



NEXOGENESIS
STREAMLINING WATER RELATED POLICIES

NEXOGENESIS 4th Stakeholder Workshop:

“Water-energy-food-ecosystem Nexus: from interlinkage modelling to decision support tool and stakeholder agreement for integrated management of the Lielupe River Basin”

6-7 February 2024, Riga, Latvia



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101003881.



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STREAMLINING WATER RELATED POLICIES

Recap of NEXOGENESIS project and activities in the Lielupe Case study

Daina Indriksone, Baltic Environmental Forum – Latvia
06.02.2024, Riga, Latvia

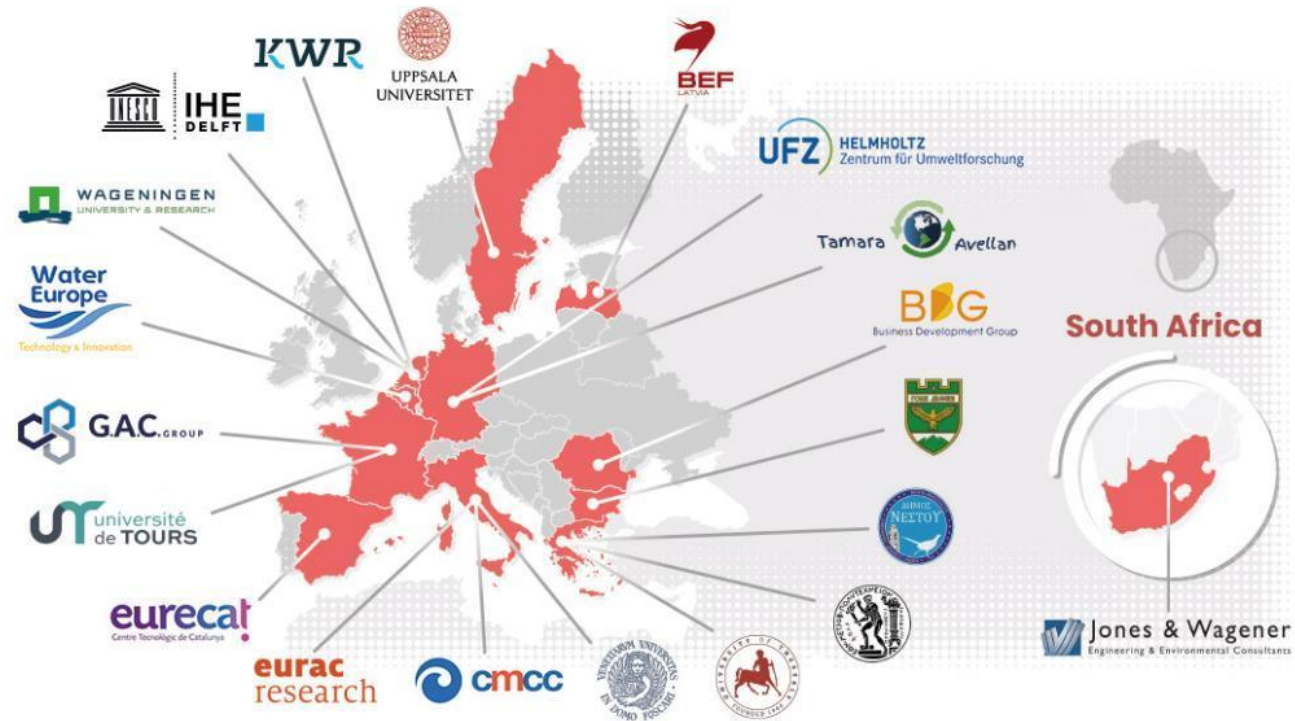
NEXOGENESIS 4th Stakeholder Workshop



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What is NEXOGENESIS?

- **European research project** (Horizon 2020)
- Sep 2021-Aug 2025
- 20 partners
- 5 case studies
- Lead: IHE, the Netherlands



To facilitate collaboration for design and implementation of integrated water-energy-food-ecosystems (WEFE) policies and practices

5 Case studies: Transboundary and national river basins



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



- Catchment area: 17 787.6 km²
- Agricultural land: ca. 62%
 - Forests: ca.30%
 - Wetlands: ca. 1.5%

What can NEXOGENESIS do for Lielupe Case study?

Lielupe River Basin

Future socio-economic and human scenarios

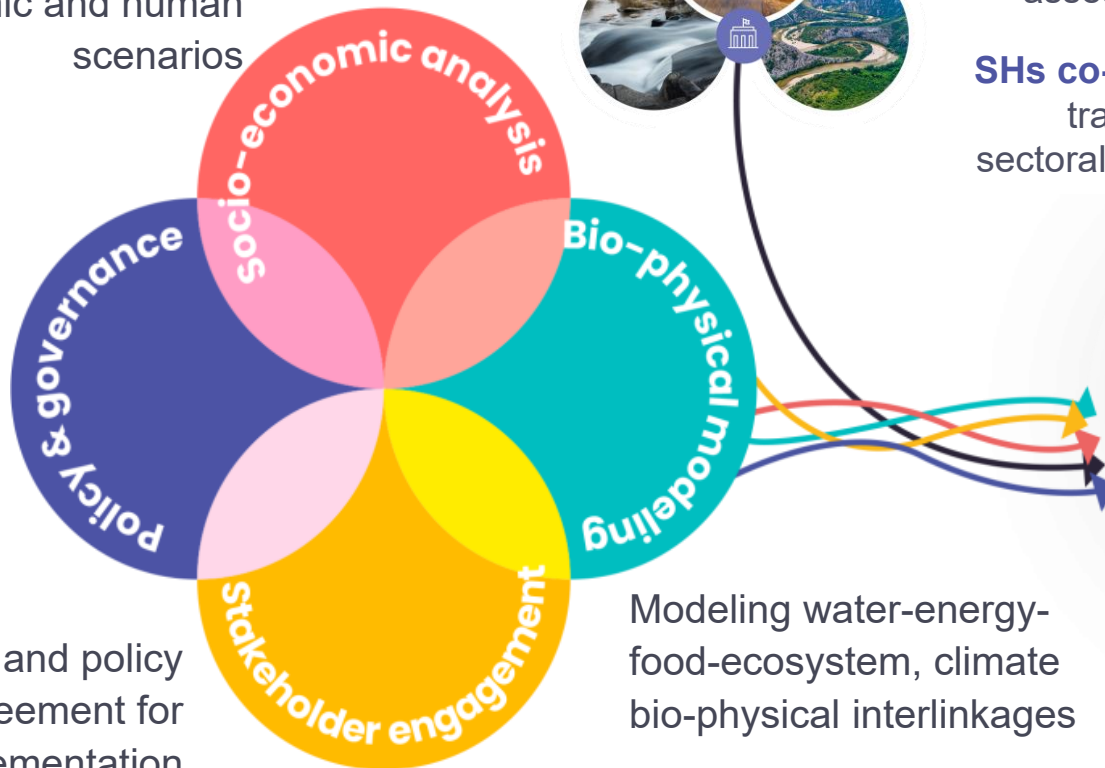


Decision support tool to facilitate SHs dialogue > assessment of policy impact

SHs co-creation approach for transboundary and cross-sectoral resource management

Governance and policy context

SHs ambitions and policy preferences, agreement for policy implementation

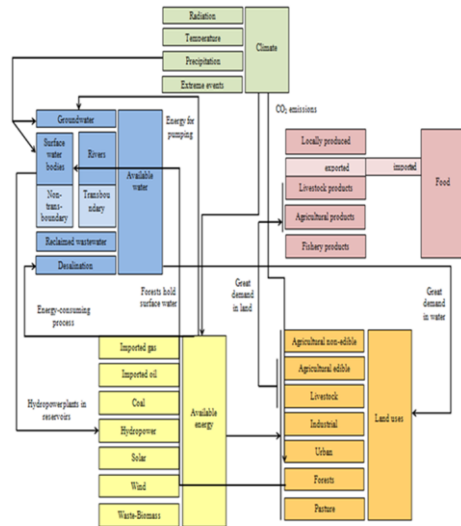


The NEXOGENESIS solutions



Nexus System Thinking and Integration

WEFE Casual loop maps



Model

SDM - a tool that connects 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 WEFE nexus
 - ✓ validation of the causal loop maps
 - ✓ policy interventions and coherence assessment
 - policy instruments to be included in the modelling

Products

- Complexity science decision support - **NEPAT Policy Assessment Tool (NEPAT)**
- Quantified interlinkages between the WEFE sectors
- Assessment of policy impacts related to the nexus sectors
- WEFE nexus footprint
- Climate projections/ scenarios

End Users

- ✓ Authorities
- ✓ Policy makers at local level
- ✓ Universities
- ✓ NGOs
- ✓ Farmer associations
- ✓ Water utilities
- ✓ Other organizations

Conceptual model agreed

System Dynamics Model baseline results to be presented today

Policy instruments to be discussed today

NEPAT tool intro tomorrow

Networking session tomorrow



Selected priority instruments in LV and LT

Nexus sector	Lithuania	Latvia
Water	Reduce water pollution load from urban areas: Nature-based solutions, e.g., constructed wetlands for smaller agglomerations	
Energy	Increase differentiation of energy sources in the energy mix, i.e., solar for small-scale application	Increase differentiation of energy sources in the energy mix, i.e., solar for small-scale application, wind for large commercial application, revenue for municipalities, biomethane 2-nd generation
	Reduce GHG emissions from (heat) energy consumption, i.e., energy performance of buildings, energy efficient technologies	NA
Food/agriculture	Increase biological farming , i.e., application of fertilizers, biologically grown products	
	Alternated agricultural practices , e.g., minimal tillage, certification of fields, soil quality protection	
Ecosystem	Increase land areas in optimum moisture conditions, i.e., constructed wetlands	Ensure sufficient ecological flow , i.e., removal of obstacles, river restoration

Priority instruments defined during the 3rd SH workshop in Vilnius, on 15 June 2023

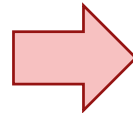


Paving the way towards long-term stakeholder cooperation

Governance assessment

Governance assessment of **resource management** procedures & practices:

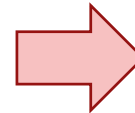
- 2 stakeholder interview rounds in Latvia and Lithuania



Cros-border cooperation

Promotion of **regional & local cooperation activities** for integrated management of the Lielupe River Basin resources:

- Transboundary stakeholder workshop in Bauska, Latvia



Stakeholder agreement




Facilitating process towards the design and adoption of a (transboundary) **stakeholder agreement** for integrated management of the Lielupe River Basin resources at various levels

NEPAT shall promote communication, bridging national and local level stakeholders

Practical steps towards SH agreement to be discussed today



You are kindly invited to follow NEXOGENESIS

- NEXOGENESIS website:
<https://nexogenesis.eu/>
- NEXOGENESIS social media:
 -  X: [@NEXOGENESIS_eu](https://twitter.com/NEXOGENESIS_eu)
 -  LinkedIn: [@NEXOGENESIS](https://www.linkedin.com/company/NEXOGENESIS)
 -  YouTube: [@nexogenesis4209](https://www.youtube.com/channel/UCnexogenesis4209)

