Impact

Introducing a scale-dependent multiple stressor framework in the restoration topic

- *How do drivers and pressures assessed at different spatial scales (from local site to watershed scale) influence both the societal and ecological outcomes of restoration projects ? What are the potential major limiting factors for restoration positive outcomes?*
- *BACI monitoring framework*

Considering the legacies effects, so far rather neglected in large-scale analyses

- *Historical databases at the European scale (Ecological atlas, demographical evolution,…)*
- *Stakeholders expert knowledge on the watersheds context*

Coupling both the ecological and societal assessments of restoration outcomes in a common causal framework

- *Identifying the synergies and trade-offs between these different outcomes*
- *What environmental factors do enhance such synergies?*

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Expected Societal & Policy Impact

Societal (population and stakeholders) acceptance of costly ecological restoration projects is of primary importance to reach WFD goals, UN SDGs

- *Stakeholders need objective criteria to communicate on positive outcomes of restoration projects*
- *Stakeholders need integrative frameworks and tools to optimize the designs of future restoration projects to enhance more positive outcomes, considering the overall watershed context*

To meet the stakeholders' expectations, a dedicated WP involves an international board of stakeholders groups through regular meetings to present and discuss goals, criteria, challenges.

- *national/regional/local environmental legislation and administrations responsible for restoration planning and funding; institutions responsible for implementation of restorations; consulting companies specialised in restoration; fishing, agricultural and tourism organisations; hydropower producers; environmental NGOs*

Information will be spread through a website, social media posts, and a final fact sheets compendium, some of which written by stakeholders.

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Acknowledgement

COSAR is funded by

- French National Research Agency (ANR), France

- German Research Foundation (DFG), Germany

- Ministry of Agriculture, Nature and Food Quality (LNV), Netherlands

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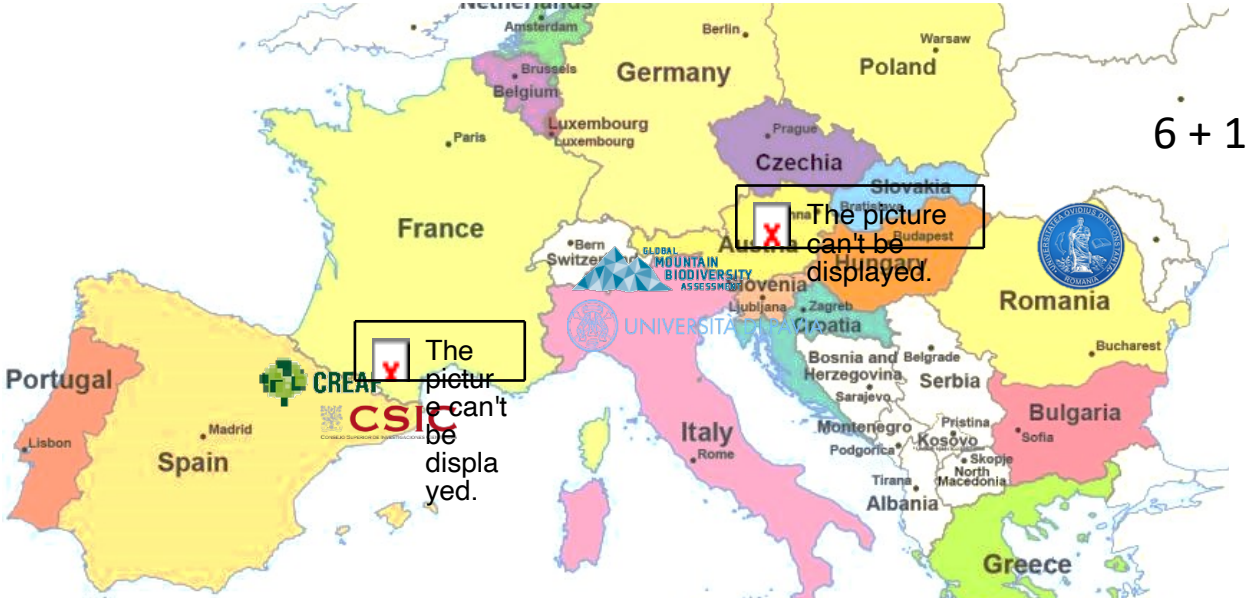
Social and ecological effects of **Fish** removal in **M**ountain **E**cosystems

Dirk S. Schmeller



6 + 1 associated partner

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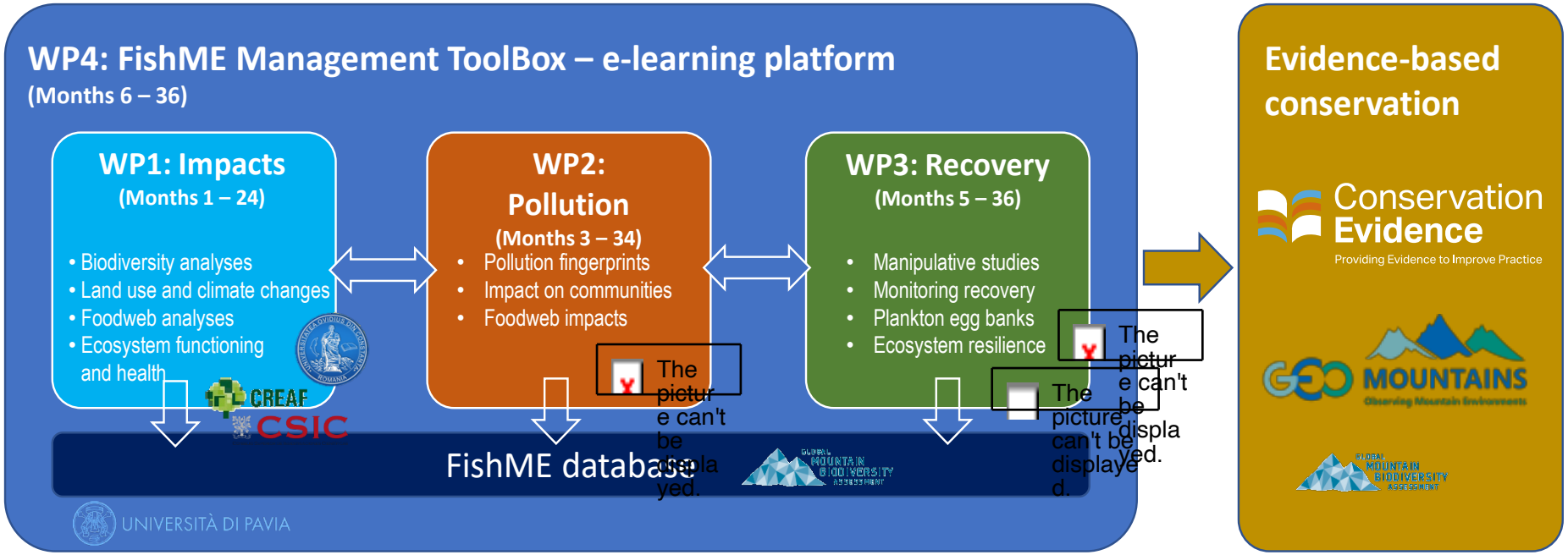
Objectives and project description



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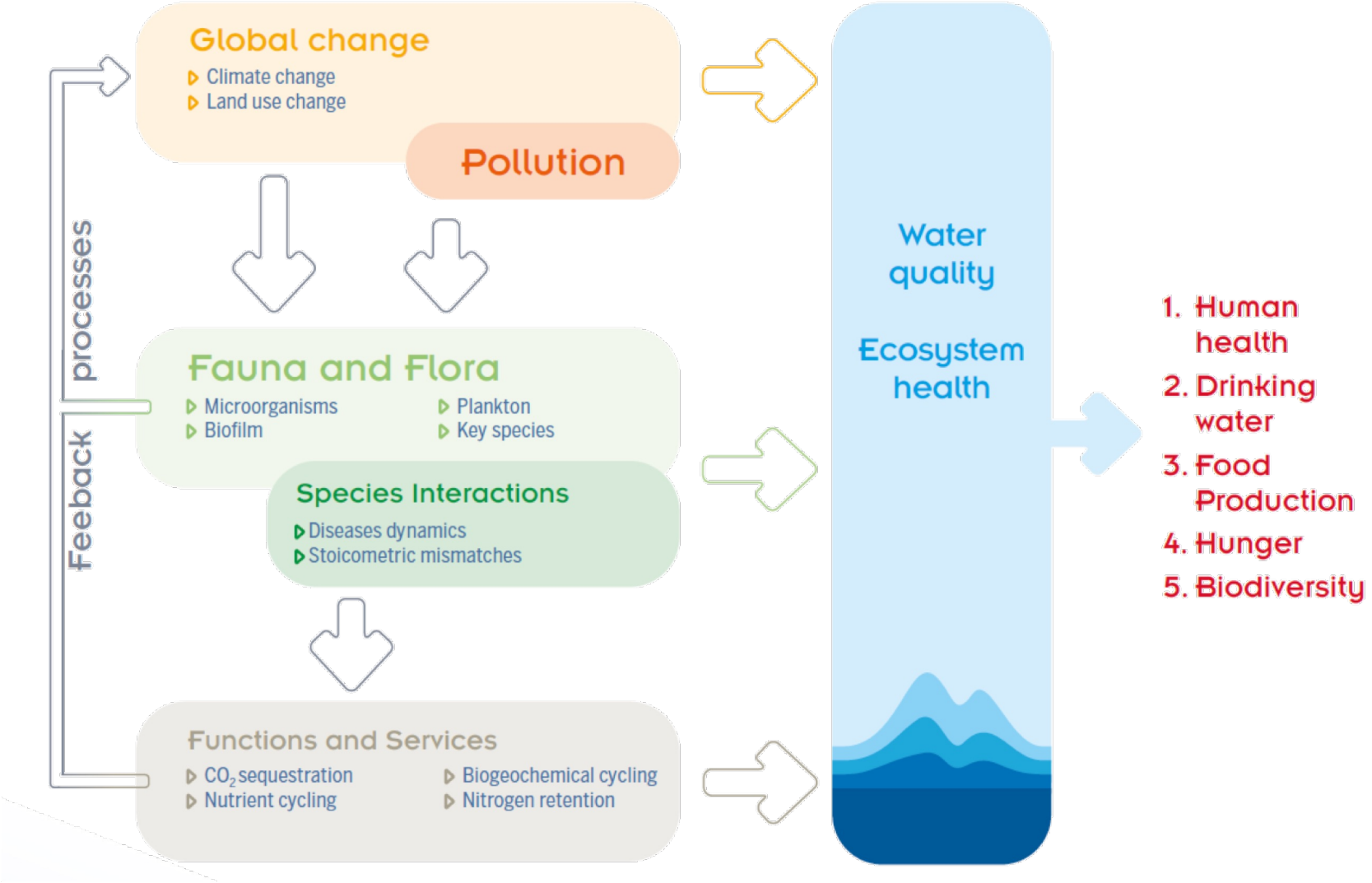
Expected Scientific Impact



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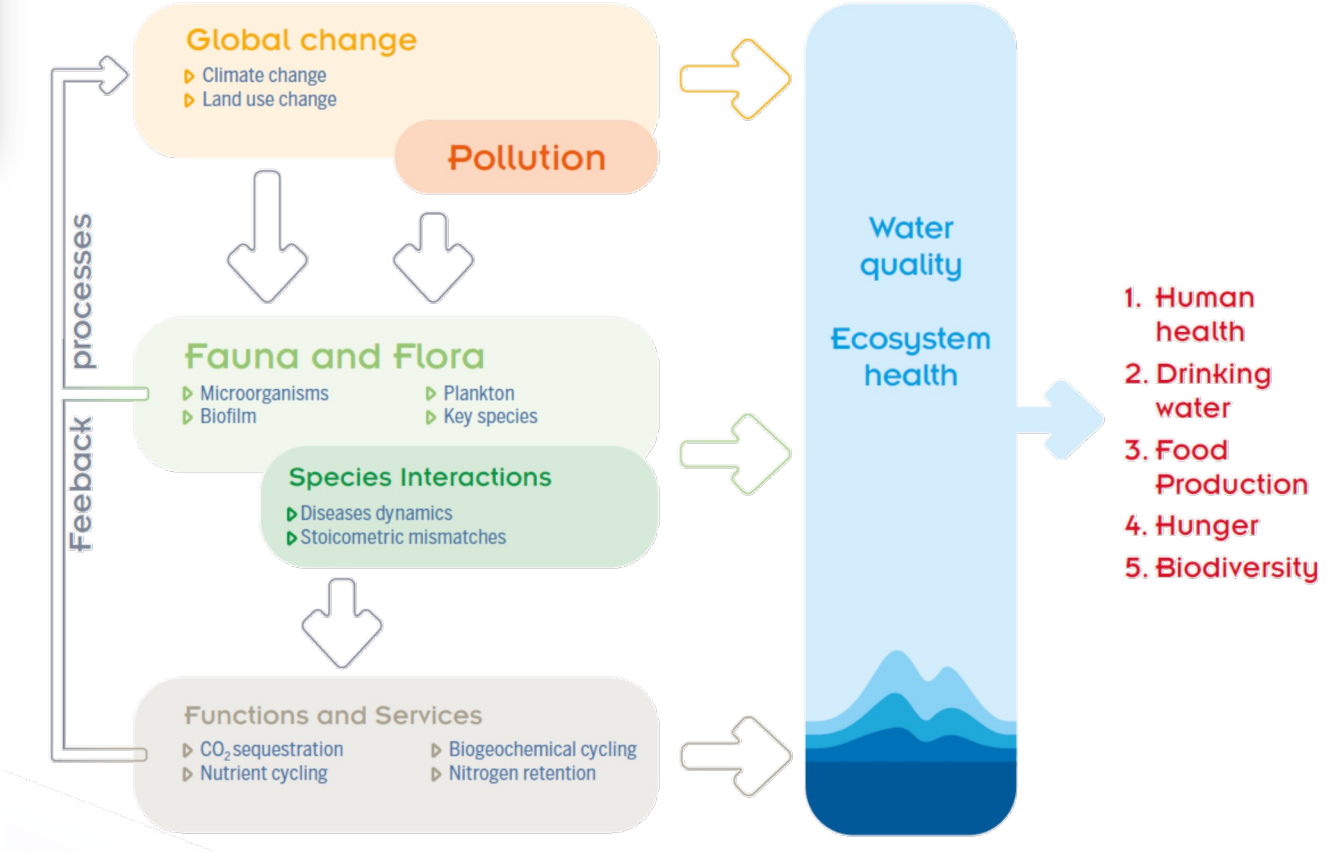
Expected Societal & Policy Impact



NGOs, National and Regional Parcs, CNPN, Forest offices, Fishery Associations, Tourist Associations, Mountain Guides

FishME toolbox, YouTube, The Conversation etc.

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Acknowledgement

AGENCIA ESTATAL DE INVESTIGACIÓN

ue fiscdi
Executive Agency for Higher Education, Research, Development and Innovation Funding

anr agence nationale de la recherche
AU SERVICE DE LA SCIENCE

FWF
Der Wissenschaftsfonds.

GLOBAL MOUNTAIN BIODIVERSITY ASSESSMENT

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biodiversa
Water JPI

Priority areas for conservation and restoration of Amazonian forest-frugivorous fish interactions and associated fisheries

FORESTFISHER

Pablo Tedesco (Partner 1, Toulouse, France)

Consortium

Financed

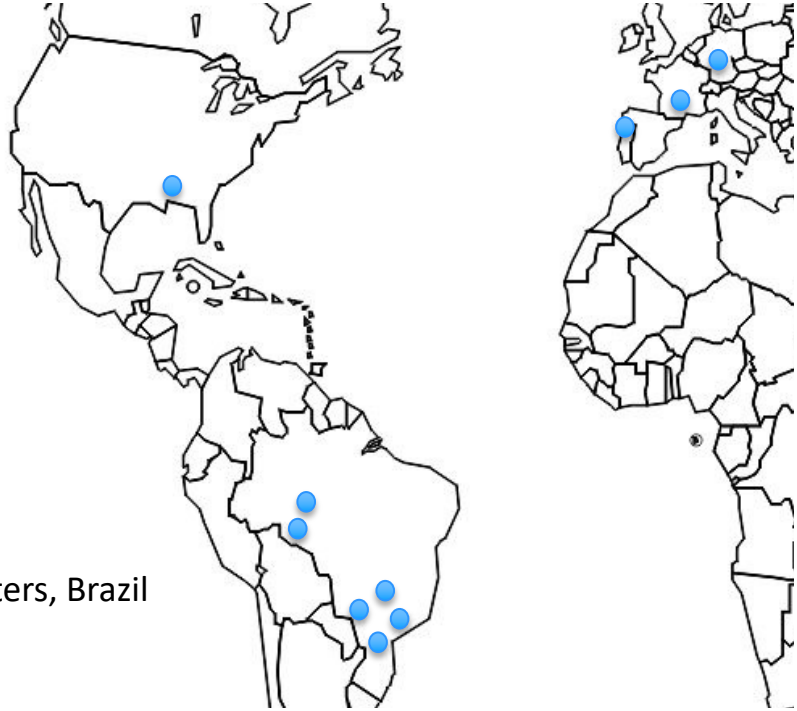
1. Institut de Recherche pour le Développement, France
2. Instituto Politécnico de Bragança, Portugal
3. Technical University of Munich, Germany
4. Federal University of Amazonas, Brazil
5. Universidade Estadual de Mato Grosso do Sul, Brazil

Self-financed

A. Mississippi State University, USA
B. Federal University of Rondônia, Brazil
C. State University of Maringá, Brazil
D. Universidade Federal de Goiás, Brazil
E. National Center for Monitoring and Early Warning of Natural Disasters, Brazil

Subcontracted

1ª. NGO - AÇÃO ECOLÓGICA GUAPORÉ, Brazil



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Objectives and project description

Rationale

Frugivorous fishes directly depend on the forest and play a crucial role in **maintaining forest diversity** as seed dispersers and constitute a **key source of food** and income for traditional, local human populations.

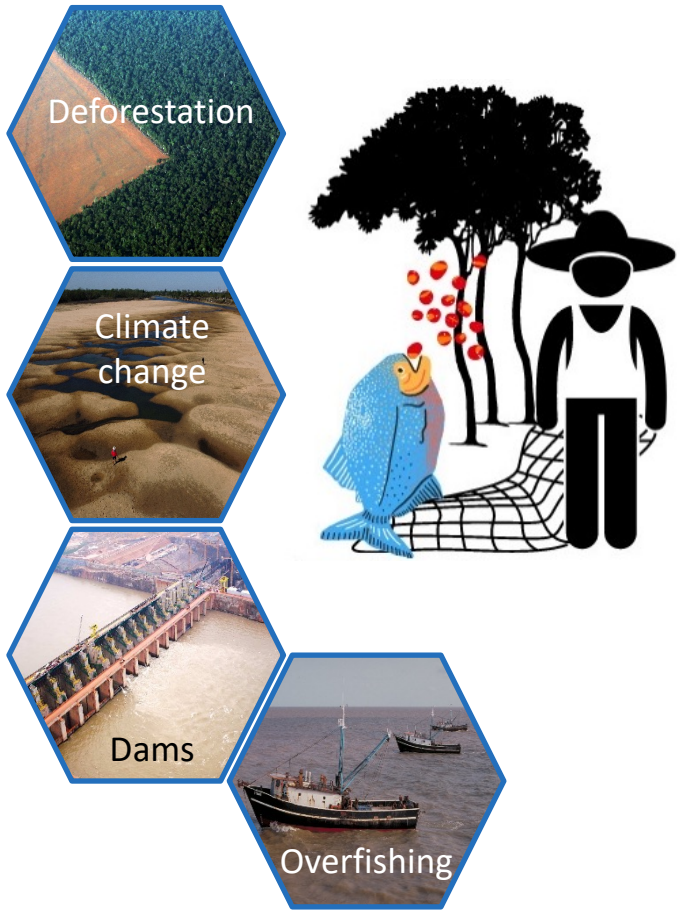
Objective

ForestFisher propose to integrate these diverse components to define **priority areas** for conservation and restoration that should ensure the **resilience of the socio-ecological system**

Activities

1. Analyse **recent and ongoing impacts** of land-use change on frugivorous fish diversity (France, USA, Brazil)
2. Build regional **informed scenarios** of the future Amazon land-use change (Germany, Portugal, Brazil)
3. **Forecast** the frugivorous **fish distribution shifts** (Portugal, Brazil, France)
4. Set **participatory land use planning** involving stakeholders (Brazil, Germany, Portugal)

A socio-ecological system under pressure



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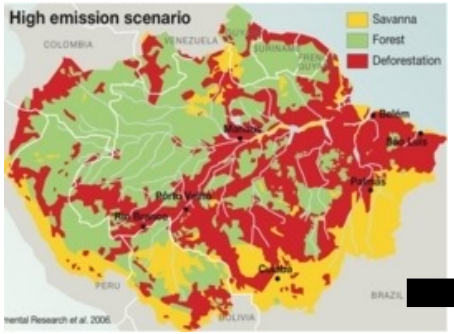
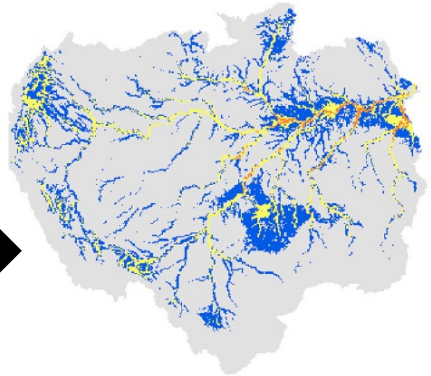
Expected Scientific Impact

The Amazon is at the centre of an ongoing intense international debate. ForestFisher offers a timely and interdisciplinary approach to assess the combined effects of multiple threats on fish species that are essential to the functioning of a socio-economic system and to the ecological processes needed for forest sustainability.





Research questions addressed

1. How recent land-use changes have affected the frugivorous fish diversity? (WP1)

2. Will future climate, land-use, and river fragmentation changes in the Amazon affect the availability of suitable areas for frugivorous fish species? (WP2 & WP3)

3. How these expected shifts in the distribution of frugivorous fish species will affect fishing communities and their traditional fishing grounds? (WP4)

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Expected Societal & Policy Impact

Main societal challenge

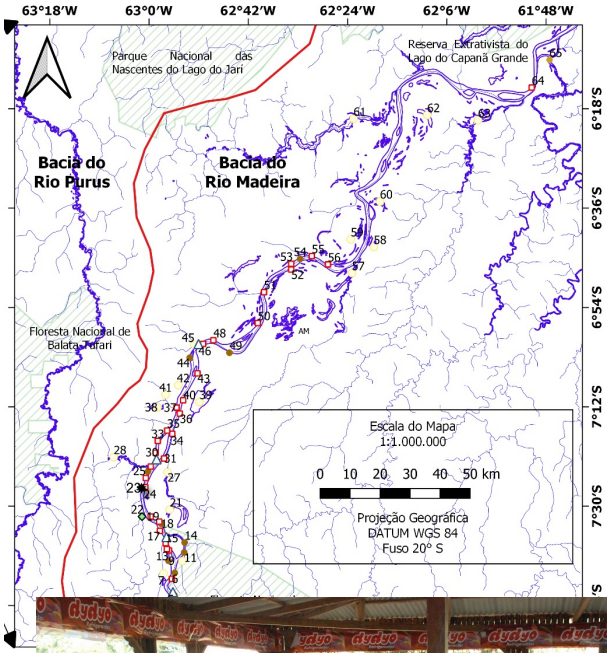
Contribute to a successful mitigation of the current and future changes in the fishing resource

…and policy issue

Build a protocol that guides public policy and decision makers to design **Fishery agreements and land use planning**

a participatory instrument that associates fisheries and land use in communal rules, based on scientific and traditional knowledge

A focus on The Madeira / Purus interfluvial region



Participatory workshops with identified stakeholders:

- Two Brazilian Partners as stakeholders (CEMADEN & NGO Ecoporé)
- Representatives and leaders of local communities
- State and Federal agencies, local associations and schools

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Acknowledgement

Funding agencies

anr agence nationale de la recherche

Fundect
Fundação de Apoio ao Desenvolvimento do Ensino, Ciência e Tecnologia do Estado de Mato Grosso do Sul

FCT Fundação para a Ciência e a Tecnologia

FAPEAM
Fundação de Amparo à Pesquisa do Estado do Amazonas

DFG
Deutsche Forschungsgemeinschaft

Self-financed partners

UEM
Universidade Estadual de Maringá

UNIR
FUNDAÇÃO UNIVERSIDADE FEDERAL DE RONDÔNIA

UFG
UNIVERSIDADE FEDERAL DE GOIÁS

Cemaden
Centro Nacional de Monitoramento e Alertas de Desastres Naturais

MISSISSIPPI STATE UNIVERSITY

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biodiversa

Water JPI

A socio-ecological evaluation of wetlands restoration and reintroduction programs in favour of the emblematic European pond turtle and associated biodiversity: a pan-European approach

Emys-R

Jean-Yves Georges PD, PhD (Partner 1)

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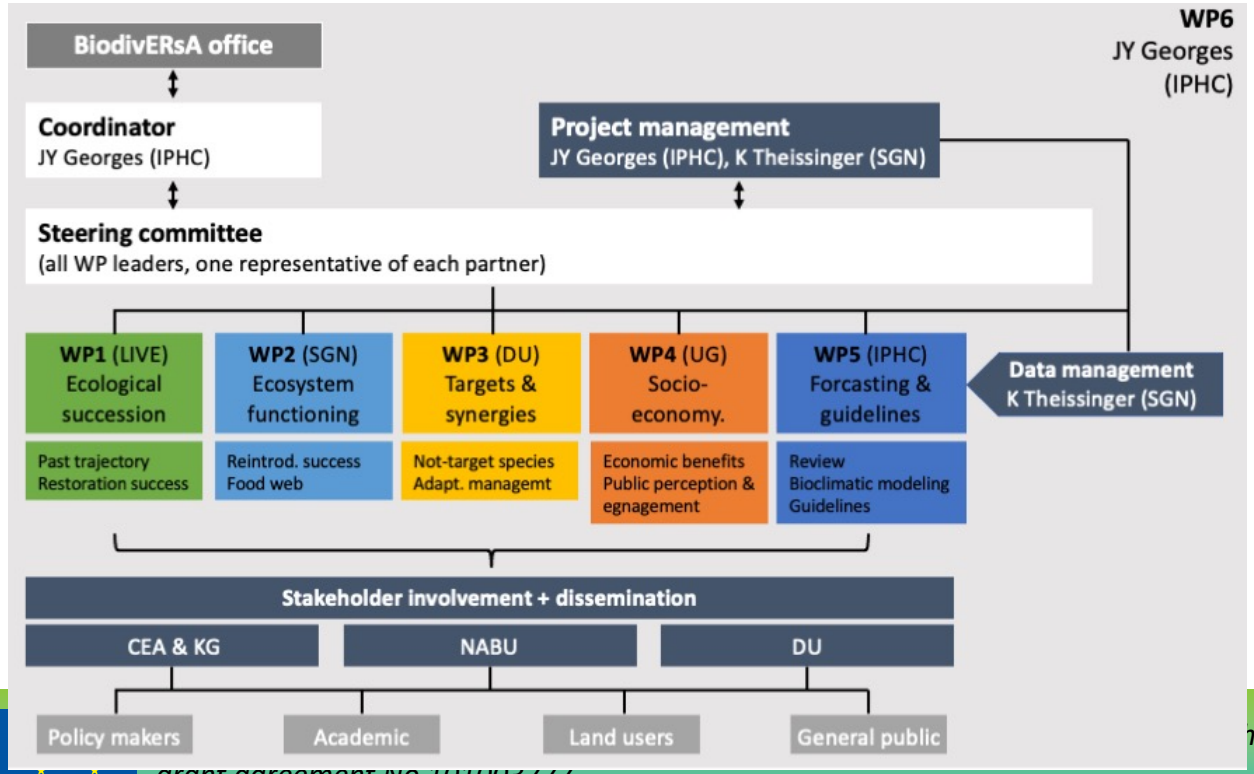
Objectives and project description

The EU Biodiversity Strategy for 2030 emphasises that *"we need nature in our lives"*.

Species reintroductions are considered as operational strategies to counter biodiversity loss. Yet the outcomes of such reintroductions need to be promoted.

Emys-R is a 3-year participatory action-oriented research project aiming at defining the most **ecologically & economically efficient** and **socially supported methods of wetland restoration** suitable for sustainable maintenance of Emys and associated biodiversity throughout Europe.



n and innovation programme under the grant agreement No 101003777

Expected Scientific Impact

- **Science**
  - **Transdisciplinary research**: humanities, social and natural sciences
  - **Multiscale and multi-site approach for an integrated socio-ecological assessment**: literature review, experimental approaches, environmental genomics, long term monitoring, forecast modelling
  - **Hypotheses**

    i) higher degree of wetland restoration can compensate for limited capabilities of captive bred Emys to settle in the wild

    ii) conservation actions can benefit society by bringing together people and nature
- **Innovation**
  - **Adapt existing biocenotic indices** to small continental hydrosystems
  - **Implement an adaptive management** by co-creating ponds promoting turtle-and-natural-patrimony while preventing invasive species to settle in restored wetlands
- **Breakthrough**

→ **guidelines of best practices** for homologous projects: wetland restoration and/or European pond turtle reintroduction/reinforcement throughout Europe

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Expected Societal & Policy Impact

- **Societal challenges**
  - Identify societally-supported, cost-efficient methods of wetland restoration for effective species reintroduction
  - Assess values of nature given by citizens and authorities that motivate people and politicians to engage in conservation actions
  - Identify levers to bring back together people and nature
- **Stakeholder involvement**
  - Internal: local councils, land managers and NGO as partners
  - External: inhabitants, local actors and local-to-national authorities throughout Europe
- **Knowledge dissemination**
  - Public seminars and participatory workshops for improving transfer knowledge between academic experts, non-expert (citizen science) leading to decision making in environmental policies
  - Guidelines of best practices for national and EU policy makers

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Acknowledgement

- National Agency for Research (ANR), France
- Federal Ministry of Education and Research (BMBF), Germany
- State Education Development Agency (VIAA), Latvia
- National Science Center (NCN), Poland

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Bundesministerium für Bildung und Forschung

Latvian Council of Science

NATIONAL SCIENCE CENTRE POLAND

www.emysr.cnrs.fr

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Translocations of flora and fauna for conservation and restoration: ecological, evolutionary, and socio-economic impacts at multiple scales.

Transloc

François SARRAZIN
Coordinator

Coordinator - Partner 1 *France*
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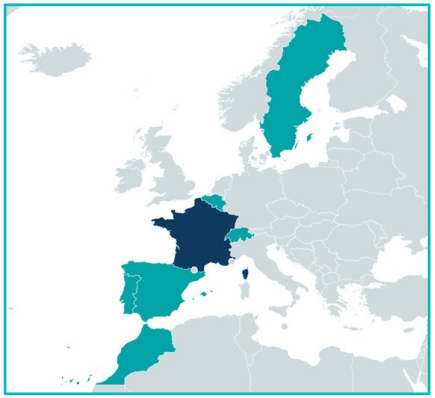
Res. François Sarrazin

Partner 2 *France*
Biotope
Res. Fabien Quetier, Anna Deffner

Partner 3 *Spain*
Universidad Rey Juan Carlos
Res. Alfredo Garcia

Partner 4 *Portugal*
FCiências.ID-- Associação para a Investigação e Desenvolvimento de Ciências
Res Fernando Ascensão

Partner 5 *France*
Université Paris-Saclay, Laboratoire Ecologie, Systématique et Evolution
Res. Bruno Colas



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Partner 7 *Morocco*
Sultan Moulay Sliman University
Res. Sidi Imad Cherkaoui & El Hassan Abba

Partner 8 *Sweden*
Swedish University of Agricultural Sciences
Res. Guillaume Chapron

Partner 9 *Switzerland*
University of Bern
Res. Markus Fischer

Partner 10 *France*
Muséum national d'Histoire naturelle – BBEES
Res. Cécile Callou

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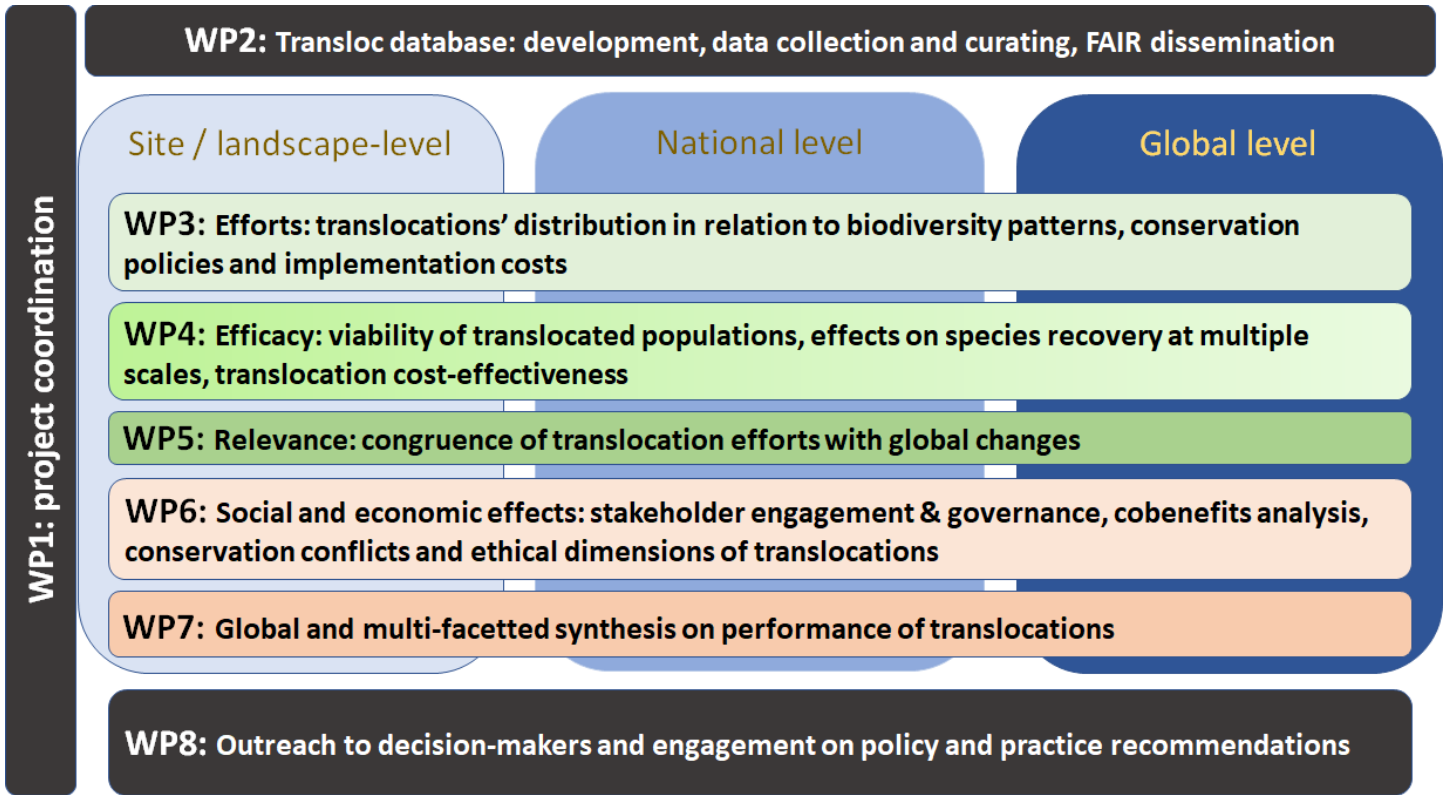
Objectives and project description

- Investigate and quantify how conservation translocations impact restoration
- Ecological, evolutionary and sociological dimensions from local to global scales.
- Mix of large databases and accurate case studies

WP	Partners in charge
1	1
2	5 & 10
3	1 & 5
4	1 & 9
5	4 & 6
6	1 & 5
7	6 & 9
8	2 & 8



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Expected Scientific Impact

Expected impact from the scientific and innovation point of view

i) Documentation (WP2) and definition of standards for translocation preparation, monitoring and reporting

ii) Understanding of translocation efforts (WP3):

- Contribution to the conservation of phylogenetic and functional diversity in Europe
- Effects of EU policies on translocation initiatives
- Assess the influence of economic costs and legal and administrative constraints on translocation initiatives

iii) Understanding of translocation efficacy (WP4)

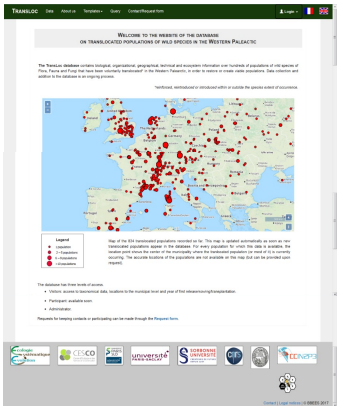
- Define demographic translocation success criteria beyond the diversity of generation times
- Consider cost-effectiveness dimensions of success and efficacy

iv) Assessing the relevance of translocations (WP5)

- Measuring the congruence of reintroductions with global changes
- Assess how translocated species disperse to better environments given the anthropogenic barriers

v) Define global and multi-facetted synthesis on performance of translocation (WP7)

- Combine efforts efficacy, relevance and social (WP6) dimensions



Potential breakthroughs

- Identify proxies of the restoration of evolutionary potential
- Mixing functional and evolutionary dimensions of populations translocations
- Define “united” short and long terms translocation success criteria relevant for a wide range of life forms, environments, local practices and target
- Contribute to the developments of standards of translocated population monitoring form ecological and sociological point of views

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Expected Societal & Policy Impact

Main societal challenges and/or policy issues.

i) Assess the diversity of the "human dimensions" of translocation projects (WP6).

- Examine actor's awareness and use of different measures to influence satisfaction, conflicts, and socio-ecological outcomes
- Assess the socio-economic consequences (even non monetary) of translocations

Ii) Assess shift in actor's satisfaction, perceptions, or values over the course of translocations (WP6)

- Case studies including large mammals (e.g. bison) and birds (e.g. vultures) as well as plants (e.g. bristly bellflower or wild tulips)
- Various methods (unstructured and semi-structured interviews in the field, questionnaires, document analysis, companion modelling ,serious games *in situ)*

Stakeholders engagement.

- WP2 (database) to identify stakeholders, and WP 3 (efforts) to prioritise them (following Biodiversa stakeholder engagement handbook)
- Interviews and stakeholder workshops to develop in a participatory manner conceptual models
- Use a subset of translocations involving large animal species such as the European bison and vultures e.g. Parc national des Cevennes and LPO, local farmers

Expected impact from the societal and policy point of view.

- Assessing and valuing the contribution of translocation to the restoration of biodiversity within socio ecosystems from local to global scales
- Feedback of translocation on values and behaviours in translocation sites and at larger scales
- Embrace short and long-time scales and be anchored to regional, national and European policies and financing mechanisms
- Potential renewal of 2013 IUCN guidelines, and new guidelines on rewilding
- Contact EU stakeholders about the drafting process of the proposed Nature Restoration Directive announced by the European Commission based on WP2.

Dissemination of the information

- High number of interactions with local, national and European stakeholders (WP2)
- Outreach trough a dedicated work package (WP 8), for selected stakeholders and key decision makers
- Press releases and communication to a wide audience through a dedicated website linked to the TransLoc database (WP2)
- Final symposium for a broader public, stakeholders, decision-makers and a more scientific audience, recorded to be a deliverable

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Acknowledgement

Funding Agencies

Belgium / F.R.S.-FNRS

France / ANR

Morocco / MENFPESRS

Portugal / FCT

Spain / AEI

Sweden / SEPA

Switzerland / SNSF

Private Partner

Biotope

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

PRESENTATION OF THE FUNDED PROJECTS
(session 2/5)

FIRST: BioReset - Biodiversity restoration and conservation of inland water ecosystems for environmental and human well-being, by *Cristina Delerue-Matos*

FreshRestore - Holistic evaluation and restoration measures of human impacts on freshwater ecosystems across biogeographical gradients, by *Kim Magnus Bærum*

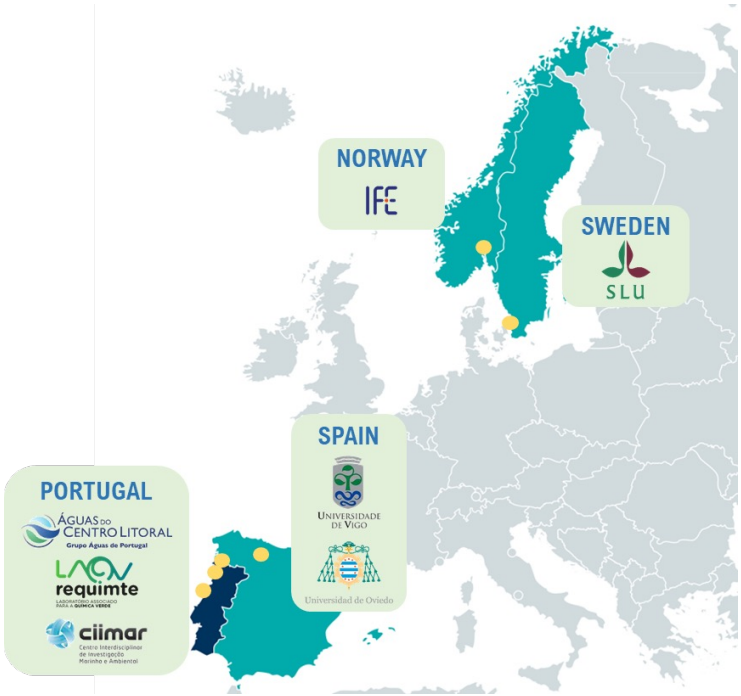
RESTOLINK - Quantifying restoration success across biomes by linking biodiversity, multifunctionality and hydromorphological heterogeneity, by *Mario Brauns*

RESPOND - Restoring and Managing Biodiversity and Ecosystem Services of Temporary Pond Landscapes, by *Bram Vanschoenwinkel*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Biodiversity restoration and conservation of inland water ecosystems for environmental and human well-being - BioReset

Cristina Delerue-Matos *(REQUIMTE; cmm@isep.ipp.pt)*

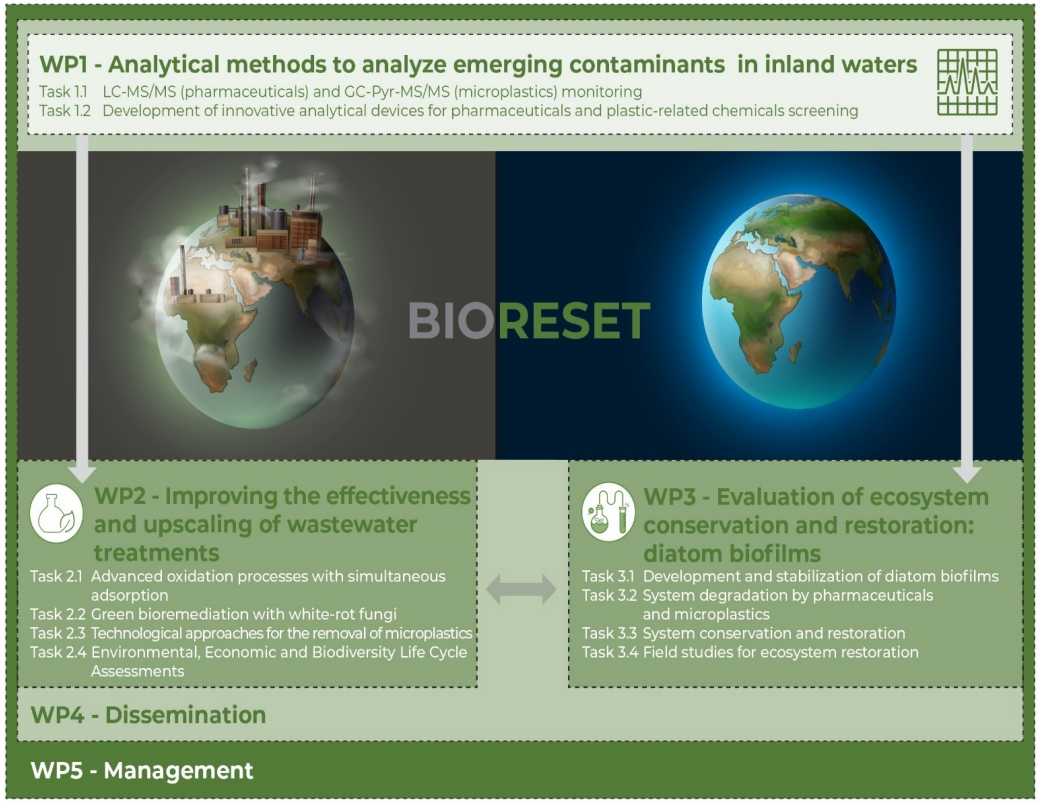


Partners	Country
REQUIMTE – Rede de Química e Tecnologia	**Portugal**
CIIMAR - Centro Interdisciplinar de Investigação Marinha e Ambiental	**Portugal**
AdCL – Águas do Centro Litoral	**Portugal**
IFE - Institute for Energy Technology	**Norway**
UVigo - Universidad de Vigo	**Spain**
UNIOVI – Universidad de Oviedo	**Spain**
SLU - Swedish University of Agricultural Sciences	**Sweden**

BiodivRestora has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

BioReset will directly contribute to European policies, namely by tackling two main environmental objectives of the European Union's promoting Biodiversity and attending Water Quality.



WP	Title (leader, partners involved)	Start	End
1	**Analytical methods to analyze emerging contaminants in inland waters** (REQUIMTE, UNIOVI, IFE, AdCL)	2	35
	Validation and application of analytical methods to monitor EC		
2	**Improving the effectiveness and upscaling of wastewater treatments** (UVIGO, UNIOVI, REQUIMTE, SLU, IFE, AdCL)	2	35
	Development and testing of remediation processes for EC removal		
3	**Evaluation of ecosystem conservation and restoration: diatom biofilms** (CIIMAR, all partners)	2	35
	Development of diatom Raman spectrosocopy to assess ecosystem resilience and recovery		
4	Dissemination (UNIOVI, all partners)	1	36
5	Management (REQUIMTE, all partners)	1	36

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Expected Scientific Impact

Monitoring
Pharmaceuticals and microplastics

Data
Space-time picture

Miniaturized sensors

Wastewater treatment technologies

Emerging contaminant removal
P. ostreatus
New activated biosorbents

Microplastic removal
Industrial byproducts
Colloidal systems

Life Cycle Assessment

Diatom biofilms

Resilience to climate changes and micropollutants

Assessment of ecosystem recovery
Raman spectroscopy

Policy makers | Wastewater treatment plant stakeholders
Governmental authorities | Environmental managers

Approaches and interventions to achieve and maintain biodiversity and a good ecological state of freshwater ecosystems

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Expected Societal & Policy Impact

European Green Deal and several UN's Sustainable Development Goals (SDG)

SDG 6 - **Clean water and sanitation** | SDG 15 - **Life on land** | SDG 17 - **Partnerships for the goals**

2030 targets of the post-2020 **Global Biodiversity Framework**

Communication and outreach

Immediate stakeholders (*industry & academia*)

- ✓ Publication in scientific journals
- ✓ Presentations in conferences
- ✓ International workshop at the end of the project
- ✓ 4 newsletters
- ✓ Promotional material in digital format

Secondary stakeholders (*media, policymakers, public authorities, society*)

- ✓ Opportunities, risks, and practical recommendations for policymakers related to WWTP
- ✓ Press releases
- ✓ Promotional material in digital format

Students

- ✓ Seminars and/or short courses
- ✓ Integration of the project's results in courses
- ✓ Open Days
- ✓ Science Week
- ✓ "*Ocupação Científica de Jovens nas Férias*"
- ✓ PhD & MSc theses

www2.isep.ipp.pt/bioreset

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Acknowledgement

Agencia Estatal de Investigación (AEI), Spain

Fundação para a Ciência e a Tecnologia (FCT), Portugal

Swedish Environmental Protection Agency (SEPA), Sweden

The Research Council of Norway (RCN), Norway

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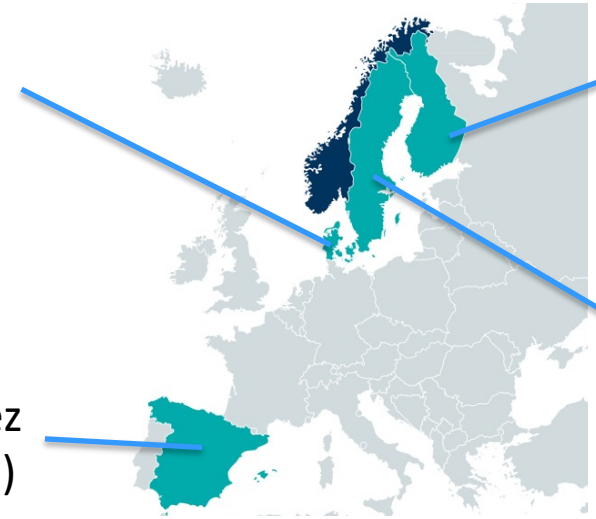
Holistic evaluation and restoration measures of human impacts on freshwater ecosystems across biogeographical gradients

FreshRestore

Kim Magnus Bærum (PI, Norwegian partner)

Berit Hasler (DK)



Antti Eloranta (FI)

Javier Sánchez Hernández (S)

Pär Byström (SE)

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Objectives and project description

Connecting global and local stressors to ecological drivers (N)

Cost efficient nature-based solutions targeting local stressors (DK, all)

Population dynamics and functional diversity (SE,N)

Community dynamics and functional diversity (S, FI)

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Expected Scientific Impact

Functional diversity x anthropogenic drivers

Integrated socio-ecological tools for the future

Size-dependent responses to environmental changes

Impacts on, and interaction of, different biodiversity dimensions

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Expected Societal & Policy Impact

Resilience and adaptive capacity to climate-related hazards

The value of ecosystem services

Facilitates effective revision of current policies and approaches

Knowledge transfer and exploitation of results

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Acknowledgement

Forskningsrådet
The Research Council of Norway

Innovation Fund Denmark

NATUR VÅRDS VERKET
The Swedish Environmental Protection Agency

ACADEMY OF FINLAND

AGENCIA ESTATAL DE INVESTIGACIÓN
State Research Agency (Spain)

BiodivRestore has received funding f *nnovation programme under the grant agreement No 101003777*

biodiversa
Water JPI

Quantifying restoration success across biomes by linking biodiversity, multifunctionality and hydromorphological heterogeneity (RESTOLINK)

Mario Brauns (Helmholtz Centre for Environmental Research - UFZ)

@RestolinkP

https://restolink.weebly.com/

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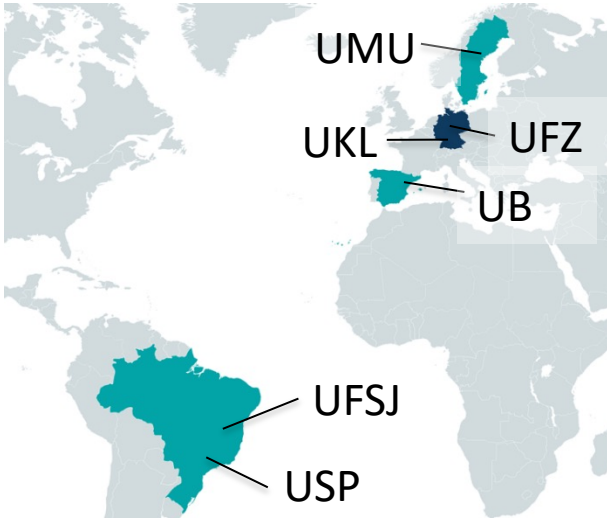
Quantifying restoration success across biomes by linking biodiversity, multifunctionality and hydromorphological heterogeneity (RESTOLINK)

Ryan Sponseller, Lina Polvi Sjöberg (*Umeå University-UMU*)
Mario Brauns, Patrick Fink, Markus Weitere (*Helmholtz Centre for Environmental Research-UFZ*)
Christine Anlanger, Andreas Lorke (*University of Koblenz-Landau-UKL*)
Daniel von Schiller, Andrea Butturini, Biel Obrador, Francesc Sabater, Margarita Mendez Lopez, Maria Isabel Muñoz Gracia (*University of Barcelona-UB*)
Björn Gücker, Iola G. Boëchat (*Federal University of São João del-Rei-UFSJ*)
Davi Gasparini Fernandes Cunha, Juliano Corbi (*University of São Paulo-USP*)



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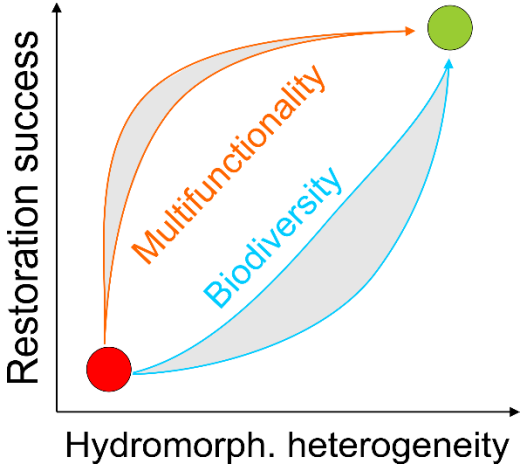
Objectives and project description

Novel framework for quantifying restoration success that connects hydromorphology with biodiversity and essential ecosystem functions

- Hydromorphological scales that need to be restored to induce recovery of microbial and macrobial biodiversity
- Uncertainties of biodiversity and (multi)functional restoration targets associated with Biomes
- Deciphering the role of biodiversity for ecosystem functioning
- Ecosystem functions as new indicators of restoration success



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Expected scientific limpact

- Novel understanding of the functional role of biodiversity (Biodiversity-ecosystem function relationship)
- Application of the concept of ecosystem multifunctionality to streams
- Quantify the role of hydromorphology on biodiversity and ecosystem functioning
- Operationalise the concept of ecosystem services

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Expected societal & policy impact

Policy relevance

- **EU Biodiversity strategy 2030:** Guide how stream hydromorphology must be restoration to return biodiversity and functioning to sustainable levels
- **Aichi aims of Convention on Biological Diversity and EU Water Framework Directive:** Functions as indicators of early restoration success and ecosystem status

Stakeholder panel

- Catalan Water Agency (ES), County Board of Västerbotten (SE), German Environment Agency (DE), Federal Agency for Nature Conservation (DE), Environmental Agency of the State of São Paulo (BR)
- To be engaged in biannual online workshops

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Acknowledgement

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Federal Ministry
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AGENCY

Agencia Estatal de Investigación (Spain) (funding decision pending)

Federal Ministry of Education and Research (Germany)

São Paulo Research Foundation (Brazil)

Swedish Environmental Protection Agency (Sweden)

BiodivRestore has received funding f *nnovation programme under the grant agreement No 101003777*

ResPond

Restoring and Managing Biodiversity and Ecosystem Services in Temporary Pond Landscapes

Bram Vanschoenwinkel (P1, coordinator, VUB, Belgium)
Luc Brendonck (P2, KULeuven, Belgium)
Bartłomiej Gołdyn (P3, Adam Mickiewicz University)
Margarita Florencio (P4, Universidad Autónoma de Madrid)
Laila Rhazi (P5, University Mohammed V Rabat)

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Temporary ponds

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Challenges

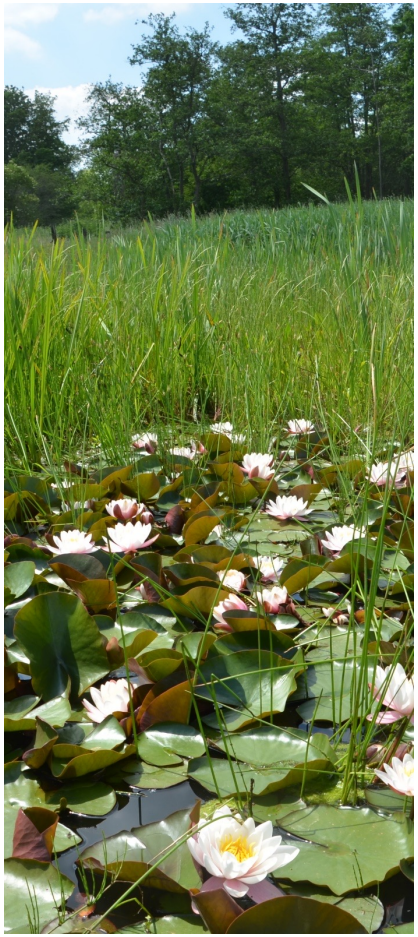
1. Most temporary ponds in Europe are unprotected.

2. Most temporary ponds in Europe are degraded.

3. Temporary pond restoration and creation projects have had variable success.

4. Ecosystem services delivered by temporary ponds are poorly understood

5. **Temporary ponds are poorly known and have a bad reputation**



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Deliverables

1. Most temporary ponds in Europe are unprotected.

→ Develop an **effective conservation framework**

2. Most temporary ponds in Europe are degraded.

→ Develop **guidelines** to **reduce degradation**

3. Temporary pond restoration and creation projects have had variable success.

→Develop **guidelines** to **improve creation and restoration**

4. Ecosystem services delivered by temporary ponds are poorly understood

→ **Quantifying ecosystem services and disservices**

5. **Temporary ponds are poorly known and have a bad reputation**

→ **Raising awareness** about temporary pond ecosystems and the strategies needed to preserve them

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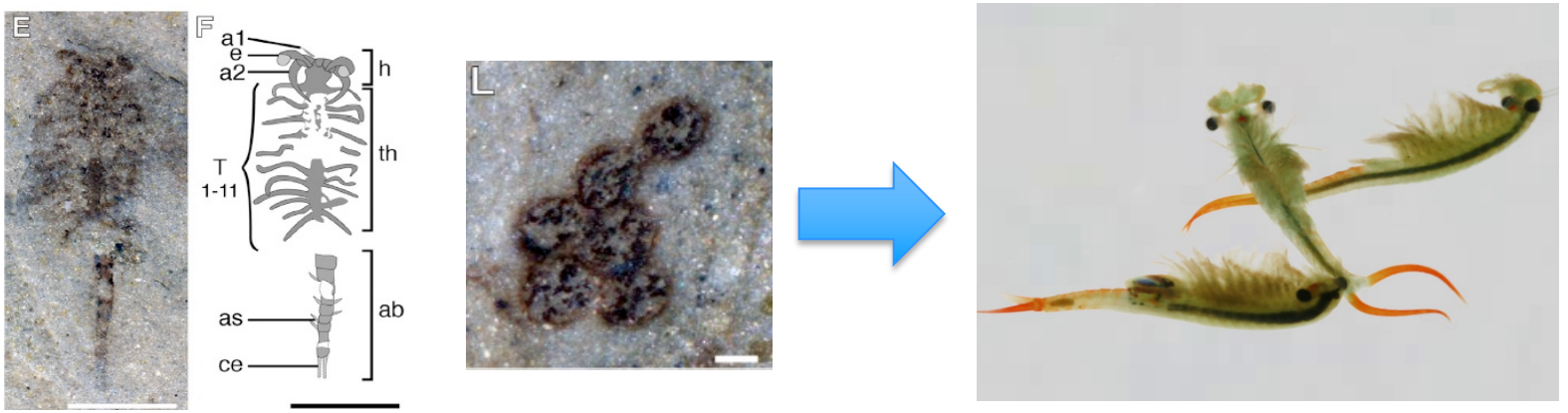
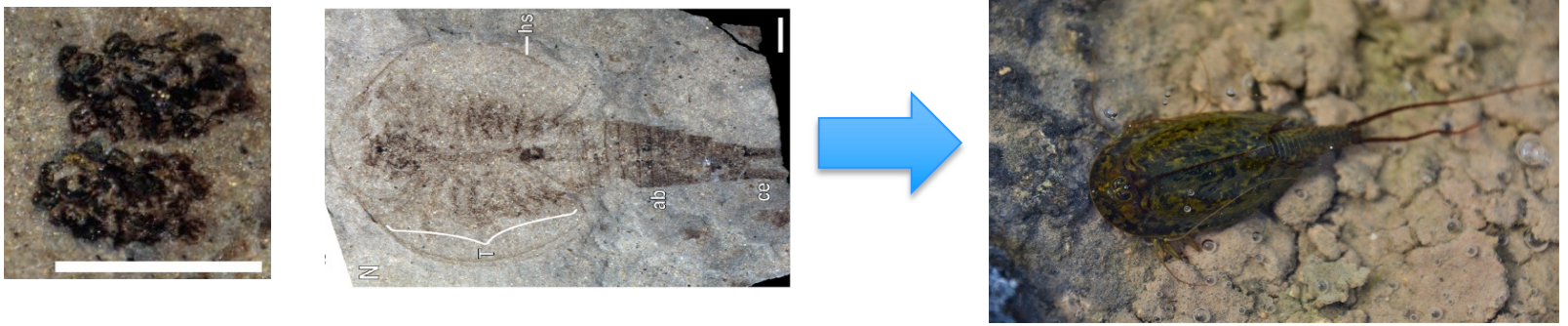
The role of ancient ecosystem engineers





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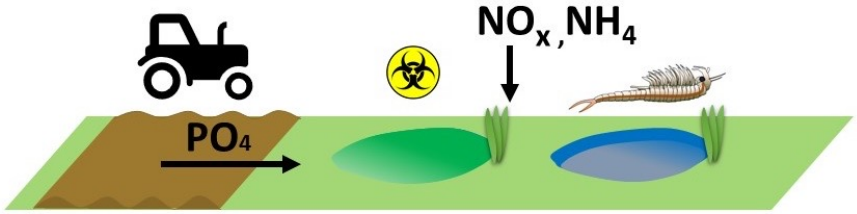
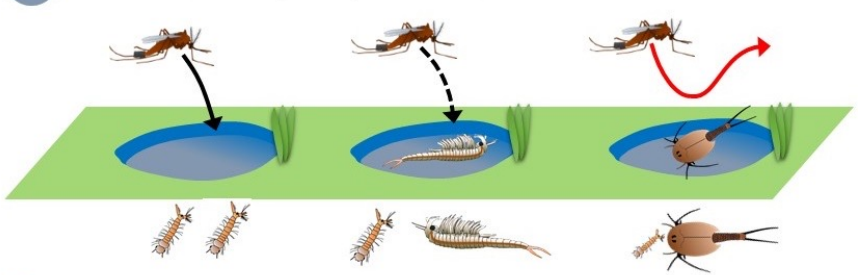
The role of ancient ecosystem engineers

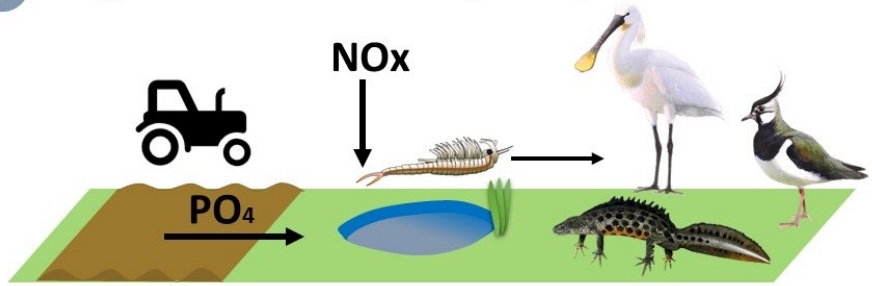
1 Control of cyanobacteria



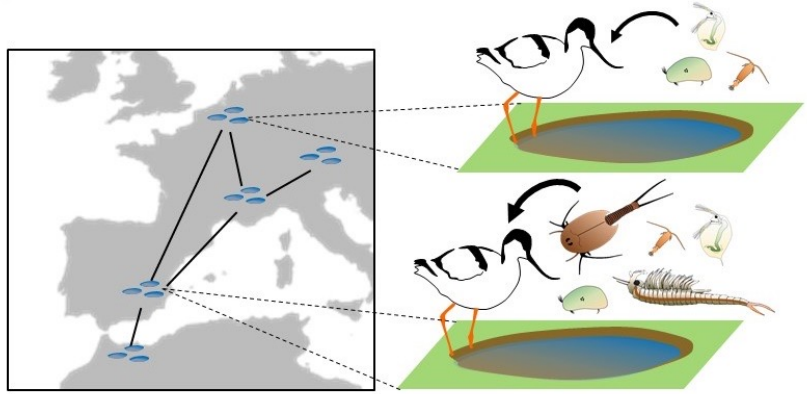
2 Reduction mosquito production



3 Energy & nutrient transfer to higher trophic levels



4 Supporting long distance migration of water birds



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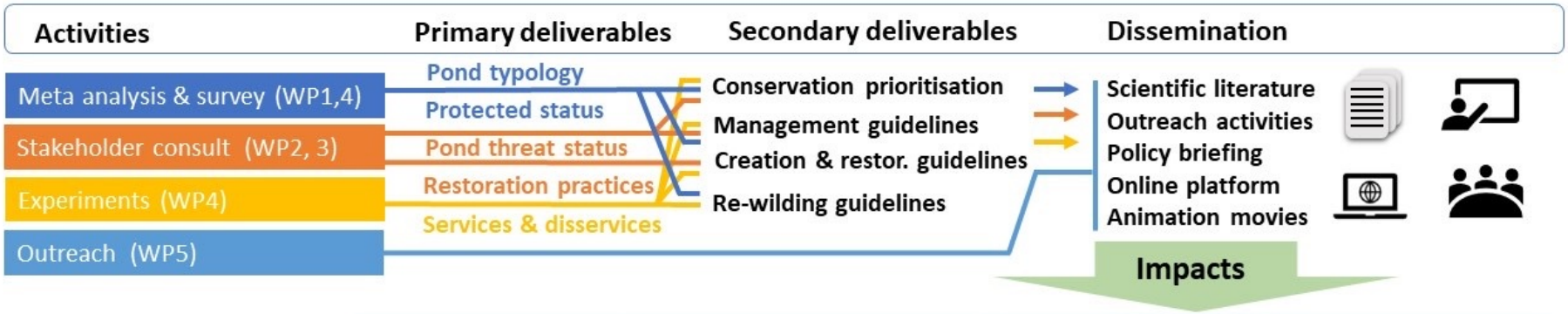
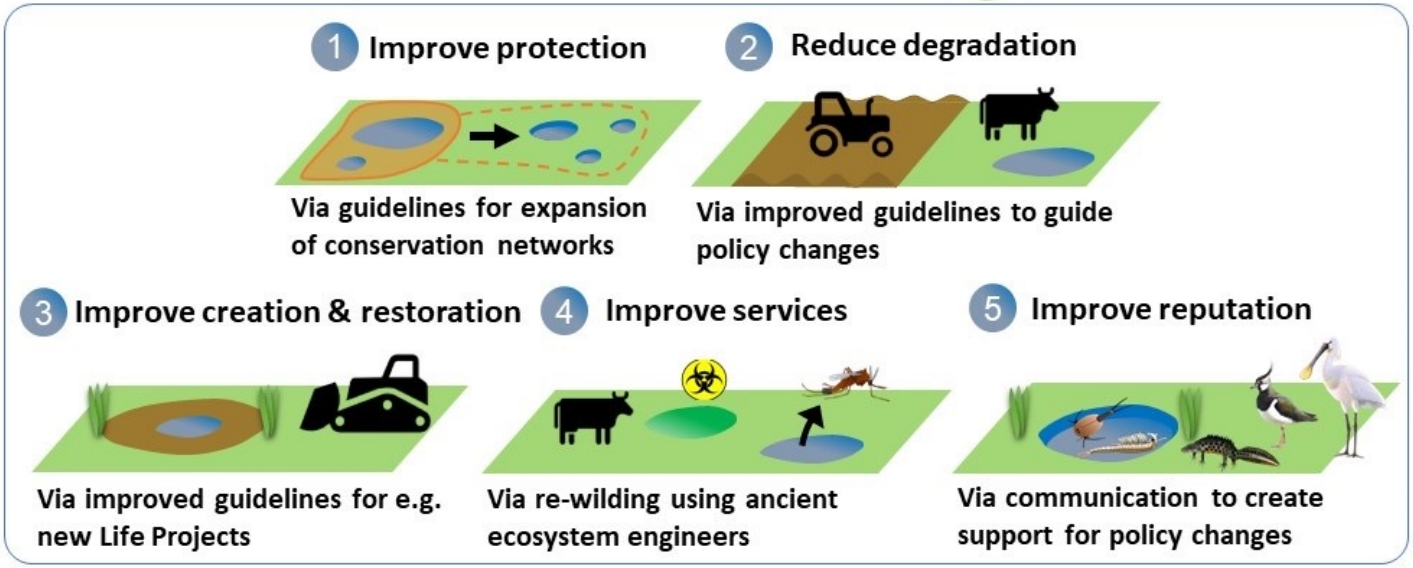
Link between activities, deliverables and impact



ResPond

Restoring and Managing Biodiversity and Ecosystem Services of Temporary Pond Landscapes



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Stakeholders

Group	Stakeholders	Engagement	Stage	Int.	Inf.	Means of communication
Gov. policy makers	EU organs +	(Involve)	WP3-5	Int	High	pol. brief, directly, symp.
	Nat. and reg. organs*	Involve	C, WP3-5	High	High	directly, pol. brief
European pond scientists	EPCN	Collaborate	C, WP5	High	High	directly, symposium, SI papers
	Freshwater Habitat Trust	Collaborate	C, WP5	High	High	directly, symposium
Land owners & managers	LIFE project coordinators	Involve	WP3	High	Int	symposium, directly
	National parks**	Involve	WP2,3, 5	Int	High	directly, pol. brief
	Nature managers***	Involve	WP 3, 5	Int	High	vulg. articles, lectures
	Farmers organizations****	(Consult)	WP5	Low	Int	pol. briefing
NGOs	WWF	(Consult)	WP5	Int	Int	pol. briefing
	Birdlife international	(Consult)	WP5	Int	Int	pol. brief, vulg. articles
Public	General public	Inform	WP5	Low	Low	media, online movies, signs
	Local communities	Inform	WP2,5	Low	Int	Directly, media, signs, folders

Int = interest, Inf = influence, () engagement is not yet initiated , C = conception project, + Rural development committee, European Environmental Agency, * regional gov. of Madrid, Andalusia (Sp), Institute of Nature and Forestry (B), Agency for Restructuring and Modernisation of Agriculture (Pl), State Forests (Pl), Haut-Commissariat aux Eaux et Forêts et à la Lutte contre la Désertification (M), Direction régionale de l'agriculture (M) ,** Zwin (B), Doñana national park (Sp), Warta River-Mouth National Park (Pl), ***Natuurpunt (B), Naturalist Club (Pl), Association des Sciences de la Vie et de la Terre (M) **** Boerenbond (B), Assoc. Sustainable Agriculture in Poland (Pl) pol. brief = Policy briefing

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Ministry of National Education, Vocational Training, Higher Education and Scientific Research – Morocco (MENFPESRS)

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PRESENTATION OF THE FUNDED PROJECTS

(session 3/5)

FIRST: BIOCONSENT - Decision-making Support for Forest Biodiversity Conservation and Restoration Policy and Management in Europe: Trade-offs and Synergies at the Forest-BiodiversityClimate-Water Nexus, by *Metodi Sotirov*

FRESHH - Farmer acceptable REstoration of Semi-natural Habitat to limit Herbicides, by *David Bohan*

InterRest - Interactive effects of local and landscape scale restoration of semi-natural grasslands and agricultural fields on species interactions and ecosystem functions in different social-ecological systems, by *Catrin Westphal*

NARROW - NARRatives On restored Water, by *Håkan Tunon*

ReVersal - Restoring peatlands of the nemoral zone under conditions of varying water supply and quality, by *Klaus-Holger Knorr*

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Decision-making Support for Forest Biodiversity Conservation and Restoration Policy and Management in Europe: Trade-offs and Synergies at the Forest-Biodiversity-Climate-Water Nexus

BIOCONSENT

Metodi Sotirov (University of Freiburg, Germany)

Project consortium:

University of Freiburg (ALU-FR) Germany (*coordinator*)
Luleå Technical University (LTU SE) Sweden
Swedish University of Agricultural Sciences (SLU) Umeå Sweden
European Forest Institute (EFI FI) Bioeconomy Programme Joensuu Finland
European Forest Institute (EFI DE) Resilience Programme Bonn Germany
University of Forestry (LTU BG) Sofia Bulgaria
International Institute for Applied Systems Analysis (IIASA) Laxenburg Austria
Forest Sciences and Technology Center of Catalonia (CTFC) Spain

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

Main objective*:* to provide novel scientific knowledge and decision-making support to help achieve forest biodiversity conservation and restoration regarding ambitious policy targets.

Main tasks and activities

- **WP1 Policy analysis** (lead LTU SE, CTFC; all partners)

- Map policy targets and instruments, and assess the cross-sectoral policy integration and actor coordination at the biodiversity-forestry-climate-water nexus

- **WP2 Scenarios and behavioural responses** (lead: ALU-FR, EFI DE; all partners)

- Explore forest owners' and conservation managers' behavioral changes under different scenarios towards sustainable socio-ecological systems with improved forest biodiversity status

- **WP3: Improved socio-ecological forest systems modelling** (lead EFI FI, IIASA; all partners)

- Integrate biophysical, socio-economic and policy drivers of forest conservation in modelling tools

- Quantify and assess the outcomes of alternative conservation and restoration measures on forest biodiversity and ecosystem service provision across spatial and temporal scales

- **WP4: Synthesis and dissemination** (lead: ALU-FR, LTU SE)

- Upscale and communicate project findings and co-design policy and management recommendations

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Expected Scientific Impact

- **Integrated socioecological system approach**
  - Policy analysis, scenario development, behavioural experiments and forest modelling in six case studies (EU and sub-national level)
  - Novel scientific articles and popular publications
- Innovative ways to explore **pathways of change** through linking **policy drivers and forest managers' behavioural responses**
  - Innovative action research and participatory methods
  - Online exchange, on-site training and IT-support
- Novel techniques to integrate **human behaviour in forest models** to bridge across spatial scales from stand to EU level
  - New forest simulation models enhanced with human agent-based drivers

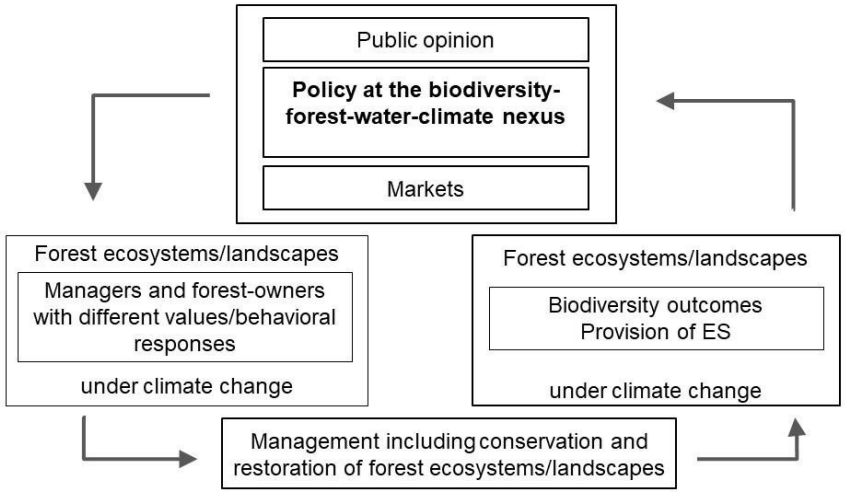

Figure 1: BIOCONSENT integrated socio-ecological system approach

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Expected Societal & Policy Impact

- **Main societal challenges and policy issues**
  - Despite ambitious global and EU **policy targets**, forest biodiversity is under increasing **threat**
  - Effective restoration and conservation needs cross-sectoral and multi-level **policy coherence** and supportive forest **managers' behaviour**
  - Managers have to respond to multiple policy and socio-economic drivers making **trade-offs** under complexity, uncertainty and climate change
- **Main societal and policy contribution**
  - **EU policy framework**: European Green Deal, the EU Biodiversity Strategy to 2030, the EU Forest Strategy to 2030, the EU Habitats Directive and the EU Water Framework Directive
  - **National policy framework**: forest biodiversity conservation and restoration related policies
  - Enhanced **decision support tools** enabling decision makers to make informed choices, explore synergies, and balance trade-offs
  - Scientific papers, practitioners' publications; new maps, tablet software, **EU policy paper, practitioners' recommendations.**

Table 1: Stakeholder engagement and dissemination

Dissemination tools	Target audiences			Project year	
	Practitioners	Scientific community	Policy makers	1 and 2	3
Project website (1 x)	X	X	X	X	X
Social media networks	X	X	X	X	X
EU Policy paper (x1) and Project briefs (2x)	X	X	X		X
Hands-On-Manual for Practitioners (1x)	X				X
Scientific conferences		X		X	X
Scientific publications (x 10)	(X)	X	(X)		X
Workshops / EU conference	X	X	X	X	X

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

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- *Austrian Science Fund (FWF), Austria*
- *Bulgarian National Science Fund (BNSF), Bulgaria*
- *Academy of Finland (AKA), Finland*
- *German Federal Ministry of Education and Research (BMBF), through VDI/VDE-IT, Germany*
- *Agencia Estatal de Investigación (AEI), Spain*
- *The Swedish Environmental Protection Agency (SEPA), Sweden*

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

Farmer acceptable REstoration of Semi-natural Habitat to limit Herbicides
FRESHH

David A. Bohan (Partner 1)

INRAE (France), CRI (Czech Republic),
Uni of Innsbruck (Austria), SLU (Sweden)
and
Wageningen (the Netherlands)

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

We know that carabid beetles could replace herbicide applications, improving the flora and freshwaters of agricultural landscapes.

These (agroecological) agents are not acceptable to farmers – the question is why?

We are interested in farmer decision-making and whether we can improve the acceptability of agroecological approaches with appropriate information at the appropriate scale for greater adoption and better landscape restoration

Working with farmers, FRESHH will co-develop acceptable practices to conserve carabid beetles, reducing herbicide use and run-off, and thereby restoring flora and benefiting aquatic biodiversity at EU scales. FRESHH will attempt to show whether the effects of this approach would 'rewild' the system.

France (Project Lead, Socio-economics and Ecology); Czech Republic (Ecology & Socio-economics); Austria (eDNA metabarcoding of freshwater biodiversity); Sweden (Ecology); and, the Netherlands (Ecological analysis)

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Expected Scientific Impact

Expected impact

FRESHH will work to understand the costs and benefits, and opportunities and constraints of supporting weed seed feeding carabids to reduce reliance on herbicides and restore terrestrial and aquatic habitats. Improved farmer knowledge and stakeholder cooperation, will lead to greater (acceptable) adoption and restoration.

Potential breakthroughs

Our socio-economic work with farmers will test whether including agronomic, socio-economic and ecological information from different landscape scales will leverage greater adoption of agroecological management to conserve carabid beetles, off-set herbicide use, restore semi-natural flora and benefit aquatic biodiversity (across the EU), and serve as a model for more sustainable, landscape-scale practices.

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Expected Societal & Policy Impact

Societal Impact

Communicating the benefits and costs of agroecological management to farmers and stakeholders will lead to greater (acceptability) adoption and restoration, and serve as a model for more sustainable, landscape-scale practices.

Policy Impact

Rewilding and agricultural landscape conservation, for better environmental health, are core requirements of several leading visions and policies for the future of farming, including the UN SDGs, the Common Agricultural Policy, the Green Deal, the EU Nature Restoration and Biodiversity Strategies, and the Water Framework Directive.

Dissemination

FRESHH is explicitly bottom-up, working directly with farmer networks, nationally, and stakeholders, from water companies to the public living in agricultural landscapes. This is our primary mode of dissemination.

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Acknowledgements

Agence Nationale de la Recherche (ANR), France

Technology Agency of the Czech Republic (TAČR), Czech Republic

Austrian Science Fund (FWF), Austria

The Swedish Environmental Protection Agency (SEPA), Sweden

Ministry of Agriculture, Nature and Food Quality (LNV), Netherlands

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

Interactive effects of local and landscape scale restoration of semi-natural grasslands and agricultural fields on species interactions and ecosystem functions in different social-ecological systems

InterRest

Annika Hass & Catrin Westphal (University of Göttingen, Germany)

University of Tartu, Estonia
Centro de Ciencia y Tecnología Forestal de Cataluña (CTFC), Spain
Universidad Autónoma de Madrid, Spain
Stockholm University, Sweden
KU Leuven, Belgium
Wageningen University, Netherlands

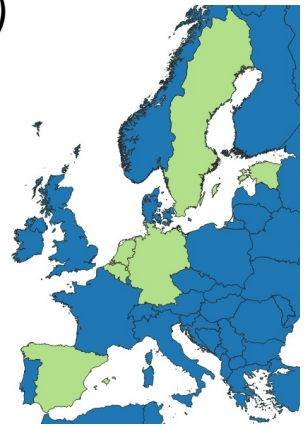



Photo: Gerard Bota

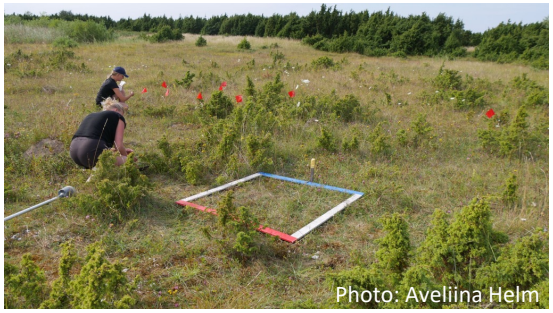


Photo: Aveliina Helm

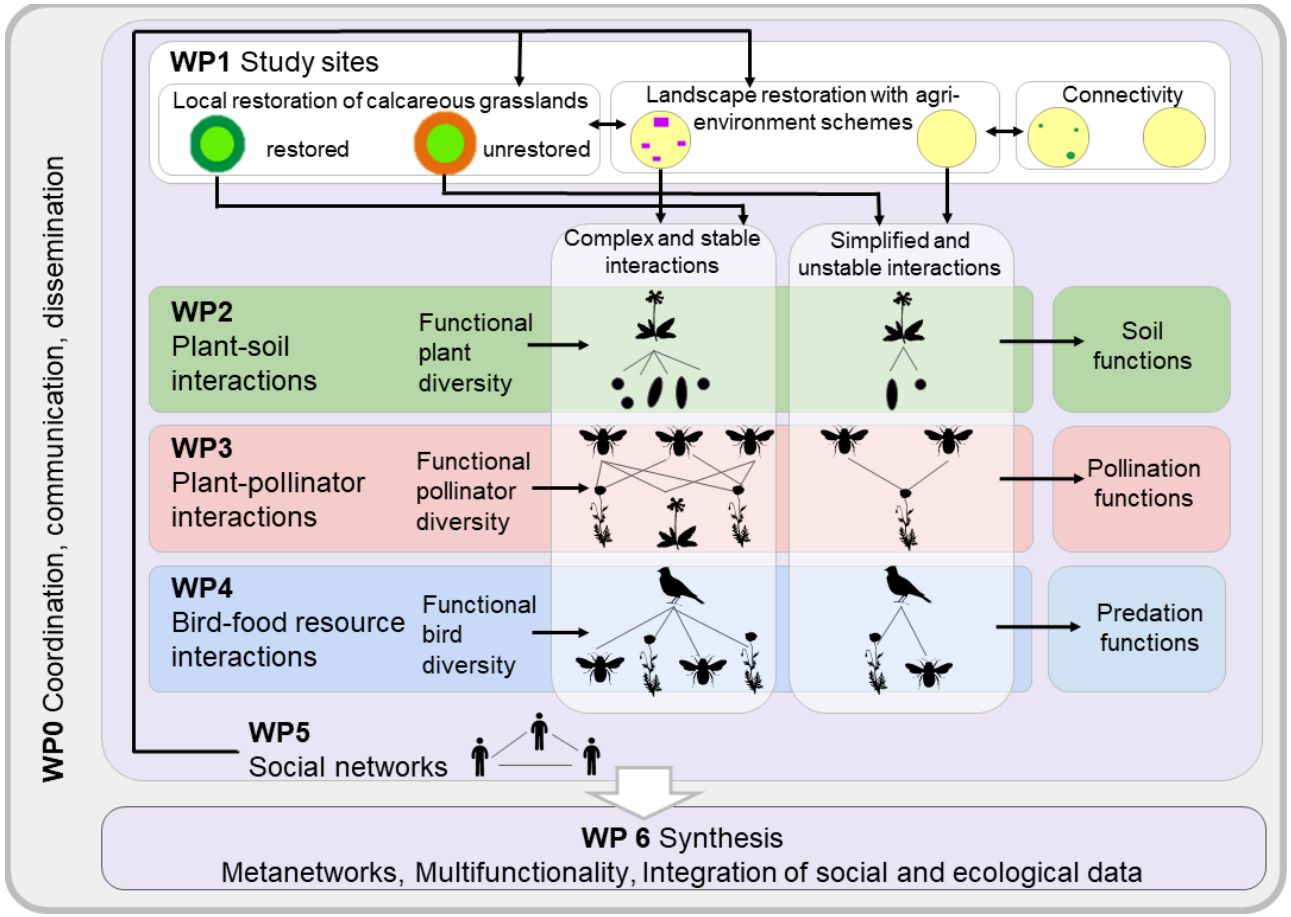

Photo: Birgit Jauker


Photo: Frank Jauker

BiodivRestora has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

- ***Local*** *and* ***landscape restoration*** *effects on* ***biotic interactions*** *in calcareous grasslands*
- *Effects of* ***social interactions*** *on restoration success*



96 grasslands in 3 countries

WP0 *University of Göttingen*

WP1 *University of Göttingen, University of Tartu, CTFC*

WP2 *University of Tartu*

WP3 *University of Göttingen, KU Leuven*

WP4 *CTFC, Universidad Autónoma de Madrid*

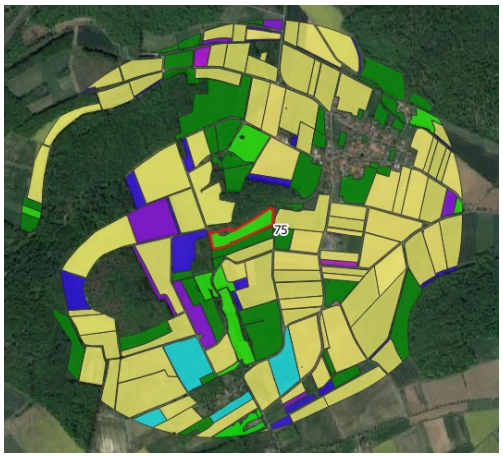
WP5 *Stockholm University*

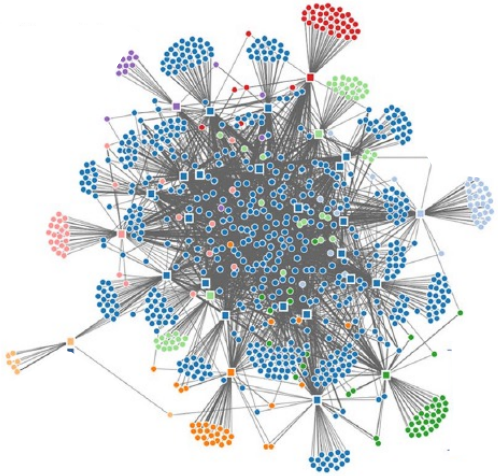
WP6 *University of Göttingen, Wageningen University*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

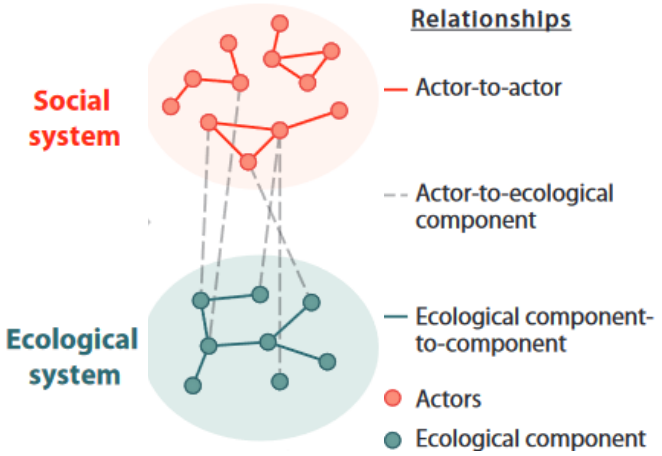
Expected Scientific Impact

- *Restoration effects on different biodiversity components:* ***functional diversity***, ***species interactions*** *and* ***ecosystem functions***
- *Relations between biodiversity components*
- *Upscaling of restoration to* ***landscape scale***
  - *Consideration of agri-environment schemes at the landscape scale*
  - *Meta-networks*
- *Combining* ***species interaction networks*** *with* ***social networks***





Librán-Embid et al. 2021, Ecology Letters



Adapted from: Bodin et al. 2020, Annual Review of Envir. and Resources

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Expected Societal & Policy Impact

- ***Recommendations*** *for restoration of semi-natural calcareous grasslands*
- *Identify possible* ***trade-offs*** *and* ***priority sites/interactions*** *(metanetworks)*
- ***Upscaling*** *to other regions*
- *Identification of* ***social requirements*** *for successful restoration*
- *Inform EU Biodiversity Strategy, Habitat Directive, Common Agricultural Policy*

	Level of engagement	Inform							Consult	Involve	Collaborate
	Method of engagement	Web-site	Social media	Public talks	Press releases	Policy briefs	Scientific publications	Scientific conferences	Question-naires	Work-shop	One-to-one meetings
	Months of the project	1-36	1-36	18+36	1+18-36	36	18-36	12-36	1-18	36	1-36
Stakeholder group	Authorities										
	NGOs										
	Farmers and landowners										
	Local businesses										
	Policy makers										
	Scientific community										
	Citizens and general public										

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Acknowledgement

The InterRest Team

Funded by

NATUR VÅRDS VERKET
SWEDISH ENVIRONMENTAL PROTECTION AGENCY

DFG Deutsche Forschungsgemeinschaft
German Research Foundation

Estonian Research Council

Ministry of Agriculture, Nature and Food Quality of the Netherlands

Belgian Science Policy Office
belspo

AGENCIA ESTATAL DE INVESTIGACIÓN

BiodivRestore has received funding j nnovation programme under the grant agreement No 101003777

biodiversa

Water JPI

Narratives on restored water
NARROW

Håkan Tunón
Swedish University of Agricultural Sciences

Finland: Snowchange Cooperative
Switzerland: University of Lausanne and
International Union for Conservation of Nature

Photo: Håkan Tunón

BiodivRestora has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

NARROW will examine nature conservation and climate change mitigation led by local communities

Evaluate governance contexts of five different water restoration sites in Finland and Sweden taking the concept of OECM:s (Other Effective Area-Based Conservation Measures) into account.

What are the main tasks and activities of your project?

- *All partners have planned and organize the work in order to find out:*
  - *How are the restoration projects organized?*
  - *What was the purpose of the restoration efforts?*
  - *What were the main achievements?*
  - *Have the local perceptions of the area changed as a result of the restoration?*
- *Finnish and Swedish partners will be main responsibility of the field work, and the Swiss partners will have a strong focus on the international policy survey*
- *All partners will analyze the results and disseminate the results*

Photo: Håkan Tunón

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Expected Scientific Impact

Photo: Mika Honkalinna

Expected impact from scientific point of view?

– better understanding of success factors in local initiatives and the value of local community involvement

– reflections over how authorities and NGOs can contribute to good results

What potential breakthroughs can you foresee?

– Possible understanding among local and national authorities how to understand and enable inclusion of local capacities (ways to collaborate in context specific ways)

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Expected Societal & Policy Impact

Societal challenges and/or policy issues?

There is a need to evaluate the possible contribution of OECMs to reach a future '30 by 30-goal' (i.e., 30 % protected areas by 2030)

Stakeholders:

– local communities
– local and regional actors in restoration
– international nature conservation actors

Impact from societal and policy point of view

Visualize the effect of restored areas on local communities and other stakeholders

Improved policy guidance on inclusion of local actors and devolving agency and capacity to local level in restoration projects

Dissemination of information?

Local meetings (formal/informal), local/regional press, national and international conferences, international policy discussions within the IUCN and CBD, and scientific papers

Photo: Chris McNeave

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Acknowledgement

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

Restoring peatlands of the nemoral zone under conditions of varying water supply and quality
ReVersal

Coord.: Klaus-Holger Knorr, University of Münster, GER

Partners: Hanna Meyer (Münster, GER), Bjorn Robroek (Nijmegen, NLD), Stephan Glatzel (Vienna, AUS), Mariusz Lamentowicz (Poznan, POL)

Photo: Peter Raabe

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

***ReVersal** addresses difficulties and limitations in restoration of ombrotrophic peatlands, using a **combined approach** of:*

palaeoecology, hydrology, biogeochemistry, greenhouse gas exchange, carbon budgets, vegetation ecology**, and **remote sensing

*Knorr (GER; coord.): investigating peat quality, stoichiometry, potential degradability, carbon stocks, GHG fluxes, and vegetation to quantify **stocks, fluxes and current status***

*Lamentowicz (POL): palaeoecological reconstruction of vegetation, water table levels, pollen records, etc. to set **past reference conditions** and understand **past resilience***

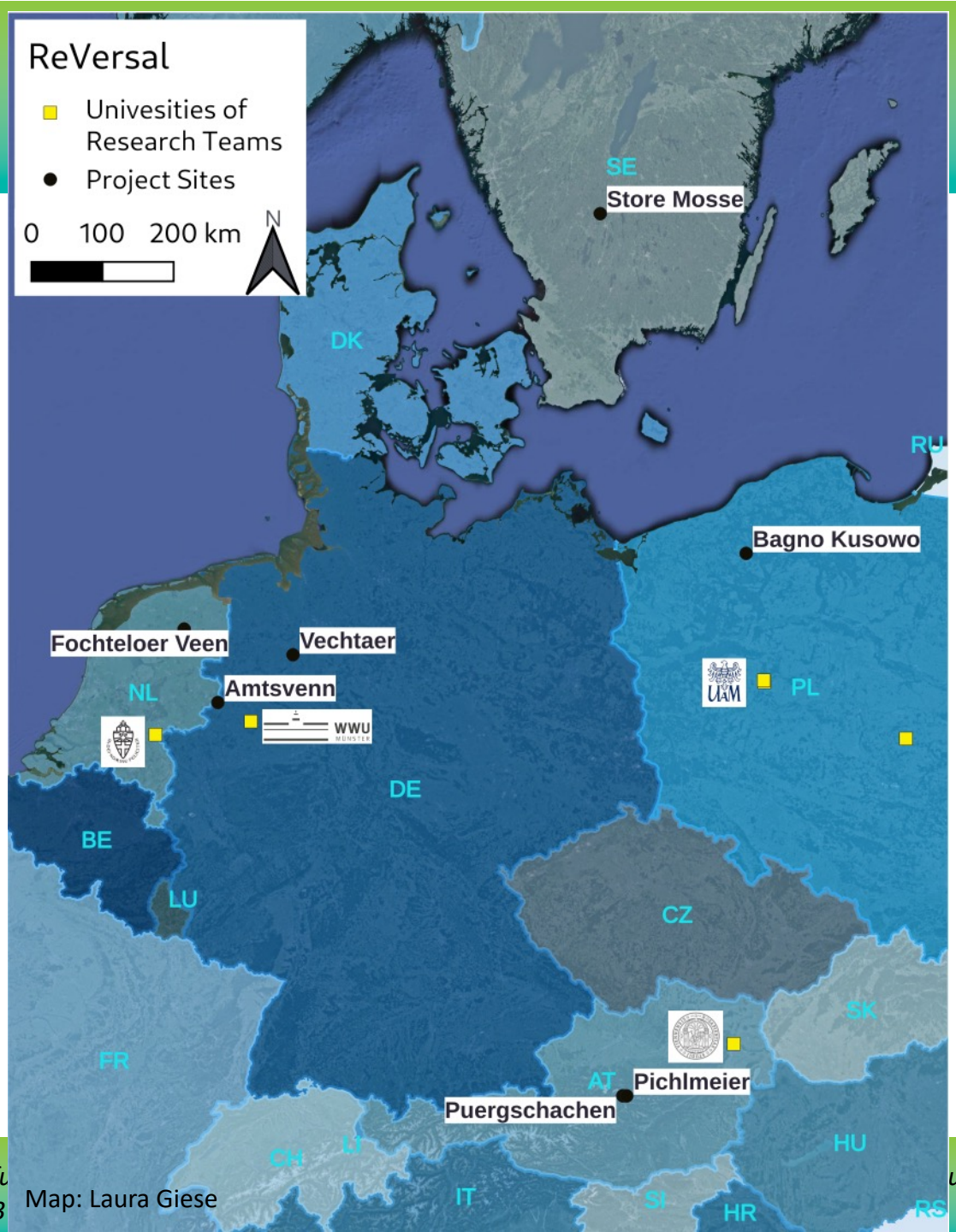
*Robroek (NLD): assessing diversity in microbial and vegetation communities, characterizing present hydrological conditions to understand **current functioning***

*Glatzel (AUS): developing a **decision support system**, leading **stakeholder dialogue and outreach**, contribution to GHG measurements*

*Meyer (GER): Assessment and monitoring of sites using **remote sensing** techniques and developing a data-driven approach to derive **models for long-term monitoring** that can be applied across sites and beyond ReVersal*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Location of project partners and study sites



Map: Laura Giese

BiodivRestore has received fu *under the grant agreement No 101003*

Expected Scientific Impact

Scientific impact and innovation:

While peatland restoration so far focuses mostly on individual aspects such as hydrology, or vegetation, ReVersal provides a holistic view of the sites to derive a truly ***interdisciplinary approach***

ReVersal *includes* ***present and past*** *aspects of biodiversity, carbon budgets, and hydrology to derive reference states for restoration sites and to better assess potentials and trajectories of restoration efforts*

Breakthroughs:

Novel ***remote sensing based tools and models*** *will enable assessment of peatlands beyond ReVersal study sites; these data-driven models will be based on and include process knowledge, aspects of biodiversity, and carbon budgets and thus go* ***beyond individual aspects of restoration***

Photo: Simon Drollinger

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Expected Societal & Policy Impact

*The majority of **peatlands** in Europe is **strongly affected by drainage and anthropogenic disturbance and climate change** further adds to existing difficulties and limitations in restoration.*

*Yet the **importance of peatlands in national and global GHG budgets** is widely accepted and restoration efforts are undertaken*

***ReVersal** wants to provide an **indicator framework beyond individual aspects of restoration** to balance trade-offs between restoration goals*

*We expect that this framework and remote sensing based tools and models will provide **multi-disciplinary, cost effective, and reliable long-term monitoring tools** on a scientific basis*

*The indicator framework and models will be discussed at **workshops** with farmers, the peat industry, nature conservationists, water managers, and administrative bodies to ensure a **co-development of research outputs***

Photo: Peter Raabe

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Acknowledgement

Funding in the individual countries:

- Germany: Deutsche Forschungsgemeinschaft (DFG)

- Austria: Der Wissenschaftsfonds (FWF)

- The Netherlands: Ministerie van Landbouw, Natuur en Voedselkwaliteit (LNV)

- Poland: Narodowe Centrum Nauki (NCN)

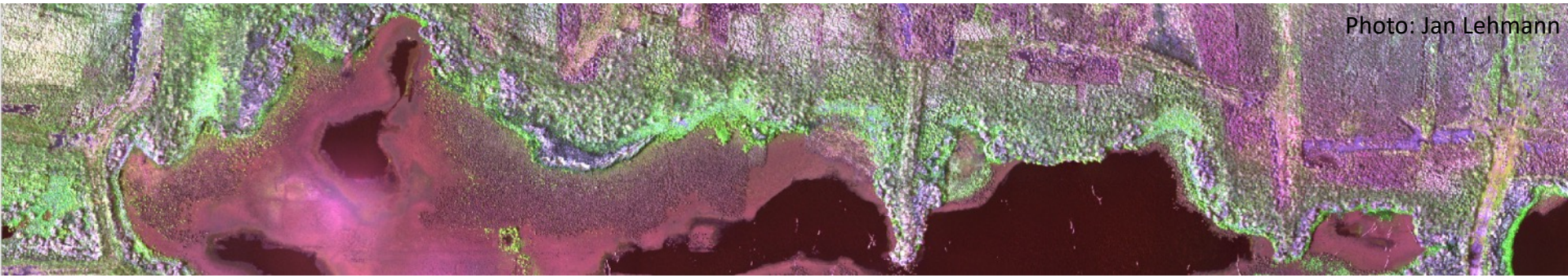


Photo: Jan Lehmann

BiodivRestore has received funding j nnovation programme under the grant agreement No 101003777

Q&A

FIRST: BIOCONSENT - Decision-making Support for Forest Biodiversity Conservation and Restoration Policy and Management in Europe: Trade-offs and Synergies at the Forest-BiodiversityClimate-Water Nexus, by *Metodi Sotirov*

FRESHH - Farmer acceptable REstoration of Semi-natural Habitat to limit Herbicides, by *David Bohan*

InterRest - Interactive effects of local and landscape scale restoration of semi-natural grasslands and agricultural fields on species interactions and ecosystem functions in different social-ecological systems, by *Catrin Westphal*

NARROW - NARRatives On restored Water, by *Håkan Tunon*

ReVersal - Restoring peatlands of the nemoral zone under conditions of varying water supply and quality, by *Klaus-Holger Knorr*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

PRESENTATION OF THE FUNDED PROJECTS
(session 4/5)

FIRST: DEEP REST- Conservation & restoration of deep-sea ecosystems in the context of deep-sea mining, by *Jozee Sarrazin*

MPA4sustainability - Enhancing the role of MPAs in restoring biodiversity while maintaining access to ecosystem services, by *David Lusseau*

RESTORESEAS - Marine Forests of animals, plants and algae: nature-based tools to protect and restore biodiversity, by *Ester A Serrao*

REMOVE_DISEASE - Conservation and restoration of degraded insular biodiversity: impacts of the removal of introduced mammals on the dynamics of infectious diseases in seabirds across islands of the Southern Ocean, by *Thierry Boulinier*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

DEEP REST

Conservation and restoration of marine ecosystems in the context of deep-sea mining

Jozée Sarrazin (coordinator, Ifremer, France)

15 partners from 8 countries, 1.27 millions euros

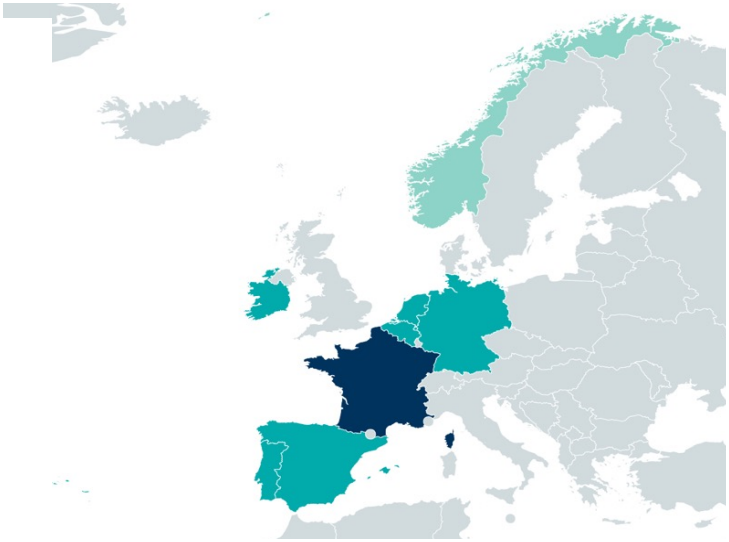
Duration : 01.04.2022 – 01.04.2025

KICK-OFF MEETING – May 4, 2022 - BIODIVRESTORE 2020-2021 CALL

DEEP-REST project partners (8 countries)

Coordinator: UMR BEEP, IFREMER, Plouzané, France

Brest University/CNRS/IFREMER, Plouzané, France
CNRS/Sorbonne University, Roscoff, France
Ghent University, Ghent, Belgium
Alfred Wegener Institute, Bremerhaven, Germany
GEOMAR, Kiel, Germany
Senckenberg Institute, Wilhelmshaven, Germany
National University of Ireland Galway, Galway, Ireland
Royal Institute for Sea Research, Den Burg, Netherlands
University Center, Svalbard, Norway
University of Bergen, Bergen, Norway
University of Aveiro, Aveiro, Portugal
University of Algarve, Faro, Portugal
University of the Azores, Horta, Portugal
University of Seville, Sevilla, Spain



Connection between most active deep-sea scientists to experienced economists & jurists.

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Context

Increasing demand for **mineral resources** worldwide for the car & nuclear industries, new technologies but also for renewable energies.

Strategic mineral resources found in deep-sea ecosystems including manganese crust, **polymetallic nodules** and **seafloor massive sulfides**.

Lack of **fundamental knowledge** about the biodiversity associated with these ecosystems, their functioning and the services they provide.

Clock is ticking : The International Seabed Authority (ISA) is currently drafting the mining code that will regulate mining operations in the Area (2023) and is working on the development of Regional Environmental Management Plans.

Information on **how to mitigate the impacts** of future mining activities are of utmost importance : **conservation, restoration, mitigation**.

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

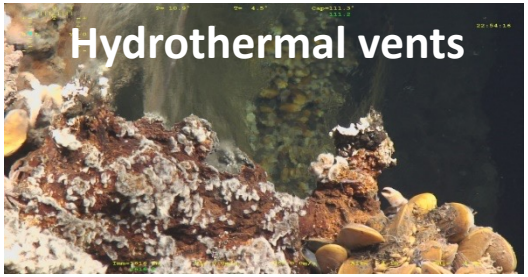
Objectives and project description

DEEP REST will develop a **novel approach** to improve our **conservation/restoration capacities** in two deep-ocean ecosystems threatened by mining.

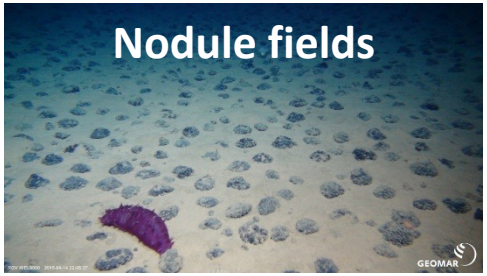
(1) investigate and compare the **biodiversity, functioning & connectivity** of biological communities within and across ecosystems, linking to environmental conditions;
(2) evaluate the **recovery potential** and **resilience** of deep-sea communities at different degrees of disturbance, identify indicators of change and characterize tipping points;
(3) test, through experimentation, the **effectiveness of different restoration actions** on the recovery of communities;
(4) evaluate **conservation/restoration outcomes** in terms of **ecosystem services** and identify the **governance arrangements** needed for efficient actions in concertation with stakeholders;
(5) provide **scientific guidance** to **stakeholders and policy-makers** and **recommendations to support deep-sea governance**, ensuring a sustainable management of resources and conservation of ecosystems;
(6) communicate with **stakeholders** on **issues linked to the exploitation** of deep mineral resources.

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Study areas



Active & inactive hydrothermal vents
Northern Mid-Atlantic Ridge
Arctic Mid-Ocean Ridge



Nodule fields
Clarion-Clipperton Zone (CCZ)
DISCOL Experimental Area (DEA)
Pacific Ocean

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Expected scientific, societal + policy impacts

- Acquisition + integration of **fundamental knowledge** on biodiversity, functioning & connectivity in link with environmental conditions in two ecosystems threatened by deep-sea mining;
- Evaluation of socio-economic dimensions **in concertation with stakeholders** including identification of ecosystem services + potential costs & benefits.
- Assessment of **conservation and restoration scenarios** to integrate **knowledge** and **concerns** from **scientists** and **stakeholders**
- Development of **improved management strategies** + **identification of areas** to set aside for **conservation** + of **reference areas. Recommendations** for the design of “marine protected areas”.
- **Policy briefs** that will feed into the public debate + **actions/interactions** with the general public + with students/classrooms.

Acknowledgements

Agence Nationale de la Recherche (ANR), France

Ministry of Agriculture, Nature and Food Quality (LNV), Netherlands

The Research Foundation – Flanders (FWO), Belgium

German Federal Ministry of Research (BMBF), VDI/VDE-IT, Germany

Environmental Protection Agency (EPA), Ireland

Fundação para a Ciência e a Tecnologia (FCT), Portugal

Fundo Regional para a Ciência e Tecnologia (FRCT), Portugal-Azores

State Research Agency (AEI), Spain

Web site : https://deep-rest.ifremer.fr/

Enhancing MPAs' role in restoring biodiversity while maintaining access to ecosystem services

mpa4sustainability

David Lusseau (DTU, DK)

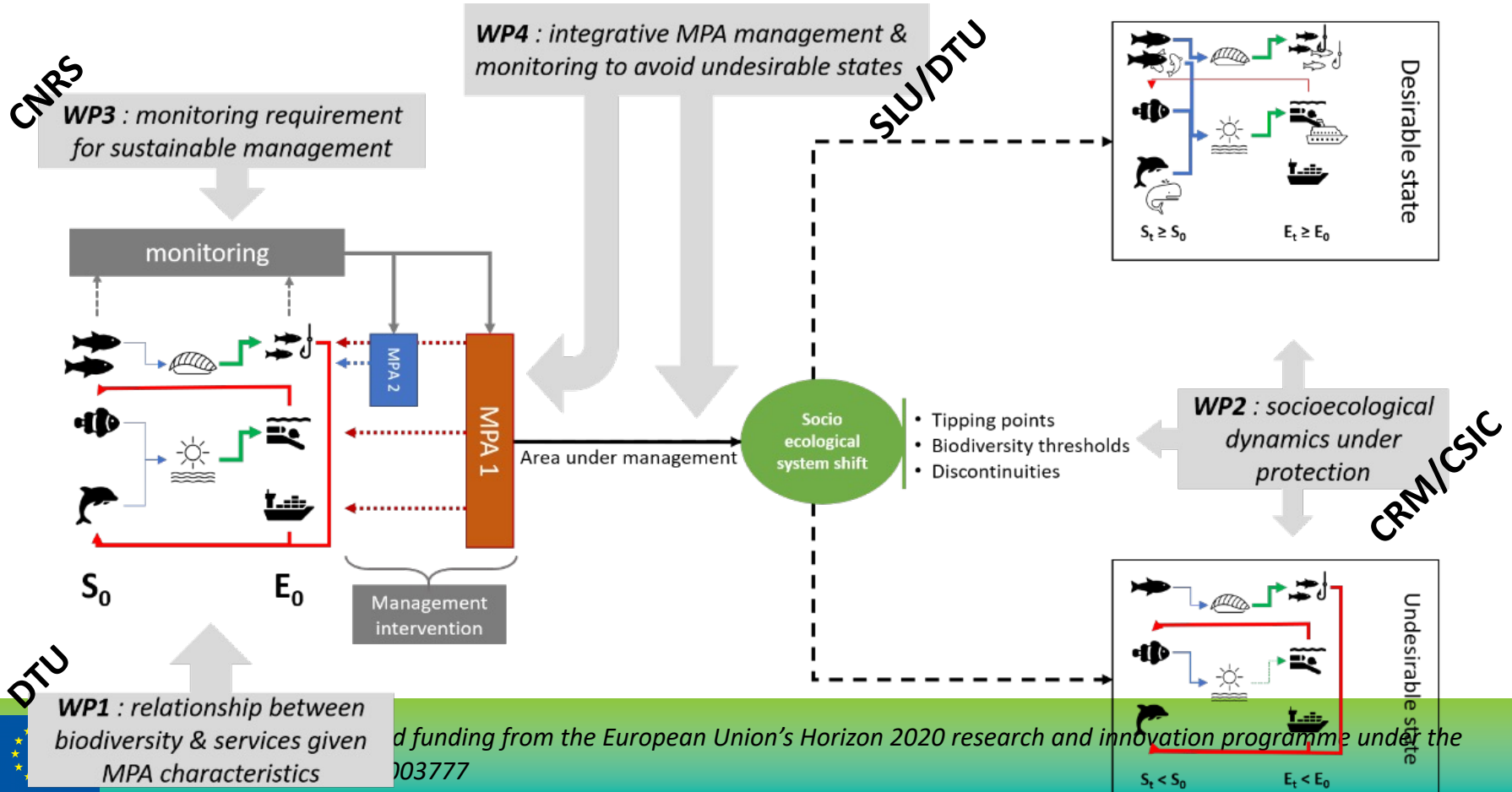
DTU Aqua (DK), SLU Aqua (SE), Museu da Baleia (Madeira, PT), CRM (ES), CSIC (ES), CNRS-EPHE-CRIOBE (FR)

mpa4sustainability

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives & Project description

- ***Challenge**: >17,000 MPAs globally*
  - *Clear management plan: ~23% & Management effectiveness evaluations: ~1%*
- ***Objective**: How can we more effectively use existing MPAs*
  - *achieve biodiversity targets & maximise their contributions to the blue economy*

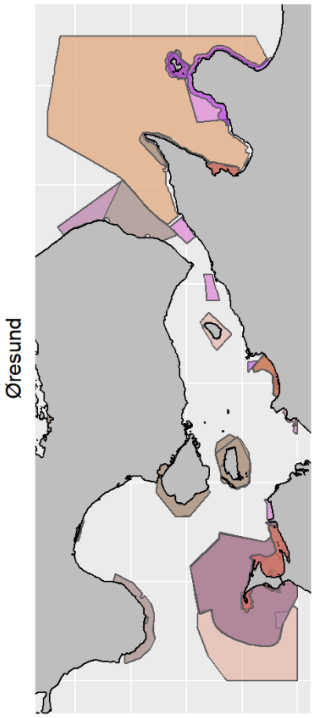


d funding from the European Union's Horizon 2020 research and innovation programme under the 003777

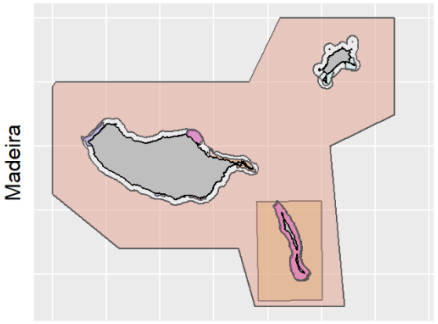
Expected Scientific Impact

- **Sustainability Science**: Form & function of coupled human-nature marine systems and how they can be exploited sustainably and efficiently monitored and managed.

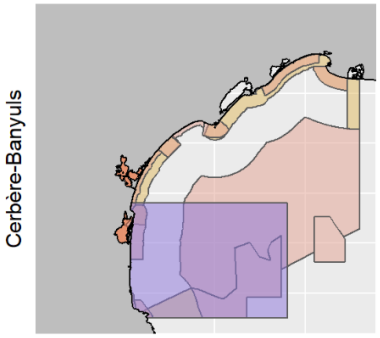
- Multiple scale insight derived from global retrospective analyses, new fundamental dynamical models, and three regional scale case studies



complexity: high - plan: scoping



complexity: low - plan: design phase



complexity: intermediate - plan: mature

BiodivRestore has received grant agreement No 10100

Expected Societal & Policy Impact

- **Policy:** integrative governance & management of multiple neighbouring disparate MPAs to maximise biodiversity outcomes and ecosystem services delivery.

- **Management**: develop management and cost-effective monitoring & management guidelines
  - to maximize opportunities for a biodiversity-rich & sustainable marine exploitations

- **Tool**: user-friendly simulation platform to develop integrative management plan
  - to consider the socioecological trade-offs,
  - identify management actions,
  - develop a monitoring programme,
  - recognise how adjacent existing MPAs can be used synergistically.

- **Beta-testing**: Practical guidelines to implement the Decision Support System in three European case studies.

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Acknowledgement

- **This project is funded thanks to the support of**
  - Innovation Fund Denmark,
  - The French National Research Agency,
  - The Spanish State Research Agency,
  - the Swedish Environmental Protection Agency,
  - The Portuguese The Foundation for Science and Technology

- **We want to also thank our case study partners**
  - Região Autónoma da Madeira,
  - Øresundsvandssamarbejdet,
  - Conseil Départemental des Pyrénées Orientales
  - Conseil de gestion du Parc Naturel Marin du Golfe du Lion
  - IUCN Marine & Polar and Protected Areas Programmes

- **We are eager to explore collaborations with**
  - BiNatUr, BIOCONSENT, COAST, COSAR, DEEP REST,EMYS-R, NARROW, RESTORESEAS

BiodivRestore has received funding f *nnovation programme under the grant agreement No 101003777*

RESTORESEAS
Marine Forests of animals, plants and algae: nature-based tools to protect and restore biodiversity

Ester Serrao

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Marine habitat restoration that targets the recovery of ecosystem functions

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

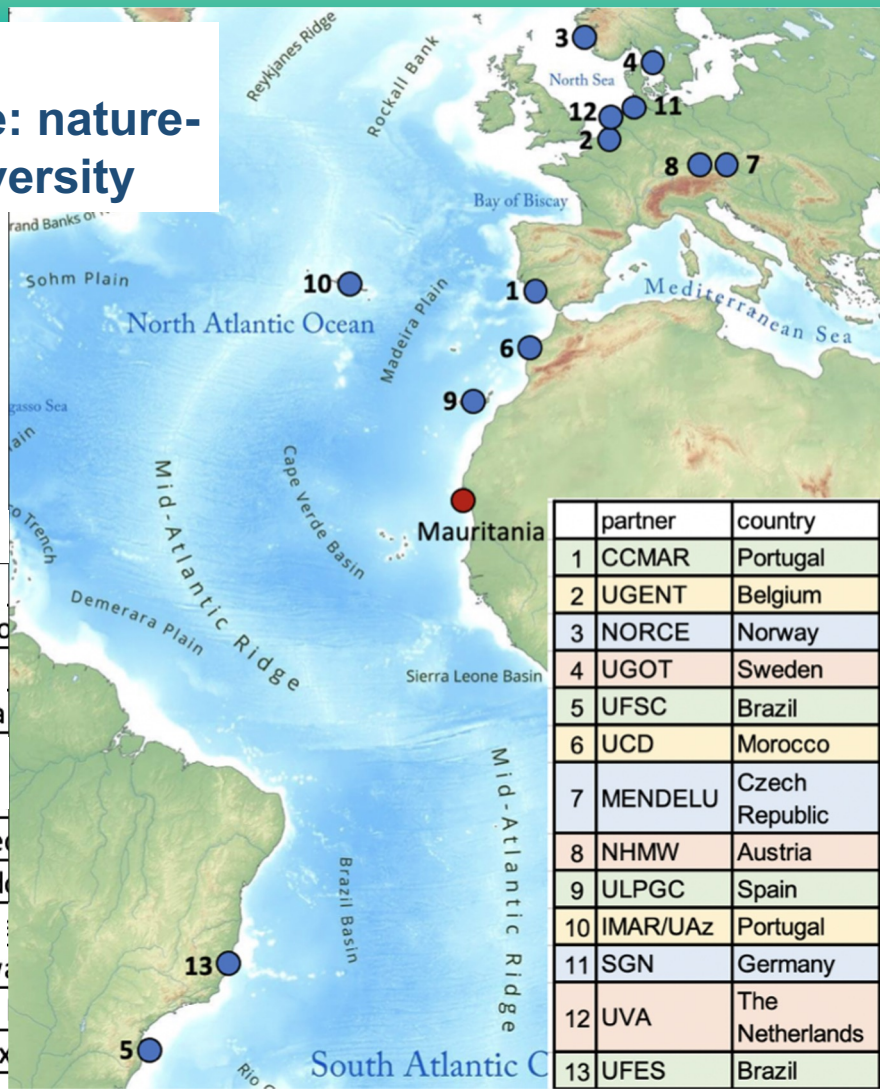
RESTORESEAS

Marine Forests of animals, plants and algae: nature-based tools to protect and restore biodiversity

Target ecosystems to restore:

marine forests of macroalgae, seagrasses and corals

Partner
Partner 1 - CCMAR (Centre Mar. Sci. Univ. Algarve, Portugal) - Ester Serrao
Partner 2 - UGENT (Univ. Gent, Belgium) - Olivier De Clerck
Partner 3 - NORCE (Norwegian Res. Inst.)- Thomas Gunnar Dahlgren <thda@nc
Partner 4 - UGOT (Univ. Goteborg) - Ann Larsson
Partner 5 - UFSC (Universidade Federal de Santa Catarina, Brazil) - Paulo Horta
Partner 6 - CDU(Chouaib Doukkali University, Morocco) - SABOUR BRAHIM
Partner 7 - MUB (Mendel University in Brno, Czec Republic) - Thomas Jung
Partner 8 - NHMV (Natural History Museum Vienna, Austria) - Frade Pedro <pe
Partner 9 - ULPGC (Universidad de Las Palmas de Gran Canaria, Spain) - Ricard
Partner 10 - IMAR-UA (University of Azores) - Pedro Afonso
Partner 11 - SGN (Senckenberg Gesellschaft für Naturforschung) - André Freiw
Partner 12: UvA (University of Amsterdam) - Gerard Muyzer
Partner 13: UFES (Federal University of Espîrito Santo) - Jean Christophe Joyeux



	partner	country
1	CCMAR	Portugal
2	UGENT	Belgium
3	NORCE	Norway
4	UGOT	Sweden
5	UFSC	Brazil
6	UCD	Morocco
7	MENDELU	Czech Republic
8	NHMW	Austria
9	ULPGC	Spain
10	IMAR/UAz	Portugal
11	SGN	Germany
12	UVA	The Netherlands
13	UFES	Brazil

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

RESTORESEAS
Marine Forests of animals, plants and algae: nature-based tools to protect and restore biodiversity

Funders

Portuguese Foundation for Science and Technology (FCT), Portugal

Austrian Science Fund (FWF), Austria

Research Foundation of Flanders (FWO), Belgium

Brazilian National Council of State Funding Agencies (CONFAP), Brazil

Technology Agency of the Czech Republic (TA CR), Czech Republic

German Research Foundation (DFG), Germany

Ministry of Agriculture, Nature and Food Quality (LNV), Netherlands

Research Council of Norway (RCN), Norway

Ministry of National Education, Vocational Training, Higher Education and Scientific Research (MENFPRESRS), Morocco

Regional Fund for Science and Technology (FRCT), Portugal - Azores

State Research Agency (AEI), Spain

The Swedish Environmental Protection Agency (SEPA), Sweden

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Milestones and Deliverables numbers are listed in the proposal forms		1
WP/Task	Task Denomination	1
WP1	CROSS-SYSTEMS APPROACHES	
Task 1.1	Scientific and public communication, participation and outreach	integrates local actors in participatory actions of management and restoration of marine forest-dominated environments undergoing disturbance
Task 1.2	Mapping vulnerable/degraded marine forests along the Atlantic coastlines	spatio/temporal biodiversity trends - past and future climate-threatened marine forests where restoration needs climate-adapted strategies.
Task 1.3	Role of habitat restoration and conservation on biodiversity	- Biodiversity in the seawater surrounding marine forests - Biodiversity over geological time on sediments surrounding marine forests
Task 1.4	Roles of the microbiome in restoration	investigate if restoration success of selected seagrass, seaweed and coral, can be monitored using microbial traits (e.g., indicator species or functions) and improved by microbiome manipulation
Task 1.5	Diversity and role of pathogens in restoration	discover the diversity, distribution, potential origin role of pathogens in marine forests predict environmental factors affecting pathosystems
WP2	DEEPER MARINE FORESTS - CO	
Task 2.1	Restoration of cold-water coral habitat	plant corals with local stakeholders (fishermen) in community-based restoration actions. Compare efficiency of sexually derived larvae and micro fragments for survival , growth, time
WP3	MARINE FORESTS OF PLANTS A	
Task 3.1	Marine restoration for a future climate - phenotyping for adaptive restoration of macroalgal forests	Use adaptive variation and local adaptation to temperature in restoration and management planning.
Task 3.2	Tipping points in seagrass and macroalgal restoration success - contrasting restoration approaches across multiple models	Estimate critical minimum planting size for restoration - Minimum Conservation Units

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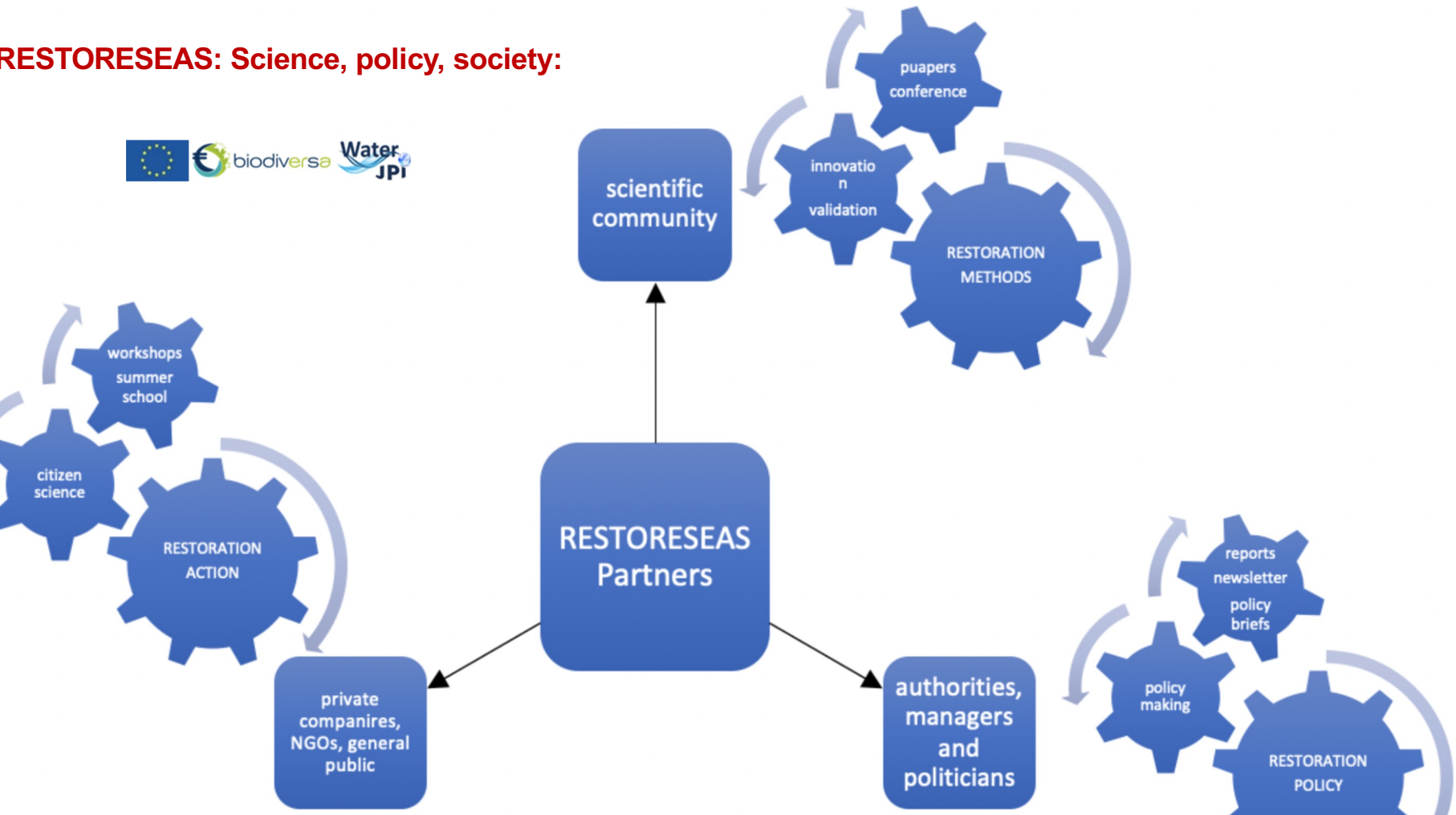
RESTORESEAS: Science, policy, society:



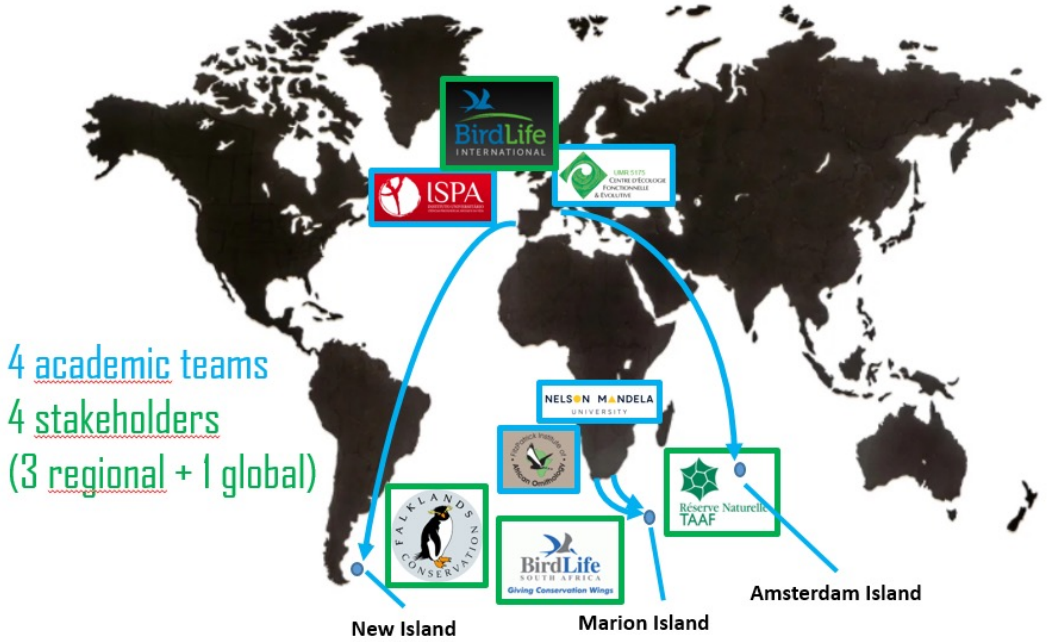
BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Conservation and restoration of degraded insular biodiversity: impacts of the removal of introduced mammals on the dynamics of infectious diseases in seabirds across islands of the Southern Ocean

REMOVE_DISEASE

Thierry Boulinier (Coordinator)



- CEFE CNRS – Université Montpellier, France
- MARE - Marine and Environmental Sciences Center, ISPA Instituto Universitário, Lisboa, Portugal (Paulo Catry)
- FitzPatrick Institute of African Ornithology - University of Cape Town, South Africa (Peter Ryan)
- Nelson Madela University (Maëlle Connan)

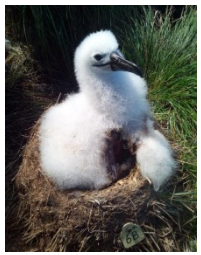
- Bird Life South Africa, South Africa
- National Nature Reserve of the French Southern Lands, France
- Falkland Conservation, Falkland Islands
- Birdlife International, Cambridge, UK

BiodivRestora has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Context & project aim

Context:

- *Introduced mammal species = major threats to biodiversity/seabirds on islands*
- *Restoration efforts via removal of introduced mammal species*



Restoration plans:
- Amsterdam Island (FR)
- Marion Island (SA)

- *Infectious diseases = neglected threat to densely breeding species*

E.g., Avian cholera killing each year thousands of nestling albatrosses on Amsterdam Island

- *Introduced species and infectious disease dynamics?*
- *Removing introduced mammals → extra benefit to biodiversity conservation via effects on disease dynamics ?*

→ ***Project aim:*** ***determine if removing introduced mammal species from islands provide indirect benefits via effects on the dynamics of infectious diseases***

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Objectives and project description

Main tasks:

- Document the effects of introduced species in eco-epidemiological dynamics involving seabirds on islands and the indirect effects of restoration efforts

To achieve this,

- 3 sets of sub-Antarctic islands

- Academic partners involved in long-term seabird population ecology

- Stakeholders involved in seabird conservation

- Field work, laboratory analyses, modelling, communication

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

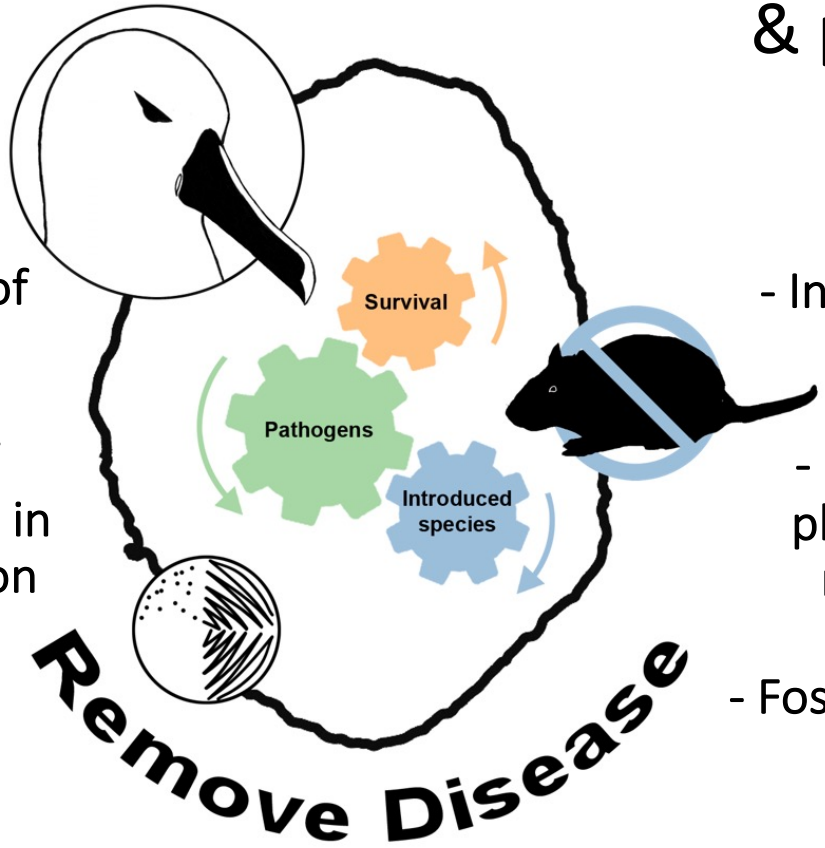
Expected Impacts

Scientific impact

- Quasi-experimental test of cascading effects

- Better understanding of infectious disease dynamics in polar/island/metapopulation systems

- Foster inter-disciplinary approach and training



Societal & policy impact

- Increased awarness

- Consideration in planning of future removal efforts

- Foster evidence-based conservation

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

Acknowledgement

Funders of the project:

anr agence nationale de la recherche AU SERVICE DE LA SCIENCE

FCT Fundação para a Ciência e a Tecnologia

WATER RESEARCH COMMISSION

For more information:

Remove Disease

http://removedisease.fr

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

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Water JPI

Q&A

FIRST: DEEP REST- Conservation & restoration of deep-sea ecosystems in the context of deep-sea mining, by *Jozee Sarrazin*

MPA4sustainability - Enhancing the role of MPAs in restoring biodiversity while maintaining access to ecosystem services, by *David Lusseau*

RESTORESEAS - Marine Forests of animals, plants and algae: nature-based tools to protect and restore biodiversity, by *Ester A Serrao*

REMOVE_DISEASE - Conservation and restoration of degraded insular biodiversity: impacts of the removal of introduced mammals on the dynamics of infectious diseases in seabirds across islands of the Southern Ocean, by *Thierry Boulinier*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

PRESENTATION OF THE FUNDED PROJECTS
(session 5/5)

FIRST: BIO-TRADE - Protecting Biodiversity through Regulating Trade and International Business, by *Anu Lähteenmäki-Uutela*

NICHES - Nature's Integration in Cities' Hydrologies, Ecologies and Societies, by *McKenna Davis*

BiNatUr - Bringing nature back – biodiversity friendly nature-based solutions in cities, by *Kati Vierikko*

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Protecting biodiversity through regulating trade and business relations
BIO-TRADE

Anu Lähteenmäki-Uutela (Finnish Environment Institute)

Finnish Environment Institute, Finland
Raoul Wallenberg Institute for Human Rights and Humanitarian Law, Sweden
Centre for Private Governance, University of Copenhagen, Denmark
Centre for Development and Environment, University of Bern, Switzerland

BiodivRestore has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Objectives and project description

The main objective of BIO-TRADE: to understand ***how the EU and European countries should regulate trade and business relations to protect biodiversity outside Europe***

The main ***tasks and activities****:*

- *WP1 Coordination, SYKE*
- *WP2 Trade law, University of Bern*
- *WP3 Due diligence in supply chains, University of Copenhagen*
- *WP4 No net loss, mitigation hierarchy and offsets, SYKE*
- *WP5 Human rights perspectives, Raoul Wallenberg Institute*
- ***Outputs****: scientific articles, policy briefs, Practical Guide, workshops and events*

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Expected scientific and societal impacts

*The expected **impacts** of BIO-TRADE:*

- improved understanding on the impacts of law

→ more efficient, fairer, and more coherent law, e.g., EU Deforestation Regulation, EU Corporate Sustainability Due Diligence Directive

→ enhanced biodiversity footprint of European companies and European consumption

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Stakeholder engagement and dissemination

Stakeholder engagement *at BIO-TRADE events:*

youth event, business managers event, national business and policy workshops, Brussels policy workshop, scientific seminar, Practical Guide launch event

Dissemination of information*: conferences, business organizations' events, web page, social media, Advisory Committee*

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Acknowledgements

ACADEMY OF FINLAND

NATUR VÅRDS VERKET
SWEDISH ENVIRONMENTAL PROTECTION AGENCY

Innovation Fund Denmark
RESEARCH, TECHNOLOGY & GROWTH

FNSNF
SWISS NATIONAL SCIENCE FOUNDATION

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Water JPI

NICHES

Nature's integration in cities' hydrologies, ecologies and societies

McKenna Davis, Ecologic Institute (Coordinator)

Partners:

- Universitat Autònoma de Barcelona (UAB), Spain
- Netherlands Institute of Ecology (NIOO-KNAW)
- University of Sheffield, UK
- Northeastern University, USA
- Pensoft Publishers, Bulgaria

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Objectives and project description

NICHES will utilise five global cities as co-design arenas to explore the potential for **mitigating combined sewage overflow (CSO) through nature-based solutions** to reduce negative impacts on aquatic ecosystems

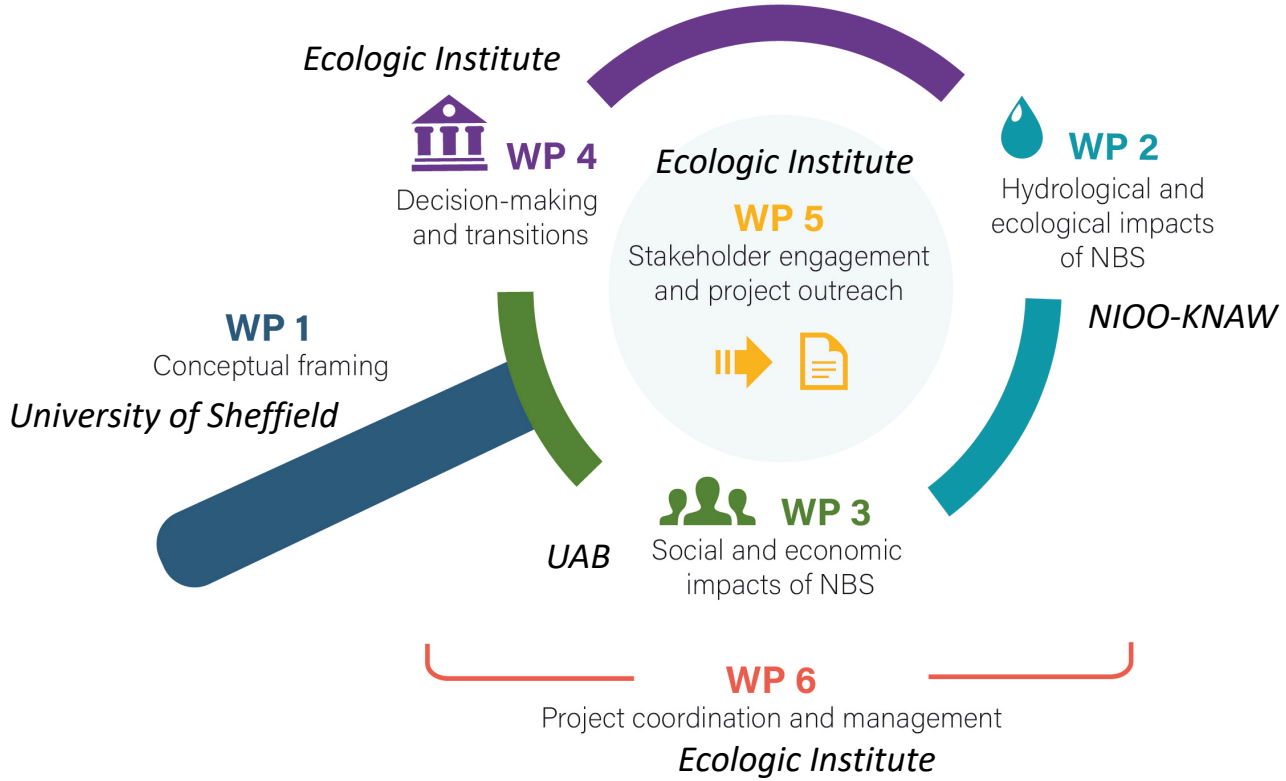
Barcelona, ES

Rotterdam, NL

Boston, USA

Sheffield, UK

Berlin, DE



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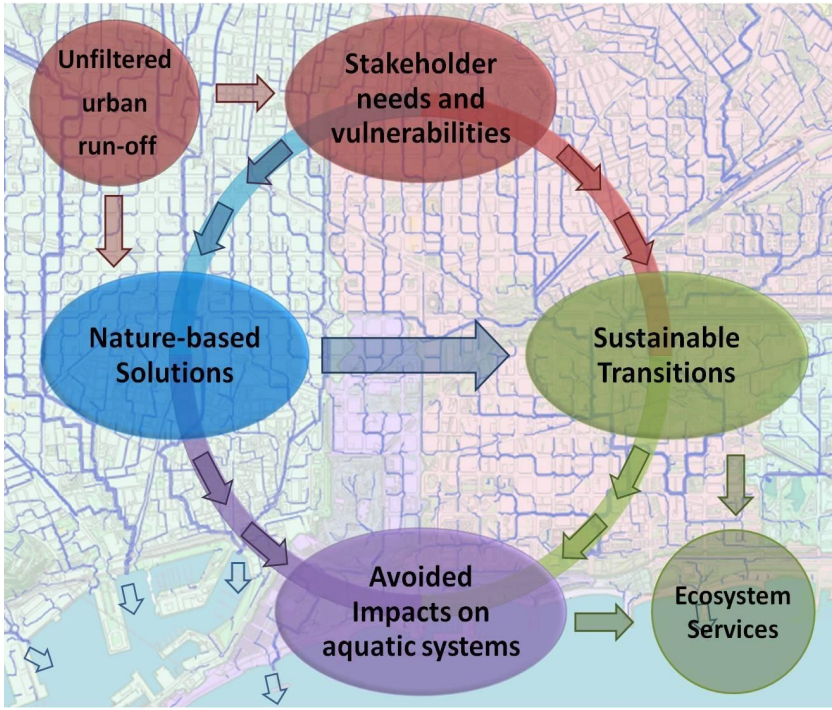
Expected Scientific Impact

By adopting a **holistic SETS approach** (socio-ecological-technical systems approach)…

- Co-create **shared understanding of restorative NBS** to avoid storm-water runoff
- Develop a novel **ecosystem provisioning module** illustrating CSO consequences on ecosystem service provisioning
- Generate **NBS scenario maps** to increase consideration of hydrological impacts in planning and decision-making
- Produce an **integrated water assessment framework** for restorative NBS, considering trade-offs and synergies



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Expected Societal & Policy Impact

- **Improve NBS effectiveness** and upscaling for (aquatic) restoration
- **Mitigate societal, ecological and economic impacts** of CSO
- **Co-create transition pathways** for increased policy integration of NBS and more integrated governance approaches to overcome policy / planning silos
- **Support sectoral policy goals** through biodiversity protection, increased NBS uptake and improvements to human health and water quality
- Strong **stakeholder involvement** through co-design arenas, targeted outreach and exploitation activities

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Acknowledgements

- *VDI/VDE-IT, Germany*
- *Agencia Estatal de Investigación (AEI), Spain*
- *Ministry of Agriculture, Nature and Food Quality (LNV), Netherlands*

SPONSORED BY THE

Federal Ministry of Education and Research

AGENCIA ESTATAL DE INVESTIGACIÓN

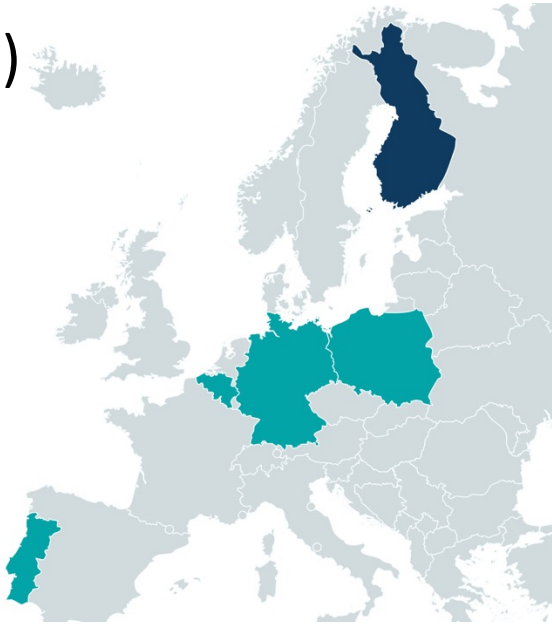
Ministry of Agriculture, Nature and Food Quality of the Netherlands

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

Bringing nature back – biodiversity-friendly nature-based solutions in cities (BiNatUr)

Kati Vierikko
project coordinator
Finnish Environment Institute (SYKE)

1. Humboldt University of Berlin (HU Berlin)
2. FVB e.V. for the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB)
3. Poznań University of Life Sciences (PULS)
4. Universiteit Antwerpen (UAntwerp)
5. Centre for Ecology, Evolution and Environmental Changes, University of Lisbon (FCiências.ID)



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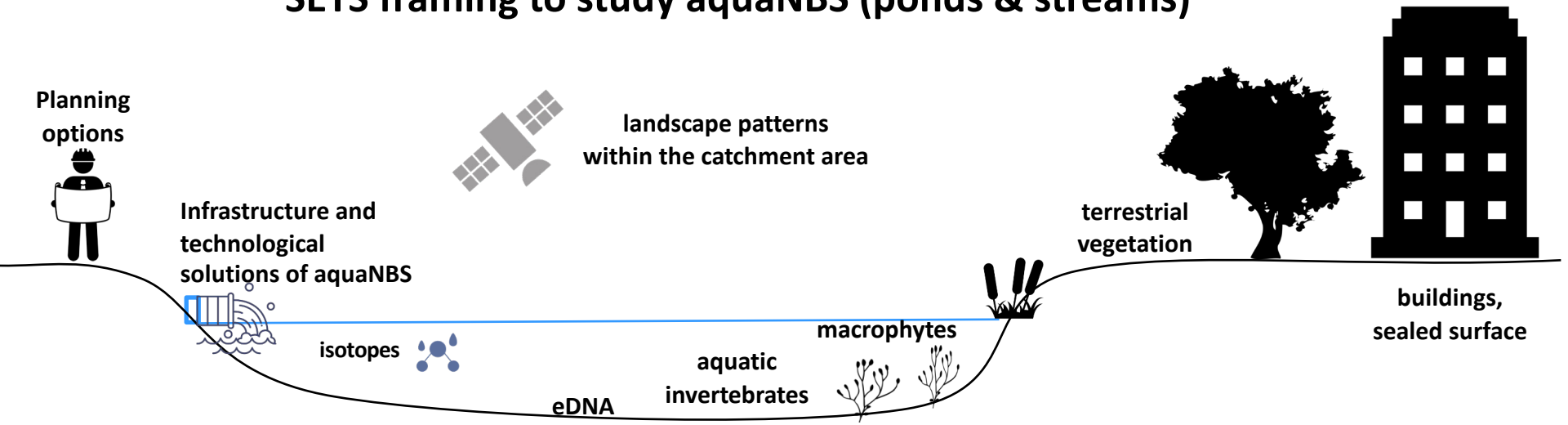
Objectives and project description

SETS framing to study aquaNBS (ponds & streams)



Social	Ecological	Technological
How is BD valued among planners and practitioners? What is the role of biodiversity in planning NBS? How it can be enhanced?	What is biodiversity in aquaNBS? Is there linkages between BD and regulating ES? How does surrounding vegetation influence BD and ES of aguaNBS?	How ESs and BD of aquaNBS are affected by local infrastructure and surrounding land-uses? How technology used in NBS influence BD and ESs?
Key social components for aquaNBS (WP1), expert interviews (WP2), document analyses (WP2), workshops and meetings (WP2) **WP1:** SYKE and HU Berlin **WP2:** SYKE and HU Berlin	Key ecological components for aquaNBS (WP1), analyzing landscape patterns (WP3), water stable isotope and eDNA analyzes (WP4), standardized inventories of biological diversity and habitat quality (WP5) **WP4:** IGB and FCiências.ID **WP5:** FCiências.ID and PULS	Key technological components for aquaNBS (WP1), expert interviews (WP2), document analysis (WP2), analyzing built environment (WP3), gray infra and technological solutions of aquaNBS (WP5) **WP3:** HU Berlin and Uantwerp

Expected Scientific Impact

BiNatUr brings new scientific evidence on the role of biodiversity and its linkage with regulating ES in urban water-based NBS (“aquaNBS”)

The SETS framework has been proposed as a holistic approach for the study of complex and strongly interactive systems, but has not yet been used to empirically study urban green spaces, small water bodies or aquaNBS

BiNatUr will test and further develop the SETS concept for empirical research to guide the methodological design, data collection and analyses.

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Expected Societal & Policy Impact of BiNatUr project:

- Support **the urban greening objectives** of European Biodiversity Strategy for 2030 by shifting current planning and management activities of aquaNBS to become more BD-supportive.
- Support **EU Nature Restoration Targets** by providing guidelines for biodiversity-friendly planning and restoration of aquaNBS.
- Produce recommendations on how urban planning can effectively co-design, monitor, and enhance the biodiversity and ES of aquaNBS.
- By studying cities in representative climatic regions, BiNatUr provide solutions that may become important in the future under climate change
- Closely engage with local urban planners and practitioners during the project through meetings, consultations and fields trips
- Publish recommendations (e.g. technical case cards) in project partners' official languages
- Publish blog writings about methods used and main outcomes during the project
- Actively communicate in social media
- Project website: www.bringingnatureback.com will open soon!

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Acknowledgement

BiNatUr project is funded by:

Academy of Finland, Finland

Bundesministerium für Bildung und Forschung (BMBF), Germany

Federal Ministry of Education and Research, Germany

National Science Center Poland, Poland

Research Foundation Flanders (fwo), Belgium

Fundação para a Ciência e Tecnologia, Portugal

BiodivRestore has received funding j *nnovation programme under the grant agreement No 101003777*

Q&A

FIRST: BIO-TRADE - Protecting Biodiversity through Regulating Trade and International Business, by *Anu Lähteenmäki-Uutela*

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Expectations towards funded projects & follow-up activities

***By** Céline Billiere, ANR, Follow up Team*
***&** Frédéric Lemaitre, FRB, Biodiversa+ SSI-SPI officer*

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Follow-up of the funded projects

Follow-up team contact

- **Follow-up Team** is in charge of the follow-up of the projects
- It is based at **ANR**, France:

Céline Billiere: celine.billiere@agencerecherche.fr
Sophie Germann: Sophie.germann@agencerecherche.fr

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Follow-up

Changes in a project (incl. cost-neutral extension):

Any change in the project (e.g. changes in the consortium) **has to be requested by the coordinator** to the Follow-up Team by sending **a note justifying and explaining** the requested change.

The request then has to be assessed & agreed by the Call Steering Committee (CSC), i.e. funding organisations.

After CSC decision, each research partner should contact her/his respective funding organisation to finalize the process at the national/regional level.

IMPORTANT **No extension of project is possible** as the BiodivRestore programme is a COFUND action – and projects have to be terminated by the end date of the BiodivRestore Action (it's a matter of eligibility of costs).

- Please inform the Follow-up Team in case your consortium faces any major difficulties.

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Reporting

MID-TERM REPORT: ~1 ½ year after the start dates of the projects

➢ These mid-term reports will be assessed by a Follow-up group. A summary of the review will be sent to the coordinators, with recommendations or requests for clarifications, when needed.

~ Sept. 2023

FINAL REPORTING: At the end of all the projects

➢These final reports will be assessed by a Follow-up group. A summary of the review will be sent to the coordinators, with recommendations or requests for clarifications when needed.

~ Sept. 2025

The Follow-up Team will circulate the report templates to the coordinators in the next couple of months. We will remind you that you have to submit your reports ca. two months before each deadline.

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Communication Tools and Dissemination requirements

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Open Data/Open Access Platform

In line with the H2020 guidelines, Biodiversa and the Water JPI are implementing an Open Access policy, which refers to:

- ✓ **Peer-reviewed scientific research articles** (published in scholarly journals), or
- ✓ **Research data** (data underlying publications, curated data and/or raw data)

Open Data Open Access Water JPI platform is available through:
http://opendata.waterjpi.eu/

- ⇨ The aim of the Open Access Open Data platform is to stimulate Open Data for all scientific publications produced within the projects funded by BiodivRestore ERA-NET. The Open Data & Open Access JPI tool is open and available for public consultation without password.
  The researchers can insert new data using the assigned password.
- ⇨ More information will be provided during the data management WS on 19 May

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Dissemination by RD projects: Acknowledgement

To acknowledge Biodiversa, the Water JPI and the funding organisations that funded your research project through the BiodivRestore programme, please follow the following guidelines:

- ⇨ FOR ALL TYPE OF SUPPORT, IN PARTICULAR PAPERS PUBLISHED IN SCIENTIFIC JOURNALS, indicate the following sentence: **"This research was funded through the join 2019-2020 Biodiversa & Water JPI joint call for research proposals, under the BiodivRestore ERA-Net COFUND programme, and with the funding organisations XXX, XXX, XXX and XXX."**

- ⇨ **Important:** please check with the relevant funding organisations if you need to indicate further details (e.g. ID number, full legal name, acronym etc.)

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Dissemination by RD projects: Acknowledgement

In addition, in any PowerPoint presentation or poster etc.**, use the Biodiversa, Water JPI and European Commission logos**, as well as the **logos of the relevant funding organisations.**

!! **Important:** As you should act as an international project, please note that you have to **acknowledge the funding organisations of all the research partners involved in this work** (and e.g. not only the funding organisation of the team who is leading the publication)

Reminder: A real collaboration between research teams and integration of research carried out is expected, and this should lead to co-publications between the different research teams, and more particularly between the different countries, involved in the project. !!

Our communication tools

Biodiversa and the Water JPI are happy to relay your news (e.g. publications, events, news) through our communication channels

Make sure to contact us early enough (e.g. before the lift of the embargo of a new publication so that we can coordinate communication at the publication of the article, etc.)

Our communication channels are:

- Biodiversa and Water JPI newsletters / newsflashes
- Social networks
  - ✓ LinkedIn
    - Biodiversa+ – https://www.linkedin.com/company/biodiversaplus/
    - Water JPI researchers forum - https://www.linkedin.com/groups/8455262/
  - ✓ Twitter
    - @BiodiversaPlus
    - @WaterJPI
- Biodiversa & Water JPI websites

For any news you would like to share, contact us:

- **Biodiversa:** contact@biodiversa.org
- **Water JPI:** waterjpicommunication@agencerecherche.fr

The online booklet of funded projects

Our first communication product for the BiodivRestore funded projects:

the Joint Call Booklet

- It is an online brochure presenting the call process/results and each funded projects
  - **You can use your project's fiche as a communication material**

Summary of the 2020-2021 BiodivRestore Call

The aim of this call was to support transnational research projects on conservation and restoration of degraded ecosystems and their biodiversity, including a focus on aquatic systems, properly taking into account socio-ecological contexts, and promoting innovative research for more informed decision-making.

This joint call included a focus on freshwater aquatic systems but all environments were eligible, i.e. marine, freshwater and terrestrial – including urban. While projects could focus on only one environment; proposals comparing different environments or studying links between environments (e.g., aquatic-terrestrial) were particularly welcomed.

Three major (non-exclusive) themes were addressed by the call

Projects could address one or several themes. Projects combining aspects from two or more themes were encouraged.

Theme 1: Studying the biological and biophysical processes at stake for conservation/restoration, and their interactions.

This research theme focussed on the role of different biodiversity dimensions for conservation and restoration, the relationship between ecosystem functioning and biodiversity during conservation and restoration processes of degraded ecosystems and on the importance of time scales for assessing and understanding post- versus pre-conservation/restoration trajectories.

Theme 2: Assessing trade-offs and synergies between targets, benefits and policies for conservation and restoration.

This theme mostly aimed at research contributing to help proposing quantitative and qualitative targets for conservation and restoration in support to integrated policies and management or practices on the ground. To this aim, analyses of trade-offs and synergies between targets of conservation and restoration measures, assessments of social and economic benefits and costs of conservation and restoration approaches and the development of integrative social-ecological approaches were welcome.

Theme 3: Knowledge for improving the effectiveness and upscaling of conservation and restoration actions.

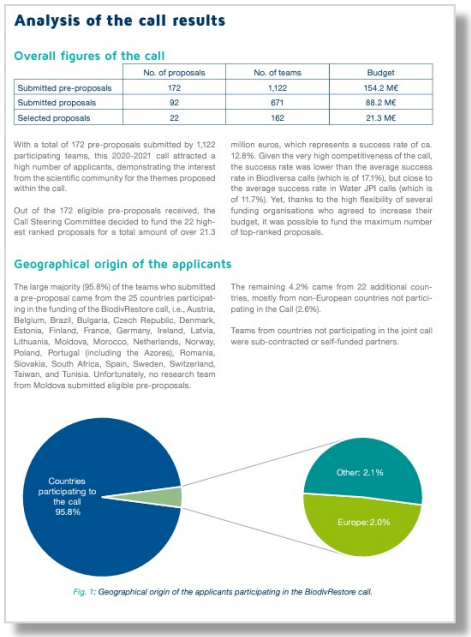
The objectives of this theme were to scale-up processes to landscapes or regions and across gradients, integrate conservation and restoration approaches for improving their effectiveness and evaluate and consider uncertainties associated to conservation and restoration approaches for developing adaptive management.

Type of research funded

This call targeted transdisciplinary projects of 3 years, involving partners from at least three different countries participating in the call.

Given the nature of the research supported through this call, proposals had to engage different disciplines including biological, natural, social, economic, political sciences and/or humanities.

The added value of international collaboration and the level of collaboration between teams from different countries had to be clearly demonstrated to allow for upscaling of knowledge beyond the national level, or for comparative approaches of different local contexts. Contributions to global research programs, assessment bodies, and multi-lateral environmental agreements were encouraged.



Analysis of the call results

Overall figures of the call

	No. of proposals	No. of teams	Budget
Submitted pre-proposals	172	1,122	154.2 M€
Submitted proposals	92	671	88.2 M€
Selected proposals	22	162	21.3 M€

With a total of 172 pre-proposals submitted by 1,122 participating teams, this 2020-2021 call attracted a high number of applicants, demonstrating the interest from the scientific community for the themes proposed within the call.

Out of the 172 eligible pre-proposals received, the Call Steering Committee decided to fund the 22 highest ranked proposals for a total amount of over 21.3 million euros, which represents a success rate of ca. 12.8%. Given the very high competitiveness of the call, the success rate was lower than the average success rate in Biodiversa calls (which is of 17.1%), but close to the average success rate in Water JPI calls (which is of 11.7%). Yet, thanks to the high flexibility of several funding organisations who agreed to increase their budget, it was possible to fund the maximum number of top-ranked proposals.

Geographical origin of the applicants

The large majority (95.8%) of the teams who submitted a pre-proposal came from the 25 countries participating in the funding of the BiodivRestore call, i.e., Austria, Belgium, Brazil, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Latvia, Lithuania, Moldova, Morocco, Netherlands, Norway, Poland, Portugal (including the Azores), Romania, Slovakia, South Africa, Spain, Sweden, Switzerland, Taiwan, and Tunisia. Unfortunately, no research team from Moldova submitted eligible pre-proposals.

The remaining 4.2% came from 22 additional countries, mostly from non-European countries not participating in the Call (2.6%).

Teams from countries not participating in the joint call were sub-contracted or self-funded partners.

Fig. 1: Geographical origin of the applicants participating in the BiodivRestore call.

COSAR

Context-dependence of the societal and ecological outcomes from river ecosystem restoration

DURATION
01.01.2022 – 31.12.2024

TOTAL GRANT
€ 630.789

MORE INFORMATION
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SOCIAL NETWORK
Twitter #cosar_project

PARTNERS OF THE PROJECT

Coordinator: Functioning of hydrosystems (RiverLy), INRAE, Villeurbanne, France

Anthropized Continental Hydrosystems - Ressources, Risks, Restoration (HYCAR), University of Paris-Saclay/ INRAE, Antony, France

Environmental Planning and Technology, University of Applied Sciences Trier, Birkenfeld, Germany

Aquatic ecology and water quality Management, Environmental Research, Wageningen University, Wageningen, Netherlands

Surface Waters, Swiss Federal Institute of Aquatic Sciences and Technology, Kastanienbaum, Switzerland

CONTEXT

Many river restoration projects, recreating local hydromorphological structures and habitats, have been implemented worldwide aiming at improving the ecological status of rivers. However, ecological outcomes (e.g. improved community structure and functions, reinforcement of ecosystem processes) strongly depend on multiple drivers and processes at various spatial scales, submitted to multiple human-stressors, also potentially affected by past conditions legacies. The landscape "context" is crucial in restoration planning but the quantitative effects of the various context variables in restoration practice, as well as the role of metacommunities, the scale issue and the role of legacy effects are still underpublished and thus poorly considered. Furthermore, knowledge also lacks on societal needs and benefits from restoration, as most operations focus on the ecological quality criteria. The achievement of societal goals is rarely reviewed and factors of success are not yet systematically examined, although this is crucial for a complete and sustainable success of restoration project. In this context, COSAR is designed to identify the combined effects of context variables on both ecological and societal outcomes of river physical restoration projects, and which combinations favour synergies or antagonisms between both outcomes types.

MAIN ACTIVITIES

COSAR aims to produce an operational framework to analyse outcomes of past restoration projects and to optimise the potential outcomes of future restoration projects in terms of both ecological and societal outcomes, by:

- defining and computing the relevant metrics to assess the ecological and the societal outcomes from restoration projects, and integrating these two sets of outcomes to assess their interrelationships at the catchment, sub-catchment and river reach scales;
- explaining how these sets of restoration outcomes are influenced by geographical, societal and environmental contexts, both considered in their spatial and temporal dimensions;
- co-constructing with a large set of stakeholder groups (national/regional/local environmental legislation and administrations responsible for restoration planning and funding; institutions responsible for implementation of restorations; consulting companies specialized in restoration; fishing, agricultural and tourism organisations; hydropower producers; environmental NGOs) an operational adapted and science-based integrative analysis framework to assess restoration outcomes;
- providing these stakeholders with clear guidelines about how to integrate these context-dependencies in their planning of future restoration projects, optimising the chances to achieve positive results and successful restoration projects.

COSAR will analyse complementary insights from taxonomic and functional dimensions of river communities for the ecological outcomes, and on-line societal feedbacks from social media and networks for the societal outcomes. To ensure the relevance of the restoration targets, context variables, and spatial scales considered in the analyses, COSAR includes a comprehensive process of stakeholder engagement. Six dedicated workshops will be held inviting all stakeholders' groups to provide insights and feedbacks on the project design, analyses and product outreach. The stakeholders will also be involved in disseminating project results to their respective communities.

OUTCOMES AND EXPECTED IMPACTS

The COSAR project will produce an integrative analysis framework of restoration outcomes from both ecological and societal standing points to help stakeholders to design well-adapted restoration measures with respect to sites spatial and temporal context, and optimise future restoration planning.

Along with the academic valorisation of the developed knowledge and methods, COSAR main operational outcomes will be summarised:

- A compendium of fact sheets, including sector specific perspectives, context influence summaries and case-studies reviews;
- An on-line application, allowing all interested stakeholders to easily test and use the model on their own sites.

These outcomes will be largely spread thanks to the important involvement of different stakeholders' groups all along the project, the development of a project's website and the use of institutional social networks.

PROJECT CONTRIBUTION TO POLICIES AND/OR SOCIETY

The knowledge generated in COSAR will help all stakeholder groups involved to better accept and set up renaturation programs and individual projects in a targeted manner, assessing in early phase whether the achievement of specific ecological and societal goals is realistic in the respective environmental contexts, and thus help to optimise the restoration programs funding.

By providing its outputs for the next rounds of national/regional restoration planning, COSAR will also help restoration programs to better promote aquatic and floodplain biodiversity and the good ecological status requested by the EU Water Framework Directive; but by introducing societal outcomes of river restoration, COSAR will also promote public support of river restoration, which is crucial to bring all the European streams and rivers closer to a good ecological status.

EXPERIMENT, CASE STUDIES

COSAR will use existing monitoring data from 200 restoration projects. This dataset covers Germany (77 projects), Switzerland (15 projects), Netherlands (28 projects), France (28 projects), Finland (50 projects) and Liechtenstein (2 projects). The restoration projects represent a large diversity of river types, from small headwater streams to large rivers with a focus on medium rivers, and present different physical restoration plans and measures (length of river restored; type of physical intervention). Sampled taxa include fish and macroinvertebrates.

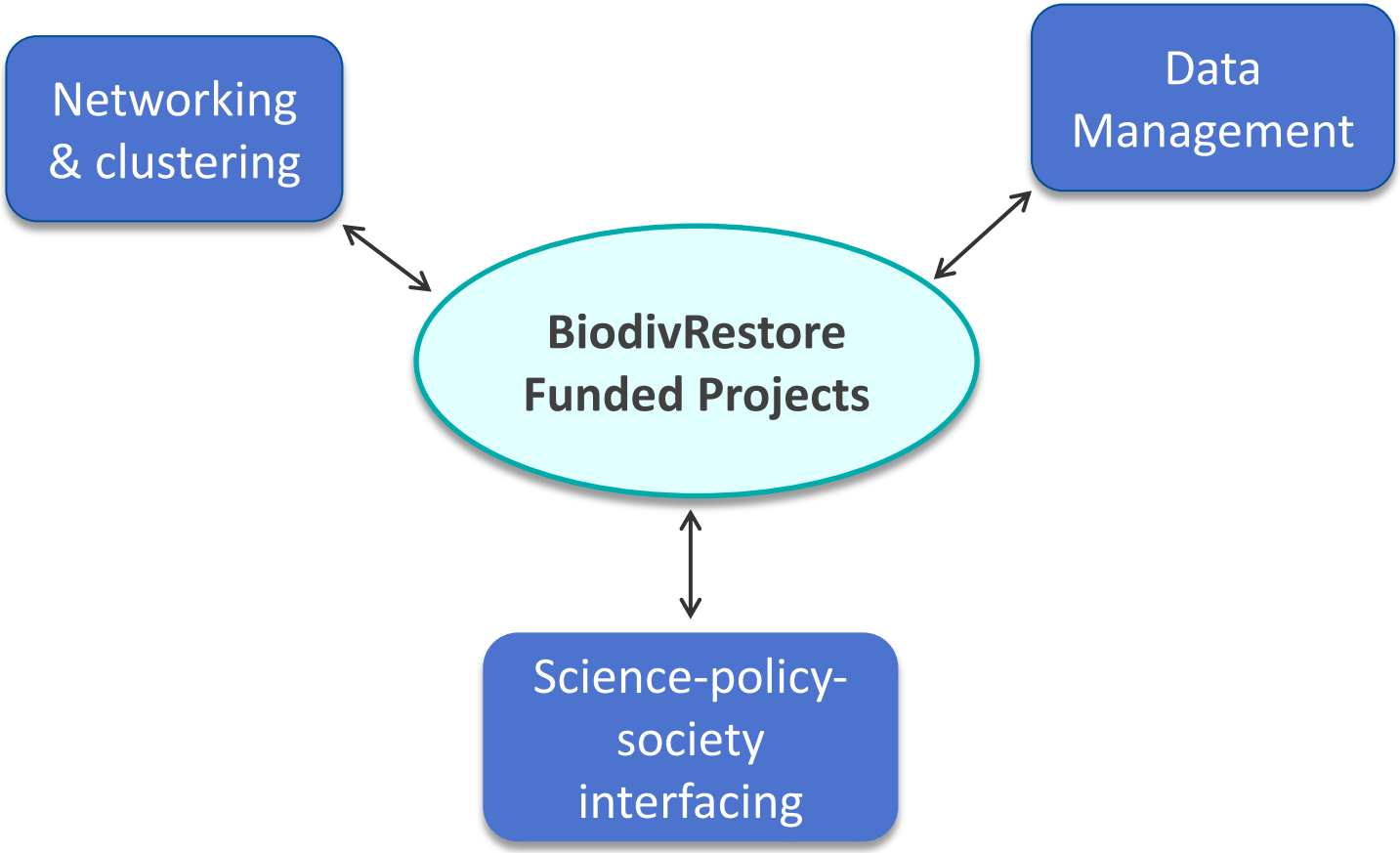
FUNDERS

- Agence Nationale de la Recherche (ANR), France
- German Research Foundation (DFG), Germany
- Ministry of Agriculture, Nature and Food Quality (LNV), Netherlands

BiodivRestora has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 101003777

Additional activities

Advancing skills and opportunities for Biodiverstore projects



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NETWORKING & CLUSTERING

OBJECTIVE

Allow funded researchers from different world regions and disciplines to **exchange on practices and results** and **work together on scientific publications and other activities**; think about the **research priorities**; provide **guidance** for future actions to meet research needs.

PLANNED ACTIVITIES

Several events planned :

- **4 MAY - Kick-Off Meeting**
- **5 MAY - Clustering workshop**
- **Ca. Sept. 2023 - Networking event between researchers and stakeholders**
- **Ca. March 2025 - Final Conference**

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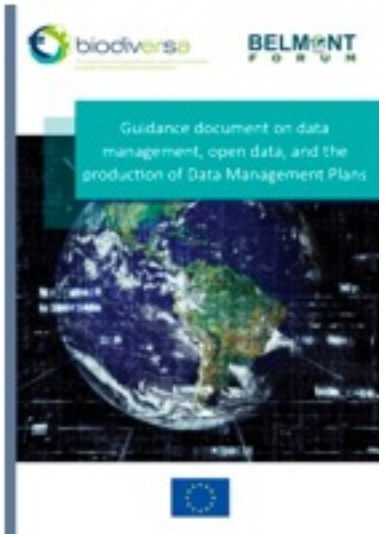
DATA MANAGEMENT

- Invitation to the **data management workshop** on **19 MAY.**
  This workshop will aim to provide you with the necessary tools to further improve and implement your Data Management Plans (DMPs).

- Check **Guidance document on data management, open data, and the production of Data Management Plans**:
  http://www.biodiversa.org/1830



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science-policy-society interfacing

Networking and capacity building

- ✓ Tools for stakeholder engagement
- ✓ Ad hoc and networking events
- ✓ Opportunities to get involved in science-policy fora
- ✓ NetworkNature/Oppla communities & dialogue events

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Opportunities in NetworkNature:
networknature.eu/

- **Getting your project and results on NBS known** (project pages and case studies, public database of EU NBS R&I projects, database of evidence on NBS...)
- **Getting to meet peers and other stakeholders working on NBS** (online and in person events, EU and national fora and events on NBS, calendar of NBS events, Network of SMEs on NBS…)
- **Relating and contributing to NBS R&I policy and knowledge gaps** (review and database of EU NBS knowledge gaps, opportunities to contribute to the development of an EU R&I roadmap on NBS
- **Getting involved with H2020/HEurope NBS Task Forces**

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Dissemination and uptake

- ✓ Opportunities for policy briefs (see www.biodiversa.org/policybriefs)
- ✓ Prize for excellence and impact (see www.biodiversa.org/1550)
- ✓ Valorization of project outcomes (e.g. www.biodiversa.org/943)
- ✓ Online knowledge marketplaces and case-study repositories (see e.g. oppla.eu/)

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Q&A session

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Concluding words

By Maja Kolar, AEI, Spain

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Thank you very much for your participation

For the funded projects

Do not forget the clustering WS tomorrow (05/05) from 9:00 to 13:00

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