NEXOGENESIS
STREAMLINING WATER RELATED POLICIES

Deliverable 5.4

Implementation report for Jiu CS

Lead: BDG
Date: February 2025

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

Project Deliverable

Project Number	Project Acronym	Project Title
101003881	NEXOGENESIS	Facilitating the next generation of effective and intelligent water-related policies, utilizing artificial intelligence and reinforcement learning to assess the water-energy-food-ecosystem (WEFE) nexus

Instrument:	Thematic Priority
H2020RIA	LC-CLA-14-2020

Title
Deliverable 5.4: Implementation report for Jiu CS

Contractual Delivery Date	Actual Delivery Date
M42 February 2025	M42 February 2025

Start Date of the project	Duration
01 September 2021	48 months

Organisation name of lead contractor for this deliverable	Document version
BDG	1

Dissemination level	Deliverable Type
Public	Demonstrator

Authors (organisations)

Lead authors
Florentina Nanu, Ioana Groza, Madalina Deaconu (all BDG)

Contributing authors
Malgorzata Blicharska, Simon Ryfisch, Claudia Teutschbein (all UU)
Maria Papadoupoulou, Chrysaida-Aliki Papadoupoulou (both NTUA)
Tamara Avellan, Andrea Müller (both AVA)
Isabelle La Jeunesse, Ingrid Canovas (both UNT)
Eva Sievers (UFZ)

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

Reviewers (organisations)
Jayne Glass (UU)

Abstract

This Deliverable (D5.4) presents the implementation of the Jiu Case Study throughout the first 42 months of NEXOGENESIS (September 2021-February 2025). It summarises activities related to the different Work Packages of the project, and outcomes related to: governance assessment, conceptual and system dynamics modelling, and stakeholder engagement. The Deliverable builds on Milestones 15 and 23, synthesizing the case study coordination and execution, and highlighting lessons learned and experiences to date.

Keywords

Jiu, case study, stakeholder engagement, policies, models, implementation, roadmap, lessons learned, recommendations

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

Abbreviations/Acronyms

CIR	*Critical Implementation Risk*
CS	*Case study*
D	*Deliverable*
KPI	*Key Performance Indicator*
M	*Month*
MS	*Milestone*
NEPAT	*Nexus/NEXOGENESIS policy assessment tool*
NXG	*NEXOGENESIS project*
PMT	*Project Management Team*
RES	*Renewable Energy Sources*
SH	*Stakeholder*
SLNAE	*Self-Learning Nexus Assessment Engine*
STC	*Scientific and Technical Committee*
WEFE	*Water, energy, food, and ecosystems*
WP	*Work package*
WS	*Workshop*

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

Table of Contents

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

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

1 Introduction

1.1 Project Summary

Water, energy, food, and ecosystems (WEFE) are interconnected and comprise a coherent system (nexus), which is characterized by complexity and modulated by climatic and socio-economic drivers. In the nexus, economic development (including optimal trade, market, and policy solutions) is hampered by resource constraints and their interconnectedness. In addition, the adoption of a sectoral approach in developing and implementing policies may affect nexus characteristics, which in turn can affect decision-making and policy formulation/implementation.

NEXOGENESIS (NXG) develops and validates:

a) a coherent cross-sectoral policy-making framework at different scales addressing climate and socio-economic change, as well as stakeholder behavior and transboundary (diplomacy) issues, developed for and validated by stakeholders, policymakers, and academics;
b) a Self-Learning Nexus Assessment Engine (SLNAE) exploiting reinforcement learning, and supporting streamlining water-related policies into the WEFE nexus;
c) a WEFE Nexus Footprint, accompanying the SLNAE.

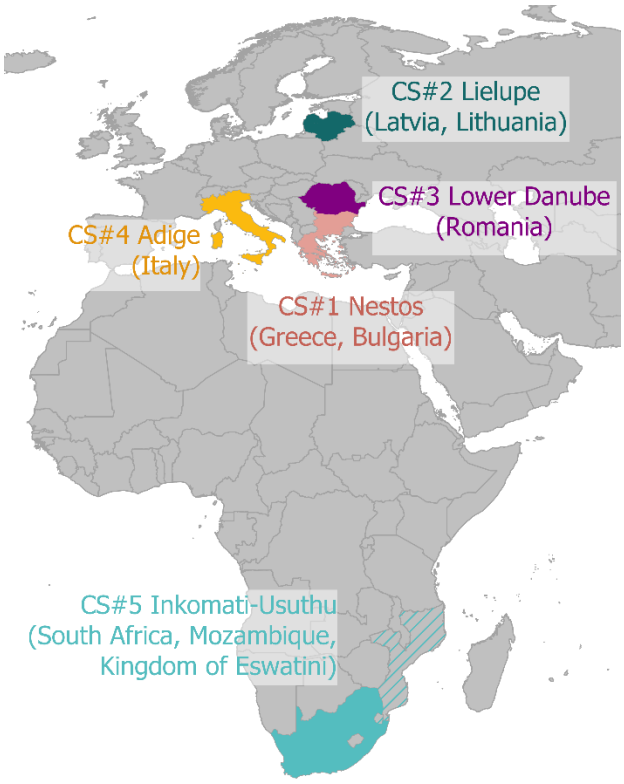
Please note that the Self-Learning Nexus Assessment Engine (SLNAE) is hereafter referred to as the nexus/NEXOGENESIS policy assessment tool (NEPAT). This is because this new term is more intuitive for non-project/non-expert readers.

NXG applies its approach to ***five case studies (CS): four European and one in Southern Africa*** (Figure 1). Through these CSs, strong stakeholder engagement and validation of output, the project will improve policies and policy-making processes to enhance cooperation and help the EU achieve targets related to the Water Framework Directive, the greener CAP, Green Deal ambitions, as well as ambitions on water diplomacy.

The five CSs cover diverse spatial, social, cultural characteristics and have a history of development challenges. They also feature strong WEFE nexus relations, with the potential for disruption from policy implementation, and allow for an assessment of how water-related policy can be streamlined into the nexus. They allow for out-scaling to broader regions and, due to the diversity of cases, and the coherent framework, wider-scale out-scaling to other regions globally will be possible. Dedicated CS partners offer access to stakeholder consultation at different tiers, ensuring maximum engagement and project impact.

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

Figure 1: Map of the case studies



Two of the CS, Nestos and Lielupe, are “frontrunner” CSs (see Table 1), which means that they conduct CS activities slightly earlier (ca. 2 months) than others (so called “followers”) to identify potential problems, redundancy or shortcuts in the applied methodology.

Table 1: Overview of the five case studies

Case Study Name	Countries	Project Category
Nestos/Mesta	Greece (GR) Bulgaria (BG)	frontrunner
Lielupe	Lithuania (LT) Latvia (LV)	frontrunner
Jiu, Lower Danube	Romania (RO)	follower
Adige	Italy (IT)	follower
Inkomati-Usuthu	South Africa (RSA)	follower

A detailed description of each CS including a list of main nexus challenges is provided in milestone (MS) 2: *Roadmap for Case Study Work/Activities in NEXOGENESIS*, which also presents deadlines/timings of different activities for the CS, i.e., deadlines when all CSs should have completed the activities to ensure a timely progress of the project.

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

1.2 Goals of the report

This deliverable builds on MS15 and MS23 by summarizing the CS implementation and stakeholder co-creation activities during the first 42 months of the project (September 2021-February 2025). It further synthesizes the CS coordination and execution of activities within WP5, and concludes with emerging CS-specific lessons learned and experiences. The deliverable specifically summarises: the implementation of the CS activities as outlined in the NXG Roadmap (MS2), and relevant communication activities as guided by the NXG Internal Communication Plan (MS5).The report highlights the input delivered by the CS for the objectives of WP1 to WP 6. with a highlight on the sustained SH management activities from the generation of the NXG Stakeholder Register (MS6), and following the NXG monitoring plan (MS8), as key foundation for reaching NXG objectives. Note that KPIs and risks are being reported by the co-ordinator of NXG (WP7). A full description of the case study co-ordination process in WP5 is provided in Annex 1.

1.3 Methodology to build the report

A transdisciplinary co-creation approach has been incorporated to integrate knowledge and experiences at different levels within the project by applying an iterative process for building, refining, and improving this second intermediate report. The document has been developed during months 30-42 of the project to summarize the CS implementation and stakeholder co-creation activities. The outline for this deliverable was developed internally and discussed within WP5. The report includes general references to activities with cross project relevance elaborated by WP5 lead and specific CS input by the CS lead. .

2 Description of the case study

2.1 Basic characteristics

The Jiu river flows from the Carpathian Mountains southwards through several counties before it discharges into the Danube at Zaval, near the border with Bulgaria (Figure 2). The Jiu river basin is one of Romania's 11 catchments and one of six that border the Danube, in Romania. Its hydrographic area includes Jiu river and the Danube tributaries from the south-west Oltenia region. It has 286 registered watercourses, with a total length of 4,954 km and an average density of 0.30 km/km^2. The Jiu river basin covers 16,758.59 km^2, with a length of 260 km and a width of 60 km in the upper part and 20 km in the lower part. The population of the Jiu river basin consists of 1,461,661 inhabitants, 56% living in the urban area.

The basin is mainly characterised by arable land (48%), forest (30%) and pastures (9%). In the north the main activities in the basin are related to the coal mining industry for lignite-based electricity and heat generation. The areas in the south and south-west are characterized by agricultural activities that depend on water supplies for irrigation and hydropower production.

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

Anthropogenic interventions (e.g. dams) along the Danube have stimulated erosion and negatively affected the riverbed, while floods and drought events continue to impact the region. The Lower Danube wetland ecosystem includes also several EU Natura 2000 sites.

Figure 2: Overview of the CS location

2.2 Description of the nexus components

2.2.1 Water

In the Jiu river basin, one main target is to secure the availability of water resources for important investments planned for the extension of public water supply and sanitation networks. Energy production is another important use, with the major hydropower electricity production plants located in the south (Iron Gates plants on the Danube) highly dependent on water availability. The northern part of the catchment area was in the past also an important lignite-based energy production and heat generation site, including open pit mines which had impacst on water quantity and quality. The area is prone to extreme climate events, including both droughts and floods (with significant impacts on water resources and regional development).

2.2.2 Energy

Energy production in both the northern upstream and southern downstream regions impacts the water resources and surrounding environment. Hydropower production requires a precise amount

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

of water to maintain electricity production even during dry periods, which directly competes with the irrigation water demand in the agricultural sector. Current plans for a transition to a carbon neutral economy aim to reduce the mining activities while diversifying the economic activities in the region. These include energy production from renewable energy sources (RES), replacing lignite with solar and gas, and sustainable use of local resources (such as quartz, limestone or clay).

2.2.3 Food

The agriculture sector plays an important role in the catchment, with 53% of the land used for vegetable production, horticulture, husbandry and aquaculture activities. The current agricultural practices are challenged by the availability of water resources and preservation of ecosystems in Natura 2000 sites, since the historic intensive agriculture negatively impacted on the groundwater quality. The National Strategic Plan for the agriculture sector in Romania[1], recently approved by EC, sets out strategic targets for sector adaptation to climate change, efficient management of natural resources (water, soil, air) and conservation of biodiversity and landscapes. Consistent financial allocations are planned for 2023-2027.

2.2.4 Ecosystems

Wetland ecosystem restoration along the Danube river is an important target at Danube basin level. As nearly 80% of wetland was lost in the last century due to river dredging, land reclamation and flood control measures, there were and currently are scientific research projects that aim to foster floodplain restoration using nature-based solutions. In the Jiu CS there are 27 water-related protected natural areas that benefit from conservation and sustainable management plans for the protection of water-dependent habitats and species.

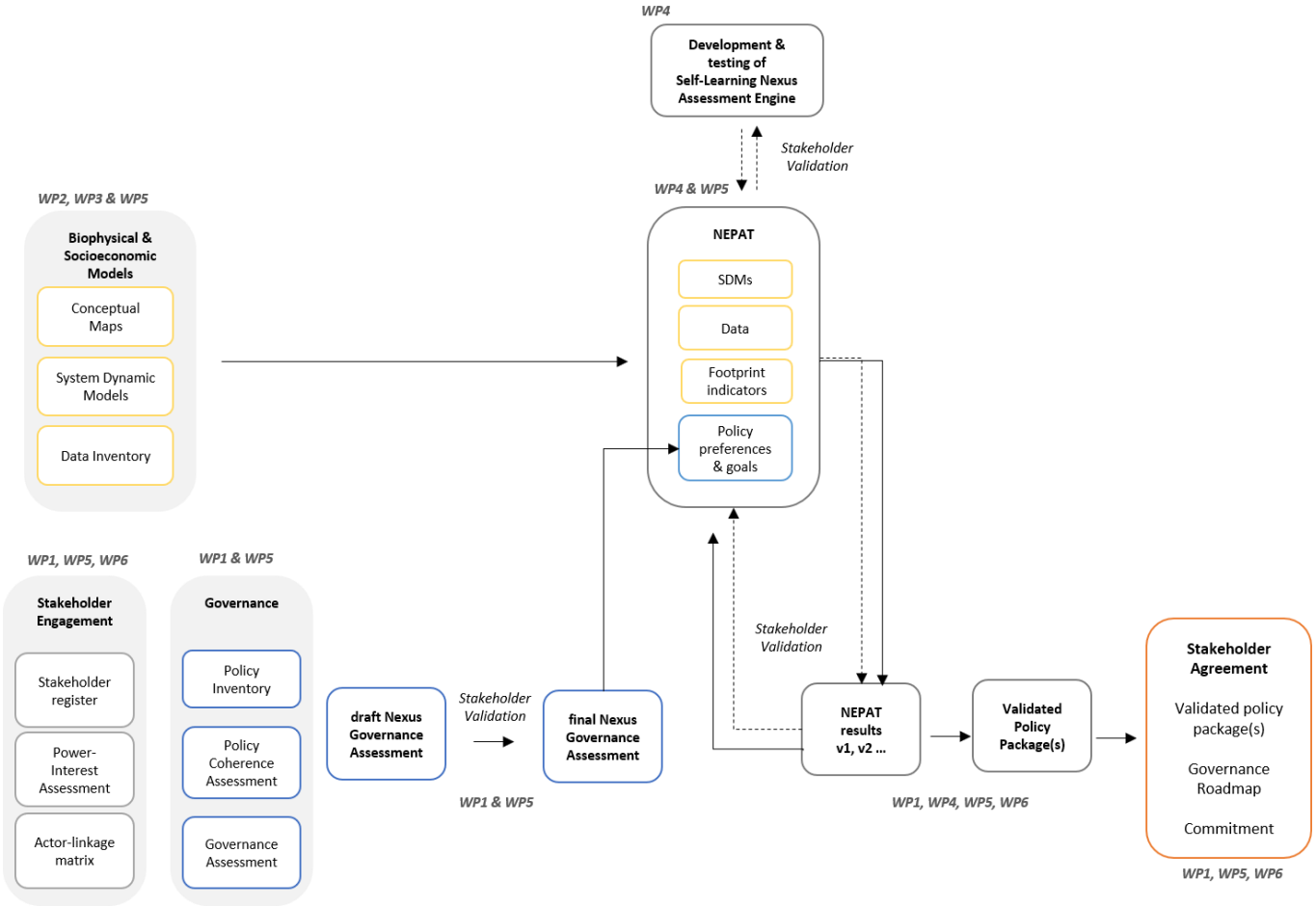
[1] https://agriculture.ec.europa.eu/system/files/2022-12/csp-at-a-glance-romania_en.pdf

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

3 Implementation of the case study work in WPs 1-6

This section describes the activities conducted in the Jiu CS within each WP of NEXOGENESIS. Figure 3 provides an overview of the NXG approach, showing the outputs from each WP and how the WPs are connected. A full list of all individual activities performed during the project can be found in Annex 2.

Figure 3: Overview of the NXG approach, showing the main activities in WP1-6 and the connections between WPs (figure produced by Sabina Khan, UFZ)



3.1 From stakeholder perception to nexus governance assessment (WP1)

The NXG project builds on a coherent cross-sectoral policy-making framework at different scales addressing climate and socio-economic change, as well as stakeholder behaviour and

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

transboundary (diplomacy) issues. WP1 specifically focuses on the co-creation of WEFE nexus governance and water policy streamlining. Thus, WP1 creates a water-energy-food-ecosystem (WEFE) nexus governance assessment tool (NXGAT), which will be used in the course of the project to measure the quality of existing and potentially future WEFE nexus governance regimes.

3.1.1 Governance assessment in the CS

A field visit was organized by the CS lead between October 17-21, 2022, in the Jiu CS together with the representatives of UNT and UFZ. The trip included nine meetings with various profile SHs from all sectors, at different locations, and the team was accompanied by the representative of the Jiu river basin administration (SH participation in project activities). An interview template developed by UNT was used when conducting the dialogues.

The governance assessment was completed in two rounds and the results were validated with SH. The results of the governance assessment have been further elaborated within WP1, a deeper insight into the level of integration and existing policy gaps is included in D1.2 *Governance and Policy Assessment in the Case Studies.* The final governance assessment found that the current governance system is 'restrictive' towards WEFE nexus governance because of lack of coherence of governance at all levels, a lack of intensity of actions, and a lack of motivation to change. However, a tendency to be more 'supportive' was identified through existing strategies and regional and national levels that encourage more cross-sectoral working. In the last years an increased interaction and a push for more bottom-up approaches became also visible, with the water sector keeping the lead for cross-sectoral dialogues.

3.1.2 Integrating nexus governance and policy knowledge into modelling and NEPAT

The second part of the first workshop was dedicated to presenting the NXG tool. The WP4 representative presented the concept and requested SH feedback to fulfil the needs of the Jiu CS, based on a set of questions translated into the local language in the preparation of the workshop. The Jiu CS was the only one to use the MENTI tool for interaction with stakeholders participating online and offline. The MENTI tool was used to gather responses and share them with the audience in real time. The approach provided valuable information for the work in WP4, especially as regards the use cases and specific expectations for features to be considered by the tool.

The stakeholders perceive the NXG tools proposed by the project and the possibility to include case study specifics in their design as an opportunity for improved public policy development in all WEFE sectors, promoting better substantiation of decision making, facilitating consensus and reducing conflicts about water use at regional level. The national authorities are interested in using the results in the case study for upscaling at the national level, in connection with sustainable development and adaptation to climate change strategies and action plans.

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

The discussions during the first workshops were also a good initial opportunity for dialogue between different profile stakeholders. The stakeholders shared valuable information and opinions that formed a basis for building awareness and collaboration for promotion of the project tool to solve WEFE nexus issues. Some specific aspects relevant for the Jiu River basin were also emphasized during the meeting, such as sustainable water use, water pollution risks, education and awareness, resilience through resilient ecosystems, and the importance played by the energy production.

All the information to date has been given to the modelling and NEPAT teams as CS contribution for the development of the tool.

3.1.3 Co-creation of policy packages, governance roadmap and river contract

The co-creation approach promoted by the project was applied in the interaction with SHs in the CS from the inception phase of the project.Preparatory bilateral meetings were conducted by the CS lead with key SH for introducing the project. Furthermore, five project workshops were organised in the CS and a field visit as already described in the previous section. Additionally targeted interactions with SH and desk research were performed to fulfil requirements during project implementation. This resulted in the development of the inventory of the relevant policies and assessment of their coherence in line with NXG project approach.

The CS team provided support to the WP1 team conducting the governance assessment for the preparation of the interviews, during the field trip in October 2022 and in the follow-up step for incorporating findings in D1.2. Governance and Policy Assessment in Case Studies.
The river contract concept was tentatively discussed with the SHs but this did not seem appealing to SHs at this stage as the nexus context is already apparent within the River Basin Management Plan (a mandatory instrument in accordance with the EU Water Framework Directive) and the activity of the River Basin Committee.

The policy packages were validated by the SHs in the third workshop, at which they provided feedback and suggestions. A set of top three policies were prioritized for each of the nexus sectors and used in the future steps of SDM and incorporation in NEPAT. CS SHs participation in the NXG exploitation workshop organized in Split, Croatia in 2023, further contributed to increasing their awareness and co-creation capacity in nexus context. Additionally, the SHs were involved along the SDM development for validation of the modelling outcome and incorporation of the selected policy packages for the Jiu CS. They were also stimulated to provide feedback on the NEPAT tool both in WS context and bilateral interaction. The tool was presented online to the CS SH in WS#4 and furthermore in an interactive user-oriented session organised in cooperation with EURECAT in WS#5, in Bucharest. The WS#5 started with a dedicated session for the high policy level in Romania aimed at raising awareness on project activities and results in the CS, preparing the next steps for enhancing project impact. All these activities have the potential to be the stepping stones towards the development of a nexus governance roadmap tailored to the CS context and facilitate reaching stakeholders' agreement on the next steps for mainstreaming nexus thinking into policy making.

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

3.2 From biogeophysical modelling to baseline scenarios (WP2)

WP2 focuses on identifying and bringing together relevant nexus data, creating a coherent scientific portfolio of data across case studies to characterize physical, environmental and socio-economic components under current and future climate change conditions through the coming century. The portfolio is developed in line with a set of selected IPCC scenarios, as a combination of shared socioeconomic pathway (SSP) and representative concentration pathway (RCP) scenarios. The goal is to provide data support for each case study (WP5) concerning appropriate nexus data combinations and modelling design for WP3 and WP4 and under SH acceptance and co-development in WP1 and WP5, in order to characterize relevant case-specific biophysical-human interactions between nexus components.

3.2.1 Current state of WEFE Nexus components in the Jiu CS

Water

The National Meteorological Administration (ANM) has run climate scenarios for 2011-2040 and 2021-2050. The quantifiable effects on the multiannual average temperature and multiannual average precipitation in Romania highlight an increase in the average annual temperature until 2030 between 0.5°C and 1 .5°C for the period 2020-2029 and between 2.0°C and 5.0°C for 2090-2099, depending on the scenario applied. A generally decreasing trend of the annual amount of precipitation at the level of the entire country was also forecast, with a sharp increase in the precipitation deficit in the areas located in the south and east of Romania. Total annual precipitation could decrease by 10-30% by the end of the century, depending on the climate models used.

Among the countries in the Danube basin, Romania is expected to be more impacted by climate change, mainly through the frequency and extent of floods, including flash floods, as well as the intensity and duration of droughts with negative repercussions on water resources for all users. The challenges posed by the effects of climate change also offer a unique opportunity to strengthen and develop the way the water resources and related risks are managed. For water bodies subject to quantitative and qualitative stress due to climate change, measures recommended by European documents and the concept that promotes natural water storage/retention (Natural Water Retention Measures - NWRM) are implemented. The measures for wetland restoration and renaturation of floodplains of water bodies, have beneficial effects, respectively:

- restoring the hydrological and ecological balance and the natural functions specific to wetlands;
- expansion of natural habitats of interest for SCI and SPA conservation;
- establishing delimitated areas in order to mitigate floods or store water in dry periods;
- sustainable development of traditional fishing, grazing and ecotourism activities

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

Energy

The National Integrated Plan for Energy and Climate Change 2021-2030 (PNIESC) anticipates that Romania will reach a RES energy share of 30.7% in 2030. To reach this target, Romania will develop additional RES capacity of approximately 6.9 GW, as compared to capacity in 2015. For this to happen, Romania needs adequate EU financing and flexibility in RES production by installing back-up capacities based on gas, storage capacities and intelligent technologies for electrical networks. For the Jiu CS, the construction of three photovoltaic parks with a total installed power of 300 MW is planned (for power plants Rovinari, Turceni & Isalnita). In 2023 construction should begin of a new co-generation unit of 200 MW with natural gas (for SE Craiova) to replace the current capacity of 2 * 150 MW on lignite, construction of a new co-generation unit of 400 MW with natural gas (for SE Turceni) to replace the current capacities of 330 MW on lignite, and construction of two energy units of 400 MW (800 MW) on natural gas (for SE Isalnita) to replace unit 8 (315 MW, from 2024) on lignite and unit 7 (315 MW, from 2025) on lignite.

Food

The food sector is under the Ministry of Agriculture and Rural Development (MARD) that is the national public authority responsible for elaborating and implementing strategies relating to agriculture and food industry, rural development, fishing and aquaculture, land improvement and connected areas: conservation and sustainable management of soil as well as of vegetable and animal genetic resources. MARD policies are developed according to EU rules and are based on common agricultural policies (CAP). The National Strategic Plan (NSP) 2023-2027, recently approved by the European Commission, focuses on the development of a sustainable and competitive agricultural sector and compliance with environmental commitments, by remunerating farmers who contribute to protecting the environment above the requirements of the basic level.

The main objectives of the NSP 2023-2027 are:

- Promoting a smart, resilient and diversified agricultural sector that ensures food security, increasing farm viability by stabilizing farmers' incomes and eliminating disparities between farms.
- Strengthening market orientation and increasing the competitiveness of the agri-food sector by intensifying cooperation, encouraging collective investments, modernizing and restructuring farms, through investments to improve productivity simultaneously with the development and modernization of the food industry.
- The socio-economic development of rural areas by attracting and supporting young people and facilitating business development, promoting and increasing employment, social inclusion and local development in rural areas.

The environmental objectives are essential for the implementation of the CAP. The objectives will focus on the contribution to mitigation and adaptation to climate change, to promotion of sustainable development and the efficient management of natural resources, as well as to the protection of biodiversity, the improvement of ecosystem services and the conservation of habitats and landscapes.

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

Ecosystems

The Sustainable Development Strategy Romania 2030 implements Agenda 2030 and the 17 Sustainable Development Goals (SDGs). As regards the SDG 15 (Life on Land), the strategy aims for the conservation and sustainable use of terrestrial ecosystems, sustainable forest management, combating desertification, restoring degraded lands and soils (including lands affected by desertification, drought and floods), developing green infrastructure, conserving and protecting wetlands, and ensuring conservation of ecosystems. At the same time, Romania contributes to the elaboration and implementation of the European Union Strategy for the Danube Region (as co-initiator, with with Austria), along with all the other riparian states. Through this strategy, specific actions have been proposed to protect the environment in the Danube region. These refer to the protection and quality of water, the prevention of flood risks, and the preservation of biodiversity, landscapes, soil protection and air quality.

3.2.2 Co-creation of technical and transdisciplinary knowledge

The activities organised in the CS followed a strategy aiming for continued participation of the representatives of all WEFE sectors as well as presence of different policy making layers, from local to national, in the project dialogues. The Jiu CS lead participated in the project co-creation meetings organized periodically online and involved WP1, WP3 and WP4 leads in CS activities. The first workshop organized in May 2022, was designed as a team effort to raise SH interest in the WEFE nexus approach and stimulate their contribution to further knowledge sharing. The process was continued in advancing the dialogues during the following workshops and the field visit organized together with WP1, in October 2022. Relevant elements for the development of technical and transdisciplinary knowledge are also identified by connection with Rexus (CS on Danube Floodplain) and GoNexus (CS on Lower Danube) based on cross project participation in SH meetings and connection of the modelers teams in early 2023 to discuss synergies for enhanced impact in the Danube basin.
CS specific data was collected from local sources and shared with WP2 and WP3 to complete or downscale variables made available from open sources/global scenarios, to support as much as possible a tailored reflection of the local situation in the planned NXG instruments. Requests for input or feedback on different information needs/ options were channelled via WP3 such as for ex-CS level data shared with WUR for agriculture and forestry.

3.3 From conceptual model to complexity science modelling and WEFE nexus footprint (WP3)

WP3 links the biophysical modelling (WP2) and stakeholder input (WP1) integratingthe outcomes of these WPs through novel complexity science approaches to assess the impacts of water-related policies in a nexus context. This is done in the CS under different scenarios, according to the requests of WP5 and the stakeholder input and recommendations from WP1.

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

3.3.1 Overview of interrelationships among WEFE Nexus components

The top-level conceptual map for the Jiu CS (Figure 4), reflects river basin management priorities and SDGs for the region (monitored indicators are included in the map). Climate change with increasing temperatures and variation in frequency and intensity of precipitation strongly influence the land use and land cover and *vice versa*. Flood events have had a long-standing presence in the region while, more recently, desertification is increasingly becoming a concern.

Water availability takes into consideration both water quantity and water quality. The good status of both quantity and quality is essential to ensure drinking water for the population and ecosystems functioning in the Jiu river basin. The availability and accessibility of safe drinking water are expected to increase due to the extension of the water supply and sanitation networks with a positive impact on human health. Water in the basin is mainly used for agriculture (irrigation), energy (production) and industrial (processing). The main agricultural activities in the basin are horticulture, husbandry, and aquaculture and they consume both water and energy. Energy produced in the basin plays a major role in the national energy mix and cover for water abstraction, distribution, cooling, heating, and treating in the region. The ecosystems that characterise the basin are important contributors to the system and thus supported and controlled by floodplain restoration and flood protection measures while at the same time they are threatened by land use change and agricultural activities. Ensuring good ecological flow is fundamental for maintaining the good status of ecosystems. Specific aquatic plants are currently tested as a nature-based solution to clean water, aiming to contribute to reducing water pollution. A circular approach and ecosystem services are strongly promoted as sustainable alternatives for local development.

3.3.2 Main WEFE Nexus challenges

One of the main challenges in the basin is ensuring water security, which is closely related to the good status of water resources in terms of both quantity and quality. The basin's water availability is challenged by the changing climate (hydrological regime) and the increasing demand for water use in households, the energy sector, irrigated agriculture and the processing industry, as well as husbandry, aquaculture, and pisciculture.

The ecosystem, its services, and local biodiversity depend on the amount of water ensured to preserve the ecological functions (via the ecological flow) in the Jiu river basin and on the quality and timing of that water. Education (i.e. citizen awareness) and digital instruments (monitoring) are currently prioritized to increase and improve knowledge about the multiple uses of water resources and the importance of integrated resource management for the environmental and socio-economic system of the basin, helping to define the links between ecosystems and the other WEF sectors.

Agriculture is not only one of the main users of water resources but also a potential contributor to significant water pollution. The increasing crop production (both for food crops and energy

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

crop production) is the main driver of chemical load into water bodies. In addition to nutrients and pesticides used for enhancing the yield (a positive benefit in terms of food security), livestock production, aquaculture and pisciculture are contributing to polluting water resources (although they also lead to food production benefits). Although agricultural activities currently require a significant amount of water, the main priority in the basin is to ensure water for domestic and industrial purposes. In order to achieve this goal, an extension of the water supply and sanitation network is currently in place. This network aims to increase water quantity and quality, thus increasing water availability and minimizing potential conflicts among sectors for its use. Recently, aquatic plants have been tested and introduced as nature-based solutions with the aim of cleaning polluted water without recourse to engineering solutions demanding more energy.

Food and energy demand are driving rapid land use change, leading to a potential conflict for land use for growing crops for both food and biomass production, as well as land for ecosystems. The expansion of arable land is currently leading to increased deforestation with an unavoidable impact on climate change, ecosystems, and biodiversity, forming a link between these sectors.

Hydro, biomass and solar are the main renewable sources for energy production. Coal completes the energy mix in the Jiu river basin. The sector is currently under transition towards clean energy and reduced impact on climate in terms of greenhouse gas emissions. Energy demand is driven by population and socio-economic drivers. The energy produced in the basin holds a major importance in the national energy mix as well as for providing water services (water supply and water treatment), for population industry, agriculture, and transport in the region.

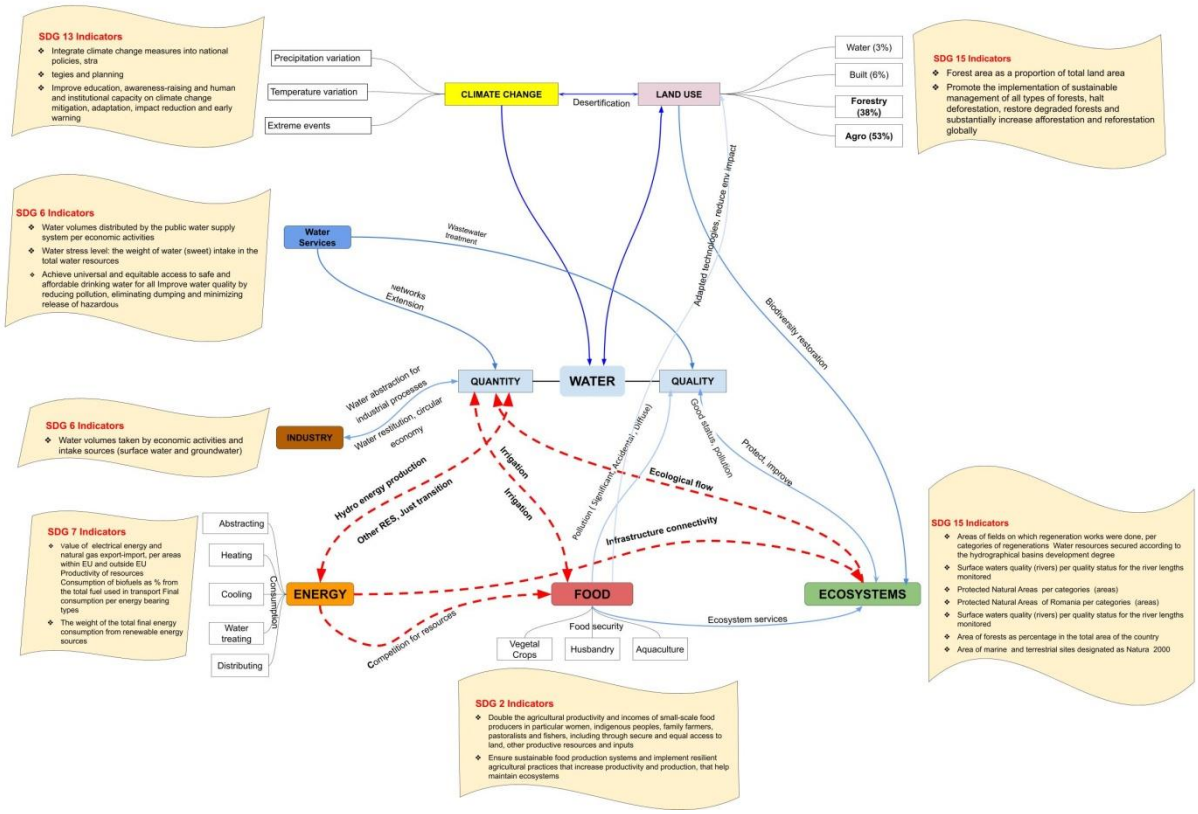
3.3.3 Conceptual Model

Water sub-sector conceptual model

The conceptual model for the Jiu CS is shown in Figure 4. Water availability, considering both water quantity and quality, was identified in the River Basin Management Plan of the Jiu river basin as an important component of the system. Directly depending on water quantity, water services have been highlighted as a key entry point to ensure water security in the basin.

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

Figure 4: Conceptual model for the Jiu CS



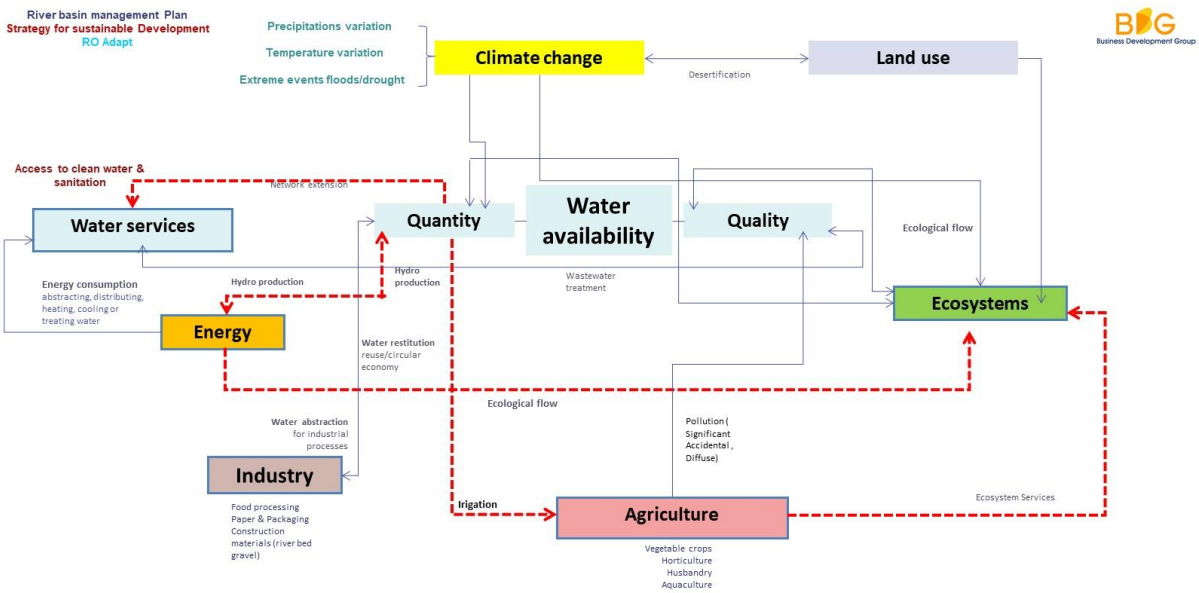
Land use change is increasing the impact of climate change on the Jiu river basin where changes in frequency and intensity of precipitation and increasing temperature are threatening the WEFE sectors due to increased frequency and intensity of extreme events such as drought and floods.

There are at present a large number of people who access water independently because they are not connected to a water network. The country is currently increasing water services thanks to the extension of the water supply network, contributing to achieving SDG 6 with a consequent positive impact on public health and access to clean water and sanitation. Although the agricultural sector is the largest water user, the main priority in the basin is to supply water for domestic and industrial use. Water is often prioritized by national level decisions for energy production and in turn, energy is used locally to increase water availability, especially for water abstraction, distribution, heating, cooling, and treating. Water abstraction is essential for industrial processes (e.g., food processing, packaging, and construction of materials) and agricultural activities, especially irrigation.

The expansion of the agricultural area, currently up to about 48% of the total available land, is leading to an increased risk of water pollution, due to chemical loads into water bodies, with a significant impact on water quality and ecosystems. Ecosystems are also impacting on water quantity in the basin. The latter are heavily impacted by climate change and land use change. Details of the water sub-sector are shown in Figure 5.

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

Figure 5: Water sub-sector conceptual map for the Jiu river basin



Energy sub-sector conceptual model

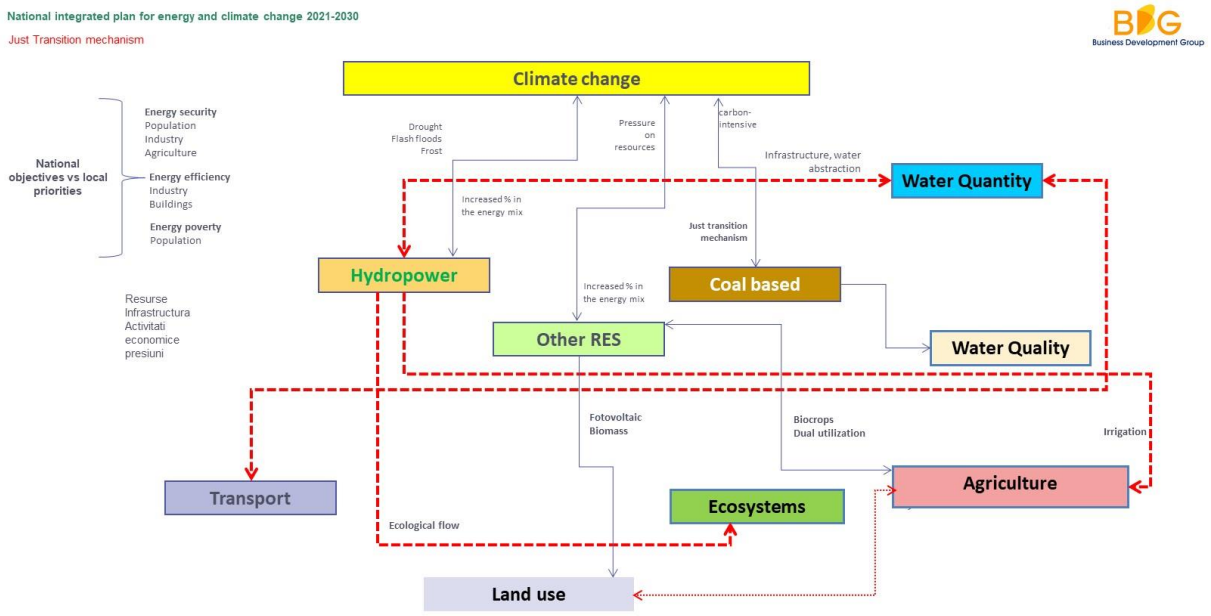
Climate change influences energy production (e.g. via affecting river flows for hydropower) and *vice versa*. Infrastructure (e.g. dams) is expected to increase water storage, contributing to mitigating climate change impact in the basin. Changing temperatures and precipitation levels mainly impact on hydropower production and energy crop production. The main energy sources in the Jiu river basin are hydropower, other renewable energy sources (e.g., photovoltaic and biomass), and coal. Energy is mainly used in the domestic, industry, agriculture, and transport sectors. The National Integrated Plan for Energy and Climate [2] and the Jiu Valley Strategy under the Just Transition mechanism[3] are framing decarbonization by reducing coal-based energy production in the region. It is expected that the implemented measures will contribute to reducing GHG emissions and water pollution while adding pressure on the water resource with alterantive economic activities.

The regulation of ecological flow is essential to ensure ecosystem health in the basin, and therefore may have a potential impact on hydropower generation. Hydropower production is expected to contribute to supplying clean energy for agricultural activities, especially for irrigation. An important trade-off in the basin is between land use for energy production (e.g., biomass, solar panels) and for food crops, which might threaten energy and/or food security in the basin. Energy production is expected to impact land use and *vice versa*. Details of the energy sub-sector are shown in Figure 6.

[2] https://energy.ec.europa.eu/system/files/2020-06/ro_final_necp_main_en_0.pdf
[3] https://reform-support.ec.europa.eu/strategy-economic-and-social-development-jiu-valley-coal-region-transition-romania_en

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

Figure 6: Energy sub-sector conceptual map for the Jiu river basin



Food sub-sector conceptual model

Crops, animal husbandry, aquaculture, and pisciculture are the main sources of food in the Jiu river basin. Food security is threatened by climate change which, due to desertification risk, might have an impact on food production and lead to widespread land use changes. Plant genetic diversity as well as agriculture adaptation to changing climate and the use of technologies are fundamental to ensuring food security in the Jiu river basin.

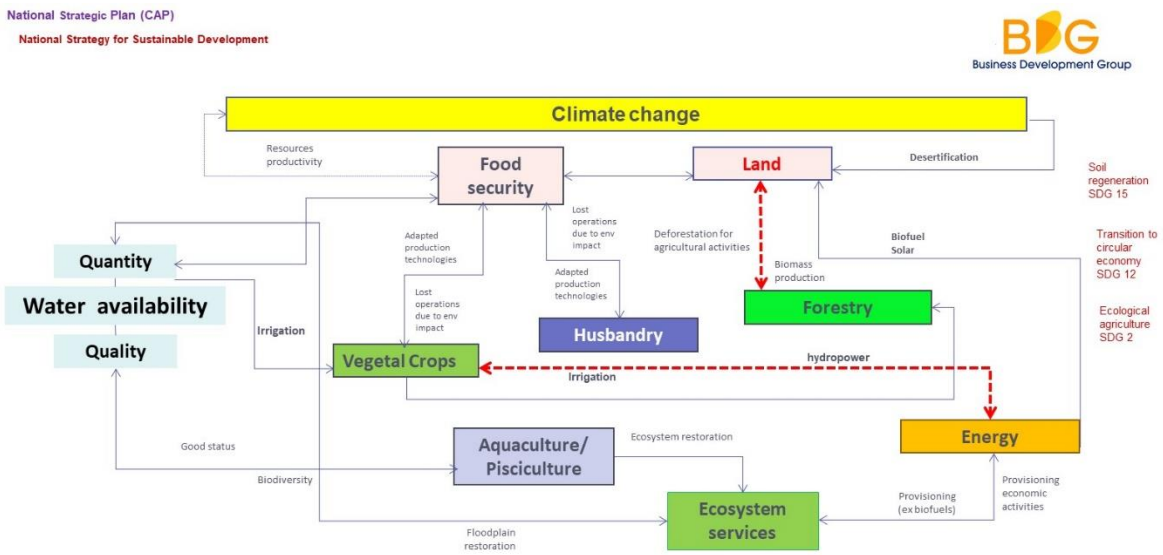
Crops, for both food and energy supply, depend on irrigation that in turn depends on water availability (quantity). Likewise, the choice of cropping can impact on overall water quantity available for other uses. Other activities, such as aquaculture and pisciculture, largely depend on water quality. Ensuring water quality is therefore essential for reducing biodiversity loss and preserving ecosystem services, as well as maintaining food production in the basin.

Food production activities can contribute to ecosystem restoration, thus maintaining and improving ecosystem services. But at the same time, as mentioned in the energy sector, there might be competition in terms of land use for food and energy (bio-crops) production, especially due to the arable land expansion and biomass production (forestry and energy crops). Such activities are exacerbating deforestation which is also a relevant issue in the basin. Energy is consumed in crop production, and crop production (biomass, waste residues) can contribute to local energy generation.

Soil regeneration (SDG15), a transition to a circular economy (SDG12), and ecological agriculture (SDG2), are expected to be achieved in the basin through the food sector assessment and its interlinkages with other sectors of the nexus. Details of the food sub-sector are shown in Figure 7.

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

Figure 7: Food sub-sector conceptual map for the Jiu river basin



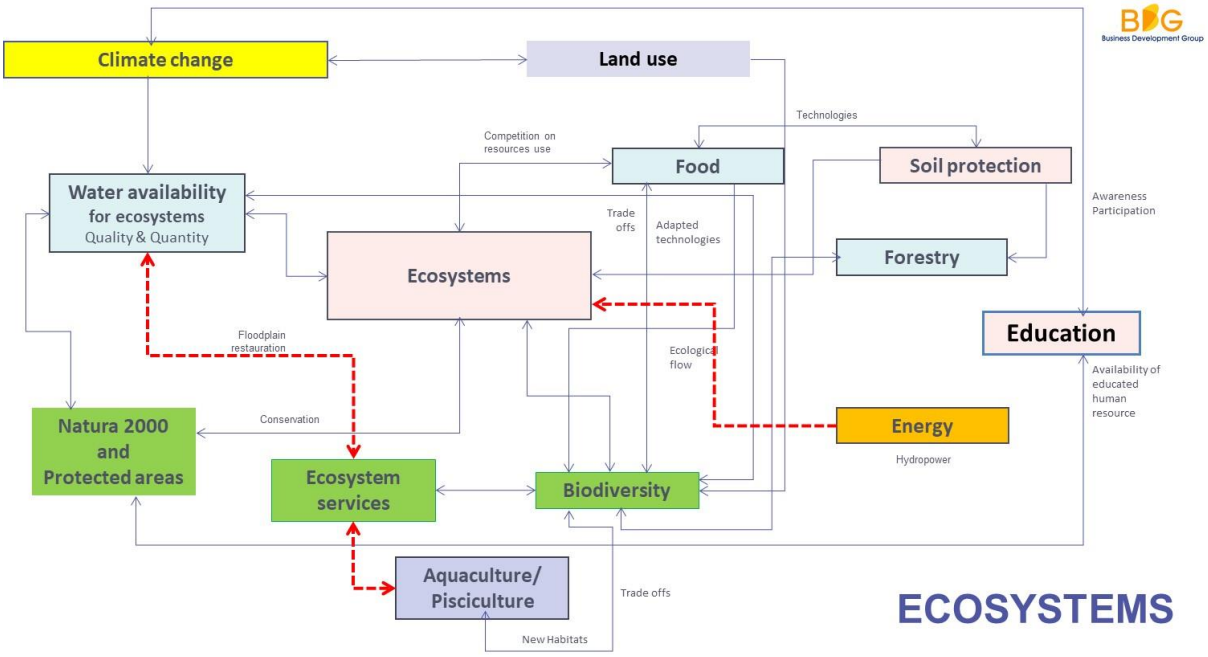
Ecosystem sub-sector conceptual model

The ecosystems in the Jiu river basin depend on both water quantity and quality, and vice versa. Water quality and quantity are essential to ensure ecosystem services, biodiversity, and the good status of protected areas. As seen in Figure 8, water resources are deeply influenced by changes in climate that in turn is impacted by land use changes, among other sectors. Food and energy production techniques have an impact on ecosystems, but due to the implementation of the decarbonization strategies in the basin, and achieving the sustainable energy production goals, an improvement in ecosystem health is expected. So, food production can negatively impact on biodiversity through ecosystems loss and monocrops but, if well managed, could also lead to the protection and expansion of ecosystems and biodiversity.

Aquaculture and pisciculture, as well as good practices such as soil protection and maintaining the ecological flow, are expected to contribute to improving the ecosystems' status. These also impact on the diversification of ecosystem services and their increased contribution to adaptation to climate change as well as local development. Interesting links here are those to education. Through NXG activities, a wider stakeholder group is being made incresingly aware of the challenges being faced, the opportunities available, the interconnected nature of the WEFE nexus in the basin, and of the potential offerred by the digital instrument that will be developed by the project NEPAT to promote new ways to improve policies. These actions may lead to the promotion of new activities, or activities being 'done differently' in order to support more effective integrated resources management in the basin, and improved holistic WEFE nexus functioning. Details of the ecosystem sub-sector are shown in Figure 8.

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

Figure 8: Ecosystem sub-sector conceptual map for the Jiu river basin



The completed conceptual models are included in the NXG Deliverable 3.1, *Conceptual models completed for all the case studies*, December 2022, updated May 2023 (pp. 34-41).

3.3.4 System Dynamic Modelling approach

The first preliminary version of the Jiu SDM is included in Deliverable 3.4: *Complexity science models implemented for all the Case Studies: Prototypes and explanatory report/manual for each CS methodology*. Intense dialogue and exchange of data and expert opinions enabled the development of the SDM between September 2023 and February 2024. The SDM for CS Jiu was finalized at the end of February 2024 and validated with key stakeholders in the CS.

The Jiu CS lead provided input in the following WP3 deliverables: D3.4 Complexity science models implemented for all the Case Studies (input for application of the methodology in the CS), D3.5 *Sensitivity/Uncertainty Analysis Report* (application of the methodology in the CS) and D 3.6 (validation of the scenario and uncertainty analyses to be used for the SDM and the NEPAT tool.

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

3.4 From nexus governance and complexity science modelling to nexus policy assessment tool NEPAT (WP4)

The objective of WP4 is to develop the nexus policy assessment tool (NEPAT) to distil integrative policies that maximize the overall nexus benefits while dealing with conflicting nexus decisions and objectives.

3.4.1 Identification of relevant policy scenarios which sustain initial development of NEPAT

The identification of policy scenarios was finalised in the second part of 2023. It started with an exhaustive inventory of relevant policies for each WEFE sector. This was validated with the SH in the third workshop in the CS when also SH selected a top three polices considered priority for each sector in the local context. The selection was further elaborated by desk research for identifying instruments available for implementation of policies in practice. Being a follower CS, the option was to use as much as available real data for keeping the connection with SH needs in real time, thus enhancing their capacity to transition towards nexus-based thinking. The incorporation of policy packages was done together with WP3 team as part of the SDM development process. The progress and the selected policy scenarios were validated with key stakeholders.

The Jiu CS lead participated in the periodic meetings led by WP4 following the steps for the development of the NEPAT tool, keeping them connected with reality on the ground. The first WS organized in the CS in May 2022 provided valuable information for the work in WP4 especially as regards the use cases and specific interest for features to be considered by the tool. Discussing NEPAT progress with CS SH was included on the second (Nexus Footprint) and third (policies, objectives, indicators and targets to be included in the tool) WS agendas, The fourth WS was organized as a joined on-line workshop to present features of NEPAT by EURECAT with participation of SHs from other NXG CSs. In the SH register the Jiu CS already identified the SH with potential to become users of the tool and those SHs were invited to the meeting (after previously checking with EURECAT whether a specific professional background is needed, e.g.IT, AI, etc., to select a group that can bring valuable input into the conversation and also stay involved in the subsequent steps). In September 2024, within the fifth WS in the CS, a dedicated user experience session was organized addressing potential users, mainly SH working in public policy units in the WEFE ministries connected to SDG network but also education and civil society. The session also provided the opportunity to adjust presentation materials (video and guide) and collected feedback to support fine tuning the tool. This was continued in the beginning of 2025 with additional contribution for the planned finalisation of the NEPAT to include feedback on the tutorial, validation of results, translation. An update with the new SSP data sets was also validated with WP3.

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

3.5 Stakeholder engagement and stakeholder workshops (WP5)

NEXOGENESIS follows a 5-step stakeholder engagement process:

- **Step 1** is the definition of the SH engagement aim to ensure a clear process and allow defining expectations and communicating to the SHs their role in the co-creation process.
- **Step 2**, stakeholder analysis, starts with the identification of who should be involved where and how (e.g., SH 1 should be informed, whereas there should be close collaboration to empower SH 2) by classifying stakeholders and analysing their relationship to the project, as well as to each other.
- **Step 3**, stakeholder engagement plan, assesses the SH's interest to identify incentives and benefits that can drive their engagement in the project.
- **Step 4**, stakeholder management and sustainment, determines how to maintain this interest and engagement of the SH throughout the duration of the project and how to sustain the SH's engagement beyond the lifetime of the project.
- **Step 5** aims at evaluating the participatory process and its effects on the project, as well as on the CS's objectives.

The SHE plan in the Jiu CS was based on the data, information and perceptions provided and analysed by the Jiu CS Lead and the AVA-Team up to September 2022. The plan is updated on a yearly basis taking new stakeholder information and evaluation results into account, to allow for adaptive management.

To actively involve stakeholders and facilitate their engagement in co-creation and validation of a WEFE Nexus approach to support improved policy-making for water management and sustainable development, the primary focus was on the Jiu basin, with relevant interactions within the Lower Danube region also assessed. Additionally, we aim to promote case study results as a trustworthy and solid reference at a national level in Romania and in the region (in dialogue with other CS in NXG and sister projects under H2020-LC-CLA-2020-2- Rexus, and GoNexus), for identifying common interests, potential conflicts, and areas of compromise between different profiles of SHs in diverse economic and biodiversity contexts. Furthermore, we aim to contribute to dissemination of project results at various levels, facilitating their effective use in assessment processes for water use requirements, evaluation of the vulnerabilities of current water systems, and improved strategies and action plans towards achieving EU targets related to WEFE sectors (WFD, CAP, Green Deal, etc.).

3.5.1 Overview of current stakeholder landscape

Table 2 shows the number of SHs preliminary identified in the CS. Table 3 provides more detail about how SHs were categorised.

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

Table 2: Overview of identified SHs in the Jiu CS

	Preliminary	Without consent	With consent (PPCF)
No. of total identified SHs	94	69(81%)	25 (26.6%)

Table 3: Categorization of stakeholders (SHs) in the case study based on different criteria

Categories	Number
By Tier[4]	
Tier 1	8
Tier 2	12
Tier 3	5
By occupation	
1. Civil society	1
2. Public initiatives	0
3. Policy makers at local level/municipalities	1
4. Policy makers at national level	2
5. Agricultural authorities and representatives	3
6. Energy authorities and representatives	4
7. Water management authorities and representatives	3
8. River basin authorities and representatives	3
9. Environmental protection authorities and representatives	4
10. Business/private or public enterprises	2
11. Media/science communicators	2
12. Other consortium members (a.k.a. internal stakeholders)	
13. Academia	
By interest and power (only 1 option)	
High Interest - High Power (HI-HP)	76%
High Interest - Low Power (HI-LP)	
Low Interest - High Power (LI-HP)	0
Low Interest - Low Power (LI-LP)	0
Female	15
Male	10
Other	-
By WEFE sector (multiple options)[5]	
Water	6
Energy	4

[4] Tier 1: This tier includes stakeholders that will be directly engaged in the project implementation and/or outcomes and are strongly case-specific (e.g., representatives of the local municipality, civil society organisations -CSOs-). SHs will potentially collaborate (they might be informed or consulted only) in the processes of development of the models and nexus policy assessment tool, and analysis and validation of policy suggestions.
Tier 2: This tier includes stakeholders with an interest in the application of project results and products. A wider constellation of interested SHs (e.g., local government, European policy departments -EC DGs-, stakeholders in different basins) who wish to utilise the NXG engine may be engaged.
Tier 3: This tier includes stakeholders with a general interest in the project. This is a wide group of stakeholders for the dissemination of outcomes which could include neighbouring basin or country authorities, business or private enterprises, and national planning agencies.

[5] These categories do not include five SHs who are cross-sectoral (climate change and SDG).

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

Food	5
Ecosystems	5
By actor-links (multiple options)[6]	
Conflict	74
Complementary	141
Cooperation	85
Non-existent	15
Blanks	0

3.5.2 Summary of engagement approach

Table 4 provides an overview of SHE activities carried out in the CS.

Table 4: Overview of engagement activities

	Co-exploration	Co-design		Co-development	
	Information	**Consultation**	**Involvement**	**Collaboration**	**Empowerment**
SH category (expected - given NXG aim)	All categories	Civil organisations, academia and science communicators, local, regional and national authorities	National and local authorities and policymakers in the WEFE sectors	National and local authorities, policymakers, academia	Policy makers, Civil society and market players in WEFE sectors
Power and Interest PI	Low PI	Low to medium PI	Medium PI	Medium to high PI	High PI and medium to low P with high I
CS focus and activity	Informing about results on held meetings and workshops (e.g., email, newsletter)	Educate, build trust and increase awareness	Build trust and increase awareness	Engage in framing the connections and developing solution pathways (e.g., focus groups, interviews, workshops)	Engage in framing and finding solution pathways by themselves (e.g., focus groups, workshops, training/ capacity building)

[6] 300 relationships across the 25 stakeholders. The relationships correspond mainly to the complementary type, 47%, followed by cooperation relationships among stakeholders (28.3%), and a considerable share of conflicts (24.7%).

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

3.5.3 Summary of workshops

WP5 supports the application of the NXG approach in the five case studies. NXG builds on co-creation, both within the consortium and with stakeholders. Thus, CS workshops with stakeholders are an important building block of the stakeholder engagement strategy. Table 5 provides a summary of the workshops. Below the table is a summary of the gender distribution of participants.

Table 5: Summary of workshops, including main goals, structure, outcomes, experiences and lessons learned

Work-shop No.	Goals	Structure, activities	Main outcomes	Experiences (positive/ negative)	Lessons learned
1	The general objective of the first workshop was to introduce the NXG project to the relevant SHs and promote the benefits of understanding the WEFE Nexus to support the bottom-up process of policy change, by stimulating the silo stakeholder to be part of the nexus dialogue using scientific tools to facilitate conflict resolution, joint decision-making and implementation of integrated nexus policies.	Two plenary sessions allocating time for interactive discussions with participants in each of them. Use of the MENTI tool and distribution of WP1 questionnaire	The meeting was a good initial opportunity for dialogue between different profile stakeholders, sharing valuable information and opinions to base building awareness and collaboration for solving WEFE nexus issues. Also, some specific aspects relevant for Jiu river basin were emphasized during the meeting such as sustainable water use, water pollution risks, education and awareness, resilience through resilient ecosystems or the importance of the energy production.	We had a very good rate of participation from the invited SH (40 participants) with a high interest in the NXG project and the topics proposed by the WS. The challenge of the consequences of fragmented implementing of sectoral polices is already recognized at societal level in Romania. The NXG project is seen as an opportunity for participating in co-designing a digital tool with a strong scientific base to facilitate agreement between different sectors as regards the sustainable management of water resources.	The choice we made for a hybrid setup with interpretation in/from RO/EN involving the WPs leads and members of the NXG consortium enabling exchange of information, raising SHs interest in the activities and tools planned by the project, stimulating the dialogue between different nexus silos in the region. We plan to keep the same strategy in workshop 2, as well as using interactive formats to keep continuity of the dialogue and the SHs interest to participate in the co-design processes.
2	The general objective of the second workshop was to present to the SHs the first drafts of the conceptual maps and the WEFE Footprint and to review together the conceptual maps connections, main	Two plenary sessions allocating time for interactive discussions with participants in each of them.	The meeting was also used to connect more deeply with the local, regional and national SH and better understand where the tools and instruments- to be created by the project- will fit	Very good interaction, good level of enthusiasm for the project objectives. At the same time a clear interest in seeing results that incorporate SH input and the specific aspects of the CS in tools	The valuable interaction is generated when nexus conversation is particularized to known conditions. We plan to build on that, enhancing the nexus knowledge basis but at the same time keep the connection with sectors specifics

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

Work-shop No.	Goals	Structure, activities	Main outcomes	Experiences (positive/ negative)	Lessons learned
	policies and relevant indicators for Jiu River Basin.		better- al local, regional or national level. As emphasized by the NARW representative, higher political level willingness to apply the WEFE Nexus is important.	that can facilitate the change towards nexus thinking is expressed. This seems to become a very important trigger to keep interest in the long term.	and practical value in the Jiu basin building on the replicability at national and Danube basin level.
3	The objectives of the WS were to present and validate the inventory of WEFE public policies in the national context and specific for the Jiu CS; discuss and validate the governance assessment proposed by NXG; present the NXG approach to system dynamic modelling; update the SH on the SH engagement landscape and evaluate together with them the engagement process in the CS. Sharing info on the parallel WEFE nexus GoNexus and Rexus.	Two plenary sessions allocating time for interactive discussions with participants off and online in each of them.	Validation of governance assessment and completion of the policy coherence evaluation. Selection and validation of policy instruments relevant for modulating WEFE interlinkages in the CS context. Build on SH trust and a sense of ownership for the results of NXG. Consolidate SHs opinion that the nexus dialogue must continue further than NXG project frame, contributing to SH capacity to identify pathways and interaction platform to be used in the future. Open the opportunity for further upscale the NXG approach by promoting it in parallel processes managed by the SDG Department. Exploring opportunities for	*Positive:* Participation of stakeholders from all WEFE sectors and levels Sustained support of water and sustainable development authorities. The hybrid format to facilitate participation of national stakeholders, project partners and representatives of sister projects. *Negative:* Limited possibility for the participants online to experience and get stimulated by the dialogue in the room	Knowledge sharing is the key to maintain and improve SHs' participation. The information flow should constantly go both ways from project the SHs and from SHs to the project. Keep the level of interest and support by informing SHs on how the data collected by NXG is processed, sharing results as preliminary and give SH the opportunity to reflect and contribute, highlight how the results could be directly useful for them. Avoid long presentations using scientific language. Seek SH activation along the event by keeping a relaxed (informal) dialogue giving them the possibility to interrupt for asking questions or making comments, breaking the flux of sometimes difficult to understand information, making it easier for them to grasp.

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

Work-shop No.	Goals	Structure, activities	Main outcomes	Experiences (positive/ negative)	Lessons learned
			enhanced impact especially as regards policy making by collaboration with REXUS and GoNexus projects;		
4.	NEPAT decision support tool of NEXOGENESIS project	Online session	Intro NEPAT, mock-ups and NEPAT demo Interactive dialogue with SH (RO, GR, SA)	Good experience to gather SH from four countries. Good level of commitment and valuable input from SH.	
5.	High level policy making session and NEPAT user experience (17 September 2024)	One plenary session with high level policy making User experience session with potential users of NEPAT	Presentation of overall project approach and CS activities to the high-level decision-making level in Romania Use of the tool for real-case scenarios in local context	Positive experience increased awareness of different SH categories on the possible pathways for making use of the NXG project tools in policy making processes, stimulating nexus thinking for improved resource management	Strong brief messages and hands-on user experience contribute to building interest and trust in WEFE nexus thinking and NXG approach

Workshop No.	Males	Females
Workshop 1	18	21
Workshop 2	6	12
Workshop 3	5	16
Workshop 4	4	15
Workshop 5	4	14

Additionally, to the 5 WS organised in the CS, the strategy applied in the CS#3 focused on finding additional opportunities for SH engagement to keep them close to the project objectives. Several meetings with key SH were organised for the completing data sets and validation of the policy scenarios to be included in the SDM. Representatives of integrated territorial development (Just Transition Mechanism) and River Basin authorities joined the CS team in the extended audience of the Nexogenesis External Exploitation Workshop organised by the NXG project in 2023 in Split, Croatia providing valuable input and sharing practical perspectives on the implementation and use of innovative WEFE Nexus related tools.

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

3.5.4 Summary of the effects of the engagement activities

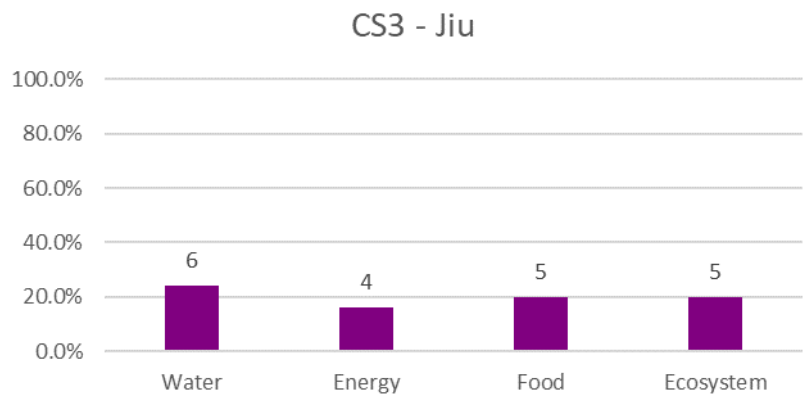
A total of 94 Romanian stakeholders were preliminarily identified out of which 25 (26.6%) consented to be officially included in the stakeholder register and participate in the NXG stakeholder engagement (Table 7).

Table 6: Jiu CS summary information of stakeholder identification as of September 2022

Item	Count
Preliminary listing of stakeholders	94
Stakeholders in registered officially	25
Percentage of consent [%]	26.6%

Not all stakeholders belong to one WEFE sector: some stakeholders belong to other sectors (e.g., civil society, policy makers at national level) and not all of them were differentiated. Across the differentiated ones, there is a rather even distribution of the stakeholders across the WEFE sectors (Figure 9). Comparing the proportions with the preliminary listing, the food sector is the only that has reduced its share.

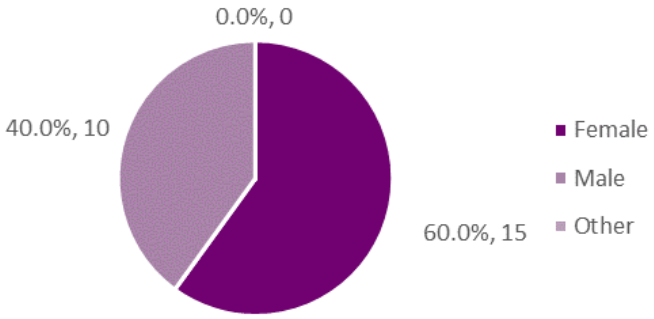
Figure 9: Distribution of stakeholders across the WEFE sectors for CS3 - Jiu. One stakeholder can be assigned to one or more sectors.



In terms of gender, there is a 60/40 distribution across female and male genders (Figure 10). All stakeholders provided data about gender.

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

Figure 10: Gender distribution for the Jiu CS



Stakeholder differentiation and categorisation

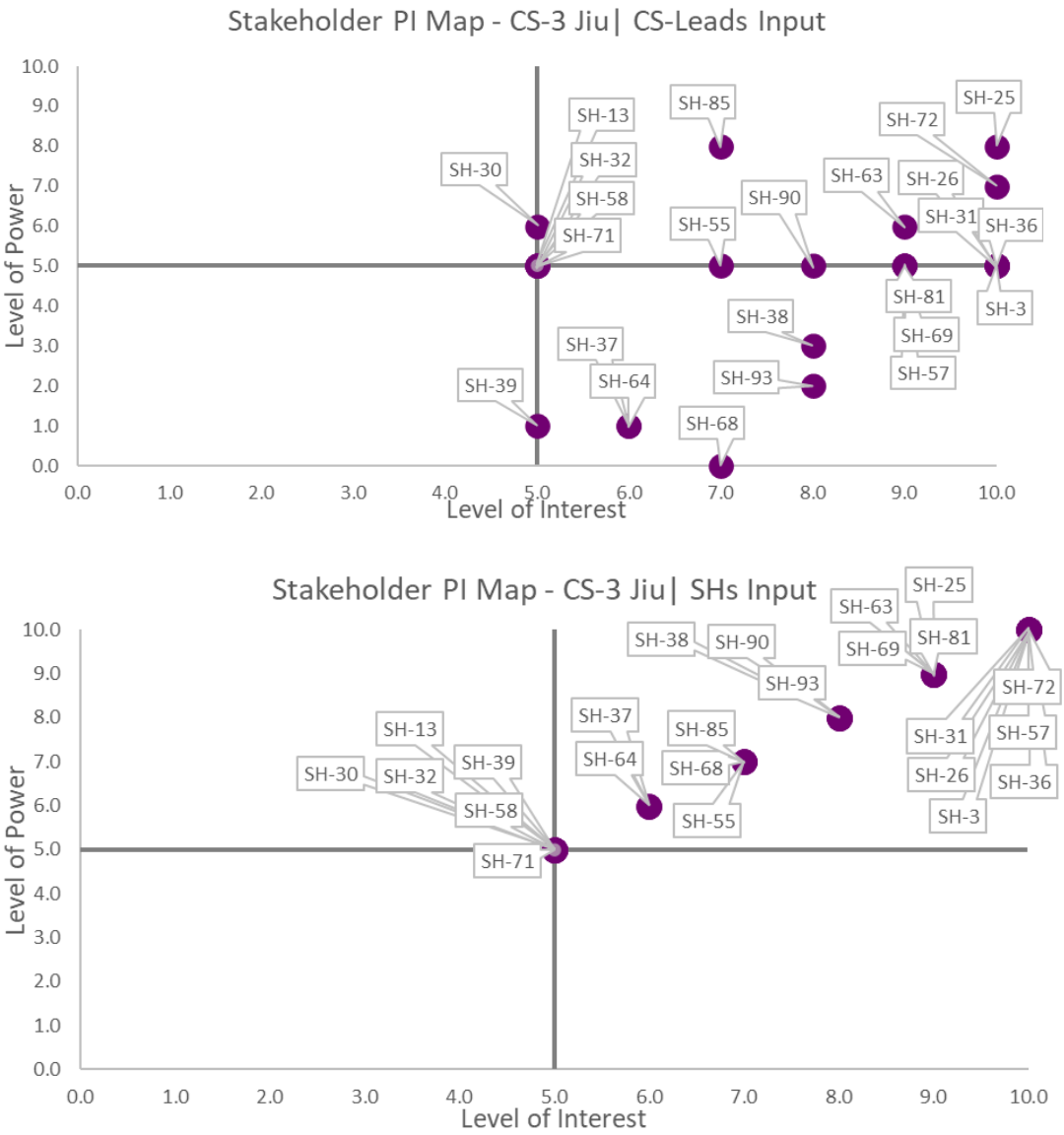
The 25 official stakeholders belong mainly to Tier 2. This means that stakeholders are perceived to be more interested in with the application of the project outputs, rather than with their development. Additionally, these stakeholders were categorised mainly as "5. Agricultural authorities and representatives", "4. Policy makers at national level", and energy (category 6) and river basin (category 8) authorities and representatives. This also reflects a rather balanced distribution of the stakeholders across the WEFE sectors. Figure 11 shows the power-interest analysis relating to the SHs.

From a power-interest perspective, all consenting stakeholders were perceived as having mid- to high-interest with a majority (76%) with high power. When comparing the perceived scoring of both the CS-Leads and the stakeholders themselves (as provided in the PPCF), stakeholders tended to score themselves as having higher power than the score perceived by the CS-Leads. The most powerful stakeholders belong to civil organisations and the river basin authority, along with authorities and representatives of the water and energy sectors (SH-3, 26, 31, 36, 57 and 72).

Although the upper right section of the maps in Figure 11 should be considered as the key stakeholder group, given the number of stakeholders, all of them will be considered for a closer engagement, as far as they are interested.

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

Figure 11: Maps of SH power-interest dimensions



Adjusting the SH engagement plan

The stakeholders need to be kept interested and engaged in NXG project in between workshops, not only by requesting information from them but by also sharing with them progress that incorporates the input provided to the project team. It is also important that they experience the instruments planned by the project from the early phases onwards.

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

3.6 From policy recommendations to impact maximization (WP6)

Impact maximisation

The general expectation is that NXG will facilitate better agreement on water use or at least support for smoother negotiation processes using scientific evidence. This is expressed strongly by the water sector, within which the awareness on resource management is stronger. Further use of impact logs will provide more information about this in due course.

The most significant change observed in the stakeholders (their attitudes, their interactions with the CS, their interactions with each other), is their empowerment based on increased knowledge and awareness on WEFE Nexus interactions. This has been caused as a result of information shared and interactive dialogues facilitated during WSs. Mobilizing HP SH by tailored approach (bilateral meetings, joining complementary initiatives that may benefit of nexus approach).

The SH mobilised by NXG are convinced by the Nexus approach that the project is offering. The positive aspects they note are connected with understanding the societal value of the resource and the need for an agreement on its sustainable use in the long term. The negative aspects concern the capacity of stakeholders to directly influence nexus policies development and implementation due to their low power in influencing the required change in the appropriate timeframe. The need for a synchronized top-down/bottom-up approach increases the expectations as regards the opportunities offered by the NXG approach and tools.

In terms of ideal policy impact, the aspiration is to see WEFE Nexus impact included in the ex-ante and ex-post evaluation procedures in policy making in all WEFE sectors, at all levels (EU, national, regional, local). Realistically achievable in the time frame of the project is an increased awareness on the nexus-based dialogues for sustainable management of the water resources. The access to NXG methodology (the planned handbook) and introducing NEPAT in the working routine of the SDG policy making working groups and of the river basin authorities, can speed up processes to facilitate change in the national setting. This could be enhanced by prioritizing nexus-based actions within the implementation of the European Water Resilience Strategy.
Additionally, in the CS#3 there is a clear interest of the academic sector (environmental economy and geography), to start using the NXG tools in the educational processes, testing in the current school year with a possibility to expand in the school year 2025-2026.

We used a combination of global scenarios and local data to base the NEPAT on. The outcome needs to stay relevant for capturing the real-life nexus challenges in local conditions. Any mismatch can affect the trust built on the general nexus approach and the relevance and robustness of NXG tools, as well as the sustainment after the project's end. Beyond its educational value, the project also has the potential to provide easy-to-use tools to facilitate nexus-based decision making for SH with different profiles and roles in each WEFE sector, as well as across sectors.

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

The main capacity missing for all is the direct involvement in the WEFE Nexus decision making processes. In our CS we tried to apply a strategy of mobilising not only HI-LP but also involve as often as possible targeted HI-HP SH, identifying opportunities in the national context. Additionally, the NXG consortium and nexus network alliances have the capacity to advocate to higher levels with a consolidated substantiation and strengthened motivation for action while at the same time empowering lower levels with increased awareness, education and easy to use tools to facilitate implementation processes. That will rely heavily on NXG capacity to capture the diversity of nexus thinking and action across countries in well formulated aggregated policy/ position papers in the next steps towards end of the project.

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

4 Lessons learned and experiences

The activities carried out during this period in the Jiu CS focused on identification of the best entry points and pathways for streamlining the nexus thinking for a better integration of sector policies and improved governance, based on continued involvement of SH in project co-creation processes. Based on the complex institutional setting in Romania, the strategy for mapping the SH considered WEFE sectors representation on technical level as well as different levels of governance. Entry points were identified also with policy areas that require cross sectorial approach such as climate change and sustainable development. Activities were conducted to respond to the different tasks within project WPs' while at the same time targeting to raise SH awareness on the WEFE nexus approach. From the first steps they were involved in recognizing intersectoral interlinkages and influences (first exercise in WS1) as well as for selecting. relevant policies and instruments in the CS context. Activities carried on in the project context built upon the activated interest. Keeping a continued dialogue to reflect the incorporation of SH input into different NXG deliverables and tools, contribute to SHs sense of ownership and consolidate their interest for the planned project results.

SHs adhere to the project objectives but do not really follow a WP based approach. A clear overall plan at project level is mandatory to avoid fragmented requests for SH input which in the long run can become a risk for their engagement. CS focused meetings in Berlin (January 2024) and Athens (January 2025) were great opportunities for consolidating actions at CS level syncing the different WP based requirements and sharing relevant experience across CSs. Sharing integrated updates on project progress and how the different CSs input was used for that progress is very helpful for the engagement activities conducted on site. Equally helpful is to jointly agree on gaps and adjust strategies for working in the CS based on project needs, allowing for a bottom-up perspective, incorporating CS specifics and bringing research closer to practice thus enhancing the relevance of the projected tools/actions.

From the workshops and interviews conducted so far in the CS, it is clear the incentive for the stakeholders that adhered to the NXG objectives is the step forward provided by the project for the operationalization of integrated water management principles for better water resources management, in Romania. The dialogues with SHs in the CS included important aspects such as the wide variety of indicators used by each of the WEFE sectors that in practice result in fragmentation of polices, not only across different scales but also within the sectors themselves. The NXG objective for the learning tool to embed the cross-sector dialogue and a decision support instrument is perceived by SHs as an opportunity for operationalization of different strategic targets in water management, climate adaptation and sustainable development sectors. At the same time, there is direct experience of various projects with good results not implemented due to the lack of political engagement.

The stakeholders perceive the tools proposed by the project and the possibility to incorporate case study specifics in their design as an opportunity for improved public policy development in the WEFE sectors and for reaching SDGs in Romania. The national authorities are interested to make use of the results in the Jiu CS for upscaling at national level in connection with sustainable development and updating of the river basin management plans. The registered participants that signed the consent forms (33) expressed interest in further engagement in project activities for reaching the objectives of their activity. The stakeholders

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

should be kept interested and engaged between workshops, not only by requesting information from them but also sharing with them the progress on the development of the different planned instruments and the incorporation of the input they provided during the process to raise their trust.

Applying the integrated water resources management principles is also recognized as a strategic goal at the Danube basin level. The Jiu CS research focus area is complementary with CSs in REXUS (Lower Danube) and GoNEXUS (Danube River Basin). Cooperation with both sister projects consolidate the future impact of nexus-based actions. Including relevant lessons from the two forward NXG CSs especially as regards the transboundary aspects sharing similar challenges in the regional context is being explored as well towards the end of the project. These lines of work will contribute additionally to strengthening SH engagement and building on the impact and sustainability of NXG planned results.

Consequently, the development of the NXG tools and solutions needs to retain a pragmatic approach. The following steps in the Jiu CS will continue in close collaboration with connected authorities at catchment and national levels.

4.1 Implementing the SHE plan

- The frame is very important for the successful SH engagement. It is good that there was a step-by-step process to achieve our final goal.
- It is important to keep SHs interested, avoid long periods without any interaction or feedback from the project. To ensure this, we created a NXG newsletter focused on elements connected with SH input (WSs 1-3, interviews, surveys, etc.), in the local language and distributed to keep SHs connected. We also involved key SH in the development of the SDM (organized a meeting with water and agri SH together with IHE modeller to check/validate different choices or collect additional data). We also created occasions for bilateral dialogues with different SH to keep them connected and interested in NXG work even when it is highly technical.
- Evaluations (questionnaires etc.): it is good to have a validation process and get feedback however the information that we are getting was not something new.

4.2 Reflecting on / Improving the SHE process

- SH need to be considered as partners to the whole dialogue, use of terminology that is “accessible” by them and encourage ideas on how positive impact of one sector could reflect onto the other sectors. Not only request to provide input for the WP needs also keep them informed on how the information is used and the outcome of processing the information they provided.
- For meetings with more than one CS represented (WS4): Good management of such (cross case studies) events is very important for its success. Avoid anything that can create confusion considering the mixed audience (languages, professional background and experience, institutional settings, etc.). Quick decision making and good team work for trouble shooting any bottleneck.
- Engagement process should be adjusted based on the needs and the feedback received from SHs (expected outcomes from the various SHs).

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

- Critical element is the interaction with SH between the WSs. We should also put some check points at which the SH should receive input /information about what was done with their inputs. The in-between interaction is equally important as the workshops themselves.

4.3 Integrating sectors in the NEPAT

The Nexus approach guided our research in the CS#3 from the development of the conceptual maps to the integration of the policies in the SDM to base the NEPAT development with a vision as close as possible to the relevant reality for the SH activated during the project.

The first version of NEPAT was presented to a wide number of SH in WS4. During WS5 a selected group of SH (potential users) from all sectors were invited for a hands-on experience using the tool also giving the opportunity for assessing its practical value in supporting the integration of policies and resulting actions across WEFE sectors. The experience provided valuable input for WP4 team to further fine tune the NEPAT tool.

4.4 Using the tools

Gathering the people around the idea of creating the tools to facilitate the WEFE nexus approach was not difficult, and the activities carried out at CS level contributed to building trust in the expected NXG project outcome. Involving the SH in every step of the development of the project tools also contributed to empowering them for a revised approach to sustainable use of the resource.

4.4.1 Motivating stakeholders to use the NEPAT

This objective can be reached only by creating opportunities for the SH to get direct experience using the tool. The planned NEPAT demonstration for local users and stakeholders during took place in September 2024, in Bucharest. The session facilitated direct user experience and provided support to WP4 team with the next steps for the finalisation of the tool. It also opened the conversation for possible use of the tool in (academic) education processes in Romania. The process will be continued towards the end of the project by encouraging SH to use the tool and organization of bilateral meetings to collect feedback.

4.5 The overall NXG co-creation approach

- The Berlin and Athens meetings were very useful for the next steps in the project not only for reaching objectives in the WP1 but also very important for sharing experiences cross CSs. The direct dialogues and brainstorming within the project team are very

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

instrumental for the identification of the best pathways for SH sustainment and the formulation of recommendations towards policy makers at different levels (local, regional, national, EU).

- NXG multi-level work (SH engagement, governance development, policy inventory, modelling approach, tool development): all these elements should co-exist to achieve outcomes. The complete approach needs to be applied in practice to generate change at sectoral level and stimulate interaction between the WEFE sectors at all policy making levels.
- In the CS specific context, the circular economy is a sector considered favourable for the nexus approach. The opportunity of the development of the Action Plan for the implementation of the National Strategy on Circular Economy was used to disseminate NXG approach on governance assessment, policies inventory as well as SH engagement (well received by central government responsible for the respective processes for circular economy). An additional opportunity for using the NXG integrated framework is explored by the CS team in the context of the Just Transition Mechanism implementation in an area of the CS (Jiu Valley). The integrated vision promoted by the instrument is currently operationalized in practice thus offering a concrete opportunity to demonstrate the value of NXG approach for sustainable local development. The leading SH in the region benefit of a technical assistance project within EU Mission: Restore our Ocean and Waters by which they target restoration of biodiversity in Jiu basin. In February 2025 they reached out towards water basin authority who used the opportunity to promote NXG knowledge and further use of the NEPAT tool.

Challenges

- Consideration given to the transferability of general research concepts to local conditions, acknowledge CS as data/information providers also allowing their participation to data processing and encouraging contributions to adapt theory to practice along with validation of research outcome.
- Keeping the SH attention and trust especially as regards the value of the co-creation processes (intersectoral dialogues) and the scientific base of the NEPAT tool. Create the conditions to mitigate for the natural changes of the SH landscape bringing the newcomers to the project speed by sharing powerful aggregated results and giving easy to-use-access to relevant project tools.
- Demonstrate the NEPAT value for real life policy making processes as well as its educational and increased awareness value for different SH categories.

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

Annex 1: WP5 – Description of Case Study Coordination

WP5 supports the implementation of the NXG approach in the five CSs through:

a) the development of a roadmap that guides the work of CSs in NXG;

b) the management of internal communication between CSs and WPs;

c) the development and implementation of a stakeholder engagement strategy;

d) the continuous coordination and monitoring of all CSs activities.

Special emphasis is placed on the provision of guidelines and training supporting stakeholder engagement processes in the five CSs, as stakeholders provide valuable inputs to the WPs (WP1-4). The WP5 guidance leads to better integration of the project results coming from the different WPs. This work helps to maximize the impact of the project (WP6).

The work of WP5 is complementary to Task 1.3 in WP1. Task 1.3 ensures the coordination of WPs1, 2, 3, 4 and in particular the timely and effective flow of information between the technical WPs (2, 3, 4) and the policy and governance work package (WP1) based on the input received from stakeholders from CSs. As such, WP5 work connects all the other WPs in the project. An overview of the links between WP5 and other WPs is presented in Figures 7 and 8 in MS2 - *Roadmap for Case Study Work/Activities in NEXOGENESIS*.

Throughout WP5 (months 1-48), five (5) tasks, seven (7) deliverables and six (6) related milestones are set with specific dates and timelines. A timeline of these WP5 activities can be found in MS2 - *Roadmap for Case Study Work/Activities in NEXOGENESIS*, Figure 9. They all require close collaboration of the WP5 team with each CS lead and coordination with other WPs. CS leaders play a critical role in co-developing the guiding documents (e.g., the CS roadmap) by expressing their needs, their preferred mode of communication, their ability to contribute with local knowledge, and by validating the developed guidelines, documents, and roadmap.

The first milestone of WP5 (MS2 – *Roadmap for Case Study Work/Activities in NEXOGENESIS*) concerns the development of a roadmap for CS work with the aim of guiding CSs in NXG and more particularly their contribution to each WP. It constitutes a timeline for all relevant activities described in relation to the work and needs of all relevant WPs (WP1-4).

The second milestone of WP5 (MS5 – *Internal Communication Strategy*) is a practical resource that fosters the communication between CS leaders and WP leaders, but also supports the exchange of relevant information/experience among the leaders of different CSs as further explained below.

The third milestone of WP5 (MS6 – *Stakeholder Register*) presents the stakeholder (SH) identification process to generate the SH register for each CS. This document reports on the steps and considerations given to CS-leaders for the identification of the respective relevant SHs. It also provides preliminary results for each CS including the categorization of different SH groups according to their engagement interest and function.

The fourth milestone (MS8 – *CS Monitoring Plan*) includes activities to enable WP5 to monitor the CSs work and potential amendment actions (if needed, in the case of delayed work). Its

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

aim is to facilitate the progress of the CS activities, thereby ensuring a successful implementation of the project work in each CS.

The fifth milestone (MS15 – *Intermediate report on case study implementation and co-creation activities*) provides detailed internal monitoring of case study implementation activities during months 1-18 of project (September 2021-December 2022).

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

Annex 2: Schedule of all activities performed

The table below provides an overview of the activities performed to date (February 2025).

Date	Type of Activity	Purpose	Participants
2021 - 2022	Participation in co-creation meetings	1.a Design the nexus governance and policy assessment framework for NXG (WP1)	CS#3 Jiu lead
	Desk research	Review data available in policy documents	CS#3 Jiu lead
	Participation in all WP5 meetings	1.b Launch stakeholder engagement process	CS#3 Jiu lead
03 Feb 2022	Interviews with main stakeholders	Intro NXG project, initiation SHE process	CS#3 Jiu lead Sustainable Development Department (DDD)
09 Feb 2022	Interviews with main stakeholders	Intro NXG project, initiation SHE process	CS#3 Jiu lead National Administration Romanian Waters (ANAR)
15 Jun 2022	First interview with WP5	To evaluate the progress status of various project tasks in the CS	CS#3 Jiu lead, NTUA
15 Nov 2022	Second interview with WP5	To evaluate the progress status of various project tasks in the CS	CS#3 Jiu lead, NTUA
2021-2022	Desk research	1.c Start data collection for WP2 and WP3	CS#3 Jiu lead
		Review data available in policy documents, reports about WEFE sector, strategies for CS#3 Jiu	CS#3 Jiu lead
		Collected GIS data available	CS#3 Jiu lead
2021-2022	Desk research	1.d Review biophysical/socioeconomic model options (WP2)	
		Check the governmental plans for indicators to be used in Romania for modelling - RCP4.5 and RCP8.5.	CS#3 Jiu lead
2022	Contribute to the User Interface specification	1.e Consolidate NEPAT and get requirements for NEPAT from stakeholders (WP4)	CS#3 Jiu lead
19 May 2022	**Workshop 1, Craiova Romania**	**Start the first SH engagement and trust building process**	**CS#3 Jiu lead, KWR, IHE, EUT and CS#3 Jiu Tier 1, 2, 3 stakeholders**
		Support the WP4 for data collection during the workshop (MENTI)	
		Support WP1 to collect data during the workshop (Questionnaire)	
17-21 Oct 2022	Field visit and interviews with stakeholders	2.a First round of governance and policy assessment (WP1)	CS#3 Jiu lead, UNT, UFZ

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

Date	Type of Activity	Purpose	Participants
		Several meetings and interviews were organised with national, regional and local stakeholders	CS#3 Jiu lead, UNT, UFZ
2022	Develop the conceptual map	2.b Develop first draft of conceptual model (WP3)	
		Participate in all WP3 weekly meeting	CS#3 Jiu lead
		Elaborate the first draft of conceptual maps for WEFE sector	CS#3 Jiu lead
		Collaborate with IHE for conceptual maps revision	CS#3 Jiu lead, IHE
		Further checking of the conceptual maps in the second workshop	CS#3 Jiu lead
	Develop indicators	2.c Discuss WEFE nexus indicators (WP3)	CS#3 Jiu lead
		Contribute to Miro tables	CS#3 Jiu lead
		Developed the first table with WEFE indicators for CS#3 Jiu	CS#3 Jiu lead
	Data collection	2.d Continue to collect local CS data (for WP3)	CS#3 Jiu lead
		Further meetings are planned in the CS#3 Jiu for discussions and approval of first results in the project	CS#3 Jiu lead
13 Oct 2022	**Workshop 2, Craiova Romania**	**Discuss stakeholder policy preferences, draft conceptual model & WEFE nexus**	**CS#3 Jiu lead**
		First version of conceptual maps presented to SH, refined and completed in an interactive exercise	CS#3 Jiu lead
		Present WEFE footprint and list of potential indicators identified by CS lead as relevant for CS context	CS#3 Jiu lead
		Present and discuss main polices with impact on water resources in Jiu RB	CS#3 Jiu lead
06 Mar 2023	Additional interview RBA Jiu, online	3.a Second round of governance and policy assessment (WP1)	CS#3 Jiu lead UNT, UFZ
24 Feb 2023	Finalized and informed WP1 lead, focus group to be included in the WS#3 for validation with SH	3.b Develop draft policy packages (WP1) to be used as input to NEPAT (WP4) 2023	CS#3 Jiu lead KWR
2 Feb 2023 and 20 Feb 2023	WP2-WP3 meetings NXG_Jiu CS_Data mapping, collection, and SDM development	3.c Discuss biophysical/socioeconomic model results (WP2)	CS#3 Jiu lead IHE CMCC UNIVE
29 May 2023	Third interview with WP5	To evaluate the progress status of various project tasks in the CS	CS#3 Jiu lead, NTUA
Feb 2023-Jan 2024	Data collection for SDM	Data mining, identification sources, collection plan CS#3 Jiu SDM	CS#3 Jiu lead IHE

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

Date	Type of Activity	Purpose	Participants
Feb 2023-Feb 2024	Weekly online meetings with IHE modeller, data research and completion	3.d Discuss CS-specific scenarios/data + continue to collect data from stakeholders	IHE CS#3 Jiu lead
		3.e Update conceptual model (WP3)	IHE CS#3 Jiu lead
		SDM development for CS#3	CS#3 Jiu lead IHE
23 May 2023	**Workshop 3, Craiova Romania**	**Nexus Governance and Policy Coherence Assessment - general approach, results of the 2022 round of interviews in Jiu CS**	**UT** **CS#3 Jiu lead**
		NXG Stakeholder Engagement Process & Stakeholder Landscape in CS Jiu	AVA CS#3 Jiu lead
		Policy instruments for the NEXOGENESIS policy assessment tool	CS#3 Jiu lead KWR
		Presentation of preliminary approach on biophysical and socioeconomic modelling	IHE
19-21 Sep 2023	Participation NXG GA Tours, France	Project Management	Consortium Partners
27 Sep 2023	Participation NXG External Exploitation WS, Split Croatia	User-Validated Policy Package Implementation and use of innovative WEFE Nexus related tools	CS#3 Jiu lead + CS SHs:Jiu RB authority, Association for the Integrated Development Jiu Valley (Just Transition Mechanism)
Oct 2023-Mar 2024	Finalization Policy Package for NEPAT	In depth data research and collection for prioritized policies in WEFE sectors based on the focus group during WS#3	CS#3 Jiu lead
Dec 2023	Feedback video interview CS leader Tours	CS Interview	WP 6 CS#3 Jiu lead
11-12 Jan 2024	NXG WS Berlin, physical	WP1 and WP5 meeting on Stakeholder Engagement and Workshop 5 and 6 Planning for Stakeholder Agreements	CS#3 Jiu Leader All CSs WP1 WP5
31 Jan 2024	SH Focus group (online)	SDM verification and validation, Feedback policy inventory Data clarification, additional needs	CS#3 Jiu lead & CS SH (agri, water) IHE
	CS contributions to WP 3 deliverables	CS input in D3.1, D3.3, D3.4	IHE CS#3 Jiu lead
		Coherence analysis and compatibility with SDM	IHE CS#3 Jiu lead

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

Date	Type of Activity	Purpose	Participants
		Policy packages SDM for WP4	IHE CS#3 Jiu lead
21 Feb 2024	**Workshop 4, online**	**NEPAT decision support tool of NEXOGENESIS project (joint event with Nestos and Inkomati)**	**WP 4 CS#3 Jiu lead CS SHs**
Feb 2024	Feedback and translation NEPAT video	Teaser WS#4	WP4 CS#3 Jiu Lead
28 Mar 2024	Forth interview with WP5	To evaluate the progress status of various project tasks in the CS	CS#3 Jiu Lead, NTUA
19 Jun 2024	Interview with WP5	Re-assessing SHE aims and approaches to co-creation	WP5 representative CS#3 Jiu Leader
17 September 2024	**Workshop 5, Bucharest Romania**	**High level policy making session: Water-Energy-Food-Ecosystems (WEFE) Nexus for Sustainable Development** **NEPAT user experience session**	**CS#3 Jiu team WP1 & WP7 team** **CS#3 & WP4 teams**
November 18-19, 2025	Project Review meeting	Presentation of activities in the CS#3	CS#3 Jiu Lead Project team
Nov 2024	Input for D3.3, D3.6	Final report on the application of biophysical models and stakeholder recommendations and Sensitivity/Uncertainty Analysis Report	CS#3 Jiu Lead UTH IHE
	Input for D 6.12, D6.13	Policy Brief: the WEFE Nexus into Policy Making and Contribution to the Water Resilience Strategy	CS#3 Jiu Lead WE
	Stakeholder Engagement Plan 2024/2025 CS3 – Jiu	Update	CS#3 Jiu Lead UU Tamara Avellan
December 2024	Follow-up project review meeting	Input for aggregated reporting on CS progress/activities, achievement/output and lessons learned/outcome/impacts	CS#3 Jiu Lead UU
January 2025	Follow-up project review meeting	NXG follow up: result and storytelling	CS#3 Jiu Lead GAC
	Workshop, Athens, Greece	Laying the Last Building Blocks - WP1 & WP5 Workshop	CS#3 team WP1, WP5
February 2025	Validation of SDMs for the Jiu case study	Updated data sets of global scenarios were integrated in the model and further incorporate din NEPAT	CS#3 Jiu Lead WP3, WP2
2021-2025	Updates SH Register	Monitoring the SHE processes	CS#3 Jiu Lead Tamara Avellan
2023-2025	Co-creation meetings WP1	Participation to online meetings, contribution to project progress	CS#3 Jiu Lead WP lead Project team

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

Date	Type of Activity	Purpose	Participants
	Periodic meetings WP3	Participation to online meetings, contribution to project progress	CS#3 Jiu Leader WP lead Project team
	Periodic meetings WP4	Participation to online meetings, contribution to project progress	CS#3 Jiu Leader WP lead Project team
	Periodic Meetings WP5	Participation to online meetings, contribution to project progress	CS#3 Jiu Leader WP lead Project team
	Connection with sister projects		
23 Nov 2021	First meeting nexus projects cluster	Participation event online with representatives of nexus projects	CS#3 Jiu lead
Jan-Oct 2022	Interaction with Rexus and GoNexus teams	Sharing preliminary information on potential synergies	CS#3 Jiu lead Project reprezentatives
07 Oct 2022	Meeting NXG-Rexus-GoNEXUS (online)	Sync project activities in the Lower Danube region	CS#3 Jiu lead IHE CMCC
01 Nov 2022	REXUS-First SH WS Danube Floodplain Romania CS	Participation physical event Craiova	CS#3 Jiu lead
09 Nov 2022	GoNEXUS- first Danube River Basin Level Dialogue	Participation online event	CS#3 Jiu lead CMCC
23 Jan 2023	Joint meeting of nexus projects, online event	Agree on common targets and joint actions	CS#3 Jiu lead IHE CMCC REXUS consortium GoNEXUS consortium
24 May 2023	REXUS-Second SH WS Danube Floodplain Romania CS,Craiova	Meeting involving overlapping SH in the CS area with NXG, understand the proposed Rexus approach (“participatory” SDM) and synergies, assess pathways for increased impact	CS#3 Jiu lead
5 Apr 2024	REXUS-Third SH WS Danube Floodplain Romania CS Participation online event	Participation online event	CS#3 Jiu lead

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