Filling a critical gap for top-class science at the continental scale

eLTER in a nutshell

Michael Mirtl
eLTER ESFRI coordinator
UFZ, Germany & EAA, Austria

eLTER
Integrated European Long-term Ecosystem, critical zone and socio-ecological Research

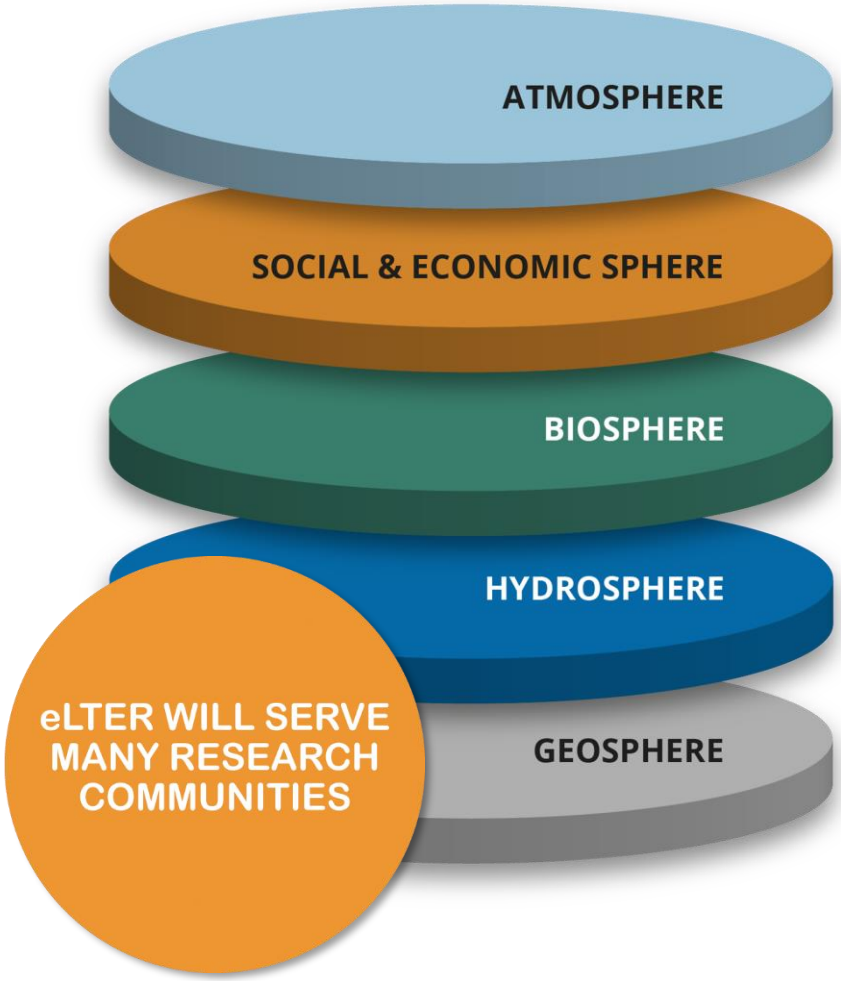
Learn more here:

HELLENIC REPUBLIC MINISTRY OF DEVELOPMENT AND INVESTMENTS | GSRI GENERAL SECRETARIAT FOR RESEARCH AND INNOVATION

European Commission

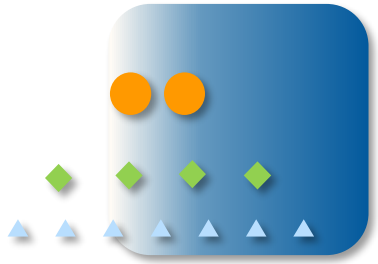
Core characteristic: „Whole System“-Approach

Cross-disciplinarity needed to understand systems functioning



DESIGN

- Hierarchy of Site categories



- Varying in complexity & costs

SERVICES

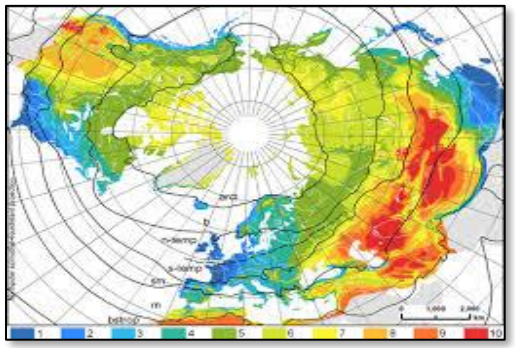
- Basic site infrastructure
- Sites as Digital Twins
  - Standard Observations on site
  - Multiple other data sources (RS, modelling)
- Data access
- Analytical tools, virtual labs
- Training etc.

Continuous long-term operation of ~200 innovative hubs

The eLTER Research Challenges and related policies

Biodiversity dynamics

EU Biodiversity Strategy, Water Framework Directive, Habitats Directive



Climate change

European Green Deal, Strategy on adaptation to Climate Change, UNFCCC Paris Agreement

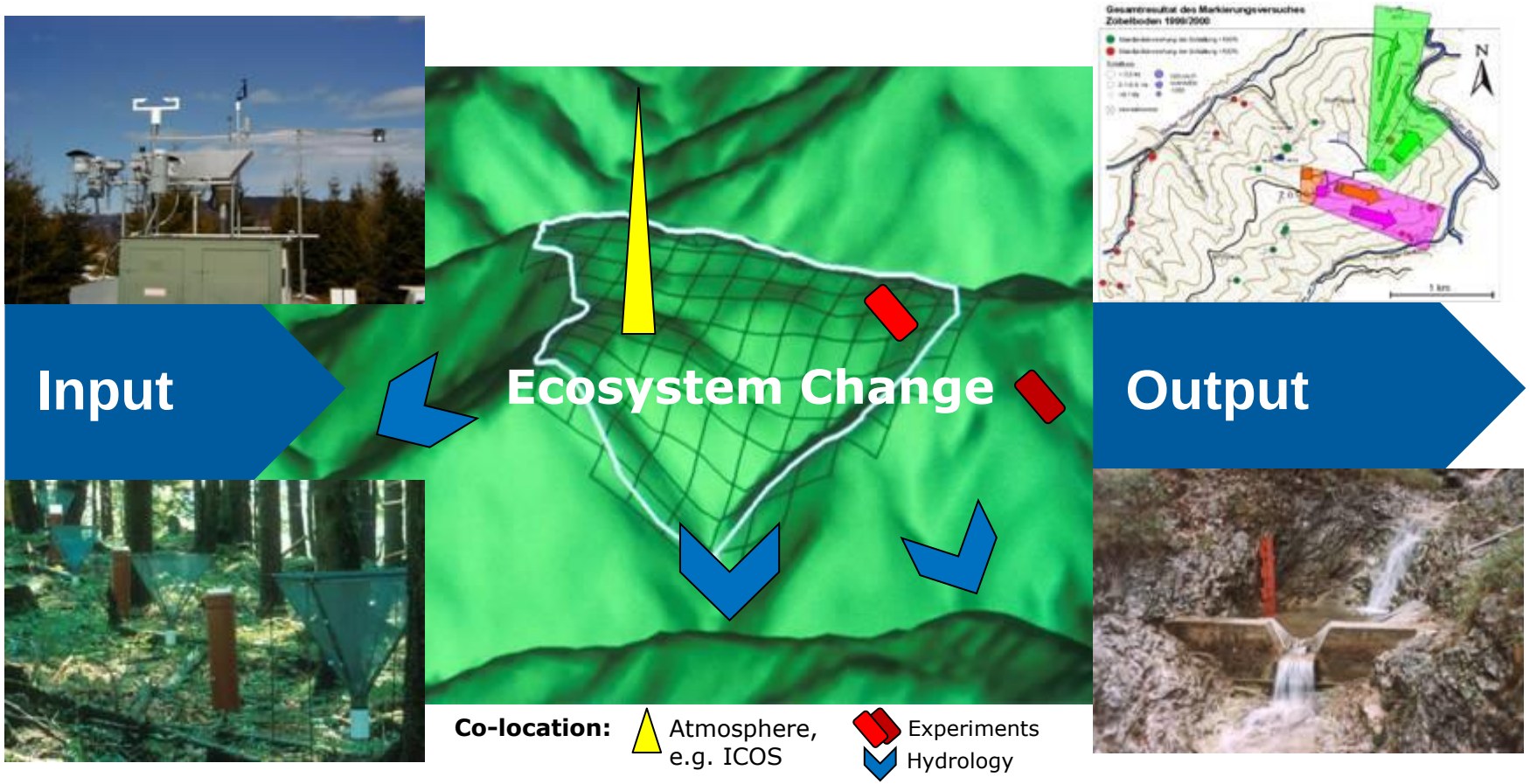
Eutrophication and pollution

Water Framework Directive, UNECE-CLRTAP

Socio-ecology - Environmental protection, sustainable management of natural resources, water, soils, biodiversity & ecosystems

CAP, Strategy on adaptation to Climate Change, Soils thematic strategy

Example for eLTER Site design, activities and co-location



Observed and investigated:

- System structure & functions
- Main drivers of change
- Slow onset processes & fast disturbances

eLTER ESFRI process: stakeholder support & coverage, *2022-12*

ESFRI Roadmap 2018

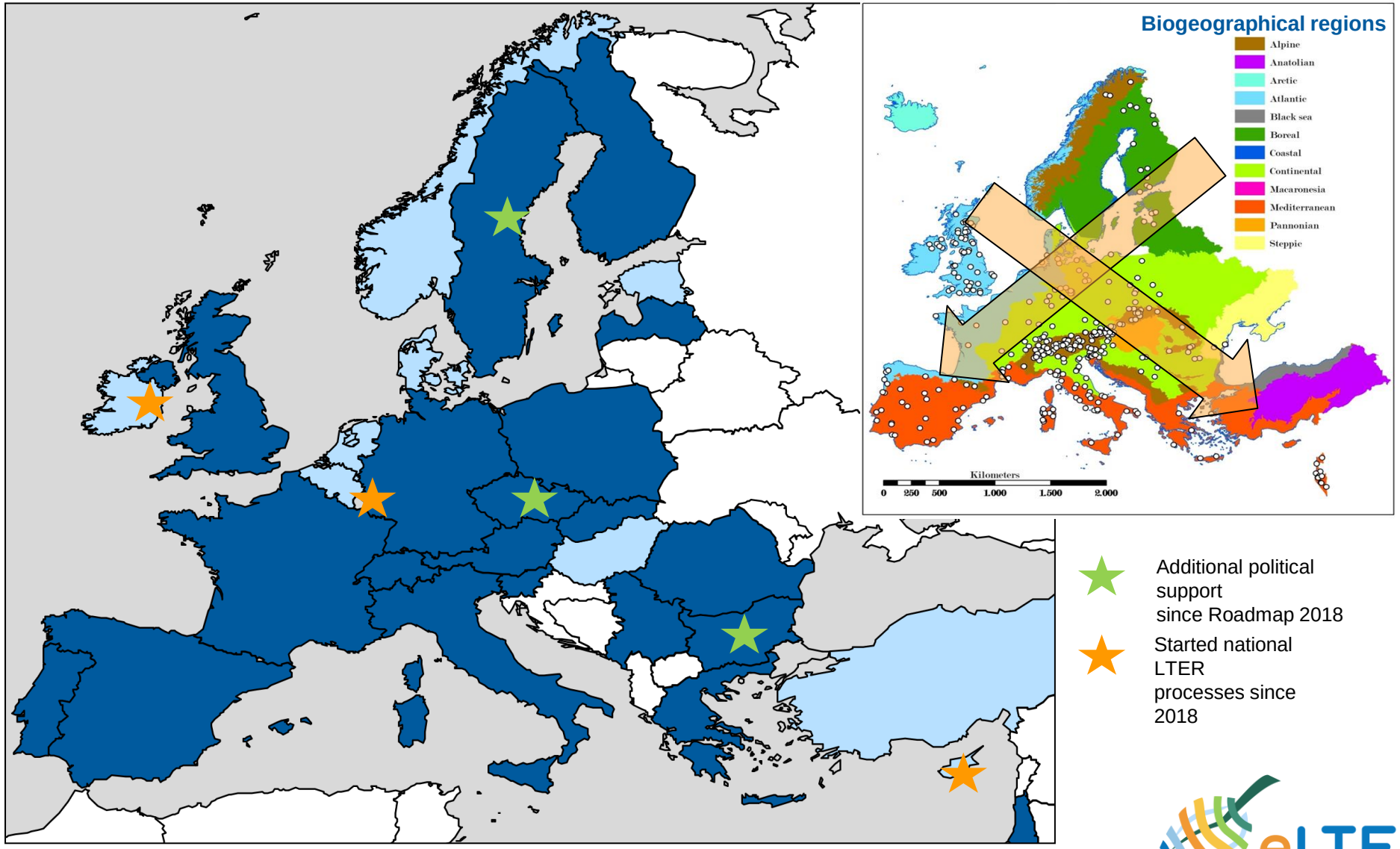
SUPPORT

Political:
20 countries

Scientific institutions:
>165 [from 28 countries]

CAPITALIZING ON...

- 26 country networks
- >500 Sites
- >50 LTSER Platforms

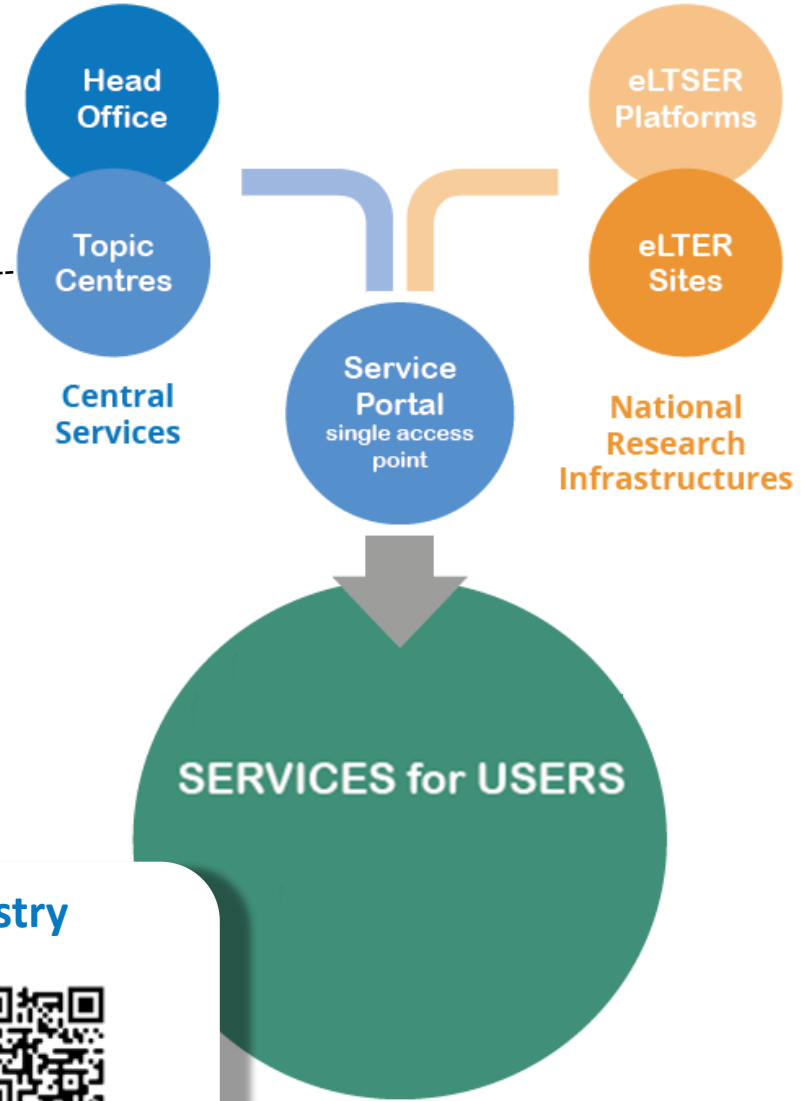


eLTER

Topic centres will collectively cover Thematic Service Areas

6 Thematic service areas

- Data management & integration (e.g. Site registry ***DEIMS.org***)
- Optimised Design and RI Interoperability
- Technological Innovation & Development
- Analysis Tools and Modelling
- Synthesis towards actionable knowledge
- Central analytics and observation



Operational example: Site registry

DEIMS SDR powered by eLTER RI

DEIMS.org

eLTER

The European LTER: www.elter-ri.eu
eLTER
If you want to go fast go alone,
if you want to go far go together.
An old African proverb