Water Diplomacy Center
WDC Policy Brief Series

Water-Energy-Food- Ecosystems (WEFE) in Türkiye

Introduction and Problem Statement

Türkiye possesses relatively strong infrastructure, technical capacity, and institutional experience in water, energy, and agricultural management. However, increasing water stress, climate variability, and competing sectoral demands are placing increasing pressure on Water-Energy-Food-Ecosystems (WEFE) systems. Agriculture remains the dominant water user, while hydropower and irrigation compete for limited resources in several basins. The core policy problem is not the absence of capacity but the absence of a coherent national WEFE strategy that translates high awareness into integrated policy, measurable targets, and coordinated investment.

Contextual and Analytical Background

Türkiye's varied climate and topography create regional water pressures, even as the national economy continues to rely on substantial agricultural exports. The Euphrates and Tigris are both domestic resources and transboundary geopolitical instruments. Energy systems are diverse but still rely on imports; renewables and hydropower are significant components. Institutional capacity exists, including strong technical agencies, but cross-sector linkages are often ad hoc. Post-harvest losses and food supply chain inefficiencies also represent large opportunities for water savings and added value.

Main Analysis and Insights

First, Türkiye's comparative advantage is its ability to implement large-scale technological solutions: precision agriculture, drip irrigation, floating PV on reservoirs, and wastewater reuse can all be scaled. However, scaling requires clear national objectives and consistent policy instruments: a WEFE policy document that defines scope, KPIs, and institutional roles is essential to prevent fragmentation.

Second, water productivity gains are best captured by shifting emphasis from volume to value. Policy measures should promote higher-value, less water-intensive cropping where agro-ecology permits, while investing in storage and processing infrastructure to reduce post-harvest losses. Market instruments and targeted subsidies (for example, support for cold-chain investments) will transform current production into higher returns per cubic meter of water used.

Third, Türkiye's geopolitical position gives it leverage to broker regional WEFE cooperation. A national strategy that couples domestic WEFE reforms with transparent, predictable management of transboundary rivers will reduce regional tensions and create space for cooperative investments (for example, joint renewable-desalination or shared data platforms).

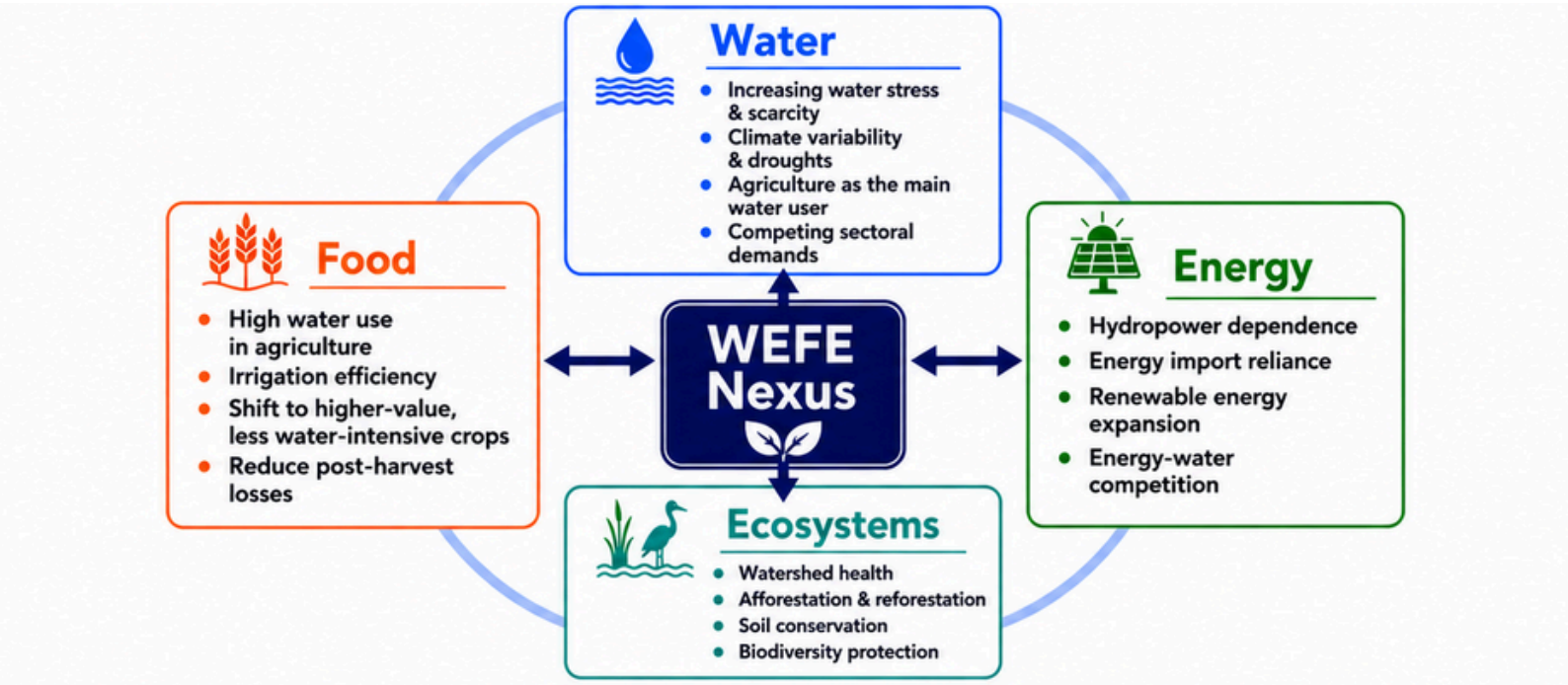
Fourth, afforestation and ecosystem restoration efforts demonstrate that large-scale environmental programs can be delivered, and they should be linked to WEFE aims. Protected area expansion, reforestation, and soil conservation complement irrigation efficiency by maintaining watershed health.

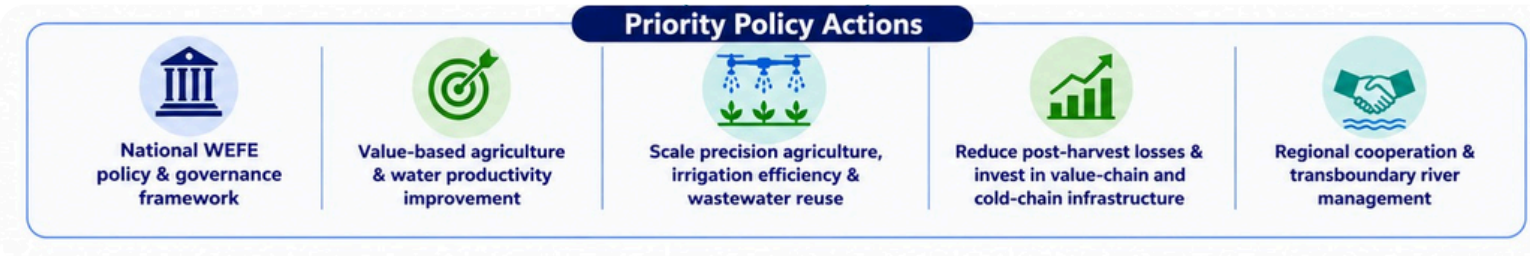
Summary and Policy Insights

Türkiye should seize its capacity edge to become a regional WEFE leader by issuing a clear national WEFE policy, aligning incentives to value-based agriculture, and scaling precision technologies coupled with wastewater reuse. Institutional steps include a statutory WEFE coordination body, a national WEFE KPI dashboard, and dedicated financing windows for farm-level modernization and post-harvest infrastructure. Regionally, Türkiye's leadership in cooperative river management can both stabilize flows for neighbors and open opportunities for shared infrastructure that reduces net water stress across the basin.

Policy Brief: Türkiye

Türkiye's Water-Energy-Food-Ecosystems (WEFE) Nexus





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