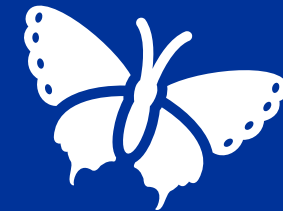


# Building Europe's Climate & Biodiversity Intelligence: From Observation to Action

BioCLIMA & GEOAtlas Webinar, 24.04

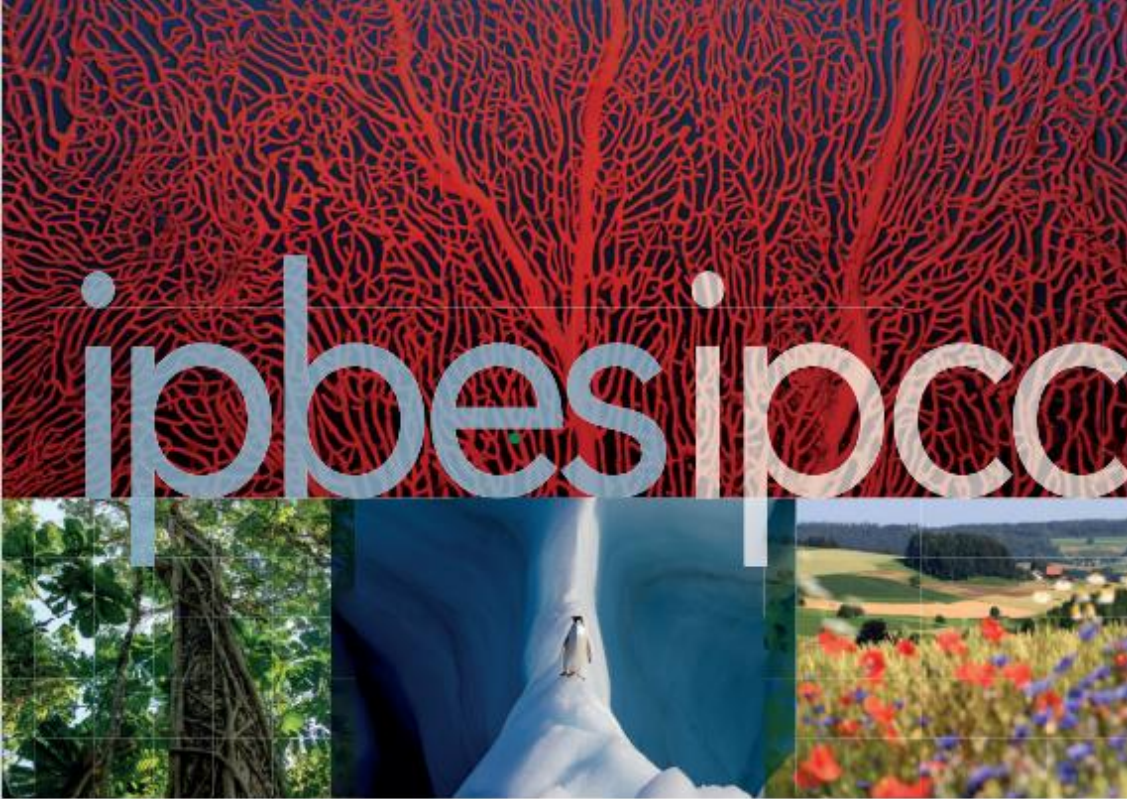


*Stefanie Lumnitz*

*European Commission, DG RTD.B3*

# The Twin Crises

- Europe is the **fastest warming** continent - shifting species ranges
- **81%** of EU habitats are in poor state - **reducing carbon sinks**
- **One in three** bee and butterfly species are in decline - reducing ecosystem resilience



IPBES-IPCC CO-SPONSORED WORKSHOP

## BIODIVERSITY AND CLIMATE CHANGE

WORKSHOP REPORT





## The Next Frontier for Climate Change Science

Insights from the authors of the  
IPCC 6<sup>th</sup> Assessment Report on knowledge  
gaps and priorities for research

Independent  
Expert  
Report

Research and  
Innovation

# IPCC Knowledge Gaps

## 3.1 Understanding future global climate risks for individual systems, sectors and for compound risks

Earth system science       Impacts, risks and adaptation       Mitigation

Developing robust projections of future compounding global climate risks ...

- 1) the **vulnerability of species, biodiversity, ecosystems**, dependent humans and societies at regional scale at different warming levels;
- 2) the occurrence, including “when” and “why”, of **biological tipping points (ecosystems)** and tipping points for societal functioning, and;
- 3) the **limits to adaptation (evolutionary adaptation) of species, ecosystems** and of dependent societies with various economic backgrounds.



**Flag(s)**  
Biodiversity/  
Ecosystems



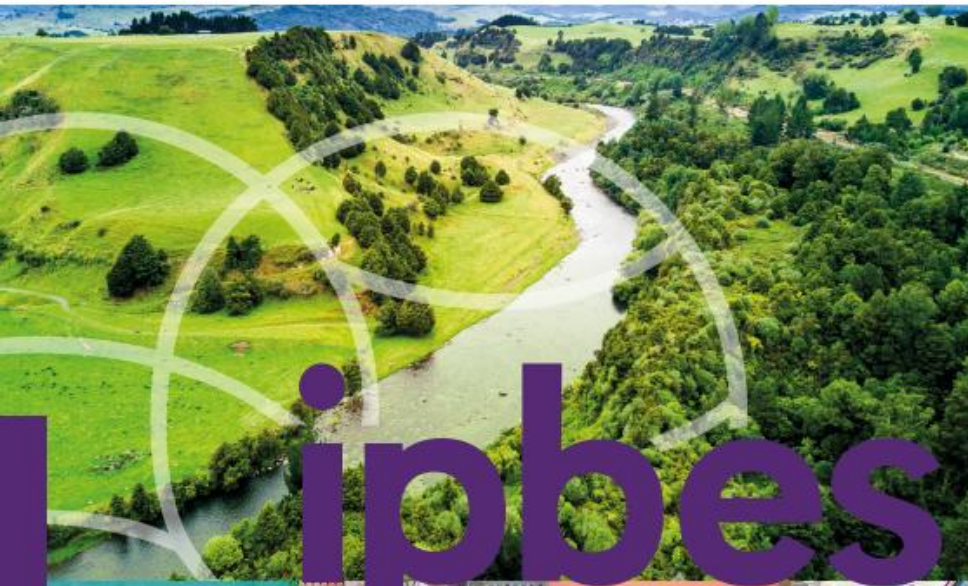
# IPBES Knowledge Gaps

**Knowledge gaps in assessing the underlying causes of biodiversity loss and determinants of transformative change to achieve the 2050 Vision for Biodiversity**

*(Box SPM 9)*

## **Monitoring & valuing transformative change**

- Monitoring across scales, including long-term effectiveness and European wide trends
- Metrics and indicators of ecosystem condition, resilience, pressure and restoration
- Integration with social, political and cultural dimension



The thematic assessment report on  
**THE UNDERLYING CAUSES OF BIODIVERSITY  
LOSS AND THE DETERMINANTS OF  
TRANSFORMATIVE CHANGE AND OPTIONS  
FOR ACHIEVING THE 2050 VISION  
FOR BIODIVERSITY**

SUMMARY FOR POLICYMAKERS



# Policy Framework for Action



Implementation Phase of  
the **European Green Deal**  
& **EU Biodiversity**  
**Strategy for 2030**



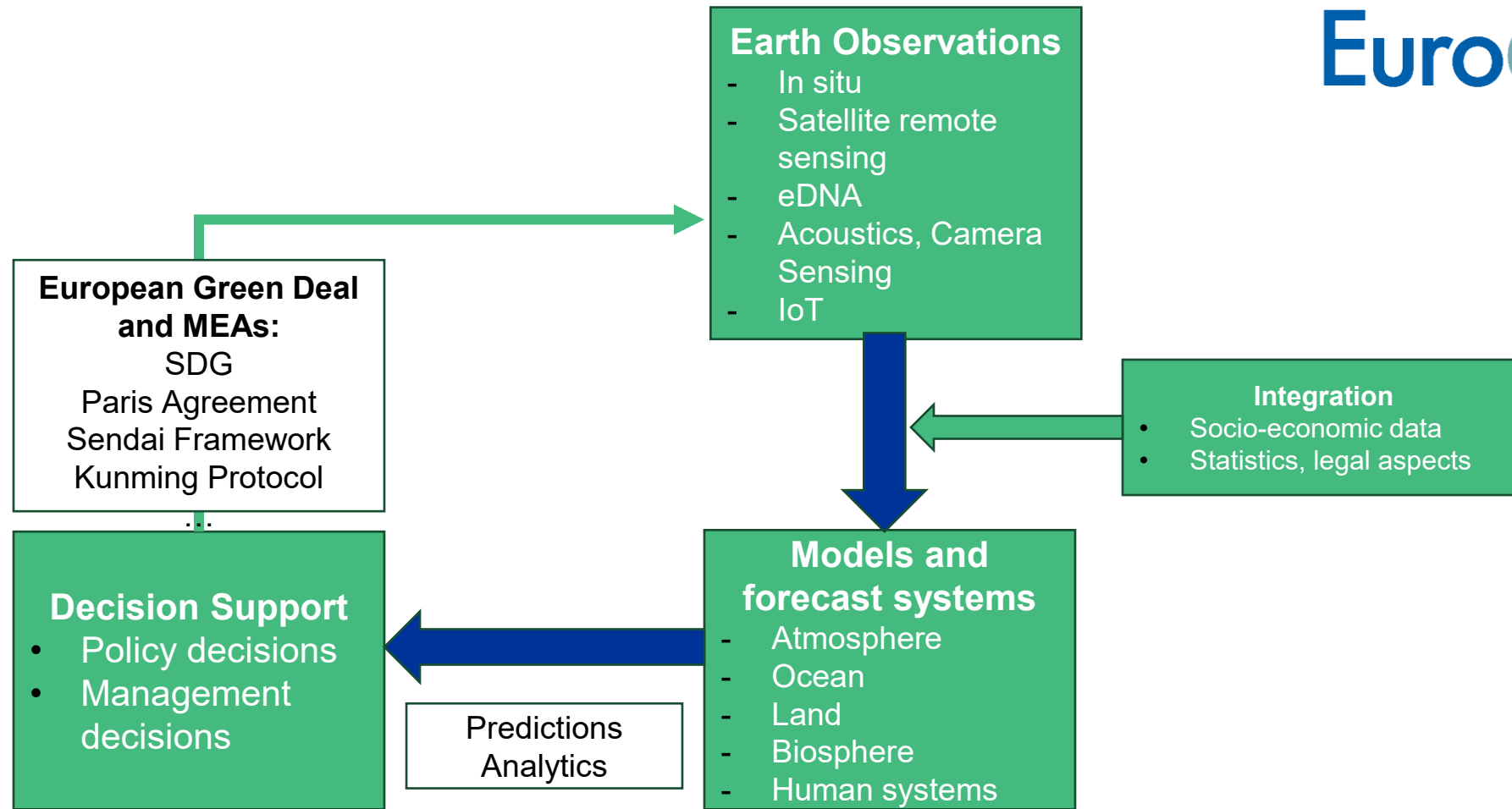
All-of-society approach in  
line with **Kunming-**  
**Montreal Global**  
**Biodiversity Framework**



R&I Framework  
Programme **Horizon**  
**Europe** funds projects that  
directly target the IPBES &  
IPCC knowledge gaps



# From Observations to Earth Intelligence



# The role of digital assets

## *The need for a knowledge valorization chain – from observations to intelligence*



- Fragmented monitoring
- Standards and Interoperability
- Calibration, Validation, Robust AI
- Uncertainty characterization



# Bridging the Gap: Cross-cutting platforms



## BioAgora

Science service for Biodiversity, connecting research to policy



## Biodiversa+

Co-funded partnership linking 41 countries' research and policy



## NetworkNature

Global knowledge-sharing hub for Nature-based Solutions



## EUBP

EU Biodiversity Platform supporting Commission on policy implementation

## KCBD

Commission Knowledge Centre for Biodiversity to support policymaking



# Overcoming Challenges for Transformative Change

Capacity Building

Policy

Metrics & indicators

monitoring across scales,

integrating qualitative & quantitative approaches

## Example projects:

**RESPIN**: Bridging Science, Policy and Practice, Capacity building for IPBES&IPCC

**ProblemShifting**: examines causes and impacts of problem-shifting in environmental treaties.

**EBOCC**: EU Biodiversity Observation Coordination Centre

**SUSTAIN**: business biodiversity dependency database & tools

**RAINFOREST**: integrated modelling for food & biomass value chains

**WaterSmartLand**: machine learning for nutrient run-off mitigation

**GoNaturePositive**: Establishing indicators for measuring 'nature positive'



# Cluster 5 WP 2026-2027 (adopted)

Code	Call title	Type	Budget (EUR)
HORIZON-CL6-2027-01-BIODIV-01	Integrating Remote Sensing and in-situ observations of Biodiversity, towards a fully interoperable observation and data framework	RIA	10 million
HORIZON-CL5-2026-08-Two-Stage-D1-06	Closing knowledge gaps on Earth system science in support of global and regional assessments and climate policy	RIA	45 million
HORIZON-CL5-2027-01-D1-10	Understanding and avoiding maladaptation to climate change	RIA	18 million
HORIZON-CL6-2027-01-BIODIV-02	Science-policy support to the implementation of EU and global biodiversity policies and strategies	RIA	7 million
HORIZON-CL6-2027-01-BIODIV-07	Health of ecosystems and wild species, predictions and impacts on human health, in the face of existing and emerging stressors, from a One Health approach	RIA	14 million
HORIZON-CL5-2027-01-D1-13	Next generation scenarios for informing climate and sustainability transitions	RIA	24 million



# Conclusion

- Connect directly to IPBES transformative change and IPCC knowledge gaps for policy reach
- Make calibration, validation and uncertainty the centre of AI-enabled decision-support
- Treat interoperability as a deliverable, connecting to EBOCC, GEO and other projects

*Research is not just to observe change, it is to organise knowledge for action. It is building the knowledge, governance, and innovation base to transform how society values, uses, protects and restores nature.*



# More information on EU funded R&I:

- [EU-funded research projects: Towards transformative change for biodiversity](#)
- [Mapping ERC Frontier Research: Transformative change for a sustainable future](#)
- [Biodiversity: The nexus approach : EU-funded research on biodiversity and its interlinkages with water, food, health and climate change](#)
- [Nature-based solutions: EU-funded NBS research projects tackle the climate and biodiversity crisis](#)

