

## A DISTRIBUTED RESEARCH INFRASTRUCTURE WITH CENTRAL SERVICES

eLTER RI will comprise National Research Infrastructures (NRIs) and European level Central Services.

### National Research Infrastructures (NRI)

Partner countries provide the national in-situ building blocks (eLTER Sites and eLTER Platforms). Distributed site-operations will be concerted (instrumentation, observation variables) and follow standards (protocols, data flows). Sites and platforms will be open for research and education via a common access scheme.

### Central Services

A range of services will make eLTER RI much more than the sum of its national networks. Service providers will comprise the Head Office (coordination, outreach, strategic development & collaborations, operation of central Service Portal) and Topic Centres. Collectively, the Topic Centres will cover Thematic Service Areas like data management, interoperability, data analysis & modelling, technological innovation, and synthesis of actionable knowledge.

## SUPPORTING PROJECTS

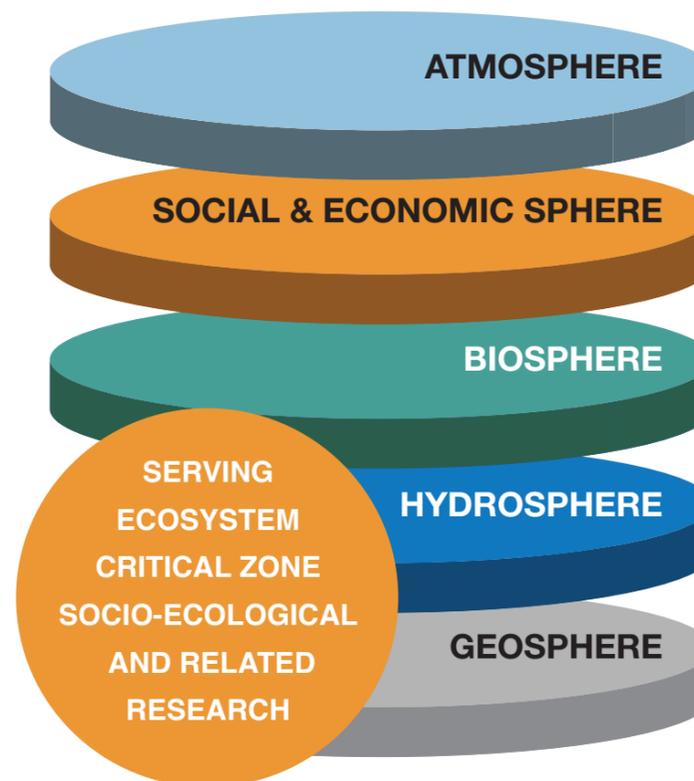
Since 2020, the provision, testing and development of the eLTER RI has been supported by two EU-funded 5-year projects involving 27 countries: **eLTER PLUS** is testing the performance of existing components through scientific case studies and is identifying the needs of a wide range of scientific and other user groups (Coordinator: Jaana Bäck, UHEL/Finland). **eLTER PPP**, the eLTER RI Preparatory Phase Project is facilitating the formalisation of eLTER RI as an ERIC (Coordinator: Michael Mirtl, UFZ/Germany).



These projects receive funding from the European Union's Horizon 2020 research and innovation programme under GA No 871126 (eLTER PPP) and GA No 871128 (eLTER PLUS).

Images courtesy of LTER-Europe members

The information in this brochure is valid for 2022



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INTEGRATED EUROPEAN  
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BROCHURE  
FOR PEERS IN  
ENVIRONMENTAL  
RESEARCH AND  
OBSERVATION



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## THE CHALLENGE

### An innovative research environment for the next generation of scientists

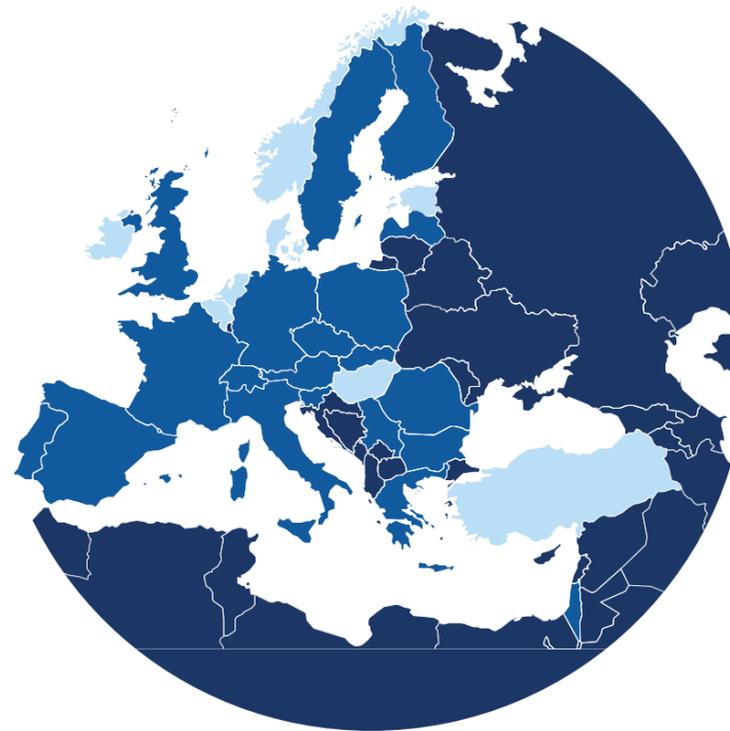
We live in a world of rapid social, economic and ecosystem change, facing major challenges such as global warming, biodiversity loss and pressures on natural resources. Addressing these topics requires world-class ecosystem, critical zone and socio-ecological research by communities of experts well-connected across various disciplines.

eLTER RI will catalyse scientific discovery through its state-of-the-art in-situ facilities and tools, open and accessible data, collaborative working culture, transdisciplinary expertise and its demand-driven service portfolio, comprising analytical tools and capacity building activities.

## HOLISTIC SCIENCE

eLTER RI will adopt a fundamentally systemic approach to observe and analyse the human-environmental system, encompassing biological, geological, hydrological and socio-ecological perspectives. eLTER RI will be the first research infrastructure capturing and analysing holistically the integrated impacts of climate change alongside other pressures on a wide variety of European ecosystems.

It comprises in-situ Standard Observations range from biophysico-chemical to biodiversity and socio-ecological variables. Ecosystem change caused by long-term pressures and short-term pulses are investigated in a nested design from the local to the continental scale.



### Support for eLTER RI

- Politically supported by 20 countries
- ~165 supporting institutions from 28 countries

## KEY FEATURES OF eLTER RI

- Wide scale and systematic coverage of major European terrestrial, freshwater and transitional water ecosystems – ca. 250 research sites, selected from a wider pool of ~600 LTER-Europe sites
- Investigation of interactions between abiotic and biotic ecosystem components at multiple scales, including human-environment interactions
- Research into ecosystem processes influenced by multiple drivers, as well as socio-ecological research relating to ecosystem services
- Integrated, long-term and high quality observations across the critical zone, supporting whole ecosystem science
- Central Services provided by: Head Office, Service Portal and thematic Topic Centres
- Strong links with other European environmental RIs (e.g., ICOS, AnaEE, LifeWatch) and international collaboration, e.g., global LTER (ILTER), Global Ecosystem Research Infrastructure (GERI).

## eLTER RI'S UPCOMING RESPONSE TO THE NEEDS OF ITS PEERS IN ENVIRONMENTAL RESEARCH AND OBSERVATION

### What is the eLTER niche in the European and global landscape?

- eLTER is a building block of the European Environmental Research Infrastructures;
- A key characteristic is that it integrates across disciplines and domains: it covers the geosphere, freshwater and transitional waters, biosphere and lower atmosphere.

### What makes eLTER a unique partner?

- eLTER explores the compounded impacts of climate change, biodiversity loss, soil degradation, pollution, and over-exploitation on major European ecosystems;
- eLTER's integrative role results from a holistic approach to investigating ecosystems and socio-ecological systems. It involves research teams across disciplines and stakeholders in a transdisciplinary approach.

### What are the benefits of collaborating with eLTER?

- The holistic approach stimulates co-location with other RIs and networks jointly using basic infrastructure and scientifically complementing each other;
- eLTER harmonisation efforts adopt the best available standards from more specialised peers and fill critical gaps to achieve whole system observation;
- eLTER triggers bi- and multi-lateral network optimization and funding alignment at local, national and global scales.

### How to collaborate with eLTER?

- The Service Portfolio of eLTER strives for multiple uses of own and other services;
- eLTER aims at integrating or directing to services from other RIs wherever possible;
- In areas of common interest options for co-design and co-implementation are explored;
- Responding to project calls in collaboration with other RIs and engaging in the European Environmental Research Infrastructures cluster (ENVRI) has always formed part of eLTER's strategy.