



# NEXOGENESIS

STREAMLINING WATER RELATED POLICIES

## Introduction to the objectives of the NEXOGENESIS project and its case study in the Lielupe river basin

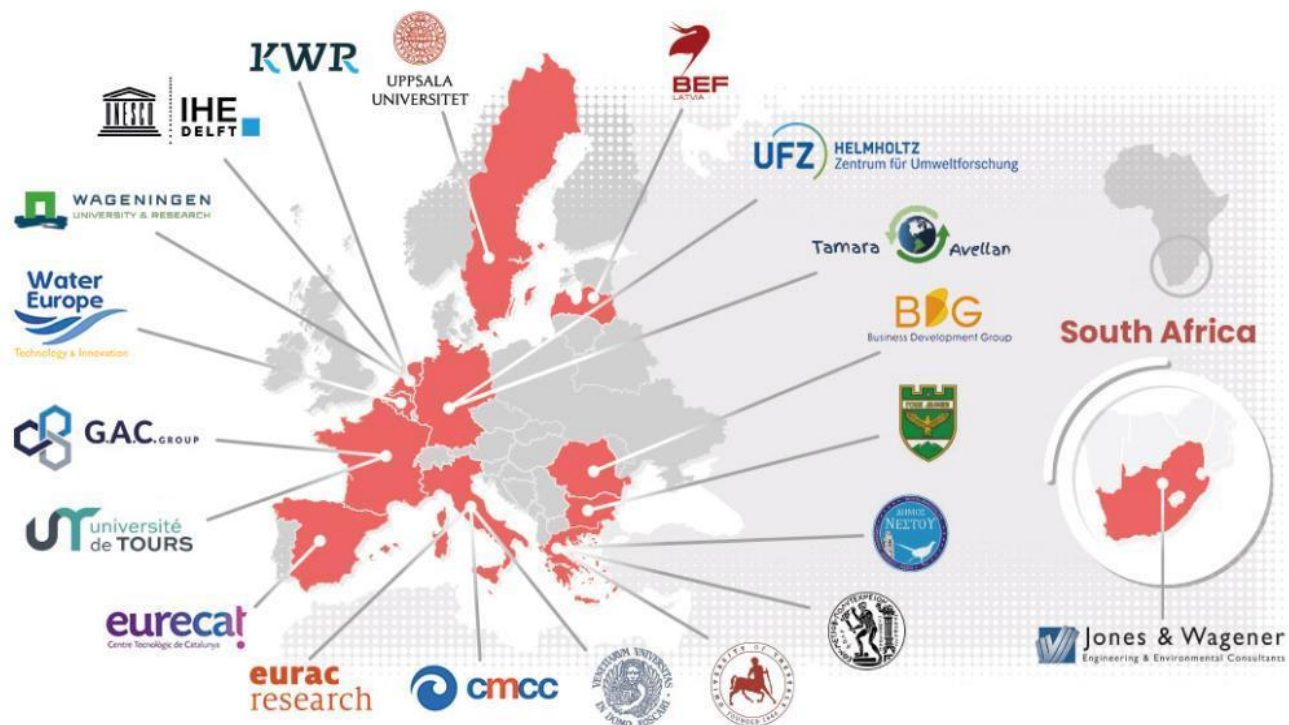
*Daina Indriksone, Baltic Environmental Forum – Latvia  
27.05.2022*

*Baltic regional thematic workshop  
«Agriculture and good water quality: policy and management measures»*



# What is NEXOGENESIS?

- European research project (Horizon 2020)
- Sep 2021-Aug 2025
- 20 partners
- Lead partner:  
IHE-Delft Institute for Water Education (The Netherlands)



The project aims to improve policies related to the water-energy-food-ecosystems (WEFE) Nexus for effective management of resources

# Overview of NEXOGENESIS

**Nexus governance approach** to co-design WEFE nexus policies

**Policies** for your region including **pathways for implementation** and **stakeholder agreement**

**Self Learning Nexus Assessment Engine (SLNAE)** to assess policy impact in the nexus

WEFE **nexus footprint**

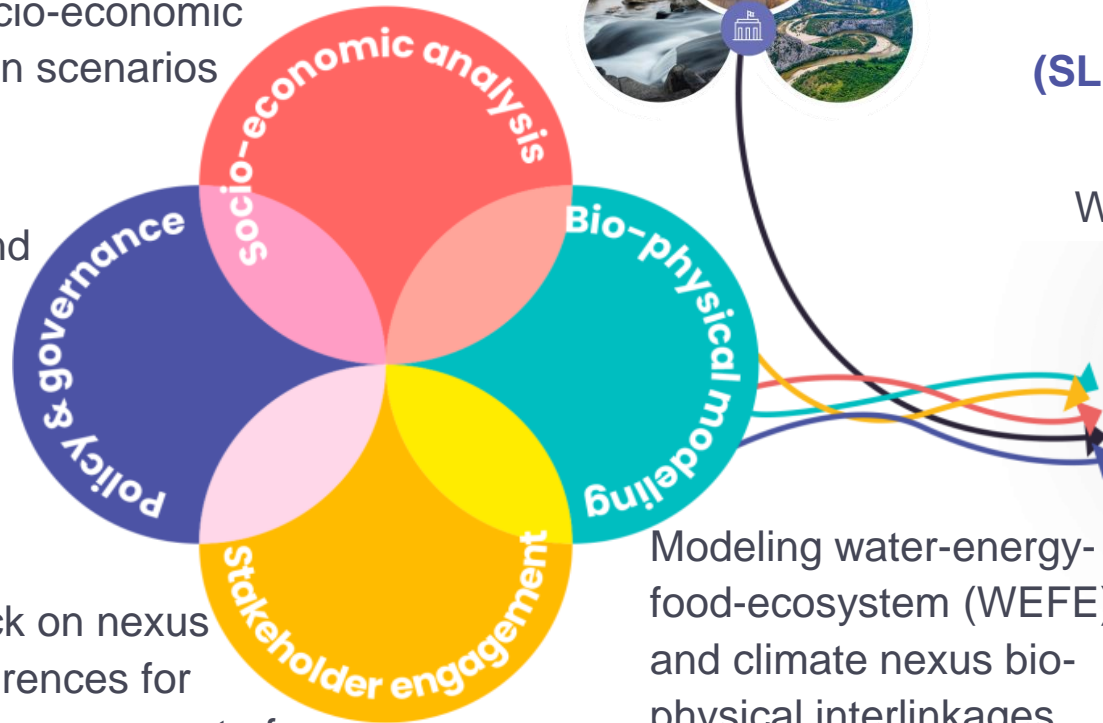
**The NEXOGENESIS solutions**

Case studies:  
5 river basins



Future socio-economic and human scenarios

Governance and policy context



Modeling water-energy-food-ecosystem (WEFE) and climate nexus bio-physical interlinkages

Ambitions, feedback on nexus interlinkages, preferences for policy/tools options, agreement of policy implementation

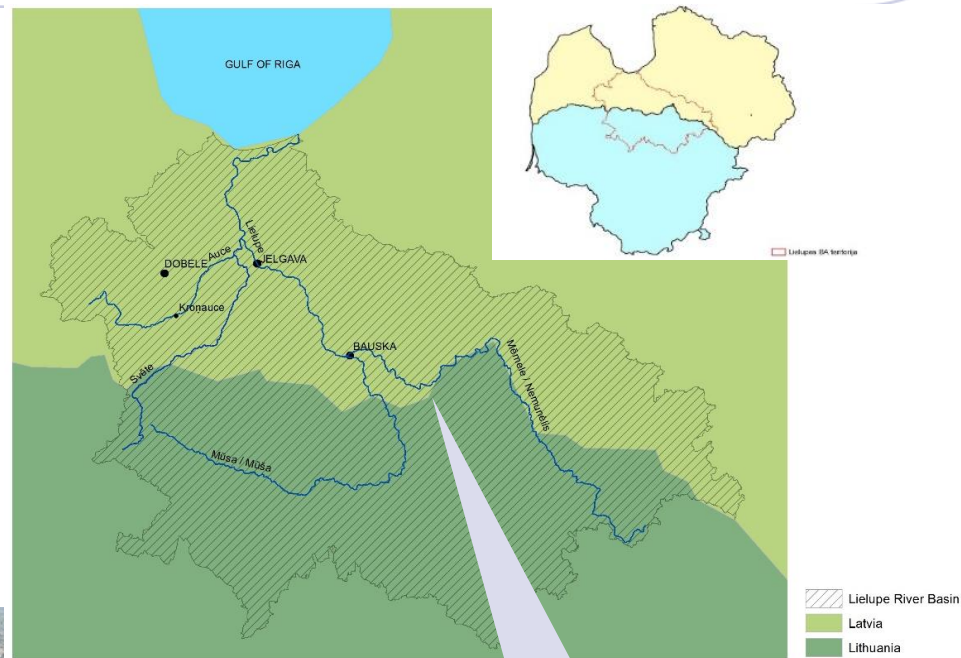


# Case studies: 4 transboundary & 1 national river basin



# Latvia-Lithuania transboundary Lielupe river basin district

- **Well-developed agricultural activities** (fertile soils)
- **Decreasing biodiversity:** reduced meadows and pastures, pressure on grassland habitats
- **Pollution of water bodies** by increased use of fertilizers and nutrient runoff
- **Increasing flood risks:** high precipitation, pressure on hydrotechnical infrastructure

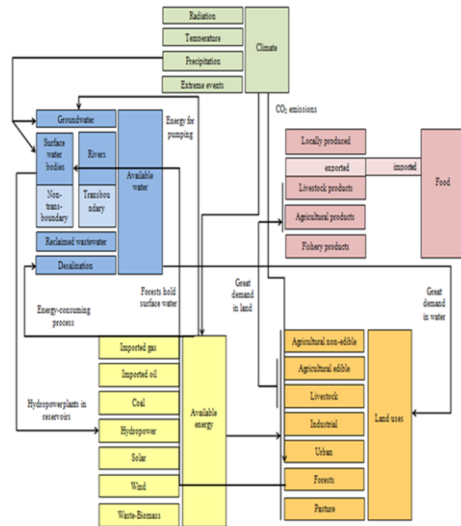


Total catchment area:  
~17 600 km<sup>2</sup>



# Nexus System Thinking and Integration

## Casual loop maps



## Model

Connecting quantitative data from the sectors of water, energy, food, ecosystem and climate change by simulating the interrelations between them

## Stakeholder involvement

Identification of the:

- critical components of the nexus
- relevant policies and policy gaps
- connections / disagreements
- hotspots in the region
- validation of the causal loop maps
- implementation of the stakeholder agreement

## Products

- Quantified interlinkages between the water-energy-food-ecosystem sectors
- Assessment of the impacts of policies in related to the nexus sectors
- Climate Projections/ Different scenarios
- Sensitivity analysis
- Complexity science tools - prototypes for all the Case Studies (SLNAE)
- The nexus footprint

## End Users

- Authorities
- Policy makers at local level/municipalities
- NGOs
- Agricultural chambers
- Farmer associations
- Water utilities
- Other organisations



# Who could use the NEXOGENESIS solutions?

**Any organization** (e.g., authorities, industry, NGOs, research institutes) interested to **initiate a discussion and bottom-up process of policy change with WEFE sector stakeholders:**

- **Quantitative and qualitative model data** - to identify and quantify interlinkages, conflicts and synergies among WEFE nexus sectors, define drivers of change and global risks, assess resource supply and demand
- The **Self Learning Nexus Assessment Engine** - to assess the impact of specific policies across WEFE sectors and obtain recommendations on policy options under specific conditions
- The **Nexus footprint** - to visualize in a synthesized form the results of the nexus analysis

*To be used for:*

*dialogue facilitation, conflict resolution, joint decision-making and implementation of integrated nexus policies*



# Sharing the NEXOGENESIS results in the wider network

## Where to find project information and latest news?

- NEXOGENESIS website: <https://nexogenesis.eu/>
- NEXOGENESIS social media:
  - Twitter: [@NEXOGENESIS\\_eu](https://twitter.com/NEXOGENESIS_eu)
  - LinkedIn: [@NEXOGENESIS](https://www.linkedin.com/company/nexogenesis)
- Local project partner for information in local language: BEF-Latvia



## Communicating locally

- Poster, flyer, webinars will be developed in local languages
- Upcoming trainings on how to communicate the NEXOGENESIS and case studies results on social media and local medias

## Communicating globally

- Upcoming policy briefs, workshops, conferences, seminar for international dissemination
- [Network](#) with other EU and international WEFE related actors /projects

