

Feedback on the Call for Evidence – A strategy for European Life Sciences

The European Life Sciences Strategy is a pivotal initiative that responds to the EU's need to strengthen its innovation capacity and to lead in sustainable, cross-sectoral transformation. Life sciences serve as key enablers of innovation in diverse fields—including agriculture, food, energy, health, and biotechnology—and **are a source of inspiration, ideas, and technological advancement. They hold the potential to respond to consumers' and societal needs, create new markets, accelerate the green and digital transitions, and tackle pressing societal and environmental challenges.**

The BIOEAST Thematic Strategic Research and Innovation Agenda (SRIA), developed by [the BIOEAST Thematic Working Group Fresh Water Based Bioeconomy](#), introduces the Water-Soil-Climate Nexus as a central concept. This holistic and integrated approach addresses ecosystem restoration, water and soil security, and bioeconomy development. **It highlights how soil and water health are indirectly but fundamentally impacted by life sciences innovation, particularly when translated into practice across land-based sectors.** The BIOEAST macro-region faces significant challenges related to freshwater availability, due to increasing frequency and intensity of droughts, floods, and land degradation. **A holistic and cross-sectoral approach to freshwater–soil–climate interdependencies is thus critical for the region's agriculture, biodiversity, and long-term socio-economic stability**, as articulated in the BIOEAST [Stakeholder Manifesto](#). Water is a basic food and condition of life. Water plays central role in the Earth's climate system. Land is space of people's action and life, where we impact water cycles and climate stability both ways.

Key Priorities from the Thematic SRIA

1. Governance & Implementation

- Promote **multi-sectoral dialogue among policymakers, industry, academia, and local communities to ensure coherent, science-based policies.**
- Introduce **mechanisms to assess the hydrological and climatic impacts of public policies** and land use changes to changes of water cycles and methodologies to reverse negative impacts.
- Integrate fragmented data systems into a comprehensive **Integrated Water-Soil-Climate Information and Monitoring System, enhancing coordination and data-driven decision-making.**

2. Restoration & Protection of Eco-system

- **Scale up nature-based solutions** (e.g., rainwater harvesting, wetland and floodplain restoration, decentralized retention systems) to increase resilience to climate extremes.
- Develop regenerative agricultural and regenerative hydrology practices and soil health improvements to boost water retention and landscape resilience.
- A new approach to water and soil management will represent a new water and soil culture, as a paradigm shift

3. Circularity in the Bioeconomy

- Advance **innovative irrigation techniques** and promote **climate-resilient aquaculture species**.
- Activate new economic sectors through a **Carbon and Water Bank Certification System** on national, regional and subregional levels, **facilitating the valuation and financing of ecosystem services and supporting land rehydration, biomass valorisation, and sustainable rural development**.

Recommendations for the Commission

To ensure the European Life Sciences Strategy contributes effectively to addressing climate risks reduction, biodiversity loss, and water-soil degradation, water and food security, it must incorporate systemic, nature-based, and cross-sectoral approaches. Specifically:

1. **Support financial instruments and incentives for ecosystem-based approaches**, such as the Carbon and Water Bank Certification System, to improve the investment landscape in Europe
2. **Integrate data infrastructures into a unified Water-Soil-Climate Monitoring System**, enabling smart data use, interoperability, and AI-powered analysis.
3. **Boost research, innovation, and capacity-building in regions** such as the BIOEAST macro-region, which are uniquely positioned to pioneer water-smart bioeconomy models.
4. **Mainstream the Water-Soil-Climate Nexus into the strategic orientation and funding of life sciences R&I**, particularly in support of the green transformation and climate adaptation.
5. **Elaboration and Implementation of the European Action Plan** to reduce climate risks by systemic restoration of natural water cycles and climate.

By embedding these elements into the European Life Sciences Strategy, the EU can ensure that life sciences not only drive technological and industrial leadership but also deliver meaningful contributions to ecosystem resilience and climate-smart bioeconomy development. This will enable Europe to shape an integrated and inclusive transformation that safeguards natural capital while advancing innovation and competitiveness for future generations.

As a crucial driver of the EU's innovation capacity, the **European Life Sciences Strategy** must foster a **multi-sectoral transformation in the sustainable use of natural resources**, reinforcing the natural regenerative cycles of **water, soil, food, biodiversity, and climate**. The **BIOEAST Thematic Working Group on Fresh Water-Based Bioeconomy** underscores the pivotal role of **ecosystem water availability** in sustaining these cycles and calls for a strategic shift toward **integrated stormwater management**. Such an approach strengthens **ecosystem recharge**, supports **small water cycles**, and stabilizes local climates—enhancing **food and water security, public health, and biodiversity**, while mitigating the impacts of **prolonged droughts and extreme flooding**. To achieve this, the BIOEAST community is actively developing the **knowledge base, methodologies, technologies, and financial instruments** that empower local communities and stakeholders to harness **nature's self-regulating mechanisms**. This agenda offers not only a framework for sustainable



transformation but also a pathway toward enhanced **environmental, climate, and social security** across the European Union.