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**WATER CONFLICT IN THE JORDAN RIVER BASIN: WHAT SHOULD  
STRATEGISTS ASK?**

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## **WATER CONFLICT IN THE JORDAN RIVER BASIN: WHAT SHOULD STRATEGISTS ASK?**

There is a fresh water shortage in the world, which is rapidly growing worse. Nearly every source is full of ominous statistics, indicating broad consensus among government, corporate, and scientific experts that the problem is real. Sometimes, such numbers framing global issues are difficult to grasp. But a senior official of NASA's Earth Sciences Directorate offers us a relative comparison, "Our concerns about global warming are trivial compared to the issues that we face over water."<sup>1</sup> Water may be the key resource in the new century. Trying to break the issue down into regional pieces, these same experts claim the 240-300 river basins of the world shared by two or more countries are the potential battlegrounds.

Given climate and geopolitics, the Middle East may already be the site that poses the greatest challenges. In fact, diverse American and international organizations have been researching water disputes along the Jordan, Euphrates, and Nile Rivers for decades. Many predict the five nations of the Jordan River Basin—Israel, Lebanon, Syria, Jordan, and Palestine—may go to war over water. Other experts, especially Mostafa Dolatyar and Tim S. Gray, take issue with this conclusion.<sup>2</sup> But with the sheer complexity of issues in the Middle East compounded by a year of intensified fighting, waging war specifically over water may not be the most pressing question. Certainly, water disputes still constitute a threat, and, perhaps, an opportunity. This paper attempts to summarize the current situation regarding water shortages in

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<sup>1</sup> Scott Peterson, "What Could Float—or Sink—Peacemaking," *Christian Science Monitor*, 14 July 1999, p. 1.

<sup>2</sup> Mostafa Dolatyar and Tim S. Gray, *Water Politics in the Middle East: A Context for Conflict or Co-operation* (Great Britain: MacMillan Press, Ltd., 2000).

the Jordan River Basin, and to frame some of the complexities about how to deal with it. It will also pose some questions for the strategist regarding the cause and scale of the dispute, the costs associated with any potential resolution, and turning awareness of the problem into useful action. To begin, instead of asking “Will there be a water war in the Jordan River Basin?”, the more useful strategic question should be “How can the US orchestrate progress in solving Middle East Jordan Basin water disputes?” In turn, the discussion may have broader application. That is, “How can the US apply those lessons to the water problem worldwide?”

### **Causes and Scope of the Jordan Basin Disputes**

Most published research blames population growth as the underlying cause of the water shortage in the Jordan River Basin. A 1986 study by The Center for Strategic & International Studies provides tables about the “startling” population and water use statistics, predicting a major resource crisis by the year 2000.<sup>3</sup> Arguably, the authors’ claim has been borne out. Continued high rates of population growth are outstripping the capacity of both the surface (rivers and lakes) and underground (aquifers) water systems to replenish themselves. A multi-year drought, the worst in half a century, multiplies the effects. Nature and too many humans have made water scarce. But, in each of the five riparian nations, dilapidated infrastructure and poor environmental management further wastes what little water there is. Old pipe systems leak huge amounts of water; poor water management practices cause pollution; domestic politics lead to misallocation. Experts estimate the loss from leaky pipes in Amman and Palestinian Gaza at

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<sup>3</sup> Joyce R. Starr and Daniel C. Stoll, *U.S. Foreign Policy on Water Resources in the Middle East*, (Washington, D.C.: The Center for Strategic & International Studies, 1987), 5.

60 percent. In Israel, the estimate is 12 percent, still higher than most US states.<sup>4</sup> Due to overuse and resulting salinity contamination, Israelis fear their main reservoir, the Sea of Galilee (also called Lake Kinneret), may become an environmental disaster on the order of Russia's Aral Sea.

According to economists and hydrologists, water should be a commodity. Not in the Jordan Basin. Israel sells water to farmers at a fraction of the cost to pump and transport it, at least partly due to the powerful lobbies that represent agriculture. Part of Israeli national identity hinges on its having transformed the desert into a verdant farm. But major crops like cotton and citrus are particularly water intensive. Some argue the security factor. Israel, surrounded by largely hostile neighbors, must pursue self-sufficiency in food. The argument flies in the face of present reality. Hebrew University of Jerusalem water expert Hillel Shuval says that less than 20 percent of the average Israeli's caloric intake comes from domestic agriculture.<sup>5</sup> Some Arab states charge nothing for water. But there is insufficient water to deliver at any price. In 1999, Jordan halved the water allocation to its Rift Valley breadbasket. Two thirds of farmers there didn't even plant. Amman residents receive piped water just 24 hours a week. Palestine may be in the worst position of all. According to the World Bank, a Palestinian in Gaza has access to less than 15 gallons a day, compared to 800 gallons for each American.<sup>6</sup>

Thus, these downstream states of the Jordan River Basin are clearly the water have-nots. This is an unaccustomed position for Israel, the economic and military powerhouse of the region.

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<sup>4</sup> Hanan Sher, "Over Jordan: Where Thirst Wonderfully Concentrates the Mind," *Civilization*, 7, Issue 5 (October/November 2000): 84-90.

<sup>5</sup> Sher, "Over Jordan," 7, 85.

<sup>6</sup> Thomas Omestad, David Makovsky and Rachel Stroumsa, "The Struggle over Water," *U.S. News & World Report*, 10 April 2000, 32.

Many experts claim that this status has long affected Israel's geopolitical behavior, and continues to do so. Jordan, a political moderate with few economic resources and no oil, is one of the ten most water-poor countries worldwide.<sup>7</sup> Domestically and internationally, the late King Hussein and King Abdullah have walked the tightest of ropes for decades. Palestine has virtually nothing. They have no state, an economy shattered by the Israeli response to the al Aksa Intifada, and the least water, nearly all controlled by neighbors. Lebanon and Syria are the water haves in the Basin, though Syria has localized scarcities due to its inability to transport relatively abundant water from east to west, and some leaky pipes. Lebanon strengthened its have status when the Israelis withdrew from south Lebanon. From a strictly water resource perspective, these states have every reason to cooperate. And there is some historical foundation on which to build (more on this later). But there are tremendous obstacles to achieving a solution to the water scarcity problem.

First, there is a history of conflict over water. Political scientists, historians, and journalists disagree whether any of the Arab-Israeli wars were fought expressly for water. But no one argues that water wasn't at least a strategic consideration. Israel claims the Arabs have used water as a weapon to deny it access in several instances. From a downstream's perspective, whatever the political motivation, any dam construction or irrigation diversion by an upstream state is potentially provocative. This is not unique to the Middle East, merely magnified there. At least some of Israel's military objectives in the 1967 Six Day War appear water-related. In seizing the Golan Heights, Israeli forces also drove Syrian forces from the entire perimeter of the Sea of Galilee. The issue has stymied Israeli-Syrian negotiations toward a peace settlement ever since. So far, Israel will not relinquish control of its most significant headwaters (which provide

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<sup>7</sup> Peterson, "What Could Float—or Sink—Peacemaking," p.1.

one third of its water), even in return for peace. Syria doesn't need the water from the Sea of Galilee, but refuses to yield an inch of pre-1967 territory out of national pride. When the late President Assad emotionally refused to compromise (he reportedly told President Clinton, "Up until 1967, I would swim in the Sea of Galilee. I would have barbecues there."),<sup>8</sup> it scuttled the Geneva Summit.

Second, the Palestinians have feared a "dry peace" with Israel, even prior to the current Intifada. There is relative power between these water have-nots, and the accusations fly. Israel claims the Palestinians have precipitated the shortages because of uncontrolled population growth and by drilling wasteful private wells into the West Bank aquifer. The Palestinians say Israel still determines all their water sources, taking the vast majority of the aquifer for its own use, especially for the despised settlements. Multiple sources give credence to Palestinian arguments. The West Bank aquifer mostly is replenished by rainfall over the West Bank, which then flows under Israel proper. Whatever the hydrology path, Israel siphons 80 percent of the yearly take. It also outlaws any private drilling by Palestinians. But inequities don't end there. On average, Israelis use four times more water than Palestinians. "On the West Bank itself, 180,000 Israeli settlers are allowed to pump about half as much water as the 2 million Palestinians."<sup>9</sup> For Palestinians, this proves another example of the oppression by Israeli occupiers. Tangibly, water shortages lead to hygiene issues that contribute to widespread public health problems. Equally important, the inequity also fuels an already-acute sense of deep mistrust and suspicion among actors across the region. An article by Abdelazeem Hammad in the June 2000 edition of the "Mideast Mirror" paints a conspiracy theory in violation of the

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<sup>8</sup> Omestad, Makovsky, Stroumas, "The Struggle over Water," 32.

<sup>9</sup> Ibid., 33.

international laws of water use. He says that the Israelis, Turks, and Ethiopians, abetted by the Americans, are allying to control the waters of the West Bank aquifer, and those of the Euphrates, Tigris and Nile Rivers. The goal is to subjugate the Pan-Arab nation.<sup>10</sup> It may not really matter whether the theory resonates with Arab intellectuals. Right now, many in the Jordanian and Palestinian lower classes don't have enough to drink, bathe with or irrigate their crops.

No aspect of the water shortage is simply a domestic political or environmental issue, for any of the Jordan Basin countries. Water is life. Water sources do not comply with international boundaries. Riparian states have and will continue to conduct international affairs based partly on their perceptions and needs for water. This may include recourse to conflict if diplomacy fails. Water is a component of economic power, affecting food production, many types of industrial production, the import-export balance, and public health. Water can be a weapon. Across the greater region, Turkey is the premier water-have state. Former Turkish president Demeril is on record saying that water originating in Turkey belongs to Turkey, and will only be given to others through sale. The site supervisor at the Ataturk Dam is more blunt, "Water is a weapon. . . in order to regulate the Arab's political behavior."<sup>11</sup> With regional population forecast to more than double by 2040, the water have-nots will reach a breaking point. That does not automatically mean war, but national implosions could be just as dangerous.

The causes and scale of the Jordan Basin water shortage are complex, all of which seems to add another distressing layer upon the already-volatile situation. With this bad news, whether

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<sup>10</sup> Abdelazeem Hammad, "Goal Post Changes Point to Middle East Water Conflict," *Mideast Mirror*, 14, no. 115, 19 June 2000.

<sup>11</sup> Peterson, "What Could Float—or Sink—Peacemaking," p.1.

US strategists ignore the water problem or conclude it's too hard in the larger Mideast equation, either still amounts to a decision. Is there any good news? There may be possibilities to make progress, at least on the margin. I will examine these further by looking at costs to increase the amount of water in the Jordan River Basin. But first, I offer some questions for US strategists based on the bad news above. They are beyond the scope of this paper, although not necessarily beyond the scope of the US government to address: (1) Are there realistic prospects to reduce population growth? (2) How can education about conservation and pollution stretch existing water resources? (3) How can the riparian states reallocate their water for better economic results? Will domestic or regional politics allow a reallocation?

### **Costs to Move and Create Water**

The economics of water holds some promise to ease the tension over the politics of water. Options should be investigated because of warnings and costs of alternatives. Jordanian and Israeli senior leaders repeatedly have cited water as a pivotal political problem for the region. Lack of compromise over water has already halted key peace initiatives. For a number of years, the full spectrum of players has examined ways to move existing water to those most in need, or to create usable water. They include G-7 and regional governments, international organizations such as Green Cross International, universities, and multinational corporations. Conservation and water management techniques must be pursued, though they can't keep up with population demands in the long run. So there must be parallel examinations of new sources of water for Basin have-nots. Cost estimates are high, impossible for riparian states to afford themselves. But in attempting to unravel the complexities of courses of action, the world community must weigh competing costs. For example, one expert calculates that war in the Middle East would

cost US \$100 million weekly. Most researchers group four movement/creation options: (1) Long distance pipelines; (2) Shipping water by sea; (3) Short distance tunnels; and (4) Desalination.

Among all proposals, the so-called “Peace Pipeline” may be the grandest scheme. Originated in the mid-1980’s by Turkish late president Turgut Ozal, one of its two lines would run 1,500 km to Iraq and Kuwait, the other through Syria to the Jordan Valley. Cost estimates for the pipeline and Syrian mistrust lingering over previous disputes with Turkey shelved the idea. When the US and Israel attempted to revive the plan in 1995, Turkey was staunchly less interested. Now the cost debate has an additional component. It is not only who will pay for the pipeline, but also how much will the water in it cost? Since 1995, Turkey “has no intention of lubricating an Israeli-Arab peace with free Turkish water.”<sup>12</sup> Assuming a competitive cost of water could ultimately be negotiated, most believe the biggest obstacle lies in the cost of the pipeline itself. Estimates vary dramatically from US \$5 to \$20 billion. Two other long-distance plans have been around since the 1970’s, both rejected until now for their own financing bottom lines. One is a Mediterranean-to-Dead Sea canal; the other a Red Sea-to-Dead Sea canal.<sup>13</sup>

The option of moving large amounts of water by sea can inspire admiration for ingenuity, fear for the existing severity of water shortages, or simply a sense of the surreal. Multinational businessmen have consulted the Turkish, Israeli and Jordanian governments on everything from melting icebergs to shipping water in converted oil tankers to towing giant plastic bags. The most viable variant again involves Turkey, which has recently built a modern pumping station at the mouth of the Manavgat River on the Mediterranean. But the 100 meter WWII-era bags aren’t big enough to be cost efficient, and the tankers would have to be cleaned and coated

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<sup>12</sup> Hanan Sher, “Source of Peace?” *The Jerusalem Report*, 13 March 2000, 34.

<sup>13</sup> Tovah Lazaroff, “A Bitter End for the Dead Sea?” *The Jerusalem Post*, 27 April 2001, 2B.

inside. The Israelis have abandoned all such proposals for now. A recent Israeli-Palestinian-Jordanian study concludes any sea shipment option would cost double the desalination approach. But the degree of Amman's immediate plight forces Jordan to continue investigating, even though the water would be unloaded at an Israeli port and then transported overland to Jordan.<sup>14</sup>

As mentioned previously, Lebanon has sufficient water. The third option calls for building a tunnel from the Litani River gorge into one of the Israeli tributaries of the Jordan River. The distance is only 10 km. The solution is neither regional nor long term. But experts think that such a project could provide one-fourth of Israel's needs for two or three decades before Lebanon's own needs make this untenable. If Israel got the Litani water now, it could then free more natural water for the Palestinians and Jordanians. It is worth mentioning that Israel has already reneged on existing promises to supply the Jordanians.

Emerging technology underpins the final option of desalination. Existing plants in Saudi Arabia and a small one in the Israeli port of Eilat use an energy-expensive thermal process. Cutting edge technology employs reverse osmosis, which lowers the cost of desalinating a cubic meter of seawater from US \$1.80 to US 55 cents. Four plants, each costing US \$200 million, could supply 10 percent of Israel's needs, again freeing Israel to give more aquifer water to Palestine, and more river water to Jordan. The head of the Washington-based Center for Middle East Peace and Economic Cooperation Council eagerly asserts that this is the winning solution. Others counter that this price is still triple the cost of natural water, and that Israel alone would have to build a new plant every 18 months simply to keep up with growing demand.<sup>15</sup>

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<sup>14</sup> Sher, "Source of Peace?" 34.

<sup>15</sup> Sher, "Source of Peace?" 34, and "Over Jordan," 84.

As usual, the solution is not as easy as simply choosing one of these options, or even a combination of them. The dollar amounts may be cheaper than war, but they are clearly beyond the capabilities of the Basin governments. With most G-7 economies in or near recession, and the US about to embark on a war against terrorism, there would be fierce political battles, domestically and multilaterally, about cost effectiveness. In addition, multinational corporations that specialize in creating and moving water bring their own considerable skills and baggage to decision makers. “Worldwide, three private French conglomerates—Vivendi, Suez-Lyonnaise des Eaux and SAUR/Bouygues—control more than 70 percent of the private market.”<sup>16</sup> With tens of billions under discussion, business and governmental competition will affect the outcome. Beyond this, several experts claim that the multinationals have done an ineffectual job with existing projects elsewhere, which triggers debate about the proper mix of private and public sector control of key services. Lastly, there is an ongoing chicken-egg dispute: is peace a prerequisite to resolving water disputes, or can water negotiations serve as catalyst for broader progress toward peace? Before I look to the state of awareness and recommendations, there are questions to consider concerning moving and creating water: (1) With the backdrop of increasing turmoil throughout the Middle East, does the US assess that the players can make progress on the water issues of the Jordan River Basin? (2) If so, how will we marshal funds to finance the implementation and administration of complex projects?

### **Engagement and a sense of direction**

The five riparian states are engaged over the water problem. Since the Oslo and Madrid comprehensive agreements, the only Madrid working group to stay the course has been the one

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<sup>16</sup> Caspar Henderson, “Eau Dear,” *Ecologist*, 30, Issue 5 (July/August 2000): 51.

formed for water issues. Technical experts have come to know one another and to collaborate to unprecedented levels, from co-authoring studies to addressing current problems on the ground. Still, the scientists and hydrologists must be discouraged. Israeli, Palestinian, and Jordanian technicians all have been shot at during the Intifada. Senior politicians have turned back from taking a next step to secure bilateral or multilateral agreements. There is no progress on resolving current inequities of distribution, or deciding upon project options to move or create water.

Much of the international community has been engaged for at least a decade. Multinational corporations have completed feasibility studies and await governmental decisions. The International Green Cross, headed by former Soviet leader Gorbachev, warns of the criticality of worldwide and regional water problems. The World Bank, international think tanks and Harvard University have tasked some of their best minds. Conferences convene quite regularly and issue findings. The UN has been involved to some extent. But for all the important projects and assessments to date, nearly no recommendations emerge that are strategic in scope. From the United States, numerous organizations within the Departments of State, Agriculture, Interior, Defense and the Environmental Protection Agency are directly involved in water projects in the Basin. Former Secretary of State Albright made a major address on the subject, and the National Intelligence Council discussed Mideast water in its threat assessment for 2015. But prior to 11 September 2001, the Bush administration demonstrated no engagement regarding water in the Middle East equation. With a subsequent presidential pronouncement that the focus of this administration will now be the war on terrorism, it remains to be seen if American policy makers draw linkage between terrorism and Arab-Israeli water disputes. In short, many know about the severity of the water problem in the Jordan River Basin. The scientists, technicians, and

researchers have offered advice, at least on the margins. But no senior political figure is in charge, or appears inclined to take charge, either in the international community or within the American government.

So what? Maybe the international community and the US have far bigger concerns. But many respected analysts believe that 21<sup>st</sup> century threats frequently originate from the “north-south” divide, that is, an abject hopelessness among the economic losers of globalization. Several point to the Palestinians as an archetype, concluding that eventually the hopelessness turns to rage. Threat issues are complex, frustrating and confusing. During 2001, many nations, including our closest G-7 allies, have viewed with dismay what they see as US unilateralism. After 11 September 2001, even as a hyperpower, the US is again relearning the limits of unilateral power. Addressing any of these threats implies multilateralism. The scale, costs, and engagement about the Jordan Basin water problem certainly point to this conclusion. Even if the US government does not believe that the water problem has a multilateral aspect, Israel is our de facto vital interest, and Israel has a water problem.

In closing, I can only leave the strategist more questions: (1) Is it a US foreign policy priority to stay engaged on the Jordan Basin water problem? (2) If so, where does the priority rank? (3) If the US remains engaged, how should it organize its disparate multi-agency efforts to improve the water situation? (4) Who leads in the US? (5) How does the US marshal the international community to effective action? If the US concludes that it must orchestrate progress on the Jordan Basin water problem, then it must also eventually apply these same questions to the worldwide water problem. It may be quite impossible to solve 240-300 basin disputes, but we should decide which demand action. A final reminder: for US strategists, water

will remain on the agenda. Hydrologists project the US will have its own significant problem by 2015.

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