

How to build a climate-resilient water supply

February 10 2023, by Rachel Fritts



Infrastructure investment is required to make the water supply sector more resilient in the face of the increasing frequency and severity of extreme weather events, such as floods. Credit: Christina Xu, CC BY-SA 2.0

Jamaica will likely face more frequent and intense extreme weather events over the coming decades because of climate change. Such events, including flooding and drought, could strain the country's water infrastructure and disrupt access to clean water. To help these systems become more resilient in the face of climate change, Olivia Becher and

colleagues developed a model to quantify how extreme weather events would affect Jamaica's water infrastructure.

The researchers found that currently, Jamaica's utility customers experience an island-wide average of five days of climate-related water supply disruption per year, and [climate change](#) will exacerbate the situation. Even in a best-case carbon emissions scenario, disruptions could double by the end of the century. Under more pessimistic emissions scenarios, disruptions could increase by a factor of 2.5.

The actual disruptions that customers might experience vary spatially and depend on the type of weather event. Infrastructure damage due to a cyclone, for example, would cause acute and widespread water supply disruptions. Meanwhile, disruptions from drought might be more frequent and protracted.

The authors hope that their study informs and promotes investment in climate-resilient water infrastructure in Jamaica. Finding and fixing leaks in aging [water pipes](#), for instance, could improve resilience to drought conditions. Meanwhile, flood barriers could mitigate the impacts of cyclones. Such adaptive measures could save millions of people from going days without [clean water](#).

The work is published in the journal *Earth's Future*.

More information: Olivia Becher et al, A Multi-Hazard Risk Framework to Stress-Test Water Supply Systems to Climate-Related Disruptions, *Earth's Future* (2022). [DOI: 10.1029/2022EF002946](https://doi.org/10.1029/2022EF002946)

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