ISTANBUL INTERNATIONAL WATER FORUM

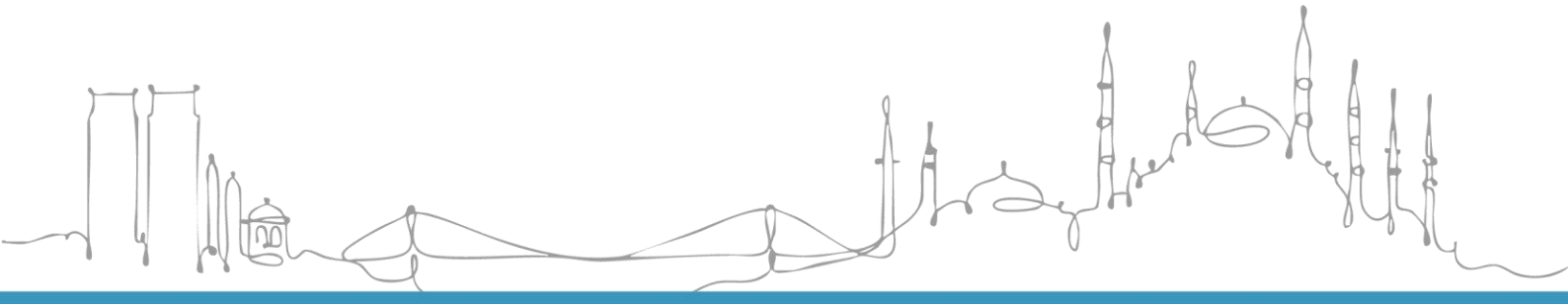
5th ISTANBUL INTERNATIONAL WATER FORUM

"Strengthening Water Resilience: Innovation to Action"

5-6 May 2026 | Istanbul, Türkiye

CONCEPT NOTE

S 4.1 From Silos to Synergy: Accelerating the WEFE Nexus



ISTANBUL INTERNATIONAL WATER FORUM

Sub-theme 4: Beyond Trade-offs: Advancing the Water–Energy–Food–Ecosystem (WEFE) Nexus

Session 4.1: From Silos to Synergy: Accelerating the WEFE Nexus

The accelerating pressures of climate change, population growth, resource scarcity, and ecosystem degradation demand a decisive shift from fragmented, sector-based management towards integrated and forward-looking governance approaches. The Water–Energy–Food–Ecosystem (WEFE) nexus has emerged as a critical framework for understanding the interdependencies and trade-offs across key resource systems. However, despite its growing prominence in policy and academic discourse, operationalizing the WEFE nexus remains a persistent challenge for many regions, due to institutional silos, governance gaps, data limitations, and mismatches between planning and implementation scales.

Against this backdrop, the session "From Silos to Synergy: Accelerating the WEFE Nexus" aims to move beyond high-level narratives and explore practical pathways that can transform nexus thinking into coordinated and actionable interventions. The session will examine how sectoral silos can be broken through shared planning processes, joint monitoring mechanisms, and coherent governance approaches that recognize water, energy, food, and ecosystems as an interconnected system rather than isolated sectors.

Particular attention will be given to enabling institutional frameworks, effective knowledge-exchange mechanisms, and multi-stakeholder coordination platforms that can foster more equitable and efficient water use. Evidence from global and regional experiences demonstrates that integrated approaches such as climate-smart agriculture, renewable energy integration, integrated basin management and sustainable water management can generate multiple benefits simultaneously, enhancing productivity while protecting ecosystem integrity and reducing systemic risks

The session will also emphasize the catalyzing role of digital technologies, such as remote sensing, Earth observation, big data analytics, and AI-supported forecasting systems, in strengthening evidence-based policymaking, improving cross-sectoral data interoperability, and supporting adaptive decision-making under climate uncertainty.

The session will also consider how urban innovation and territorial approaches including, green and blue infrastructure, circular water systems, and water-sensitive planning, can serve as basin-scale and replicable models for integrated WEFE implementation. As urban areas concentrate water, energy, and food demand, cities offer practical entry points for translating nexus principles into investment and planning decisions with tangible outcomes.

By bringing together policymakers, practitioners, scientists, and innovators, the session seeks to demonstrate how cross-sectoral collaboration and digital innovation can unlock tangible, multi-benefit WEFE outcomes. Drawing on as a hosting country of COP 31, Türkiye's experience alongside global and regional perspectives, the session will offer replicable insights that contribute to climate resilience, sustainable development, and the transition from isolated interventions to synergistic, system-wide solutions.

Objectives and expected outcomes:

- Translate the WEFE Nexus into practice by identifying practical, implementable pathways that translate nexus concepts into coordinated planning, governance, and investment decisions across water, energy, food, and ecosystem sectors.

- Break sectoral silos by examining governance models, institutional arrangements, and coordination mechanisms that enable shared planning, joint monitoring, and coherent policy implementation at national, basin, and urban scales.
- Highlight the role of digital technologies in improving cross-sectoral integration and evidence-based decision-making. Showcase scalable integrated solutions by showcasing global and regional experiences in climate-smart agriculture, renewable energy integration, integrated basin management, and sustainable water management that deliver multi-benefit outcomes.
- Explore urban and territorial entry points for WEFE implementation, focusing on green and blue infrastructure, circular water systems, and water-sensitive planning as replicable models under increasing climate and resource pressures.
- Foster multi-stakeholder collaboration by bringing together policymakers, practitioners, scientists, and innovators to align technical solutions with policy priorities and governance realities.
- Enhanced policy coherence through improved understanding of how integrated WEFE approaches can align sectoral policies, reduce trade-offs, and strengthen resilience under climate change.
- Actionable insights and good practices on institutional and governance arrangements that support effective WEFE implementation across different scales and regional contexts.
- Improved capacity for data-driven decision-making, including clearer pathways for integrating digital tools and decision-support systems into WEFE governance frameworks.
- Concrete examples of scalable WEFE solutions, particularly in agriculture, energy–water systems, basin management, and urban contexts, demonstrating tangible economic, environmental, and social co-benefits.
- Strengthened cross-sectoral and cross-actor collaboration, contributing to sustained dialogue and partnerships among public authorities, research institutions, and practitioners.
- Policy-relevant contributions to broader international agendas such as UN 2026 Water Conference and the World Water Forum 2027, and as well as COP 31, including climate adaptation, sustainable development, and resilience-building efforts, by demonstrating how integrated WEFE action can move from concept to implementation.

Keywords: Water governance, cross-sector synergy, policy coherence, nexus integration, innovation