

App helps farmers crowdsource water during India's water crisis

August 8 2019



Farmers in India using MARVI to record well water levels. Credit: Western Sydney University

Western Sydney University's expertise in water management is providing an efficient tool for monitoring scarce groundwater reserves as large parts of India bake in extreme drought and heat.

The MyWell smartphone app is enabling Indian farmers to monitor and manage scarce [groundwater](#) in a distributed and localized way to monitor

water levels in wells that supply drinking and [irrigation water](#). MyWELL is part of the highly-successful project led by Western Sydney University and funded by the Australian Centre for International Agricultural Research (ACIAR) through the MARVI project (Managing Aquifer Recharge and Sustaining Groundwater Use through Village-level Intervention).

Experts estimate that by 2040, 21 Indian cities will run out of groundwater entirely and 40% of the Indian population will have no access to drinking water. Increasing use of industrial pumps to extract water from deep under the ground is slowly draining groundwater levels, meaning that water once available at 10-15m depth is now only available at 30m or even deeper. Effectively, at many places in India water is hardly accessible for growing crops or domestic water needs.

Professor Basant Maheshwari, lead scientist in the MARVI project that developed the app, said "the MyWELL app supports the efforts of communities to be informed about the availability of local groundwater through the efforts of local, trusted volunteers called Bhujal Jankaars (BJs—a Hindi word that means "groundwater-informed"). These volunteers act as the intermediary between local people, organizations and governments in monitoring water levels through [data collection](#) in the MyWELL app."



Farmers use the MARVI app to educate colleagues about groundwater monitoring. Credit: Western Sydney University

"MARVI's success is driven by its focus on village-level engagement, where local involvement close to water sources has created a distributed and reliable record of water availability, rainfall and water quality with easy-to-use measurement tools and the fact that everyone now has a smartphone."

As India's heat and drought conditions worsen, MyWELL provides better coordination for [water management](#) than any other method. Its major benefit is using everyday resources—smartphones and local volunteers—to decentralize the recording efforts. BJ Volunteers are trained to show local people how to measure water levels in wells with a wooden float and measuring tape and record these measures precisely in the app. Over thousands of recordings, these measurements add up to create an excellent water data set that can be used to reduce the toll from

drought and extreme heat.

"This technology can be readily used in other countries, developing or developed, to manage water supplies more effectively," said Professor Maheshwari.

"By working alongside local people, building simple and repeatable skills, we can slow down the rate that [water](#) is taken out of the ground. These issues are common in many countries and that's where we can readily extend the innovation to empower other communities to become more informed about the precious groundwater reserves."

More information: MyWELL is available to download on the Google Play store: play.google.com/store/apps/details?id=com.tech.mywell&hl=en_AU

Provided by Western Sydney University

Citation: App helps farmers crowdsource water during India's water crisis (2019, August 8) retrieved 9 April 2024 from <https://techxplore.com/news/2019-08-app-farmers-crowdsource-india-crisis.html>

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