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Middle East Water Conflicts and Directions for Conflict Resolution

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Because of water's preeminent role in survival, political conflicts over international water resources tend to be particularly contentious. The intensity of a water conflict can be exacerbated by a region's geographical, geopolitical, or hydropolitical landscape. Water conflicts are especially bitter, for example, where the climate is arid, where the riparians of regional waterways are already engaged in political confrontation, or where the population's water demand is approaching or surpassing annual supply.

Each of the three major waterways of the arid and volatile Middle East--the Nile, the Jordan, and the Tigris-Euphrates systems--have elements of all of these exacerbating factors. Scarce water resources have already been at the heart of much of the bitter, occasionally armed, conflict endemic to the region.

The same characteristics of water resources that fuel conflict can, if managed carefully, induce cooperation in an environment of hostility. In a 1985 article in the *Annals of the American Academy of Political and Social Science*, Frey and Naff said, "precisely because it is essential to life and so highly charged, water can--perhaps even tends to--produce cooperation even in the absence of trust between concerned actors."

One fact is indisputable: the region is running out of water. And the people who have built their lives and livelihoods on a reliable source of fresh water are seeing the shortage of this vital resource impinge on all aspects of the tenuous relations that have developed over the years between nations, between economic sectors, and between individuals and their environment.

This paper explores how this critical shortage of water came about, the political tensions that are inexorably intertwined with the scarcity of water, and what the nations of the Middle East can do to help alleviate both the water crisis and the attending political pressures.

Hydropolitics of the Middle East

Living as they do in a transition zone between Mediterranean subtropical and arid climates, the people in and around the major watersheds of the Middle East have always been aware of the

limits imposed by scarce water resources. Settlements sprang up in fertile valleys or near large, permanent wells, and trade routes were established from oasis to oasis. The fluctuating waters of the ancient Middle East have also given rise to legend, extensive water law, and the roots of modern hydrology. It was in the beginning of this century, though, as the competing nationalisms of the region's inhabitants began to re-emerge on the ruins of first the Ottoman, then the British, Empire, that the quest for resources took on a new and vital dimension.

All three basins have experienced periods of both water-related conflict and cooperation. The Aswan High Dam on the Nile, for example, has been a cause of contention between Egypt and Sudan for decades, but it has also led to the only international water-sharing treaty on the river--the 1959 Nile Waters Treaty. However, the treaty takes little account of the other nine riparian states--many of which are beginning to develop the Nile waters within their territory--creating a vital need for the process of conflict resolution to continue and expand. Similarly, Syria and Iraq came close to armed conflict over the increasingly developed waters of the Tigris-Euphrates in 1975, and only intense mediation on the part of Saudi Arabia was able to break the increasing tension and avert violence.

The most contentious basin in the region, though, is that of the Jordan River. Although the smallest of the three watersheds, it is the most intensely developed--with almost every drop of water planned for--and the most intricate politically, including as it does five distinct states and territories that are only now reaching agreements to end their decades-old cycle of violence. Water-related conflict helped form the borders of the modern states of Israel, Jordan, Lebanon, and Syria, and has exacerbated tensions between Israelis and Palestinians. Water has also brought limited cooperation among these riparians, even when they were legally, if not actually, at war. Cooperative ventures have included the Johnston Negotiations of 1953-55 and the resulting Picnic Table Talks between Israel and Jordan, attempts at "water-for-peace" desalination projects in the mid-1960s, and negotiations over the Yarmuk River and the Unity Dam in the 1970s and 1980s.

Technical and Policy Options

There is an entire array of solutions to water resource limits that can be considered, ranging from agricultural to technological to economic and public policy solutions, but they all fall under the same two basic categories: increase supply or decrease demand. Increasing the supply of water includes exploitation of new natural sources, particularly deep aquifers or interbasin surfacewater transfers. Alternatively, new sources of water might be developed through technology such as desalination and wastewater reclamation. The second option--to decrease demand--uses market and public policy forces to more efficiently allocate water. But water can also be saved through better technology, such as drip irrigation and bioengineering.
Limiting population growth would be the most direct way to cut demand, but national, religious, and ethnic conflicts in this region make this unlikely to occur.

Water and the Peace Process

The Gulf War in 1990 and the collapse of the Soviet Union realigned political alliances in the Middle East and finally made possible public face-to-face peace talks between Arabs and Israelis beginning in 1991. During the bilateral negotiations between Israel and its neighbors, it was agreed that multilateral negotiations would also be undertaken on five regional subjects, including water resources.

Since the opening session of the multilateral talks in Moscow in January 1992, the Working Group on Water Resources, with the United States wielding the gavel, has been the venue for raising problems of water supply and demand among three of the five parties to the bilateral negotiations. Israel, Jordan, and the Palestinians participate in the Working Group; Lebanon and Syria do not. Many other Arab states and nonregional delegations also participate.

The multilateral working groups provide forums for relatively free dialogue on the future of the region and, in the process, allow for personal icebreaking and confidence building to take place, thus helping to smooth the way for progress in the bilateral talks. Innovative, creative ideas can be exchanged and discussed more openly outside of the heavy political constraints of the more formal bilateral negotiations.

The Working Group on Water Resources has met five times to date. The success of each round has varied but, in general, has been increasing. Agreement in this multilateral working group has been reached on a wide range of projects and principles. These agreements have helped catalyze the bilateral negotiations, which have yielded, to date, a declaration of principles between Israelis and Palestinians, and a treaty of peace between Israel and Jordan. Both agreements have had major components dedicated to jointly and collectively solving the regional water crisis.

Measuring Equity in Water Resources Disputes

At the heart of water conflict management is the question of "equity." A vague and relative term in any event, criteria for equity are particularly difficult to determine in water conflicts, where international water law is ambiguous and often contradictory, and no mechanism exists to enforce agreed-upon principles. However, effecting an equitable water-sharing agreement along the volatile waterways of the Middle East is a prerequisite to hydropolitical stability, which, finally, could help propel political forces away from conflict in favor of cooperation.

Measures that have historically been used to promote water-sharing equity include rights-based measures, largely addressed by the international legal community; needs-based measures,

particularly using population, arable land, or historic use parameters; and measures based on economic definitions of efficiency. Each of these measures alone, however, cannot incorporate all of the physical, political, and economic characteristics that are unique to each of the world's international waterways. To supplement this approach, a process for cooperative watershed development, based on the guidelines of "dispute systems design," is developed.

Cooperative Watershed Development

Given the vital need for a regional water development plan that incorporates the political realities of the region as well as the limitations imposed by economics and hydrology, the following steps might be taken:

1. Separate the control of water resources to address past and present grievances by
   - Negotiating property rights to existing resources, Guaranteeing control of a water source adequate to meet future needs, and
   - Addressing the issue of equity within the design of any cooperative project.

2. Examine the details of initial positions for options to induce cooperation. By closely studying the assumptions and beliefs behind the starting points, it might be possible to glean clues about how to induce some movement within the "bargaining mix," or range within which bargaining can take place, for each party. These underlying assumptions and beliefs may also point to the creative solutions necessary to move from distributive bargaining ("win-lose") over the amount of water each entity should receive to integrative bargaining ("win-win"), wherein opportunities for mutual gain are sought.

3. Design a plan or project, starting with small-scale implicit cooperation, and building toward ever-increasing integration, always keeping pace with (presumably) warming political relations. Building on that small-scale cooperation, and keeping the concerns of equity and control firmly in mind, projects might be developed to increase integration within the watershed, or even between watersheds over time.

Conclusions and Observations

The history of hydropolitics along the rivers of the Middle East exemplifies the best and the worst of relations over international water. Shared water resources have brought nations to the brink of

armed conflict, but they have also been a catalyst to cooperation between otherwise hostile neighbors.

The flow of water ignores political boundaries, and appropriate measures to attain water equity have eluded disciplinary boundaries in the Middle East. Nevertheless, this gloomy glimpse of the history of hydropolitics in the Middle East may portray the probable future for many of the world's 200 international river basins. Without agreed-upon criteria for fair ownership and distribution of such a vital resource, many may come to experience the sentiments of Byron: "Till taught by pain, men know not water's worth."

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"A 2020 Vision for Food, Agriculture, and the Environment" is an initiative of the International Food Policy Research Institute (IFPRI) to develop a shared vision and consensus for action on how to meet future world food needs while reducing poverty and protecting the environment. Through the 2020 Vision initiative, IFPRI is bringing together divergent schools of thought on these issues, generating research, and identifying recommendations. The *2020 Briefs* present information on various aspects of the issues.