



Water harvesting

What is happening?

Water vapour in the air in deserts is being turned into drinking water.

How do we know this?

- Scientists have built a water harvesting box that collects water vapour (gas) from the desert air at night.
- The box contains a substance called MOF (made of carbon and hydrogen and a metal called zirconium). Water vapour sticks to the MOF.
- The water vapour condenses as liquid water in the box (even at temperatures near that of the surrounding area).

Why is this important?

- In the last 100 years, the human population has increased 3-fold and the demand for water has increased 6-fold. More people need clean water and they are using more water.
- Climate change is likely to make water supply much less certain. The United Nations predicts that by 2025, 48 countries will experience water stress.
- Developing cheap and efficient ways to harvest fresh water is necessary in water-stressed countries so that farmers can grow crops to feed the populations.

KEY FACTS

Water stress

One third of the world is water stressed. This means that the demand for water is greater than the amount of water available.

Water vapour

The gaseous form of water is always present in the air. How much there is changes from place to place and at different times of day. The total amount is equivalent to 10% of all fresh water lakes on Earth.

Condense

Water vapour can change from a gaseous state to liquid water.

Professor Omar Yaghi is one of the scientists leading this research on water harvesting. He is a professor of chemistry in the USA but was born in Jordan to a refugee family originally from Pakistan.



What else can you find out?

- Which countries in the world are most likely to be water-stressed? Use the QR code to see a world map showing population and water availability.
- Can you think of ways to reduce the use of fresh water and to avoid wasting water?



<https://bit.ly/3Q6suWr>

