DANUBIUS-RI: International Centre for Advanced Studies of River-Sea Systems

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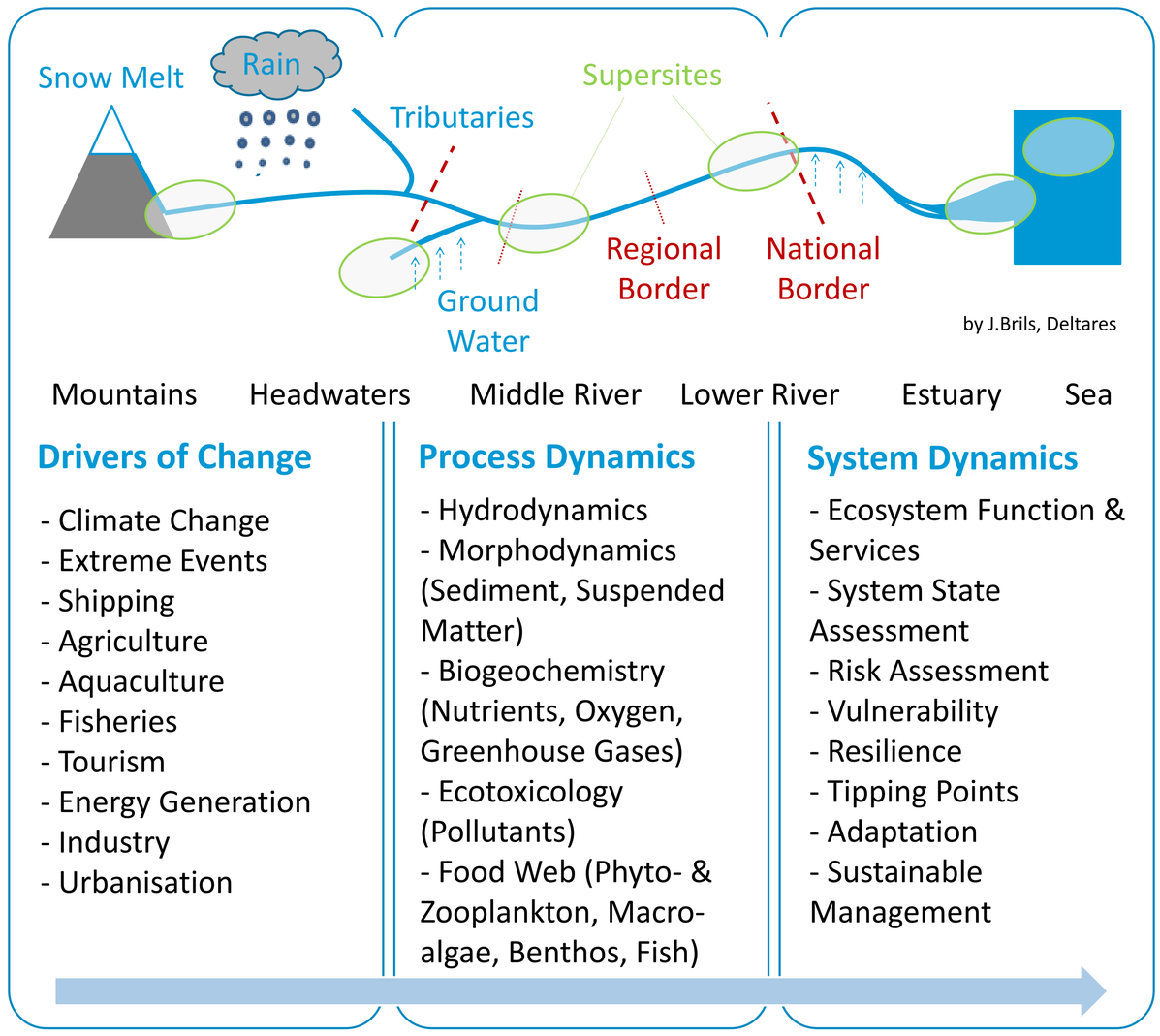
Addressing Grand Challenges

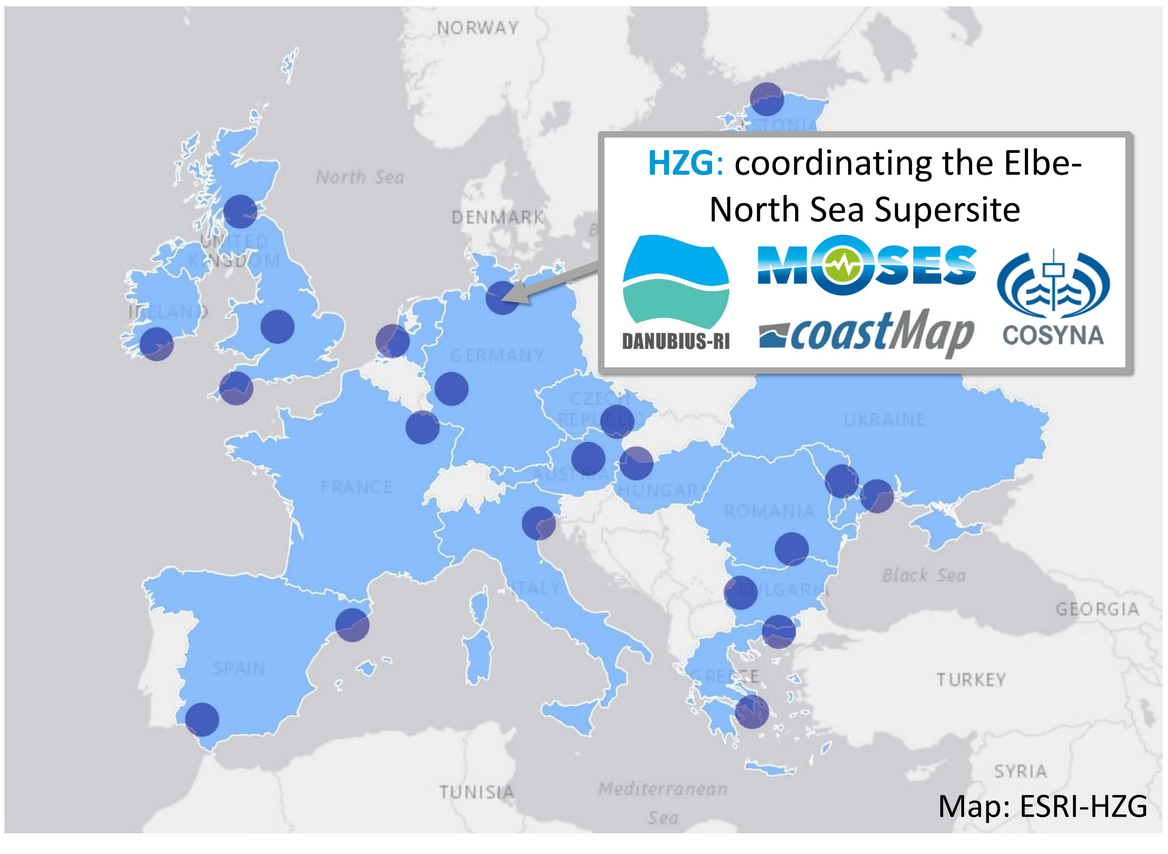
- pan-European **Research Infrastructure (RI)** to study River-Sea Systems, comprising rivers and catchments, transitional waters (e.g. estuaries, deltas) and coastal seas
- to enable research based on **systems approach**, overcoming disciplinary, regional and national boundaries, and to bring together relevant expertise and data
- to better **understand ecosystem functions**, identify cause-effect-relationships, address grand challenges and thus **sustain ecosystem services**



Distributed Research Infrastructure

- **Coordination, Hub & Data Centre**: GeoEcoMar, Romania
- **Technology Transfer Office**: University College Cork, Ireland
- **Nodes**: Observation (Plymouth Marine Laboratory, UK), Analysis (Federal Institute of Hydrology, Germany), Modelling (Institute of Marine Sciences, Italy) and Socio-Economic Impact (Deltares, Netherlands)
- **Supersites**: upper, middle and lower Danube, Elbe, Thamse, Ebro, Po and Nestos, and their respective adjacent seas (additional Supersites under discussion)

Bringing together: 29 Partners from 16 Countries



Map: ESRI-HZG

Enhancing Process and System Understanding

- How are River-Sea Systems changing due to natural and anthropogenic pressures? What are the **drivers** and how are they interacting?
- How are processes and changes in the catchment affecting those further along the **River-Sea Continuum**? What are the timescales?
- How are these changes affecting **ecosystem functioning and services**? How can we sustainably use River-Sea Systems? Which guidelines can be derived from that?
- How are these changes affecting the **resilience** of River-Sea Systems as Socio-Ecologic Systems? What are "tipping points" of such a system or of its components?
- How can we distinguish between **natural variability** and **anthropogenic changes**?
- How can we observe process and system dynamics on a **higher spatial and temporal scale**? How can we predict short and long term changes in River-Sea Systems?

HZG: leading the development of the "Science and Innovation Agenda"

Making a Difference

- provides **access to Research Infrastructure** along several River-Sea Systems
- synthesises and **integrates existing knowledge** on River-Sea Systems
- uses **standardised methods** and provides access to comparable data
- strengthens regional, national and international **collaborations**
- **brings together** research institutes, universities, public authorities, as well as small and medium enterprises
- combines research with **technology development** and its application
- educates and trains young scientists
- develops guidelines for **sustainable management** of River-Sea Systems
- bridges gap(s) between current **European water related policies**, e.g. Water Framework Directive and Marine Strategy Framework Directive
- addresses several **Sustainable Development Goals** (SDGs) of Agenda 2030, particularly SDG 6 (Clean Water and Sanitation) and 14 (Life below Water)

Moving towards DANUBIUS-RI

ESFRI Projects Landmarks ROADMAP 2016

2016

Entry in Roadmap of European Strategy Forum for Research Infrastructures (ESFRI)

DANUBIUS-PP

2016 - 2019

- H2020 Project
- **P**reparatory **P**hase
- 4 Mio. € (Grant Agreement No. 739562)

2019 - 2021

- Implementation Phase
- European Regional Development Funds?

DANUBIUS-RI

2022 ~ 2050

- Operational Phase
- Life Span: 20-30 years

www.danubius-pp.eu // www.danubius-ri.eu

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