Many small farms around the world rely on rainfall | Photo source Roman Synkevych on Unsplash

SOLAR-POWERED PUMPS COULD RESHAPE WATER POLICY

AGRICULTURE & ENERGY

Data collected from solar water pumps is being used to help governments develop more accurate water policies

Spotted: There are more than 500 million one-acre farms around the world. Many of these farms rely on rainfall for irrigation, but this has become more unpredictable as the impact of climate change increases. In response to this, British social enterprise Futurepump has developed solar-powered water pumps designed for small farmers.

Futurepump's pumps are currently used by thousands of small-scale farmers across more than 15 African nations. The pumps act as a cheaper, cleaner alternative to those powered by diesel or gasoline. Now, the company has fitted remote monitoring sensors to the pumps, in order to record real-time data such as energy usage and pump speed in each location.

The information gathered by the pumps is now being shared with the Sri Lanka-based International Water Management Institute (IWMI), who is using it to track water usage across different regions around Africa. By giving an accurate picture of how much water is being extracted at any given time, the data could enable governments to develop better policies for water sustainability, such as planning for shifts to less water-intensive crops.

The IWMI suggests that the data could also help people to better realise the environmental cost of water extraction. David Wiberg, hydroinformatics leader at IWMI, explains that: "People often see solar pumps as 'free energy' ... They feel since it's not going to cost extra to extract more water, it can be taken. But once you put in place an information system like this, farmers will be able to see that pumping extra amounts of water is not helping them or their neighbours grow extra crops."

As global warming impends, correct and efficient water management will become even more important. This is why we have seen a growth in the number of innovations aimed at tackling looming

water shortages. Recent ideas have included a solar-powered water farm and the use of portable, low-energy condensers.

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Takeaway:

In Africa, more than 90 per cent of agriculture depends on rainfall. To ensure food security on the continent therefore, countries need to manage their water resources efficiently. However, there has always been a shortage of data able to be used to inform policy. By sharing sensor data from its pumps, Futurepump and IWMI hope to address this data deficit. This could ultimately lead to better water management and greater food security, and could be used in other industries in the future.