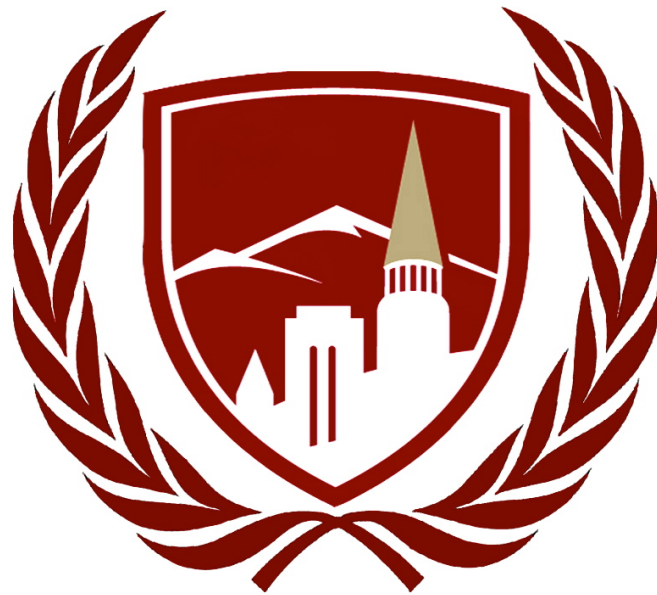


UNIVERSITY OF DENVER



INTERMEDIATE LEAGUE OF ARAB STATES

Desertification and Access to Potable
Water



By Lauren Harris

Introduction

Desertification is the persistent degradation of dryland ecosystems by human activities – including unsustainable farming, mining, overgrazing and clear-cutting of land – and by climate change. Some causes of desertification include the removal of tree and plant cover that binds the soil such as when trees and bushes are stripped away for fuel, timber and land for cultivation, animals eating away grasses and erode the topsoil with their hooves, and intensive farming that depletes the nutrients in the soil. It is estimated that some 50 million people could be displaced within the next 10 years as a result of desertification.¹ (United Nations) In June of 2013, a pilot phase of the Regional Water Scarcity Initiative was launched in July 2013 in six countries that include Egypt, Jordan, Morocco, Oman, Tunisia, and Yemen, which reviewed the current status of water availability and use and the potential for further agriculture production.² (UN News Centre) The desertification in Arab States has also contributed to increasing physical shortages and scarcity to potable water. These shortages have been threatening agriculture production, which will have long-term effects on the security of the food supply in the region. Desertification also has huge impacts on access to potable water, which is discussed later in the guide.

Historical Background of Desertification

Over the past 100 years there have been numerous occasions of desertification and land degradation, most notably the Dust Bowl in the 1930s. The Dust Bowl is an example of land degradation due to human activities. Bad agricultural practices of deeply plowing wheat fields and years of drought caused the Dust Bowl. As the drought became worse, farmers continued to try and plow the field even more and eventually the groundcover that kept the soil in place was lost.³ (University of Illinois) This resulted in major dust storms as the wind blew the loose soil in the southern Plains. This drought and the dust storms that accompanied it lasted for many years until conservation techniques such as planting shelterbelts and re-plowing land into furrows significantly reduced the amount of loose, blowing soil.

Events like the dust bowl can result from various factors. As mentioned above, bad agricultural practices, like over-plowing led to the Dust Bowl. However, there are many factors involved in desertification that humans have no control over. One such factor is weather patterns. If a region gets little to no rain, the chance of desertification exponentially increases.⁴ This means that areas like the Middle East, which is mostly comprised of desert terrain, are more at risk for desertification than others. It is important to note that although these natural factors can account for desertification, desertification only occurs due to man's activities. While a dry climate can certainly contribute to the

¹ "Desertification," United Nations.

² "Water Conflicts in the Middle East," ISN. 18 October 2012

³ "About The Dust Bowl," University of Illinois.

⁴ http://www.redorbit.com/news/international/1844932/desertification_threatens_middle_east/

problem of desertification, the definition of desertification specifically entails effects on lands due to man's actions, not just natures.⁵

Another factor important when considering desertification is population size. The larger a population, the more food that population will require. However, if a growing population does not have the land available to expand food production, more food will need to come from the same size area, making it land prone to over-production, increasing the chance of desertification.⁶

The 1950s saw the first organized international effort to limit the effects of desertification. In 1951 UNESCO began its first study on Arid Lands, hoping determine ways to enhance the natural resources of arid lands and make them more livable for humans.⁷ Though desertification was on the radar of international organizations like the UN, it was not until the drought in the African Sahel from 1969 to 1973 that truly demonstrated the possible effects of desertification. Though the drought was natural, over-plowing of the land worsened its effects, making the drought devastating for many.⁸ During this period millions of livestock were lost, countless human lives were lost (due to malnutrition and lack of water), as well catastrophic damage to countries' economies. This event prompted the UN to call a conference on desertification, and preventing desertification became one of the main missions of the UN Environmental Agency.⁹

Current Situation on Desertification

Currently, 2.6 billion people depend directly on agriculture, but 52% of the land that they use is moderately or severely affected by soil degradation.¹⁰ This is particularly true for Arab States, most of which are located in desert climates. In Arab States, agricultural practices continue to contribute to soil degradation and increase desertification. According to the United Nations, arable land loss is estimated at 30 to 35 times the historical rate.¹¹ In addition, each year 12 million hectares of arable land are lost due to drought and desertification. This is land where 20 million tons of grain could have been grown.¹² Additionally, the UN has reported that 1.15 million square miles of land are currently threatened by desertification, a statistic which shows how wide spread the problem of desertification has become.¹³

It has also been concluded that urbanization, rapid population growth, and climate change all enhance desertification.¹⁴ It has been reported that Arab States are expected to be the

⁵ Dregne, H. E. 1986. Desertification of arid lands. In *Physics of desertification*, ed. F. El-Baz and M. H. A. Hassan. Dordrecht, The Netherlands: Martinus, Nijhoff.

⁶ Ibid

⁷ Ibid

⁸ Ibid

⁹ Ibid

¹⁰ "Desertification," United Nations.

¹¹ Ibid

¹² Ibid

¹³ http://www.redorbit.com/news/international/1844932/desertification_threatens_middle_east/

¹⁴ Dregne, H. E. 1986. Desertification of arid lands. In *Physics of desertification*, ed. F. El-Baz and M. H. A. Hassan. Dordrecht, The Netherlands: Martinus, Nijhoff.

most impacted countries by climate change.¹⁵ This can be seen in a variety of ways. Djibouti is ranked as the country that is expected to feel the greatest impact of climate change through flooding and tropical storms. Also, Iraq is the fifth most at risk country with impacts including coastal flooding, exposure to extreme temperature, susceptibility to decreasing food availability, and negative health problems created by these changes.¹⁶

Because the potential impact of desertification has been made clear in the past few years, the Arab States have been working to take collective action to address the issue, instead of relying on individual states to fix the problem within their own boundaries.¹⁷ Additionally desertification affects food security and poverty alleviation, as well as migration trends, all issues that are incredibly important for economic and state security.¹⁸ Some researchers have recently reached the conclusion that while almost all Arab states have access to the appropriate technologies to combat desertification, there is a huge lack of understanding of the reasons for arid land, the socioeconomic contexts behind arid land, and a mismanagement of natural resources. Thus, researchers and politicians alike are hopeful that a cooperative approach will yield better results.

Current Situation on Potable Water

In the face of desertification, access to potable water becomes even more important. Since water is essential to all life, access to potable water is of paramount importance. Potable water is water that is safe to be consumed by humans with a low risk of immediate or long-term harm. According to the World Health Organization (WHO), it is estimated that 768 million people did not use an improved source for drinking water in 2011 and 185 million relied on surface water to meet their daily drinking-water needs.¹⁹ An improved source of drinking water is defined by the WHO as a “source that by nature of its construction adequately protects the source from outside contamination, in particular from fecal matter.” Especially in the Arab region, it is extremely hard to find clean sources of water. This is because of the high prevalence of refugee camps, poverty, and lack of infrastructure.

The geographical area the Arab States occupy is one of the driest in the entire world. The water situation can be described as precarious at best, both in terms of quality and quantity. However, precariousness of the situation has been recognized by the Arab States, and measures have been taken to help ensure access to water. One such measure is the implementation of desalination plants. These plants take ocean water and remove the salt from it, thereby making into “fresh” water that can be used for agricultural purposes and to drink. In fact, the Arab States house 70% of the desalination plants in

¹⁵http://www.redorbit.com/news/international/1844932/desertification_threatens_middle_east/

¹⁶ “Trouble Waters – Climate Change, Hydopolitics, and Transboundary Resources,” Stimson. 2009.

¹⁷ Ibid

¹⁸ Mamdouh Nasr: Assessing Desertification and Water Harvesting in the Middle East and North Africa: Policy Implications, ZEF – Discussion Papers On Development Policy No. 10, Center for Development Research, Bonn, July 1999.

¹⁹ “Water Sanitation and Health,” World Health Organization. 2013.

the world.²⁰ While desalinization does create potable water, there are several downsides to the process. Firstly, the desalinization process often removes essential minerals like calcium, making it more difficult to get nutrients essential for health. Secondly, the salt extracted from the seawater is often dumped back into the ocean, increasing its salinity. This practice adversely affects the ecosystem, making the habitat inhospitable to native plants and continually makes the desalination effort more difficult.²¹

Another suggestion for increasing access to potable water is to pipe it in from more fertile rivers, like the Nile or Euphrates. However, there are significant political challenges associated with this solution. Because many Arab States have shaky relationships with each other, depending on each other for water could potentially give certain states more power in a relationship. There is also the basic lack of trust between states that might prevent any networks like this to be set up.²²

In the Arab States there have been few wars triggered directly by water shortages, however water shortages can help to fuel existing tensions.²³ With increasing water scarcity, local conflicts and interstate conflicts over access to water could spark much more easily. Some people believe that conflicts over water have not occurred yet due to the fact that in many potential cases, one of the involved parties has had a clear militaristic and economic advantage.²⁴ For instance, Egypt is a hegemonic power in the Nile river basin. Because Egypt is so powerful militarily and economically, other states often choose to negotiate water rights rather than get into a military fight.

Prep Questions

- What are some reasons that state or national interests would prevent a country from fully embracing a regional coalition to secure access to clean water?
- How does one combat causes of desertification without impeding a countries ability to become more developed?
- What can the UN do in this situation to further Arab unity? Would greater cooperation between countries be enough to effectively fight desertification?
- How are desertification and access to potable water connected? Does addressing one issue automatically help to solve another issue?

²⁰ <http://thewaterproject.org/water-in-crisis-middle-east.php>

²¹ Ibid

²² "Middle East Water Problems." William Dale. August 2001.

²³ "Water Conflicts in the Middle East," ISN. 18 October 2012.

²⁴ "Water Sanitation and Health," World Health Organization. 2013.