Solar energy yemen

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Not much good news has come out of Yemen since the country"s civil war began in late 2014. But one thing generally seen as positive has been the country"s overwhelming adoption of solar power.

Even before the current conflict started, the country was described as "energy poor" compared to other Middle Eastern nations. Then, during the ongoing conflict, over half of the country"s electricity infrastructure was damaged and official power supplies plummeted further.

At first, locals substituted this loss with their own, often-diesel-powered generators. But after fuel supplies became more difficult to access because of blockades, and diesel prices rose accordingly, many Yemenis have been forced to switch to solar power.

According to the EADP, which focuses on access to clean and affordable energy, solar power went from being a niche product, used in just a few households in 2012, to the main source of energy for Yemeni households om 2016 onwards, its use has rocketed: "75% of the urban population and 50% of the rural population are estimated to receive solar energy," EADP researchers concluded. That even included some communities that had never had electricity before.

The organization, known as CEOBS, uses open source information to monitor the impact conflict has on the environment. CEOBS researchers Leonie Nimmoand Eoghan Darbyshire actually started their work in Yemen in 2019, looking at agriculture and also at groundwater -- that is, water trapped underground in soil and rocks, rather than rain or river water --using satellite remote sensing.

Whenever a mass shifts, it changes earth"s gravity just a little. When there"s less groundwater, there"s also less mass. The GRACE satellites are affected by earth"s gravitywhile in orbit so when gravity changes, they move a little. The satellites register this movement and relay that back to scientists on earth, who convert the data to track changes in water.

The CEOBS researchers were using satellite remote sensing when they discovered that groundwater in western Yemen was at its lowest level since satellite records started in 2002. It was only later that they concluded that the increased availability of solar power was probably playing a big part in those worryingly low levels.

As one of the most water-poor countries on earth, Yemenis are heavily dependent on groundwater. When people there were using diesel-powered pumps to get water out of the ground, fuel was expensive, so the pumps couldn"t be run for so long. This led to reductions in crops and played a part in the current famine.

However solar-powered water pumps can keep running as long as the sun shines and, once set up, they"re

almost free. This was better for agriculture, emissions and the environment, but far worse for groundwater levels.

Nimmo and Darbyshire told DW that they came to this conclusion because of several factors. Firstly, rainfall was above average yet groundwater was still going down. "That"s the opposite of what you might expect," Darbyshire said.

Secondly, there had beenhuge growth in use of solar panels in the country. And thirdly, statistics from Yemen officialssuggested that, in 2019, there was a large increase in local agriculture after a serious decrease due to the war. The assumption was that people were watering their crops more.

The increase in solar-powered pumping is "where all the evidence was pointing," Nimmo told DW. Both researchers are certain of their findings. But they also say that to absolutely confirm their hypothesis, more research and more testing inside the country is needed, even if this is difficult because of the current conflict.