



Webinar: ‘Nexus research for improved policy support: water scarcity in Europe’

***31 January 2023
(14:00 - 16:45 CET)***

Virtual Event

<https://bit.ly/3GJhOuU>



AGENDA

Opening and welcome

14:00

Floor Brouwer - Nexus Project Cluster

Paul Webb - Head of Department for “Green Europe”
Research at European Research Executive Agency
(REA)

Octavi Quintana – Director at Partnership for
Research and Innovation in the Mediterranean Region
(PRIMA)

14:15 Tour de table (10 projects to present themselves)

Moderation: Giannis Adamos (University of Thessaly)

Projects to introduce themselves (5 minutes)

- Title and acronym of project, website, start/end date, the main objective
- What are the policy-relevant questions addressed, and when are outcomes foreseen?
- What are the main constraints faced in the case study work?

GoNexus - Manuel Pulido-Velazquez (Universitat Politècnica de València, UPV)

GoNEXUS: Innovative tools and solutions for governing the water-energy-food-ecosystems NEXUS under global change

Website: <https://gonexus.eu/>

GoNEXUS addresses the WEFE nexus by innovatively combining modeling techniques with nexus dialogues. The project will look at the EU level and other case studies in the Danube, Spain, and Italy, as well as two African basins and at the global level, acknowledging the interlinkages across scales (e.g., how EU policies influence local actions).

REXUS - José González Piqueras (Universidad de Castilla-La Mancha)

REXUS: Managing Resilient Nexus Systems Through Participatory Systems Dynamics Modelling

Website: <https://www.rexusproject.eu/>

REXUS is developing and validating knowledge and tools to facilitate the transition from WEFE NEXUS theory to practice, considering climate impacts. REXUS is helping the shift from Nexus Thinking to Nexus Doing by bringing together participatory stakeholder alliances with scientific data and models in four pilot cases at the European level in Spain, Greece, two transboundary areas in Italy/Slovenia, and Lower Danube (Romania/Bulgaria/Serbia), and a case study in Latin America (Colombia).

NEXOGENESIS – Janez Susnik (IHEDelft, Institute for Water Education)

NEXOGENESIS: Facilitating the next generation of effective and intelligent water-related policies utilising artificial intelligence and reinforcement learning to assess the water-energy-food-ecosystem (WEFE) nexus.

Website: www.nexogenesis.eu

NEXOGENESIS will identify and model WEFE nexus interlinkages, reduce uncertainties of how new policies and stakeholder behaviour affect the nexus through the development of a machine-learning “Self-Learning Nexus Assessment Engine (SLNAE)” -will develop and apply a WEFE Nexus Footprint.

The project will demonstrate and validate the NEXOGENESIS framework including the application of the SLNAE in five case studies throughout Europe (Lielupe River Basin, Lithuania-Latvia; Adige River Basin, Italy; Jiu River Basin, Romania; Nestos/Mesta River Basin, Bulgaria-Greece) and South Africa (Inkomati-Usuthu). NEXOGENESIS supports out-scaling of the framework to other basins and wider spatial areas.

NEXUS-NESS – Fernando Nardi (WARREDOC, University for Foreigners of Perugia)

NEXUS-NESS - NEXUS NATURE ECOSYSTEM SOCIETY SOLUTION. Fair and Sustainable Resource Allocation Demonstrator of the Multiple WEF Nexus Economic, Social and Environmental Benefits for Mediterranean Regions Website: <https://prima-nexus-ness.org/>

NEXUS-NESS aims to co-produce and co-test with stakeholders WEF Nexus management plans for fair and sustainable allocation of resources. NEXUS-NESS will deploy trans-disciplinary methods and multi-sector scenarios by integrating bio-physical models and engagement tools for building a dedicated service to operationalize the proposed WEF Nexus approach, namely the NEXUS-NESS Service. This new service will transfer and test science-driven WEF Nexus knowledge to address real case study issues. NEXUS-NESS will adopt and test the proposed WEF Nexus bottom-up approach in four Nexus Ecosystem Labs in Italy, Spain, Egypt, and Tunisia. A WEF RRI-based Nexus Innovation Ecosystem Approach supported by a novel Multi-Stakeholder and User Platform will effectively engage all stakeholders, including the private sector, for creating long-lasting Innovation Ecosystems based on collaboration among academia, industry, different levels of the public sector, and citizens.

LENSES - Stefano Fabiani (CREA - Council for Agricultural Research and Economics)

LENSES - Learning and action alliances for Nexus environments in an uncertain future
Website: <https://www.lenses-prima.eu>

LENSES aims at enhancing system understanding, gathering and structuring knowledge to unravel complexity and manage uncertainty in Water Ecosystem Food systems, with their dynamic evolution. Coping with uncertainty and understanding “what are the intrinsic qualities that render a WEF system resilient?” is vital to building resilient Nexus systems, i.e. developing the capacity of Nexus systems to adapt quickly to changes and disruptions.

In this context, LENSES wants to contribute to improved water allocation, and enhanced food security while preserving ecosystems and aiding climate change adaptation by supporting the operationalization of the Nexus paradigm (from Nexus Thinking to Nexus Doing) through a collective learning process, which integrates the concepts of sustainable Nexus management (progressing Sustainable Development Goals, SDGs) with a resilience-oriented approach, leading decision-makers in accepting uncertainty as an integral part of management and decision-making.

This will be done in six demonstration pilot sites distributed across the Mediterranean basin, which cover a wide range of environmental, socio-economic, and socio-technical conditions that are relevant across the whole Mediterranean area. This will put the LENSES approach to the test and build a broader evidence base on the opportunities it offers.

BONEX – Antonia Lorenzo (Bioazul)

BONEX- Boosting Nexus Framework Implementation in the Mediterranean

Website: <https://bonex-prima.eu/>

BONEX project aims to provide practical and adapted tools, examine concrete and context-adapted technological innovations, enhance policies and governance and facilitate WEF Nexus practical implementation that balances the social, economic, and ecological trade-offs.

SURE-NEXUS – Jordi Morató (Technical University of Catalunya)

SURE-NEXUS - Ensure fair NEXUS transition for climate change adaptation and sustainable development implementation based on coupled nature-based systems and bioeconomy

Website: <https://mel.cgiar.org/projects/1729>

SURE-NEXUS will establish promising small-scale innovative-based-nature solutions and assess their productivity and value to the local communities. The integrated tools will be tested in four innovative Living Labs focused on relevant NEXUS actions.

WEFE4MED - Fadi G. Comair (The Cyprus Institute)

WEFE4MED - Towards a Mediterranean WEFE Nexus Community of Practice

Project: <https://www.cyi.ac.cy/index.php/waterresearchandmanagement-ongoing/wefe4med-towards-a-mediterranean-wefe-nexus-community-of-practice.html>

WEFE4MED will gather scientists, practitioners, policymakers, investors, local authorities, the media and other stakeholders in a Mediterranean WEFE Nexus Community of Practice (NCoP) to provide convincing practical and scientific evidence of the Nexus benefits as a basis for decision-making in integrated natural resources management. WEFE4MED will achieve this by identifying, federating and promoting examples of best practice around the Mediterranean, including demonstrator projects, having Nexus at their core. It will foster long-lasting cooperation between actors as well as demonstrator projects to replicate and upscale them in other countries and to disseminate their achievements, including as part of a science-based advocacy effort aimed at policy-makers and investors.

BIONEXT - Anna-Stiina Heiskanen and/or Soile Oinonen (SYKE)

BIONEXT - The Biodiversity Nexus - Triggering transformative change for sustainability
BIONEXT will develop knowledge, tools, and guidance for mainstreaming biodiversity into policy-making and provide concrete options on how to initiate, accelerate and upscale biodiversity-relevant transformative change in society. We plan to involve policy- and decision-makers and allow them to explore the concept of just transformative change. The project aims to deliver an innovative Nexus Modelling Framework that will integrate scenarios and pathways modelling interlinkages between biodiversity, water, food, energy, transport, climate, and health, and enabling simulation of the impacts of indirect and direct drivers on biodiversity, and developed into an interactive BIONEXT App, contributing to science brokerage, capacity building and networking to IPBES, EU policymakers, and civil society.

RETOUCH Nexus – Maria Vrachlioli (TU Munich)

RETOUCH Nexus - Resilient water governance Under climate Change within the WEFE NEXUS
Link (CORDIS): [Resilient water governance Under climate Change within the WEFE NEXUS | RETOUCH Nexus Project | Fact Sheet | HORIZON | CORDIS | European Commission \(europa.eu\)](#)

RETOUCH Nexus is about realizing the importance of an integrated approach in water governance. The project introduces and promotes the Water-Energy-Food-Ecosystems (WEFE) Nexus as a multi-level and cross-sectoral approach that advocates the EU water economy and, in addition, relies on ecological and social considerations. The overall objective of RETOUCH

Nexus is to design and foster integrated, innovative and inclusive Nexus-smart water governance schemes and institutional settings to promote a secure water future in the EU, resilient to climate change. RETOUCH Nexus follows an evidence-based approach to propose, assess and optimize a set of WEF Nexus smart methods in six case studies reflecting various cross-sectoral, multi-level and multi-stakeholder water governance contexts. The project covers six case studies in the EU.

15:15 Core topic: Water Scarcity and the nexus in European policy

Moderation: Chrysi Laspidou (University of Thessaly)

Water stress and water scarcity are of major concern in Europe. According to estimates by the European Environment Agency (EEA), some 20% of European land and 30% of the population are affected by water stress. Water scarcity is linked to multiple resources, including food, energy, land, ecosystems, and climate. Possible mitigation measures include improving water efficiency or strengthening the resilience of ecosystems. Several nexus projects have explored the potential of more nexus-compliant practices to address water scarcity.

Please find below a list of questions on nexus and water scarcity, which would be relevant to DG Environment (following the exchange with Dagmar Behrendt-Kaljarikova of Unit C.1):

- Which are the challenges faced in applying the nexus approach (e.g. governance issues, no clear guidance, etc.) and which potential legal gaps could be addressed by the European Commission?
- Which are the risks of climate change and projected water demand/consumption by economic sectors (agriculture, livestock, energy, industry, tourism, etc.) to ecosystems and drinking/domestic water supplies?
- Which contributions can the actions of the EU Adaptation Strategy (i.e. developing water resource allocation and water-permits, raising the water-saving requirements for products, encouraging water efficiency and savings, promoting the wider use of drought management plans

and/or promoting sustainable soil management and land-use) make to the achievement of WFD objectives (e.g., good status/potential of surface and groundwater water bodies) by the 2027, 2033 and/or 2039 deadlines?

- Which are the most useful measures to avoid/reduce water resources overexploitation (e.g., of groundwater bodies) due to irrigation water abstractions?
- Which indexes, e.g., related to water balances, are most appropriate to improve the management of water scarcity and/or drought situations?
- How can uncertainties (climate change, unknown water resources or abstractions, economic sector development, others) be best incorporated in managing water scarcity and/or drought situations?

The questions are varied and can hopefully serve to link the nexus projects with policy development. Most of these questions are closely related to work undertaken within the ad-hoc technical working group on water scarcity and droughts of the WFD Common Implementation Strategy, which runs until 2024. Therefore, it would also be interesting to gather information from the nexus projects, including which results they expect within these two years.

Dagmar Kaljarikova Behrendt (European Commission, DG ENV) to introduce the topic, including main policies at stake (e.g., biodiversity, agriculture, Green Deal) (10 minutes).

Contributors from the projects:

GoNexus - Maria Blanco (Universidad Politécnica de Madrid, UPM)

REXUS - José González Piqueras (Universidad de Castilla-La Mancha)

NEXOGENESIS – Janez Susnik (IHEDelft, Institute for Water Education)

SURE-NEXUS – Jordi Morató (Technical University of Catalunya)

WEFE4MED - Fadi G. Comair (The Cyprus Institute)

Water Futures – Phoebe Koundouri (Athens University of Business and Economics). Smart Water Futures - Designing the next generation of urban drinking water systems. [Water Futures](#)

16:25 Measure the impact of the Nexus research on the policy side (Barbara Willaarts, IIASA)

Barbara Willaarts will update the webinar on the recent survey “Taking Stock of Nexus Challenges and Proposed Solutions for Stakeholders Across Europe and Beyond” prepared in the framework of the COST Action NEXUSNET. Building on the extensive portfolio of Nexus projects developed across Europe, and beyond, this survey is to map the main Nexus challenges identified across regions and explore barriers and opportunities in implementing the identified policy solutions. Some preliminary results of the survey are presented.

16:40 Closure of the Webinar

Notes:

● **For content-related questions please contact to:**

Floor Brouwer (UNU-FLORES): floor.brouwer@unu.edu

Serena Caucci (UNU-FLORES): caucci@unu.edu

● **For technical matters please contact to:**

Zeynep Ozkul (UNU-FLORES): ozkul@unu.edu



UNU
FLORES

Integrated solutions for water, energy, food and ecosystems

A presentation on GoNEXUS

Manuel Pulido-Velazquez, Héctor Macian-Sorribes,
Amparo Martínez-Domingo

(IIAMA-UPV)

mapuve@hma.upv.es, hecmasor@upv.es,
demardo@upv.es



GoNEXUS goals

- Tackle the *overshoot* of natural resources to maximise our planet's environmental security
 - Develop innovative tools and solutions for governing the water-energy-food-ecosystems NEXUS
-

Project Partners



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Universiteit Utrecht



PBL Netherlands Environmental
Assessment Agency



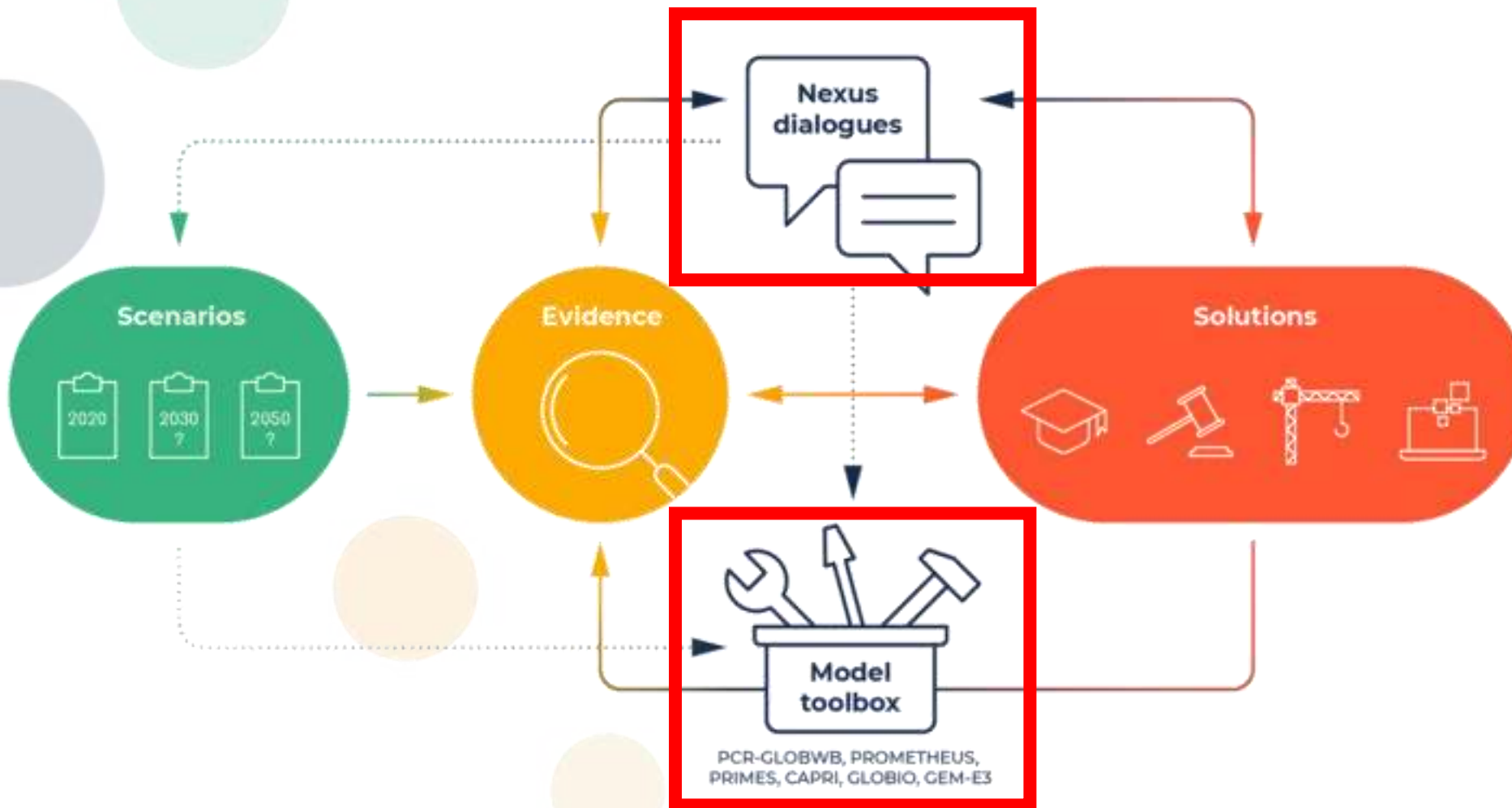
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E3 Modelling
Energy Economy Environment

Methodology



8 case study areas

1. Global
- 2. European Union**
3. Danube river basin
4. Lake Como river basin
5. Júcar river basin
6. Tagus and Segura river basins and water transfer
7. Senegal river basin
8. Zambezi watercourse

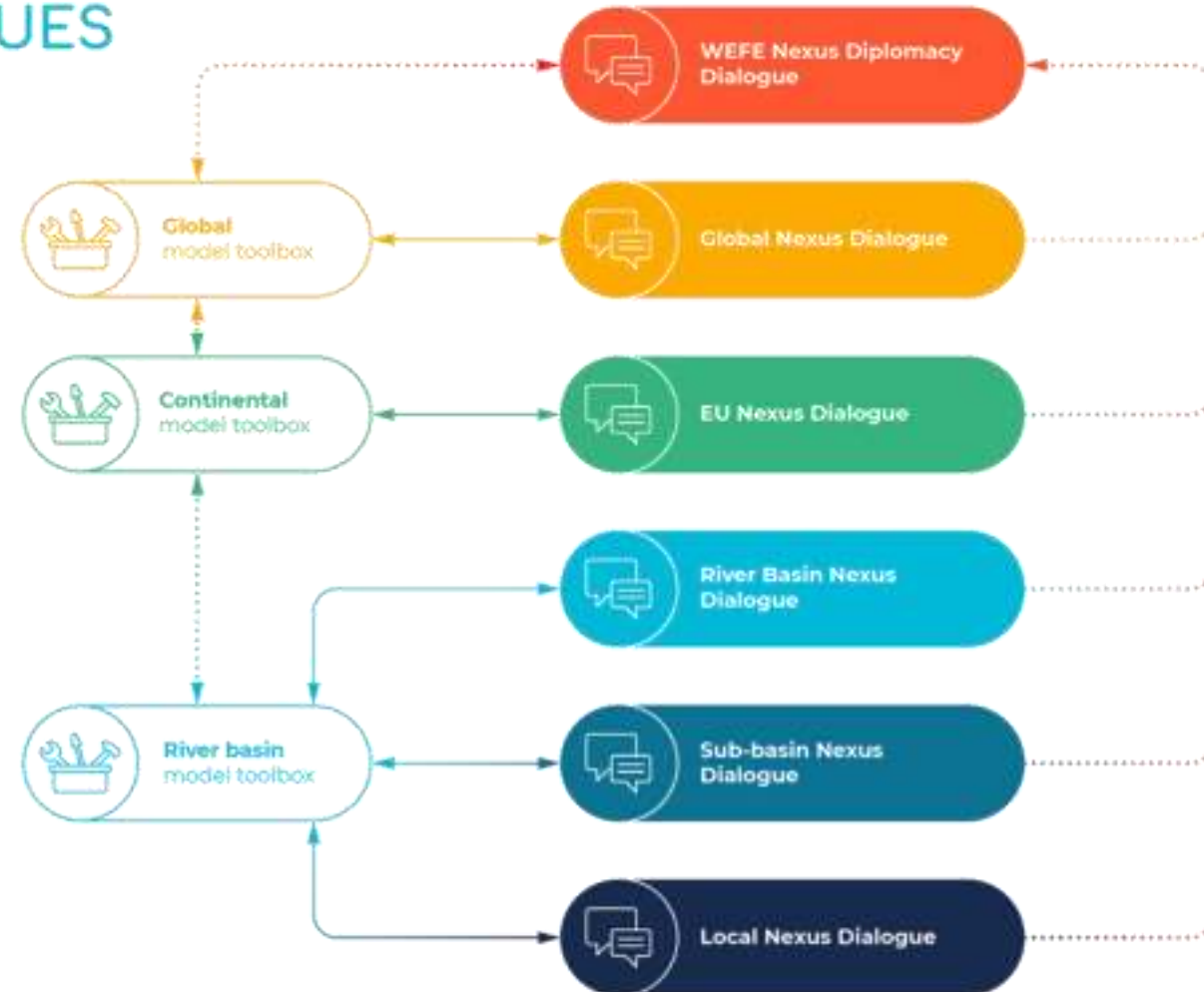


NEXUS dialogues

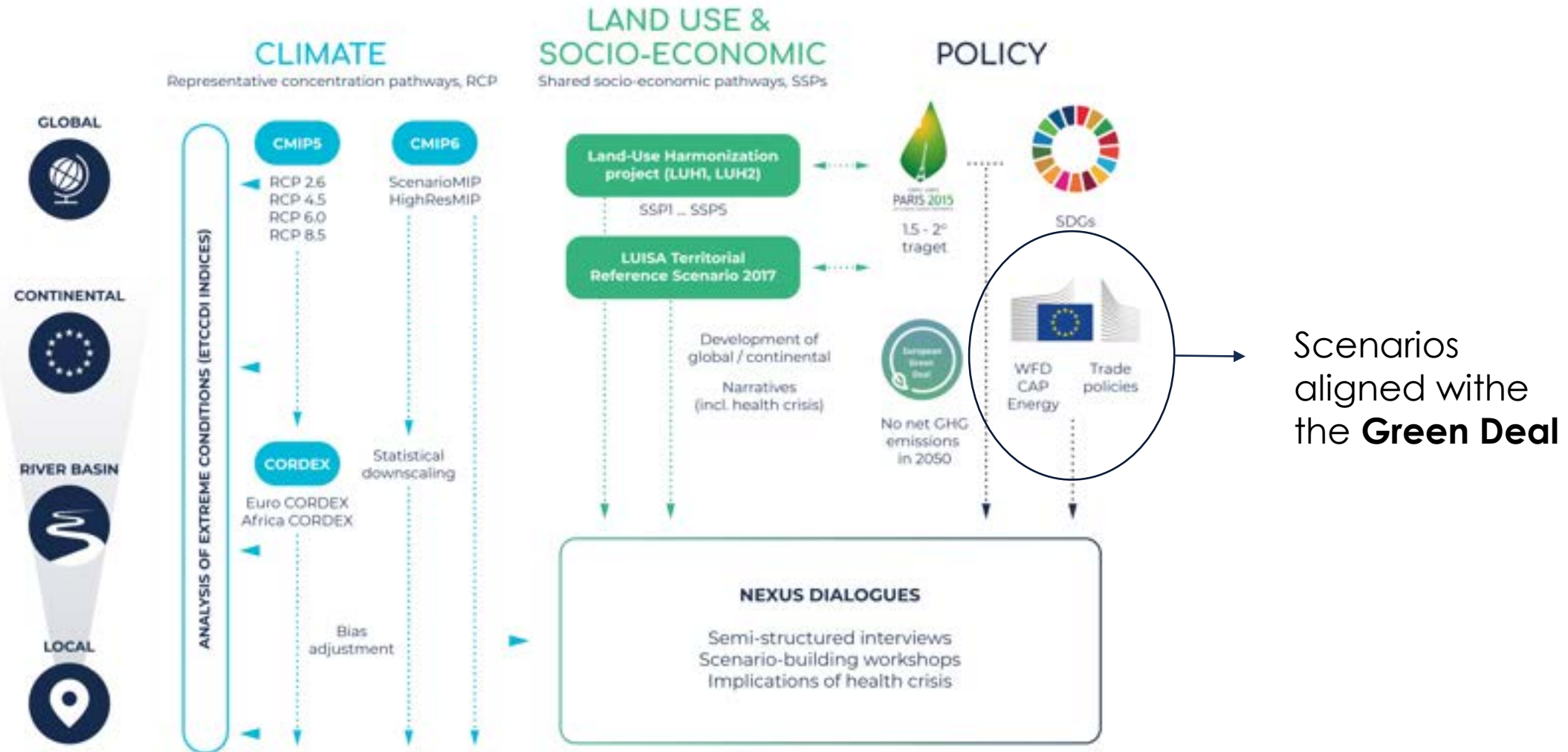
Stakeholder meetings to
co-design scenarios,
models, indicators and
solutions

Goal : understand conflicts
& trade-offs, sectoral
policies, synergies, and
uncertainties

NEXUS DIALOGUES



Future projection scenarios



European case study

Preliminary identification of **challenges**



All-encompassing challenges: **water scarcity & environmental degradation**

(A) Growing **water scarcity** and water **stress** index due to **increasing water demand** related to macroeconomic trends and climate change

(B) Green **energy transition** and the reduction of GHG emissions

(C) **Reconciling** water, energy and food security with **ecosystems** conservation

(D) Nexus **governance:** Search for **policies** that are **robust** under change, economically and ecologically sustainable

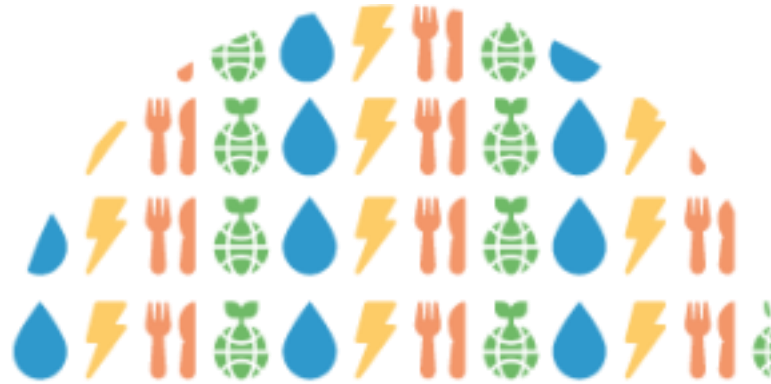
Contact us!

GoNEXUS.eu

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BONEX

Boosting Nexus Framework Implementation in the Mediterranean

Nexus research for improved policy support: water Scarcity
in Europe

Antonia M^a Lorenzo López

31/01/2023

INFORMATION OF THE CALL

BONEX : Boosting Nexus Framework Implementation in the Mediterranean

- **Nexus Theme:** Water-Energy-Food-Ecosystems, **Call:** 2021
- **Innovation Action**
- **Start date:** 01/05/2022, **end date:** 30/04/2025
- **Consortium:** 16 partners (5 SMEs) from 8 countries (Germany, Italy, Portugal, Spain, Jordan, Lebanon, Morocco, Tunisia)



WHAT IS BONEX?

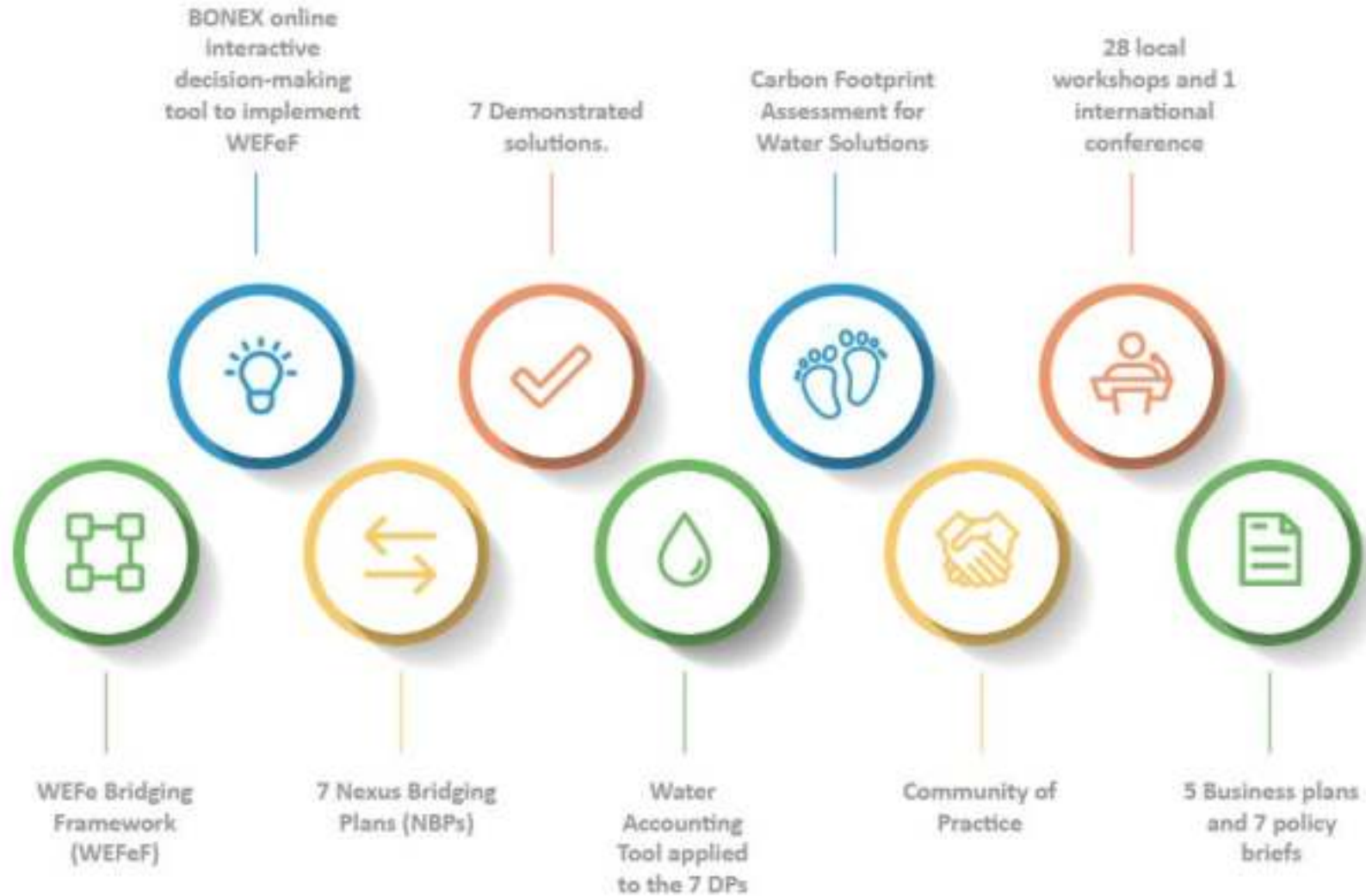
Our mission

BONEX aims to:

- **provide practical and adapted tools** examine concrete and context-adapted technological innovations, enhance policies and governance and **facilitate WEFe Nexus practical implementation** that balances the social, economic, and ecological trade-offs.



BONEX EXPECTED OUTCOMES



WEFE FRAMEWORK (WEFeF)

WEFeF is a **methodological framework** with the necessary tools to produce context-specific Nexus Bridging Plans (NBP) in the MedRegion



Critical pillars:

1. Integration of ecosystem services
2. Exploitation of results to maximize adoption of innovative WEFe practices and technologies in MedRegion
3. Holistic WEFe Nexus diagnosis that takes into account specific social-ecological, institutional and governance aspects
4. Use of a Water Accounting Tool

WEFeF will be implemented and validated in 7 Demonstration Projects (TRL 3 → 6)

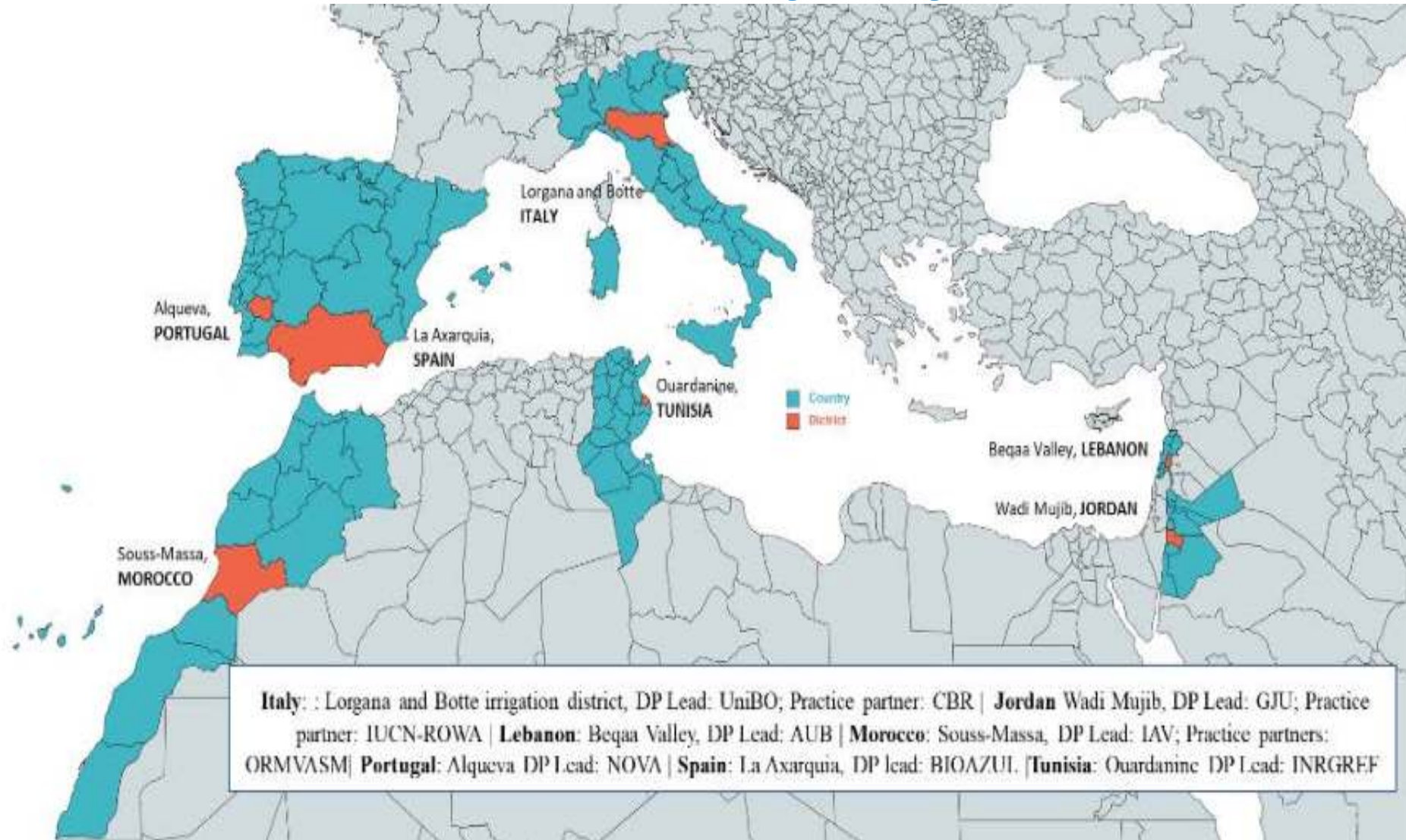
NEXUS BRIDGING PLANS

Definition

*Concise and practical **context-specific plans** (strategies) guiding the transdisciplinary implementation of the proposed WEFe solution approaches*

- Include: Specific objectives and measures (e.g. policy adaptations), tasks, milestones, roles for different actors throughout the implementation, assessment of risks, economic viability of the proposed WEFe solution approaches.
- NBPs will be built in a participatory way with the active involvement of local actors that will be engaged in **Regional Working Groups (RWG) -> Participatory workshops**
- NBPs will be produced in 7 selected DPs -> Lighthouse WEFe solutions in the MedRegion

DEMONSTRATION PROJECTS (DPs)



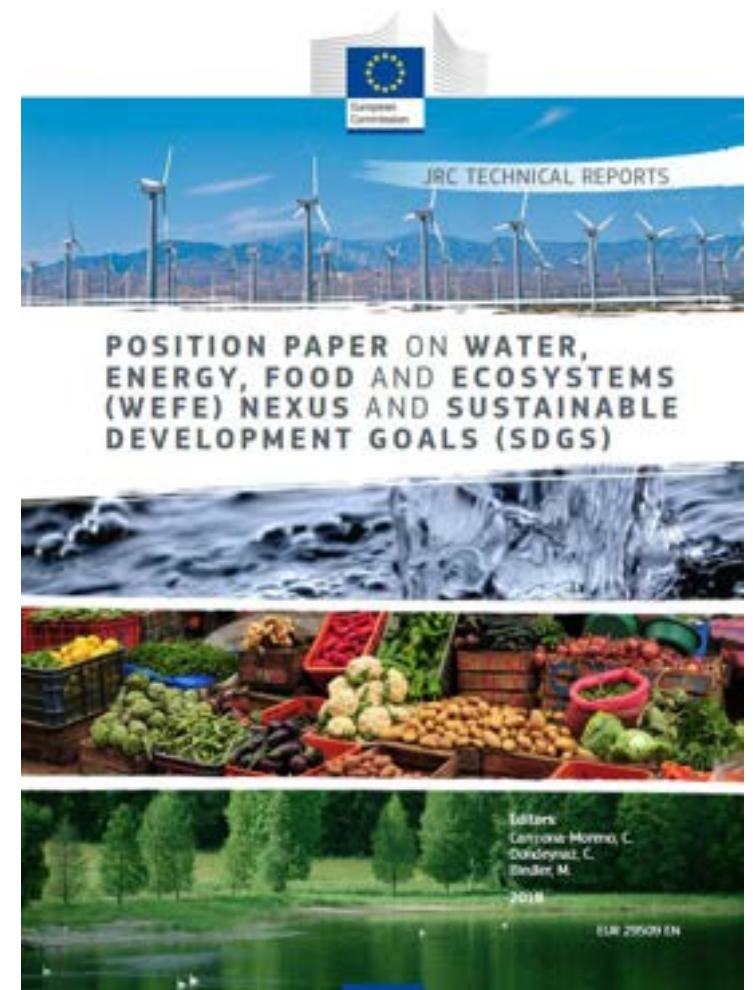
DEMONSTRATION PROJECTS (DPs) IN BONEX



WHAT IS BONEX?

Policy relevant questions addressed

- How to integrated WEFE Nexus **management and governance** across the multiple sectors of food, energy, water and ecosystems?
- How to move from a **single sector** planning towards a **more holistic** approach to planning?
- How to realize the interconnection between Water, Energy, Food Security and Ecosystems?
- How to integrate ecosystem dimension in the water-energy-food nexus (WEF)?
- How to catalyze strong and binding coordination mechanisms (Nexus Policy Dialogues) for the transition to the WEFE nexus approach?
- How to translate existing research results into effective tools for the implementation of WEFE nexus?



WHAT IS BONEX?

Constraints

- Conflicts between users of natural resources and energy.
- Interest oriented behaviors in the data collection and decision-making procedures.
- Reluctance to change.
- Difficulties to overcome the “Silo approach” to the “Integrated and interconnected approach”.
- Lack of evidence and success cases showing the benefits of the WEF E Nexus which support implementations/planning/budget allocations/etc.



CONTACT DETAILS



Antonia Lorenzo

BIOAZUL SL

alorenzo@bioazul.com

Rafael Casielles

BIOAZUL SL

rcasielles@bioazul.com



Learning and action alliances for Nexus environments in an uncertain future LENSES



This project is part of the PRIMA programme supported by the
European Union

Learning and action alliances for Nexus
environments in an uncertain future

LENSES

Overview, approach and main goals

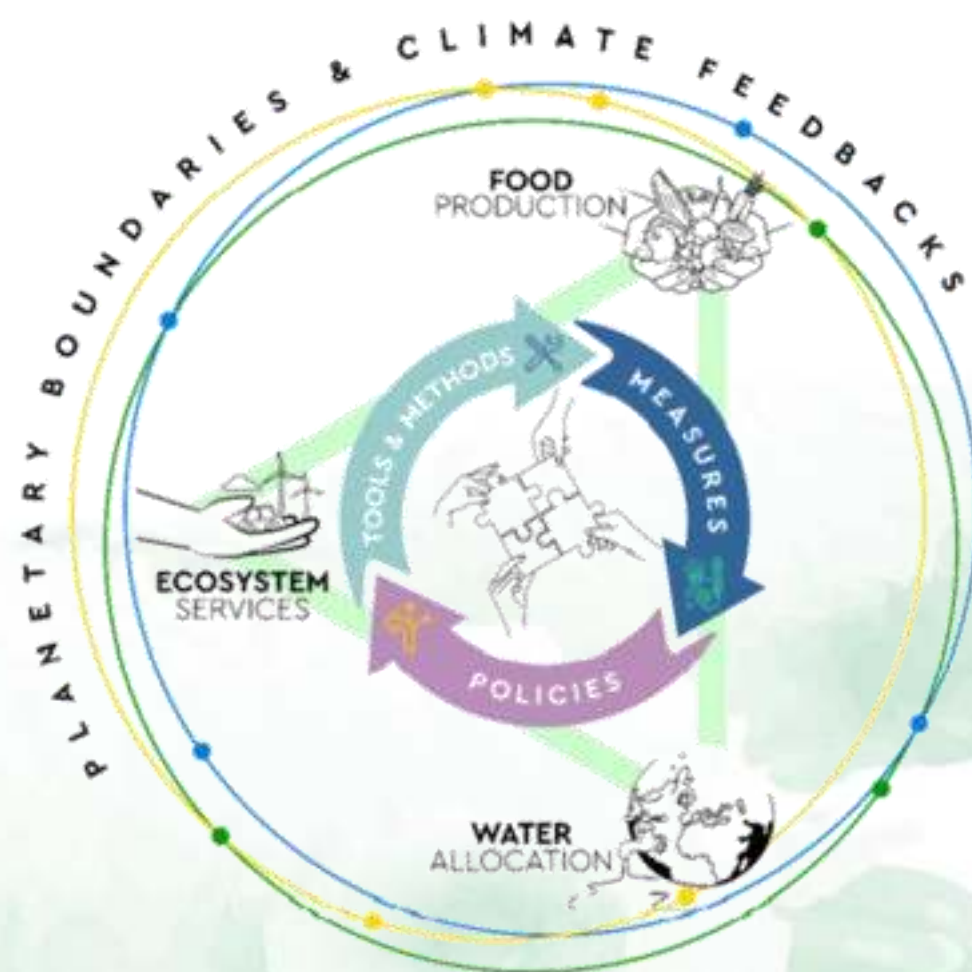
Stefano Fabiani



Resilient WEF Nexus systems is only possible through the true **engagement of all relevant parties in the policy-dialogue and decision-making processes** across the domains while incorporating uncertainty!

LENSES will use **LAA** and **PSDMs** in a multi-scalar WEF Nexus analysis to:

- i. Improve the **understanding of the interlinkages** between the different sectors of WEF Nexus and of how actions in one sector create consequences in the other sectors;
- ii. Support a socio-economic, policy and environment-related **scenario analysis**;
- iii. Help in the co-designing and building of systemic and innovative **resilience-enhancing solutions** (such as NBS), capable to support system transition towards sustainable development and SDG delivery;
- iv. Enhance **trust between stakeholders** and **awareness of the complexity of the systems** under investigation.



Structure of work plan

Middle Jordan Valley
(JO)

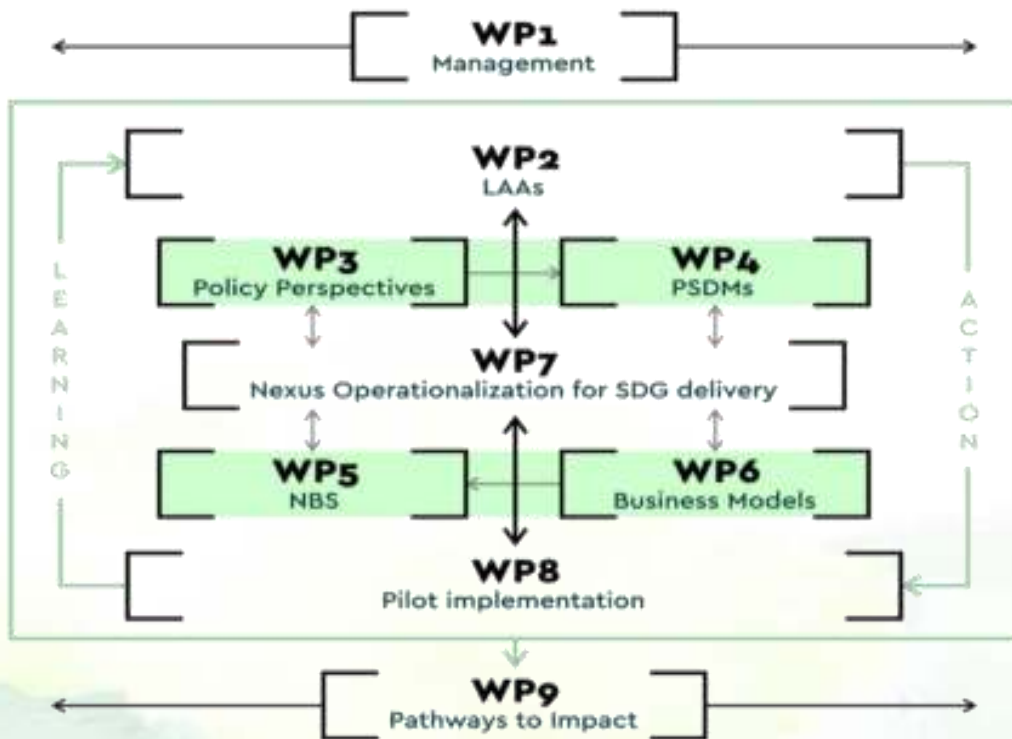
Galilee, Hula Valley
(Israel)

Guadalquivir basin,
Doñana national park
area (Spain)

Tarquiniia plain
(IT)

Gediz Basin &
Delta (Turkey)

International Long-Term
Ecological Research
Network Sites (GR)



- Different **conflicting water and land uses** (food production through agricultural activities, forest and natural ecosystems conservation and other activities (e.g. tourism, industrial production, etc.).
- Typical **Mediterranean conditions**, in terms of e.g. climate conditions and climate change impacts, interaction between surface water (SW) and groundwater (GW), potentially conflicting uses of the resources, relevance of agricultural activities, types of crops, social context and stakeholders.

Innovation potential and impact

1. ...acting in Nexus way;
2. Development of an operational approach to the **interdependent management** of Water-Ecosystems-Food resources (Mediterranean region conditions);
3. **Replicability of the demonstration cases** also after the project's end;
4. Creating strong **cross-sectoral links** between institutions including ground-level beneficiaries and relevant public authorities that govern the Nexus approach;
5. Strengthen scientific capacities and set-up a **collaborative WEF Nexus space** across the Mediterranean region.



LENSES



Learning and action alliances for **Nexus**
environments in an uncertain future

LENSES

Main project achievements



This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

Main project areas

- NBS catalogue

Key Performance Indicators

Recommended indicators

- 3.13 Surface runoff in relation to precipitation quantity
- 3.14 Water Quality – general urban
- 3.15 Total Suspended Solids (TSS) content
- 3.16 Nitrogen and phosphorus concentration or load
- 3.17 Metal concentration or load
- 3.18 Total faecal coliform bacteria

Show additional indicators

Business model

About Business Model Glossary

With this practical methodology, we aim to help practitioners in various sectors and positions to develop business models for Nature-Based Solutions (NBS) projects that they want to promote to address challenges related to the Water-Energy-Food Nexus.

The business model's development helps identify various elements to make possible the implementation of the solution; ranging from defining the necessary resources, the critical partners to collaborate with, the governance arrangements to maintain the solution, and the solution's cost structure up to a point to identify possible financing sources.

The **Business Model Canvas** proposed to apply in the context of the LENSES project follows the original Business Model Canvas by Osterwalder and Pigneur, with novel adaptations specifically to fit the case of NBS options provided by the Connecting Nature and the NMAO projects.

The development of NBS business models consists of 3 phases

- 1 Value Proposition Phase**
Defining the project's value proposition.
- 2 Value Creation and Delivery Phase**
Determining how the project creates and delivers value.
- 3 Value Capture Phase**
Establishing how the project captures value.

Indicators

nutrition and promote

men, indigenous peoples, family sources and inputs, knowledge.

increase productivity and production, heat, drought, flooding and other

gricultural research and extension productive capacity in developing

Main project achievements

- Pilot activities meetings and events
- #nexustories

Koiliaris Critical Zone (Crete – Greece)





HOME > PILOT AREAS > HULA VALLEY (ISR)



Hula Valle

Pilot leader: Nikolaos Nikolaidis



HOME > PILOT AREAS > DOÑANA REGION (SPAIN)

Pilot leader: Moshe Meron

Doñana regio



Pilot leader: Manuel Bea Martínez



Menemen Plain in Gediz Basin (Turkey)



Pilot leader: Zübeyde Abdurrahman Doğan






Main project achievements

- WEBSITE & Social

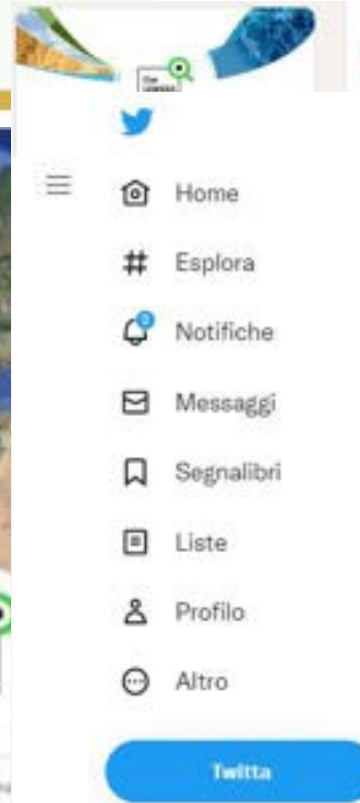
<https://www.lenses-prima.eu/>



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GA n° [20

109 visualizzazioni · 3 settimane fa



**Thank you
for your attention!**



Contacts:
stefano.fabiani@crea.gov.it

This presentation reflects only the author's view.

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This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]



Cost Action NEXUSNET
Working Group 3 “Policy Measures”

Assessing the policy impact of the Nexus research across Europe

Bárbara Willaarts, Chair WG3, International Institute for Applied Systems Analysis

Contributors (WG3 members):

Sarah Milliken (University of Greenwich)

Serena Caucci (UNU-FLORES)

Zeynep Okzul (UNU-FLORES)

Francesca Giroto (Università degli Studi di Milano)

Stanislav Martinat (James Hutton Institute)

COST ACTION NEXUSNET - Network on Water-Energy-Food Nexus for a Low-carbon Economy in Europe and Beyond (CA 20138)

NEXUSNET is an **international network of researchers** collaborating with universities, research institutions, policymakers and the business sector to better **understand how the water-energy-food Nexus research fosters policy coherence and biophysical interactions** in the domains of water, energy and food, supporting the transition towards a circular and low-carbon economy in Europe.



Chair: Chrysi Laspidou

Vice-Chair: Floor Brouwer

WG1: Nexus modelling

WG2: Nexus applications

WG3: Policy measures and impacts

WG4: Outreach

WG5: Events and capacity building

WG6: Stakeholder Engagement



Working Group 3- Policy measures and impact of nexus research in Europe

Objectives:

- Making nexus science meaningful and available to decision makers across scales and EU policy makers
 - Strengthen the Nexus governance research community
- ▶ **Chair: Bárbara Willaarts** (International Institute for Applied Systems Analysis)
 - ▶ **Co-chair: Luisa Prista** (Water Europe Board Advisor, former EU Commission official)
 - ▶ **Members: 49 from 23 European countries**



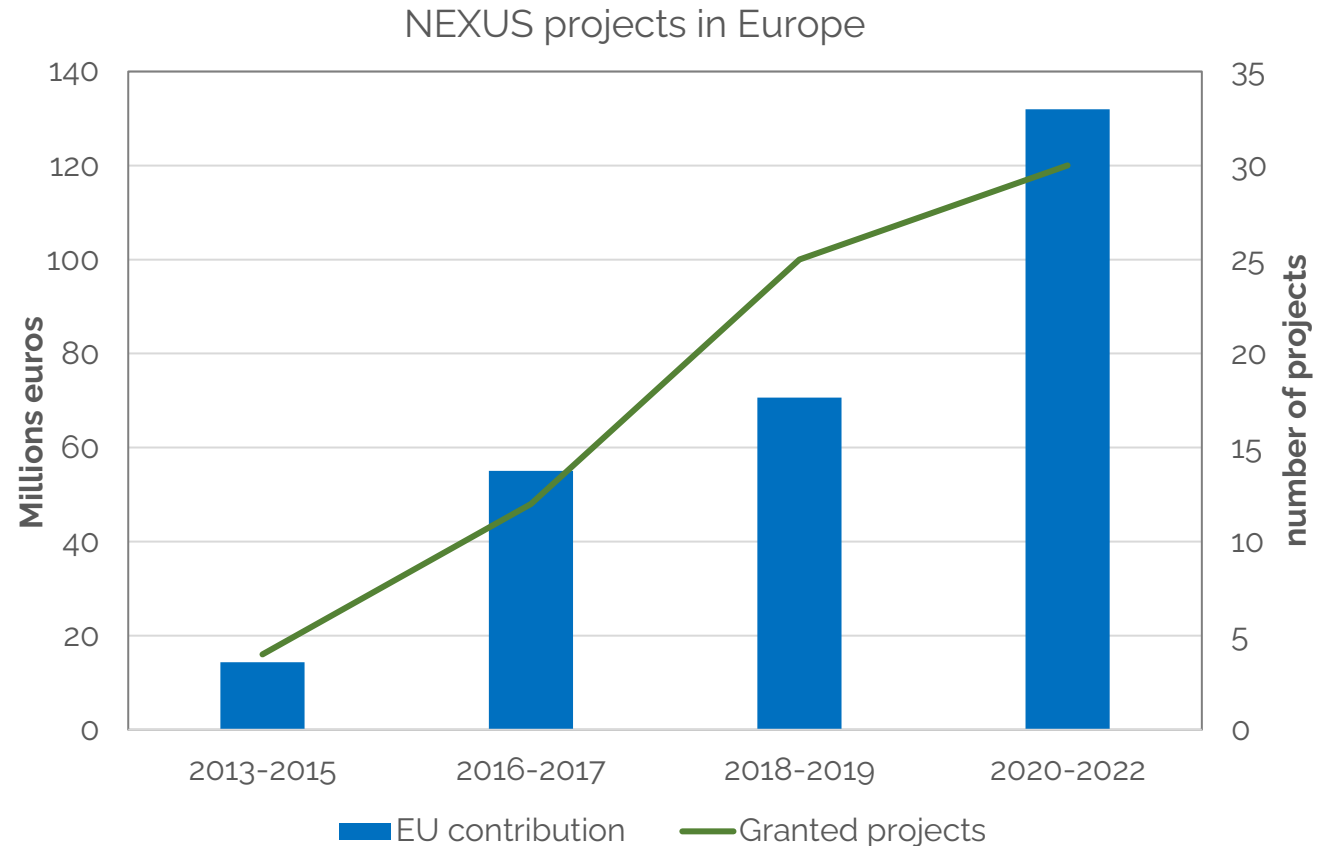
Activities to explore the impact of nexus science in policy

- **Mapping of nexus projects** funded (or co-funded) with European contributions across Europe
 - FP7, H2020, Horizon Europe, PRIMA (Section 1), JPI Urban Europe, COST
 - **Soon: LIFE and INTERREG**
- **Asses the policy recommendations and level of adoption** from nexus demonstrators and case studies across Europe



Mapping of nexus projects across Europe

- Between 2013-2022 **71 projects** have been funded through FP7, H2020, Horizon Europe, JPI Urban Europe, PRIMA, COST
- **272 million** Euros in contributions
- **Nine-fold** increase in a decade

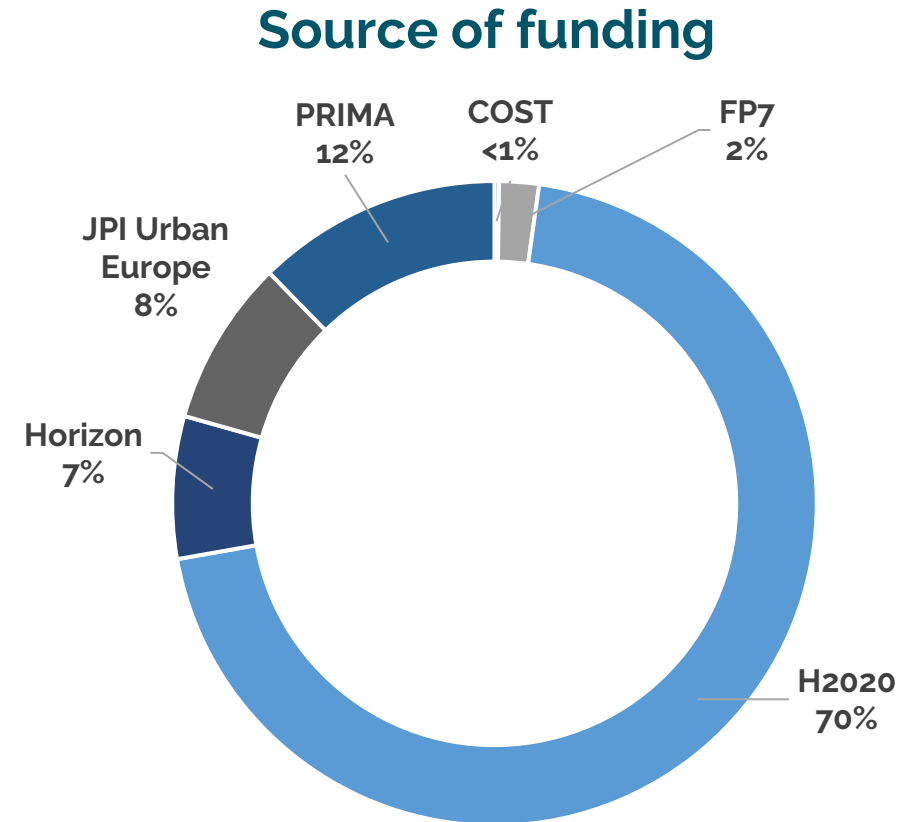


LIFE and INTERREG to be added..



Mapping of nexus projects across Europe

- **70%** funded through **H2020** (~190 million Euros)
- **12%** funded through **PRIMA** (~33 million Euros)
- **8%** funded through **JPI Urban Europe** (~23 million Euros)
- Remaining **10%**: Horizon, FP7, COST



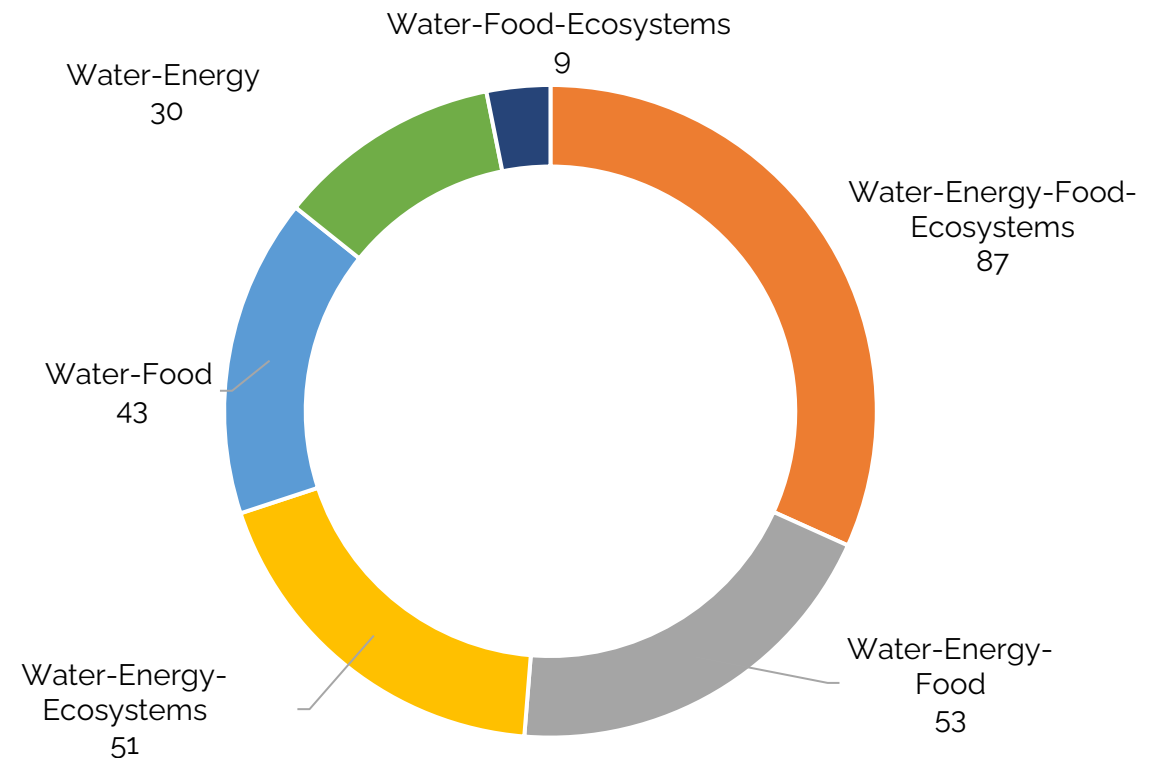
LIFE and INTERREG to be added..



Mapping of nexus projects across Europe

- Largest funding went to **WEFE**
- Followed by **WFE, WEF**
- Less funding to **WE or WF**
- **WATER** is core to all nexus projects
- The **ECOSYSTEM** dimension is gaining traction in the nexus research

Funding (mill Euros) per Nexus domain

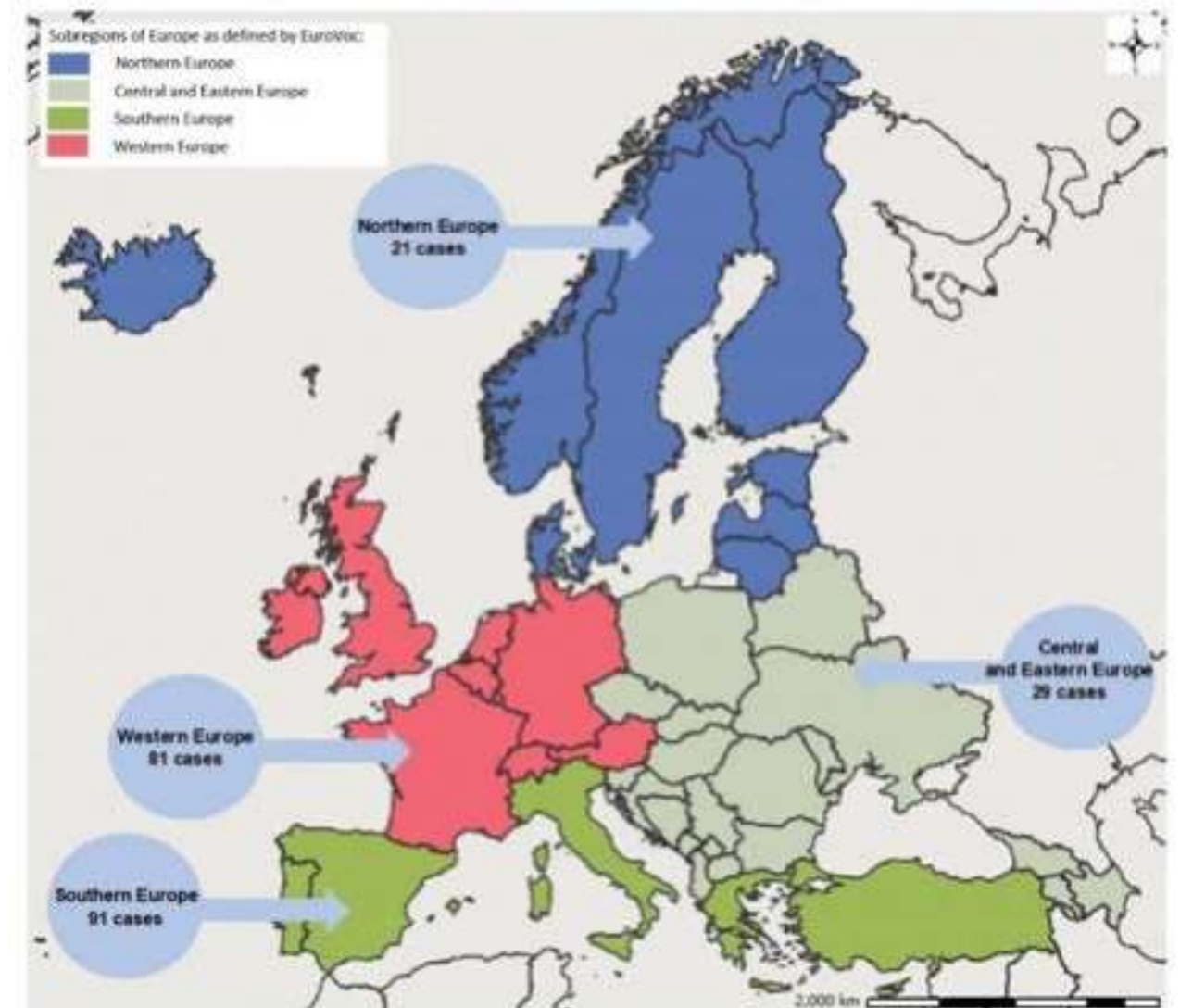


LIFE and INTERREG to be added..



Mapping of nexus demonstrators across Europe

- Over **220 demonstrators/case studies** across Europe
- Distribution:
 - **Southern 91**
 - **Western 81**
 - **Central and Eastern 29**
 - **Northern 21**
- Majority of efforts went to far to Southern and Western Europe

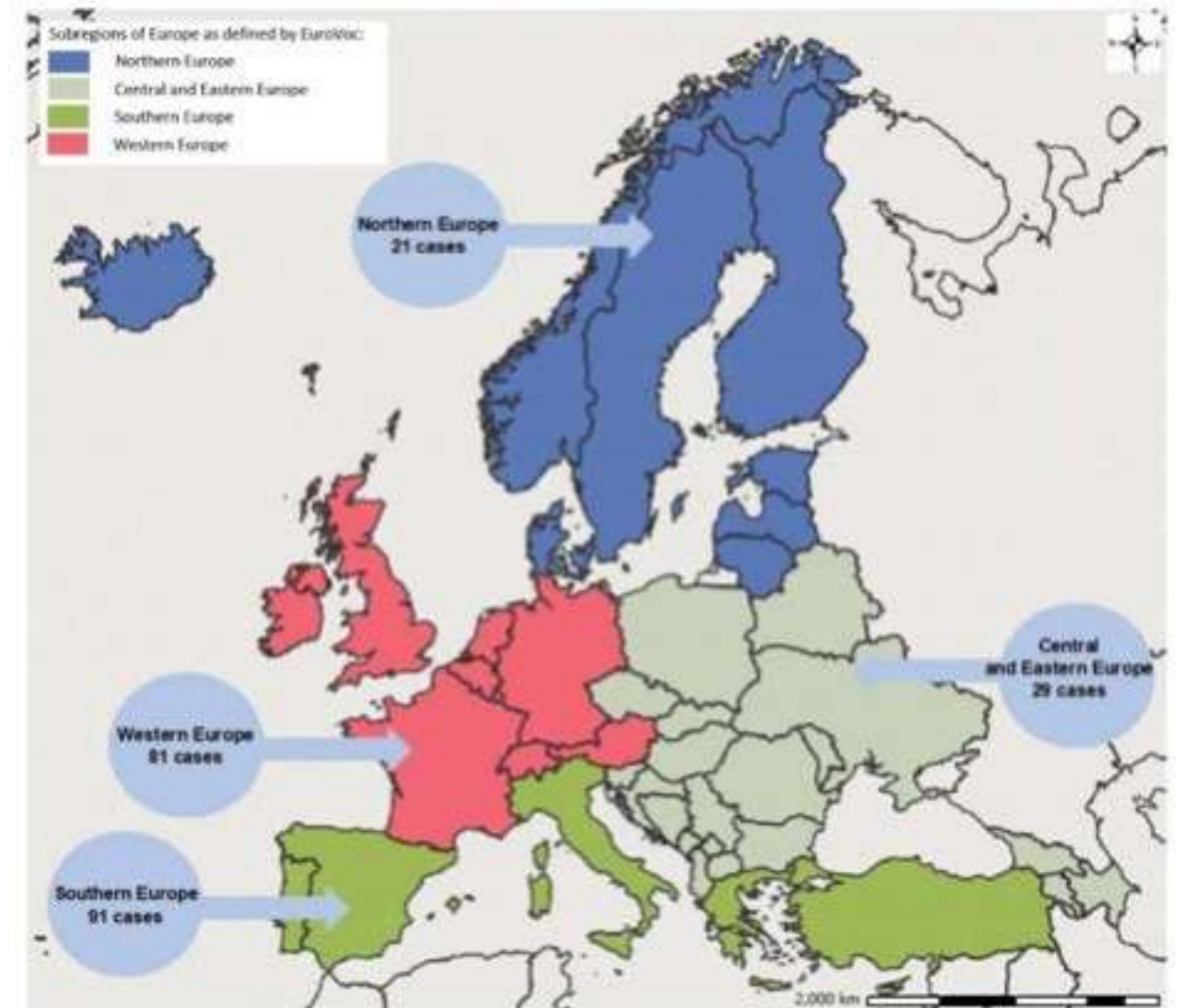


LIFE and INTERREG to be added..



Mapping policy impact of nexus projects

- Important questions pending:
 - Are there **recurrent nexus challenges across** different European **regions**?
 - **What** lessons learned and **policy recommendations emerged** from these **demonstrators**?
 - What is the **level of adoption of policy recommendations**?



LIFE and INTERREG to be added..



Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

PURPOSE

- **Systematic mapping** of **nexus** challenges and **policy recommendations across Europe** (and beyond)
- Understanding on how **nexus knowledge** is **influencing** the decision making and the **policy agenda**

STRUCTURE

- 5 sections
- 25 multi-choice and open questions.
- Time required: 15-20 minutes.
- Target audience: Case study coordinators or policy and stakeholder engagement experts

SECTION : Project Information

SECTION 2: Mapping Nexus Hotspots

SECTION 3: Mapping nexus challenges

SECTION 4: Understanding Underlying Causes of Nexus Challenges

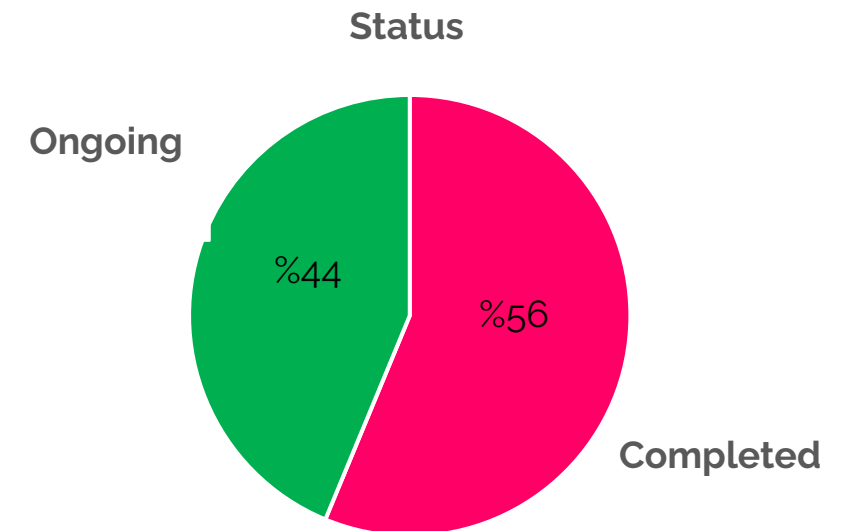
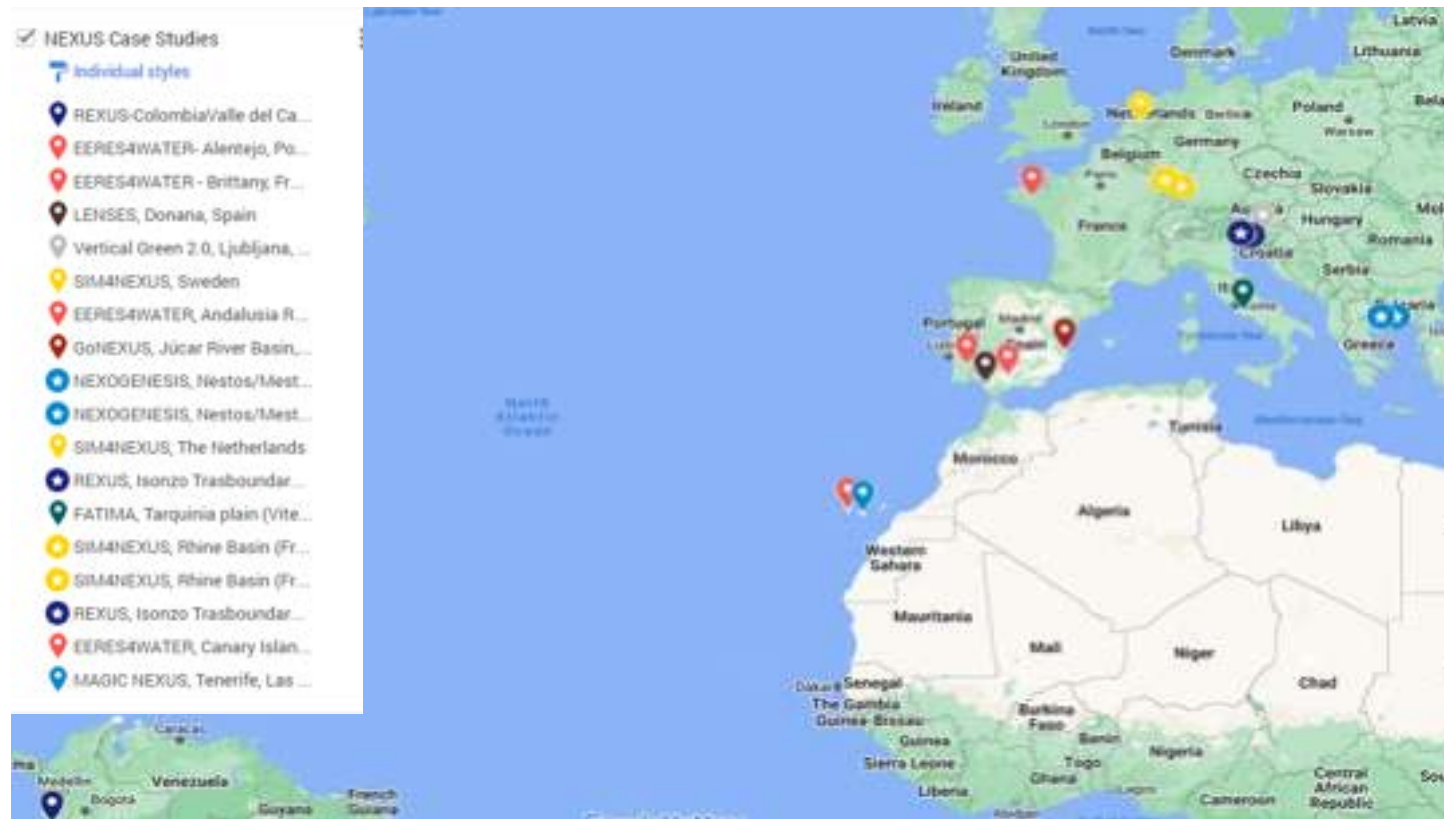
SECTION 5: Policy solutions Identified to Address Nexus Challenges

[LINK: https://form.jotform.com/222324362877055](https://form.jotform.com/222324362877055)



Survey *“Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”*

Mapping of nexus hotspots-ONGOING



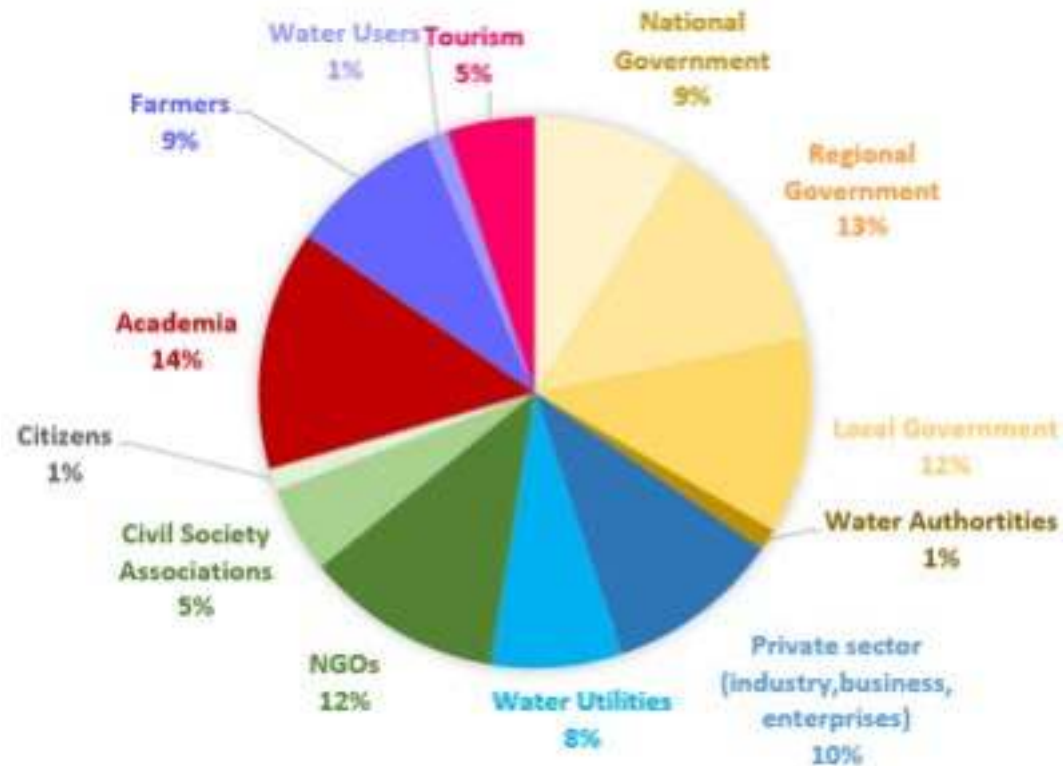
Based on a 10% rate of response...



Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

Mapping of nexus hotspots-ONGOING

Q7: Who are the key stakeholders connected to the nexus challenges investigated?



- A wide range of actors and across scales are involved in the nexus research project.
- Private sector to a lesser extent

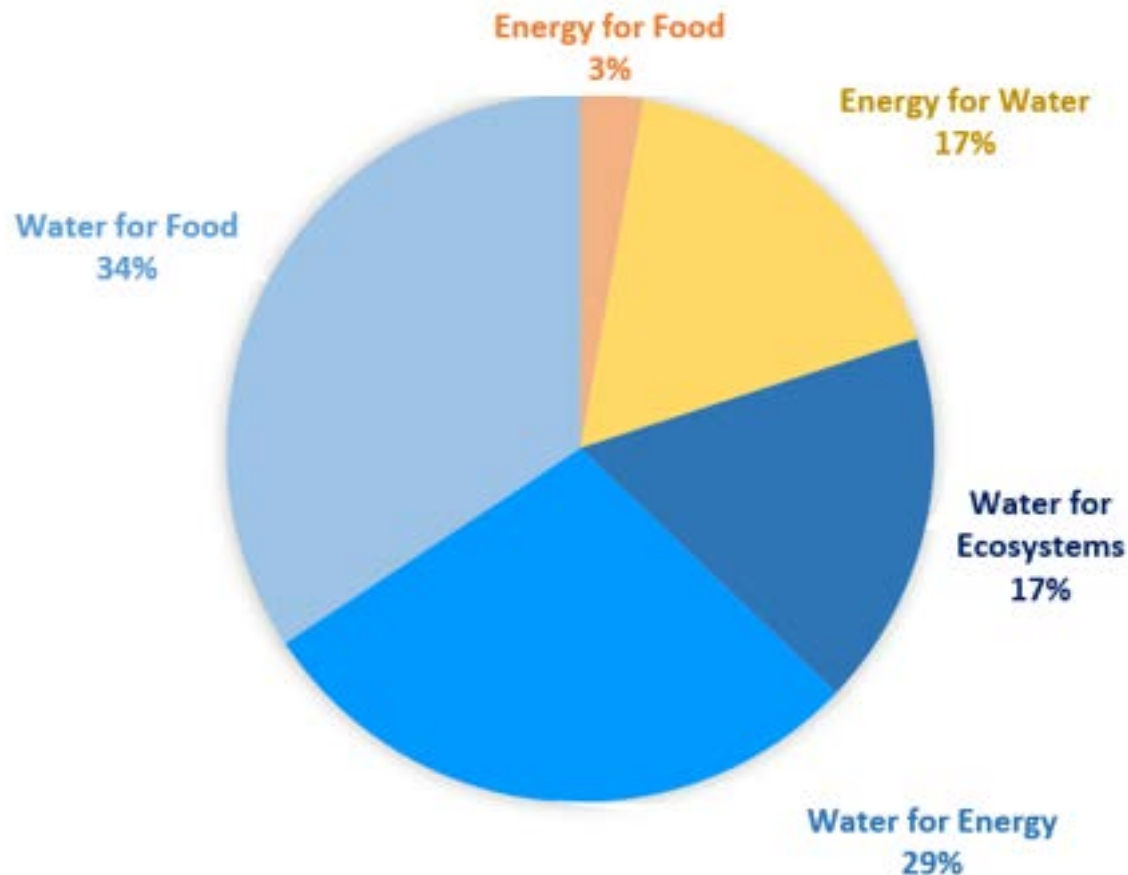
Based on 10% rate of response...



Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

Mapping of nexus challenges-ONGOING

Q10: Which type of Nexus challenges emerged between these sectors?



- Water FOR is economy and ecosystems is a key nexus topic

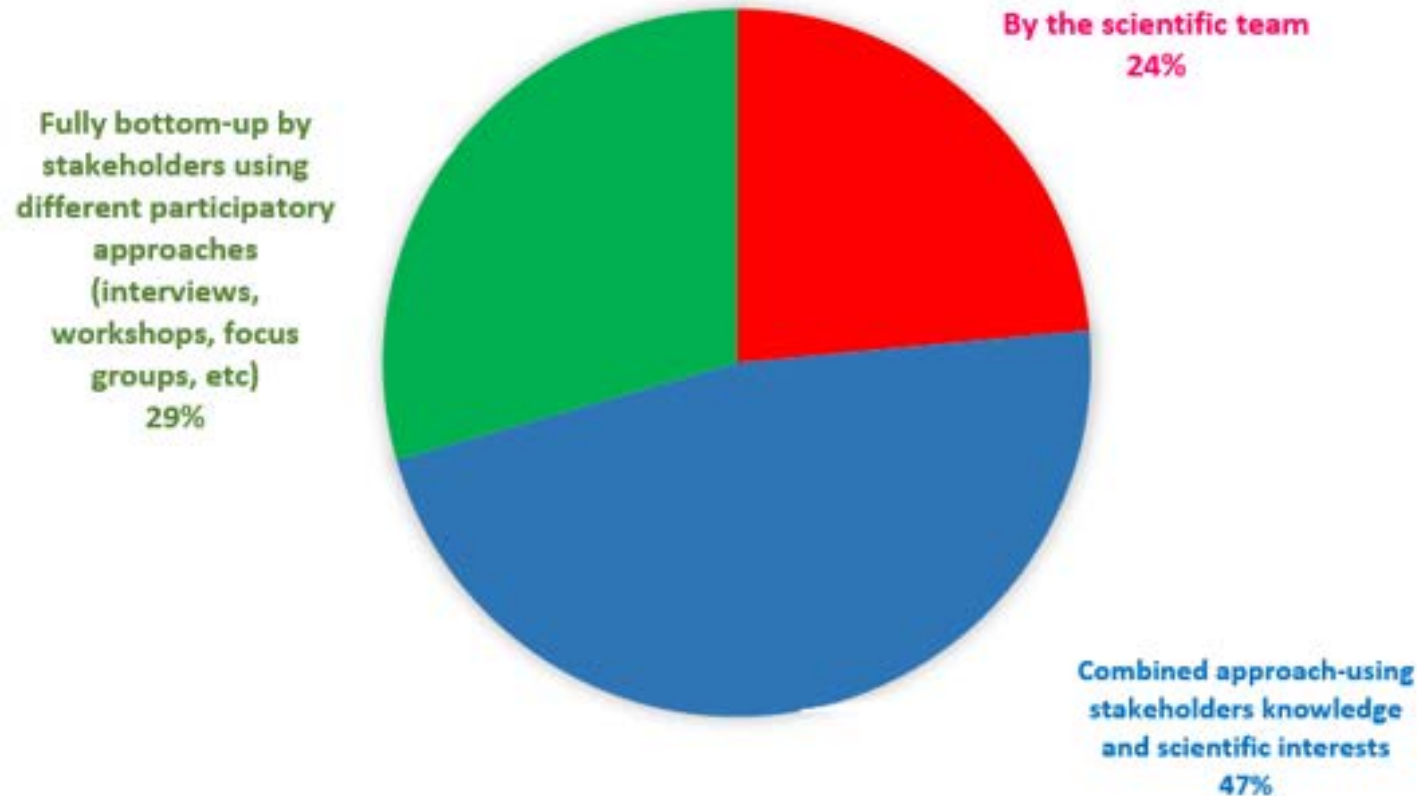
Based on 10% rate of response...



Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

Mapping of nexus challenges-ONGOING

Q8: How were the Nexus challenges identified?



- Problem framing is largely defined by scientific innovation and stakeholder demands

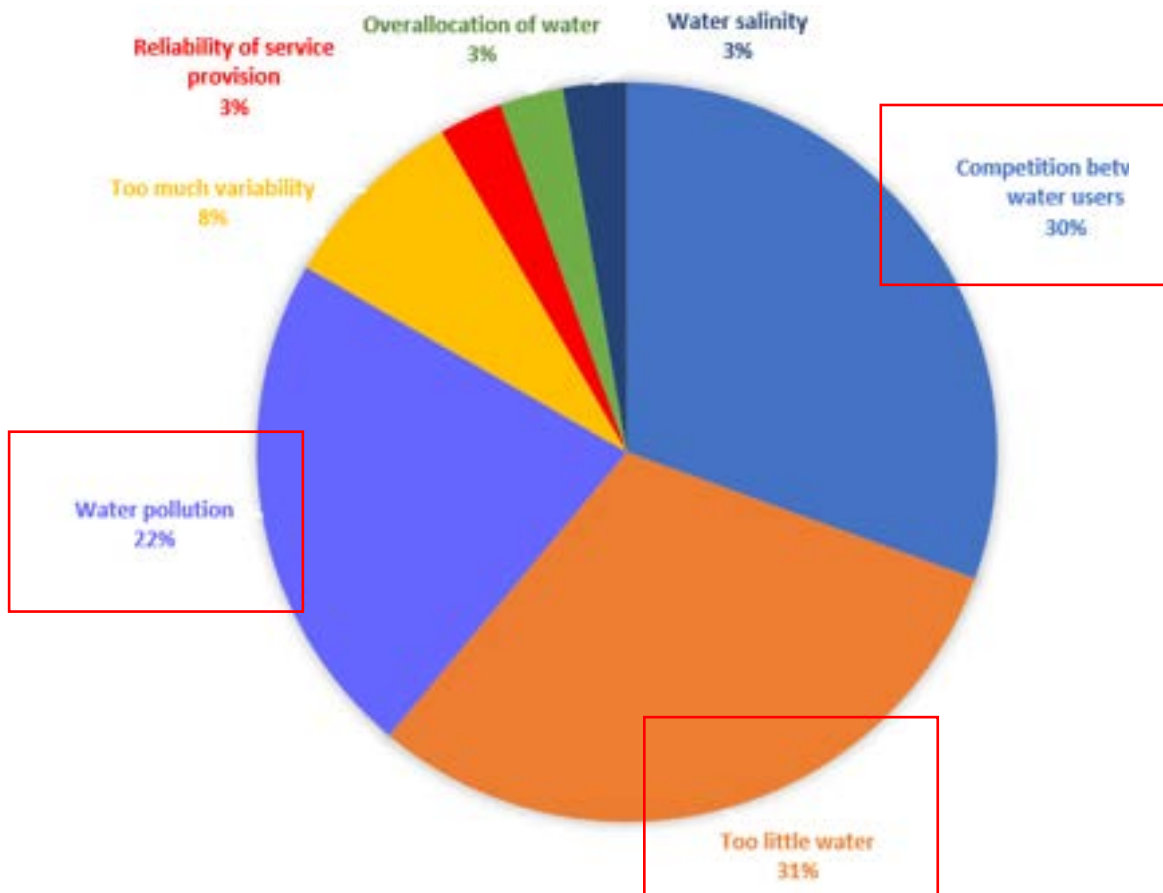
Based on 10% rate of response...



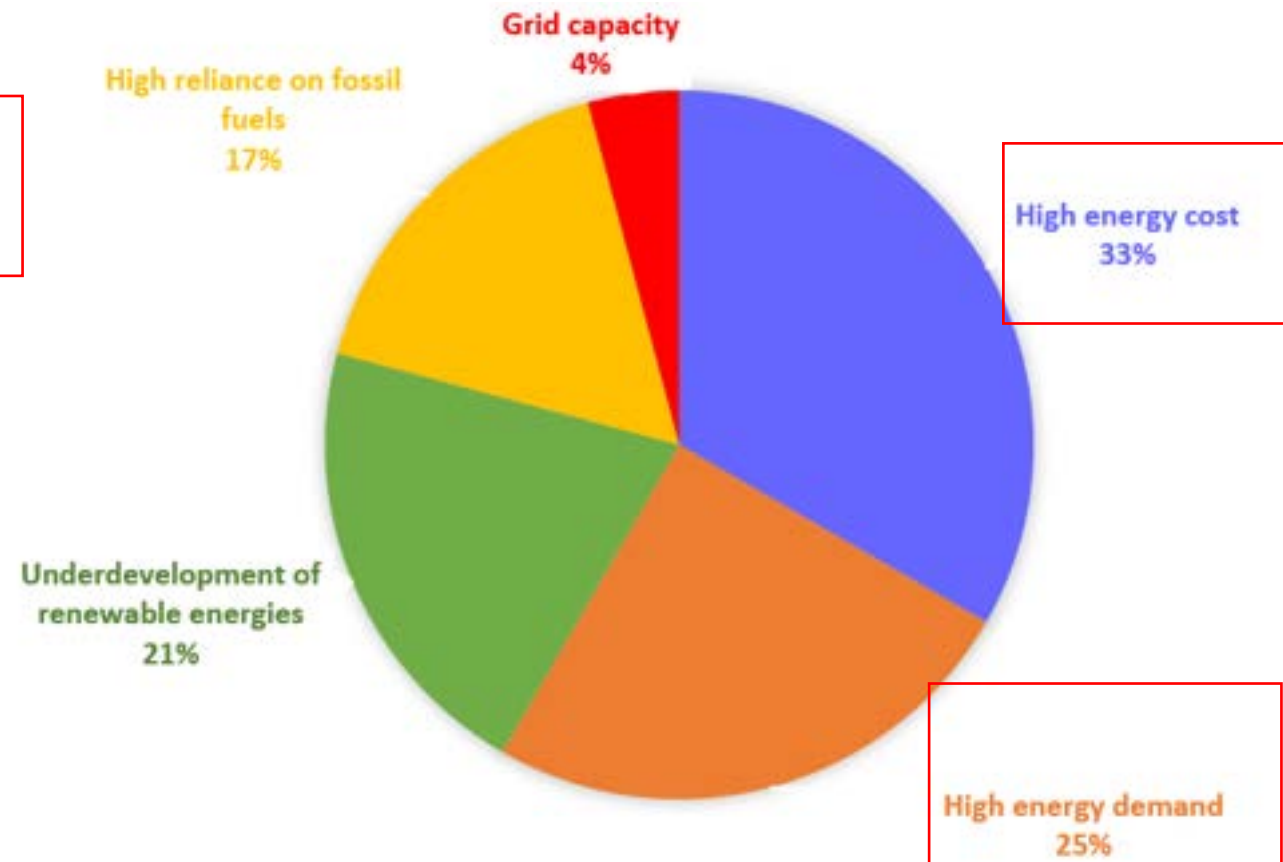
Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

Mapping of nexus challenges-ONGOING

Water-related challenges



Energy-related challenges

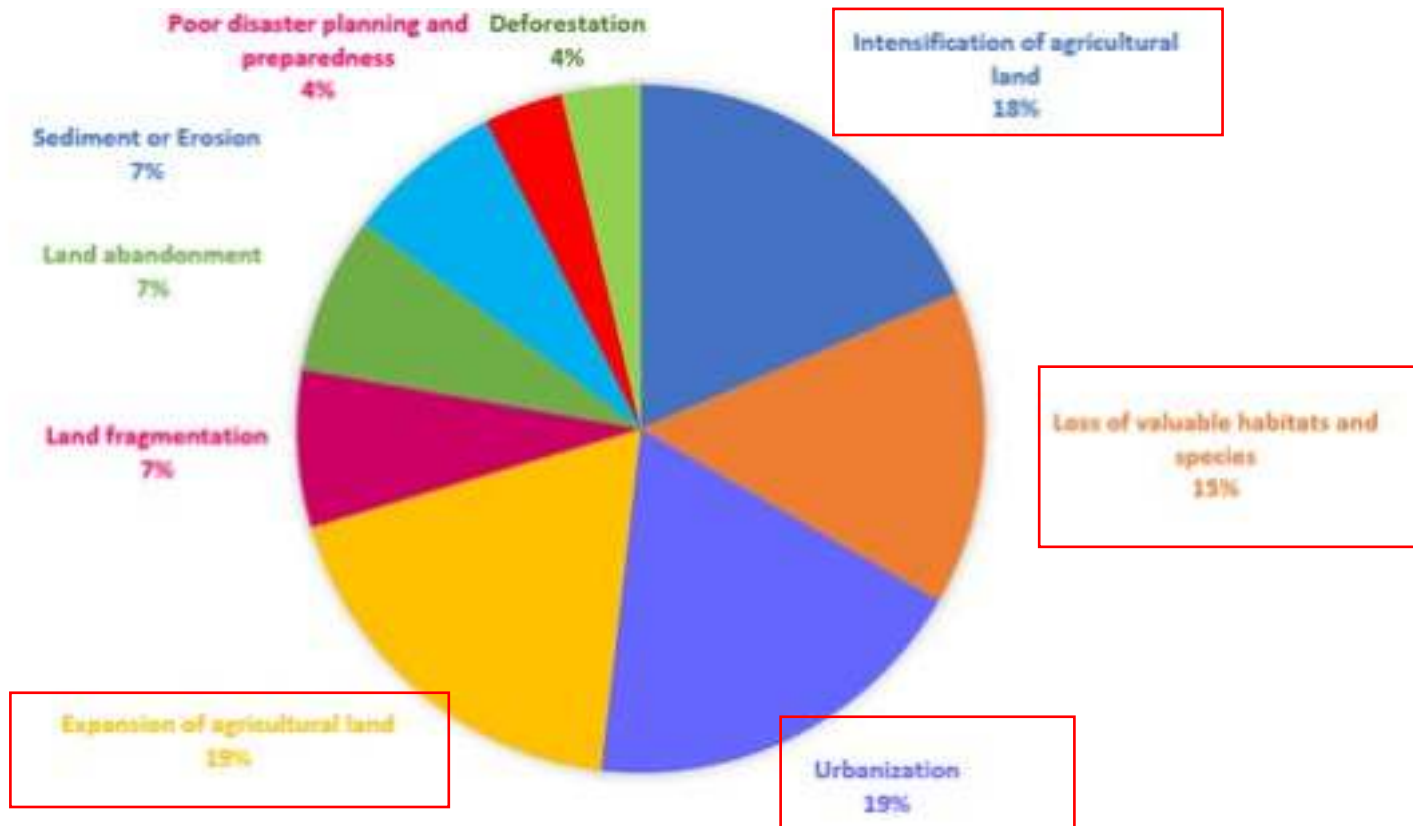




Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

Mapping of nexus challenges-ONGOING

Land-related challenges





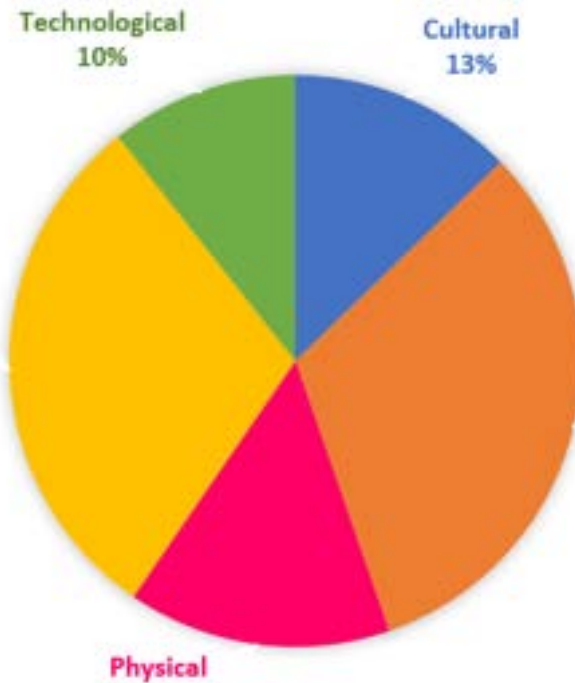
Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

Mapping of drivers of nexus challenges-ONGOING

- Limited know-how
- Limited cooperation with leading technological institutions
- Limited access to expensive technologies

- Market forces
- Economic growth
- Changing habits and new lifes practices

Socio-economic
30%



- Limited awareness of stakeholders
- Resistance to new ideas
- Lobby made by economic agents

- Limited cross-sectoral cooperation (horizontal)
- Limited cross-sectoral cooperation (vertical)
- Unclear roles and responsibilities
- Legal barriers
- Limited data and/or information exchange
- Inadequate financing

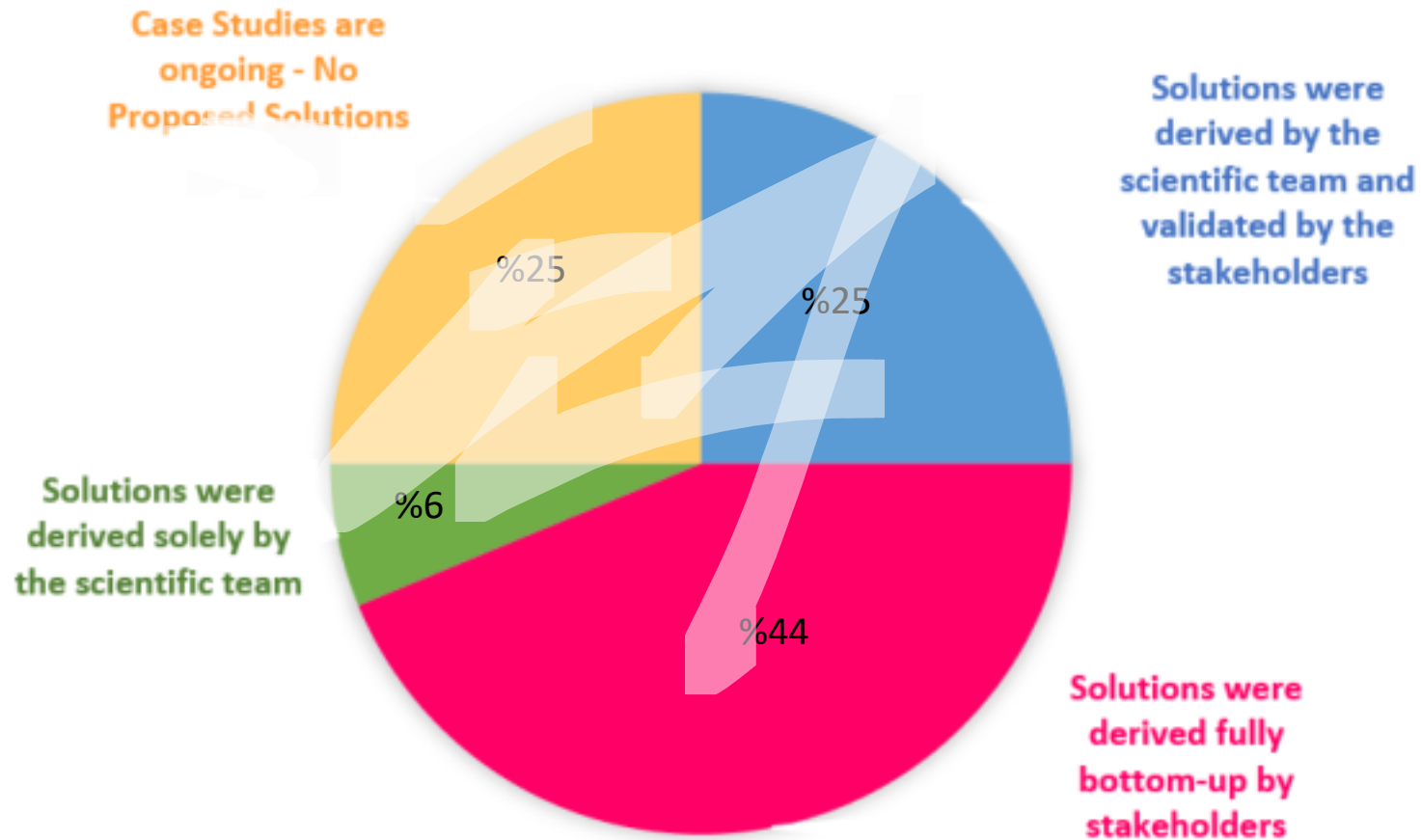
- Limited resources available (water, land)
- Climate
- Geographical factors (insularity, relief, etc.)



Survey “Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”

Mapping of nexus policy solutions-ONGOING

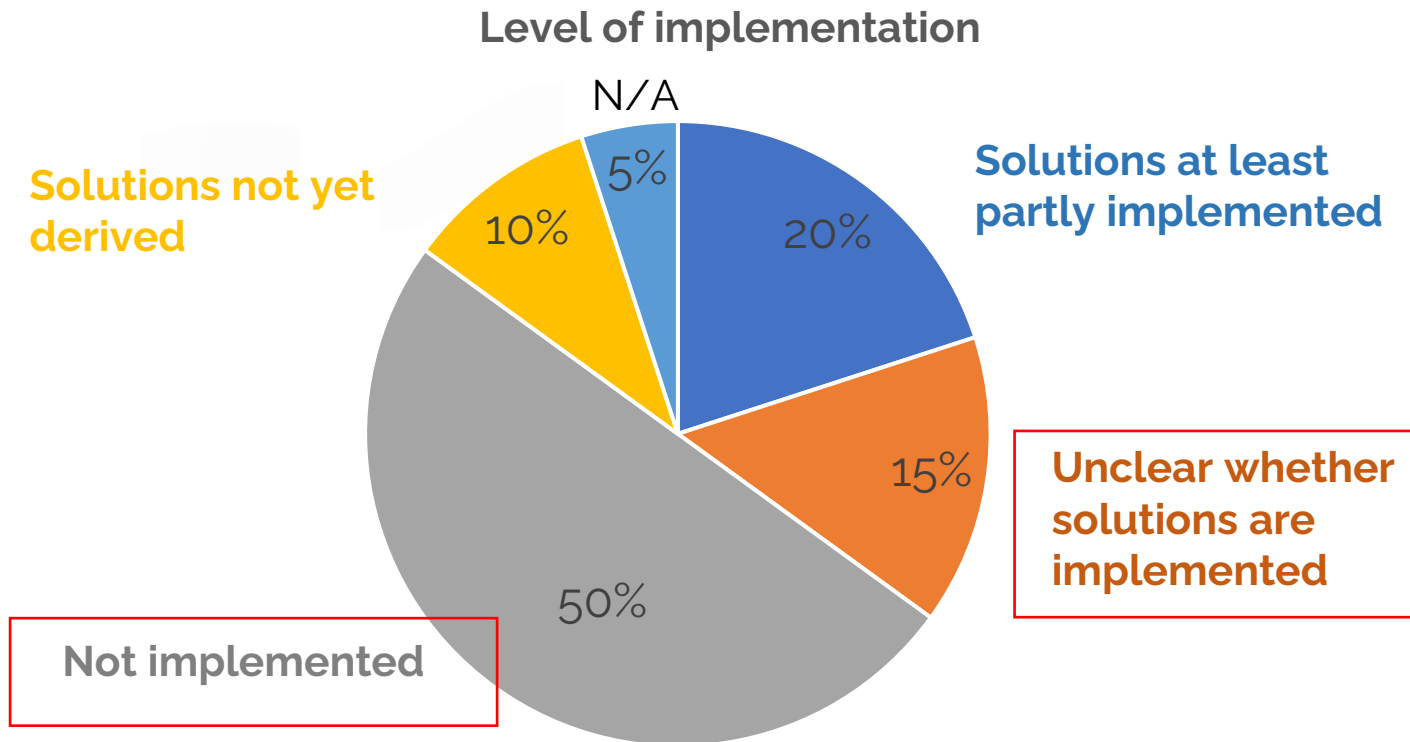
Q22: What was the level of co-production of policy solutions and recommendations?





Survey *“Taking stock of Nexus Challenges and Proposed Policy Solutions Across Europe”*

Implementation of nexus policy solutions-ONGOING





PRELIMINARY CONCLUSIONS AND NEXT STEPS

PRELIMINARY CONCLUSIONS

- **Significant efforts** went into **NEXUS research** over the last decade **BUT policy impact is limited**
- **Southern and western Europe** is where most nexus research effort went in so far
- **Level of co-production** of solutions and policy recommendations is **moderate**, which could be influencing the level of adoption

NEXT STEP

- Continue the distribution of the SURVEY [LINK: https://form.jotform.com/222324362877055](https://form.jotform.com/222324362877055)
- Organize a NEXUS policy Forum
- Develop communication materials (e.g. Policy briefs)



Thanks

Bárbara Willaarts
willaart@iiasa.ac.at

<https://nexusnet-cost.com/>



RETOUCH NEXUS

REsilienT water gOvernance Under climate
CHange within the WEFE NEXUS

Nexus research for improved policy support: water scarcity in Europe

Maria Vracholi (Technical University of Munich)
maria.vracholi@tum.de



This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101086522.

RETOUCH NEXUS

REsilienT water gOvernance Under climate CHange within the WEF E NEXUS

Overall objective

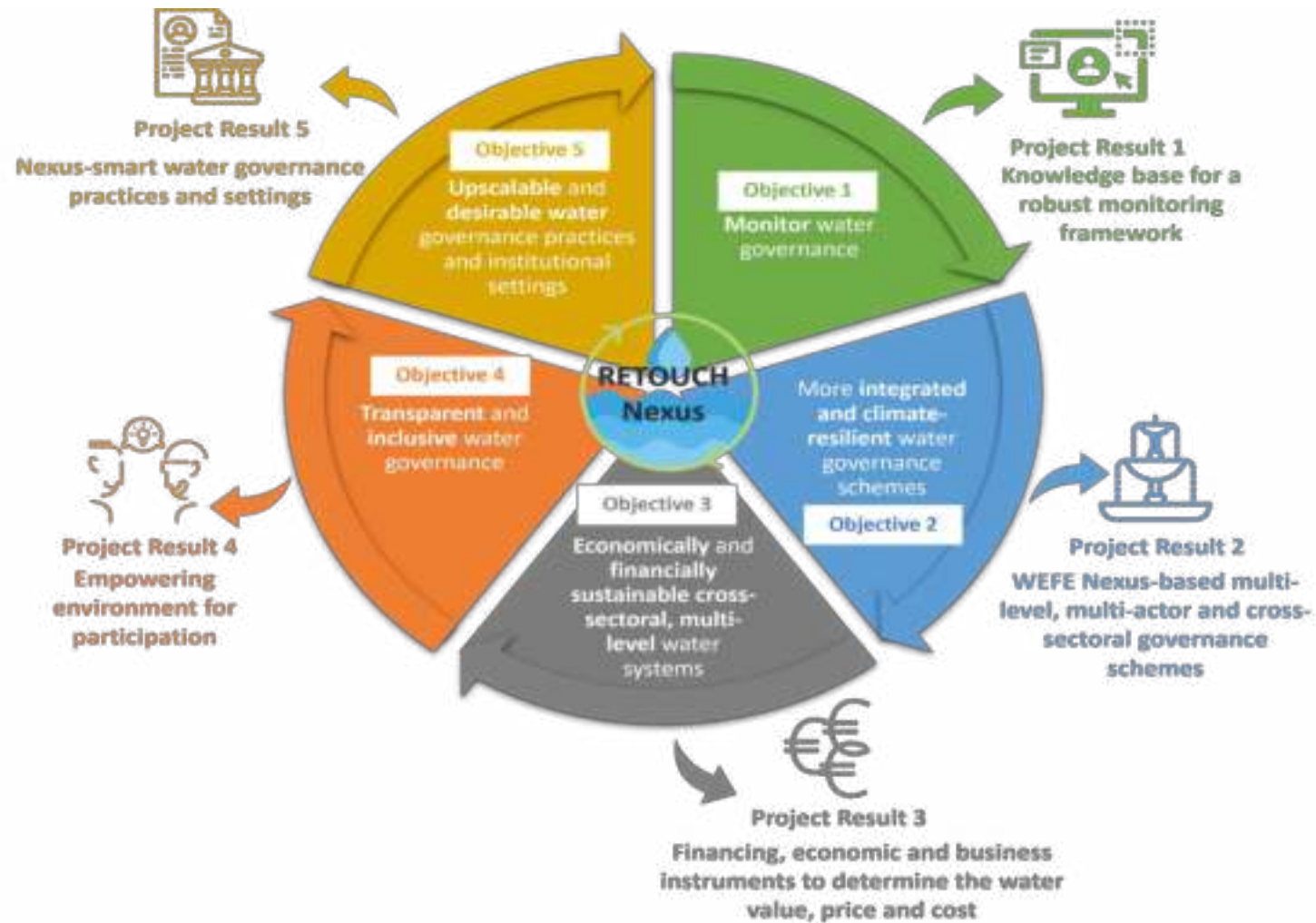
Building upon the **Water-Energy-Food-Ecosystems (WEFE) Nexus**,
RETOUCH NEXUS' overall objective is to promote **robust, integrated, sustainable,**
inclusive and **upscalable** water governance practices.

General Introduction

RETOUCH NEXUS project will:

- introduce and promote the **Water-Energy-Food-Ecosystems (WEFE) Nexus** as a **multi-level, cross-sectoral** and **multi-stakeholder** approach that supports the EU water economy and relies on **ecological** and **social** considerations.
- design and advance **integrated, innovative, and inclusive Nexus-smart water governance schemes** and **institutional settings** aiming at a secure water future in the EU, resilient to climate change.
- propose, assess and optimise WEFE Nexus smart methods in **six case studies**.

RETOUCH NEXUS concept



RETOUCH NEXUS specific objectives

Objective 1

- Propose **35 Nexus-smart water governance metrics**



Objective 2

- Propose **at least 6** multi-level, multi-actor and cross-sectoral **water governance schemes**

Objective 3

- Develop and apply **economic instruments** to reconcile water price, value and cost

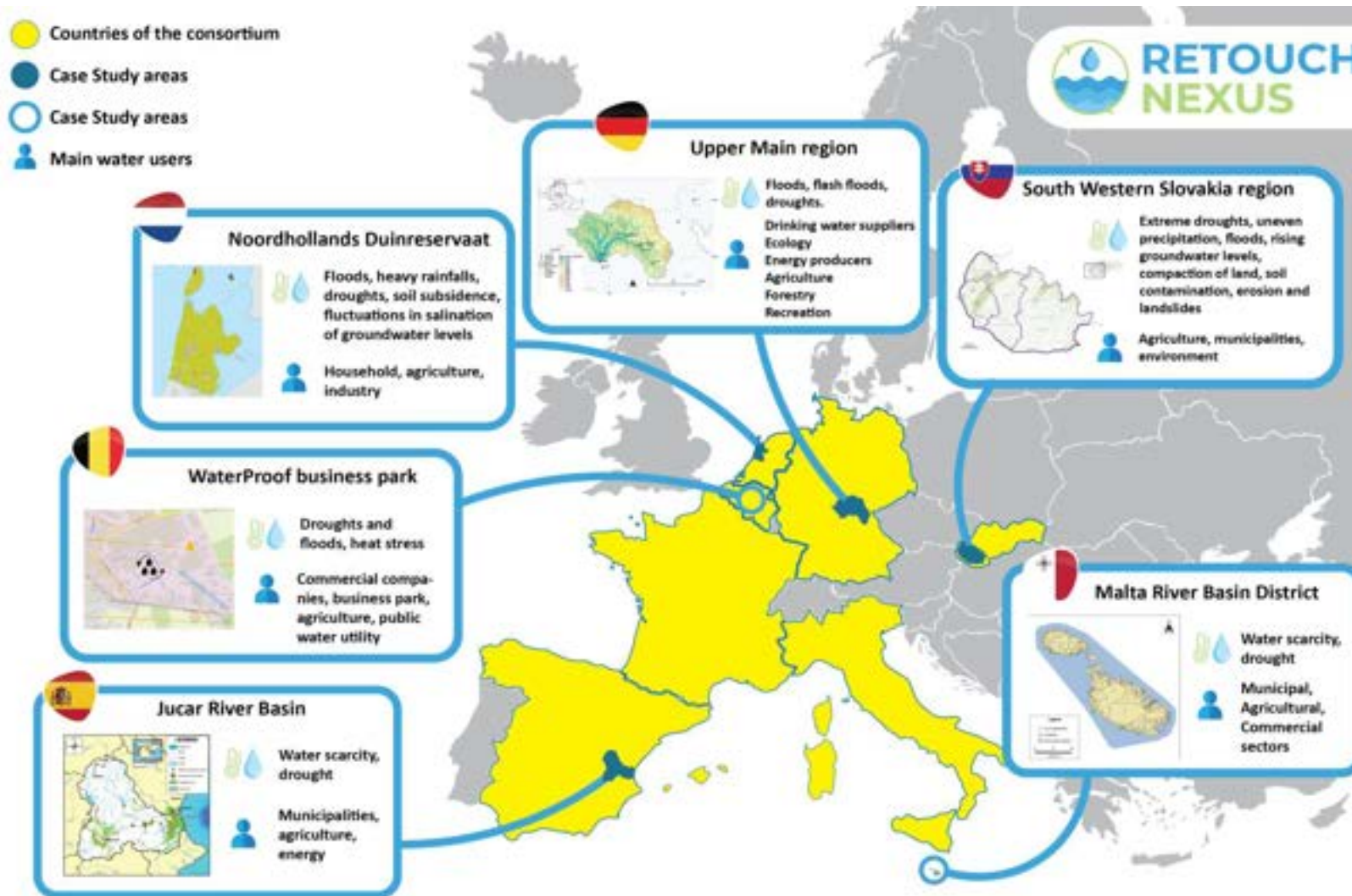
Objective 4

- Develop and demonstrate **12 innovative engagement mechanisms**

Objective 5

- Establish a strategy for **upscaling** governance schemes and engagement mechanisms

RETOUCH NEXUS case studies





Sustainable Innovation and Governance in the Mediterranean Area for the WEF Nexus

<https://sigma-nexus.eu/>



This project has received funding from the PRIMA and European Union's H2020 research and innovation programme under Grant Agreement No. 1043



Working Group 1:
Monitoring and modelling the Nexus



Project Coordinator
Maria Vrachioli (TUM)



maria.vrachioli@tum.de
@MariaVrachioli

<https://www.retouch-nexus.eu>

LinkedIn: @RETOUCH NEXUS HEU

Twitter: @RETOUCH NEXUS HEU



WEFE4MED: Towards a Mediterranean WEFE Nexus Community of Practice

Fadi Georges Comair, Professor and Director

Adriana Bruggeman, Associate Prof., Hydrology and Water Management
Energy, Environment and Water Research Center (EEWRC)

The Cyprus Institute

Coordination and Support Action

1 October 2022 – 30 Sep 2026

***Nexus research for improved policy support: water scarcity in Europe
Nexus Project Cluster and COST Action NEXUSNET virtual event
31 January 2023***



PRIMA

PARTNERSHIP FOR RESEARCH AND INNOVATION
IN THE MEDITERRANEAN AREA



The PRIMA programme is an Art. 185 initiative supported and founded under Horizon 2020, the European Union's Framework Programme for Research and Innovation

WEFE4MED Objectives

WEFE4MED Objectives

Foster adaptation of Water-Energy-Food Ecosystem Nexus Approach in the Med through a Nexus Community of Practice NCoP.

Confront climate and environmental challenges facing societies and agro-ecosystems.

Bridge between practitioners, scientists, policymakers, civil society, media, entrepreneurs, innovators, and investors.

Facilitate the identification, testing, dissemination and replication of Nexus solutions in the Mediterranean.

Showcase to policymakers and other stakeholders the advantages of the Nexus approach using successful real-live demonstrators.

Promote the deployment of regional demonstration sites as laboratories for replication, upscaling and policy design.

WEFE4MED: Partners and Management Structure

Project partners

- The Cyprus Institute, Cyprus
- Global Water Partnership - Med / Med. formation Office for Environment, Culture and Sustainable Development, Greece
- Berytech Foundation, Lebanon
- The Energy and Water Agency, Malta
- Jožef Stefan Institute, Slovenia
- MED CITIES, Spain
- Arab Water Council, Egypt
- Center of Arab Women for Training and Research, Tunisia
- Egyptian Center for Innovation and Technology Development, Egypt
- Global Water Partnership Organisation, Sweden
- International Center for Agricultural Research in the Dry Areas, Lebanon

Project Management Committee PMC

Representatives Consortium Partner

Project Advisory Board (PAB)

Key Stakeholders

Selected Demonstration Projects

Local Authorities

Investors

Academics

Executive Committee

Governing the Project Advisory Board

PRIMA

Directorate Research/Joint Research Committee JRC

UfM

Stakeholder Consulting Groups (SCG)

Participating Demonstrator Project



Steps to Create the NCoP

Define

Design

Launch

Grow

Sustain



Nexus Community of Practice

Project Advisory Board

Launch of the NCoP

March-May 2023

pre-launch event: World Water Day at The Cyprus Institute

Nexus Conference in Athens, hosted by GWP-MED

Nexus Demonstrators

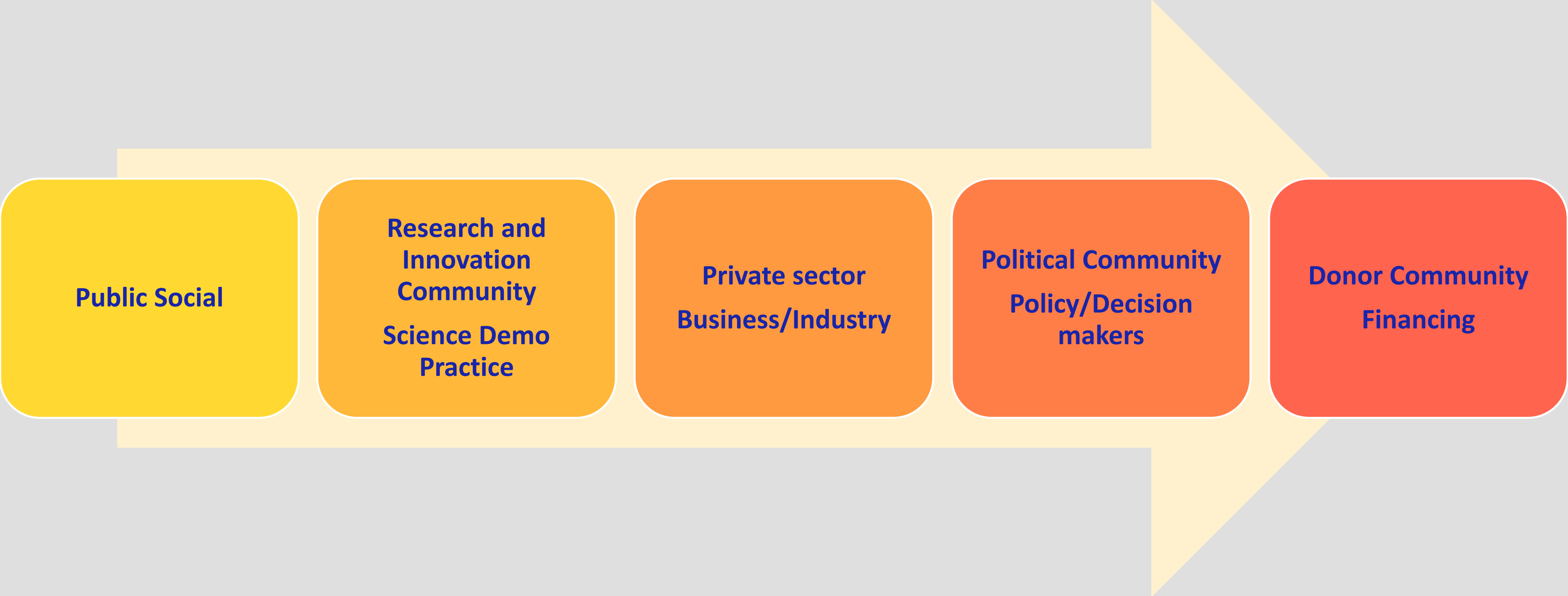
Identify a range of representative demonstration cases (demonstrators) and provide them with added value services

Bringing Nexus demonstrators together in a single multi-disciplinary NCoP platform will

- Offer visibility, impact, opportunities for sharing real best practices.
- Boost knowledge-sharing and transfer,
- Stimulating collaboration and further adoption and uptake of Nexus solutions at all levels.

WEFE4MED: Dissemination

Dissemination will take place at the following levels



WEFE4MED: Exploitation of Results

Living Lab Approach

Awareness building

Assist Demos to disseminate their results

Full Scale advocacy Campaign

WEFE4MED: Contribution to the SDG's



Thank you



The PRIMA programme is an Art. 185 initiative supported and founded under Horizon 2020, the European Union's Framework Programme for Research and Innovation



PrimaProgram



@PRIMAInnovation



Prima Programme official



@prima_foundation_med



Prima-med YouTube



Soile Oinonen, Finnish Environment Institute (Syke)
31 January 2023



**Co-funded by
the European Union**



**UK Research
and Innovation**

This work was co-funded by UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee 10039588

BIODIVERSITY NEXUS

Why?

Currently happening biodiversity loss threatens life as we know it. It threatens our well-being, food and water security. Biodiversity is the requirement for a healthy, happy life.

Biodiversity is the heart of sustainable societies.

What?

A research and innovation project that creates science-based solutions and tools for halting biodiversity loss and achieving sustainable, nature-centered future and societies.

Funded by Horizon Europe and UK Research and Innovation.

When?

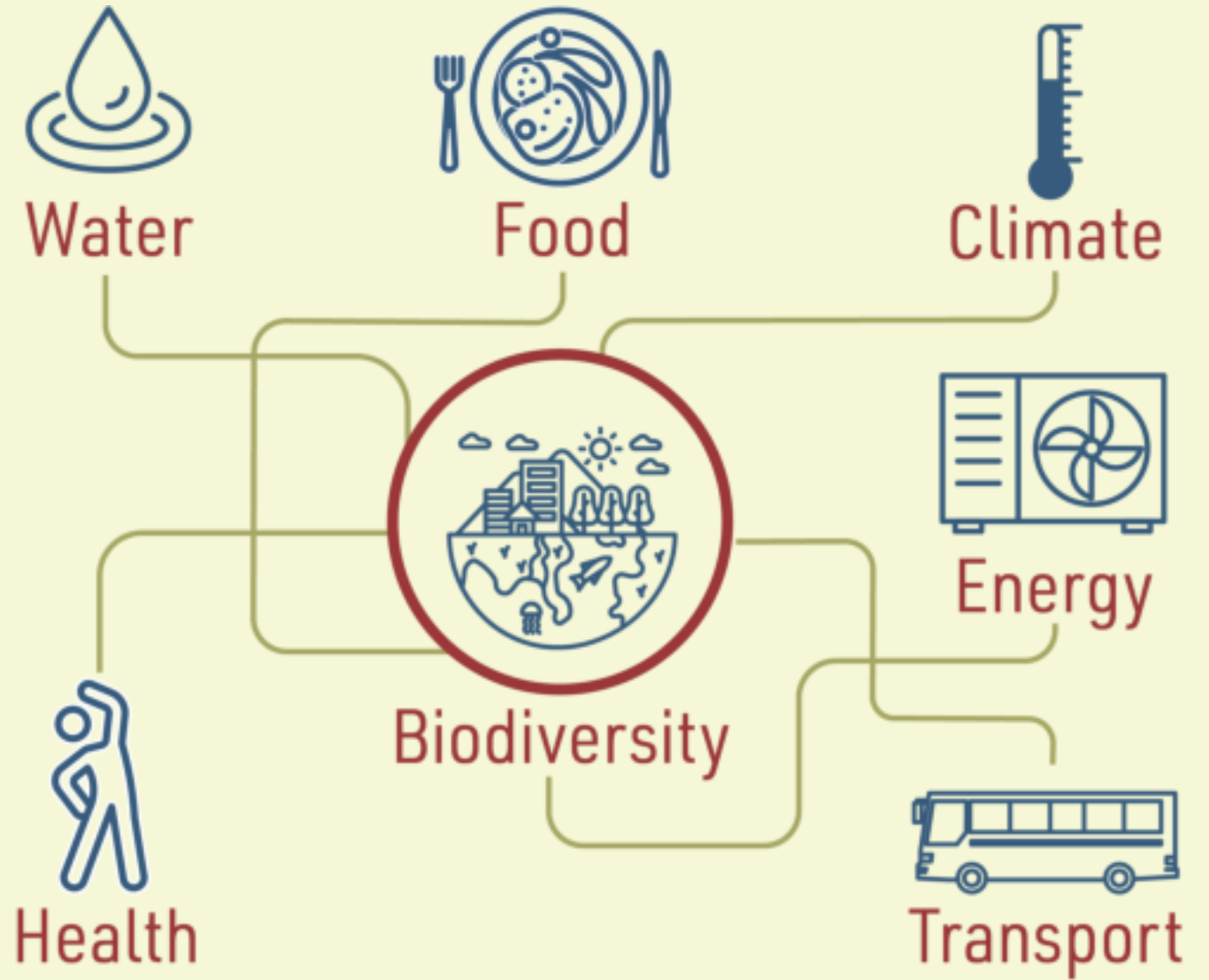
During the next four years, 2022–2026.

Who?

Coordinated by the Finnish Environment Institute (Syke). Ten partners from eight European countries.

#BiodiversityNexus

Focus on the biodiversity nexus



Expected outcomes

- ✓ Demonstrate the reasons for biodiversity loss
- ✓ Produce **guidelines and recommendations** for policymakers
- ✓ Develop an innovative **nexus modelling framework** that simulates the interlinkages between biodiversity, climate change, food, water, energy, transport, and health
- ✓ Create a **Pathways app** that allows users to explore and harness ways to create sustainable societies

How?

- Co-creation and co-production.
- Iteration between theory and practice.
- Combining scenarios.
- Modelling nexus interlinkages.
- Adopting a socio-technical approach.
- Demonstrating cases in practice.

For whom?

- Other projects.
- IPBES.
- Scientists.
- Policymakers and politicians.
- Businesses.
- Interest groups.
- Civil society.



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Website: www.bionext-project.eu

Newsletter: subscription from the website

#BiodiversityNexus

Thank you!

For any questions, please contact soile.m.oinonen@syke.fi



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UK Research
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