



**CASE BACKGROUND**

Ironically, the Middle East's most sought after resource is not crude oil, but water. With precious few rivers and lakes to obtain fresh water for their populaces, Middle Eastern countries have turned to other methods of obtaining water. One such method is to search out and drain deep underground water aquifers. The al-Disi aquifer is a deep aquifer that lies beneath the border between Jordan and Saudi Arabia. The al-Disi is a sandstone aquifer believed to be about 320 kilometers long and is the largest of its type in the region. There have been debates by the two countries over the rights to draining, the extent of draining, and the regulation of draining the al-Disi aquifer. As the already arid environment of the Middle East is exacerbated by growing populations and agriculture, the potential for conflict becomes greater. This scenario discusses the potential of conflict and resolution between Jordan and Saudi Arabia over the al-Disi aquifer, and its relationship to the environmental conditions of the Middle East.

The role of water in the Middle East is a crucial one. Not only is it a sustenance for life, but it is also critical in industry and agriculture. The Middle East makes up 5% of the world's population, while the region's access to water is limited to less than 1% of the world's water resources. Because of water's scarcity in the region it is a topic of political and environmental concern. Politically, states must decide who owns what water. Often rivers and lakes are the borders of states, causing debate over who has control of the river as a resource. Furthermore, conflict can occur when water upstream may be polluted or overused, leaving what is left for countries downstream. However, international disputes over large underground aquifers have been largely ignored due to the pressing questions of environment, international law, economics, and politics. Coupled with the effect of water scarcity in the

region, these questions must be answered urgently and satisfactorily to maintain peace and stability in the region.

The al-Disi aquifer is located in the Arabian peninsula and, although most of its mass lies underneath Saudi Arabia, a section also lies underneath Jordan. It is a deep sandstone aquifer that is 320 km long and is the largest in its region. By being locked within non-porous sandstone rock the aquifer is not subject to recharging by rainfall. It is largely unknown how much water the aquifer contains or its archeological history. What is known is that the water in the al-Disi is not rechargeable and is quite old (ie. 20,000-30,000 years old). The al-Disi is currently drained to support the production of agricultural products, but this is a relatively new occurrence, as desert production of agricultural goods by both Jordan and Saudi Arabia started in the 1980's. Furthermore, there is no agreement between the countries concerning the al-Disi and its usage.

The conflict over the al-Disi is a relatively new one. The al-Disi was not a focus of Saudi Arabia and Jordan until the population growths and water shortages of the late 20th century began to put new pressures on the two countries. Jordan is the smaller country of the two geographically and economically. The majority of the al-Disi lies under Saudi Arabia, therefore, Jordan has largely viewed itself as the victim of Saudi Arabia's bullying and overuse of the aquifer.

Saudi Arabia is 90% desert and has no rivers or lakes to use as water sources. Farmers in Saudi Arabia have found and drawn on water aquifers beneath the ground to maintain their vast irrigation systems.

As a result of the Saudi Arabian water shortage when one travels by plane over Qassim province, the breadbasket of Saudi Arabia, they can see lush circular wheat farms with powerful 4000 foot sprinkler systems, but, unfortunately, they can also see the dried up circular imprints of former farms that ran out of water available in underground aquifers and were forced to shut down. The wheat program in Saudi Arabia started in the early 1980's, primarily for the purpose of weaning the Saudi population off dependence on European wheat. The costs to produce high yields of wheat in the desert are high. Wheat farmers are subsidized at nearly five times the world market for their product, which allows them to establish expensive irrigation systems. Subsidies also allow Saudi wheat to compete on the world market and produce some income for the state. Since 1997, however, the Saudi government began to curtail their wheat output to subsistence levels within Saudi Arabia. Regardless, seventy percent of the water used for the wheat program has been non-rechargeable fossil water.

In the Middle East region an average of 50-90% of any nation's water is used for irrigation in agriculture. Some of the techniques of irrigation are not conducive to water conservation. For instance, in Saudi Arabia the high powered sprinkler systems lose water because they are susceptible to evaporation into the arid air. As a result, a large amount of water is wasted by never reaching the roots of the plants. Drip irrigation technology that allows for water to be applied directly to the roots of plants drastically reduces evaporative effects. Furthermore, the plants chosen by Middle Eastern governments for growth by subsidy often require high amounts of water. Wheat, for example, requires high amounts of water for growth and most of the growth is in the stalk and roots and not in the usable grain. Alfalfa, another plant chosen by some governments to grow, consumes four times the amount of water as wheat.

The 1997 U.N. Convention on Non-navigational Uses of International Watercourses, adopted by the U.N. General Assembly, addresses the issues of watercourses shared by more than one country. Watercourses are defined in Article two of the convention as "...a system of surface waters and

groundwaters constituting, by virtue of their physical relationship, a unitary whole and normally flowing into a common terminus” (UNCNUIW 1997). The Al-Disi aquifer's qualification as a watercourse is questionable. It is a groundwater resource, but its nature as a deep, non-rechargeable aquifer lying in non-porous sandstone does not allow for flowing into a common terminus or uniting with surface waters. Despite this technical definition problem, the convention's principles could still apply to the sharing of the Al-Disi aquifer.

The convention calls for equitable and reasonable use of international watercourses. Furthermore, in the event of conflict over a watercourse, parties to the convention must bestow special regards to vital human needs in their resolution to the conflict. The convention also asks parties to take into account “geographic, hydrographic, hydrological, climatic, ecological, and other factors of a natural character,” when resolving conflict on watercourses (Hunter et al. 1992: 836). Parties to the convention are required to consider the environmental consequences of any uses of watercourses. Because the Al-Disi is non-rechargeable, its draining could result in salinization or “salting effect,” and/or the permanent drying up of the aquifer. This situation would be adverse to the environmental conditions of both Saudi Arabia and Jordan and are impending factors in any resolution on the matter.

The convention requires ratification by 35 countries before it can take affect. At present, the convention has been ratified by only seven countries and signed by only 18, keeping the treaty from going into affect. Interestingly, Jordan is one of the ratifiers of the convention, but Saudi Arabia is not. Despite its failure to become ratified and Saudi Arabia's decision to not sign the document, the convention is the most relevant international law for the resolution of the al-Disi conflict. It is the only written law about the use of water resources.

Source: <http://www.american.edu/TED/ice/iceall.htm>

### **CRISIS**

***Recently, the tension between Jordan and Saudi Arabia has risen, due to this year's drought and to its inevitable consequence: both countries have drawn excessively large amounts of water from the aquifer. Mutual accusations of undue usage have been exchanged, and the tension is high. The sudden eruption of the crisis highlights the strategic importance of water resources. In other parts of the world too, in Asia, in Africa and in South America, disputes over aquifers, which had up to now been rated as low-intensity, suddenly acquire a renewed urgency.***

***The international community mobilizes to meet the challenge. Just as the G-8 has put the issue on its next agenda, the Secretary General of the UN convenes the Political committee, and requires that it seizes itself of the matter: a global approach to the issue of aquifers seems necessary.***