Jordan's national water security: The need to sustain its resources and boosting resilience

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Recent geopolitical developments in the Middle East have significantly disrupted the balance of power dynamics, posing new and evolving threats to shared water resources and Jordan's water security. These changes require Jordan to adopt a long-term strategic approach that emphasize the importance of national projects to enhance the resilience of the water sector and safeguard increasingly scarce water resources. Over-pumping of groundwater, water losses, and the growing impacts of climate change have made the preservation of these resources more critical than ever.

Jordan's water sector has demonstrated its adaptability and resilience, especially during challenging periods like the Syrian refugee crisis. The country welcomed about 1.5 million refugees and provided them with water and sanitation services, managing a sudden population increase of roughly 22% without noticeably reducing water availability. This accomplishment is largely due to the strong support from Jordan's leadership and the King's directives to prioritize water projects in national financing, with significant contributions from international and Arab funding partners.

Despite low rainfall amounts, frequent heatwaves, and other climate challenges over the past 15 years, the sector has managed to maintain an acceptable level of water supply for citizens supported by a backbone of essential projects. Noteworthy among these are the Disi-Amman and Northern Governorates water supply system, the Al-Mujib-Al-Zara project to Amman, the Wadi Al-Arab-2 project for Irbid, and the construction of major dams such as Al-Mujib, Al-Wala, Al-Wahda, and Kafranjeh. Deep groundwater projects in Karak, Jerash, Jordan Valley and Wadi Araba have also played vital roles. Major investments in upgrading water networks across all Jordanian governorates and cities have begun to yield results, evidenced by a modest but promising reduction in Non-Revenue Water.

Wastewater and reclamation projects, such as the Khirbet Al-Samra plant, and facilities in Irbid, Ramtha, Wadi Al-Arab, South Amman, and Aqaba, have been instrumental in supporting irrigated agriculture and enhancing food security. The adoption of modern technologies e.g., digital meters, remote reading and data retrieving systems, and real-time leak detection, has improved efficiency and strengthened the sector's efficiency to manage water scarcity.

Given the evolving regional threats, it is more important than ever to bolster the resilience of Jordan's water sector by investing further in public awareness programs, national sovereign resources, even if these come at a higher cost. The National Carrier Project, for instance, should be implemented to augment domestic water supplies. Expanding wastewater reuse,

particularly in the northern and central governorates, will maximize every available drop, reinforcing water supplies in the Jordan Valley and sustaining drinkable freshwater for growing communities. Further exploration of deep groundwater resources, as seen in the Disi project, along with similar initiatives in Azraq, Sarhan, and Al-Hasa, is crucial and needed on the mid-term.
Innovation and smart technology should be at the forefront of water management, improving efficiency and conservation. Coordinating water policy for WEFE NEXUS sectors, will help maximize water return per cubic meter, boost water and energy efficiency, increase agricultural produce, and expand renewable energy use.

Prioritizing climate action measures, in particular, adaptation and mitigation will not only safeguard precious resources but also foster a resilient water systems and society capable of withstanding shocks, seizing opportunity in adversity, and inspiring a new era of stronger resilience, enhanced national security and sustainable development of its scarce water resources in a turbulent region.