



The Program for Learning in Partnership

Climate Change and Water Scarcity in the Fertile Crescent: Challenges and Prospects for Arab-Israeli Cooperation



In an unprecedented webinar organized by the Center for Peace Communications, a former senior Iraqi official in the Ministry of Water Resources met with Tomer Swisa, Director of International Relations at the Kinneret Innovation Center in Israel, and Syrian American social entrepreneur Ahed Al Hendi, to discuss the water scarcity crisis in the Fertile Crescent. Moderated by Samuel Tadros, the webinar covered the severity of the crisis as well as Israel's success in managing its own water scarcity problem and emergence as one of the world's leaders in water technology. Participants urged cooperation in the field among Israel, Iraq, and other Arabic-speaking countries.

Amid heightened Arab-Israeli partnership in a range of sectors, several countries in the region – notably Jordan, Morocco, and the United Arab Emirates – have already forged bilateral agreements with Israel on water-related issues. These countries provide a natural context in which to convene Iraqi and Israeli experts to conceptualize multilateral projects to address water scarcity. Should the United States choose to support the envisioned cooperation, it could further advance the global struggle against climate change, deliver valuable assistance to countries in need, and make a new contribution to advancing peace and prosperity in the Middle East.

Understanding the Problem

Throughout history, the availability of water resources has been one of the key factors contributing to the emergence of ancient civilizations in the Middle East, from the Nile valley to the Fertile Crescent. But over the past decades, the Middle East has been transformed into the world's most water-scarce region. As a study by the Population Reference Bureau observes, the region is “home to 6.3 percent of the world's population and contains only 1.4 percent of the world's renewable fresh water.”¹ Today, 12 of the region's countries are considered among the countries suffering from water scarcity, with the individual average share of water in the region reaching 1,100 cubic meters annually. This crisis has only been exacerbated by the impact of climate change. Water scarcity in the Middle East is not only a question of human development but also a source of political conflict, as current tensions between Egypt and Ethiopia over the latter's construction of a dam on the Nile River clearly highlight. In fact, the role of climate

¹ Roudi-Fahimi, Farahnaz & Liz Creel, Roger-Mark De Souza, “Finding the Balance: Population and Water Scarcity in the Middle East and North Africa”, Population Reference Bureau, 17 July 2000, available at: https://www.prb.org/wp-content/uploads/2021/01/FindingTheBalance_Eng.pdf

change in the Syrian civil war is already a much-discussed topic, with studies arguing that climate change, while not the instigator of the conflict, contributed to it.²

Such a crisis transcends barriers and borders and the ability of a single country to address its ramifications. This is especially true in the Middle East: efforts to address the issue within individual countries have been modest, local resources in Arabic-speaking countries are limited, and multinational partnerships within the region in the field of water scarcity are few.

On March 8, 2022, in order to address the problems of water scarcity and impact of climate change in the region, as well as examine the potential for regional cooperation to address these problems, the Center for Peace Communications conducted an unprecedented public webinar that brought together Iraqi, Israeli, and Syrian experts in the field: a former senior Iraqi official in the Ministry of Water Resources currently residing in Iraq; Tomer Swisa, Director of Industry Innovation and International Relations at the Kinneret Innovation Center, a leading Israeli technology hub for agriculture, water, and sustainability; and Ahed Al Hendi, a Syrian American social entrepreneur with expertise in developing Syria's water plants. The three experts were keen to share their experiences and gauge the potential for cooperation despite the political tensions among their respective countries.

Water Scarcity in the Fertile Crescent

Perhaps no two countries exemplify the decline in water resources in the Middle East more than Iraq and Syria. Until the 1970s, both countries would have been considered water-abundant, with the individual's share of water at 10,300 and 7,300 cubic meters respectively. Today, both countries' supply has fallen to the water scarcity level of one thousand cubic meters per person. As the former senior Iraqi official highlighted in his comments, in 1970, Iraq's population was close to ten million while its water resources were at 70 billion cubic meters annually. By 2015, Iraq's population had exceeded 40 million while its annual water resources had declined to close to 50 billion cubic meters annually. As a study by the Population Reference Bureau in 2000 warned, "Rapid population growth has exacerbated the water scarcity the Middle East and North

² "How Climate Change paved the way for war in Syria," DW, available at: <https://www.dw.com/en/how-climate-change-paved-the-way-to-war-in-syria/a-56711650>

Africa faces.”³ Efforts by the region’s countries to control population growth have thus far failed to address the problem. Between 1950 and 2000, the population of the Middle East and North Africa grew from 92 million to 349 million.⁴ Over the past 20 years, more than 100 million were added. This tremendous population growth has spurred intensive efforts to increase agricultural land, which has more than doubled in the Middle East since the 1970s. Not only has the rise in demand been catastrophic, but, as the former senior Iraqi official pointed out, the quality of water has itself declined as the amount of solid materials more than tripled in the Tigris and Euphrates rivers. Yet there has been little effort in Iraq to address the problem. While political infighting is a contributing factor, as Shommari attested, Iraq also lacks the resources and expertise to address the issue.

In Syria, the situation is further exacerbated by the ongoing civil war, which has severely reduced the possibility of addressing the water crisis. Furthermore, as Ahed Al Hendi highlighted, Turkey has unilaterally built dams in apparent disregard for the needs of both Syria and Iraq. The former senior Iraqi official concurred: both Turkey and Iran have conducted their own water policies to the detriment of Iraq, he said. Iran, he added, has been systemically ignoring the water clauses in the 1975 Algeria Agreement between the two countries. Iran’s brazen water policy has been facilitated by its allies in Iraq, which attempt to obstruct any attempt to address the issue inside the country.

The Israeli Experience

While both Iraq and Syria have been historically known as lands with water abundance, the state of Israel, over the period of its formation, found itself in the opposite position, with limited water resources, a vast desert, and attempts by hostile neighbors to cut off its access to water.

Despite these problems, Israel not only managed to address water scarcity, but also emerged as one of the world’s leading citrus exporters. With limited water resources, “Israel produces

³ Roudi-Fahimi, Farahnaz & Liz Creel, Roger-Mark De Souza, “Finding the Balance: Population and Water Scarcity in the Middle East and North Africa”, Population Reference Bureau, 17 July 2000, available at: https://www.prb.org/wp-content/uploads/2021/01/FindingTheBalance_Eng.pdf

⁴ Clawson, Patrick, Demography in the Middle East: Population growth slowing, Women’s situation unresolved, Washington Institute for Near East Policy, 16 March, 2009, available at <https://www.washingtoninstitute.org/policy-analysis/demography-middle-east-population-growth-slowing-womens-situation-unresolved>

almost 70 percent of its food requirements,”⁵ with the rest offset by food exports. This agricultural miracle stems from technological innovations which enabled “Israeli farmers [to] succeed in doubling the agricultural yield from each cubic meter of water used for irrigation.”⁶

Today, Tomer Swisa explained, Israel recycles 87 percent of its wastewater, a figure unparalleled in the world, with Spain being a distant second at 17 percent. Furthermore, “in 1999, the Israeli government initiated a long-term, large-scale SWRO (Seawater Reverse Osmosis) desalination program.”⁷ Today, “the five Israeli seawater desalination plants are among the 12 largest plants globally, and the Sorek plant is the largest in the world.”⁸ Meanwhile, in the private sector, 300 Israeli startups have emerged to further innovate in water use, water management, and water purification.

The webinar participants agreed that Israel's success in addressing its water scarcity crisis, and the various technologies it has developed, provide an opportunity for regional cooperation. Iraq, Syria, and other nearby countries urgently need help, Ahed Al Hendi said, and not only does Israel have the technological know-how; it also shares a similar climate, making its technology all the more relevant.

The Cooperation Gap

While Israel has shared its experience and solutions with numerous countries, including “China, India, Vietnam, Taiwan, Italy, Brazil, Mexico, South Korea, Poland, Russia, Canada and the United States,”⁹ until recently, Israel’s cooperation with Arabic-speaking countries has been largely confined to Jordan.¹⁰ This has not been the result of Israeli reluctance: as Tomer Swisa pointed out, Israel views the crisis of water scarcity not as one country’s problem but as an imperative for cooperation region-wide. Following the signing of the Abraham Accords, Israel signed an

⁵ Fedler, John, Israel’s Agriculture in the 21st Century, Israel Ministry of Foreign Affairs, 24 December 2002, available at: <https://www.mfa.gov.il/mfa/aboutisrael/economy/pages/focus%20on%20israel-%20israel-s%20agriculture%20in%20the%2021st.aspx>

⁶ Israel: A Global Leader in Water Management and Technology, State of Israel: Ministry of Foreign Affairs, 22 March 2018, available at: <https://mfa.gov.il/MFA/AboutIsrael/Documents/water.pdf>

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

¹⁰ Water Cooperation for a Secure World: Focus on the Middle East, Strategic Foresight Group, 2013, available at: https://www.strategicforesight.com/publication_pdf/20795water-cooperature-sm.pdf

agreement with the UAE to create a joint research institute to address water issues. Swisa added that he had just returned from Morocco, where he signed an agreement for cooperation in the water field, and that as a leading Israeli tech hub, his organization is seeking cooperation with countries in the region. “Technology is not a matter of a country,” he said, “but rather of challenges. Technologies have no borders.”

The call for regional cooperation to address the crises of water scarcity and climate change was echoed by the other participants. The former senior Iraqi official argued that climate change was a national security issue, and stressed that it knows no borders. In this sense, he said, Iraq’s national security is intertwined with that of Israel and other countries, and Iraq urgently needs partnership with numerous countries of the region including Israel. Ahed Al Hendi agreed, highlighting the need for a partnership that transcends political conflicts in order to address the crisis – and the need for such cooperation impels strengthening the culture of peace across the region. He called on organizations working in the Middle East to follow the logic of this webinar in bringing together Arab and Israeli agricultural and water experts to share knowledge.

One concern often expressed across the Middle East – that Israel would be unwilling to share its water technology with its neighbors, as such technology would be viewed as a state secret – was explored with the webinar participants. Ahed Al Hendi said that such fears reflect a lack of understanding of the country. Israel is in fact looking for such cooperation, added Swisa, and more than willing to share its innovative technologies in the fields of agriculture and water with its neighbors.

Toward the end of the webinar, as participants joined in calling for cooperation between Israelis and their neighbors, Tomer Swisa highlighted his own family roots in the region: he is a descendent of Jewish immigrants to Israel from Iraq and Morocco. His Iraqi roots are shared by more than half a million Israeli citizens.

American Support for a Concrete Plan

The fact that Israel’s Swisa was joined in this webinar by a prominent citizen and resident of Iraq, which officially boycotts Israel, points to both the severity of the water scarcity crisis and shifting dynamics in the Middle East. In the face of a daunting challenge which Iraq and other Arabic-speaking countries are not well-equipped to address, the former senior Iraqi official, in

calling for a new era of partnership, has lent public expression to an increasingly popular view in his country.

Should the United States choose to support the envisioned cooperation, it could further advance the global struggle against climate change, deliver valuable assistance to countries in need, and help grow peace and prosperity in the Middle East. In light of growing Iraqi urgency and demand, an initial step would be to convene Iraqi and Israeli field experts to conceptualize projects that would benefit Iraq and other Arabic-speaking countries. These may include partnerships in applied water research, the development of an innovation growth engine in Iraq, and the creation of a “tech pipeline” in the fields of agriculture, water, and climate change to strengthen the region’s innovation ecosystem.

An appropriate place to convene such an initial gathering would be Jordan, Morocco, or the UAE, three countries that maintain diplomatic relations with both Iraq and Israel and have already formed their own bilateral agreements with Israel in this field. As noted earlier, Jordan maintains cooperation with Israel in the realms of water and agriculture; the UAE has signed an agreement to create a joint research institute to address water-related issues; and Tomer Swisa’s Kinneret Innovation Center signed a water cooperation agreement with a Moroccan institution earlier this year.

Another option for the United States to consider relates to its Water for the World Act of 2014, a landmark legislation tasking the United States Agency for International Development to address the deficit in safe and resilient water, sanitation, and hygiene assistance globally. In 2022, the United States designated Jordan, Lebanon, the West Bank, and Gaza as “high-priority countries” in light of their strategic importance and needs in the field. By adding Iraq to the program and initiating collaboration with Israel, the U.S. can further a range of interests as well as mitigate a humanitarian crisis in Iraq.



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