



**RETOUCH
NEXUS**

2023

2026



The **RETOUCH NEXUS** project promotes a cross-sectoral **Water–Energy–Food–Ecosystems (WEFE) Nexus** approach to support a resilient EU water economy. It ensures that water governance considers ecological, social, and economic dimensions, fostering coherence and effectiveness across sectors and governance levels.

KEY STAKEHOLDERS

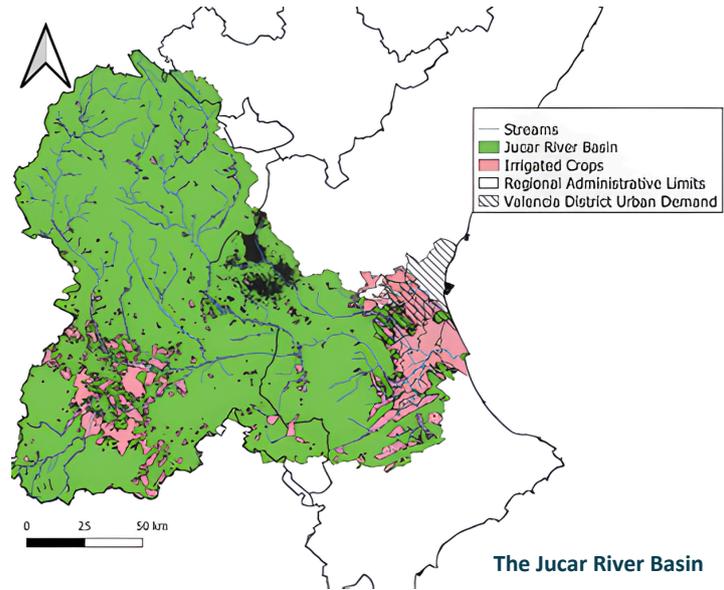
- National and regional governments
- Jucar River Basin Authority
- Municipalities
- Research institutes
- Agricultural Users Communities
- Hydropower industry
- Environmental and NGO groups

PRIORITY ACTIONS

- Integrate WEFE nexus considerations into basin-wide policies using economic modeling and decision-support tools.
- Engage underrepresented stakeholders in participatory platforms for co-production and context equitable planning.
- Adopt water pricing, cross-sectoral financing, and adaptive monitoring to boost resilience and long-term sustainability

INTEGRATED PARTNERSHIP FOR INCLUSIVE GOVERNANCE

Effective and inclusive water governance in the Júcar basin requires cross-sector and multi-level partnerships that connect water, energy, food, and ecosystems. While the basin management plan supports participation among the authority, irrigation communities, cooperatives, and hydropower operators, links with smallholder farmers and environmental NGOs remain limited. A WEFE Nexus approach calls for participatory platforms that support shared problem-solving, empower underrepresented stakeholders, and promote knowledge co-production to assess trade-offs and synergies.



CONTEXT

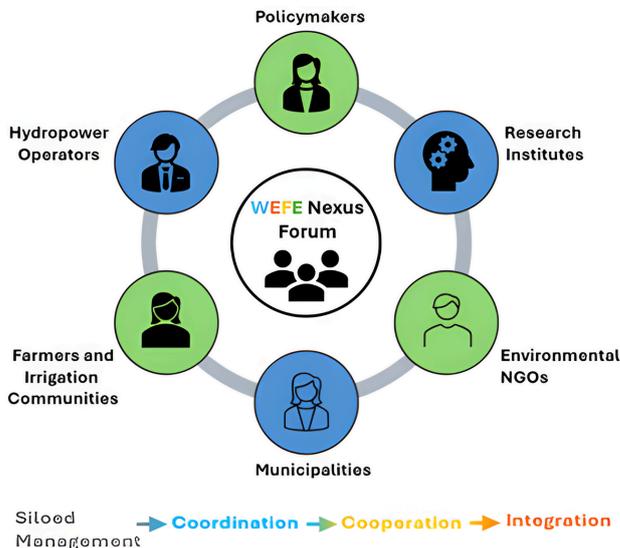
The Júcar River is Valencia’s main water source, yet the region faces frequent droughts driven by water scarcity, irregular hydrology, and groundwater overuse, pressures intensified by climate change and political tensions between Castilla-La Mancha and Valencia. Innovative solutions for sustainable water management, supported by efficient governance and economic tools, are essential to balance water use with energy production, agriculture, and environmental needs in line with the Water Framework Directive.

NEXUS GOVERNANCE CHALLENGES & BARRIERS

Water, energy, food, and ecosystem security are central to the Júcar basin’s sustainability, but rising demands, resource scarcity, and uncertainty have intensified their interconnections and the risks of poor management. Governance remains fragmented, with rigid legal frameworks, weak cross-sector coordination, and inconsistent policies across scales and stakeholders. Additionally, overlapping institutional competences and limited engagement of non-water actors in participatory processes create coordination gaps.



Integrated WEFE Nexus Approach



FRAGMENTATION VS INTEGRATION

Aspect	Current State (Fragmented)	WEFE Nexus Approach (Integrated)
Policy Focus	Water-dominant; energy/food/ecosystems indirect.	Explicit WEFE linkages with quantified trade-offs.
Stakeholder Engagement	Limited to water/irrigation/hydropower actors; excludes smallholders/NGOs.	Multi-sectoral platforms for co-decision and knowledge co-production.
Coordination Mechanisms	Rigid laws, overlapping competences, scale mismatches.	Adaptive institutions, shared data systems, cross-financing.



PATHWAYS TO SUSTAINABLE NEXUS WATER GOVERNANCE

Success in advancing pathways toward more effective water governance hinges on political will, stakeholder buy-in, and funding from sources like EU recovery funds or national green investments. Key principles include:

- **Integration:** Map interlinkages, gaps, and stakeholder needs; use nexus tools and economic models to reveal trade-offs, cascading impacts, and systemic vulnerabilities, enabling coherent, basin-wide strategies.
- **Inclusivity:** Involve underrepresented groups through co-design and participatory platforms, ensuring governance reflects diverse perspectives, mitigates power imbalances, and fosters equitable resource distribution.
- **Adaptability:** Build real-time monitoring and feedback loops into governance, enabling flexible, responsive strategies that enhance resilience and prevent rigid, outdated planning.
- **Sustainability Indicators:** Use multidimensional metrics to track efficiency, synergies, and stakeholder satisfaction, ensuring accountability, continuous improvement, and alignment with long-term resource security goals.

Economic instruments, especially water pricing, link allocation decisions to scarcity by encouraging efficient use through volumetric and tiered tariffs, while maintaining equity via differentiated rates and subsidies. Public funding supports initial modeling and reforms, while private investment scales innovations like smart metering and drought-resistant technologies. Integrated economic models help identify high-return options, such as solar-powered irrigation, that attract private capital and reduce scarcity risks. Revenues from water pricing can feed resilience funds for adaptive infrastructure, and WEFE platforms help ensure financial flows support nexus goals, improving resource security, reducing conflicts, and generating economic benefits.

PROGRESSION TIMELINE ROADMAP (2025-2035)



Phase	Short-Term: Build awareness and evidence-based	Medium-Term: Test and integrate solutions	Long-Term: Embed and expand resilience
Key Actions	<ul style="list-style-type: none"> • Perform comprehensive WEFE nexus audits (quantify linkages via modeling). • Organize inclusive workshops for joint problem identification. • Develop shared data systems (open-access dashboards on water flows, energy use, crop yields). 	<ul style="list-style-type: none"> • Launch participatory platforms for co-decision • Revise basin plans to include energy/food/ecosystem goals explicitly. • Introduce cross-financing and pilot innovations like ecosystem-based agriculture. 	<ul style="list-style-type: none"> • Institutionalize a WEFE governance body with legal mandates. • Implement adaptive monitoring (early warning for scarcities). • Scale successes and influence national/EU policies.
Responsibilities	<ul style="list-style-type: none"> • Basin authority (lead), research institutions, regional governments. 	<ul style="list-style-type: none"> • Irrigation communities, hydropower operators, NGOs, smallholders. 	<ul style="list-style-type: none"> • National government (oversight), local communities.
Enablers/ Tools	<ul style="list-style-type: none"> • EU Horizon funds; tools like GIS mapping and nexus simulators. 	<ul style="list-style-type: none"> • National plans; knowledge co-production with universities. 	<ul style="list-style-type: none"> • Sustainable financing mechanisms; international best practices.
Challenges & Mitigations	<ul style="list-style-type: none"> • Resistance from siloed sectors. Mitigated via incentives. 	<ul style="list-style-type: none"> • Funding gaps. Mitigated via public-private partnerships and transparent data protocols. 	<ul style="list-style-type: none"> • Climate variability. Mitigated with scenario planning and continuous inclusion audits.
Milestones / Outcomes	<ul style="list-style-type: none"> • Baseline report on trade-offs; multi-stakeholder alliance formed; initial synergies identified. 	<ul style="list-style-type: none"> • Pilot projects operational; policy amendments adopted; capacity building for 500+ stakeholders. 	<ul style="list-style-type: none"> • Full integration achieved; 20-30% resource efficiency gains; model for Mediterranean basins; reduced vulnerability to pressures.

