



# Multiple Uses of Artesian Water

## THE CHALLENGE

### **FREE-FLOWING ARTESIAN WELLS DEplete GROUNDWATER**

When a well or borehole taps into groundwater that is under pressure, the groundwater can sometimes rise above the point of first contact, often emerging above ground. This type of groundwater is referred to as Artesian water. Artesian flows are often celebrated since they give the impression of an endless supply of groundwater that is effortlessly rising to the surface without the necessity of expensive infrastructure. However, uncontrolled or free flowing artesian wells can significantly deplete groundwater supplies, drying up nearby boreholes and eventually reducing flow rates over time.

Based on government records, as at 2017, Malawi had an estimated 33 free flowing artesian wells scattered across the country.

Together with the National Water Resources Authority and the Ministry of Water and Sanitation, a mapping project in 2024 indicated Malawi actually had 71 free flowing artesian wells with a combined estimated discharge of 10.8 billion litres of water over several years.

## THE SOLUTION

### REGULATE AND ACCOUNT FOR EVERY DROP

We implemented an innovation pilot project in the Southern Region community of Jordani (Lat -15.495752, Long 35.110923) from 2018 to 2020. An artesian well had been running continuously in Jordani since 2007, wasting almost 150 million litres of water. In order to improve food security, guarantee a sustainable water supply, and demonstrate how wastewater from artesian systems could be used for production, the pilot sought to harness the potential of artesian water for sustainable agriculture. This would have the added benefit of building community resilience to impacts of climate shocks such as floods and droughts.

The key activities of the pilot included:

1. Regulating or remediating the artesian flow by setting up a closed system that would maximise or account for every drop of water.
2. Working together with a multi-disciplinary team of local government officials to execute a tailored portfolio of artesian water applications, which included aquaculture, irrigation, tree nurseries, and an extended water supply.



## SOCIAL IMPACT

### IMPROVED WATER EFFICIENCY INCREASED PRODUCTIVITY ALTERNATIVE INCOMES

In addition to extending clean water supply to 1,730 people, the pilot improved water efficiency by controlling the artesian flow from being wasted, conserving almost 59 million litres of water as a result. In addition to producing USD 2,100 in revenue by the project's conclusion, the growth of small-scale fish farming and irrigation increased productive land by 314%, from 390 to 1,614 square meters.

## RESOURCES

**Video:** Jordani Village Project Playlist:

<https://www.youtube.com/watch?v=Xf38ynQ-U80&list=PLe5ibBlpKHq-D6dpzZ9TbWHxJjsJDxsfY>

**mWater Indicator tracker:** <https://shorturl.at/eS8Kp>



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