2nd Science EU Policy Dialogue

29 April 2025 9:30 – 12:00 (CEST)

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Welcome

This meeting will be recorded for project-internal evaluation purposes. The recording will not be made public.

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Introduction

Welcome Message:

Dr. Franziska Wolf (EuropeLAND)

Prof. Dr. Julia Leventon (PLUS Change)

Dieter Cuypers (MOSAIC)

Purpose:

-Provide a platform for science-policy exchange.

-Strengthen dialogue between researchers and policymakers.

-Align research insights with EU policy needs.

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Introduction

Key Goals:

-Facilitate inclusive discussions on land-use policies.

-Present scientific contributions to EU land-use strategies.

-Address challenges and solutions for sustainable land management.

Interactive Approach:

Engaging discussions with EU policy officers and researchers, using digital tools (Slido) for interactive participation.

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Agenda

PART 1	Keynotes
PART 2	Interactive Session A: Land Use Policy
PART 3	Interactive Session B: Land Use Solutions
PART 4	Conclusions
PART 5	End of 2nd Science Policy Dialogue

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Key notes

“The relevance of Science -Policy interaction for EU policy making”

Dr Karen FABBRI

Deputy head of the Science for Policy Advice, Advice and Ethics Unit

“The Nature Restoration Law – an opportunity amongst risks?”

Dr Guy Pe’er
Dept. Biodiversity and People, German Centre for Integrative Biodiversity Research (iDiv) and Helmholtz Centre for Environmental Research (UFZ)

“Enhancing Europe’s land carbon sink, status, challenges and opportunities”

Linde Zuidema

European Environment Agency (EEA)

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The relevance of Science-Policy interaction for EU policy making

Karen Fabbri

Deputy Head of Unit

DG RTD.02 – Science for Policy, Advice and Ethics

Research and Innovation

Science and policy

- Science as the domain of facts
  - → What the world is, how it works

- Politics/policy as the domains of decisions and action
  - → What the world should be, which direction to take
  - → Policy decisions:
    - Have consequences
    - Have costs
    - Require trade-offs
    - Involve value judgements

What role for Science in Policy?

“Science for Policy” → The use of the best available scientific evidence, knowledge, and expertise to inform policymaking; aiming to enhance the quality, effectiveness, efficiency, and impact of public policies.

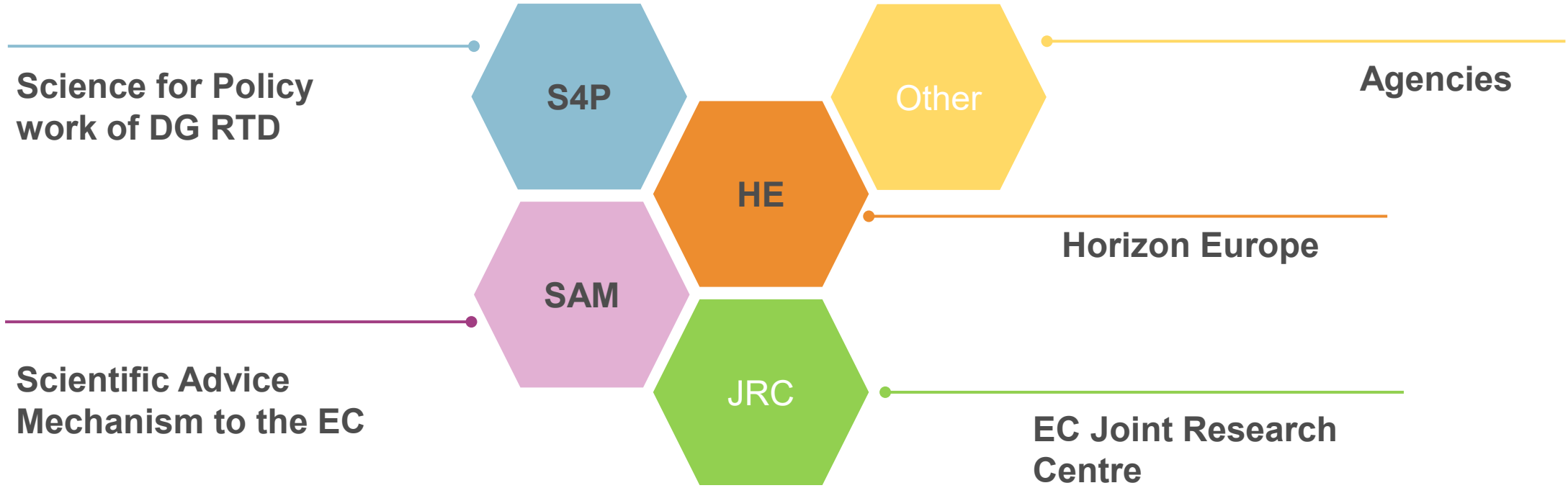
- Identifying and framing problems
- Identifying possible solutions
- Mapping uncertainties
- Assessing consequences, impacts and trade-offs …

“Policy for Science” → aka *R&I policy* is about deciding which science gets done, by whom and how it will be funded/supported.

Science-Policy interactions / interfaces

- Integrating **scientific knowledge and expertise**, in particular to address the current ‘wicked’ problems (e.g., food security, climate change, and biodiversity loss).
- Decision-makers need **access** to the best available science in a **timely** manner, in a **format** they can use, and which is **trusted** by citizens.
- Therefore, **supply** (scientists) and **demand** (policymakers) need to be brought together - dialogue & **collaboration** are essential for understanding each other and coordinating efforts.
- We need to **remove barriers**: difficulty of translating findings into actionable knowledge, limited absorptive capacity and skills for science uptake by policy makers, fragmented S4P ecosystems, etc.

EC Science-Policy Landscape



European Commission

S4P work of DG RTD

- Mandate to EC for coordinating actions given by Dec 2023 Council Conclusions on '*Strengthening the role and impact of research and innovation in the policymaking process in the Union*'.

- Interlocking objectives to be achieved:

1. Further develop the concept of 'Science for Policy' and improve the cross-cutting integration of scientific evidence and knowledge in **public policies**.

2. Advance and strengthen the European **S4P ecosystem** across sectors and governance all levels.

3. Promote the **collaboration of networks** of relevant actors and foster the identification and exchange of best practices and mutual learning.

S4P work of DG RTD

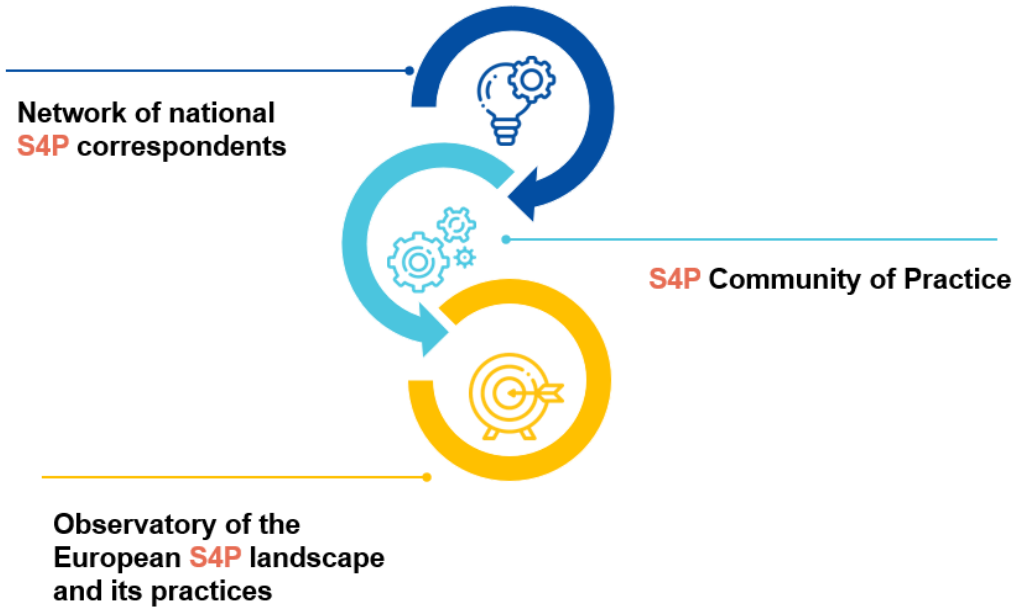
Mutual Learning Exercise (MLE) on '*Bridging the gap between Science and Policy*': involves 16 Member States and HE Associated countries to strengthen the research sector's engagement with policymaking at both European and national level. (June 2024-May 2025).

1. Foster knowledge sharing within and among the S4P actors.
2. Science advice to policymakers: Roles, enabling conditions and incentives.
3. Assessing the effectiveness and implementation of science-for-policy ecosystems.
4. Reinforcing S4P governance and trust.

S4P work of DG RTD - Future

- European Research Area (ERA) Policy Action on '*Advancing the European Science for Policy ecosystem*' in the next ERA Policy Agenda 2025-2027

- Horizon Europe tools to support the process, including the following milestones:



- **BUILDING BRIDGES CONFERENCE: SHAPING EUROPE'S SCIENCE-FOR-POLICY LANDSCAPE** (26-27 May, Vienna)

European Commission

Scientific Advice Mechanism

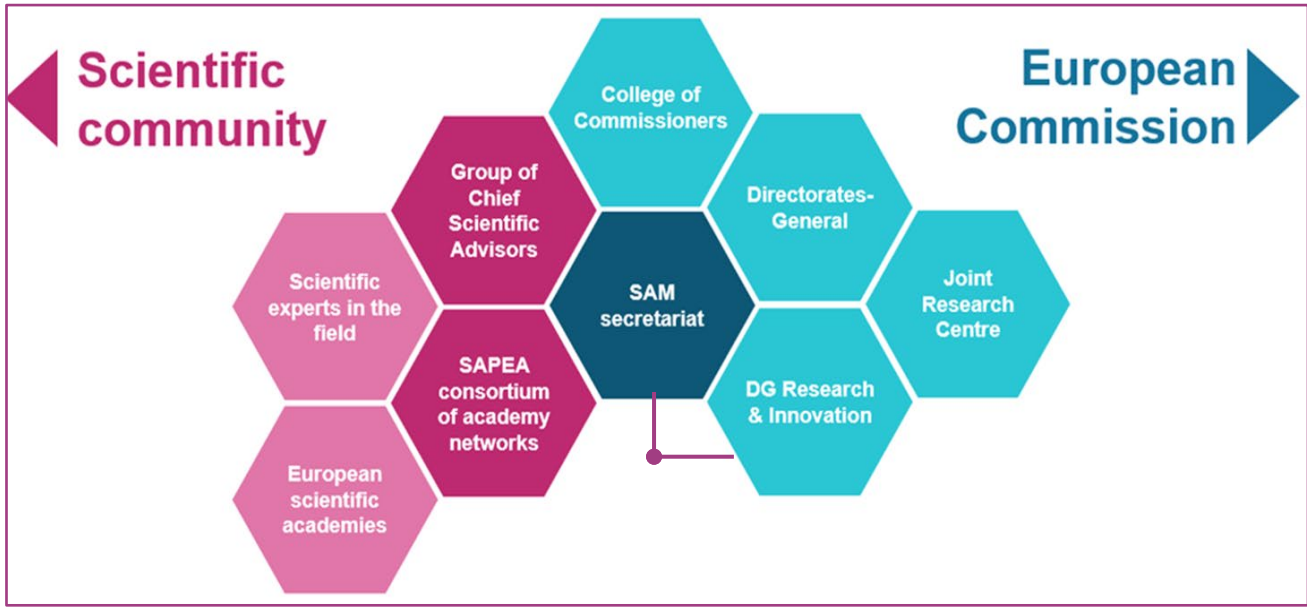
SAM provides **independent** scientific evidence and policy recommendations to the European institutions by request of the **College of Commissioners**.

- **Seven highly qualified experts**
- Backgrounds in various disciplines, both social and natural sciences

- **Make policy recommendations** in response to requests for advice
- Recommendations based on publicly available scientific evidence

- **Brings together around 110 academies from across Europe**
- Offers outstanding expertise from natural sciences, engineering and technology, medical, health, agricultural and social sciences, and the humanities

- **Provides independent evidence reviews on request**
- Informs the Advisors' policy recommendations



European Commission

SAM – How it works?

We receive a request

European Commissioners can ask us for advice on any topic

We review the evidence

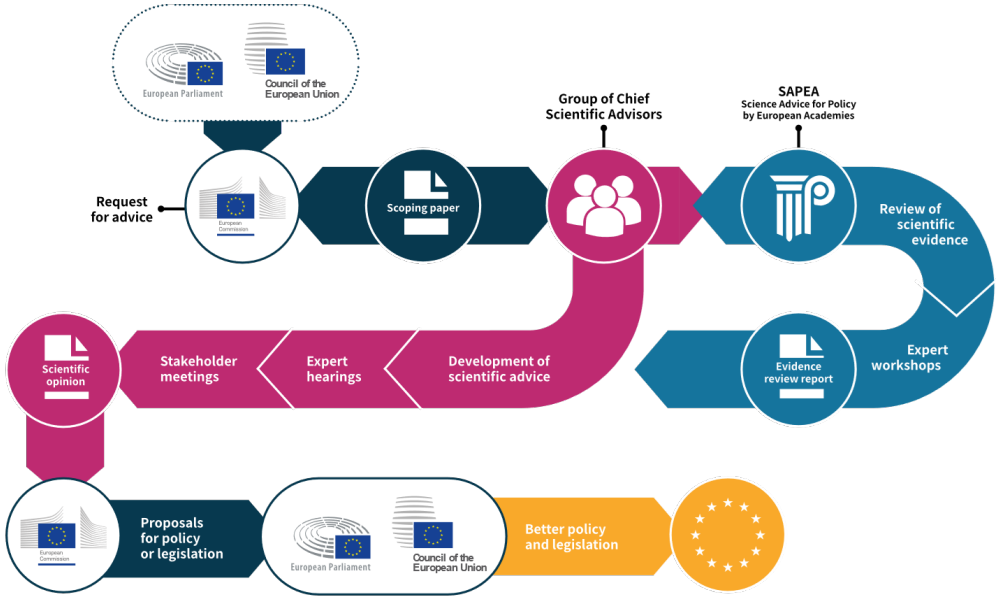
A SAPEA working group writes an evidence review report

We make recommendations

The Advisors write a Scientific Opinion based on the evidence

We deliver our advice

Our evidence and recommendations are both handed to the Commission



European Commission

SAM – Delivered advice

2017–2019

- Glyphosate
- Light duty vehicle real-time CO2 emissions
- Cybersecurity
- New techniques in agricultural biotechnology
- Food from the oceans
- Carbon capture and utilisation
- Improving authorisation processes for plant protection products in Europe
- Microplastics in nature and society
- Transforming the future of ageing
- Making sense of science for policy

2020–2024

- A sustainable food system for the EU
- Adaptation to climate change-related health effects
- COVID-19, future pandemics
- Biodegradability of plastics in the open environment
- The energy transition in Europe
- cancer screening
- Strategic crisis management in the EU
- Sustainable food consumption
- AI in science
- The governance of One Health in the EU
- Solar radiation modification

Recently published report: Outputs and impacts 2019-2024

European Commission

Horizon Europe

- **Calls for proposals** that give rise to **projects and collaborations** with the ambition to stimulate and feed science for policy interactions.
- Thematic EC **Expert Groups, procurement studies**, **collaborations** with JRC, EEA, international panels (IPCC, IPBES …) …etc.
- **Feedback to Policy (F2P) REA & ERC** work to fostering the use of high-quality information incorporating science and research findin
- Focus on knowledge acquired form R&I project implementation, offers insights for effective policies and programming activities

A mechanism that enhances and promotes the uptake of Framework Programme research results into the policy/programming cycle

→ *Collaborative approach that ensures adaptability, bridging the gap between R&I projects and policymaking.*

Thank you

Karen.fabbri@ec.europa.eu

European Commission

Enhancing Europe's land sink
Status and prospects

Linde Zuidema / Europe-Land 2nd Science EU Policy Dialogue/ 29 April 2025

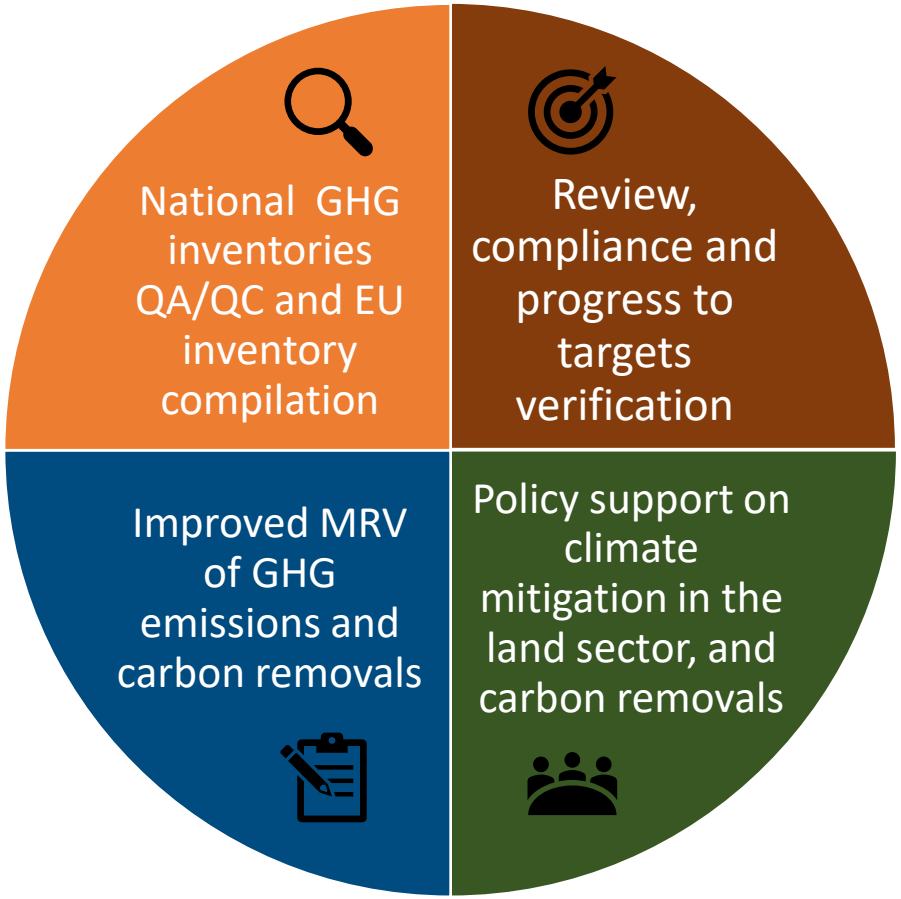
Introduction to the EEA's GHG reporting and verification unit (CMT3)

WA1: Conduct **quality control of national GHG inventories**, compiling and submitting the **EU GHG inventory** to the UNFCCC. Supporting EC in the implementation of the Enhanced Transparency Framework under the PA.

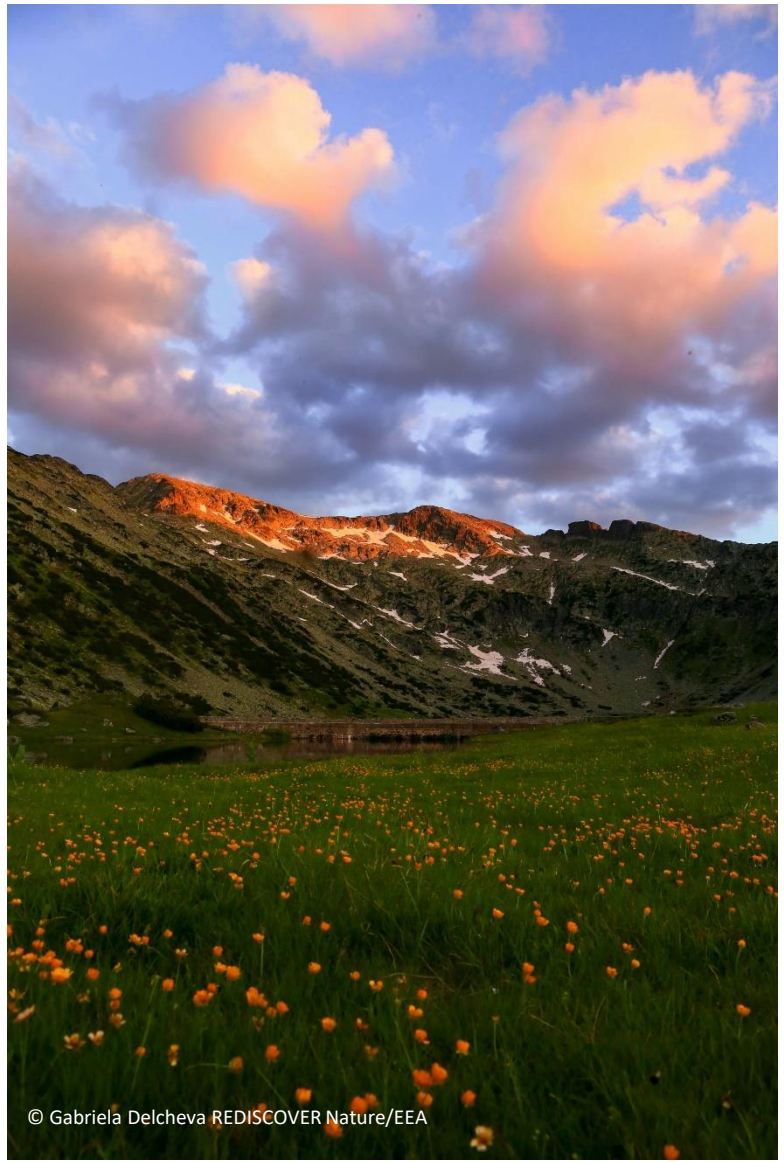
WA2: Coordination of **comprehensive review of MS GHG inventories** and compliance reports; provide preliminary data on **progress to targets** (ESR and LULUCF). Supporting implementation of LULUCF Regulation and Carbon Removal and Carbon Farming Regulation.

WA3: Support **improvement of reporting in inventories**. This involves identifying, developing, and disseminating methodological improvements and reference datasets, as well as offering capacity building.

WA4: Support climate action in the land sectors, with **evidence-based knowledge to support** policies and measures. E.g., EEA Report Biomass Puzzle (2023); Enhancing Europe's land carbons sink (forthcoming).



What this presentation will cover



1. Introduction to the Land Use Land Use Change and Forestry (LULUCF) sector

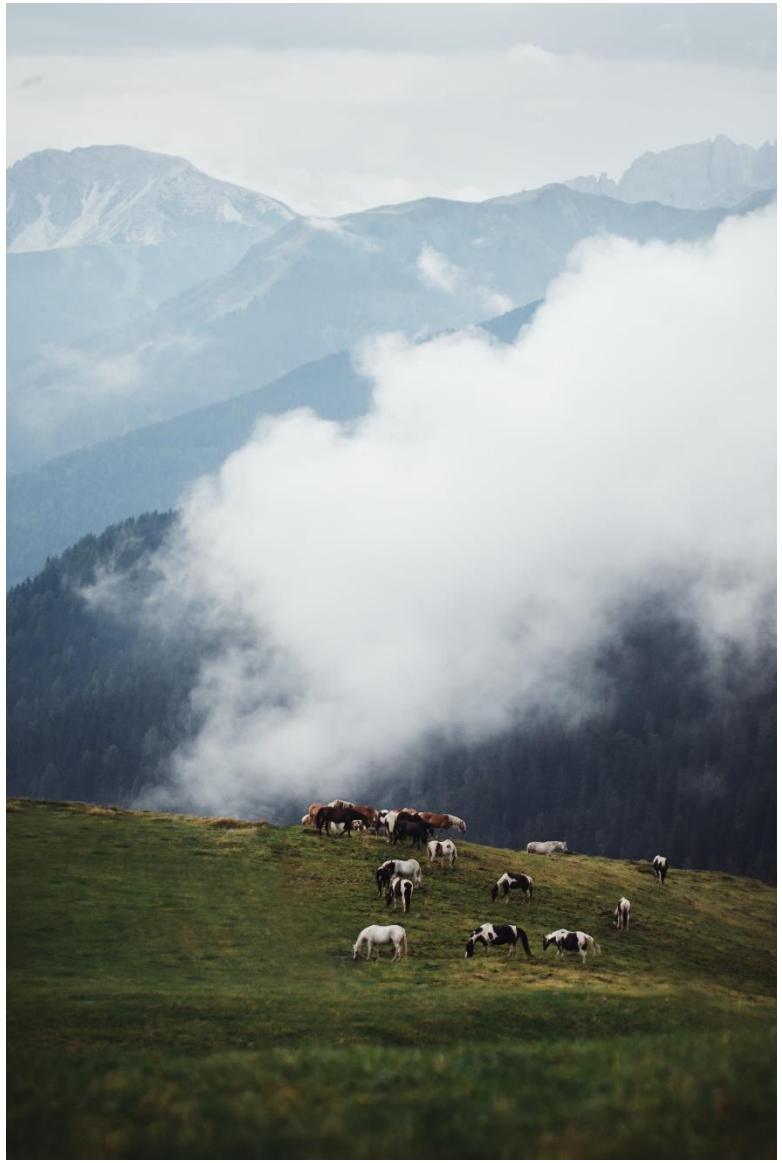
2. Status of EU reported emissions and removals for LULUCF (1990-2023 / 2025 reporting year)

3. Status of projected emissions and removals in LULUCF (2024 reporting year)

4. Snapshot of mitigation options in LULUCF

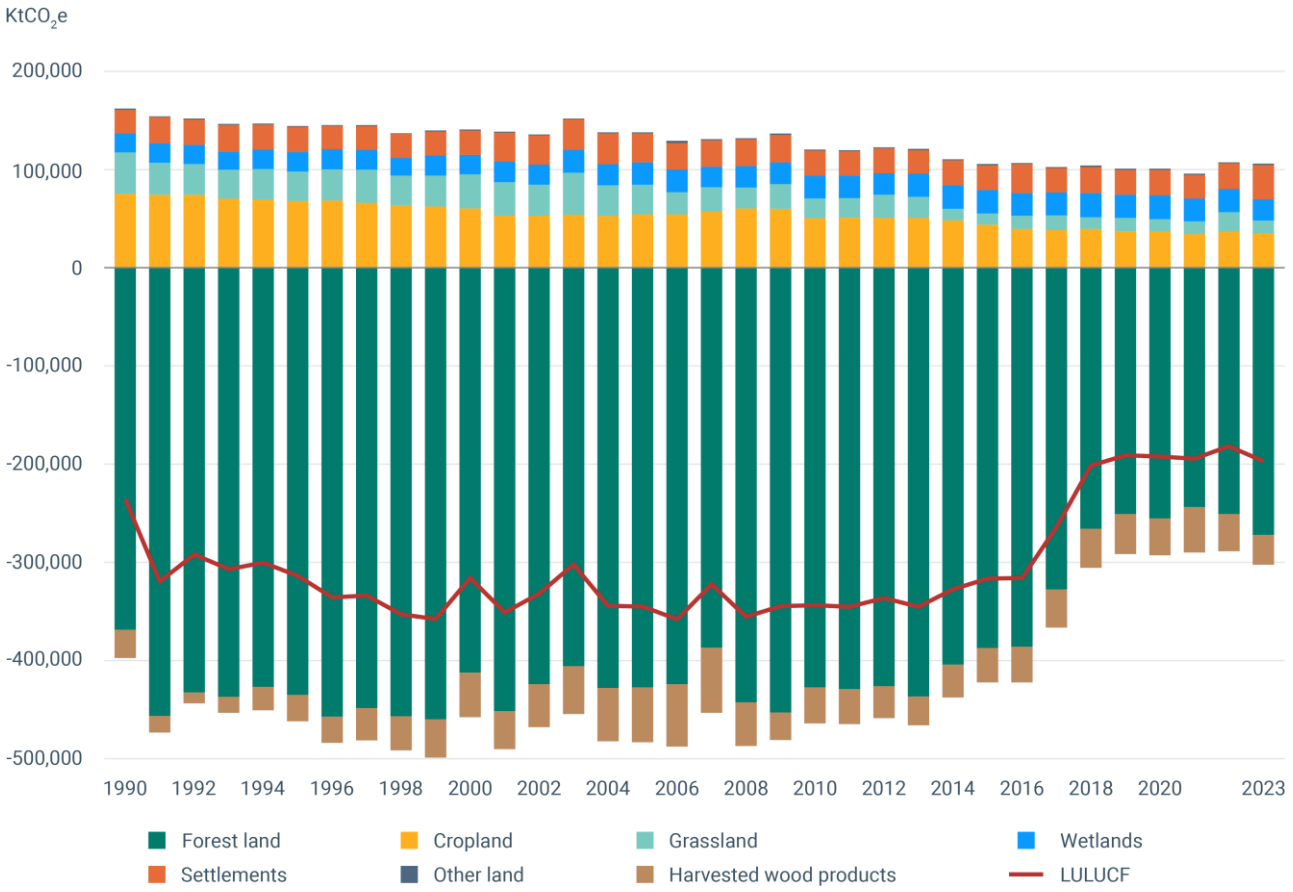
5. Barriers and enabling factors

Introduction



- The Land Use Land Use Change and Forestry (LULUCF) sector is expected to deliver a large share of the carbon removals that are necessary to reach climate neutrality in 2050.
- In 2023, the EU adopted its first EU-wide LULUCF removals target of -310 Mt CO_2e, as well as Member States targets that should jointly deliver an additional removals of -42 Mt CO_2e compared to a 2016-2018 baseline
- GHG fluxes in LULUCF are impacted by human activities – mostly associated with land use and management – as well as natural processes such as changing site conditions, weather patterns, climate variability and natural disturbances.
- Europe is the continent with the most managed land, underscoring the relevance of the sector for climate change mitigation. The sector encompasses the management of forests, cropland, grassland, wetlands, and settlements, as well as changes in land use, including afforestation, deforestation, or draining of peatlands.

1. Status of reported emissions and removals in the LULUCF sector 1/3

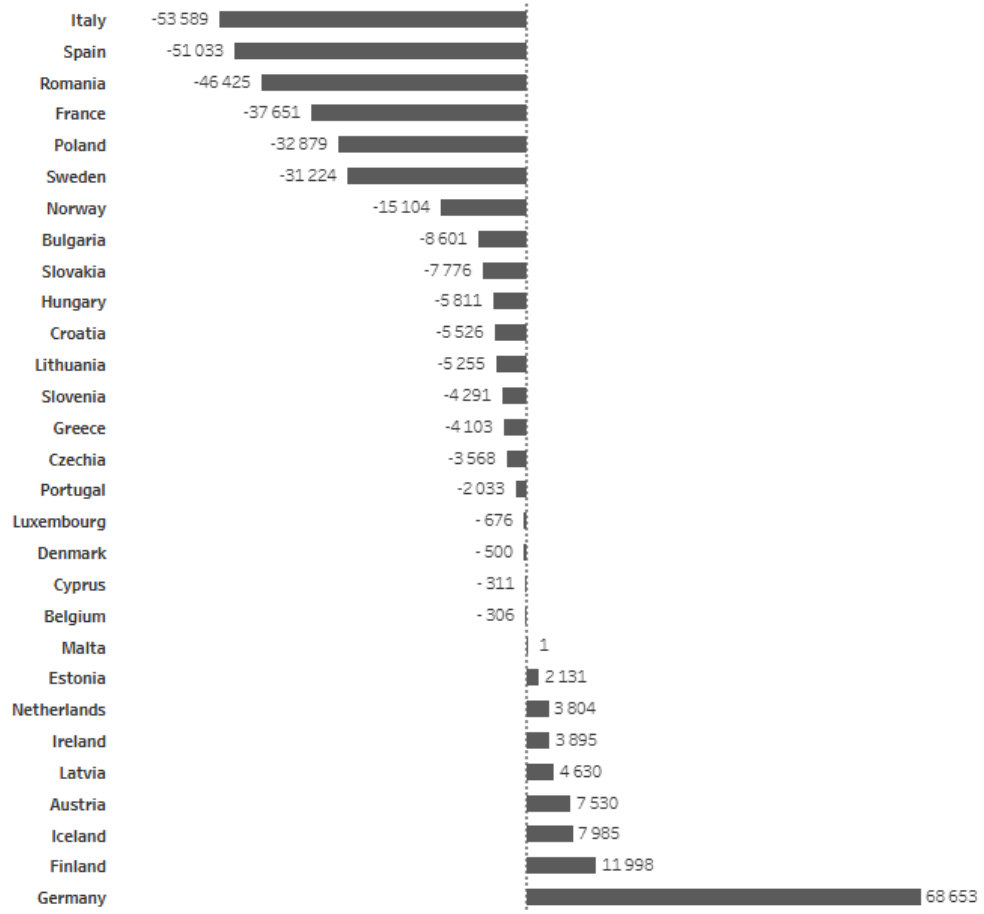


- In 2023, the LULUCF sector provided a net carbon sink at EU level of -198 $MtCO_2e$, counterbalancing around 6% of emissions from other sectors
- The LULUCF sink has been declining since about a decade. Between 2014-2023 the average annual sink was 30% smaller compared to the decade before, largely due to a decline in Europe's forest sink.
- Cropland and Settlements are the major sources of emissions, including due to drainage of organic soils and conversion of high carbon stock land to Settlements.

Source: EU GHG inventory (2025)

1. Status of reported emissions and removals in the LULUCF sector 2/3

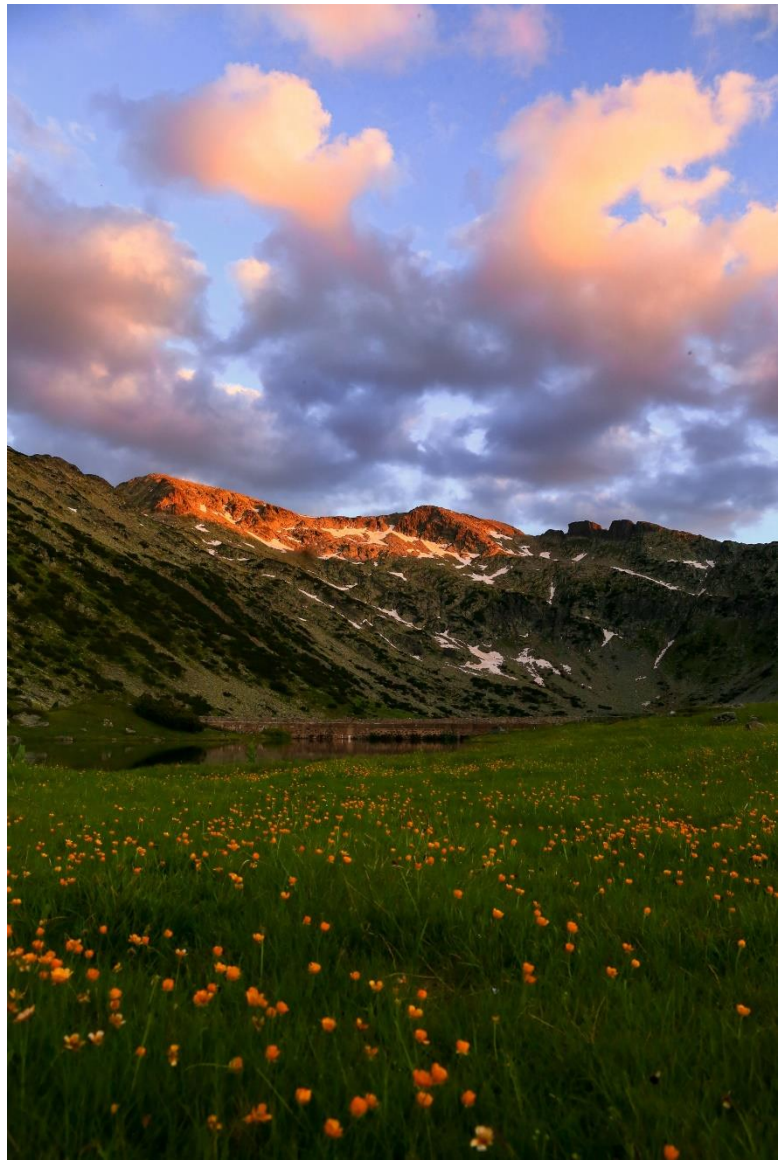
Net emissions/removals per country in Kt CO2e in 2023



- Behind the EU-level data, there is strong variability between countries, with certain MS reporting LULUCF as a net sink and others as a net source of emissions.
- Such variability arises from differences in extent of ecosystems, land characteristics, management intensity, climate conditions and effects from natural disturbances.
- Most forest-rich countries saw a declining trend in their forest sink in recent years, with some exceptions (incl. IT, ES, HU).

Source: EU GHG inventory (2025)

1. Status of reported emissions and removals in the LULUCF sector 3/3



The decline in Europe's forest land sink has been driven by a combination of interrelated factors:

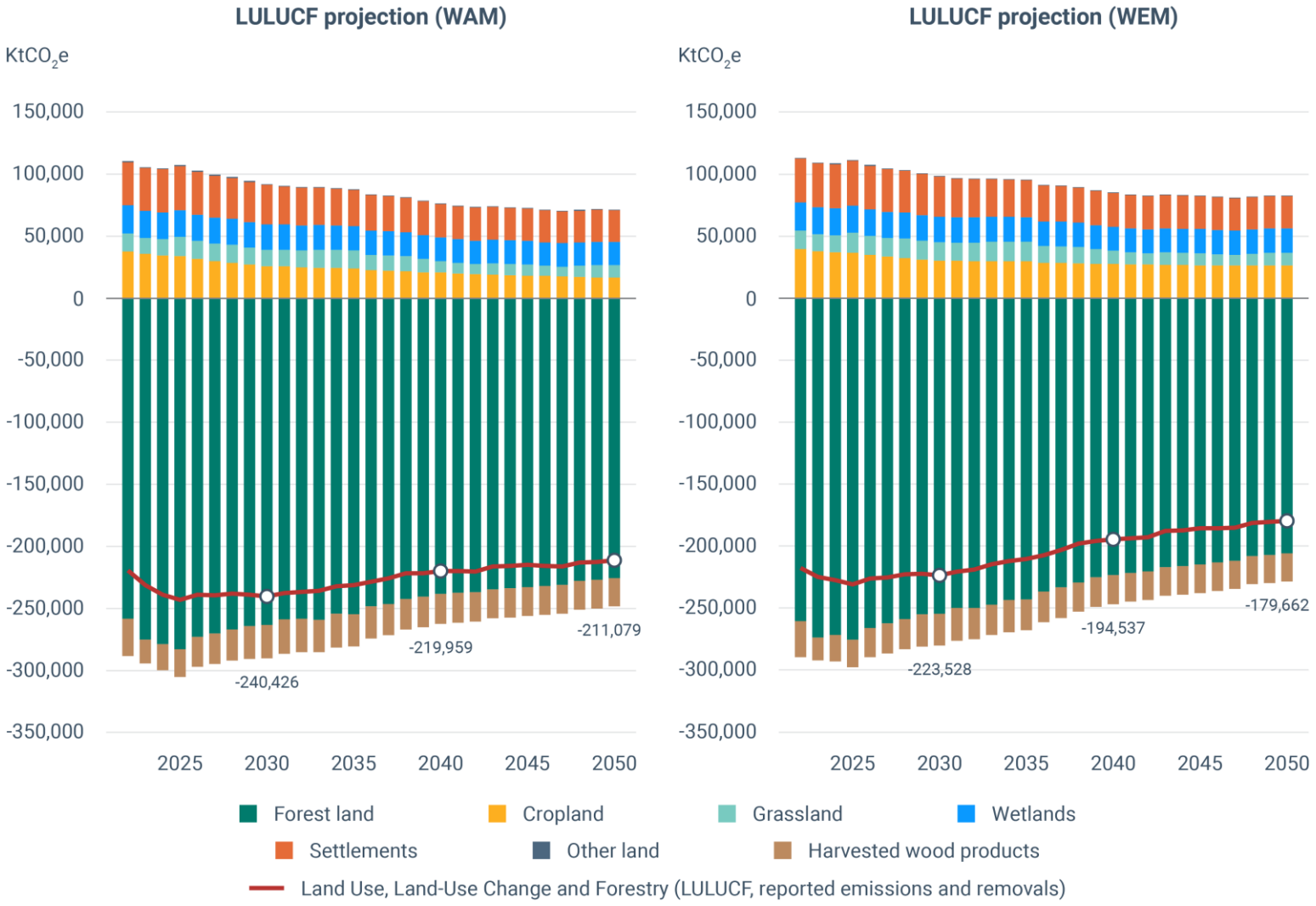
i. Forests have matured. While they still sequester carbon, they do so at a lower rate.

ii. Forest harvests have increased due to economic- and policy drivers, and salvage logging.

iii. Climate change and natural disturbances have accelerated the decay of carbon stored in soils and dead organic matter, and forest fires, droughts and pests have affected standing trees.

iv. The annual rate of afforestation has decreased compared to 50-70 years ago, contributing to factor (i) above.

2. Status of reported projections emissions and removals in the LULUCF sector (2024 reporting year)

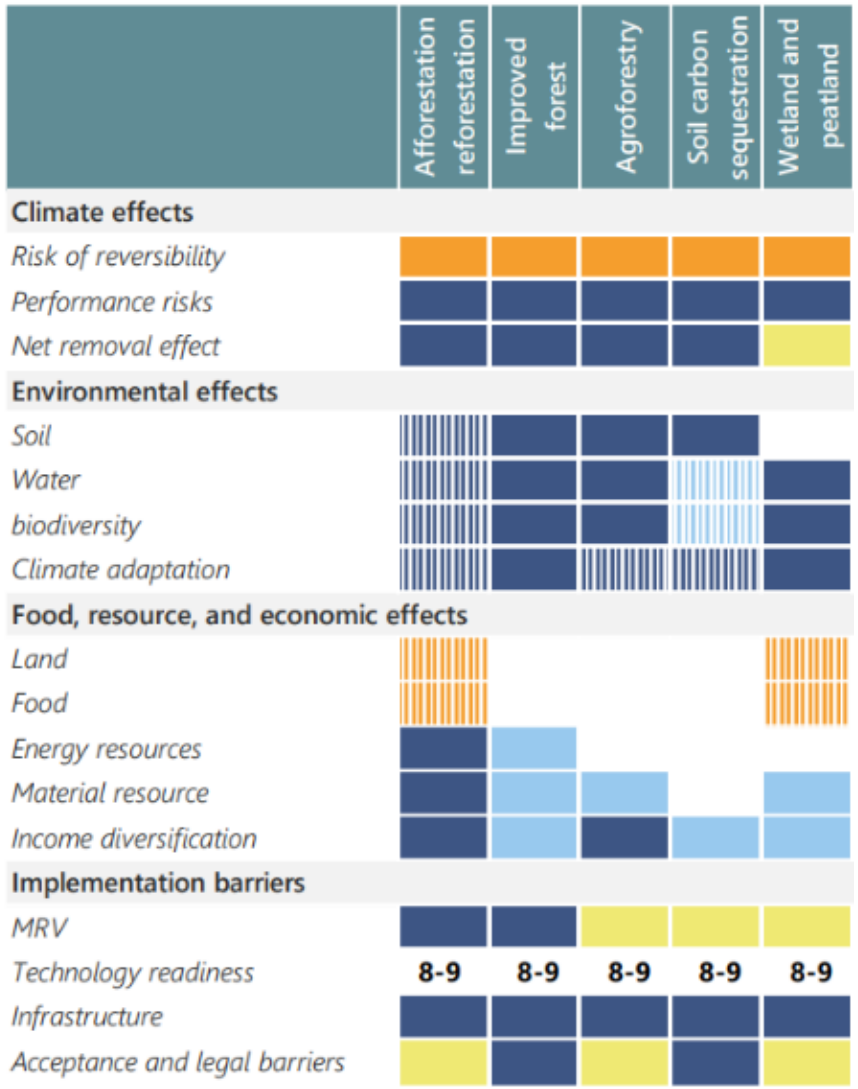


Source: EEA, 2024

- Projections indicate the EU LULUCF removals target for 2030 is at considerable risk of not being met.
- Several Member States also face a challenge meeting their national LULUCF target for 2030.
- Additional action is needed to reverse the trend of a declining sink.
- Removals target only adopted in 2023, so MS in early phase of implementing additional PaMs.

European Environment Agency

Various options provide vast potential for mitigation with significant co-benefits

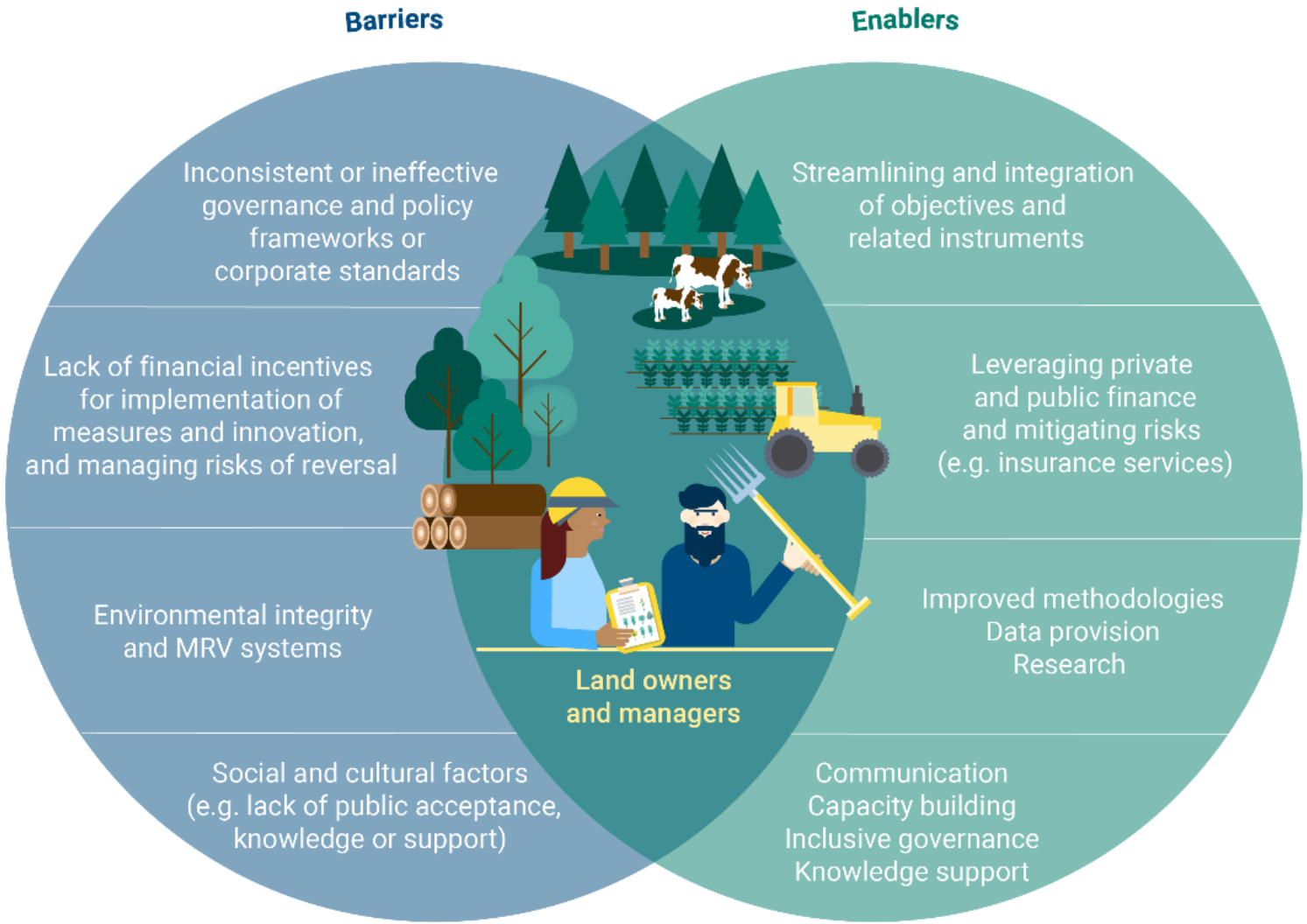


Source: ESABCC (2025)

- There are many options to enhance carbon removals or reduce emissions in LULUCF, in forest land, cropland, grassland, wetlands, settlements and harvested wood products.
- Many of these are in a ‘mature development phase’ and relatively low-cost compared to industrial removals. Carbon farming *removals* are of temporary nature.
- Different options have a varying relevance in terms of potentials and timing of mitigation result, yet upscaling of all is urgent for LULUCF to contribute to climate change in short- and longer time frame.
- Most options provide significant environmental and social co-benefits, including for restoration, biodiversity, resilience, soil- and water management, income diversification. This can strongly depend on the specific context and implementation.
- In some cases, trade-offs can occur, incl. related to land use and biomass supply, and foregone income.

European Environment Agency

Enabling factors for land-owners and managers to adopt a change in practices



Source: forthcoming EEA report (2025)

European Environment Agency

Enabling policy framework focuses on key barriers, but scope for more policy coherency

- LULUCF Regulation aimed to encourage MS to take additional action to enhance removals in LULUCF
- The Carbon Removal and Carbon Farming Regulation provides a novel instrument to leverage public and private finance.
- CAP and State aid rules provide a key financial and legal framework to leverage public finance.
- Other policies can also have negative effects on LULUCF trends and trajectories, notably those encouraging biomass supply and demand (RED, EU ETS, ..).
- Improved monitoring and reporting is essential for improving policy effectiveness and the EU has committed to this in the Governance Regulation and CRCF

Source: forthcoming EEA report (2025)

European Environment Agency

Key messages

- The LULUCF sector is expected to deliver a large share of the carbon removals that are necessary to reach climate neutrality by 2050. While a LULUCF removals target has been agreed in 2023, the current trend goes in the opposite direction, largely due to factors affecting forest land.

- While Member States are still in the early phase of implementing additional PaMs to ensure progress towards their LULUCF targets, projections show the EU as a whole is not on track to reach its cumulative target for the sector.

- Additional action is needed from Member States and land practitioners, supported by a wider group of stakeholders, to reverse the trend in LULUCF. Addressing key barriers such as cost-effective MRV and adequate finance will be crucial going forward.

- Successful LULUCF strategies and policy frameworks will further depend on their ability to:
  - ✓ Seek synergies with increasing the resilience of ecosystems (and supply chains) towards climate change, restoration of ecosystems, biodiversity protection and a sustainable bioeconomy.
  - ✓ Capitalise the potential of an evolving technological and data landscape, and data interoperability

Thank you for your attention

Contact information: Linde.Zuidema@eea.europa.eu

Further information:

- LULUCF Handbook V.2 provides a comprehensive guide to:
  - **Explain all elements of the LULUCF Regulation**, including reporting requirements, with practical tips, examples, and case studies from Member States.
  - **Improve the quality of data on GHG emissions and removals** in the LULUCF sector emission inventory data by making use of latest methodologies and monitoring data.
  - **Share knowledge and experience on enhancing GHG monitoring** in the land sector to effectively implement land sector policies.

Forthcoming EEA report:

Enhancing Europe's land carbon sink: status and prospects

ESA/EEA Conference on EO for MRV 7-10 October Copenhagen

Thank you

Interactive Session A: Land Use Policy

1 “Policy incentives and instruments related to land -use decisions - Reflection on defining appropriate assessment criteria”

Prof. Joanna Ejdys, Dr. Joanna Godlewska, Bialystok University of Technology, Poland (Europe-LAND)

2 “Causal -link diagrams that shape land use – exploring drivers of land use”

Edvin Andreasson (PLUS CHANGE)

We are going to have discussions after all the presentations

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POLICY INCENTIVES AND INSTRUMENTS RELATED TO LAND-USE DECISIONS – REFLECTION ON DEFINING APPROPRIATE ASSESSMENT CRITERIA

Task 3.1. Assessment of policy incentives and instruments related to land-use decisions

29 April 2025

Speaker: Joanna Ejdys, Joanna Godlewska, BUT

2nd Science EU Policy Dialogue Europe-LAND

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TERMS AND DEFINITION

Policy instruments - tools and incentives by which, directly or indirectly, state, regional, local institutions and other organizational units can **influence the behaviour of enterprises, citizens and land users in order to force behaviour desirable from the point of view of the adopted policies** (agriculture, forestry, biodiversity and nature protection, land-use, climate change) (Poskrobko, 2007).

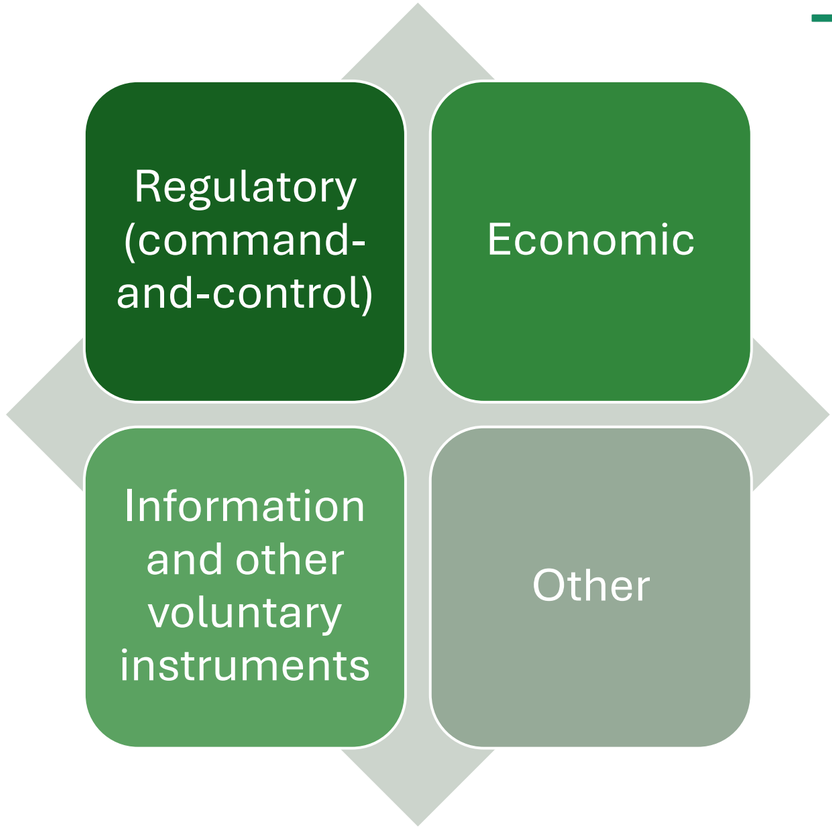


Fig 1. Classification of instruments relevant to sustainable land use

Source: *Policy instruments relevant to sustainable land use* | Towards Sustainable Land Use: Aligning Biodiversity, Climate and Food Policies | OECD iLibrary (oecd-ilibrary.org)

REGULATORY INSTRUMENTS

Agricultural land lease guidelines	Lease of forest land	Local spatial development plan	The general plan	The spatial development plan for the voivodeship
Strategic Environmental Assessment (SEA)	Environmental Impact Assessment (EIA)			

Rules and standards for soil quality and land management	Guidelines for the use of fertilizer	Guidelines for the use of pesticides	Guidelines for soil use methods
Good agricultural and environmental conditions GAEC			

Prohibitions in nature reserves

Protected areas plan	Forest management plan	Deciding on exclusion or limitation of use	Compensation for forest damage	Concession for sustainable forest management

https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2019/03/Regulation-e1504844756783-600x350.jpg

Sub-categories

Land use/spatial planning tools nad requirements	**Standards and controls on overuse of agrochemicals and fertilisers in production**	**Restrictions or prohibitions on use**	**Management**

ECONOMIC INSTRUMENTS

Fee of excluding land from acriculture production	Fee for agricultural and forest land fragmentation	CO2 tax on emissions from livestock	The fee of excluding land from forest production
Forest restoration			

Basic Income Support for Sustainability (BISS)	Direct Payments	Eco-Schemes	Retirement of Degraded Cropland	Subsidization of Conservation-Frendly Production
Practices (So-Called Greening Payment)	Support for specific forms of farming diversification\	Support for specific forms of farming diversification		Austrian Integrated Administration and Control System (IACS) and the funding of mountain agriculture
Subsidies for Organic Farming	Biodiversity offseting conservation payments	Remuneration for forest ecosystem services		
Support scheme to meet ambitious national afforestation target of 250 000 ha new forest				

Land purchase

Sub-categories

Price-based instruments	**Payment for ecosystem services (including REDD+) and agri-environment measures**	**Property rights and secure and tenure**

INFORMATION AND OTHER VOLUNTARY

Guidelines for lebelling organic food	Geographical Indication Labels (GLs)	International forest management certification

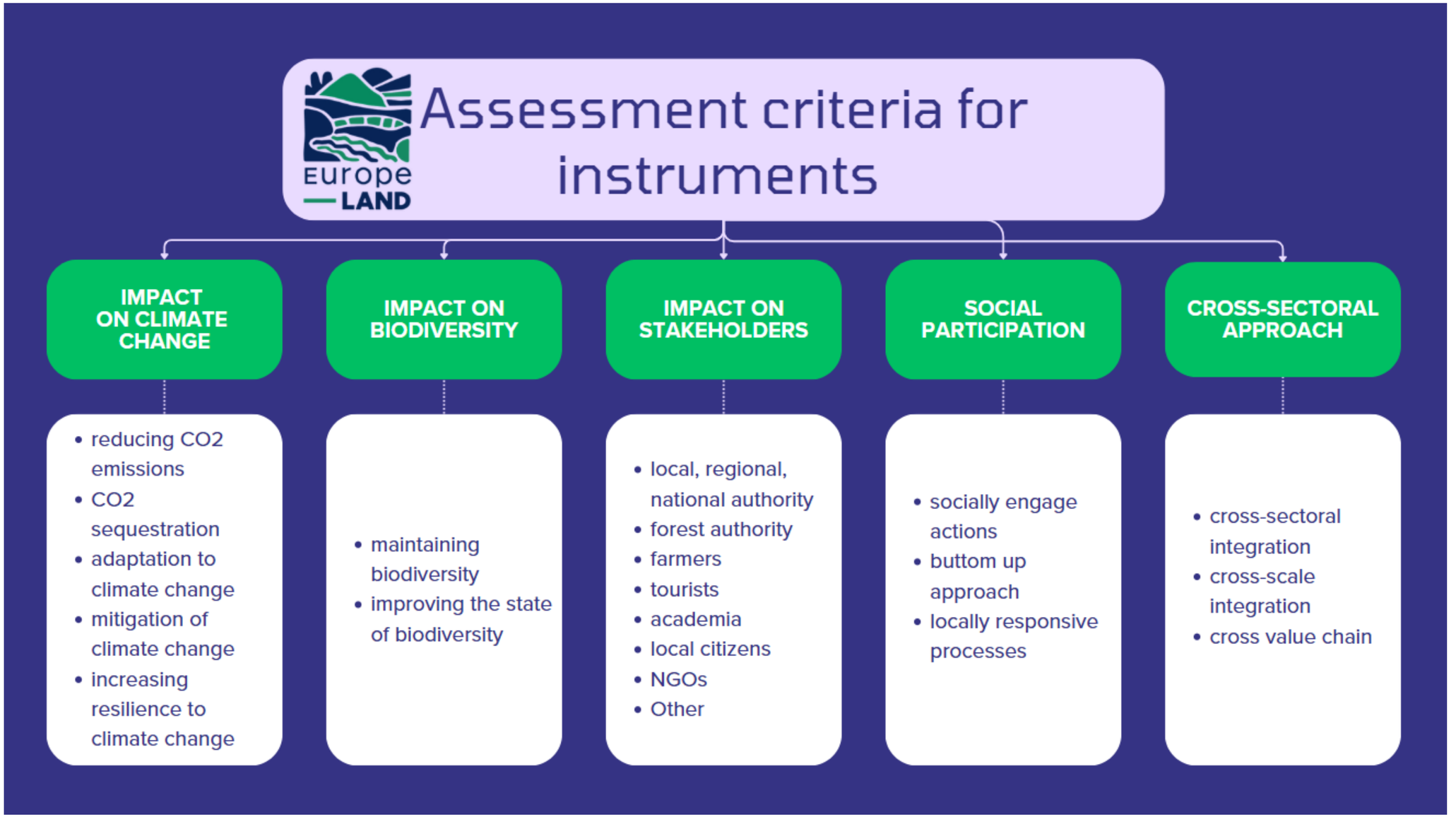
Local anchoring of the restructuring effort (the green tripartite agreement)	Forest Forum	INSPIRE

Organic Farming Program	Forest Information System for Europe (FISE)	Paludiculture – productive use of wet peatlands
Wetland buffer zones for nitrogen and phosphorus retention		

Sub-categories

Ecolabelling and certification	**Partnership instruments**	**Building ecological awareness**

Assessment criteria for instruments



Eco-scheme Carbon farming and nutrient management

Econo mic instrum ent

- Eco-schemes - support farmers who adopt or maintain farming practices that contribute to EU **environmental and climate goals**. Through eco-schemes, the EU rewards farmers for preserving natural resources and providing public goods, which are benefits to the public that are not reflected in market prices.
- This mechanism focuses on a **common list of action areas** defined at EU level and can be used to support practices such **as organic farming, agro-ecological practices, precision farming, agro-forestry or carbon farming**, as well as animal welfare improvements.
- The non-use of synthetic nitrogen, herbicides and pesticides offers significant benefits for **reduced GHG emissions** per ha, biodiversity and sustainable resource use, including water, soil and air quality, while the animal welfare standards have positive animal welfare impacts.

EU Carbon Removals and Carbon Farming Certification (CRCF) Regulation

Good agricultural and environmental conditions (GAEC)

Regulatory (command-and-control)

A set of EU standards, aiming to achieve a sustainable agriculture.

Keeping land in good agricultural and environmental conditions is directly related to issues such as:

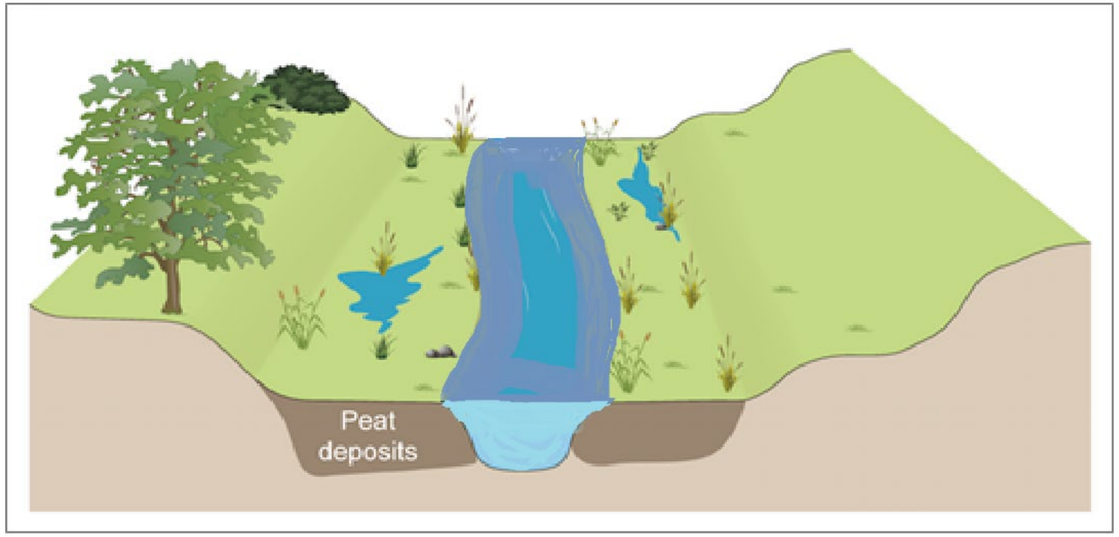
- minimum level of maintenance
- protection and management of water
- soil erosion
- soil organic matter
- soil structure

- maintain a certain share of permanent grassland of the total agricultural area **(GAEC 1)**
- protect wetlands and peatlands **(GAEC 2)**
- maintain soil organic matter and soil structure through a ban of burning arable stubble **(GAEC 3)**
- protect water from pollution through the establishment of buffer strips along water courses **(GAEC 4)**
- prevent soil erosion through relevant practices **(GAEC 5)**
- protect soil by defining rules for minimum soil cover **(GAEC 6)**
- preserve the soil potential through crop rotation **(GAEC 7)**
- maintain non-productive areas and landscape features **(GAEC**

The green tripartite agreement (Denmark)

Information and other voluntary instruments

- By delegating the tripartite agreement to the local level, efforts will be anchored in **municipalities**, which will lead **negotiations** between the local tripartite groups comprising **farmers, landowners, and nature organisations**.
- This approach fosters **collaboration** among all stakeholders, promoting local ownership and **holistic decision-making**.
- The agreements and plans must be finalised by December 2025, paving the way to achieve the key goals of **reducing nitrogen emissions by 13,780 tonnes** and **converting 140,000 hectares of agricultural land near water bodies into natural areas**. The groups may also begin planning the placement of **250,000 hectares of new forest**, although this is not a requirement.



Pic. 1. Wetland buffer zones for nitrogen and phosphorus retention
Source: Development of Sustainable (adaptive) peatland management by Restoration and paludiculture" (DESIRE), INTERREG 2019-2021. https://projects.interreg-baltic.eu/projects/desire-183.html

The Integrate Network https://integratenetwork.org/

Information and other voluntary instruments

- the Integrate Network, established in 2016 (Prague Declaration) - an alliance of representatives of 19 European countries
- promotion of **cross-sectoral and cross-country learning and cooperation** on successful approaches for enhancing **biodiversity conservation as an integral part of forest management practices**
- the triangle of **research, policy and practice**
- **exchange scientific and practical evidence on the successful application, training, and communication of integrative forest management**
- **a platform** for discussion on balancing demands of nature conservation and other forest functions and services
- **a network** of ca. 200 demonstration and learning sites in more than 20 European countries, consisting of a broad diversity of forest types and ownership structures

Integrate Triangle

Source: Integrate Networ Flayer
https://integratenetwork.org/about-us/

POLICY INCENTIVES AND INSTRUMENTS RELATED TO LAND-USE DECISIONS – REFLECTION ON DEFINING APPROPRIATE ASSESSMENT CRITERIA

29 April 2025

Speaker: Joanna Ejdys, Joanna Godlewska, BUT

Thank you for attention

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PLUS CHANGE

Causal loop diagrams that shape land use – exploring drivers of land use

DR. ANDREA M. BASSI

MR. EDVIN ADREASSON

Co-funded by the European Union

Project funded by

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

UK Research and Innovation

Why is Systems Thinking needed?

Systems thinking attempts to understand a whole system rather than its parts, utilized to identify the most effective leverage points to stimulate change within the system.

Increasing dynamic complexity

Growing interdependence

Need for holistic perspectives

Growth in one area, can have unintended consequences

This project has received funding from the Horizon Innovation Actions under the grant agreement n° 101081464.

Tools: system mapping

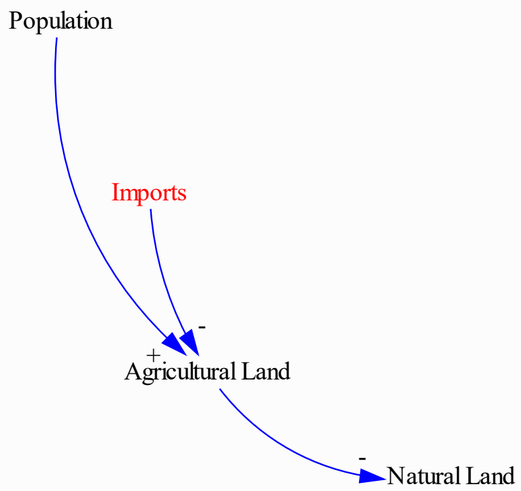
Causal Loop Diagrams (CLD) are created to identify the main variables, and understand them main dynamics of the system (with full customization and co-creation)

CLDs represent the feedback structure of systems

CLDs capture:

- The hypotheses about the causes of dynamics
- Mental models of individuals or teams
- The important feedbacks driving the system

This project has received funding from the Horizon Innovation Actions under the grant agreement n° 101081464.



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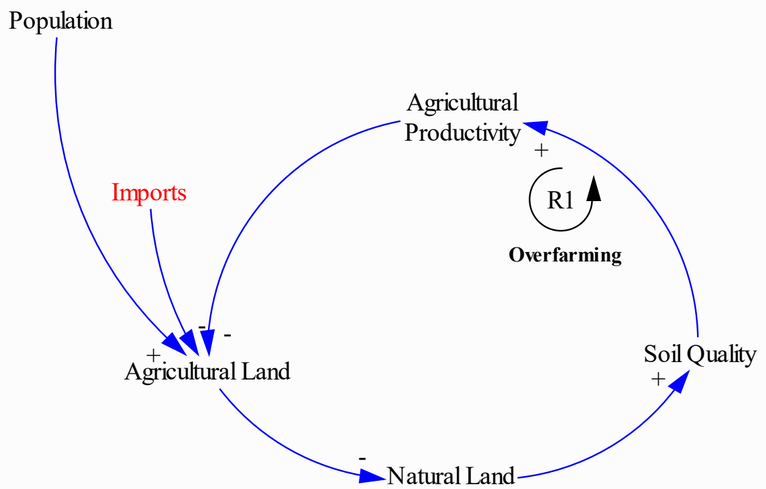

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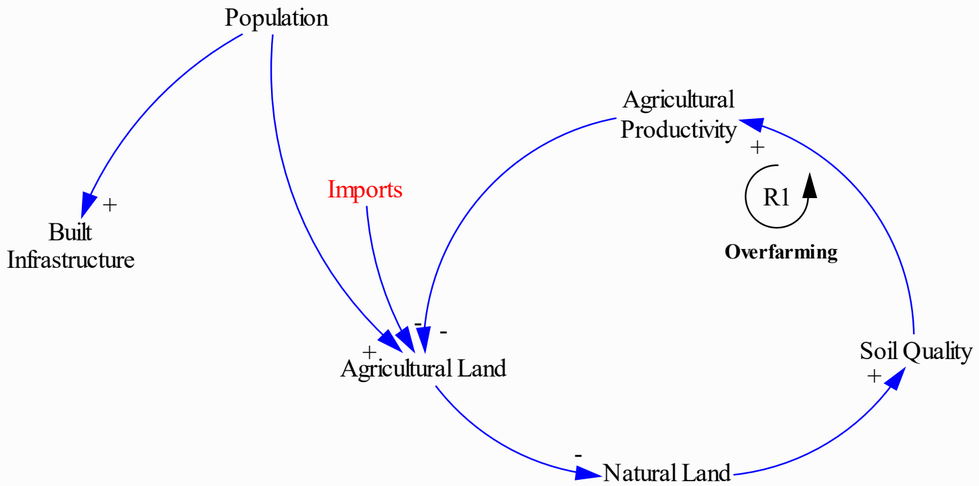

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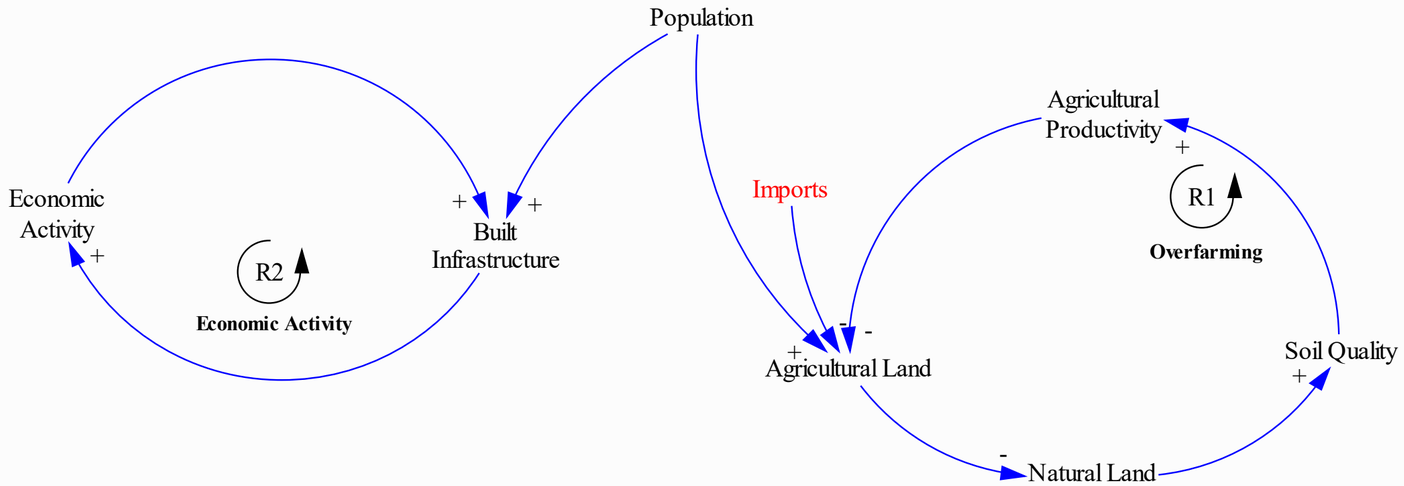

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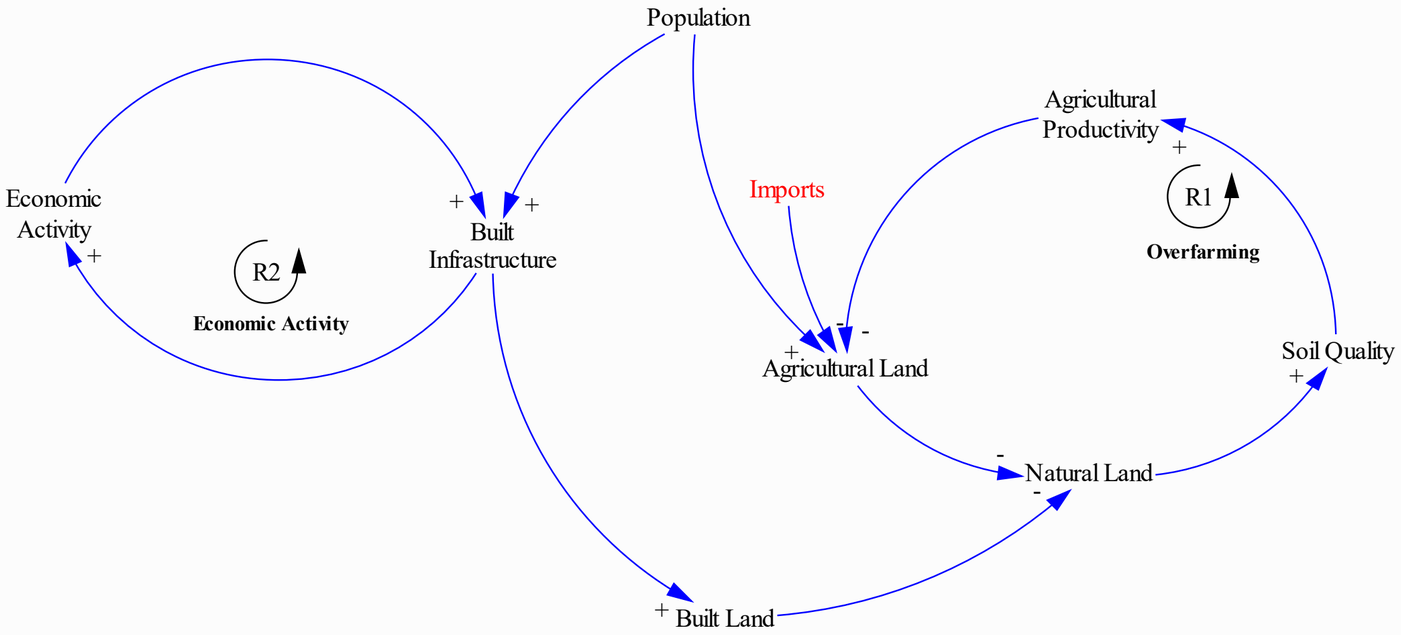

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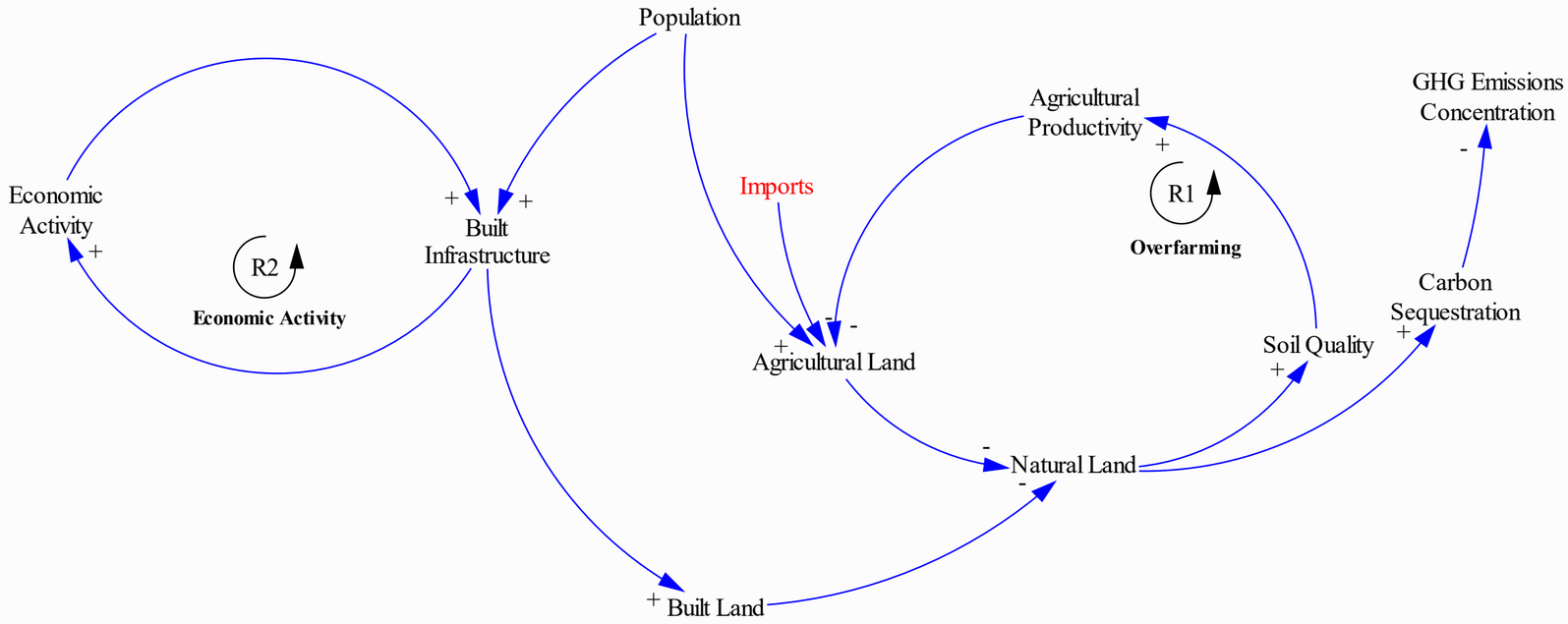

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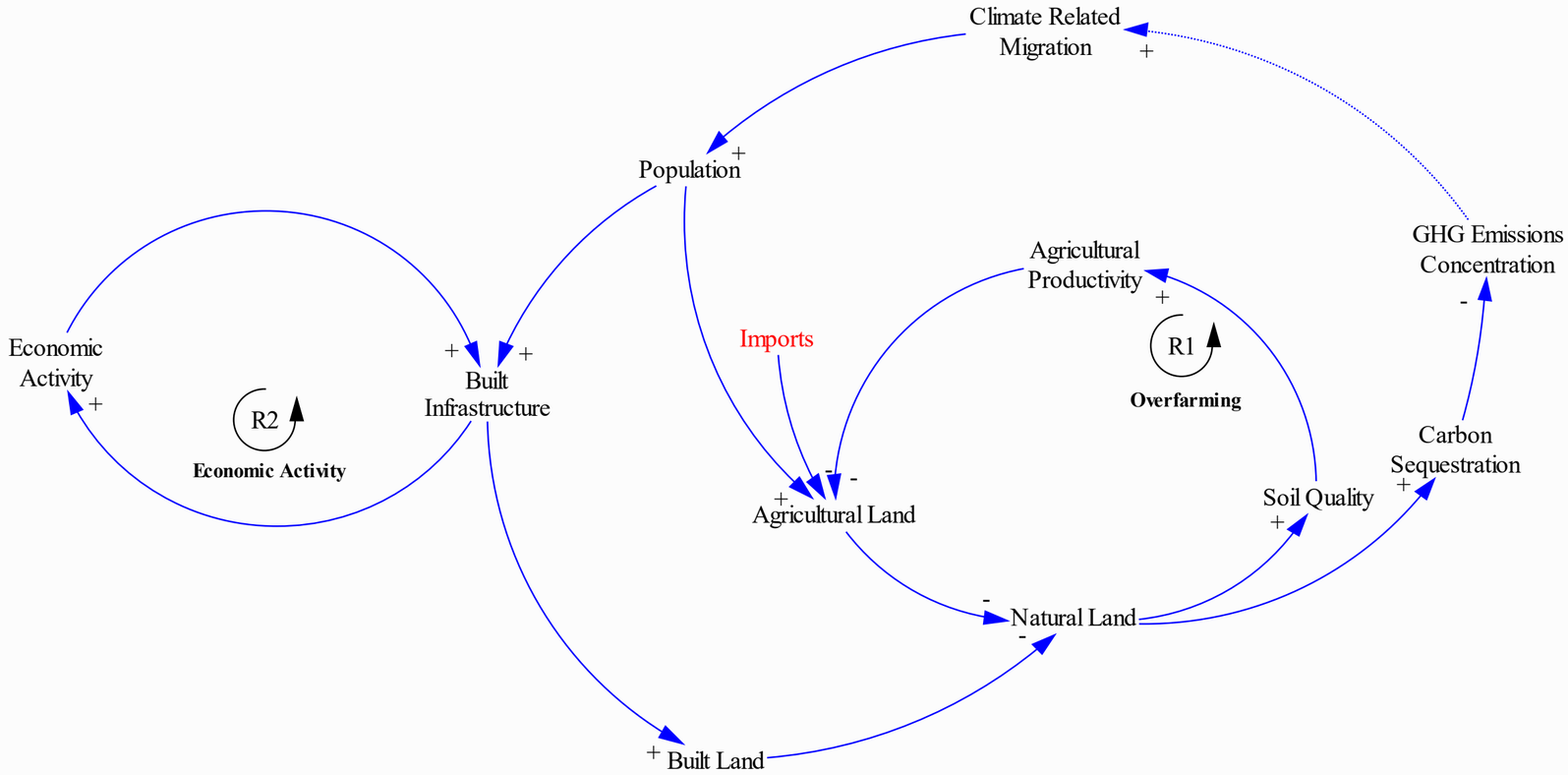

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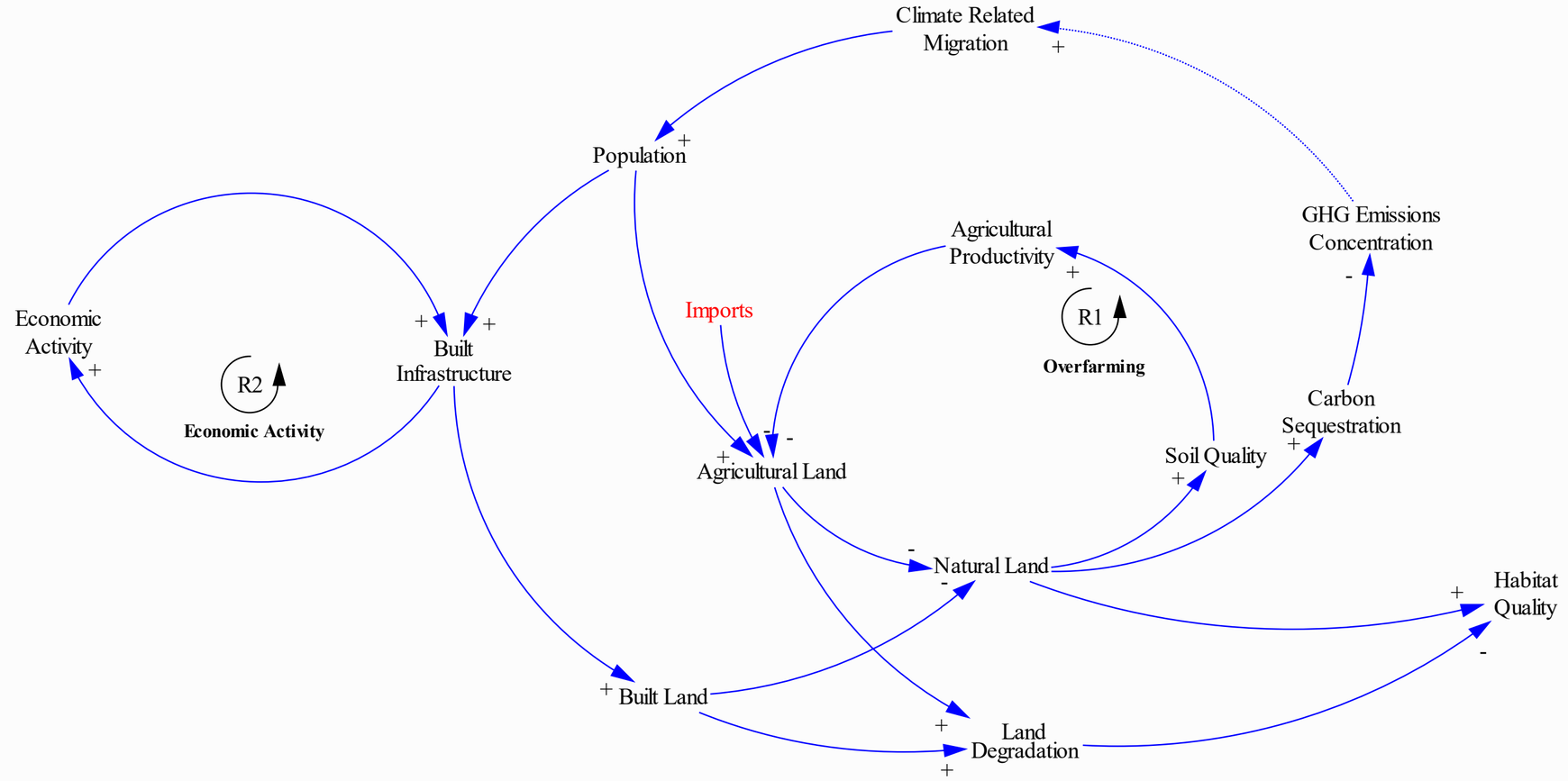

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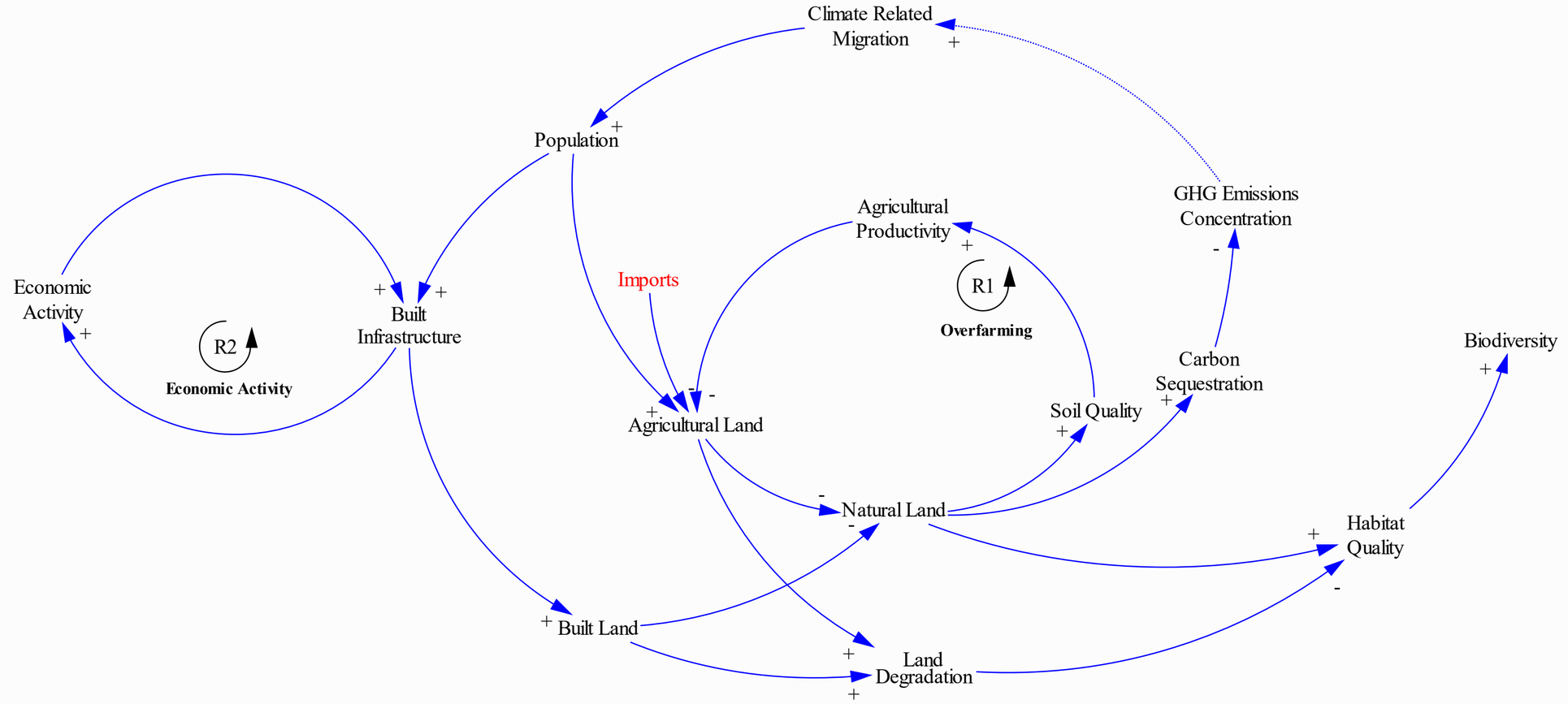

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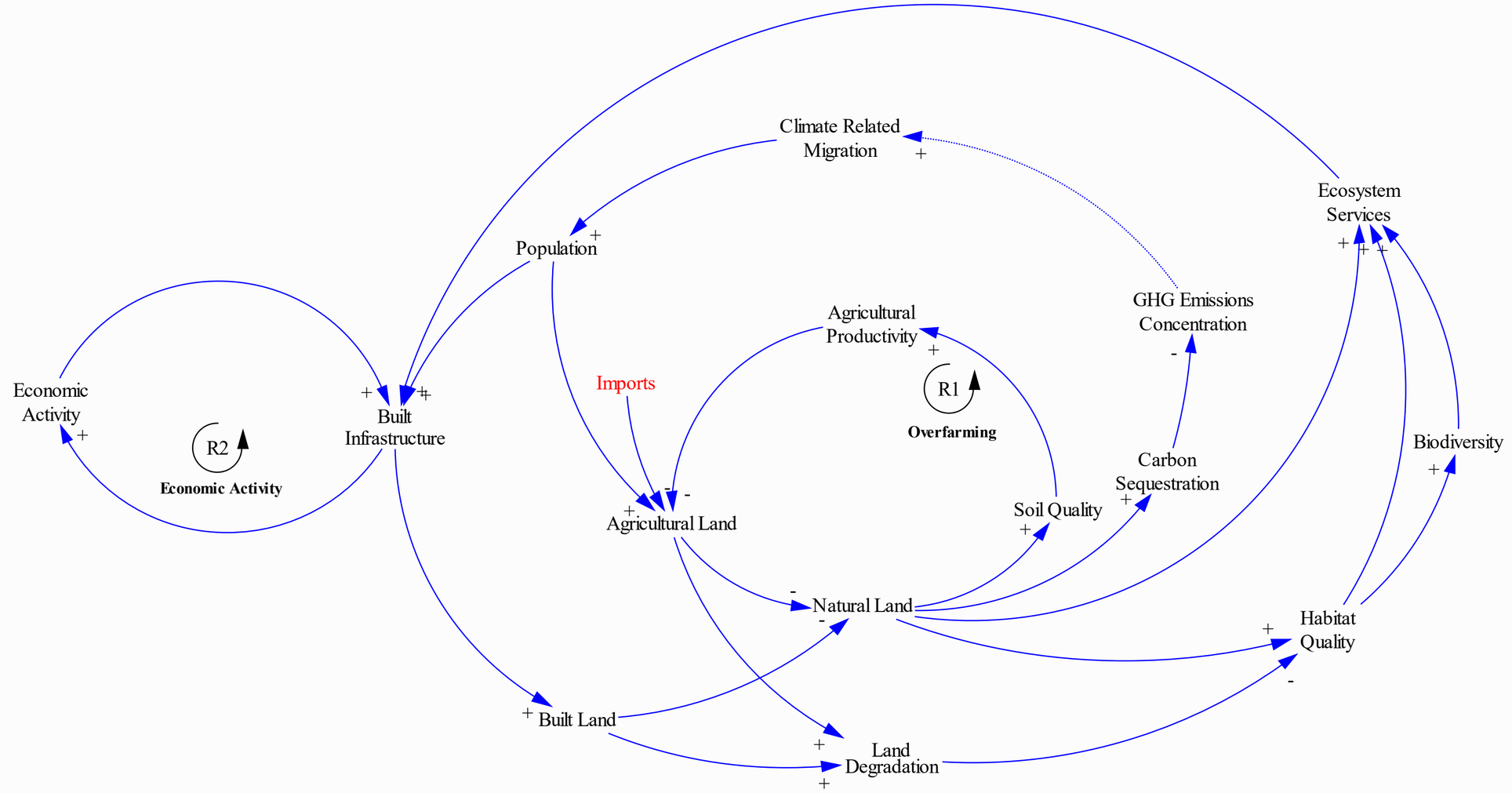

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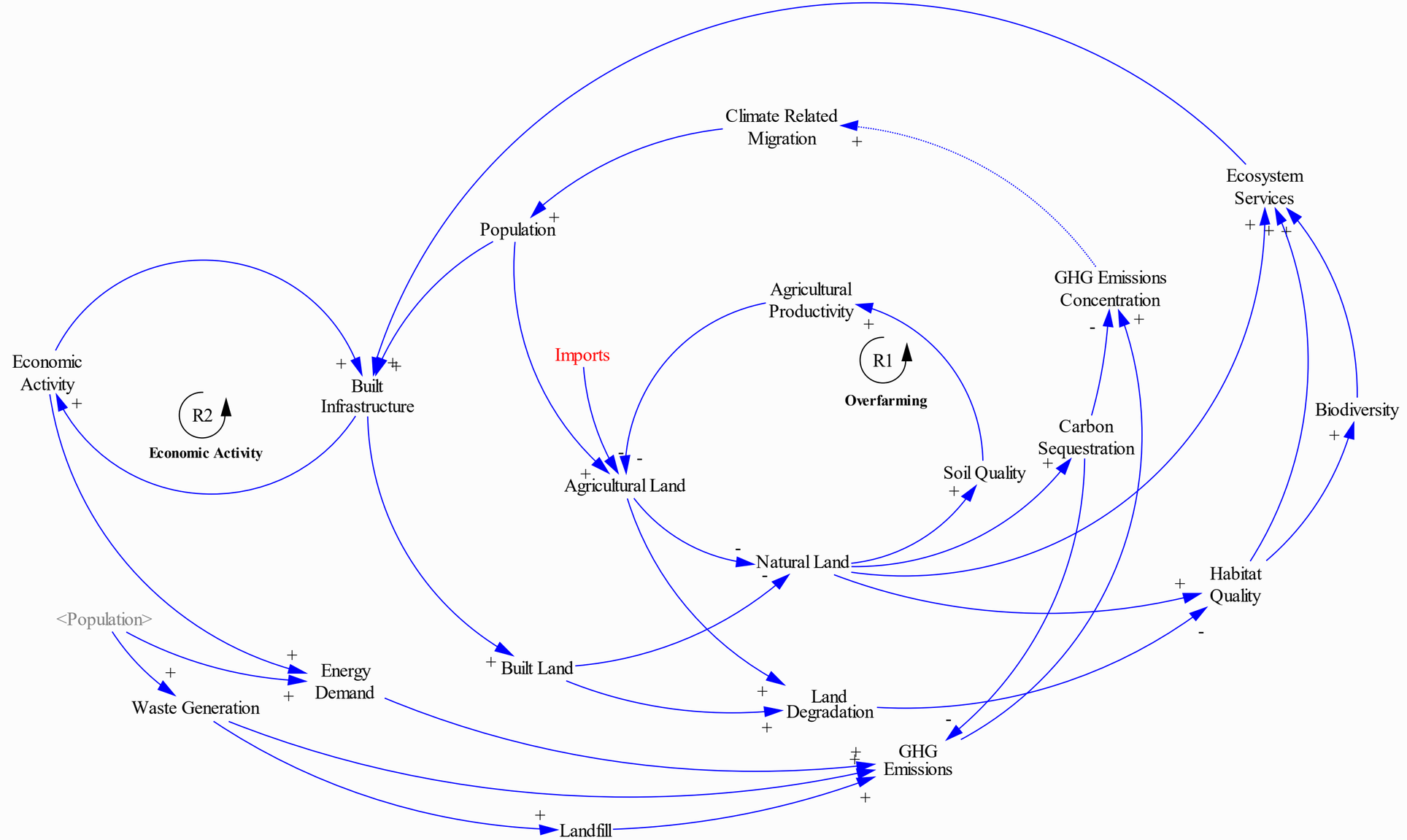
https://pluschange.eu/



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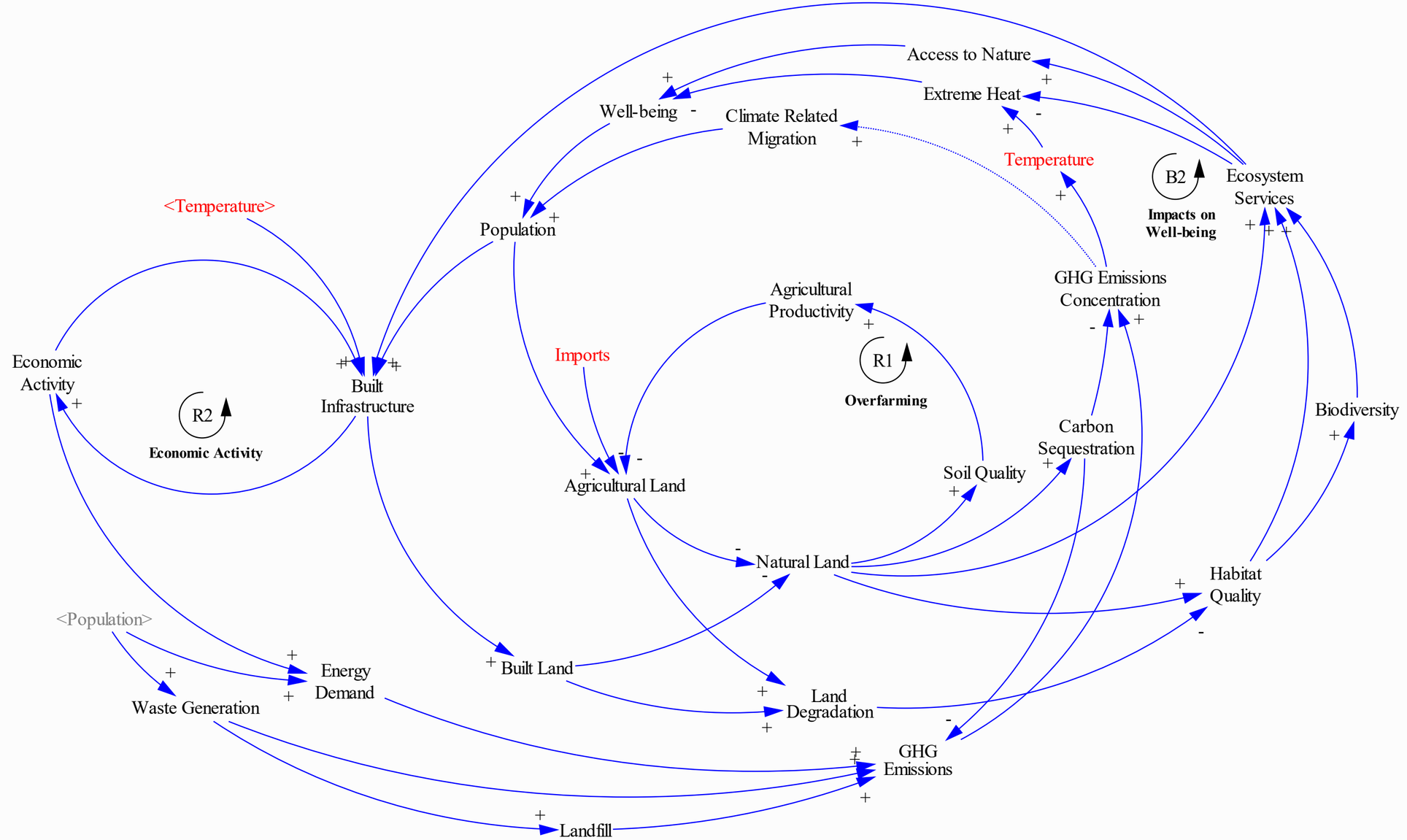

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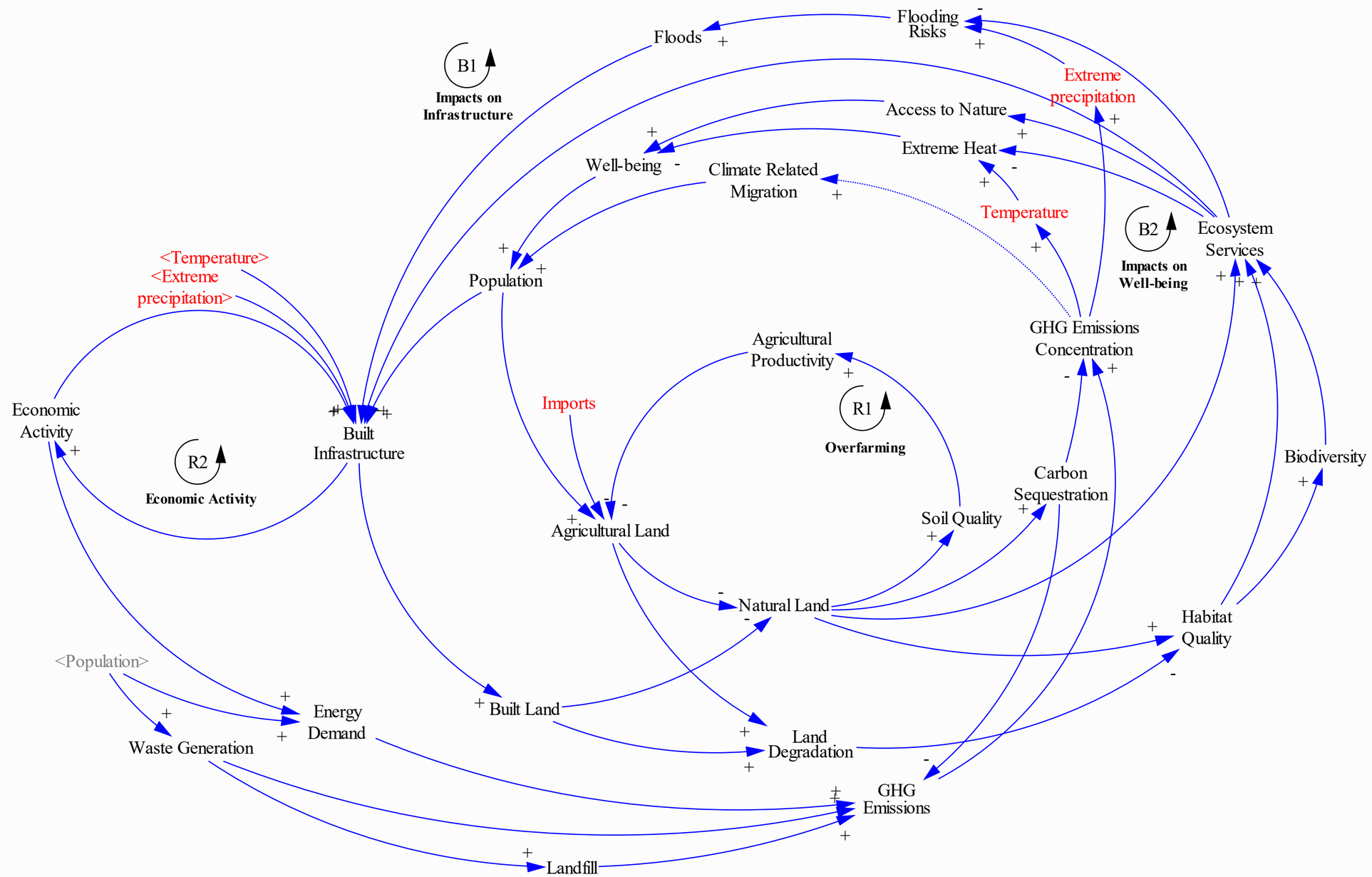

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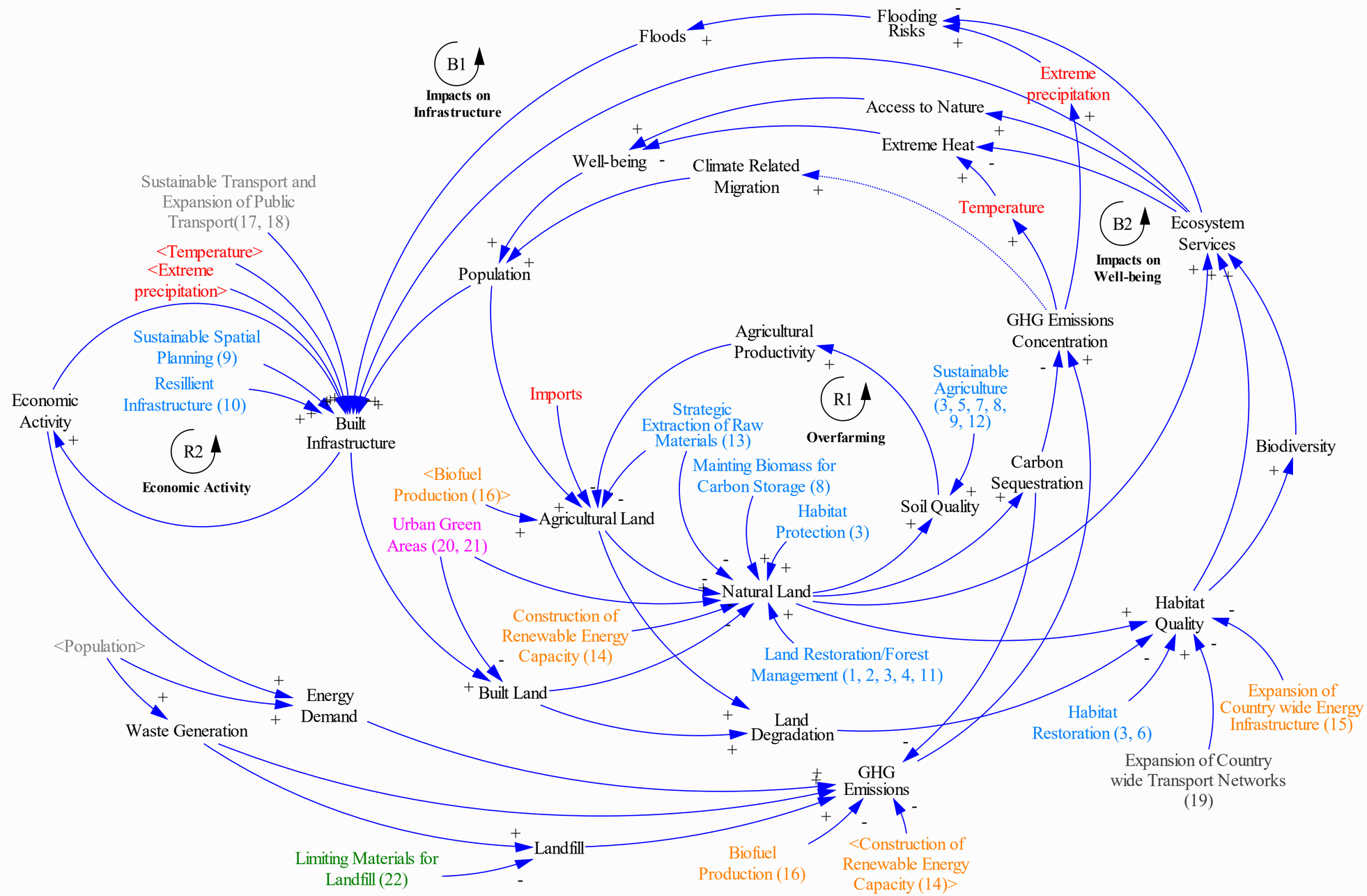

This project has received funding from the Horizon Innovation Actions under the grant agreement n° 101081464.

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Any Questions?

If any questions come up later:

andrea.bassi@ke-srl.com
edvin.andreasson@ke-srl.com

This project has received funding from the Horizon Innovation Actions under the grant agreement n° 101081464.

Thank you!

KEEP IN TOUCH

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Interactive Session A: Land Use Policy

-Do you consider that current strategic provisions of agriculture, environment, and climate policies support the sustainable use of land in the EU? Why (not)?

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Interactive Session B: Land Use Solutions

1. **"The Possible Landscapes Tool"**

   Kimberley Major (PLUS CHANGE)

2. **"The Europe -LAND toolbox – First insights of potential use cases"**

   Prof. Nikolaos Theodosiou, Aristotle University of Thessaloniki, Greece (Europe-LAND)

3. **"Introducing the MOSAIC Digital learning environment"**

   Dieter Cuypers, VITO (MOSAIC)

We are going to have discussions after all the presentations

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Negotiating Solutions through Creativity

PROF. JULIA LEVENTON (CZG)

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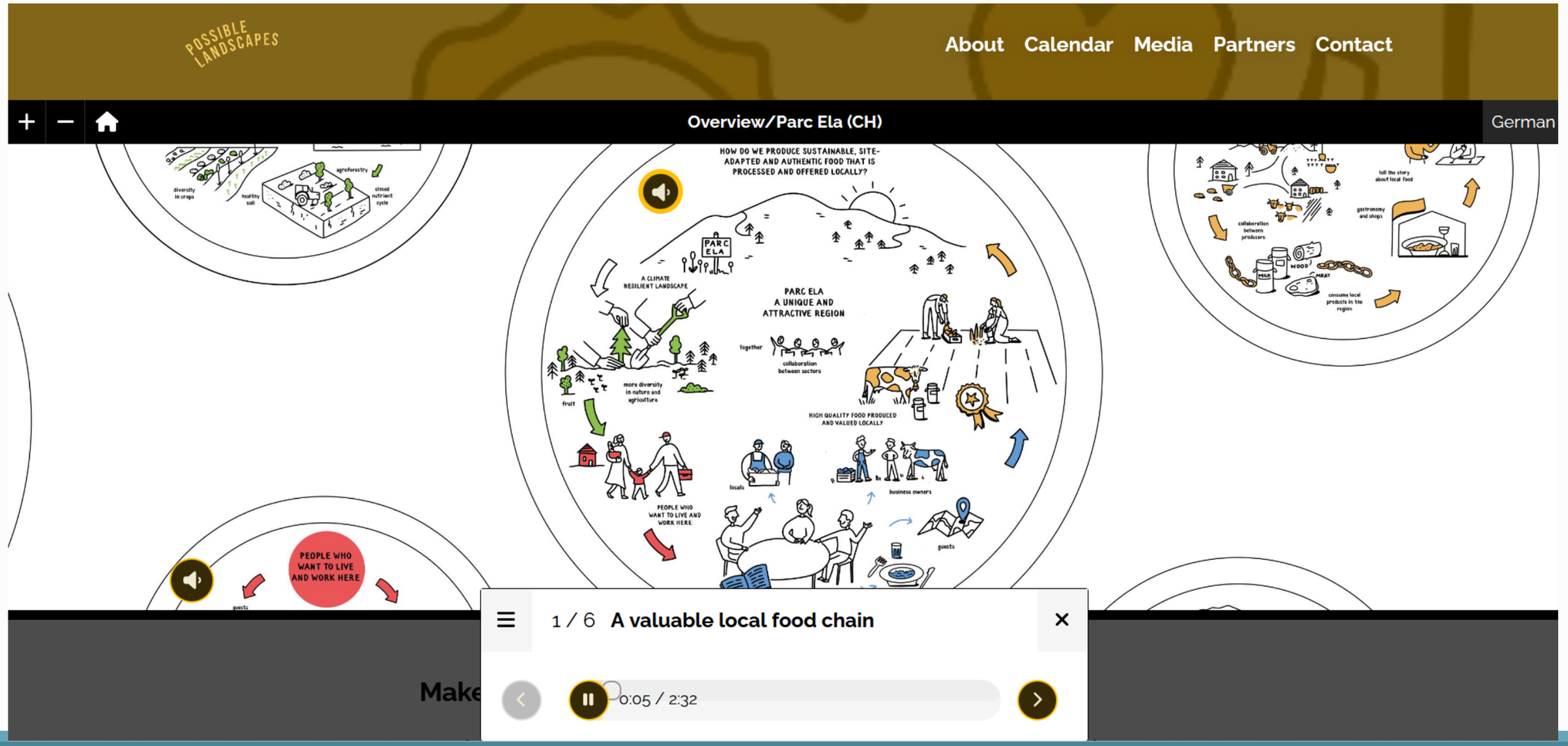
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

UK Research and Innovation

Planning as Participation

How do we meaningfully engage diverse voices?

Possible Landscapes Process



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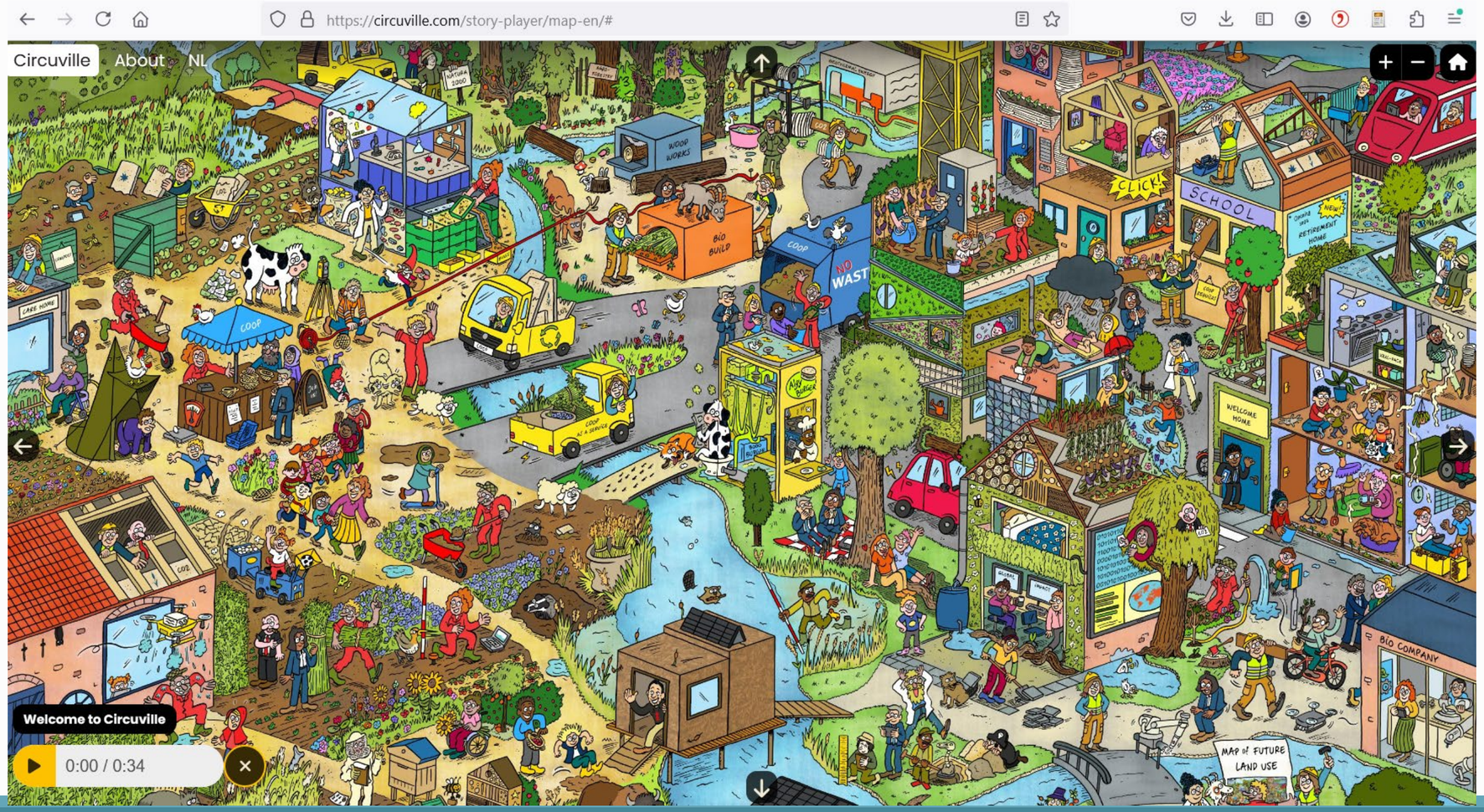
Circuville – the conversation tool



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Next Steps

Weave into scenarios, mapping, modelling

Use-cases

29 April 2025

2nd Science EU Policy Dialogue

Presentation by

Speaker: Prof. Nicolaos Theodossiou
Aristotle University of Thessaloniki, Greece (AUTh)

Europe-LAND

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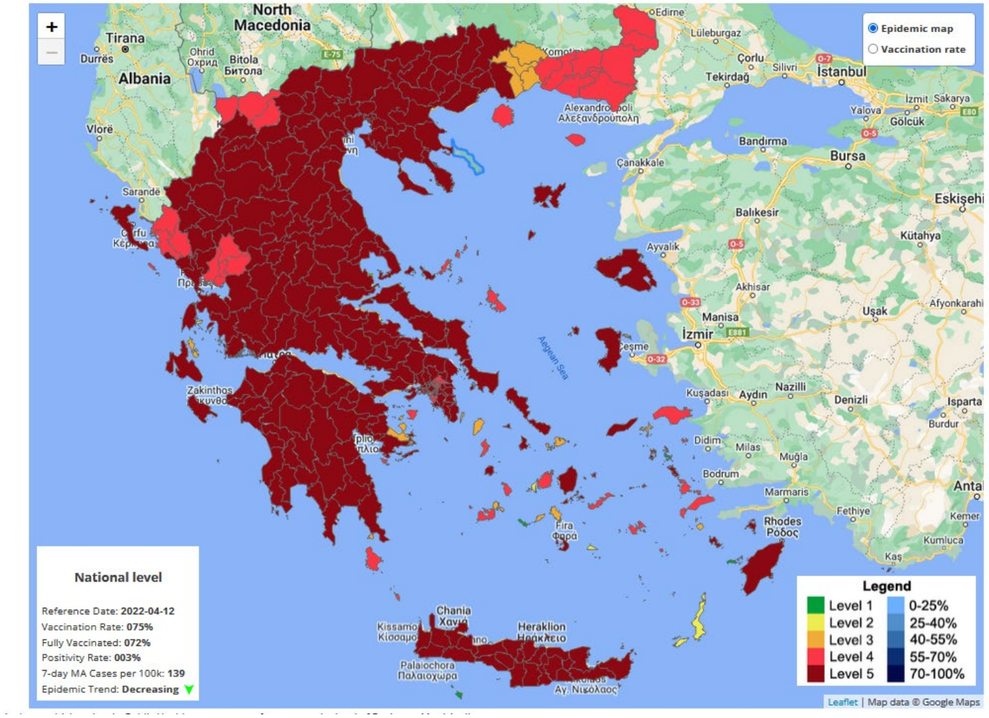
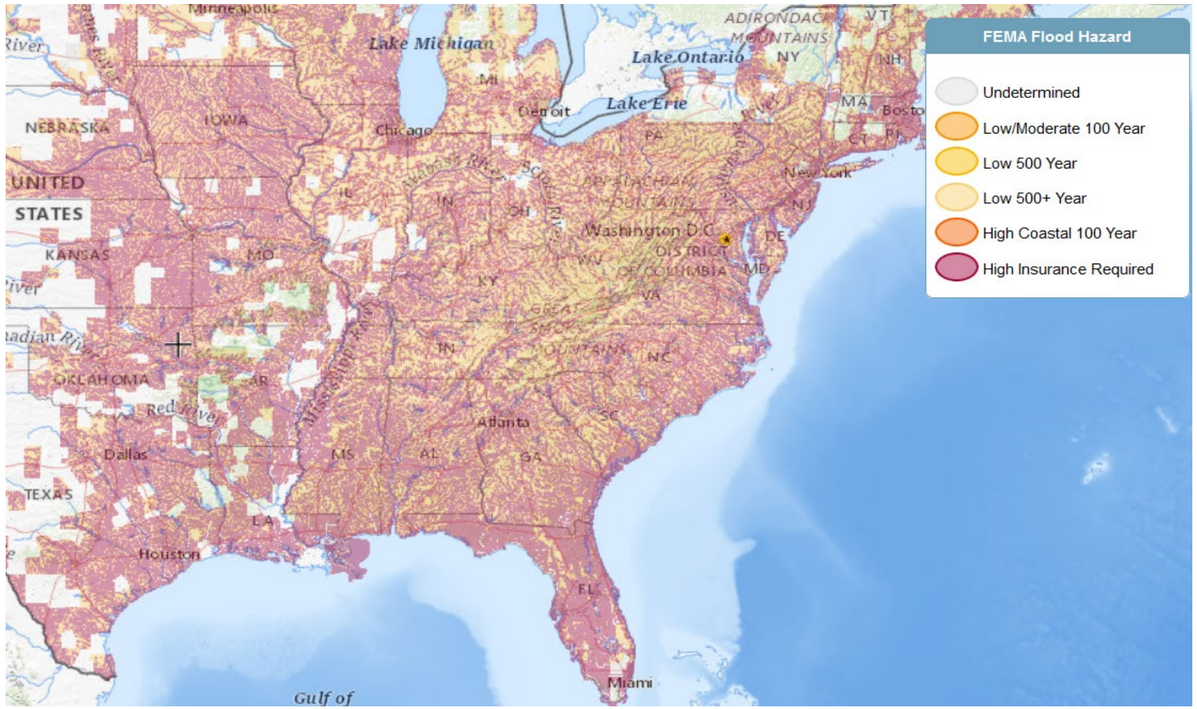
WP6 First Steps – Leaflet Platforms

Search, IDentify and Analyze EXisting GIS-platforms to investigate their suitability + applicability to the needs of Europe-LAND



During the COVID-19 pandemic, many developers created open-source web maps to visualize data related to the virus. Greek Ministry of Health. **https://covid19.gov.gr/covid-map/**



From Federal Emergency Management Agency (USA) a daily update web-GIS about Hazards and Perils like Wildfires, Hurricanes, Earthquakes. **https://femafhz.com/map/**

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Europe-LAND Toolbox TEMPORARY URL

https://europe-land.civil.auth.gr/wp-content/static/index.html

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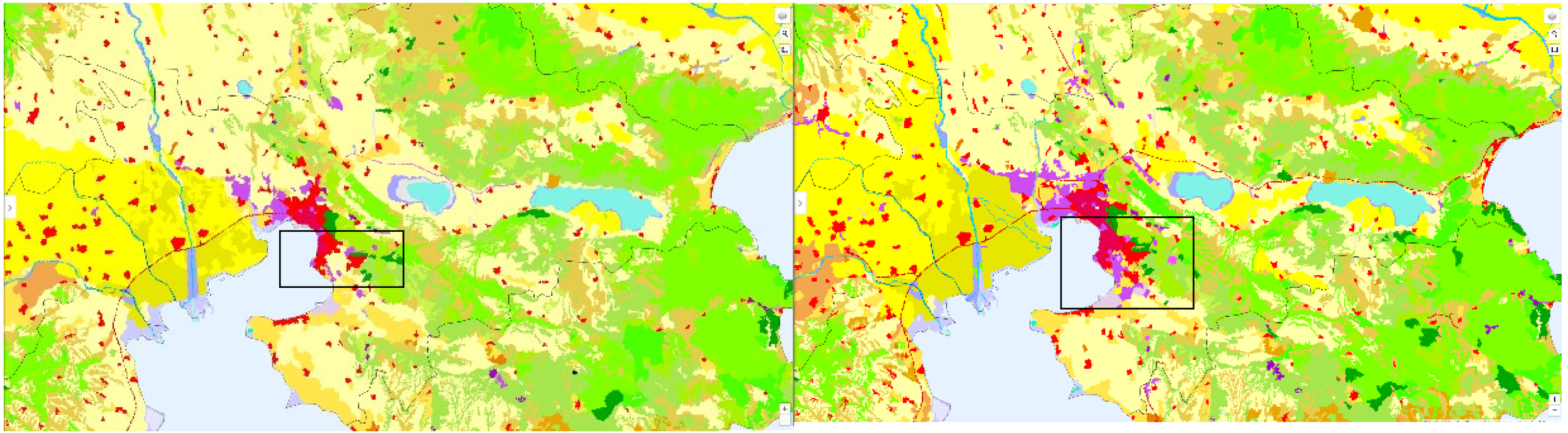
Example of usage
Expansion of the city of Thessaloniki for 2000-2018



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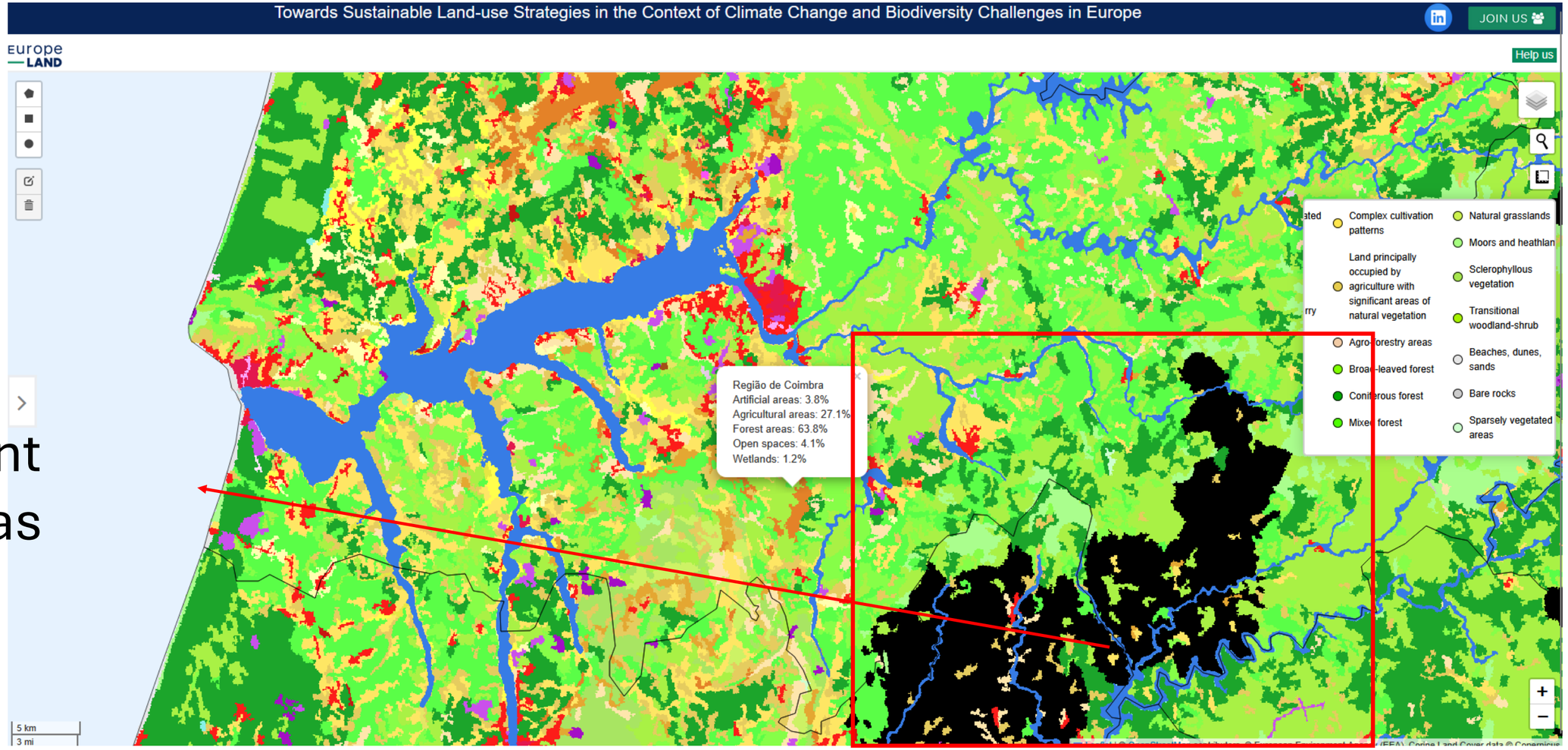
Example of usage
Corine Land Cover 2018 + Flood Prone areas



Burnt areas

Example of usage
Draw shape and calculate progression of Land Uses


```
{
  "1990": {
    "Artificial": 1.46,
    "Agricultural": 38.97,
    "Forests and Seminatural": 58.86,
    "Wetlands": 0.12,
    "Water Bodies": 0.59
  },
  "2000": {
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    "Agricultural": 38.92,
    "Forests and Seminatural": 58.73,
    "Wetlands": 0.12,
    "Water Bodies": 0.64
  },
  "2006": {
    "Artificial": 1.92,
    "Agricultural": 38.43,
    "Forests and Seminatural": 58.79,
    "Wetlands": 0.1,
    "Water Bodies": 0.75
  },
  "2012": {
    "Artificial": 2.14,
    "Agricultural": 38.12,
    "Forests and Seminatural": 58.74,
    "Wetlands": 0.11,
    "Water Bodies": 0.89
  },
  "2018": {
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    "Wetlands": 0.11,
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}
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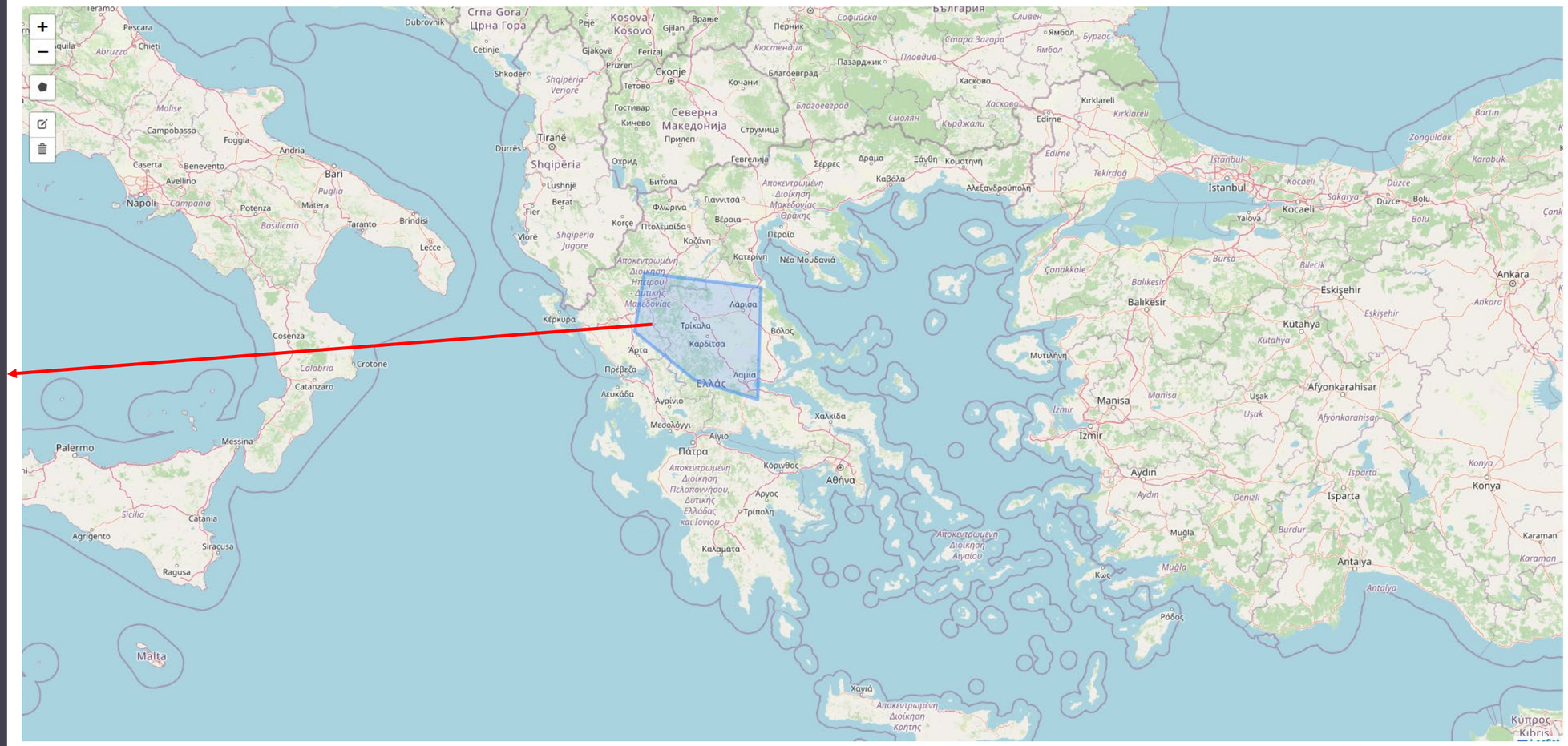
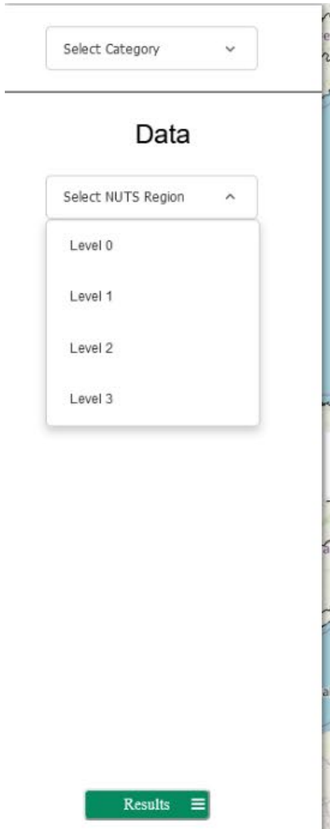
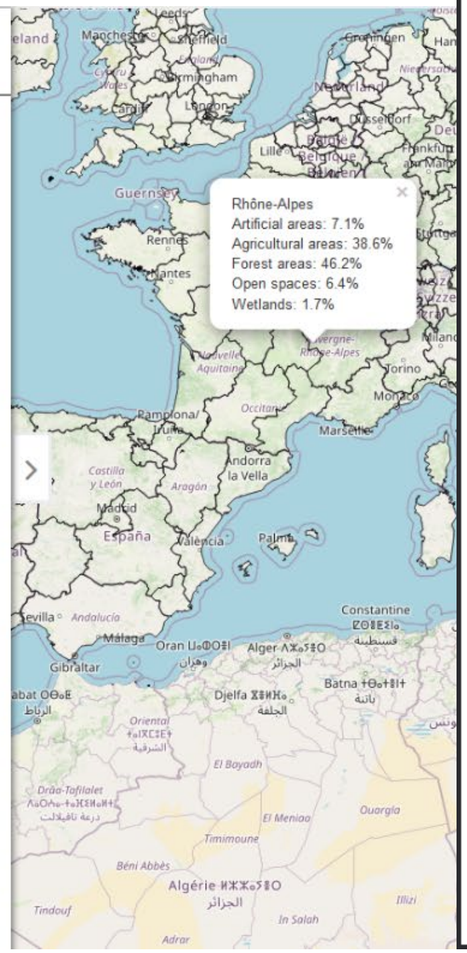


Example of usage
Report of Land Uses in NUTS Regions





Land Use Analysis Report

Region: Bayern

Country: DE

Date: 11/21/2024

Land Use Analysis Report

Main Land Use categories

Artificial Areas: 7.1%

Agricultural Areas: 38.6%

Forest Areas: 46.2%

Open Spaces: 6.4%

Wetlands: 1.7%

Code	Class Name	Percentage
1	Continuous urban fabric	0.1%
2	Discontinuous urban fabric	0.2%
3	Industrial or commercial units	1.1%
4	Road and rail networks and associated land	0.2%
5	Airports	0.1%
7	Mineral extraction sites	0.1%
10	Green urban areas	0.1%
11	Sport and leisure facilities	0.2%
12	Non-irrigated arable land	9.4%
15	Vineyards	1.0%
16	Fruit trees and berry plantations	0.7%
17	Olive groves	0.1%
18	Pastures	13.5%
20	Complex cultivation patterns	10.3%
21	Land principally occupied by agriculture with significant areas of natural vegetation	3.2%
23	Broad-leaved forest	15.0%
24	Coniferous forest	12.1%
25	Mixed forest	8.3%
26	Natural grasslands	6.3%
27	Moors and heathland	1.0%
28	Sclerophyllous vegetation	0.0%
29	Transitional woodland-shrub	1.2%
31	Bare rocks	3.0%
32	Sparsely vegetated areas	2.4%

Page 2

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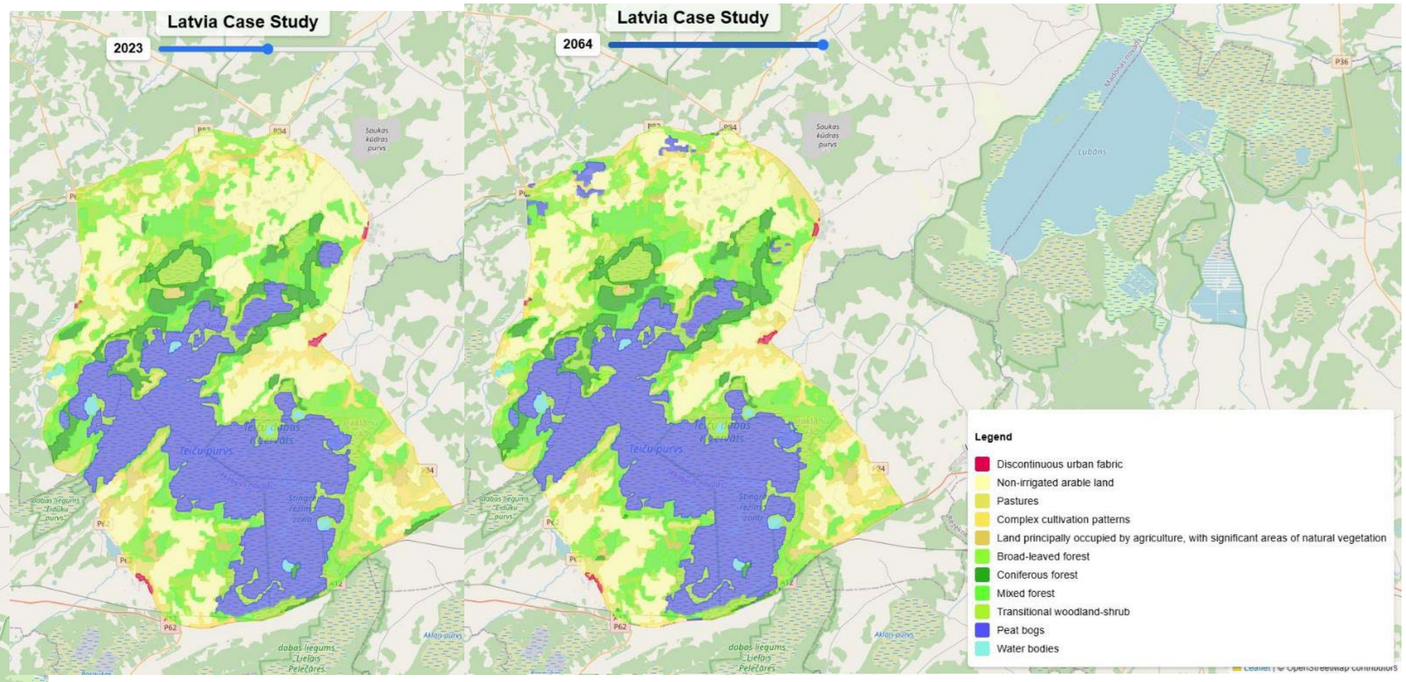
Features of Toolbox – Compare and Slider tool
Example: test case study Latvia

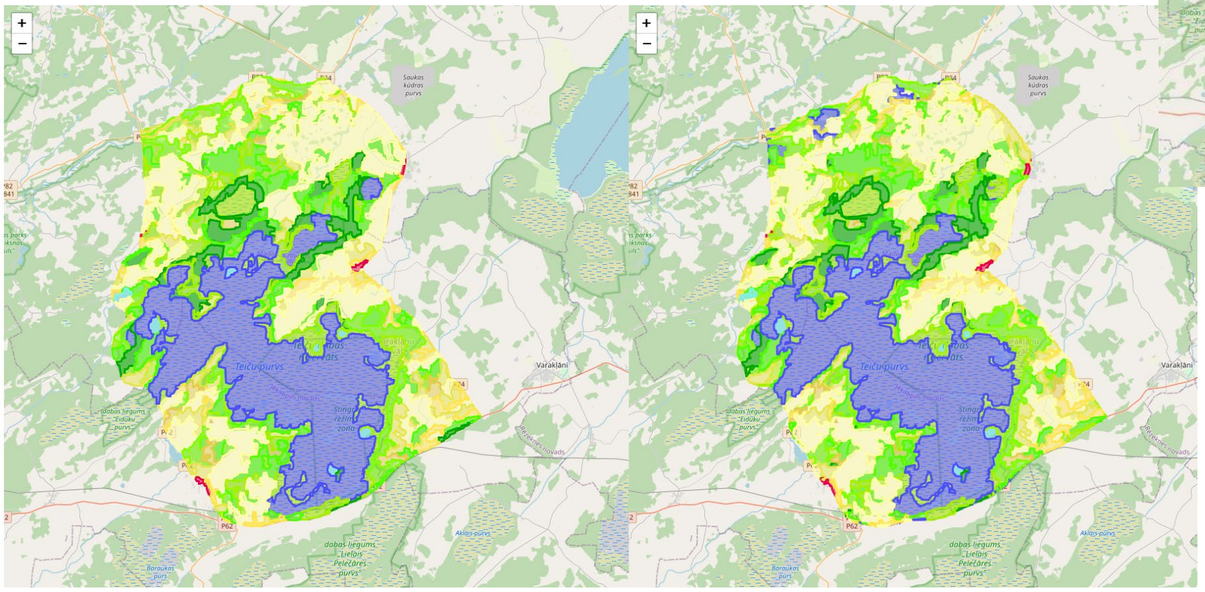
Slider Tool



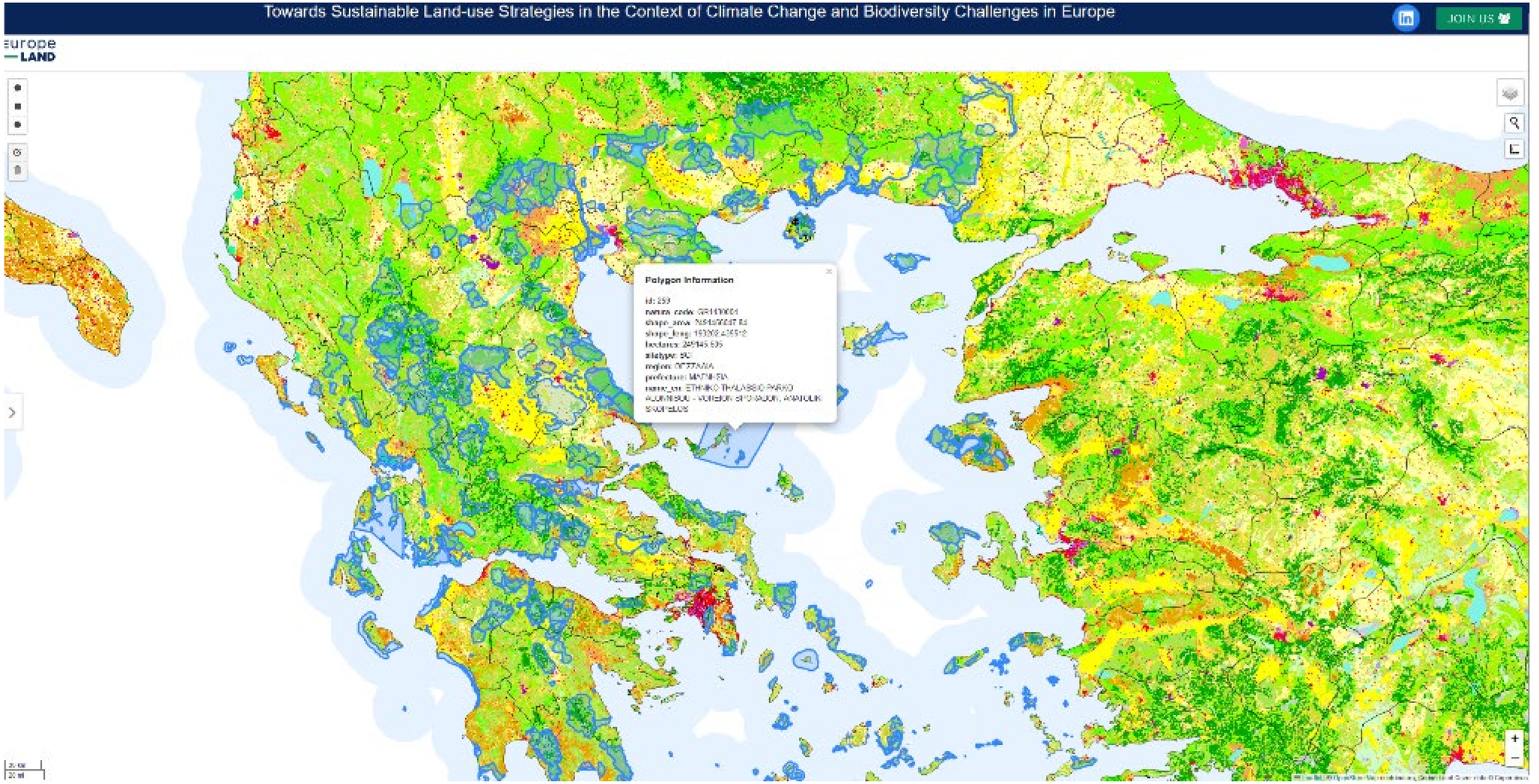
Compare Tool

Latvia Case Study: Land uses in 1990

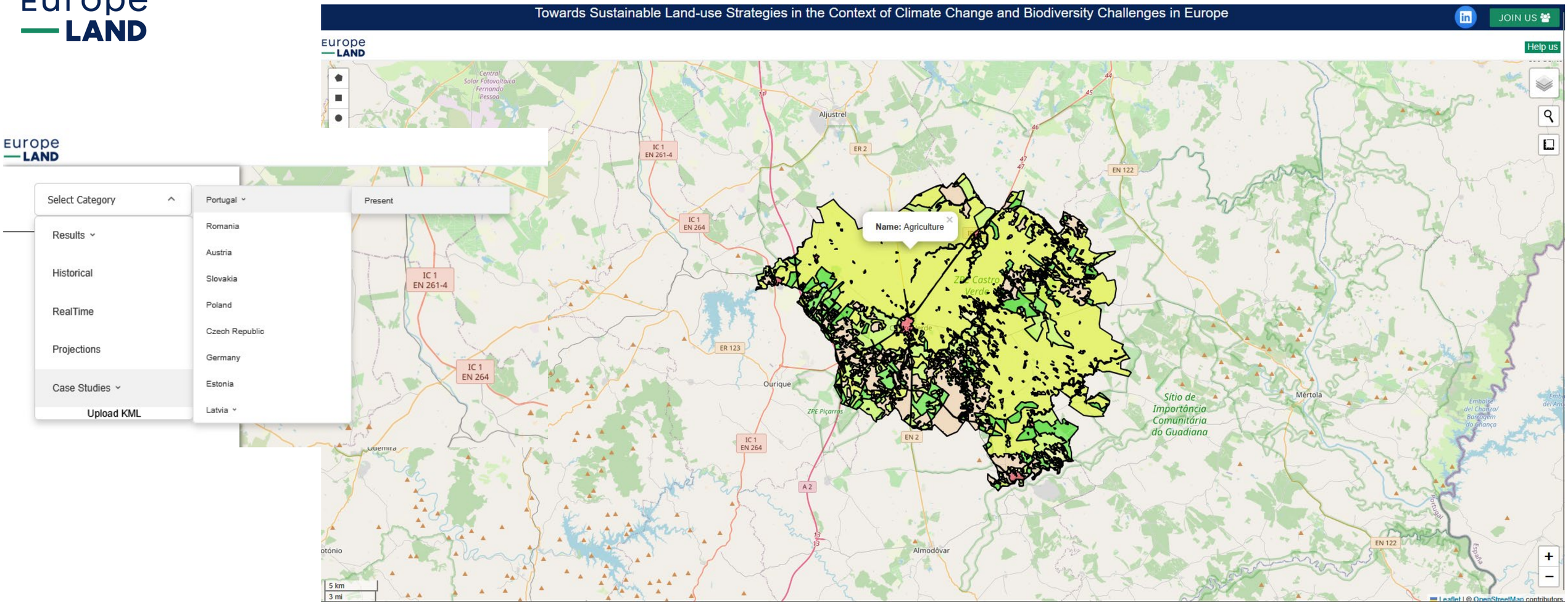
Latvia Case Study: Land uses in 2064



Upload KML/Shapefile Files – NATURA 2000 of Greece



Toolbox Ready to Receive DATA & RESULTS
Example: Data from Portugal Case Study



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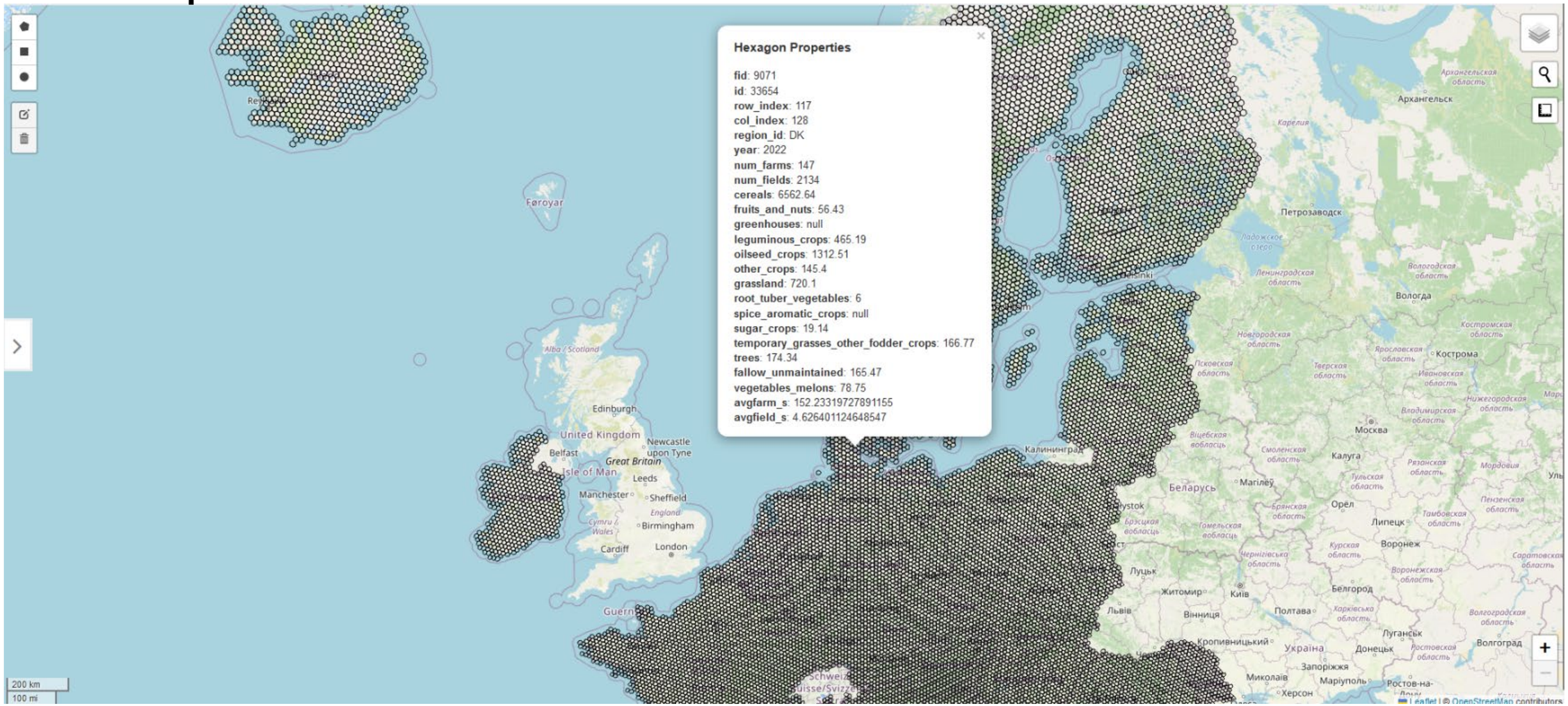
Toolbox Ready to Receive DATA & RESULTS
Example: Results from WP2 Harmonized IACS Dataset



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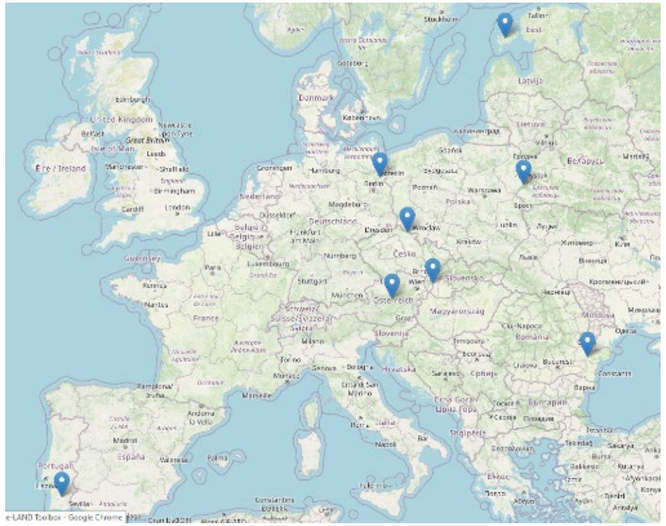
Europe-LAND Toolbox – Data

Data Integration (platform is already data-ready)

- Import data and results from case studies
- Integrate data from external databases

8 Case Studies



Current Databases and Potential Future Additions

Land Monitoring Service
- CORINE Land Use/Cover
- Imperviousness
- Tree Cover Density
- Grassland
- Water and Wetness
- Forest Type

European Environment Agency
- NATURA 2000
- Elevation
- Flood-Prone Areas

ESA Climate Change Initiative
- CCI Land Cover

Eurostat
- NUTS Regions
- Land Use/Cover Area frame Survey (LUCAS)

Disasters and Hazards
Copernicus Emergency Management Service (EMS)
European Flood Awareness System (EFAS)
European Forest Fire Information System (EFFIS)
European Climate Adaptation Platform (Climate-ADAPT)
European Drought Observatory (EDO)
Copernicus Atmosphere Monitoring Service (CAMS)

Soil and Water
European Soil Data Centre (ESDAC)
WISE (Water Information System for Europe)

Remote Sensing and Satellite Data
Sentinel Satellites (Copernicus)
European Space Agency Climate Change Initiative (ESA CCI)

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MOSAIC

Introducing the MOSAIC Digital Learning Environment

Dieter Cuypers

VITO

29/04/2025

www.mosaic-europe.eu

Our project website

HOME ABOUT NEWS CONTACT

MOSAIC

INNOVATIVE AND EFFECTIVE POLICIES FOR SUSTAINABLE LAND USE

Learning space

Learn from our project and apply our tools and insights to your specific place and needs. The MOSAIC Learning Space brings together our tools, insights and experiences for you to use and adapt to achieve your sustainable land use goals.

LEARN MORE

ting on the

nd across

engagement
d to support
ctive policies.

Objective

How to enable sustainable land use in line with EU goals in concrete situations (national, regional, local) ?

- Climate mitigation
- Climate adaptation
- Biodiversity conservation
- Renewable energy

Which decisions to take/incentives to use in participatory planning to realize this objective in those concrete situations?

How to derive actionable knowledge from science through direct interaction between researchers, practitioners and decision makers?

Policy Labs

The interaction environment →enabling transdisciplinary research

Social Science research

Land Use modelling

→ Digital Learning Environment : actionable knowledge

Digital Learning Environment

The internet is full of unused tools

MOSAIC Tools in Digital Learning Environment

- Policy labs are testing ground (proxy personas)
- Iterative testing and evaluating in temporary workspace
- Transfer to learning space

www.mosaic-europe.eu

This work was co-funded by UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee.

Co-funded by the European Union

Project funded by

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

Interactive Session B: Land Use Policy

- In what ways would you use these tools presented?
- Do you miss any important information that the tools should provide/consider?
- Should these tools/infrastructures be made available by the EU?

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Conclusion

Prof Julia Leventon

PLUS CHANGE Coordinator

Department of Human Dimensions of Global Change at the Global Change Research Institute of the Czech Academy of Sciences

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Thank you very much!

Please fill the evaluation form from here:

https://forms.office.com/e/sbimNsWEBS

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Contacts

Europe-LAND – www.europe-land.eu

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PLUS CHANGE - https://pluschange.eu/

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Funded by the European Union

Funded by the European Union (10108307). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EC-CINEA. Neither the European Union nor the granting authority can be held responsible for them.