

# International Project

Rotary hands on water

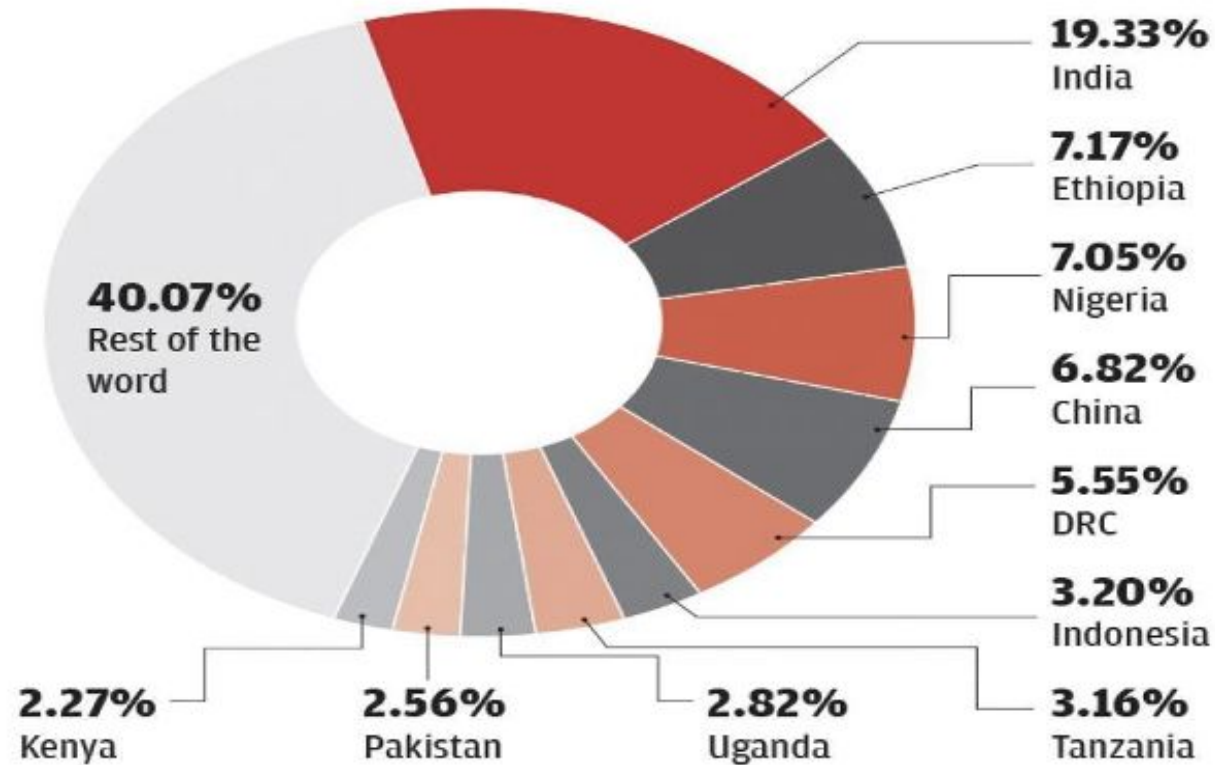
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# Main problem : Water Crisis

## Waterless countries

Just 10 countries account for 60% of the world population without access to clean water



Source: The water gap—The State of the World's Water 2018 report by WaterAid

# Statistics about main problem :

- By 2025, an estimated 1.8 billion people will live in areas plagued by water scarcity, with two-thirds of the world's population living in water-stressed regions.
- 780 million people live without clean drinking water.  
More than one-third of Africa's population lacks access to safe drinking water.  
Compared to today, five times as much land is likely to be under "extreme drought" by 2050.  
Unless measures are taken, California will demand three times more groundwater than can be supplied over the next 100 years.  
More than two billion people worldwide rely on wells for their water.

## So what ?

- **By the year 2040 there will not be enough water in the world to quench the thirst of the world population and keep the current energy and power solutions going if we continue doing what we are doing today.**
- In most countries, electricity is the biggest source of water consumption because the power plants need cooling cycles in order to function. The only energy systems that do not require cooling cycles are wind and solar systems, and therefore one of the primary recommendations issued by these researchers is to replace old power systems with more sustainable wind and solar systems.
- The research has also yielded the surprising finding that most power systems do not even register how much water is being used to keep the systems going.



# OUR IDEA

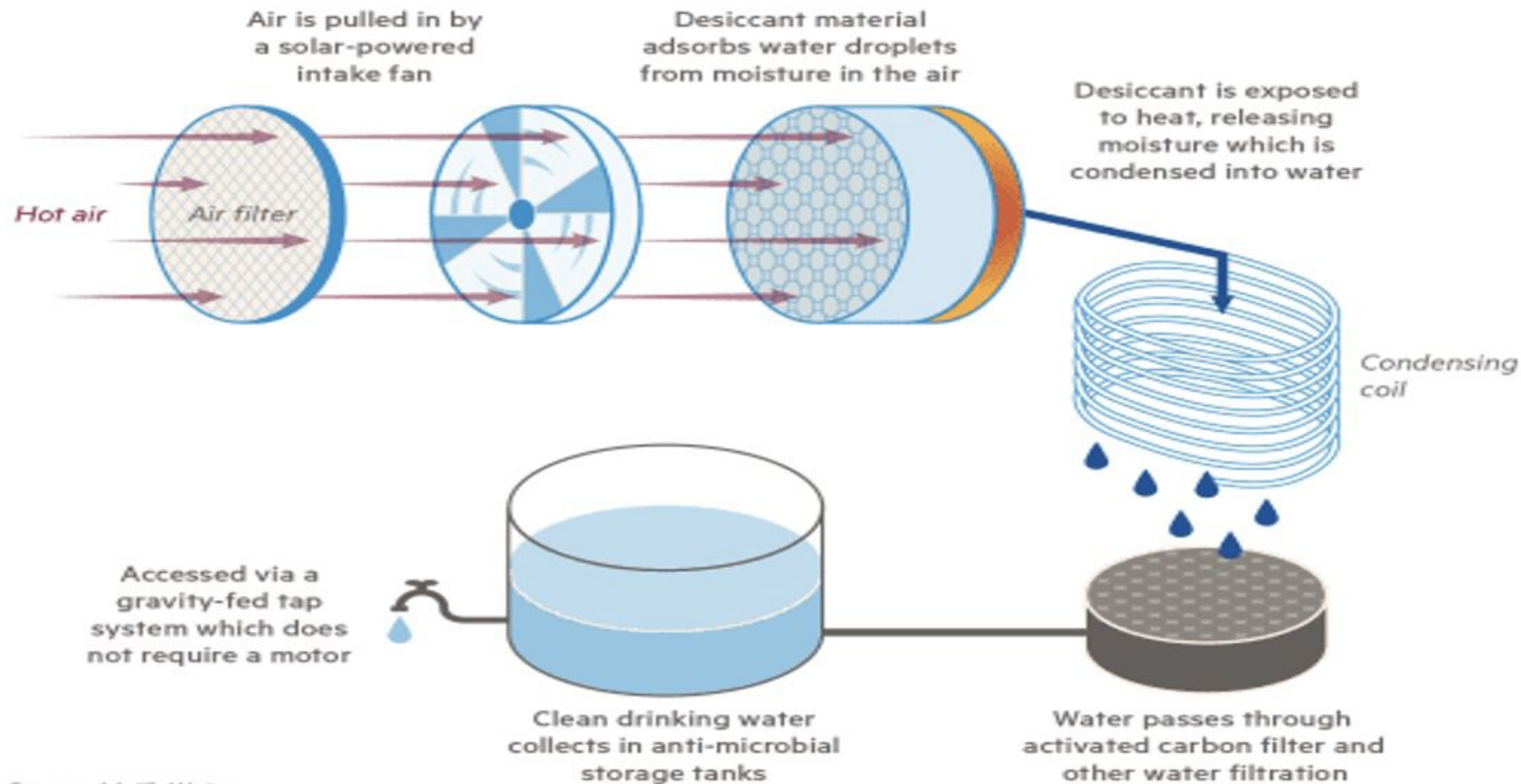
Deployable Solar-Driven Atmospheric Water  
Generator

Hybrid Hydrogel with High Water  
Vapor Harvesting Capacity for Deployable Solar-  
Driven Atmospheric Water Generator



# Harvesting drinking water from air

Majik Water's system for extracting water from the air in arid places







# 0

# 1 **Why this ?**



The Earth's atmosphere holds approximately 12,900 billion tons of fresh water and it distributes all over the world with fast replenishment. The atmospheric water harvesting is emerging as a promising strategy for clean water production in arid regions, land-locked, and remote communities. The water vapor sorbent is the key component for atmospheric water harvesting devices based on absorbing-releasing process.



# Advantages



1. It possesses superior water sorption capacity even in low humidity air thanks to the deliquescent salt and it maintains a solid form after it sorbs a large amount of water owing to the hydrogel platform.



2. Ecofriendly  
Only hydrogen  
Solar energy

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3. An “easy-to-assemble-at-household” prototype device with 35 g of the dry hydrogel was tested outdoors in field conditions and delivered 20 g of fresh water within 2.5 h under natural sunlight.

# Cost

**Is estimated that the material cost of making such a device to supply minimum daily water consumption for an adult (i.e., 3 kg) is only \$3.2 (USD). This type of atmospheric water generator (AWG) is cheap and affordable, perfectly works with a broad range of humidity, does not need any electricity, and thus is suitable especially for clean water production in remote areas.**



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**Thank You**

