

## **Water for Prosperity: valuing water, water–energy–food nexus, advancing integrated and sustainable water resource management, wastewater reuse and water-use efficiency across sectors, and economic and social development**

Water is fundamental for human well-being, economic growth and peace and provides for the planet to thrive and prosper. However, both competitive and inefficient use of water, as well as the triple planetary crisis—biodiversity loss, climate change, and pollution—continue to undermine water sustainability, its equitable allocation, and thus increase social and economic dislocation and fuel conflict. Global progress on SDG 6 remains too slow: while access to basic services and IWRM implementation have improved in some regions, persistent gaps in water quality monitoring, institutional capacity, industry data, and policy coherence impede prosperity. Water is the keystone of sustainable development and prosperity.

### **Headlines on Progress to Date**

- *Progress on wastewater treatment and water quality under SDG 6.3* is central to water-driven prosperity. UN-Water data indicates that just over half of domestic wastewater is safely treated globally, industrial wastewater generation, treatment, and reuse data gaps persist. Innovations in pollution control and wastewater reuse are an investment in sustainable agriculture, resilient cities, productive ecosystems, and sustainable industries.
- *Water-use efficiency is an economic multiplier (SDG 6.4)* but gains in water-use efficiency globally have been modest and uneven, and exacerbated by increased water stress. Where demand outpaces supply and reuse potential, water scarcity acts as a brake on agricultural productivity, energy generation, industrial output, and ecosystem health. Despite inelastic demand, water is still widely undervalued as an economic resource. This leads to inefficient use and a high rate of non-revenue water, resulting in further underinvestment, neglected water infrastructure across sectors, and a poor level of water service provision. Meaningful water for prosperity stems from improved water use efficiency, through innovative technologies, circular economy and accurate cross-sectoral water valuation including the effective integration of private sector innovations and improvements in enabling environments to accommodate multiple users.
- *Integrated water resources management (IWRM, SDG 6.5)* is particularly important at national levels where it enables equitable allocation, risk reduction, and shared benefits through low carbon and pollution energy production including hydropower, renewable powered desalination, irrigation and ecosystem protection. IWRM implementation is gradually improving, but progress remains insufficient with a lack of transfer of suitable applicable models for replication: accelerated IWRM implementation is fundamental to transforming water from a contested resource into a foundation for inclusive and sustainable prosperity. Cross-sectoral water use efficiency gains and integrated planning that addresses the nexus between climate, land use, water use and energy production to allow governments to link economic growth to sustainable water management – enabling long term prosperity despite increasing climate pressures.

### **Emerging Issues / Areas of Action**

1) *Value water holistically*, including non-conventional water, backed by robust data and monitoring on economic, social, cultural, and ecological\* values of water integrating customary and traditional perspectives for fair allocation. Close data gaps—especially for water quality—by strengthening monitoring networks, and open data sharing. Equip institutions with efficient technologies, decision-support tools (e.g., water accounting,

remote sensing, demand modelling, early warnings), capacity to use and maintain the tools, analyze trade offs and adapt to imperfect information to enhance water use efficiency for equitable prosperity to produce more with less water. Account for emerging and increasing water demands such as the proliferation of water intensive AI\* and server farm technologies, and climate adaptation and mitigation measures\*.

2) *Accelerate circularity of water systems*: Scale safe wastewater reuse across cities\*, industry, and agriculture; mainstream fit-for-purpose reuse and other non-conventional water resources powered by renewable energy with environmental safeguards\* (soils, salinity, brine, zero liquid discharge, and brine mining). Combine demand management, digitalization (sensors, analytics, automation), and ecosystem-based solutions\* to reduce withdrawals, pollution, and energy footprints.

3) *Transform agrifood systems through sustainable and inclusive water management*: modernize infrastructures, deploy digital tools (remote sensing for land/water productivity, scheduling), and scale treated wastewater reuse and desalination in agriculture where safe and appropriate. Engage farmers, fisherfolk, and pastoralists to develop water capacity; ensure smallholder farmers, especially women, access to clear affordable water.

4) *Closer integration with the private sector to foster innovation and investment\* at scale and to unlock coherent, cross-sectorial policies and governance frameworks*: Use well-designed approaches and innovative regulations including public–private partnerships (PPPs), blended finance, performance-based approaches, and incentive structures to induce integration of water for prosperity. Scale treatment/reuse, digital monitoring, water-use efficiency technologies, and climate-resilient water infrastructure and services. Consider mechanisms for political, industrial and agricultural leadership for a “water-resilient era”. Encourage private sector actors to embed long-term water stewardship principles, while public policy reduces risk by addressing non-revenue water and water wastage and aligns incentives—to tackle distorting subsidies—and regulatory frameworks that attract private participation without compromising equity and affordability. Combine private investments with public and climate\* finance to propel investment\*. Build workforce and institutional capacity development initiatives to address the workforce crisis, and increase sustainability. Include women as decision makers across all levels of water management.

5) *Strengthen cross-sector policy coherence to promote responsible water governance and just water allocation*: Advance coherent governance across water, energy, food, and ecosystems to steer shared positive sum outcomes. Accelerate IWRM through inclusive national level institutions, basin governance, participatory allocation, risk reduction, and shared benefits. Mainstream data sharing, multi-stakeholder platforms, and strengthen institutional capacities to use data and align financing and enable decisions across ministries and sectors and ensure equitable service and sustained performance.

### **Guiding Questions**

1. What practical steps can countries take to operationalize improved water valuation—capturing water connectivity across economic, social, and ecological dimensions—in ways that inform fair allocation, incentivize efficiency, and guide integrated investment decisions across sectors? Which regulatory frameworks and fiscal incentives are suitable to which cases?
2. How can countries accelerate the adoption of circular water systems that reduce pressure on ecosystems and energy use, while delivering economic benefits across cities, industry, and agriculture? What is required to establish interoperable data systems?

3. How can countries upscale and promote faster transformation of sustainable agrifood systems – the largest sectoral water user through sustainable water management practices? How can farmers, fisherfolk, pastoralists and other producers be better supported in driving agrifood systems transformation through improved integrated water resource management to protect natural resources and ensure smallholder inclusion?
4. How can the private and public sector work together more closely to adopt a shared supply and demand management approach to fresh water? What steps can reduce inequalities in water access and quality through allocation, protection, and demand management while also addressing, emerging demands, including water for AI and server centres?
5. How can governments and multi-stakeholders' partnerships design and implement governance frameworks and national planning that integrate water, energy, food, and ecosystem policies—supported by inclusive national and basin-level strategies, estimated trade-offs and shared data systems, and institutional capacity building—to improve coherence across sectors and equitable service delivery?

*\* Indicates a link to another interactive dialogue.*