

The global clean water crisis looms large: Study finds water quality is underrepresented in assessments

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Water scarcity will intensify with climate and socioeconomic change, disproportionately impacting populations located in the Global South, concludes a new Utrecht University article published in *Nature Climate*

Change.

Humans require [clean water](#) for drinking and sanitation purposes, but also for the production of food, energy and manufactured goods. As communities and policymakers grapple with water scarcity issues on the ground, researchers at Utrecht University aim to shed light on the escalating global clean water crisis.

Current and future water scarcity

Using simulations from a state-of-the-art water quantity and quality model, the authors assess present-day and future global water scarcity.

"Climate change and socioeconomic developments have multi-faceted impacts on the availability and quality of, and demands for, [water resources](#) in the future," says lead author Dr. Edward Jones. "Changes in these three aspects are crucial for evaluating future water scarcity."

The study estimates that 55% of the global population currently lives in areas that experience a lack of clean water in at least one month per year. "By the end of the century, this may be as high as 66%," remarks Jones.

Strong regional differences in future water scarcity

While global water scarcity is projected to intensify in the future, both the changes and impacts will not occur equally across all world regions. Future increases in water scarcity in Western Europe and North America, for example, are concentrated in just a few months of the year—predominantly driven by water quantity aspects. Conversely, water scarcity increases in developing countries are typically more widespread in space and persist for a larger portion of the year.

Jones remarks, "Increases in future exposure are largest in the Global South. These are typically driven by a combination of rapid population and economic growth, [climate change](#) and deteriorating water quality."

Quality: The invisible part of water scarcity

Water quality—despite being crucial for safe water use—remains an underrepresented component of water scarcity assessments. "Previous assessments still predominantly focus on water quantity aspects only," explains Jones. "Yet, the safe use of water also depends on the quality."

Therefore, a key aim of this study was also to normalize the inclusion of [water quality](#) in water scarcity assessments—and in the design of management strategies for alleviating [water scarcity](#).

Jones concludes, "The lack of clean water presents a systemic risk to both humans and ecosystems, which is becoming increasingly difficult to ignore. Our work highlights that alongside substantially reducing our water demands, we must place an equally strong focus on eliminating water pollution in order to turn the tide on the global water crisis."

More information: Current and future global water scarcity intensifies when accounting for surface water quality, *Nature Climate Change* (2024). [DOI: 10.1038/s41558-024-02007-0](https://doi.org/10.1038/s41558-024-02007-0)

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