

Competition For Scarce Groundwater In The Sana Plain Yemen Study Of The

Water is the elixir of life, yet in many parts of the world, it is becoming increasingly scarce. The Sana'a Plain in Yemen is one such region, where the competition for groundwater is intensifying, threatening the livelihoods of millions of people.

This article presents a comprehensive study of the competition for scarce groundwater in the Sana'a Plain. It examines the factors contributing to the scarcity, the impact on the local population, and the potential solutions to mitigate this pressing issue.



Competition for Scarce Groundwater in the Sana'a Plain, Yemen. A study of the incentive systems for urban and agricultural water use. by Mohammed I. Al-Hamdi

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Water Scarcity in the Sana'a Plain

The Sana'a Plain is home to Yemen's capital city and over 10 million people. The region is arid, with limited rainfall and few surface water

resources. As a result, groundwater is the primary source of water for both domestic and agricultural purposes.

However, groundwater levels in the Sana'a Plain have been declining rapidly in recent decades. This is due to several factors, including:

- **Population growth:** The population of the Sana'a Plain has grown rapidly in recent years, putting a strain on the available water resources.
- **Increased agricultural water use:** Agriculture is the main economic activity in the Sana'a Plain, and farmers have been increasingly using groundwater to irrigate their crops.
- **Climate change:** Climate change is likely to exacerbate water scarcity in the Sana'a Plain by reducing rainfall and increasing evaporation.

As a result of these factors, the groundwater table in the Sana'a Plain has dropped by over 100 meters in some areas. This has made it increasingly difficult for farmers to access water, and has also led to higher water prices.

Impact of Groundwater Scarcity

The scarcity of groundwater in the Sana'a Plain is having a significant impact on the local population. Many farmers have been forced to abandon their land, and others are struggling to make a living. The cost of water has also increased, making it difficult for many people to afford clean water.

In addition to the economic impact, groundwater scarcity is also having a negative impact on the environment. The declining groundwater levels are causing the land to subside, which can lead to cracks in buildings and

roads. The over-extraction of groundwater can also lead to the intrusion of saltwater into freshwater aquifers.

Potential Solutions

There are a number of potential solutions to the problem of groundwater scarcity in the Sana'a Plain. These include:

- **Improving water efficiency:** Farmers can reduce their water use by using more efficient irrigation methods and growing crops that require less water.
- **Investing in water conservation:** The government can invest in water conservation projects, such as building dams and reservoirs to store rainwater.
- **Developing alternative water sources:** The government can also explore alternative water sources, such as desalinating seawater or using treated wastewater.

It is important to note that there is no single solution to the problem of groundwater scarcity in the Sana'a Plain. A combination of approaches will be needed to address this complex issue and ensure water security for the future.

The competition for scarce groundwater in the Sana'a Plain is a serious challenge that threatens the livelihoods of millions of people. However, there are a number of potential solutions to this problem. By working together, the government, farmers, and the international community can ensure water security for the future of the Sana'a Plain.

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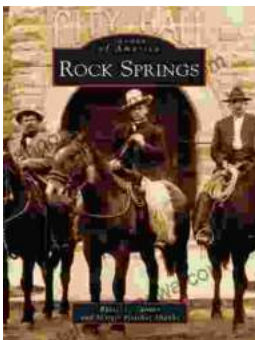
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