



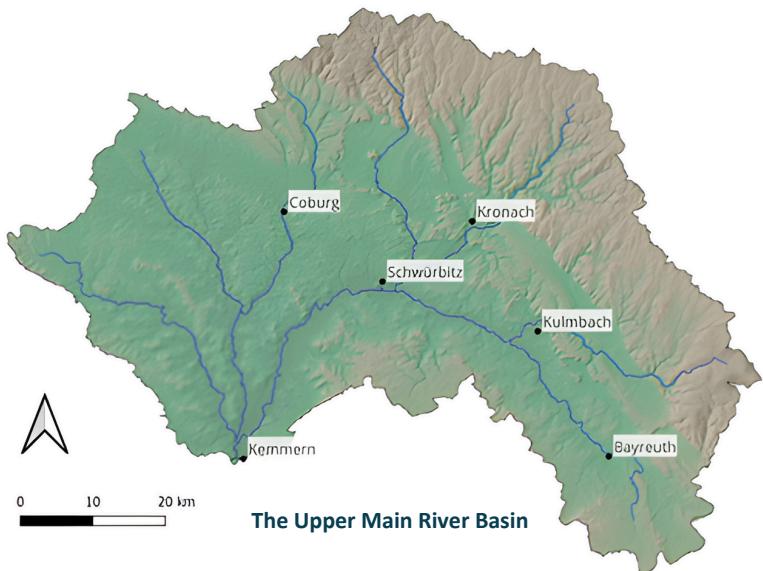
The RETOUCH NEXUS project promotes a cross-sectoral Water–Energy–Food–Ecosystems (WEFE) Nexus approach to support a resilient EU water economy. It ensures that water governance considers ecological, social, and economic dimensions, fostering coherence and effectiveness across sectors and governance levels.

KEY STAKEHOLDERS

- Bavarian State Ministry of the Environment agencies
- Government of Upper Franconia
- Regional water authorities
- Universities
- Farmer groups

PRIORITY ACTIONS

- Promote **multi-stakeholder partnerships** that include civil society, private actors, and underrepresented groups.
- **Integrate economic instruments** (e.g., water pricing, subsidies for Nature-Based Solutions – NBS) to incentivize sustainable resource use.
- **Introduce digital engagement and data-sharing platforms** to improve transparency and stakeholder collaboration.



CONTEXT

The **Upper Main River Basin (UMRB)** in northern Bavaria faces growing **climate-related pressures**, including reduced groundwater recharge, seasonal shortages, and rising competition for water. **Intensive cereal production** adds water-quality challenges, while fragmented institutional responsibilities limit coordination. At the same time, active local actors and new digital initiatives create opportunities to advance more integrated, participatory, and adaptive water governance.

NEXUS GOVERNANCE CHALLENGES & BARRIERS

- **Fragmentation** remains a core issue as responsibilities for water, agriculture, energy, and ecosystem management are distributed across different administrative levels and institutions with limited coordination.
- **Technical and institutional barriers** further complicate effective governance. Data on water availability, demand, and quality remain fragmented, and a comprehensive quantitative assessment of the basin's water resources is still lacking.
- **Outdated tools** (e.g., water allocation priority rules) and interoperable data systems could support cross-sectoral coordination.

FRAGMENTATION VS INTEGRATION

Aspect	Current State (Fragmented)	WEFE Nexus Approach (Integrated)
Policy Focus	Water-dominant; limited links to energy, food, ecosystems.	Integrated WEFE planning, quantified trade-offs, adaptive allocation.
Stakeholder Engagement	Mainly water authorities. Farmers, NGOs, and youth tend to be excluded.	Multi-level, inclusive platforms for co-decision and knowledge sharing.
Coordination Mechanisms	Rigid laws, overlapping competences, poor data sharing.	Adaptive institutions, shared data systems, cross-sector collaboration.
Outcomes/Risks	Fragmented strategies, conflicts, vulnerability to climate extremes.	Resilience, efficiency, equitable resource use, reduced conflicts.
Examples	Participatory water boards.	Expanded to NGO-led monitoring, farmer-research partnerships, digital tools.



INTEGRATED PARTNERSHIPS FOR INCLUSIVE GOVERNANCE

Transitioning toward integrated governance requires cross-sectoral and multi-level cooperation among key institutions:

- **High-level actors:** Bavarian State Ministry of the Environment and Consumer Protection (STMUV), Government of Upper Franconia, and regional water authorities, with strong policy-shaping power.
- **Local actors:** Farmers, civil society, and research institutions show high engagement but limited influence in formal decision-making.
- **Existing networks**, such as Flussparadies Franken e.V. and Runde Tisch Umweltbildung Oberfranken facilitate dialogue but remain dominated by public-sector voices.

Enhancing inclusive governance calls for stable coordination platforms that ensure continuous dialogue between government, local stakeholders, and private actors. Strengthened partnerships can improve transparency, accountability, and policy innovation within the WEFE Nexus.

PATHWAYS TO SUSTAINABLE NEXUS WATER GOVERNANCE

Achieving sustainable and nexus water governance in the UMRB calls for a combination of:

1. **Participatory planning:** expanding engagement using innovative tools, such as online participation platforms and citizen science initiatives, which promote knowledge exchange, enhance legitimacy, and ensure shared ownership of governance reforms.
2. **Policy & Governance Reforms:** target a basin-wide coordination framework that aligns water management with agricultural, spatial planning, and ecosystem objectives. Further, modernize legal and planning frameworks to support adaptive, data-driven management capable of responding to changing hydrological conditions.
3. **Monitoring & Accountability:** establish shared monitoring systems across institutions to track water availability, quality, and use. In parallel, innovative economic instruments, such as dynamic water pricing schemes, incentives for nature-based solutions, and tradable water use permits, can encourage more efficient resource allocation.
4. **Policy Innovation:** introduce instruments that align economic incentives with sustainable water use. Examples include differentiated water tariffs that reflect scarcity conditions, subsidy schemes encouraging the adoption of nature-based solutions, and the testing of tradable water use permits among sectors to increase allocation efficiency.
5. **Education and Capacity Building:** promote water awareness among younger generations through workshops in schools and in community forums. Including water governance, sustainability, and climate adaptation topics in school curricula can strengthen long-term capacity to manage water sustainably.

PROGRESSION TIMELINE ROADMAP (2025-2035)

2025-2027 Short-term Foundations			2028-2030 Medium-Term Implementation			2031-2035 Long-Term Consolidation and Scaling		
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">Establish a cross-sector coordination platform.Launch a participatory digital platform for stakeholder engagement and data sharing.Develop a joint monitoring framework for water quantity and quality across sectors.	<ul style="list-style-type: none">Pilot economic instruments (e.g., water pricing incentives, subsidies for NB).Embed participatory monitoring and digital tools into basin policies.Strengthen education and capacity-building in schools and communities.	<ul style="list-style-type: none">Institutionalize a basin-wide coordination framework with legal mandates.Integrate dynamic water pricing and tradable water permits into policy frameworks.Expand adaptive monitoring for long-term resilience.					
Main Actors	<ul style="list-style-type: none">STMUV (lead), Regional Water Authorities, Municipalities, Research Institutions, Civil Society, Farmers.	<ul style="list-style-type: none">STMUV, Regional Water Authorities, Research Institutions, Educational Institutions, Local Governments, Hydropower operators, NGOs, Farmers.	<ul style="list-style-type: none">National Government, Regional Governments, STMUV, Regional Water Authorities, Private Sector, Civil Society.					
Expected Outcomes	<ul style="list-style-type: none">Improved governance coordination.Shared data systems are operational.Greater transparency and inclusion across stakeholders.	<ul style="list-style-type: none">Pilot instruments implemented.Adoption of nature-based solutions increases.Higher water awareness and stakeholder capacity.	<ul style="list-style-type: none">Integrated WEFE governance institutionalized.Efficient water allocation and improved resource valuation.Enhanced resilience to water scarcity and long-term adaptive planning.					

