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Water Diplomacy: Creating Value and Building Trust in Transboundary Water Negotiations

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MOST difficulties in water negotiations are due to rigid assumptions about how water must be allocated. When countries (or states) share boundary waters, the presumption is that there is a fixed amount of water to divide among them, often in the face of ever-increasing demand and uncertain variability. Such assumptions lead to a zero-sum mindset, with absolute winners and losers. However, when parties instead understand that water is a flexible resource and use processes and mechanisms to focus on building and enhancing trust, even countries in conflict can reach agreements that satisfy their citizens' water needs and their national interests. The Israel-Jordan Treaty of Peace serves as an excellent example of how value can be created and trust can be enhanced. It also demonstrates how innovative technologies and a collaborative administration can not only facilitate problem solving but also introduce important means for enhancing sustainable solutions that are acceptable to all sides.

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Israel and Jordan: From War to Water Sharing

The two largest streams in the Jordan River basin—the Jordan River and the Yarmouk River (and the significant groundwater sources associated with them)—are shared by Jordan and Israel. This situation posed serious challenges to the two countries as they each attempted to manage what they viewed as “their” water. From 1948 until 1994, the countries unilaterally tried to manage the available water to meet their development needs. Negotiations regarding how much each side could extract failed. As a result, both countries overdrew the water that was available, critically damaging the environment and their own long-term water security.

In 1994, Israel and Jordan signed a peace treaty that included a detailed agreement regarding water sharing and seasonal transfers across borders, but within the basin. Although the agreement was bilateral and the three other riparian entities—Syria, Lebanon, and the Palestinian territories—were not included, given the political dynamics, it was a remarkable accomplishment.

Technological and scientific creativity facilitated the section of the treaty dealing with water (Annex II). The treaty specifies that Israel may extract twelve million cubic meters (MCM) of water during the summer and thirteen MCM in the winter from the Yarmouk River. In exchange, Jordan is allowed to “store” twenty MCM of its water in Lake Tiberias in Israel during the winter. Israel agreed to help Jordan find additional water using desalination technology. This dovetailed nicely with Israel’s long-term desalination program. (In fact, in its recently released National Water Plan, Israel stated that it intends to meet 70 percent of its water needs through desalination by 2040).

Because the negotiators realized the importance of acknowledging ambiguity and the different types of uncertainties, discussed below, they created a Joint Water Committee with three individuals appointed by each government to oversee implementation and address future challenges. According to Itay Fischhendler, this also allowed them to leave certain politically sensitive issues for a later date, avoiding backlash from domestic constituents and creating an agreement characterized in part by “strategic ambiguity.”¹ This cooperative approach—involving joint fact-finding and monitoring—appears to be the key to the longevity of the agreement. Even in the face of drought and water shortages, and while political conflicts and uncertainties continue to smolder, water professionals have kept working together through the Joint Committee. And with this important trust-building component of the agreement, the parties have been able to return to some of the issues that were uncertain or too politically sensitive to deal with when the treaty was first signed.

Building relationships between governments, however, is not enough. There is an important role for “non-state” actors, such as water users, nongovernmental organizations, and networks of scientists and universities, to play in treaty implementation that can add an important dimension to trust-building efforts. As

we explored in our recent book,² stakeholder networks are important to the success of adaptive management. They can provide on-the-ground feedback, especially as governments experiment with new technologies or ways of managing water supply and pricing. Often these civil society groups have detailed knowledge of what is actually happening as opposed to what was intended. In addition, their strong interest in promoting better outcomes can push governments to keep searching for “joint gain” solutions. In the Jordan River basin, nongovernmental organizations, such as the Friends of the Earth Middle East, convened experts and advocates from both sides that were very helpful to the negotiators.

Uncertainty, Risk, and Opportunity

When countries face contending water claims, one of the biggest obstacles to reaching an agreement is uncertainty. Specifically, there are three types of uncertainty:

Uncertainty of Information: Parties are often unable to assign probabilities to the likelihood of particular events occurring. This type of uncertainty ranges from zero (in which they are completely confident about the forecasts), to intermediate levels (which involve events with known probability ranges), to high levels of uncertainty (in which they have almost no idea what the future holds). For example, in the arid Jordan River basin, it is difficult to predict next year’s rainfall by relying on historical records.

Uncertainty of Action: Parties often cannot predict a cause-effect relationship, such as whether certain policies or programs will produce the results they desire. For example, authorities in Jordan and Israel planning to build dams have not been able to predict exactly how these would affect water quality.

Uncertainty of Perception: This occurs when people “see” what they expect to see rather than what is actually there, which can happen when questions are framed in ideological or political terms.

All three types of uncertainty shaped the water-management decisions facing Jordan and Israel from 1948 to 1994. Uncertainties of information and action meant that neither state felt secure offering options that might limit access to what they viewed as “their” water. Uncertainty of perception led planners to mistrust the other side and focus on their own country’s political positions instead of trying to meet the concerns of their negotiating partners.

It is not possible to eliminate uncertainty. For example, extensive data analysis and modeling based on historical records will not help water planners “know” the future. Nevertheless, policy makers and planners can use uncertainty to generate

opportunities for value creation. And, periodic reassessment in light of actual results is often required to adapt and ensure positive outcomes. Moreover, it is important for representatives of the parties to undertake these scientific analyses together. This helps them learn to trust the process and each other. Israeli and Jordanian officials have cooperated—explicitly and tacitly—for several decades, building trusting relationships that have been essential to the longevity of their peace agreement.

The Role of Science in Water Diplomacy

Scientific and technical knowledge is important in water negotiations, but not in the ways it has often been used. It is counterproductive to use scientific information to justify arbitrary (political) decisions. For example, scientific information about water has increased dramatically over the last several decades, but our ability to manage water resources has not improved proportionately. There is a difference between knowledge of water as an innate object and knowledge of water as a multifaceted resource. For example, our understanding of the atmospheric and hydrologic processes related to water (as an object) has significantly improved; yet, thousands of people die and billions of dollars are lost every year because of our inability to fully anticipate when floods and droughts will occur. Simply connecting experts, creating more scientific knowledge, developing more formidable modeling capabilities, and sharing data is not enough to improve water management. We need more effective ways of creating actionable knowledge that is trustworthy, is easily communicated, and will be used by all sides to enhance policy and program implementation.

Again, for scientific or technical information to be trusted and used, it must be generated collaboratively. Scientific findings related to water usually hinge, in part, on nonobjective and value-laden judgments such as what to measure, how to value competing uses (e.g., conservation versus agriculture), how to scope a study (e.g., what geographic and time horizons to use), what indicators and models to employ, and what to do about missing data. Judgments like these need to be transparent and should be made in consultation with those who will be affected by the results. Scientific or technical analyses can help lead to the creation of value, but only when they are perceived as mutually beneficial. Uri Shamir, an Israeli negotiator who worked on the 1994 water agreement, noted that “The joint work in the field [measuring stream flows and planning projects] remained a major confidence building measure (CBM) during the years of the negotiation process. The veracity and accuracy of the data provided by one party was continuously examined and often questioned by the other, but this did not undermine the basic mutual trust between them.”³

Trust in the process of collecting data and creating knowledge is especially important when parties are generating creative options aimed at increasing value.

While it may be helpful to have a skilled facilitator in water negotiations at every scale, in cases where technical issues are being negotiated it is essential to have a facilitator with a substantial scientific and technical background. With such assistance, the parties can create value by identifying changes in practice or policy that will be mutually beneficial. For example, changing the price of water can alter demand, which in turn can increase short-term supply. Similarly, identifying new technologies (and their costs and benefits) can change the dynamics of overall supply and demand in a basin. Thus, it is important to bring scientific knowledge and ideas into all water negotiations, but not merely to justify decisions that have already been made by one side. Rather, trusted scientific input should be used during the “inventing” stage when stakeholders can use reliable information to formulate creative trades collaboratively.

Value-Creating Approaches to Water Negotiation

Zero-sum thinking emerges when people conceive of water as a fixed resource—one provided by nature in a given quantity that is either static or diminishing. Based on these assumptions, diplomats often focus on what share of the existing water will be given to each entity. Negotiations of this type typically involve decision makers who are political leaders focused on preserving sovereignty and maintaining state security. They are often unprepared to think about improving the overall efficiency of water use, which, in effect, can “create” more water.

During the 1950s, the United States mediated negotiations between Israel and Jordan. Both sides primarily focused on which country would get what share of the water in the Jordan River basin. Although the mediator made numerous suggestions regarding the benefits of enhanced cooperation (such as using Lake Tiberias as a common reservoir for water storage), political concerns led both countries to reject these ideas and instead focus exclusively on the volume of water allotted to each side. Even if this line of negotiation had succeeded—which it did not—it would have produced a sub-optimal outcome. Such an agreement would not have encouraged either side to look for creative ways of increasing or reusing available supplies, and therefore would have done nothing to help either party deal with population increases, drought, or decreasing environmental quality.

Escaping the trap of zero-sum thinking means recognizing that water is not a fixed resource. When water is conserved or used more efficiently, it is as if more water were added to the supply side of the equation. Since the 1950s, Israel has worked to develop new technologies, such as drip irrigation, that use much less water than traditional methods. Jordan and Israel have both worked to improve their water infrastructure so less is lost to leakage and evaporation. Both Israel and Jordan also reclaim wastewater for agriculture and desalinate seawater. These methods formed an important part of the 1994 peace treaty, where Israel received

groundwater rights in exchange for increasing the supply of desalinated water that it could share with Jordan.

In addition to creating multiple uses of water through technological innovation, countries or states may create flexibility merely by living up to treaty agreements. In the 1994 treaty, the two countries promised to work together to create storage capacity for Jordan. Because Jordan has highly seasonal flows and no water storage capacity, the Jordanians needed a system that allowed them to transfer water into Israel's Lake Tiberias in the winter. They had to be able to count on Israel to release that water back to Jordan during the summer. Because the Jordanians believed that the treaty would be honored, they now have the water they need during the summer. Thus, more water was not actually created through this storage-and-release commitment, but the arrangement allowed more effective *use* of the available supply. If negotiators from different countries can focus on ways of increasing their "virtual" water supplies through cooperation, then they are not as likely to get bogged down in disputes over who gets how much of a limited supply.

The best opportunities to create value come when countries negotiate linked agreements (i.e., when multiple issues are considered simultaneously). While a country might not prefer to forego any of its surface water, it might be willing to exchange a modest amount of surface water for an increased share of groundwater over the long term. Since most states sharing basins have different needs, preferences, and capabilities, it is almost always likely that linking issues will open up value-creating opportunities. Such linkages do not have to be confined narrowly to the water domain. Prior to the 1994 Israel-Jordan treaty, the two countries disputed two bits of territory, one in the Araba/Arava Valley south of the Dead Sea and the other in the Baqura area near Lake Tiberias. Ultimately, Israel conceded the land in the south in exchange for Jordan giving Israel the right to continue extracting groundwater there. Israel also conceded certain land in the north while Jordan granted Israel the right to continue agriculture there for twenty-five years.

Using a Cooperative Approach

The case of Jordan and Israel shows how even countries at war can negotiate a water agreement if it is framed in non-zero-sum terms and trust continues to be built over time. And that is not the only case of a treaty that has succeeded against all odds to bridge conflicting water interests; the Indus Waters Treaty between India and Pakistan and the Ganges Water Treaty between Bangladesh and India are other examples. Despite dramatic differences in these instances, all three negotiations succeeded because the parties involved were able to treat water as a flexible resource and meet conflicting interests simultaneously.

The critical ingredient in these successful non-zero-sum negotiations is trust—not trust in experts, but trust in a process for creating new knowledge and confidence that all parties will do what they promise. While

boundary-crossing water negotiations will always be difficult because competing interests are involved, it is possible to use a cooperative approach that can benefit all parties. **SD**

Endnotes

1. I. Fischhendler, "Ambiguity in Transboundary Environmental Dispute Resolution: The Israeli-Jordanian Water Agreement," *Journal of Peace Research* 45, no. 1 (2008), 91–110.
2. S. Islam and L. Susskind, *Water Diplomacy: A Negotiated Approach to Managing Complex Water Networks*. New York: The RFF Press Water Policy Series, Routledge, 2012.
3. M. Haddadin and U. Shamir, "Jordan River Case Study," *The PCCP Series: Technical Documents in Hydrology* 15 (2003).

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