



SYMBIOSIS

Systemic Mobilisation for Joint Biodiversity and Infrastructure

Stakeholder Engagement Workshop

Funded by the European Union. Views and opinion expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Europe's Rail Joint Undertaking. Neither the European Union nor the granting authority can be held responsible for them. The SYMBIOSIS project is supported by the Europe's Rail Joint Undertaking and its members Grant Agreement No 101177281.



Funded by
the European Union



Agenda

11:00-11:20

Welcome & Introduction

- **Project Overview , Stakeholder Engagement & Capacity Building – UIC & ICSI**

11:20-12:25

Expectations towards stakeholders

- **WP3 presentation** (10 min + 5 min Q&A) – UPM
- **WP4 presentation** (10 min + 5 min Q&A) – UKCEH
- **WP5 presentation** (10 min + 5 min Q&A) – CERTH

12:25-12:30

Closing Session - UIC



Coordination and Support Actions
22 members from 13 countries

36 months (September 2024 – August 2027)
2.8 M €



International Organisations
UIC, FEHRL, ICSI



Research Centers
UKCEH, CERTH, IFEU



Consulting and Service Providers
MINUARTIA, H&Z, KONNEKTABLE



National Non-Governmental Organisations
FFE, RPS

Railway Undertakings
SNCF, SNCF RESEAU,
NETWORK RAIL, ITALFERR



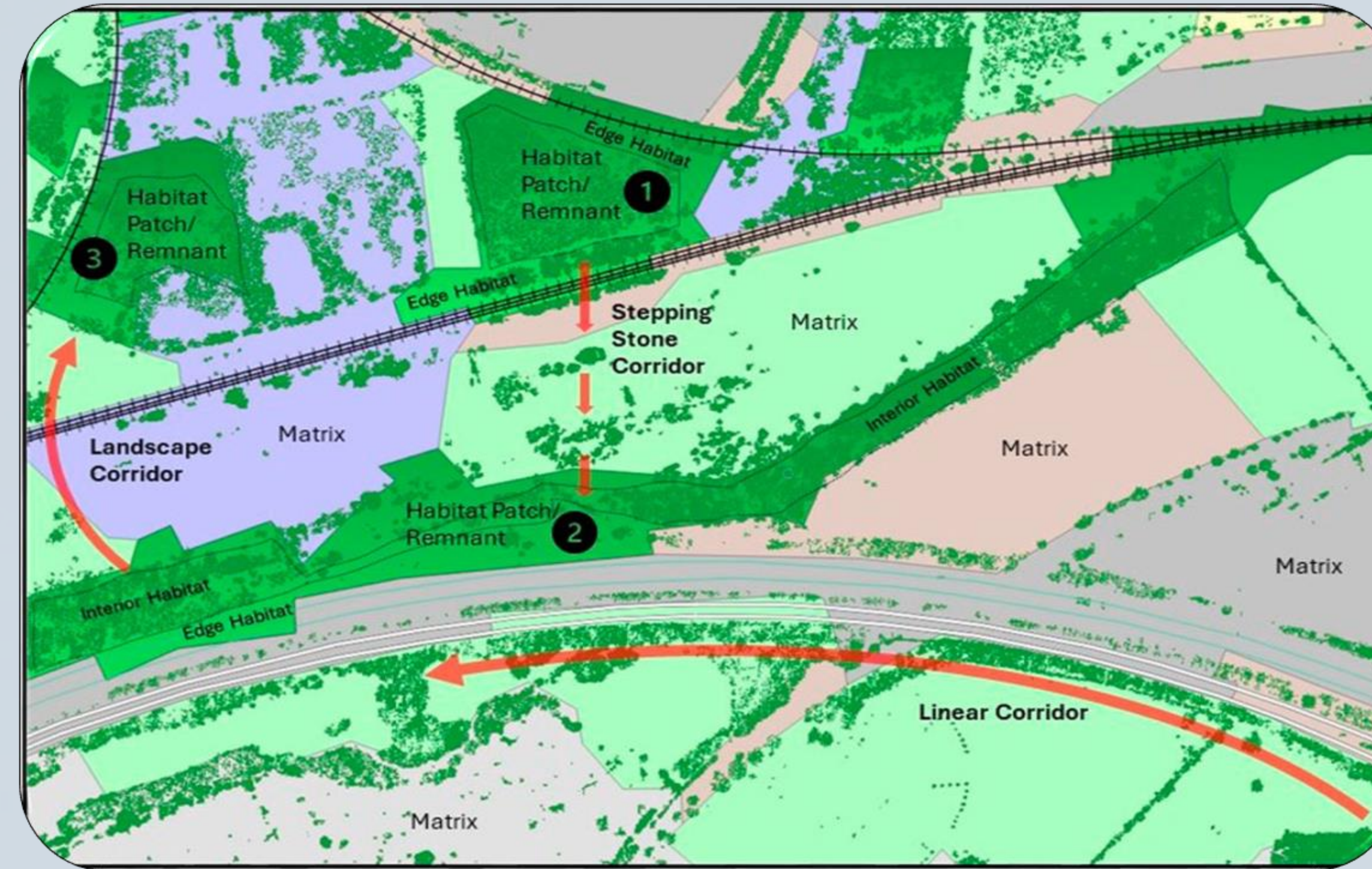
Universities
UPM, CENTRALE SUPELEC,
UNIVLEEDS, ULISBOA, SLU



Energy Companies
PGE Group



Objectives



Underline Key Enablers

- Mainstream biodiversity in infrastructure development
- Accelerate action by focusing on
 - ❖ 📄 Transport Policy
 - ❖ ✅ Environmental Impact Assessments
 - ❖ 🇪🇺 Sustainability Reporting (CSRD)
 - ❖ 🛒 Procurement Processes

Deliver Practical Tools

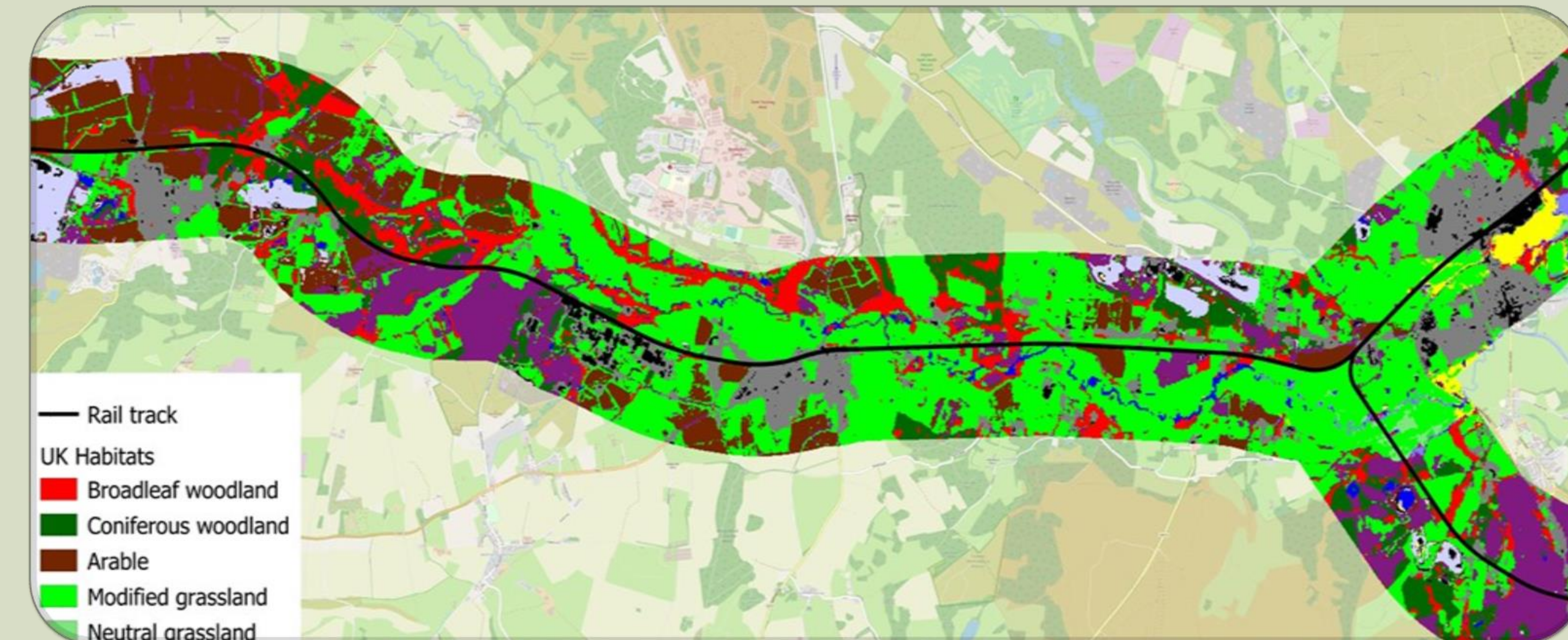
- Sustainable land management for resilient infrastructure
- Promote biodiversity while ensuring infrastructure is resilient, cost-effective, reliable, safe, and carbon-free.

Convene Communities of Practice

- Convene rail actors and biodiversity experts
- Standardised framework for high-quality biodiversity data across transport and energy infrastructures



Workstreams



Aligning transport and energy infrastructure with biodiversity and climate objectives.

WP2: Communication, Dissemination and Exploitation (FEHRL)

WP5: Assessment of Societal Challenges in Sustainable Transport Development (CERTH)

Valuing nature on railways

WP3: Operational toolkit (UPM)

WP4: Standardising Biodiversity Data Collection and Integration (UKCEH)



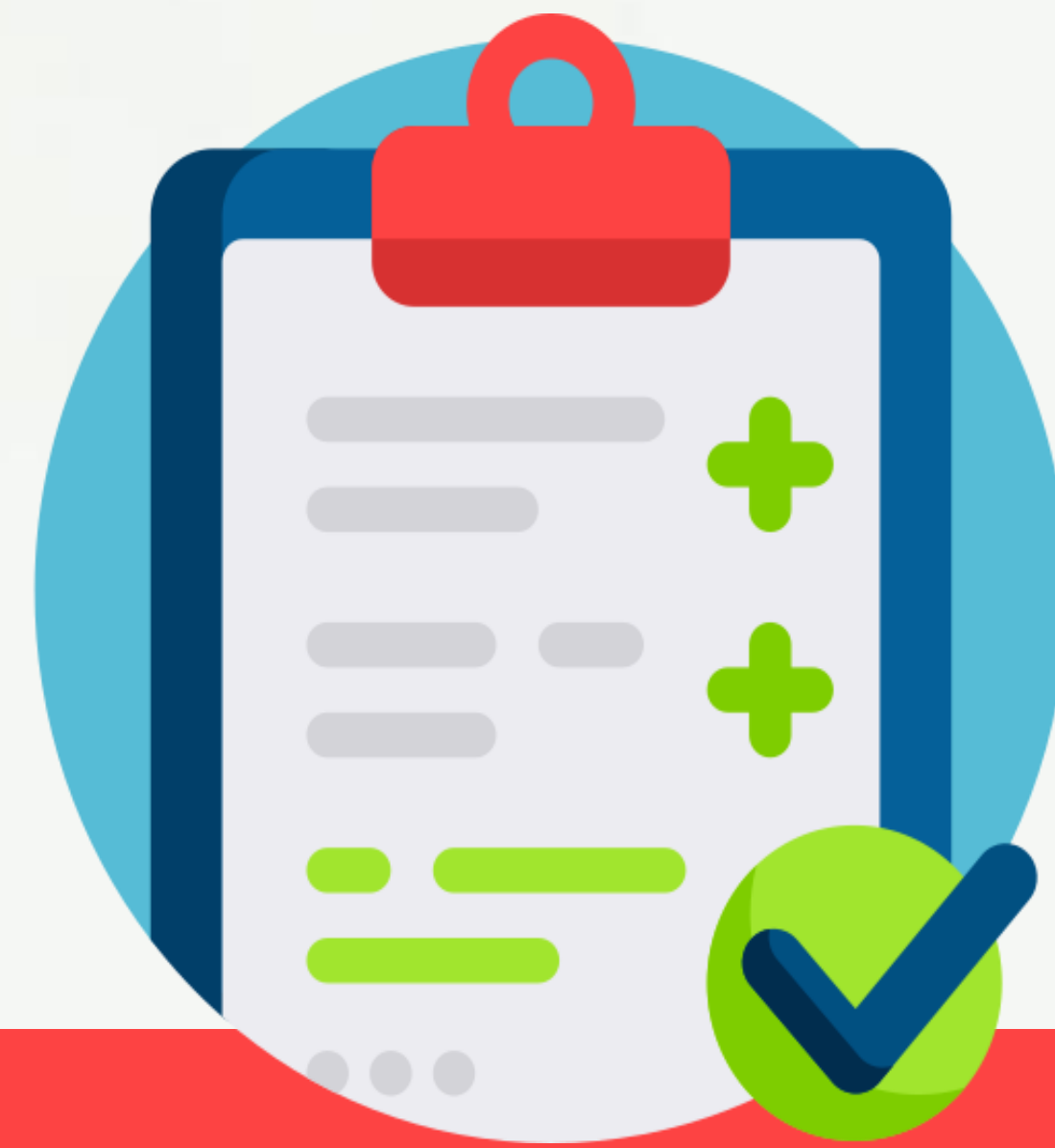
Outputs & Impacts



**Integrated
Biodiversity Tools**



**Collaborative
Mapping for NbS**



**Standardised
Guidelines**



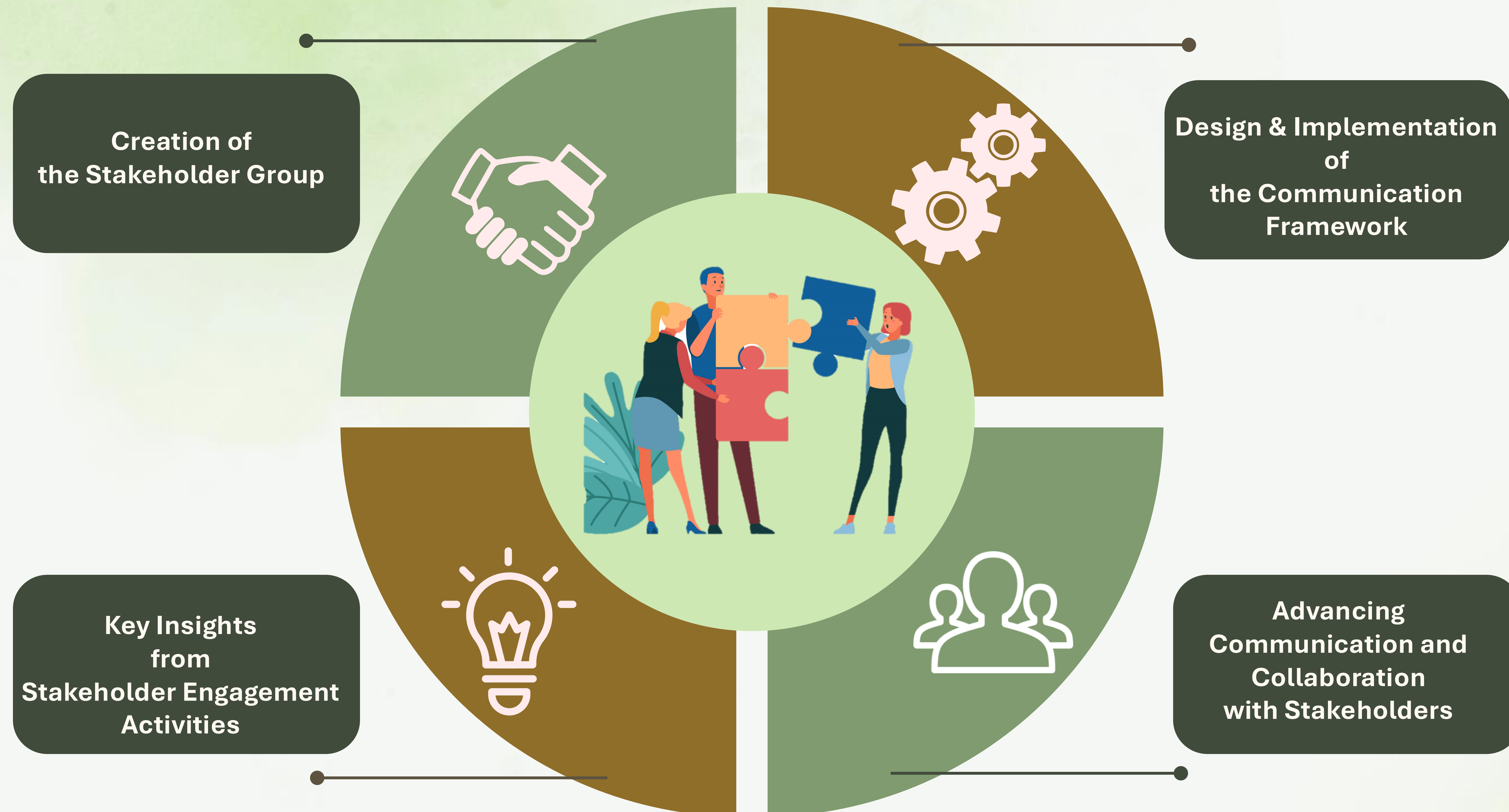
**Regulatory, Policy,
and Procurement
Frameworks**



**Research and
Capacity Building**



Stakeholders Engagement



Advisory Board

- *Strategic Planning*
- *Policy Guidance*
- *Technical Guidance*

Technical Stakeholder Group

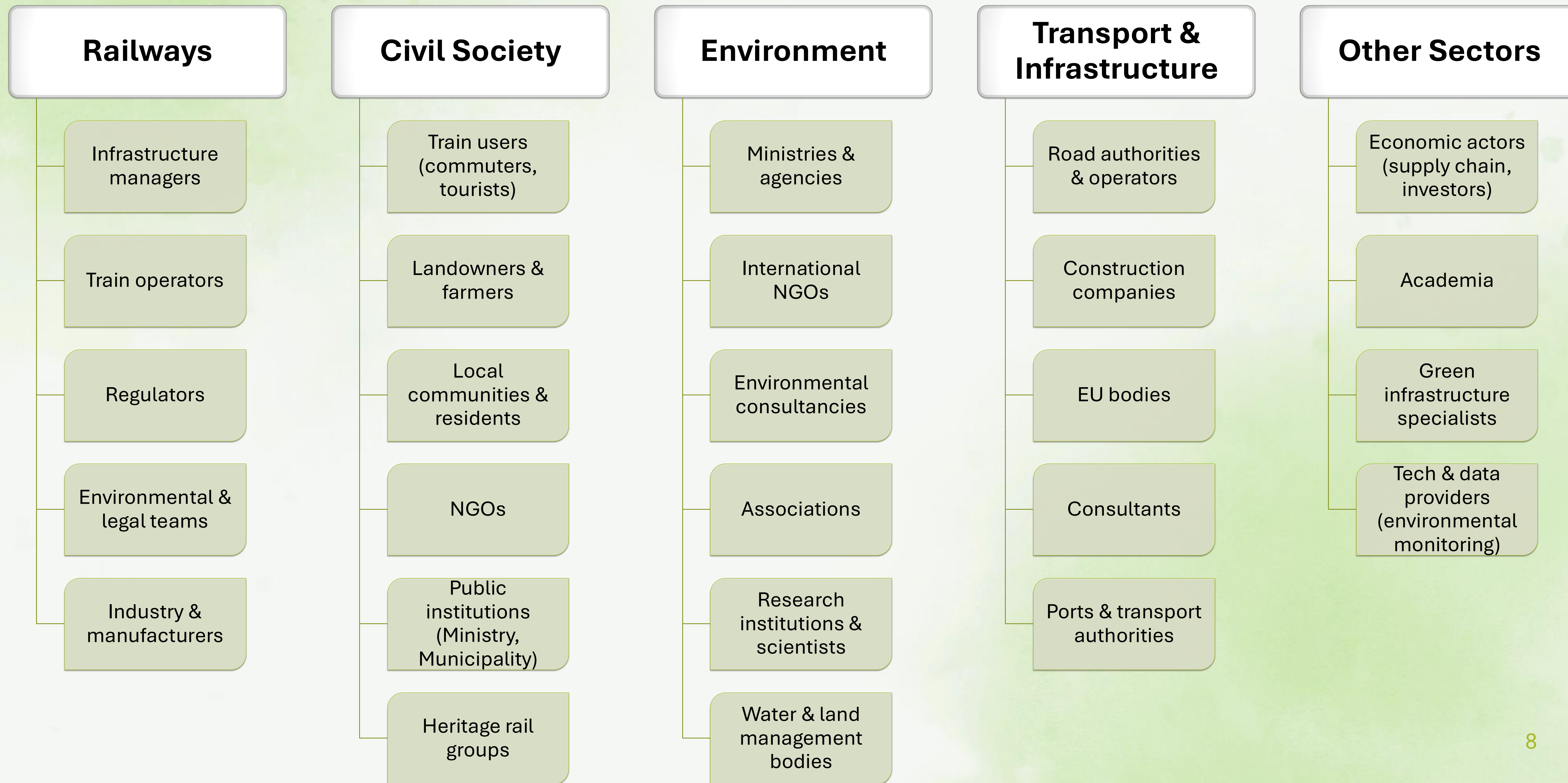
- Technical knowledge and research
- Editing/Reviewing deliverables
- Provide data/information

Interested in joining our stakeholder group? Contact us at manuel.campos@ffe.es





Technical group profiles...



Advisory Board



Individual Members of the AB: Rowan Palmer , Suneetha Subramanian

Technical Stakeholder Group



Knowledge Transfer & Capacity Building Strategy

PURPOSE

- Build a community of practice linking transport, energy, and biodiversity sectors
- Equip stakeholders to integrate biodiversity and resilience into infrastructure planning

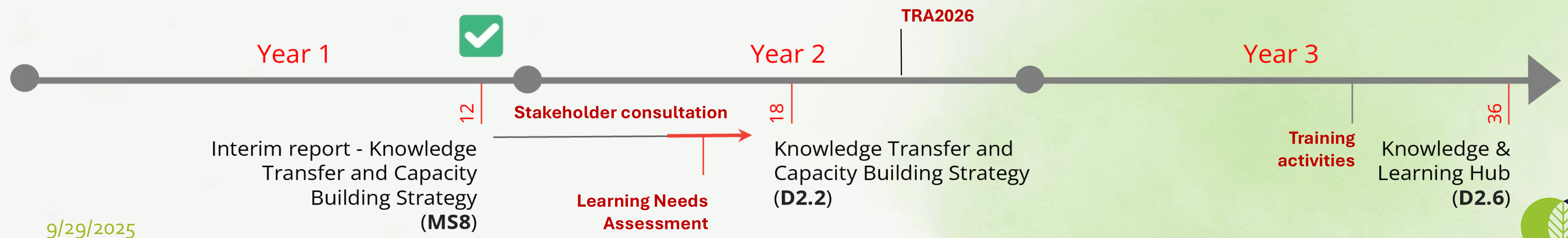
KEY COMPONENTS

- **Audiences:** policymakers, investors, practitioners, infrastructure owners/operators, ecologists, asset managers, rail users
- **Approach:** consultation + learning needs assessment → targeted training (ISLe) → Knowledge & Learning Hub
- **Formats:** peer-to-peer learning, case studies, toolkits, online hub, “Train the Trainer,” “Ask an Expert”
- **Delivery Partners:** ICSI, Duke University, project WPs

OUTPUTS

- Two training activities – in Europe (potentially TRA) & Africa
- Transport Infrastructure & Biodiversity Knowledge Hub

- Scan the code from a mobile device or
- Visit [menti.com](https://www.menti.com) and enter this code:
7701 2456



9/29/2025





Technical WP Leaders



Sergio Alvarez

WP3: Operational Toolkit

**Universidad
Politécnica de
Madrid**



Reto Schmucki

WP4: Standardising
Biodiversity Data and
Integration

**UK Centre for Ecology
& Hydrology**



Matina Loukea

WP5: Assessment of
Societal Challenges in
Sustainable Transport
Development

**Centre for Research
& Technology,
Hellas**

OPERATIONAL TOOLKIT

Work Package 3



Leader: Sergio Alvarez

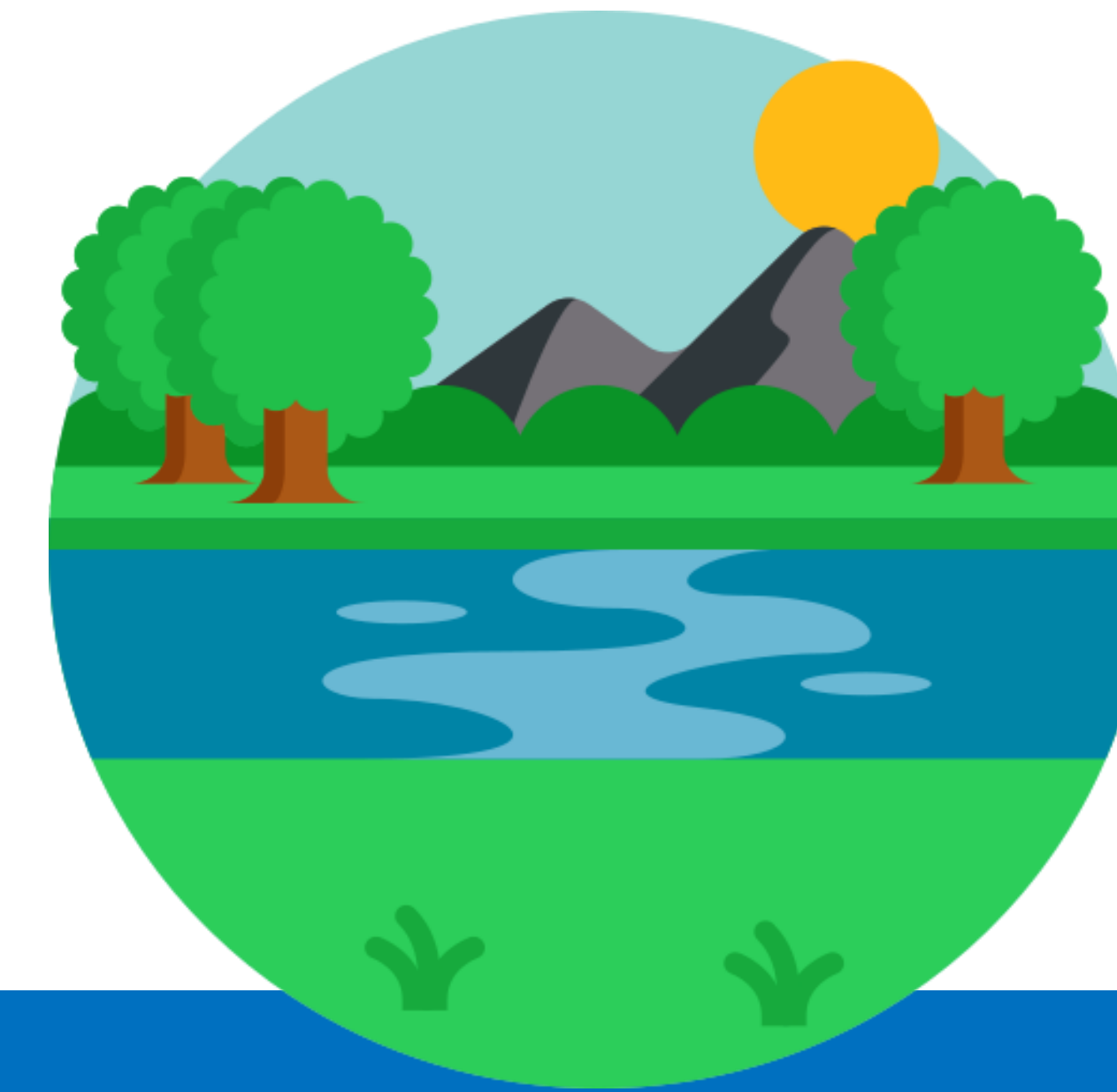
Deliverables



Impact Assessment
Tools for Linear
Infrastructures



Mapping railway
resilience, climate risks,
and biodiversity
enhancement
opportunities



Guidance for railway
blue-green
infrastructure design
and management
options



Develop user-friendly
biodiversity and carbon
emissions calculator

Partners:



UK Centre for
Ecology & Hydrology



UNIVERSITY OF LEEDS



CentraleSupélec



INSTITUT FÜR ENERGIE-
UND UMWELTFORSCHUNG
HEIDELBERG



Swedish University of
Agricultural Sciences



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



ITALFERR
GRUPPO FERROVIE DELLO STATO



Energetyka Kolejowa



FCiências^{ID}
ASSOCIAÇÃO PARA A
INVESTIGAÇÃO E
DESENVOLVIMENTO
DE CIÊNCIAS



Task 3.1.1: Explore and characterize existing operational tools for assessing environmental impacts and benefits

Milestone 5

SYMBIOSIS

Characterisation of operational tools that focus on the assessment of impacts on ecological qualities and biodiversity values during all life cycle phases

Milestone 5 (MS5)

Alvarez, Sergio (UPM); Morillas, Carlos (UPM); Gil, Rodrigo (UPM); Alonso, Carlos (UPM); Franzoni, Lorenzo (UIC); Yilmazer, Pinar (UIC); Ollerton, Jeff (UKCEH); Fernández, Luis M. (Minuartia)

Objective: Characterize operational tools that assess ecological and biodiversity impacts/benefits of linear infrastructure (roads, railways, pipelines) across the full life cycle.

Systematic review:

This review compiles the **most relevant internationally documented scientific experiences from the last five years** on environmental impact assessment of linear infrastructure.

102 studies (2021–2024)

Task 3.1.1: Explore and characterize existing operational tools for assessing environmental impacts and benefits

Milestone 5

Main findings

- **Uneven life cycle coverage:** Construction and operation phases dominate, while **planning, maintenance, and end-of-life are systematically underrepresented.**
- **Data quality and transparency gaps:** Many studies rely on **partial or non-standardized inventories**, with limited baseline definitions and scarce open-access datasets.
- **Scoping heterogeneity:** Significant variation in how system boundaries are defined (strategic, empirical, or LCA-based), limiting comparability across cases.

Benefit assessment remains marginal:

- Mostly qualitative or descriptive.
- Very few cases quantify biodiversity or ecosystem service gains.
- No formal economic valuation applied.

Task 3.1.1: Explore and characterize existing operational tools for assessing environmental impacts and benefits

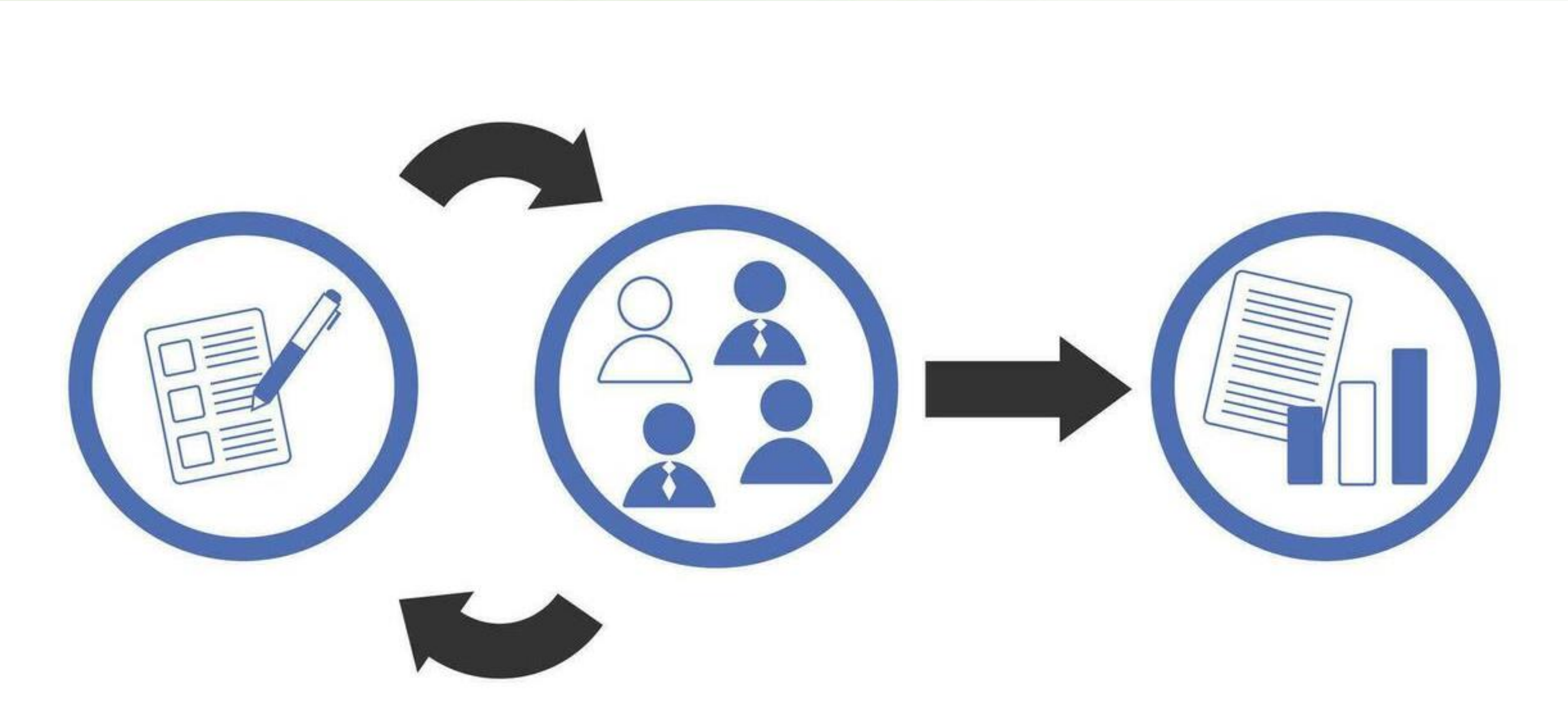
Milestone 5

Recommendations for SYMBIOSIS

- Develop **hybrid tools** integrating LCA metrics with ecological indicators.
- Cover **all life cycle phases**, including maintenance and decommissioning.
- Establish **structured benefit evaluation** (co-benefits, ecosystem services, monetisation).
- Deliver outputs **tailored to diverse audiences**: technical users, policymakers, and communities.
- Align methodologies with **EU Biodiversity Strategy 2030, the European Green Deal, and global biodiversity frameworks**

Task 3.1.2: Understanding the specific needs and complexities from different stakeholders that may improve environmental and biodiversity indicators.

Delphi Technique



8 Experts



7 Countries



9 Entities



Task 3.1.2: Understanding the specific needs and complexities from different stakeholders that may improve environmental and biodiversity indicators.

Areas of clear consensus (>75% agreement):



- **Safety** comes first. Consistent priority over biodiversity
- **Mandatory requirements** have universal influence (100%)
- Climate priority: **Decarbonization** as the clear environmental focus (88%)
- Main conflict is **economy** vs. **environment**
- Most effective **partners: Academia** and **NGOs**, followed closely by private consultants
- **Voluntary initiatives** are valued across the board
- **Regional disparities:** Differences in awareness (85%) and financial resources (83%)

Areas without clear consensus



- **Organizational barriers** vary significantly with organizational context
 - External stakeholder pressure
 - Economic incentives
 - Corporate image
 - ...
- The **Knowledge vs willingness** debate regarding the barriers
- Is the railway sector more **proactive** or **reactive**?
- **Priorities beyond decarbonization:** Noise, fires, habitat fragmentation...

Task 3.1.2: Understanding the specific needs and complexities from different stakeholders that may improve environmental and biodiversity indicators.

Next steps:

Deadline for TRA submission: 30/09/2000

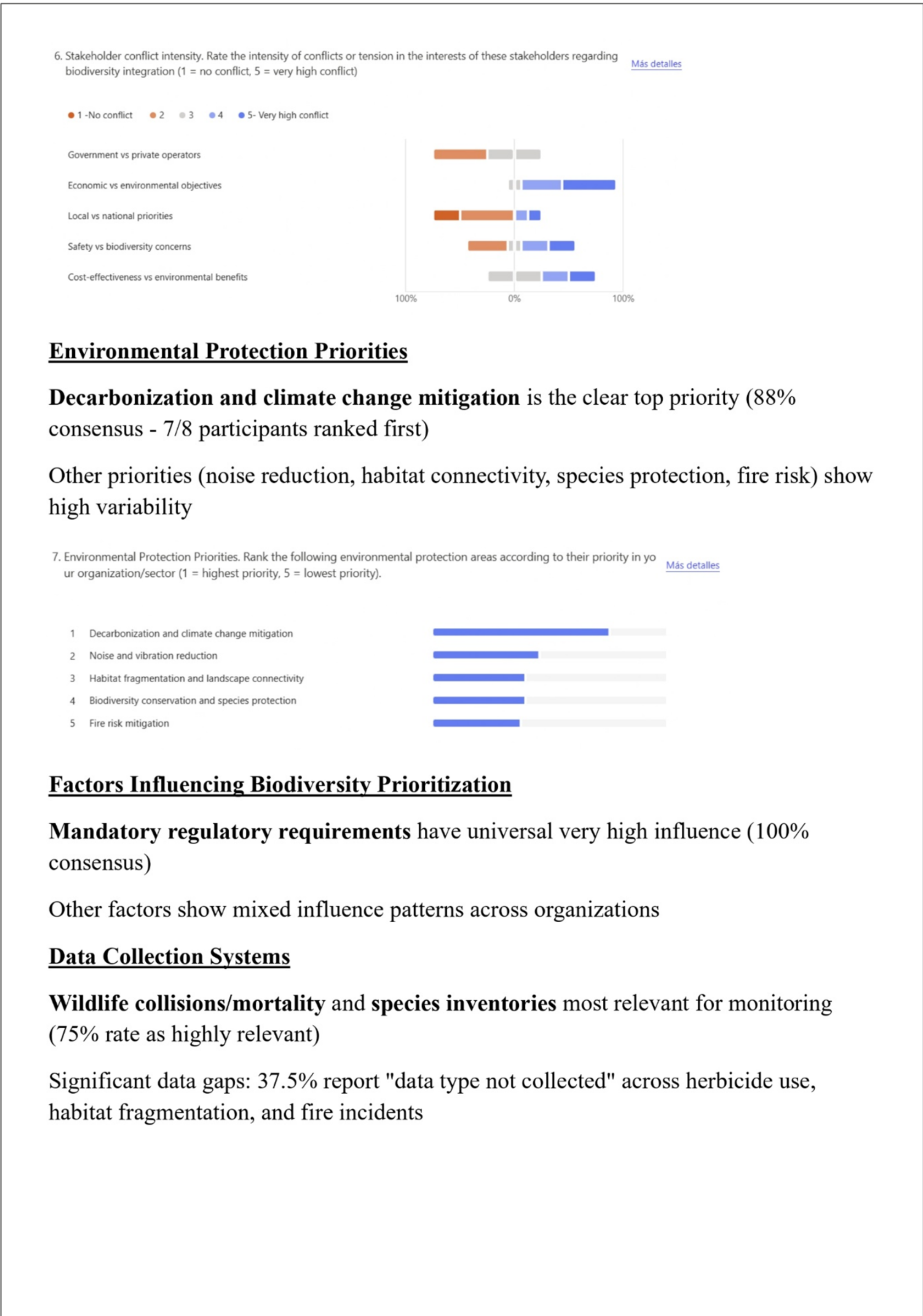
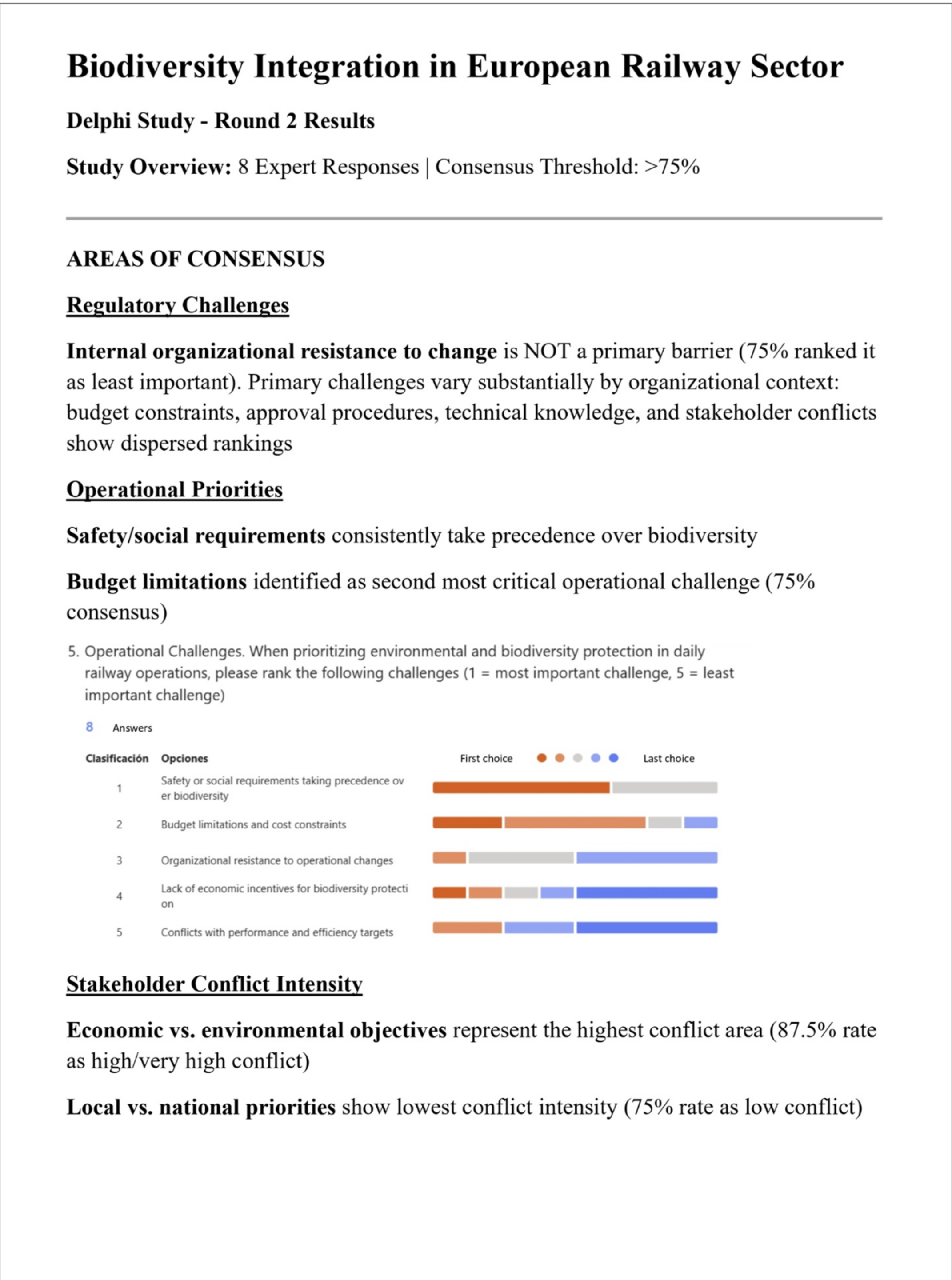
- 3000 Word abstract

Gathering answers and extracting data

Final memo including conclusions of this study

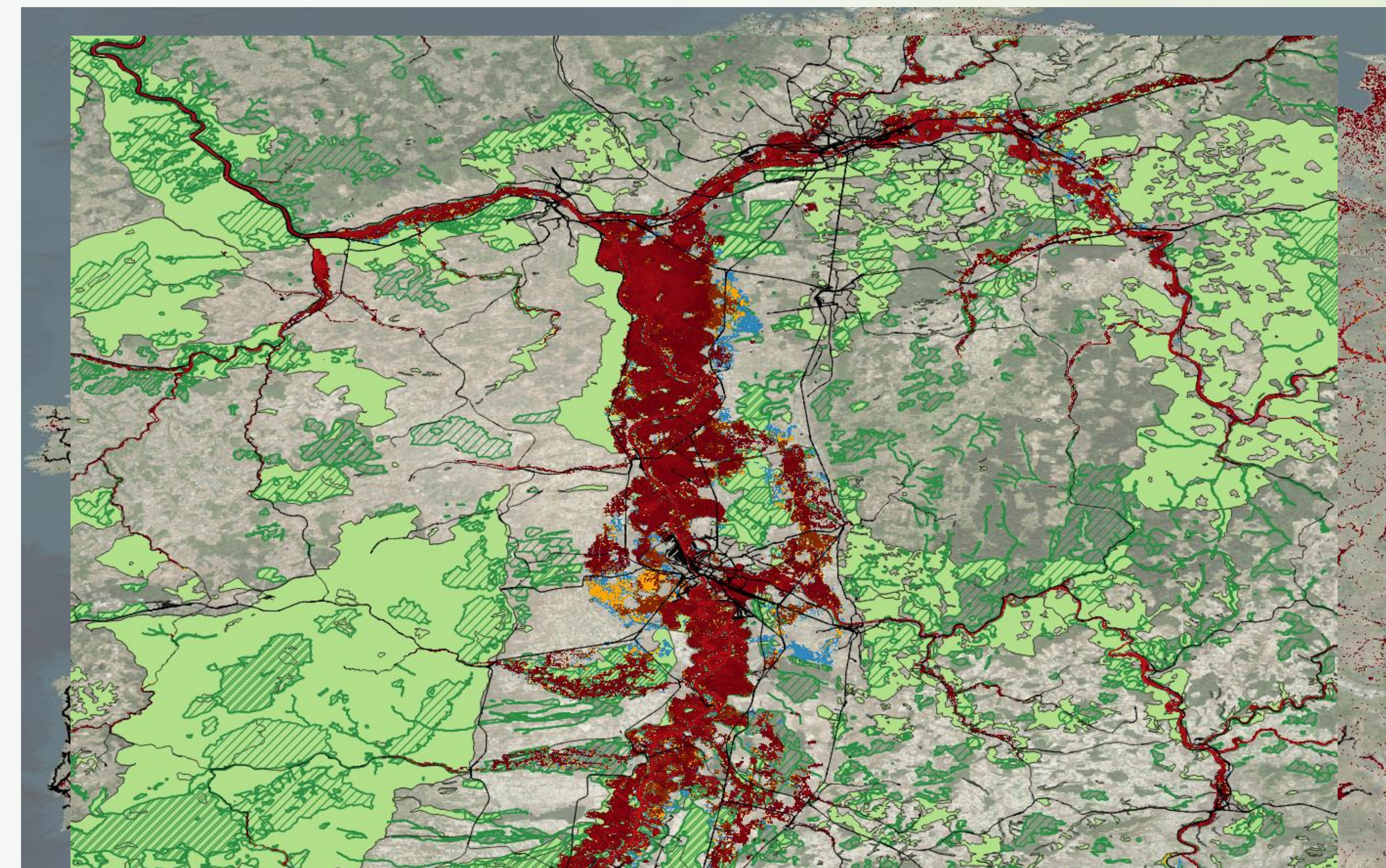
Presentation of the results in TRA 2026 (Budapest)

Final round is sent and ready to be answered!



Task 3.2: Mapping of railway resilience to climate change and opportunities to benefit biodiversity

- Activities conducted:
 1. Literature review to understand climate risk assessment and adaptation within transport sector.
 2. Data collection and integration (European railway network, Climate-hazards, Protected areas, Land Cover, Protected habitats and species, ecological connectivity, etc...).



Task 3.3: Blue and Green Infrastructure Guidance for Railways

- Collection, classification and description of Nature-based Solutions applied (or applicable to transport infrastructure).

Bioengineering techniques for slope stabilisation



Adaptation of transversal drainages



MINUARTIA



Expected contributions from stakeholders

- A stakeholder workshop is planned during the mid-term event to validate the progress of both tasks. We hope to see you there!
- Provide relevant information:
 - If your company or institution have any climate change adaptation plans (or similar).
 - If you have any practical examples of Nature-based Solutions applied in transport infrastructure.



STANDARDISING BIODIVERSITY DATA COLLECTION AND INTEGRATION

Work Package 4



UK Centre for
Ecology & Hydrology

Leader: Reto Schmucki



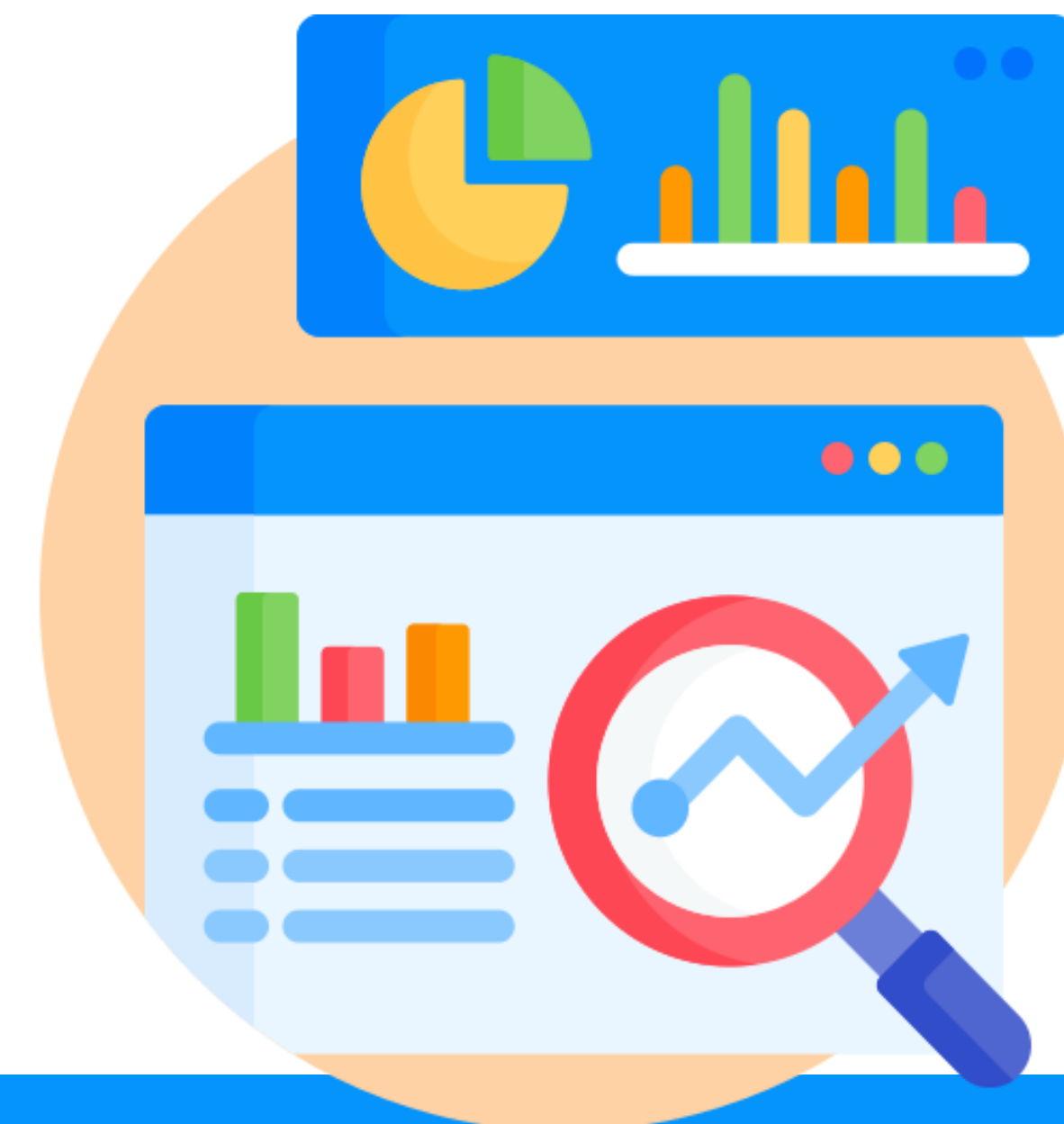
Deliverables



Assess biodiversity data collection and reporting practices across railways



Pilot testing automated biodiversity monitoring for standardisation and scalability



Integrate biodiversity data into rail asset management



Co-design an inclusive framework for standardised biodiversity monitoring and reporting.

Partners:



FCiências^{ID}
ASSOCIAÇÃO PARA A
INVESTIGAÇÃO E
DESENVOLVIMENTO
DE CIÊNCIAS

UNIVERSITY OF LEEDS



CentraleSupélec



INSTITUT FÜR ENERGIE-
UND UMWELTFORSCHUNG
HEIDELBERG

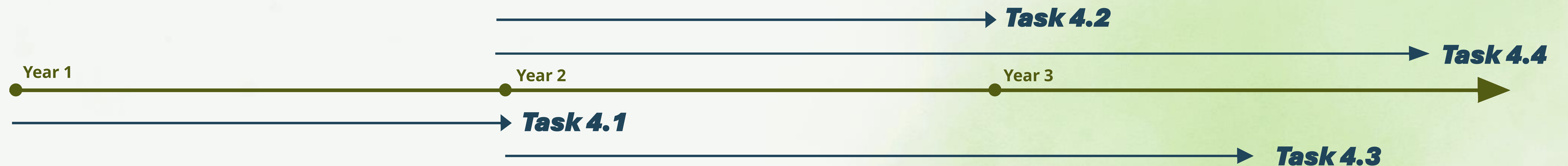


**Task 4.1. Assessment of current practice for biodiversity data collection and reporting
(M1 to M12)**

**Task 4.2. Pilot testing of new approaches to biodiversity data collection to inform standardisation
(M12 to M24)**

**Task 4.3. Demonstrating best practice for integrating biodiversity data into asset management systems
(M12 to M30)**

**Task 4.4. Co-designing an inclusive framework for standardised biodiversity monitoring, analysis and reporting
(M12 to M36)**

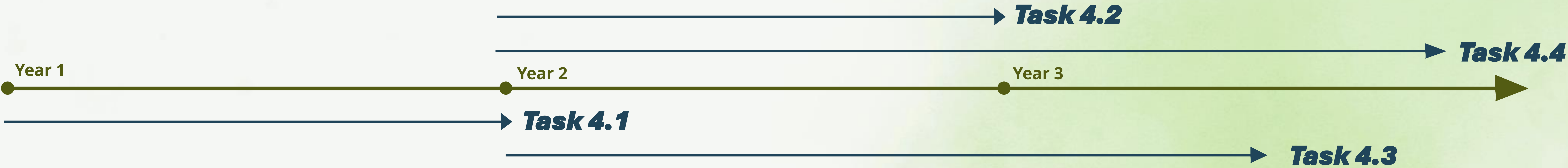


**Task 4.1. Assessment of current practice for biodiversity data collection and reporting
(M1 to M12)**

**Task 4.2. Pilot testing of new approaches to biodiversity data collection to inform standardisation
(M12 to M24)**

**Task 4.3. Demonstrating best practice for integrating biodiversity data into asset management systems
(M12 to M30)**

**Task 4.4. Co-designing an inclusive framework for standardised biodiversity monitoring, analysis and reporting
(M12 to M36)**

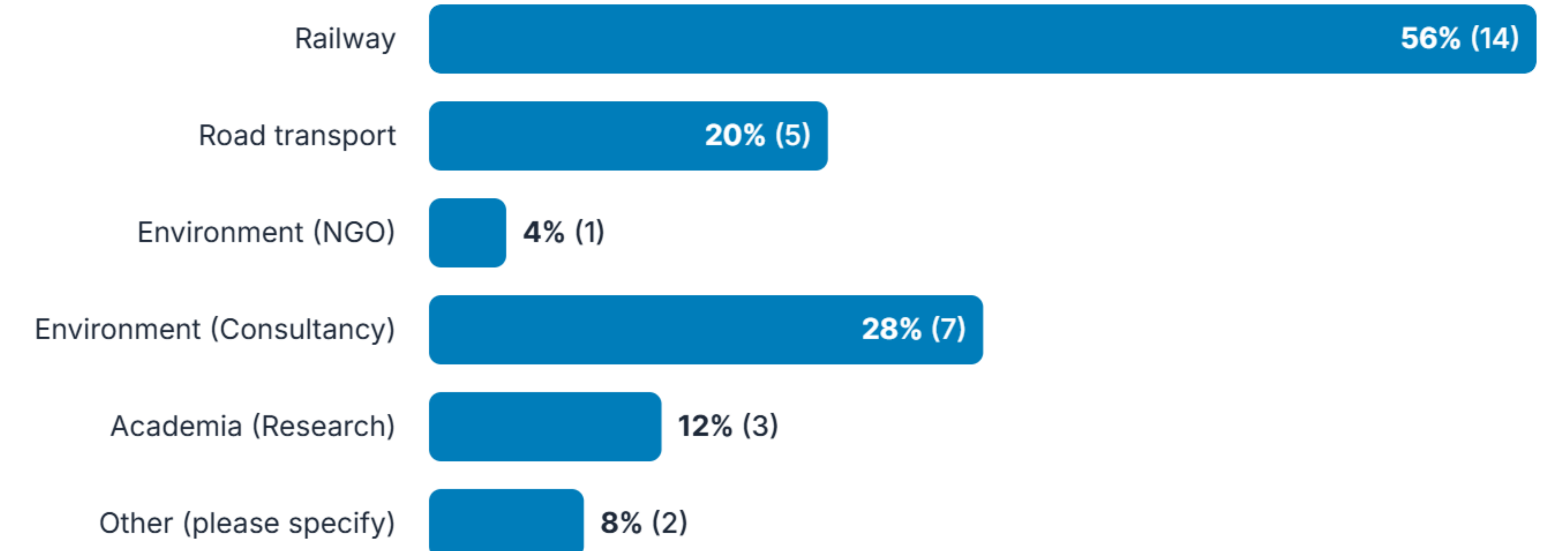
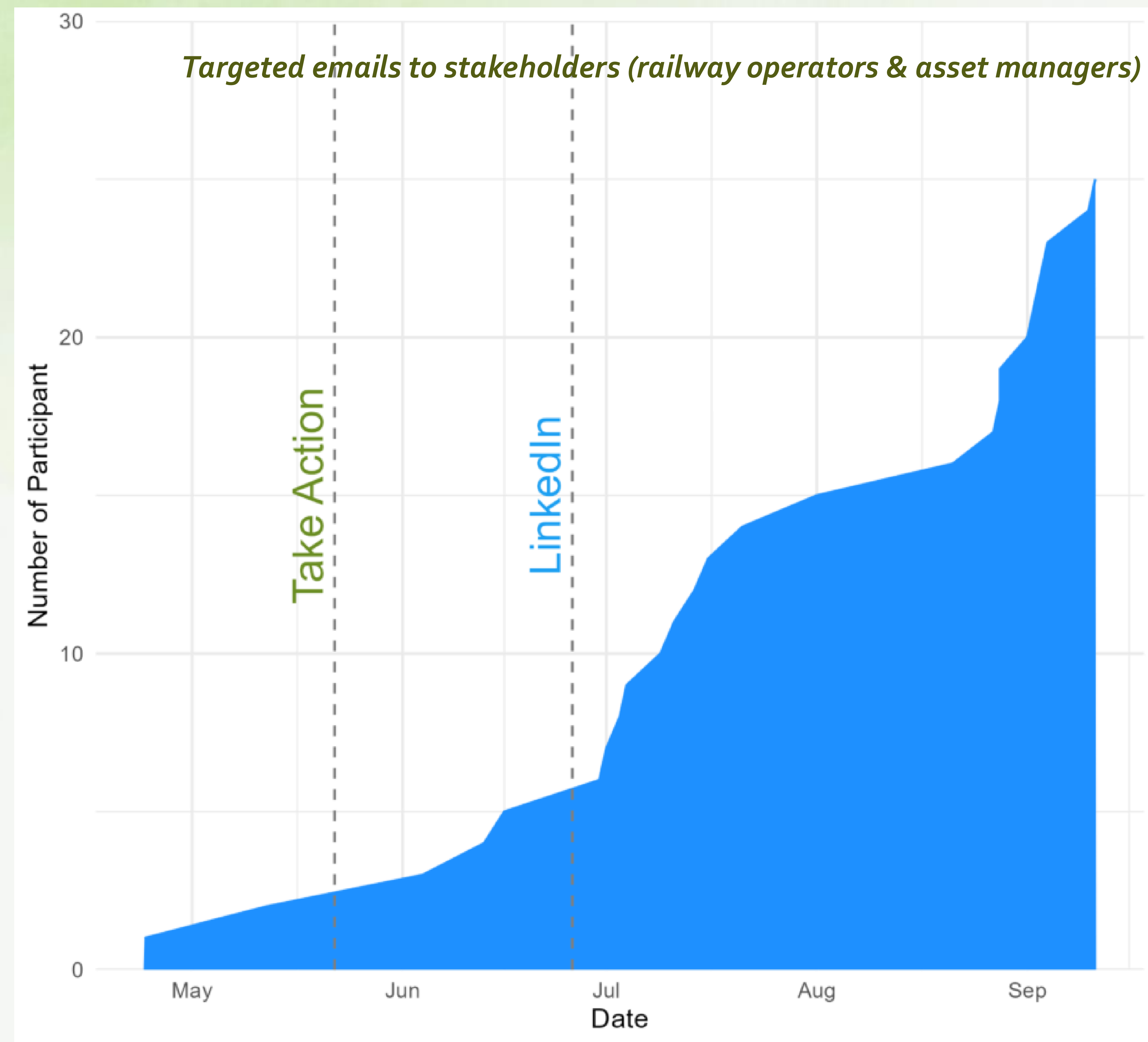


Survey on current practices for biodiversity and habitat monitoring

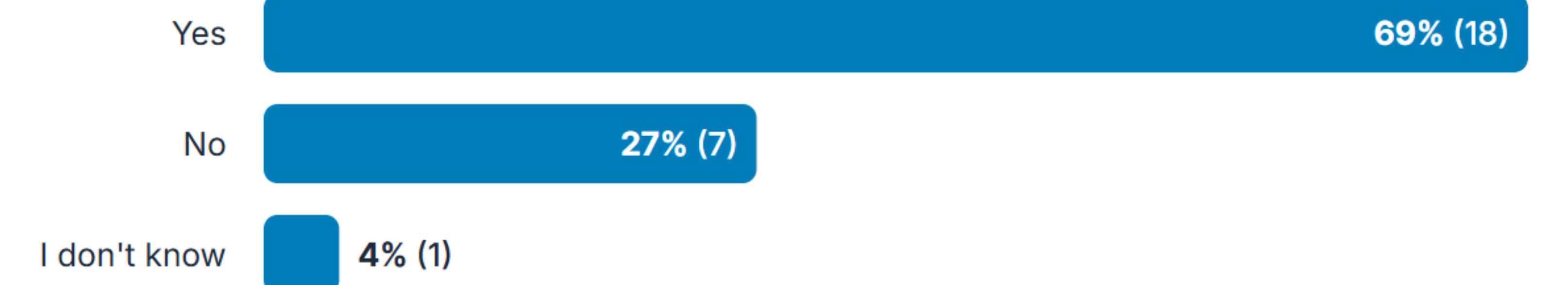
Term	Definition
Habitat	A place or type of site where an organism, population, or ecological community occurs naturally. This includes natural and human-altered environments where species reside for part or all of their life cycle.
Biodiversity	The variety of all living organisms, including diversity within and between species.
Monitoring	An organised survey designed to collect data that can inform us of the status and changes over time and space.



Participation as of September



Does your organisation demonstrate an increasing interest in including biodiversity monitoring data in their reporting?

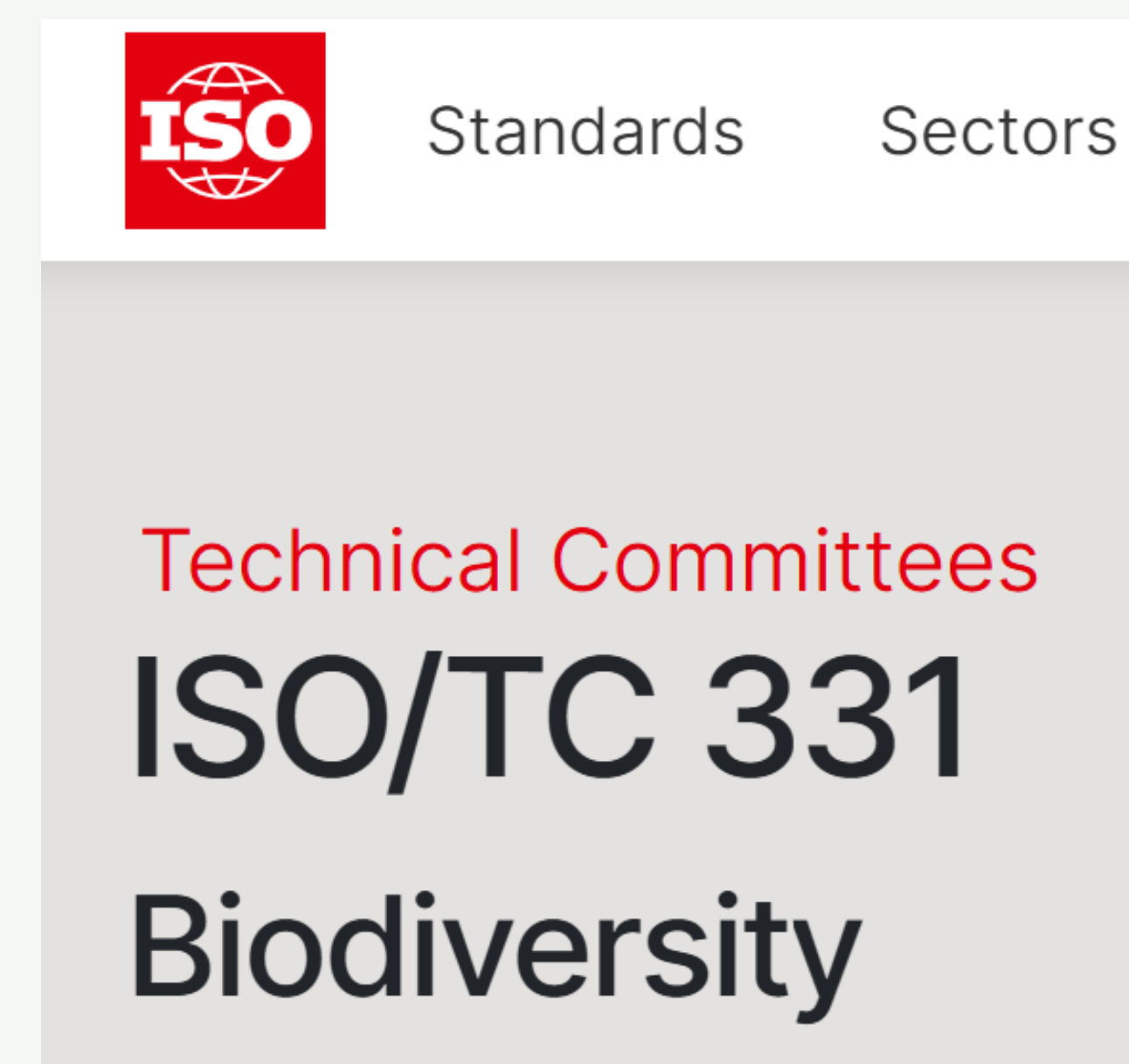
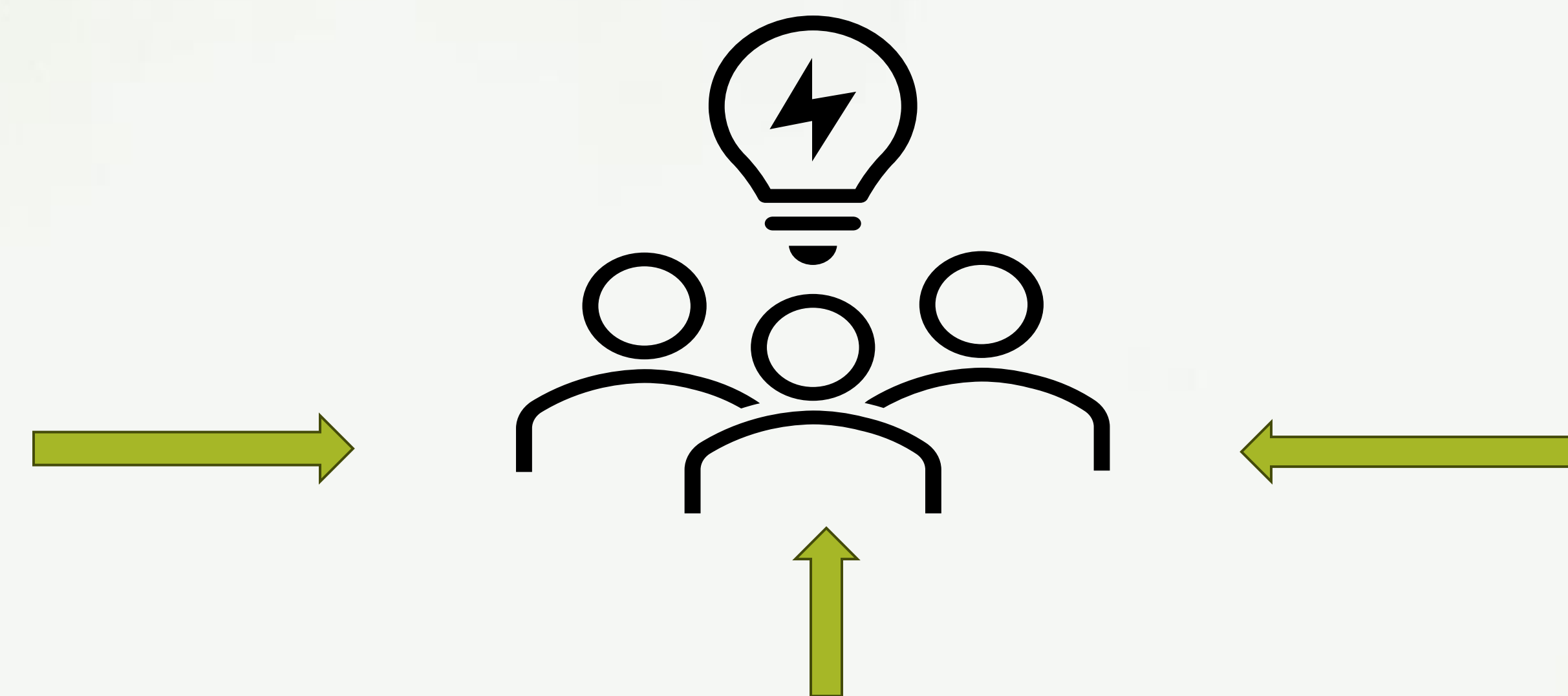


Working on a standardised terminology

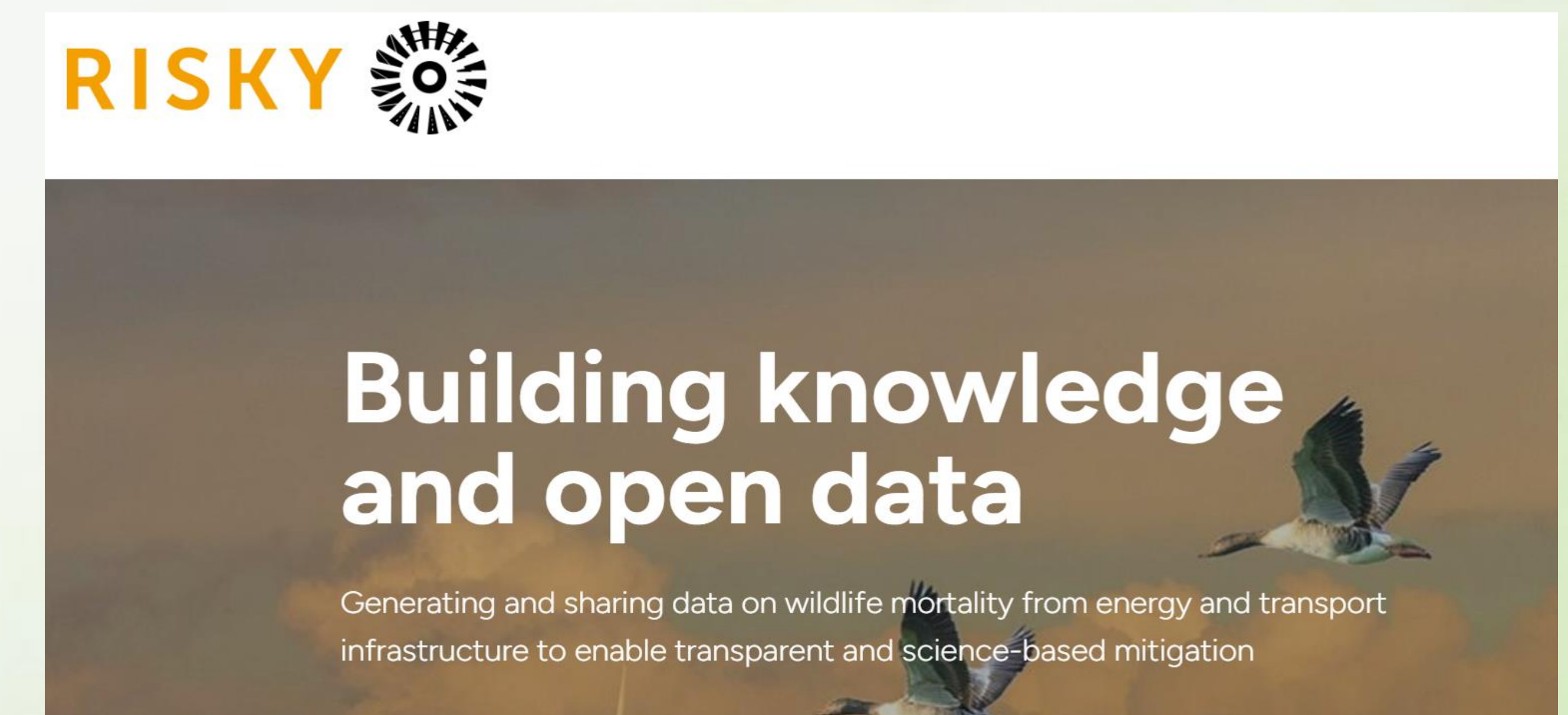
SYMBIOSIS



<https://www.biodiversityinfrastructure.org/>



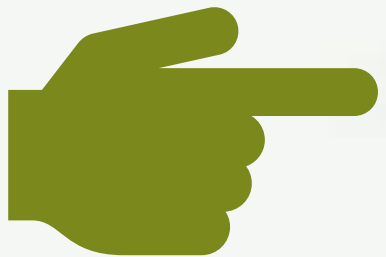
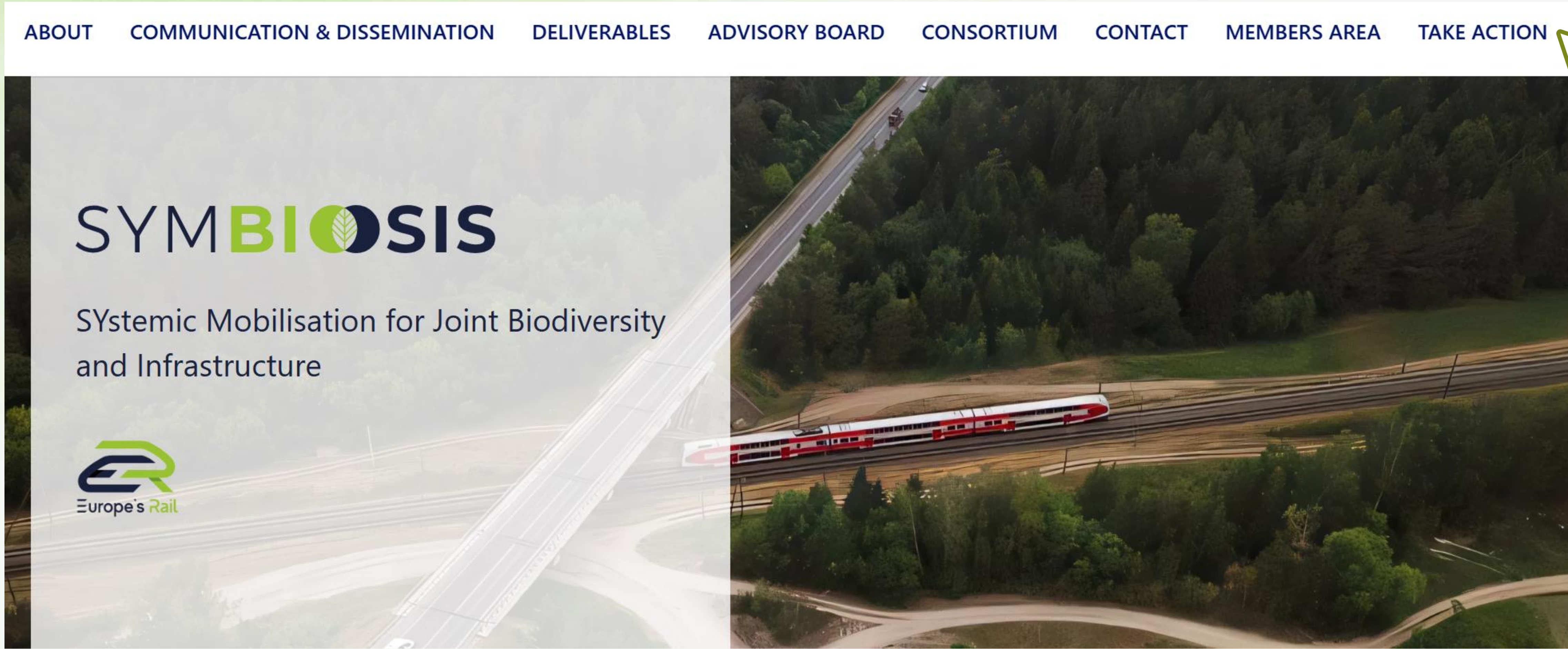
<https://www.iso.org/committee/8030847.html>



<https://www.risky.pt/>



Contribute to SYMBIOSIS: participate in our online survey



<https://symbiosis-transport.eu/>

SYMBIOSIS

Assessment of current practice for habitat and biodiversity data collection and reporting

As rail expands to meet the EU's Sustainable and Smart Mobility Strategy targets and promote a greener way to transport people and goods across Europe, railway operators and managers must also adopt practices to mitigate the threats to biodiversity and reduce pressure on habitats.

This survey aims to assess and better understand how habitat and biodiversity are monitored on European transport infrastructures and how the data are integrated into daily asset management and reporting. This work is being undertaken by the UK Centre for Ecology and Hydrology (UKCEH) as part of the SYMBIOSIS project ([SYstemic Mobilisation for Joint Biodiversity and Infrastructure](#)), in partnership with the International Union of Railways (UIC).

The questionnaire focuses on current practices, how and why habitat and biodiversity data are collected, managed, analysed, and integrated into planning, management, and reporting operations. Completion of the 22 questions is estimated to take 30 minutes or less. You can pause and resume later by using the "Save and finish later" option displayed at the bottom right of your screen.

Data generated from this survey will be retained for the duration of the SYMBIOSIS project. Any data usage will comply with the principles outlined in the [UKCEH privacy notice](#) and be stored and analysed within the UK and the European Economic Area (EEA). Your data will not be shared, and if provided and agreed upon, your email will solely be utilised to provide feedback and share the results of this survey.

The SYMBIOSIS project is funded by Europe's Rail Joint Undertaking research and innovation programme under grant agreement 101177281.

I agree to participate and have been made aware of the focus and purpose of this questionnaire. I am aware that I can exit and withdraw from this survey at any time, including after submitting my responses.

☐ Yes

☐ No

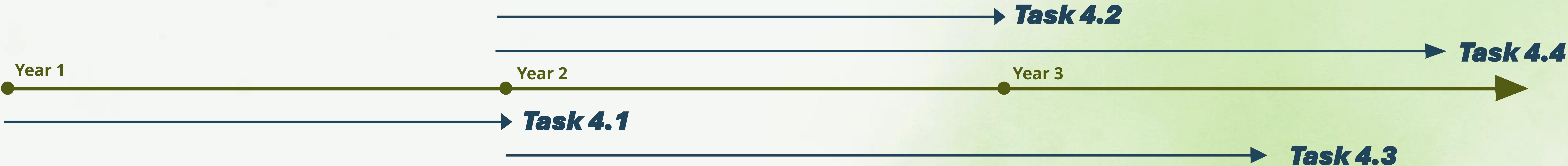


**Task 4.1. Assessment of current practice for biodiversity data collection and reporting
(M1 to M12)**

**Task 4.2. Pilot testing of new approaches to biodiversity data collection to inform standardisation
(M12 to M24)**

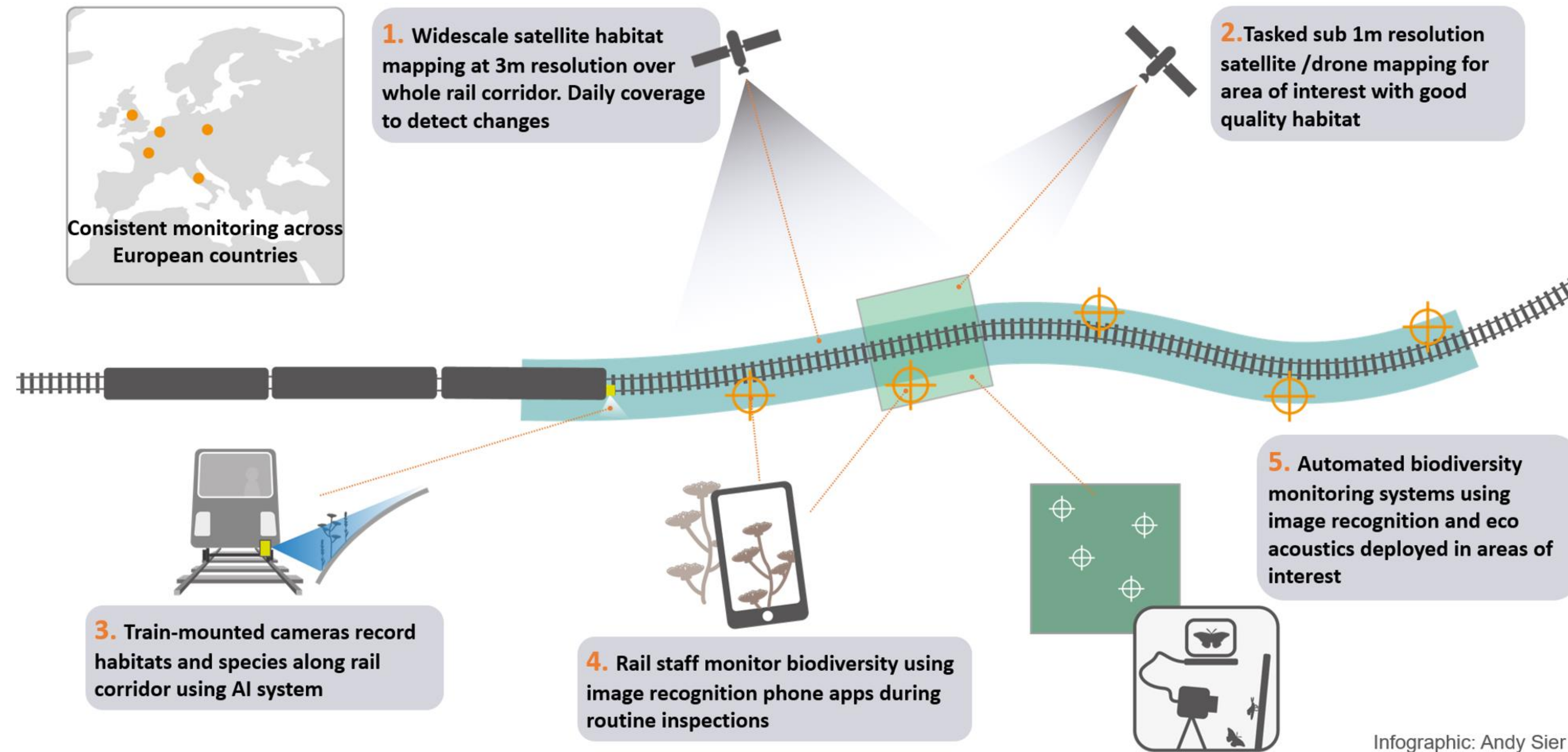
**Task 4.3. Demonstrating best practice for integrating biodiversity data into asset management systems
(M12 to M30)**

**Task 4.4. Co-designing an inclusive framework for standardised biodiversity monitoring, analysis and reporting
(M12 to M36)**



Monitoring and Integrating

Framework for AI-Driven Biodiversity Monitoring



Infographic: Andy Sier

Innovation in automated data collection



2024 (UKCEH AMI)



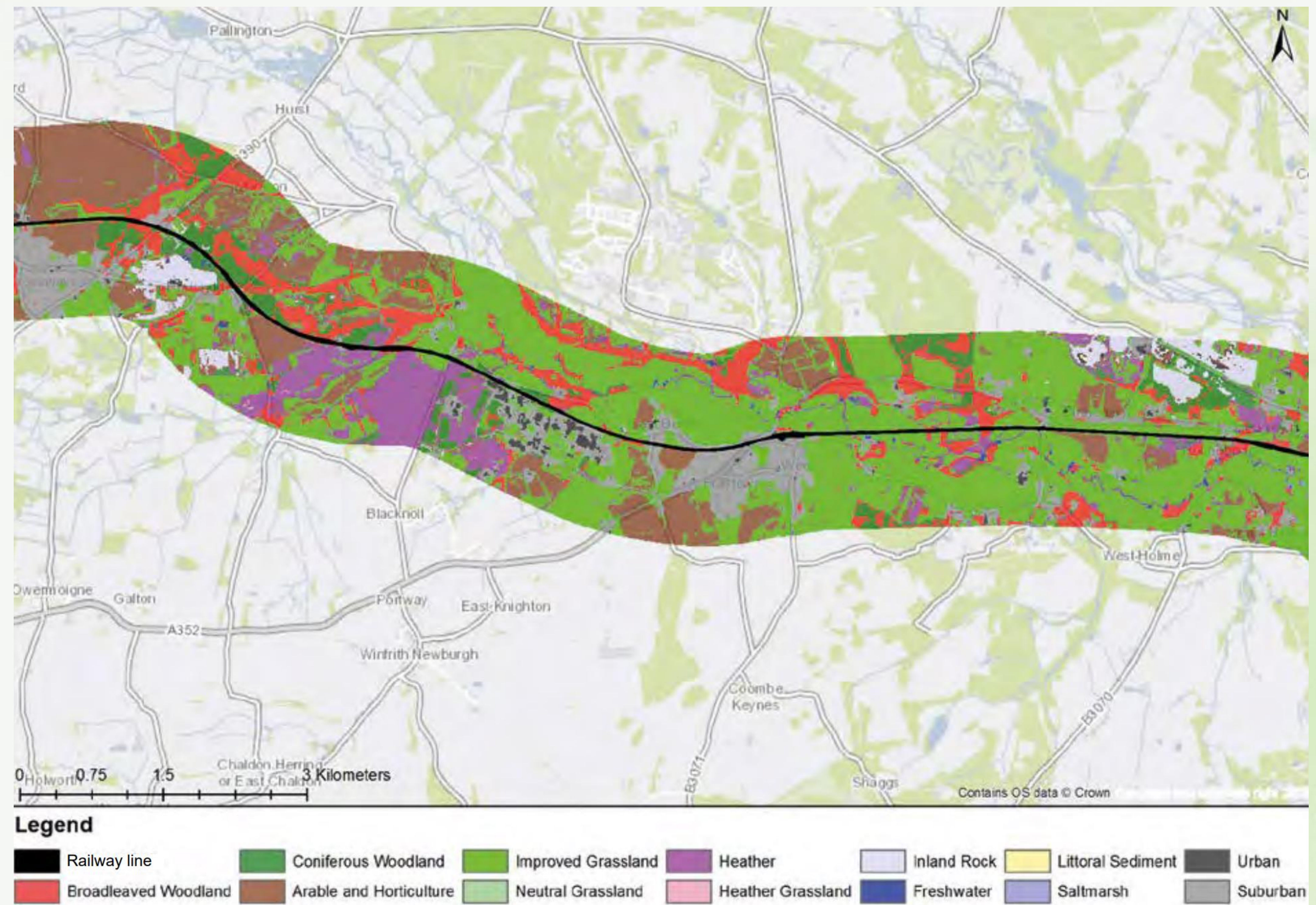
2025



<https://www.ceh.ac.uk/solutions/equipment/automated-monitoring-insects-trap>

Innovation in data integration

- **UKCEH Land Cover map tailored along railways in England (Network Rail)**
- **10m resolution, multispectral (Sentinel-2 optical satellite imagery)**
- **21 Land Cover classes**
- **Potentially available everywhere**



Innovation in data integration

- **UKCEH Land Cover map tailored along railways in England (Network Rail)**
- **10m resolution, multispectral (Sentinel-2 optical satellite imagery)**
- **21 Land Cover classes**
- **Potentially available everywhere**

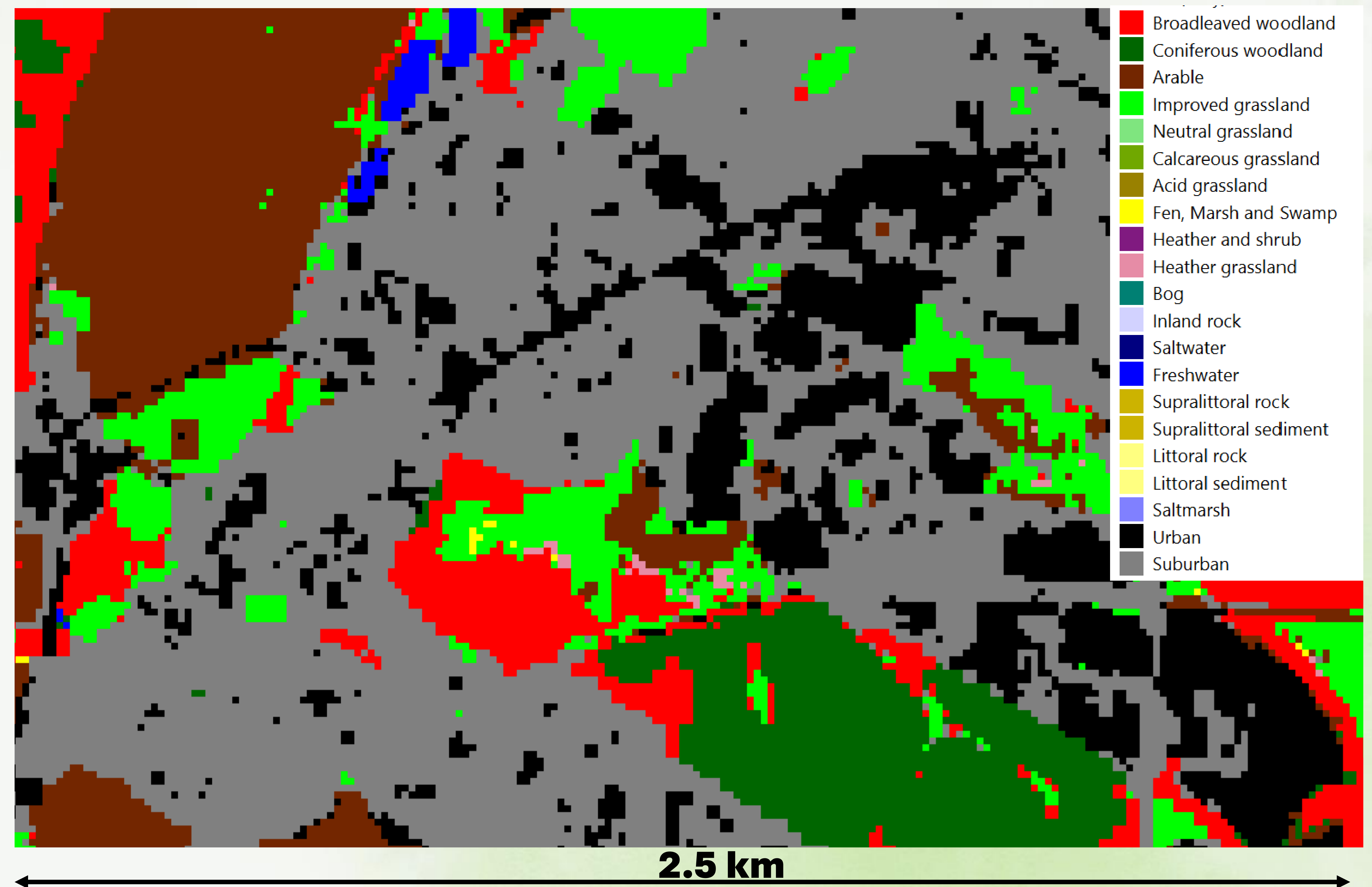


2.5 km



Innovation in data integration

- **UKCEH Land Cover map**
- **10m resolution, multispectral images (Sentinel-2 optical satellite imagery)**
- **21 Land Cover classes**
- **Potentially available everywhere**
- **Broad-scale national-level land cover mapping**
- **Can lacks in accuracy and details**



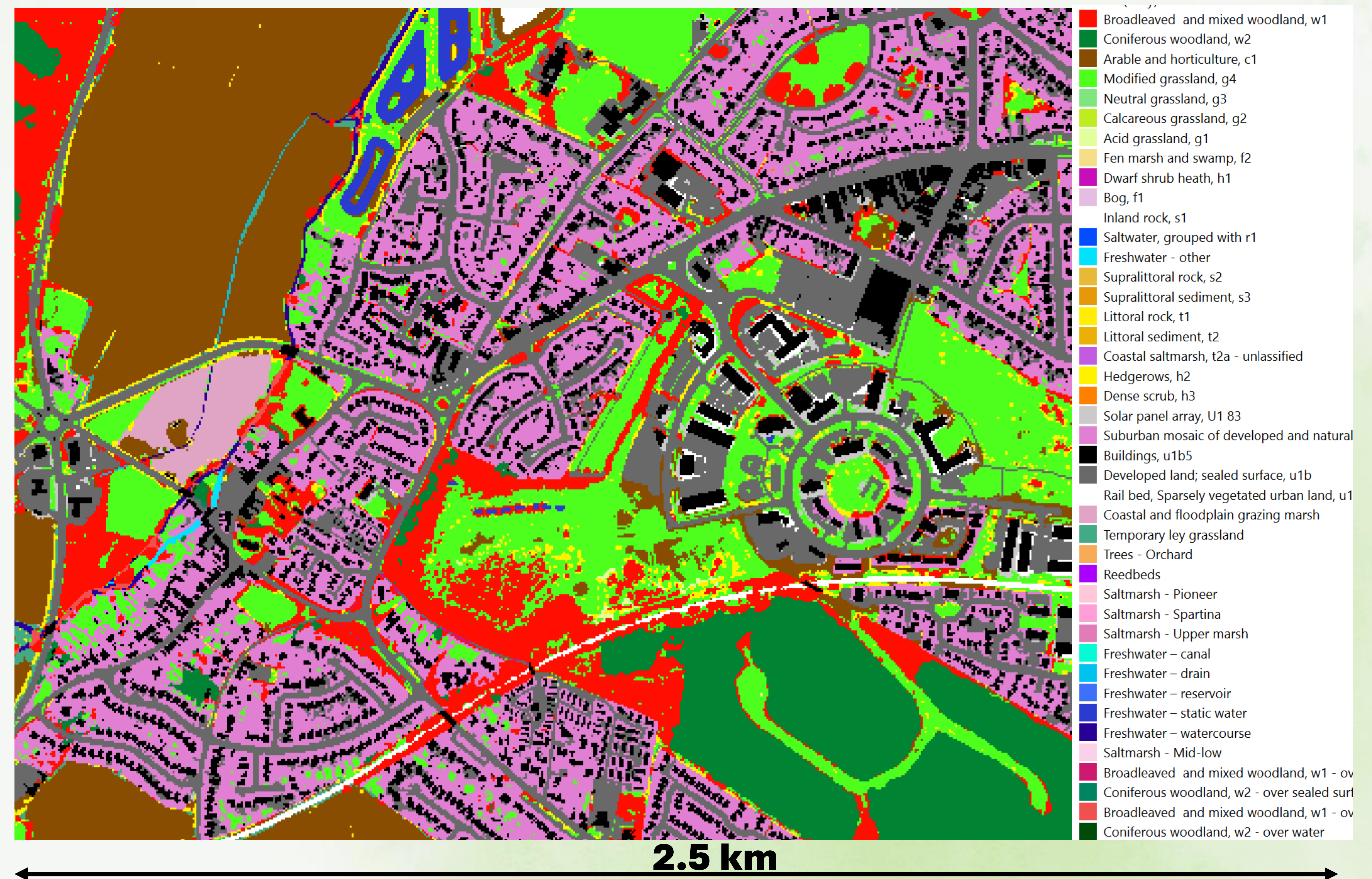
Innovation in data integration

- UKCEH Land Cover map
- 10m resolution, multispectral images (Sentinel-2 optical satellite imagery)
- 21 Land Cover classes
- **Difficult to distinguish and classify smaller features (e.g. trees, hedges, gardens)**



Innovation in data integration

- **UKCEH prototype of the latest Land Cover map (in progress)**
- **3 m resolution, multispectral images, LiDAR and more (Planetscope monthly)**
- **Integration of a wide range of data sources**
- **42 Land Cover classes**
- **Potentially available everywhere, with local or targeted optimisation (*but not free*)**
- **Computation-intensive**



Innovation in data integration

- **Potential benefits of integration of high-resolution satellite imagery and LiDAR technology**
- ***1m LiDAR and 10m image RGB - resampled at 20cm points***
- **More dimensions (x, y, z)**
- **Opportunity for structure analysis, biomass accounting, risks, etc.**
- **Computation-intensive (GPU)**



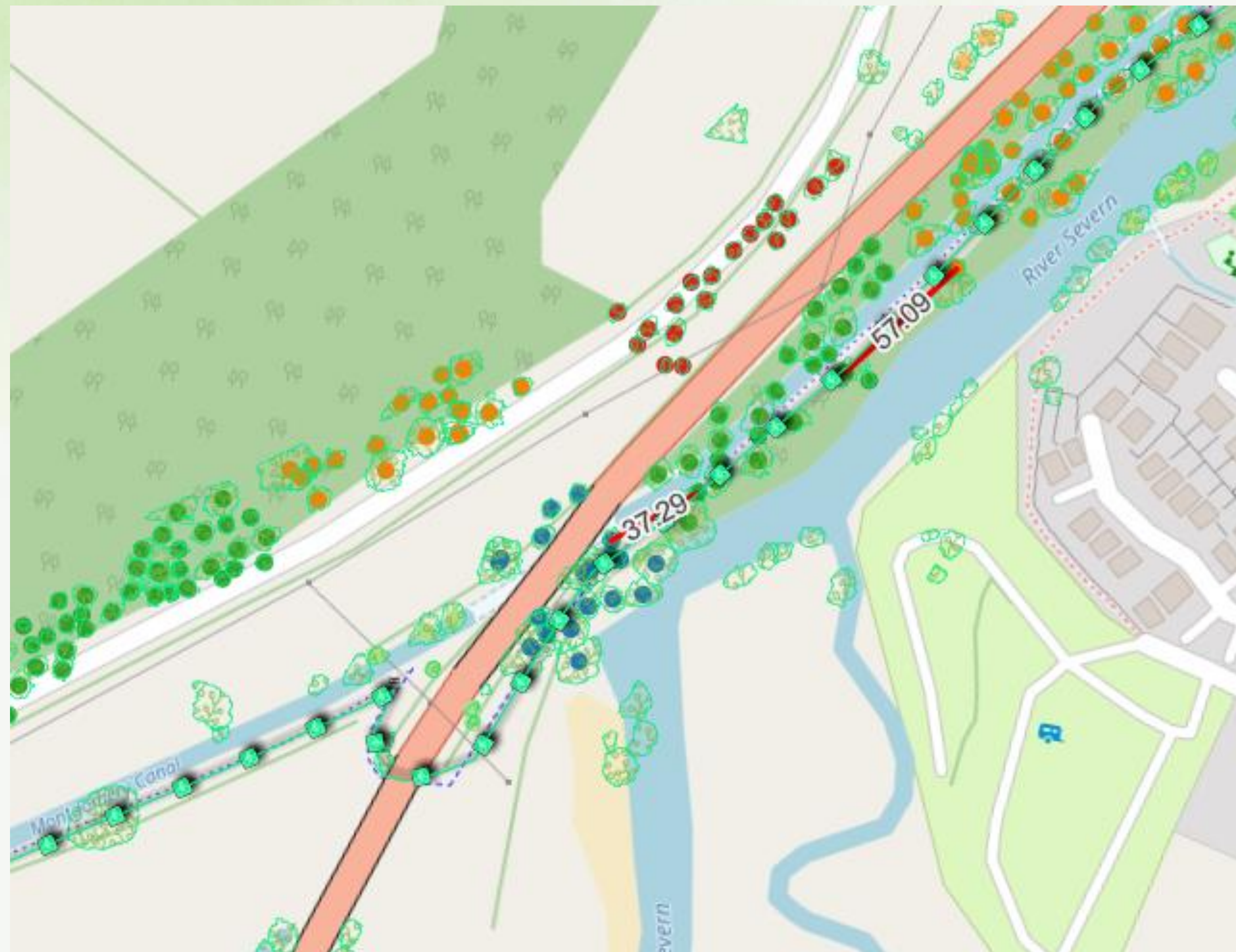
Innovation in data integration

- **Potential benefits of integration of high-resolution satellite imagery and LiDAR technology**
- ***1m LiDAR and 10m image RGB - resampled at 20cm points***
- **More dimensions (x, y, z)**
- **Opportunity for structure analysis, biomass accounting, risks, etc.**
- **Computation-intensive (GPU)**



Innovation in data integration

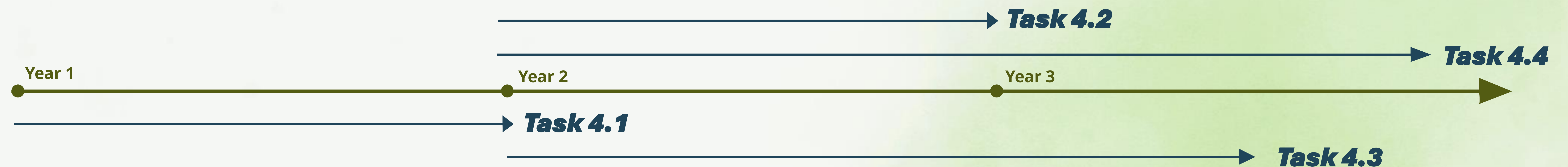
You can access the tool by clicking [here](#)



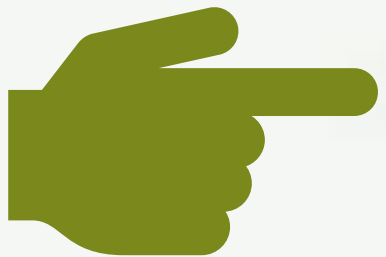
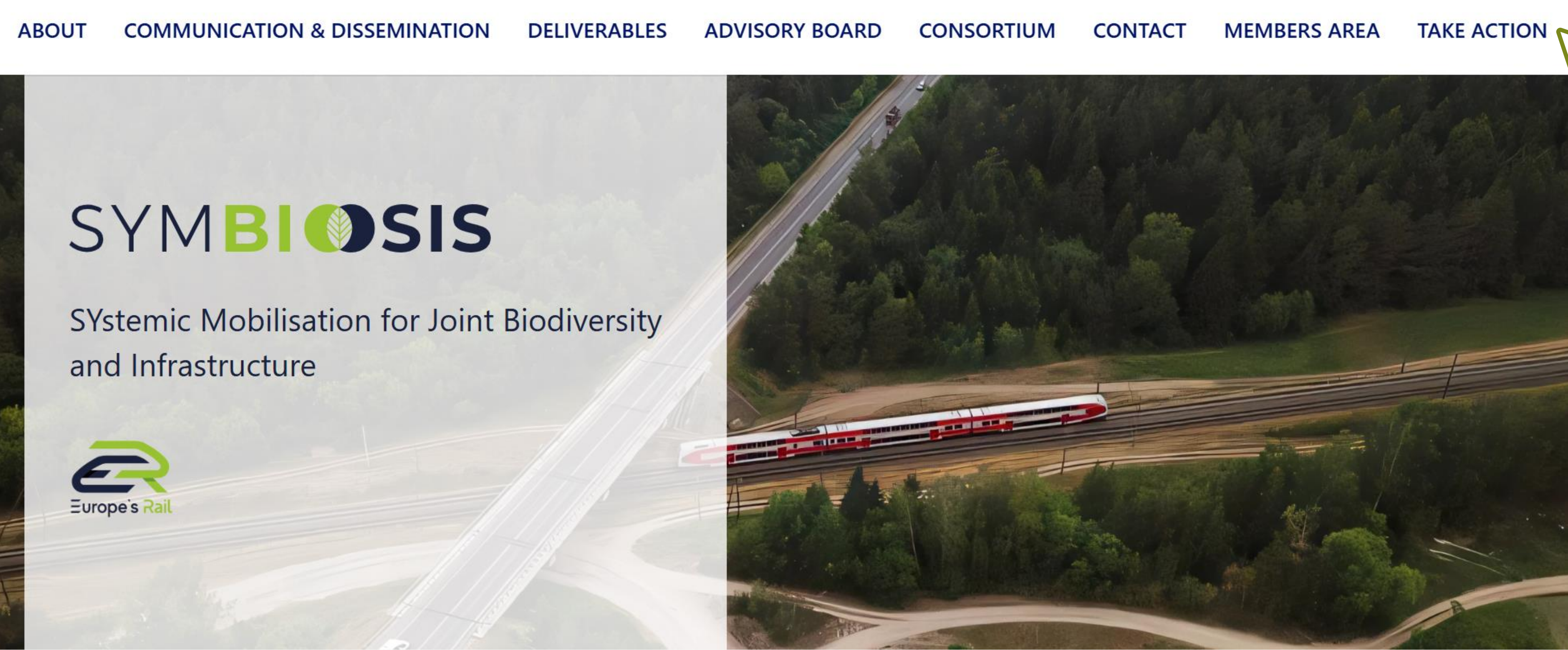
Innovation in technology and practices to protect biodiversity and nature

Task 4.3. Demonstrating best practice for integrating biodiversity data into asset management systems (M12 to M30)

Task 4.4. Co-designing an inclusive framework for standardised biodiversity monitoring, analysis and reporting (M12 to M36)



Help us make our work relevant and of use



[**https://symbiosis-transport.eu/**](https://symbiosis-transport.eu/)
(Before October 5th)

SYMBIOSIS

Assessment of current practice for habitat and biodiversity data collection and reporting

As rail expands to meet the EU's Sustainable and Smart Mobility Strategy targets and promote a greener way to transport people and goods across Europe, railway operators and managers must also adopt practices to mitigate the threats to biodiversity and reduce pressure on habitats.

This survey aims to assess and better understand how habitat and biodiversity are monitored on European transport infrastructures and how the data are integrated into daily asset management and reporting. This work is being undertaken by the UK Centre for Ecology and Hydrology (UKCEH) as part of the SYMBIOSIS project ([SYstemic Mobilisation for Joint Biodiversity and Infrastructure](#)), in partnership with the International Union of Railways (UIC).

The questionnaire focuses on current practices, how and why habitat and biodiversity data are collected, managed, analysed, and integrated into planning, management, and reporting operations. Completion of the 22 questions is estimated to take 30 minutes or less. You can pause and resume later by using the "Save and finish later" option displayed at the bottom right of your screen.

Data generated from this survey will be retained for the duration of the SYMBIOSIS project. Any data usage will comply with the principles outlined in the [UKCEH privacy notice](#) and be stored and analysed within the UK and the European Economic Area (EEA). Your data will not be shared, and if provided and agreed upon, your email will solely be utilised to provide feedback and share the results of this survey.

The SYMBIOSIS project is funded by Europe's Rail Joint Undertaking research and innovation programme under grant agreement 101177281.

I agree to participate and have been made aware of the focus and purpose of this questionnaire. I am aware that I can exit and withdraw from this survey at any time, including after submitting my responses.

☐ Yes

☐ No



Help us make our work relevant and of use

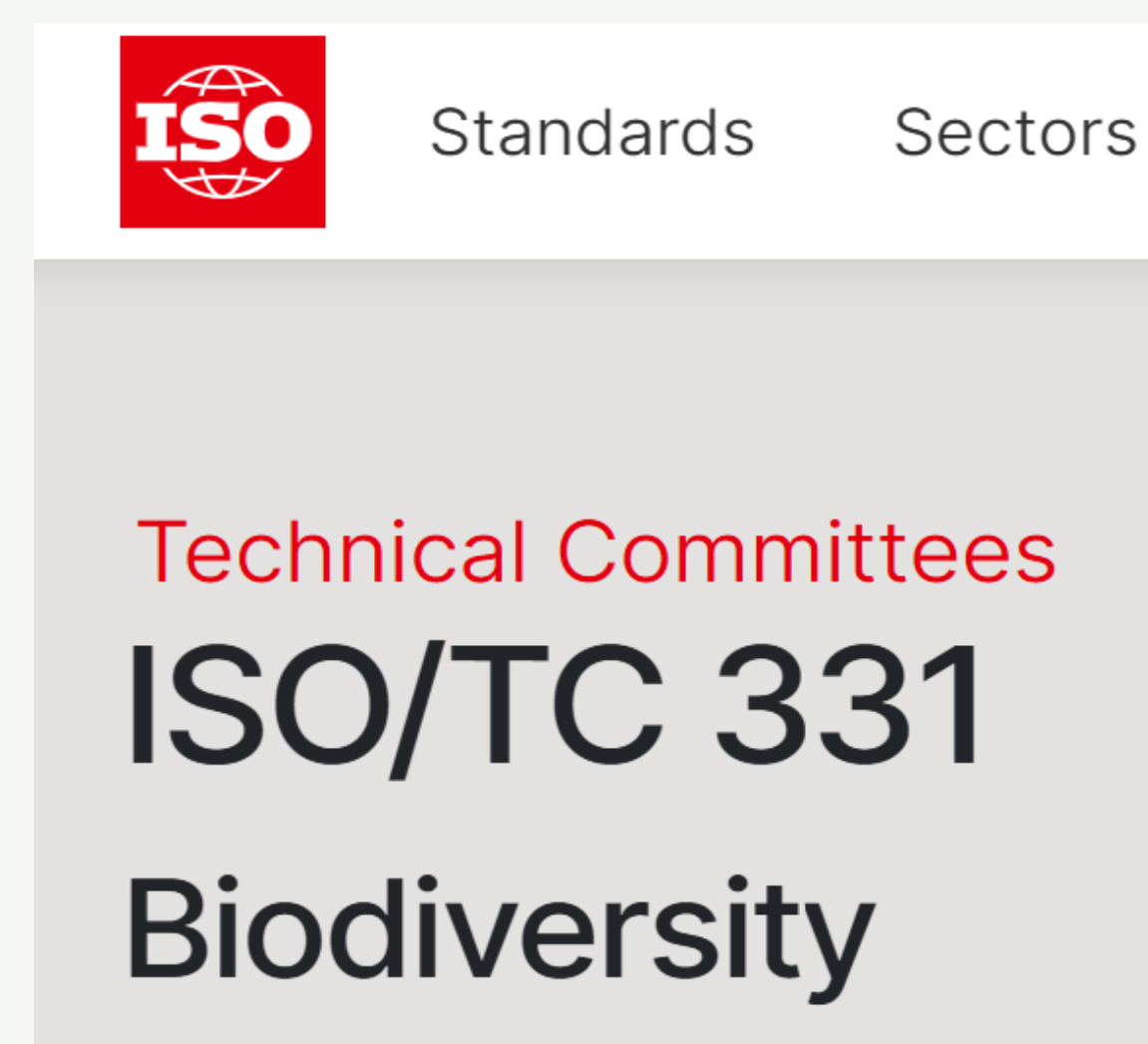
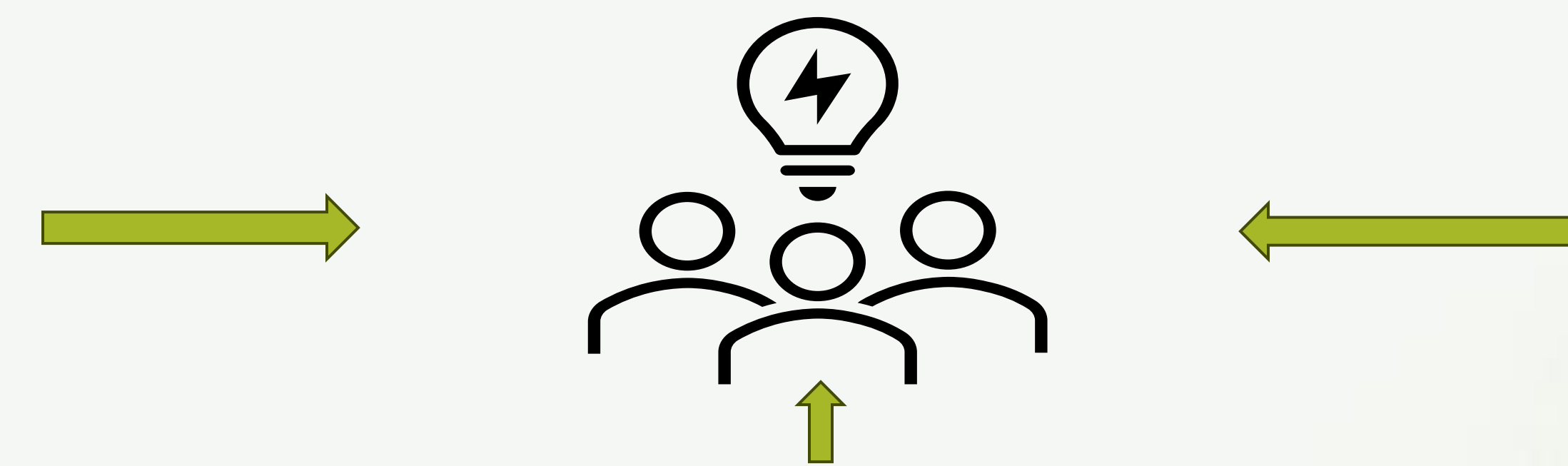


Standardising terminology and concepts for biodiversity monitoring, data sharing, integration and reporting

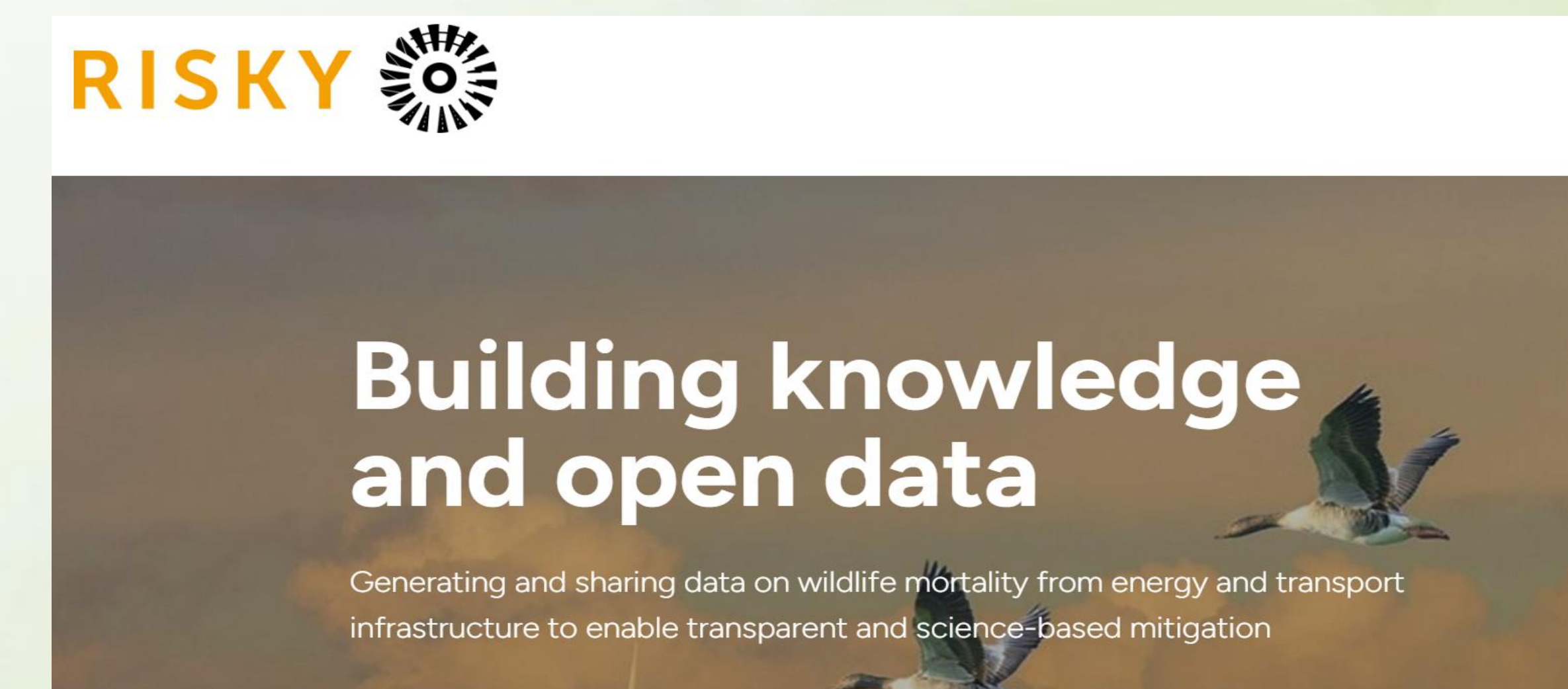
SYM**BIO**SIS



<https://www.biodiversityinfrastructure.org/>



<https://www.iso.org/committee/8030847.html>



<https://www.risky.pt/>



Engage and share your thoughts with SYMBIOSIS

- Innovation in automated data collection and dataflow;
- Innovation in data sharing, integration and interoperability;
- Effective monitoring to inform actions and support nature-positive decision-making;
- Participate in a cultural change in which nature is seen and managed as an opportunity for the railway sector.



SYMBIOSIS

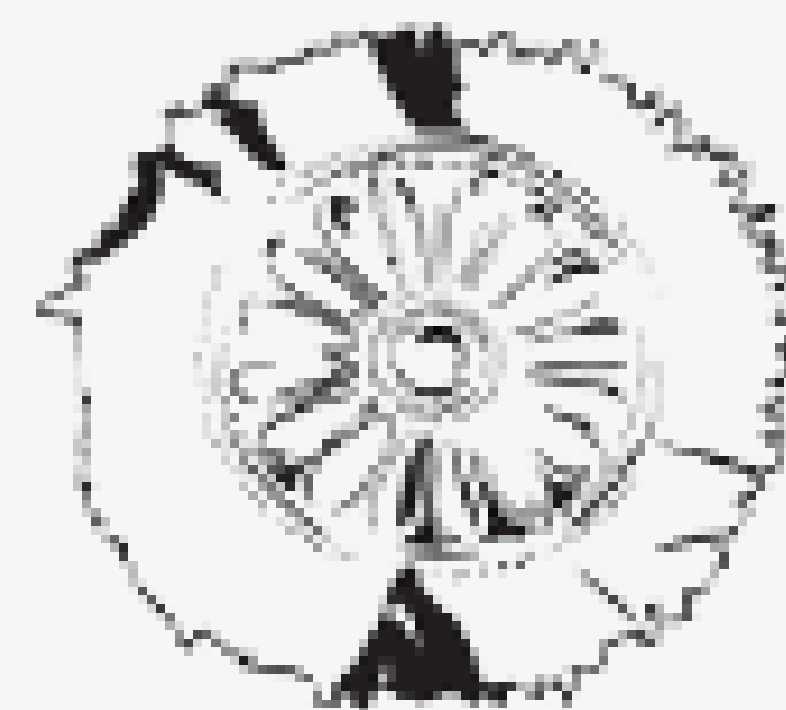


retoschm@ceh.ac.uk



ASSESSMENT OF SOCIETAL CHALLENGES IN SUSTAINABLE TRANSPORT DEVELOPMENT

Work Package 5



CERTH

CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS

Leader: Matina Loukea

Assessment of Societal Challenges in Sustainable Transport Development

18 Partners:



WP Leader :



Duration: M1- M36

Scope:

Address societal challenges from transport infrastructure and enhance environmental policies and sustainability reporting, led by the rail sector for improved connections.



Assessment of Societal Challenges in Sustainable Transport Development

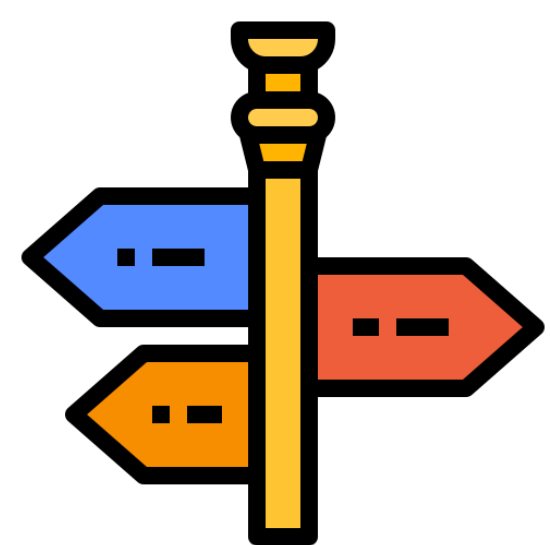
TASKS



Investigate societal impacts of sustainable transportation, enhancing railway capacity and reducing infrastructure costs.



Assess alignment of Europe-wide policies with environmental goals, focusing on rail and energy impacts on biodiversity and climate change.



Establish guidance framework for seamless integration in rail and energy sectors by providing recommendations for holistic planning and inclusive land use management.



Formulate recommendations to enhance biodiversity and climate considerations in transport policies.

5.1. Assessment of societal challenges in sustainable transport development

5.2: Regulation and Policy Assessment

5.3: Sustainable environmental impact assessment and corporate sustainability reporting on transport

5.4: Integrating biodiversity into company strategies, procurement processes and supply chain



T5.1: Assessment of societal challenges in sustainable transport development (M1-M23)



- Task 5.1 is dedicated to a **comprehensive exploration and enhancement of societal impacts and well-being associated with the evolution of sustainable transport systems**, maximising the benefits for society, economy and nature.
- The overarching objectives of this task include:
 - **Evaluating Societal Challenges and Impacts** → to understand the influence of transportation development on public health, societal well-being, the natural environment, etc.
 - **Identifying Sector-Specific Challenges** → Recognising and comprehending common and distinctive challenges, within transport and energy sectors.
 - **Improving Stakeholder Participation in Decision-Making** → Evaluating and enhancing stakeholders' involvement in decision-making processes and transport policy formulation.

Methodology

- 1 Extensive bibliographic review
- 2 Stakeholders consultation
- 3 Multicriteria Analysis
Societal Readiness Level integration



Task 5.2. Regulation and Policy Assessment (M13-M30)



- T5.2 examines the interactions and impacts of rail and energy infrastructure on biodiversity and climate change. The main objective of this task is focused on:
 - ✓ **Evaluate the existing frameworks.**
 - ✓ **Identify gaps.**
 - ✓ **Provide recommendations from a joint sectorial approach, considering rail and energy infrastructure, and its interactions with biodiversity and climate change**
- T5.2 is based on regulatory and policy aspects from two key sources: **Energy, biodiversity & climate** and **Rail infrastructure & operations**. The analysis will include:
 - ✓ Results from **BISON, SYMBIOSIS** (WP3, WP4, T5.3), and partner expertise.
 - ✓ **European policies and regulatory frameworks.**
 - ✓ **State of the art** (impact assessments, articles...)
 - ✓ **Stakeholder experience** in the application of these frameworks and identification of gaps.

METHODOLOGY

- 1 Evaluation of existing frameworks
- 2 Regulatory framework analysis and policy assessment
- 3 Gap analysis
- 4 Stakeholders consultation



Task 5.3. Sustainable environmental impact assessment and corporate sustainability reporting on transport (M6-M36)



Methodology

- 1 Review of bibliographic resources & project results (e.g., BISON)
- 2 Stakeholder engagement across sectors
- 3 Task results conceptualized in an AI-based Dashboard as a centralized analytical tool

T5.3 focuses on two activities:

✓ Cumulative effects in Environmental Impact Assessment (EIA):

- Integrate biodiversity in assessments on pairing linear transport infrastructure.
- Update Strategic Environmental Assessment (SEA) and EIA requirements toward biodiversity net gain / no net loss.

✓ Biodiversity in corporate reporting:

- Align with the EU CSRD and EU Biodiversity Strategy 2030.
- Apply indicators and monitoring in line with the Kunming-Montreal Global Biodiversity Framework.
- Support planning, monitoring, reporting, and review at project and corporate levels.



Task 5.4. Integrating biodiversity into company strategies, procurement processes and supply chain (M8-M36)



Task 5.4 focuses on three main objectives:

- ensure that **biodiversity integration** becomes an integral part of infrastructure management practices;
- empower infrastructure managers with the knowledge necessary for the assessment of biodiversity impacts across their **supply chain** and the disclosure on this topic in compliance with the **new reporting standards**;
- support infrastructure managers in seamlessly integrating biodiversity considerations into their **procurement processes** and overarching **corporate strategies**.

METHODOLOGY

- 1 Analysis of the state of the art of sustainability reporting and procurement processes
- 2 Benchmark analysis of a sample of representative linear infrastructure companies
- 3 KPI and criteria identification for integrating biodiversity in procurement processes while highlighting related risks, challenges and opportunities



Outcomes



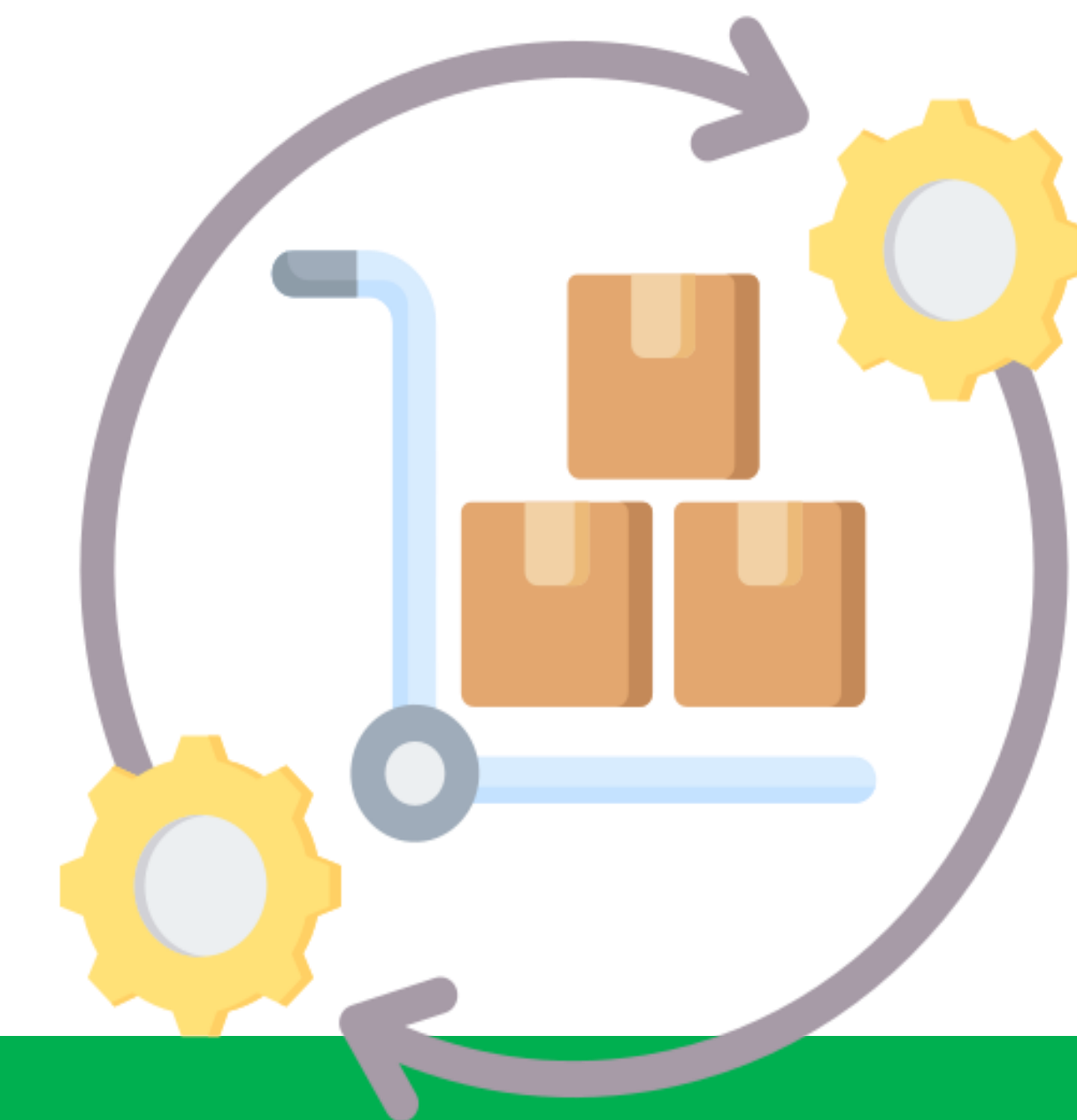
Assess societal impacts, challenges, and stakeholder involvement in sustainable transport development.



Assess regulatory frameworks and policy gaps affecting transport and biodiversity



Update environmental assessments and corporate reporting to integrate biodiversity



Embed biodiversity in procurement processes and corporate strategies effectively

Partners:



Deliverables



N°	Name	Lead	Month
D5.1	Analysis report on assessing societal priorities on sustainable transport development	CERTH	M23
D5.2	Recommendations for enhancing cross-cutting biodiversity and climate policies on railway infrastructure.	FFE	M30
D5.3	Recommendations on environmental impact assessment of the cumulative effects of pairing infrastructure development.	CERTH	M36
D5.4	Recommendations for mainstreaming biodiversity within the procurement process, as well as for improving the disclosure regarding biodiversity in the supply chain in compliance with the new standards	ITALFERR	M36



Stakeholders engagement in WP5



➤ Rail & Transport Sector

- ❑ **Rail operators & infrastructure managers** (e.g., Europe's Rail JU members, national rail companies) - *Role: Provide operational insights, test and validate biodiversity-friendly practices, pilot innovative solutions.*
- ❑ **Other transport modes & associations** (aviation, road, inland waterways, logistics platforms) - *Role: Share best practices, contribute to cross-modal synergies, participate in impact assessments.*
- ❑ **Regulatory & policy bodies** (DG MOVE, national transport ministries, ERA – European Union Agency for Railways) - *Role: Ensure policy alignment, support regulatory harmonisation, uptake recommendations into EU/national legislation.*



➤ Energy Infrastructure Sector

- ❑ **Energy infrastructure operators & grid managers** (ENTSO-E, TSOs, DSOs, renewable energy associations) - *Role: Provide data on synergies/conflicts with transport infrastructure, integrate biodiversity considerations in co-location projects.*
- ❑ **Energy regulators & policy bodies** (DG ENER, ACER, national energy regulators) - *Role: Ensure consistency between energy and transport regulatory frameworks, harmonise permitting/EIA requirements.*



Stakeholders engagement in WP5



➤ Biodiversity & Environment Sector

- ❑ **Conservation NGOs and networks** (IUCN, BirdLife Europe, WWF, European Environmental Bureau) - *Role: Provide expertise on biodiversity protection, contribute to biodiversity indicators and monitoring frameworks.*
- ❑ **Scientific & research organisations** (universities, CEN-CENELEC, academic consortia, think tanks) - *Role: Deliver scientific evidence, methodological development, biodiversity valuation/monetisation approaches.*
- ❑ **International environmental bodies & conventions** (UNEP, CBD, Bern Convention, Carpathian Convention, CMS, IAIA) - *Role: Ensure alignment with international commitments, contribute guidance on biodiversity mainstreaming.*

➤ Governance, Reporting & Market Actors

- ❑ **Corporate stakeholders** (rail & energy companies, infrastructure developers, suppliers) - *Role: identify gaps for the adoption of the CSRD in their reporting activities, share case studies, provide feedbacks on biodiversity-inclusive procurement models.*
- ❑ **Standardisation & certification bodies** (ISO, CEN/TC 256 – Railways, GRI) - *Role: Integrate biodiversity indicators into standards and certification schemes.*
- ❑ **Financial institutions & investors** (EIB, commercial banks, ESG investors) - *Role: Embed biodiversity/climate risk in financing of rail/energy projects, align with EU Taxonomy.*

➤ Public & Societal Stakeholders

- ❑ **Local/regional authorities & spatial planners** - *Role: Ensure biodiversity objectives are embedded in land-use planning and permitting procedures.*
- ❑ **Citizens and community organisations** - *Role: Provide input on societal challenges, local biodiversity impacts, and acceptance of infrastructure projects.*



Stakeholders engagement



➤ Bilateral Consultations & Interviews

Policy-makers, infrastructure companies, certification bodies

- Targeted insights into regulatory expectations, compliance challenges, and sector-specific practices.
- In-depth exploration of case-specific approaches (e.g., renewable energy projects vs. railway corridors).

➤ Surveys & Questionnaires

Industry associations, SMEs in the supply chain, local communities

- Collect perceptions on biodiversity risks, awareness of CSRD obligations, and readiness to adopt new metrics.

➤ Workshops & Roundtables

Transport operators, energy providers, regulators, NGOs

- Co-design sessions on how biodiversity metrics can be integrated into reporting and operational practices.
- Joint problem-solving for identifying practical barriers to CSRD-aligned reporting.

➤ Collaborative Case Studies

Rail infrastructure managers, energy providers, biodiversity experts

- Development of real-world examples that represent different contexts (urban, rural, cross-border).
- Joint authorship of results ensures ownership and credibility.



Stakeholders engagement



- **Monthly WP5 meeting:**
 - ☐ Held on the **last Tuesday of each month**, from **09:00–10:30 CET**
- Complemented by **dedicated stakeholder interactions**, organized as needed according to WP5 task requirements and progress.



CLOSING REMARKS



WP5 Deep Dive Session

Agenda

13:00-13:10

- Welcome & Context Setting

13:10-13:55

- Framing Key Themes & exchange with Stakeholders:
 - ✓ Social & environmental considerations in rail infrastructure projects (CERTH)
 - ✓ Regulation & Policy aspects (FFE)
 - ✓ Cumulative effects in Environmental Impact Assessment (CERTH)
 - ✓ Biodiversity considerations into procurement processes and Corporate strategies (ITALFERR)

13:55-14:00

- Closing remarks & next steps





Thank You See you at 13:00

SYMBIOSIS

<https://symbiosis-transport.eu/>



Funded by the European Union. Views and opinion expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Europe's Rail Joint Undertaking. Neither the European Union nor the granting authority can be held responsible for them. The SYMBIOSIS project is supported by the Europe's Rail Joint Undertaking and its members Grant Agreement No 101177281..



Funded by
the European Union