Exploring China's water usage trends and sustainability

March 22 2024

Credit: Pixabay/CC0 Public Domain

Against the backdrop of growing global concern over water scarcity, China, has been grappling with the complexities of water dynamics and their impact on economic growth and environmental protection. A study

published in the journal *Advances in Water Science* has shed light on the intricate interplay between China's water usage, demand, and the factors influencing it, which is crucial for understanding the future trajectory of the country's water resources.

Led by Academician of Chinese Academy of Engineering Zhang Jianyun, the research team delved into the concept of water peaking, which refers to the point where water consumption reaches a maximum and then stabilizes or declines. This phenomenon is vital for comprehending the future of China's water resources.

The researchers analyzed China's water usage patterns, identifying three distinct phases: a period of rapid growth, a stable growth phase, and a gradual decline since 2013. However, this decline is attributed to a combination of factors, including stringent water resource management policies, technological advancements in water efficiency, and adjustments in statistical reporting methods.

The study emphasizes that China's current economic and social development indicators, such as GDP per capita, industrial structure, and urbanization levels, do not yet align with those of developed countries that have experienced water peaking. This suggests that China may not have reached its peak water demand, and future water demand remains uncertain.

The study also highlights the urgent issue of water scarcity in China, with significant challenges in agriculture, industry, domestic water use, and ecological conservation. Despite efforts to improve water efficiency and implement water-saving measures, researchers believe there is still considerable room for improvement in water resource management and conservation.

In light of these findings, researchers call for a comprehensive top-level

design of China's national water grid, emphasizing the need to enhance the optimization of water resource allocation at various scales. They argue that this is essential for ensuring water security and supporting the country's high-quality development amidst increasing demands and environmental constraints.

As China continues to balance its economic growth with sustainable water resource management, the international community will closely monitor its strategies and their impact on global water resource management. The study serves as a reminder of the critical role water plays in the sustainable development of any country and the importance of proactive planning and management in addressing water-related challenges.

More information: Zhang Jianyun et al, Discussion on issues related to water peaking in China. *Advances in Water Science* (2024) DOI: 10.14042/j.cnki.32.1309.2024.01.001

Provided by Maximum Academic Press