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Water in the West Bank: A Case Study on Palestinian Water Security

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Water in the West Bank: A Case Study on Palestinian Water Security

A photograph of a public water tap in a public facility. The tap is set into a concrete wall. A yellow jerrycan is being filled with water from the tap. The wall above the tap is covered in graffiti, including blue and white paint splatters. The tap handle is a simple metal lever. The water is flowing into the jerrycan. The jerrycan is held by a person's hands, which are visible on the right side of the frame. The overall scene suggests a public water supply point in a developing or conflict-affected area.

WATER IN THE WEST BANK:

**A
CASE
STUDY ON
PALESTINIAN
WATER SECURITY**



By Kelly Anne Bridges

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D. Nazer, M. Siebel, P. Van der Zaag, Z. Mimi, and H. Gijzen, "A financial, environmental and social evaluation of domestic water management options in the West Bank, Palestine," *Water Resources Management* 24 (2010): 4445-4467.

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In 1989, Malin Falkenmark developed the water stress index that defines water scarcity by annual individual usage. In her index, which the United Nations later adopted, Falkenmark categorized absolute water scarcity as when annual individual usage is less than 500 m³. Based on these metrics, Palestine suffers from absolute scarcity, as the territory only has 320 m³ per capita of water available annually. Moreover, Palestinian residents are also classified as water insecure based on interpretation of the UN-Water's 2013 Analytical Brief. In this document, water security is defined as the "the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability".

CONCERNS

There are numerous political, demographic, and environmental reasons as to why Palestine is and will continue to be one of the world's most water insecure and scarce regions.

Although the Jordan River passes through the West Bank, Palestinians are not authorized to extract water from it, as the Israeli government diverts the flow upstream. Any water that does manage to trickle into the West Bank is brackish and polluted by untreated sewage water.

The Israeli government also restricts the use of groundwater from the Mountain Aquifer, which is the largest groundwater resource in Israel and the West Bank. In fact, it is the sole source of freshwater for

Palestinians, as the Jordan River is unusable. The aquifer includes the Western, North-eastern, and Eastern aquifers, whereof the Western is the largest source boasting the highest water quality. Due to Israeli-imposed restrictions, Palestinians can only access 20% of the Mountain Aquifer annually. In the Western Aquifer, for example, Palestinians are only able to pump 22 million m³ annually, whereas Israelis are permitted to pump over 14.5 times as much at 320 million m³ annually.

Due to Israeli-imposed restrictions, Palestinians can only access 20% of the Mountain Aquifer annually.

Due to climate change and population growth, among other factors, the situation is expected to worsen. Although the current population in the West Bank is around 2.5 million, it is expected to increase dramatically in the coming years. In Israel, the population is expected to expand to 13 million Palestinians and 12 million Israelis by 2050. The Palestinian population is growing by about 2.18% annually, while the Israeli population is growing by an estimated 1.67%. In the past, population growth in Palestine has raised large issues with regards to water availability. Between 1967 and 1987, for example, even though usable water resources in the West Bank increased by 20%, the Palestinian population of the West Bank grew by 84%. The rate of expansion of water resources could not keep up with that of population growth; as a result, West Bank residents have historically suffered from acute water shortages.

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Climate change also affects water availability in the West Bank. In the West Bank, the average rainfall is 450 mm per year. Since 2007, however, the area has faced significant winter droughts, which have affected rainfall.



Consequently, rainfall is expected to decrease by up to 27% in the region over the course of the 21st century. Additionally, climate change will reduce the length of the winter season and increase local temperatures. By 2100, winter rainfall is expected to decrease by 35% and temperatures are expected to increase by up to 4.8°C. Climate change also affects groundwater. Groundwater recharge is affected by the "intensity, duration, frequency, and timing of precipitation events". Currently, the depletion rate of groundwater resources is 15% more than that of recharge, which is troubling given the projected effects of climate change on this valuable resource.

Due to these factors, water will continue to be scarce in the West Bank. By 2020, Palestine is expected to face a shortage of 271 million m³ of water. Furthermore, by 2025 the annual amount of available water per person will decrease to 45 m³. Even now, Palestinians are unable to meet their daily water needs due to these conditions. According to the World Health Organization (WHO), the minimum amount of water each person requires daily is 100 liters; however, Israelis use 350 liters, while Palestinians use only 70 liters. Although certain factors such as climate change and population growth are not controlled by either nation, water insecurities can be minimized through cooperative government policies. The Joint Water Committee (JWC) was one such cooperative vehicle where Palestinians hoped to address water insecurities; however, water scarcity for Palestinians ostensibly persists.

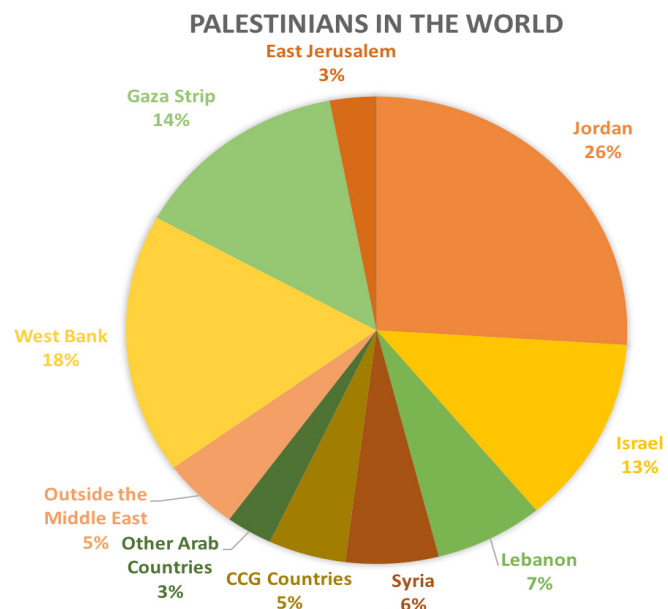
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ATTEMPTS AT COOPERATION

In 1995, the Israeli government co-operated

with Palestine to develop the Oslo II Peace Accords with the Quartet on the Middle East and the Arab League as international brokers. It was during the creation of the second Oslo Peace Accords that the Joint Water Commission (JWC) was formed. The JWC is charged with regulating the number and depth of Palestinian-operated wells in the West Bank. More specifically, the JWC allows Palestinians to drill in the Eastern Aquifer, but denies them access to much of the Western Aquifer and the Jordan River flow-through.

Israel also protects its interests by providing itself veto power within the JWC.



Although the JWC permits Palestinian drilling in the Eastern Aquifer, well construction projects are virtually impossible to implement. Well projects must undergo an exhausting 18-stage process before they can be approved. This is an incredibly time-consuming procedure that many Palestinians are unable to complete. Many projects are also simply rejected by the JWC. According to Godlewski (2010), these projects are discarded to protect Israeli national interests, as the government fears that 'irresponsible' Palestinian consumers will overuse scarce water resources.

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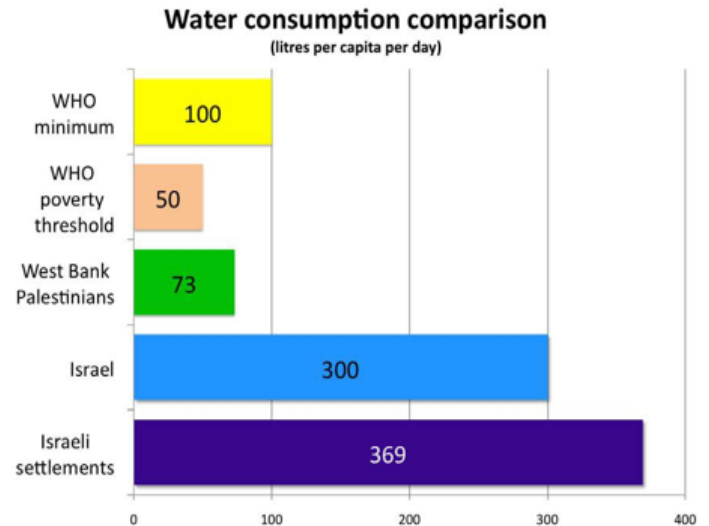
A. Godlewski, "Damming the peace process: Water politics and its impact on the Israeli-Palestinian conflict," *Journal of Muslim Minority Affairs* 30(2) (2010): 153-166.

Ibid. A. Bubna, "A new kind of war: Ecoviolence in Palestine," *The Michigan Journal of Public Affairs* 8 (2011): 32-46.

These interests are protected through the policies of the JWC, which dictate that all decisions be made through a consensus. As over half of its members are Israeli, the consensus seldom, if ever, supports Palestinian desires. Israel also protects its interests by providing itself veto power within the JWC. Despite the creation of the JWC to promote cooperation in the creation and distribution of water resources in the West Bank, it has failed to protect Palestinians from water insecurities.

It is imperative, however, that Israel and Palestine learn to cooperate effectively with one another in order to improve water conditions. Not only will Palestinians benefit from such measures, but so too will Israelis, as cooperation reduces conflict. The Friends of the Middle East – a seventeen-year old joint Egyptian, Israeli, Jordanian and Palestinian initiative – suggests, for example, that two additional bodies should be created to reduce water insecurities. The proposed Bilateral Water Commission and the Water Mediation Board will have an equal amount of Israelis and Palestinians and an agreed-upon third party, as to ensure fairness. Furthermore, decisions will require a majority of votes rather than a full consensus like the JWC. Additionally, Godlewski (2010) argues that JWC policies should be less restrictive on well creation and water extraction. Although there are challenges to cooperation in this delicate region, internal pressures, as well as international ones, can help persuade Israel to reconsider its current water-based policies and practices to help its Palestinian neighbors and, ultimately, itself.

It is imperative, however, that Israel and Palestine learn to cooperate effectively with one another in order to improve water conditions.



Kelly Anne Bridges graduated in May 2016 with a degree in Science, Technology, and Society, concentrating in Energy, Environment, and Technology. Currently, she is pursuing a Master's at the University of Ocford in Water Science, Policy, and Management. She intends to pursue a career in environmental law, consulting, or international development, and her interests include water scarcity, conflict studies, and livelihood security.

