

Disi Aquifer Jordan and Saudi Arabia



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Introduction

In a region short on renewable water resources, the Disi aquifer is of tremendous value to the countries that overlay it. Shared today by Jordan and Saudi Arabia, the aquifer is approximately 30,000 years old. A sandstone aquifer approximately 320 km long, and 600-900 m thick, it is the largest aquifer of its type in the region. The aquifer receives negligible recharge, but stores approximately 280 km³ of water with excellent quality.

Kingdom of Saudi Arabia

Saudi Arabia is greatly dependent on its groundwater resources. The country uses 17.3 MCM (million cubic meters) of water every year, but has only 2.4 MCM of renewable freshwater. This means that the country relies on non-renewable aquifers such as the Disi aquifer.

Saudi Arabia began exploiting the aquifer in the 1970s and dramatically increased pumping of the Disi in the 1980s when the country subsidized wheat production. Wheat is a water intensive crop and this farming effort required a tremendous amount of groundwater extraction. In 1993, Saudi Arabia began altered its agricultural policy and curbed its wheat production to 25% of its previous level. Nevertheless, Saudi Arabia still extracts a large quantity of Disi water, at over 1000 MCM per year.

Kingdom of Jordan

While the majority of the Disi aquifer underlies Saudi Arabian territory, a small portion of the exploitable section of the aquifer lies in Jordan. Unlike Saudi Arabia, Jordan has access to renewable surface water in the form of the Jordan River. Jordan also has plans to dam the Yarmouk, a tributary to the Jordan, to form a water reservoir. The kingdom's total renewable water resources sum to 900 MCM/yr.

The Kingdom of Jordan uses the Disi aquifer to supply water to the city of Aqaba and the region around it. This land was acquired from Saudi Arabia in a land deal in 1965. Total current Jordanian pumping of the Disi aquifer amounts to 70-80 MCM/yr.

Jordan has big plans to increase its exploitation of the aquifer, with a project underway to construct a 325 km long pipeline from a well field in the South to the capital, Amman, in the north. It is expected that when completed in 2012, the project will supply 100 MCM per year to the city.

Transboundary Non-cooperation

Use of the aquifer's water is a source of dispute for the two countries. Each country thinks the other should be pumping less and there is no bilateral agreement governing water withdrawals. Additionally, no precedent has been set for such an agreement for a non-renewable transboundary aquifer. In fact, it is not even certain if the Disi qualifies as an international watercourse under the 1997 UN Convention on Non-Navigational Uses of International Watercourses. In either case, Jordan has signed the ungratified treaty, but Saudi Arabia has not, making it an unlikely source for resolving the dispute.

A potential starting point for cooperation originates in the land deal that provided Jordan the coastal area around Aqaba. Under the agreement, Jordan and Saudi Arabia were to jointly manage Disi extractions in the region, but this has not been realized. There is a

forum for exchange of data on the aquifer and its use, however the success of this exchange is uncertain with Saudi Arabia particularly reluctant to divulge data on use of the aquifer.

The Amman water conveyance project may bring the dispute to the limelight, with Jordan greatly increasing Disi water extraction. The project has been undertaken without consultation or agreement with Saudi Arabia. Despite Jordan's public calls for joint management, the construction of Disi-Amman pipeline contributes to a "silent pumping race" where each country attempts to get the most out of the aquifer, with neither side cooperating with the other. When completed, the project may catalyze negotiations and exchange, or alternatively it may lead Saudi Arabia to follow suit.

Recommended Reading

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