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The Jordan River Basin: A conflict like no other
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Munther J. Haddadin

The Jordan River has been marked by conflict between the countries on its banks—Israel on one hand, and Lebanon, Syria, Jordan, and the Palestinian Authority on the other. The Arab states resented the United Kingdom’s 1917 Balfour Declaration supporting the establishment of a national home for the Jews in Palestine.1 The League of Nations granted Great Britain a mandate over Palestine and empowered it to implement the pledge made in the Balfour Declaration. Arab resentment developed into violent conflict in Palestine in the late 1920s.

Jewish immigration to Palestine began in 1882 in the aftermath of anti-Jewish violence following the assassination of Czar Alexander II of Russia, in which 200 Jews who had nothing to do with the assassination were beaten to death. The Palestinians feared the consequences of Jewish immigration into their land, supported after 1897 by the Zionist Organization (now the World Zionist Organization) and facilitated by the British Mandate government, including the acquisition of land by the immigrants.

The conflict peaked in 1936 with a six-month Palestinian revolt. The British government dispatched a royal commission headed by Lord Earl Peel to look into the grievances of the Palestinians. The Peel Commission recommended the partition of Palestine between its indigenous population and the immigrant Jews, with the Jerusalem enclave to remain under international jurisdiction (PRC 1937). This plan, later modified by the Woodhead Commission, was not accepted by

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1 The Balfour Declaration stated: “His Majesty’s Government view with favour the establishment in Palestine of a national home for the Jewish people, and will use their best endeavors to facilitate the achievement of this object, it being clearly understood that nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine, or the rights and political status enjoyed by Jews in any other country” (Yapp 1987, 290).
the Palestinians, and the conflict continued. The United Nations General Assembly (UNGA) adopted a partition plan in 1947 based largely on the earlier British plan (UNGA 1947), and the State of Israel was proclaimed on the evening of May 14, 1948, despite Arab resistance, immediately after the British withdrawal from Palestine. The first Arab-Israeli war erupted the next day. Armistice agreements were concluded under the auspices of the United Nations, in 1949, between Israel and Egypt, Lebanon, Jordan and Syria; and the United Nations Truce Supervision Organization (UNTSO) was set up to maintain peace between the parties.

The parts of Palestine not taken over by Israel in 1948 were the Gaza Strip, which came under Egyptian military administration but was kept separate from Egypt, and the West Bank, which in 1950 became part of the Hashemite Kingdom of Jordan. The Palestinians in the West Bank, including those from other parts of Palestine who had taken refuge there, became Jordanian citizens.

Perhaps the worst consequence of the proclamation of the State of Israel and its aftermath has been the displacement of hundreds of thousands of Palestinians who fled the fighting and took refuge in the West Bank and Gaza Strip, and in the surrounding Arab states—the majority in Jordan, and others in Lebanon, Syria, Iraq, and Egypt.

Despite the armistice agreements, recurring violence erupted between Israel and its Arab neighbors in the early 1950s and thereafter. Several wars also broke out: one waged by Israel against Egypt in 1956, in collaboration with Great Britain and France; another in 1967, waged by Israel against Egypt, Syria and Jordan; a third waged by Egypt and Syria against Israel, in 1973, to recover territories Israel had held since the preceding war; and a fourth by Israel against Lebanon in 1982. Peace talks started between Egypt and Israel in 1978. Until a peace treaty between them was concluded in 1979, in which the two states exchanged explicit political recognition, none of the Arab states had recognized the legitimacy of the State of Israel, despite its admission to the United Nations. The Arab states based their rejection on the argument that Israel’s statehood was proclaimed on territories belonging to the indigenous Palestinian people and that Israel was a foreign implant on Arab soil. That position gradually transformed in the wake of the successive wars. The acceptance by the Arab states of United Nations Security Council (UNSC) resolutions 242 and 338, which brought to an end the wars of 1967 and 1973 respectively (UNSC 1967, 1973), could be considered an implicit recognition of Israel.

Conflict between the indigenous populations of the region, Jews and Arabs, can be traced to the decision of the First Zionist Congress in Basel, Switzerland, in 1897, to target Palestine as a national home for the Jews. As a conflict between states, it surfaced in 1947, when Arab and other states voted against UNGA Resolution 181, which called for the partition of Palestine between Jews and Arabs. The post-conflict era can be said to have begun between Israel and Egypt in 1979 and between Israel and Jordan in 1994, when each of these Arab countries concluded a peace treaty with Israel. (The latter treaty is discussed in more detail, later in this chapter.) Conflict still simmers between Israel and the Palestinians, Syria, Lebanon, and the rest of the Arab countries.
The different territories that shared the Jordan River Basin developed conflicting plans for its utilization. Abraham Bourcart, a German engineer, assessed Palestine’s water resources for the Zionist Organization in 1901 (Haddadin 2001). In 1915, the Ottoman Empire’s director of public works for Palestine, George Franjieh, initiated an effort to utilize the water of the Yarmouk River, the largest tributary to the Jordan River, for irrigation and power development; his efforts were aborted by the outbreak of World War I and the demise of the Ottoman Empire. Plans developed in 1944 and 1947 for the Jewish Agency, the pre-state Jewish government and the executive arm of the Zionist Organization, conflicted with plans developed for the Emirate of Transjordan in 1939 and for its successor, the Hashemite Kingdom of Jordan, in 1951 (Haddadin 2001). The Jewish Agency’s Lowdermilk Plan of 1944 called for the utilization of the Jordan River and the
transfer of water from Palestine’s humid north to its arid south, and the transfer of Mediterranean Sea water to the Dead Sea to compensate the latter for the loss of inflow from the Jordan River. Israel’s Seven Year Plan of 1953 also addressed water issues.

Water plans for Jordan included the Ionedis Plan of 1939, which envisaged two canals, one on each side of the Jordan River, and allowed for the use of Lake Tiberias (also known as the Sea of Galilee and Lake Kinneret) as a reservoir, with a feeder canal conveying water from there to the eastern canal, which would also be fed by the Yarmouk River. This plan was further elaborated in 1951. Both Jordanian plans conflicted with a Syrian-Lebanese plan for the use of the Jordan River’s upper tributaries. This plan, created in 1951 and revised in 1959, called for the diversion of the two upper tributaries of the Jordan, the Banias and the Hasbani rivers, to the Baqa’a Valley in Lebanon for irrigation.

When Israel implemented its plan to divert water from its semihumid north to the arid south in 1951, it unilaterally attempted to divert Jordan River water from a point in the demilitarized zone that had been established between Syria and Israel in their armistice agreement of 1949 (Haddadin 2001). To prevent the Israeli earthmoving equipment from operating there, Syria fired at the equipment operators as they approached the diversion point. Israel responded by expelling Syrian citizens from their villages of Bekara, Naymeh, and Mazra’at al Khouri. (Syrian citizens in the demilitarized zone and nearby areas lived within the range of the rifles of Israeli soldiers.) This in turn triggered Syrian shelling of Israeli equipment and settlements inside Israel. UNTSO intervened and determined that the Israeli diversion works were contrary to the provisions of the armistice, and on October 27, 1953, the UNSC adopted Resolution 100, suspending the diversion (UNSC 1953).

At the same time the Israeli military made incursions into the West Bank, then part of Jordan, in response to what Israel claimed were Palestinian incursions into Israeli territory. These were mostly civilian raids carried out by disenchanted Palestinian refugees seeking access to their former homes inside Israel, during which they sometimes looted Israeli property, mostly livestock. The Arab Legion, Jordan’s army, responded to the Israeli military incursions, and tensions in the region escalated. Other military clashes took place between Israeli military and Egyptian patrols on account of Palestinian incursions from the Gaza Strip.

These military clashes in the early 1950s created political tensions in the Middle East at the beginning of the Cold War. The Korean War had just ended, and the confrontation between East and West in Indochina had begun. The Near East—which includes the Middle East, Turkey, and Iran—was becoming increasingly unstable: Iran was just returning to normal after the Mossadegh government nationalized the oil companies; a series of military coups had taken place in Syria and one in Egypt, creating tremors in the wake of the Arab failure to rescue Palestine from Zionist control. Frequent military clashes along ceasefire lines with Israel added to the political and social tensions in the region. Coupled with
the growing needs of Palestinian refugees and their hopes of returning to their homes in Israel, it was feared that these tensions would fuel a popular drive toward communism as a reaction to Western support for Israel.

In response to these tensions, the president of the United States, Dwight D. Eisenhower, appointed Eric Johnston as a U.S. envoy to the Middle East in October 1953. Johnston’s mission was to try to defuse the conflict over water, create calm in the region, promote economic and social development, settle Palestinian refugees in Jordan, and induce the Arab riparian states to communicate and cooperate with Israel over water.

It was believed that poverty and want invited the spread of communism and that a fight against them would curb its spread. The social and political plight of refugees, especially in a poor economy like Jordan’s, could not be alleviated without outside help. If water was brought to the arid Jordan Valley, irrigated agriculture could provide livelihoods for a good portion of the Palestinian refugees. Water works and irrigation could create jobs and help refugees resettle in the Jordan Valley. This was expected to be an attractive proposition for Israel and an incentive to cooperate with American objectives.

**THE JOHNSTON MISSION**

Ambassador Johnston was to work out a plan for the development of the Jordan Valley in which the Jordan waters would be fully harnessed for the benefit of all riparian states. He had to pursue shuttle diplomacy between the Arab states and Israel. Lebanon, Syria, and Jordan (including the West Bank) were all members of the League of Arab States (Arab League), established in 1945, and none were prepared to recognize or deal directly with Israel.

A plan for the development of the Jordan Valley had been prepared by the American consulting firm Chas. T. Main on request of the Tennessee Valley Authority, which in turn had been commissioned by the United Nations Relief and Works Agency for Palestinian Refugees (UNRWA). This plan, also known as the Unified Plan for the Development of the Jordan Valley, “describes the elements of an efficient arrangement of water supply within the watershed of the Jordan River system. It does not consider political factors or attempt to set this system into the national boundaries now prevailing” (Clapp 1953). It was submitted to UNRWA and to the U.S. government on August 31, 1953, and a month after that to the relevant Arab states. Johnston met with the prime ministers of Lebanon, Jordan, and Egypt on his first trip. The Egyptian prime minister, Gamal Abdel Nasser, was receptive and advised the Arab League to form a committee to negotiate the plan with Johnston.

The agreement addressed water storage, distribution, and supervision. It allowed the impoundment of Yarmouk River waters, with U.S. financing, by a 126-meter dam to be built on the river at Maqarin on the border between Jordan and Syria. The dam could be made higher than that, but without any additional U.S. financial contribution. Lake Tiberias was designated as another storage location,
which would regulate the river flow downstream. An international board would supervise the distribution of water and would rule, in five years, on the feasibility of storing Yarmouk waters in Lake Tiberias.

In assessing the total water resources of the Jordan River Basin, the Johnston technical team, led by Wayne D. Criddle, an American water specialist, assumed the average annual rate of return flow (after use for irrigation) at 112 million cubic meters per year (mcm/year).\(^2\) Return flow augments the natural flow of the river. The natural flow in 1953 was estimated at 1,320 mcm/year, and the historic consumptive use prior to that year was estimated at 40 mcm/year. Thus the total resources available for sharing by the riparian parties (natural flow, consumptive use, and return flow) amounted to an estimated 1,472 mcm/year.

Water distribution to Arab countries was based on the irrigation of arable lands within the basin in the territories of each riparian party. The Israeli share was based mostly not on the irrigation needs of its arable lands within the basin but more on the residual flow after the arable lands in the basin, Arab or otherwise, had their needs for irrigation met. This was a clever approach by Johnston to strike a middle position between two contradictory demands: The Arab side insisted that basin water should be reserved for in-basin uses and not transferred out of the basin. Israel, on the other hand, demanded that water from the basin could be transferred outside the basin to irrigate the arid south. No water was allocated for municipal, industrial, or environmental uses.

Water sharing under the plan was negotiated in four shuttle rounds that Johnston conducted between 1953 and 1955. The final version, known as the Modified Unified Plan or the Jordan Valley Plan, was arrived at in September 1955.\(^3\) That plan called for a dam on the Yarmouk River 126 meters high, more than twice the height originally envisioned. It allocated water from the Jordan River and its tributaries north of Lake Tiberias as follows:

- **Lebanon:** 35 mcm/year from the Hasbani River, the upper tributary that flows through Lebanon before it enters Israel to meet two other tributaries to form the Jordan River.
- **Syria:** 22 mcm/year from the Jordan River and 20 mcm/year from the Banias River, the tributary that originates in Syria and flows to join the Hasbani and Dan rivers inside Israel to form the Jordan River.
- **Jordan (including the West Bank):** 100 mcm/year from Lake Tiberias including a maximum of 15 mcm of brackish water emerging from saline springs on the western shore of the lake and on the lake bottom near the western shore.
- **Israel:** The residual flow of the Upper Jordan River (before it enters Lake Tiberias), estimated at 554 mcm/year.
- **Estimated loss to evaporation:** 300 mcm/year.

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\(^2\) Wayne D. Criddle, unpublished working documents (on file with author).

\(^3\) For the complete text of the Jordan Valley Plan, see Haddadin (2001).
Water from the Jordan River tributaries south of Lake Tiberias was allocated as follows:

- Syria: 90 mcm/year from the Yarmouk River, the largest tributary to the Jordan River.
- Israel: 25 mcm/year from the Yarmouk River.
- Jordan (including the West Bank): The residual flow of the Yarmouk River, estimated at 377 mcm/year.
- Estimated loss to evaporation: 14 mcm/year.

The Jordan River itself would become a drain unfit for agricultural use after water shares were distributed for use by the riparian parties.

The West Bank share had to be separated from the Jordanian share after the disengagement of Jordan from the West Bank. As will be shown below, the West Bank share of this estimated flow was 81 mcm/year, and Jordan’s was 296 mcm/year.

The final plan was presented to Egyptian President Jamal Abdul Nasser on October 7, 1955. Nasser remarked that the plan had both an economic and a political character, that he was sure the technical side of it would be acceptable by the Arabs, and that he had to handle the political side in his own way (Haddadin 2001).

The Arab Technical Committee of the Arab League, which was entrusted by the Arab League Council to negotiate with Johnston, recommended that the Council accept the plan but try to increase Jordan’s share from Lake Tiberias to 160 mcm/year. Meeting on October 11, 1955, the Political Committee of the Arab League failed to reach consensus on accepting the plan and instructed the Secretary General of the Arab League to inform Johnston that time was needed to perform more studies. The Israeli political leadership expressed its preparedness to ratify the agreement once the Arab side did (Haddadin 2001).

The United States distributed the Jordan Valley Plan to the parties in January 1956, and made it the cornerstone of its Jordan River Basin policy for the next decade. American emissaries visited the area and followed up on the water development projects there. For example, Wayne D. Criddle, advisor to Johnston and the chief technical member of his mission, made two trips to the region and verified the compatibility of the water projects financed by the United States in the basin with the Jordan Valley Plan. This lasted until Israel won the 1967 war against Egypt, Syria, and Jordan.

**U.S. SUPPORT FOR WATER PROJECTS IN THE BASIN**

Lebanon’s foreign minister, Salim Lahoud, suggested in 1956 to the U.S ambassador in Beirut, Donald R. Heath, that a staged implementation of the

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4 The Hashemite Kingdom of Jordan disengaged with the West Bank on July 31, 1988, by a royal decree.
Water-sharing plan be adopted. Jordan, with assistance from the Food and Agriculture Organization of the United Nations, had prepared a project to divert unregulated flows of the Yarmouk River to irrigate land in the Jordan Valley. The idea of a staged implementation appealed to the United States. It offered assistance to Jordan, provided that Jordan would not draw from the Yarmouk more water than allocated to it under the Jordan Valley Plan. Jordan undertook to abide by that condition (Haddadin 2001; MOF 1958).

There were political reasons behind U.S. support for the Jordanian project. Jordan, a Western-leaning country, had a sizable number of Palestinian refugees and one of the weakest economies in the region. (Its per capita gross domestic product was US$100 in 1957, and its balance of payments deficit was the highest of any Middle Eastern country except Israel.) The U.S. role in the region had grown following the 1956 Suez crisis, which began with Egypt’s nationalization of the British- and French-owned Suez Canal. British, French, and Israeli forces invaded Egypt but, following intense international pressure, soon had to withdraw. Jordan, which had been under British influence since its creation in 1921, terminated its treaty of alliance with Great Britain in 1957, although it maintained diplomatic relations. Meanwhile, the Soviet Union had established a foothold in Egypt and Syria by supplying weapons to both countries, and the United States was concerned about communist influence spilling over to Jordan and spreading in the region.

The United States adopted a staged approach to the implementation of the Jordan Valley Plan, in which it helped Jordan to develop the Jordan Valley, create jobs, and settle Palestinian refugees there. This was seen as fighting communism by fighting the poverty and need on which communist propaganda depended. In parallel to its assistance to Jordan, the United States also helped fund an Israeli pipeline that would convey some 70 mcm/year of water from Lake Tiberias, a Jordan River source, to the Beit She’an Valley. Thus the United States maintained a balance between the Arab parties and Israel in its approach to the implementation of the Jordan Valley Plan.

By 1966 Jordan, with U.S. funding, had brought some 11,400 hectares under perennial irrigation. A drop inlet dug on the southern bank of the Yarmouk River drew water by gravity toward an inlet structure on Jordanian territory. The inlet marked the beginning of the Jordanian main water carrier, the East Ghor Canal (renamed the King Abdullah Canal in 1987).

To improve diversion efficiency, the project needed a diversion weir across the Yarmouk River to direct water to the Jordanian inlet and on to the East Ghor Canal. Israel objected to the construction of this structure, arguing that it would give Jordan a military advantage as it could provide a crossing point for pedestrian intruders from Jordan to a demilitarized zone across the river from which they could enter Israeli territory. Contacts were made in the early 1960s through UNTSO and through the good offices of the United States, but none persuaded Israel to consent to this construction. Israel would not even agree to have a lip built from the Jordanian bank to midstream at the same location, which would
have helped improve the diversion efficiency without giving Jordan a military advantage. Beyond its military implications, the issue also affected the Israeli water supply: The less efficient the water diversion to Jordan, the greater the flow to Israel. Also, the diversion structure would have been operated by Jordan alone, and that could have caused problems for water sharing with Israel.

The 1967 war and its aftermath stalled this development effort in Jordan and brought about further complications related to the diversion of Yarmouk waters to Jordan. Before the war, UNTSO patrolled the Yarmouk bank across from Jordan, aided on request by Syrian police. After the war Israel occupied the Golan Heights and the Yarmouk gorge inside Syria, and thus controlled that bank of the Yarmouk. The ceasefire line between Jordan and Israel extended up the midstream of the Yarmouk until the confluence of its principal tributary, Wadi Raqqad. Consequently, routine Jordanian maintenance work in the river’s midstream, such as cleaning debris and deposits in the riverbed at the site of the drop inlet after each flood season, became impossible without the consent of Israel, which proved difficult and costly to obtain.

THE VALUE OF THIRD-PARTY INTERVENTION

The involvement of the United States in managing the conflict over the Jordan River proved to be very valuable, at least to Jordan. Without it the conflict, exacerbated by Arab grievances over the loss of most of Palestine to Israel and the plight of the Palestinian refugees, could have escalated into all-out war. Neither Jordan nor the other riparian Arab countries, Syria and Lebanon, were equipped to win such a war, and the loss would have devastated Jordan.

U.S. financial assistance to Jordan and Israel enabled the United States to create an indirect channel of communication between the two countries. Visiting American experts were dispatched to the region to follow up on the staged implementation of the Jordan Valley Plan and assure that no violations of it were committed. Through their deliberations with these U.S. technical missions, water officials in both Israel and Jordan learned about each other’s views. Sometimes U.S. intermediaries conveyed professional proposals from one country to the other. Such indirect interactions helped avoid misunderstandings.

Third-party intervention proved very helpful. By 1979, twelve years without maintenance of the riverbed at the drop inlet location had allowed the formation of a sandbar that partially obstructed the diversion of water to the inlet. The United States worked with UNTSO in the summer of 1979, a low-flow year, to help obtain Israeli consent for Jordan to shave off as much of the sandbar as possible. The cleanup resulted in Jordan receiving more water than it was entitled to. When Jordan was slow to respond to Israeli requests to adjust the diversion ratio, Israeli soldiers moved into the river and adjusted the flow using rocks to recover what they thought was Israel’s share. In so doing, the Israelis created an inverse imbalance, again diminishing the flow to Jordan. The Jordanian armed forces were mobilized, the Israeli forces responded in kind, and the two forces
faced each other separated only by the Yarmouk gorge. The situation was defused only when the president of the Jordan Valley Authority of Jordan worked with the U.S. embassy in Amman and with UNTSO to arrange a meeting of the Truce Commission under UN auspices to settle the dispute and avoid a breakout of hostilities (Haddadin 2001).

After that incident, and because of the need to monitor the diversion rates to both parties, the UNTSO-sponsored meetings continued at almost regular intervals during the dry months, and during the winter months if there was a drought. Each party was represented by a military officer and a water systems expert. Discussion was limited to matters pertinent to the immediate diversion problems. However, the reaction of each side to the plight of the other helped cement informal ties between the two sides’ representatives at the talks and even between their superiors.

Soon each party realized the importance of transparency, honesty, and credibility in living up to the commitments they had undertaken. Important operational transactions were agreed on verbally without a binding written document. The mutual respect that developed made it possible, during droughts, for Israel to help Jordan by allowing part of its share of the Yarmouk River water to be diverted to Jordan. This was particularly helpful to Jordan when large numbers of Jordanian citizens returned from the Gulf states in 1990–1991, after Iraq’s invasion of Kuwait. Some 300,000 returnees took up residence in and around the capital city of Amman, raising the demand for municipal water there. A good part of Amman’s municipal water supply came from the Yarmouk River via the King Abdullah Canal.

Between 1975 and 1990, several high-level U.S. missions tried to remove political barriers to the building of a dam for Jordan on the Yarmouk River at Maqarin. Donors made the approval of other riparian parties a prerequisite for funding to build the dam. Emissaries who shuttled between Jordan and Israel included Philip Habib (1978–1981); Richard Murphy (1984); and Richard Armitage (1988–1991), who continued his work as an intermediary until the Middle East peace process was launched in 1991. Bilateral negotiations then made it possible for Jordan to negotiate directly with Israel without the need for intermediaries.

Palestinian refugees, as well as other natives in the Jordan Valley, benefited from jobs created by U.S.-supported irrigation projects there. But third-party interventions did not resolve the water dispute between Jordan and Israel, and it continued to occupy center stage in the negotiations between the two countries from 1991 to 1994. By the end of the negotiations in October 1994, Jordan and Israel had come to agreement on water-related issues and resolved their bilateral conflict.

Direct bilateral negotiations achieved what the indirect talks could not. During Johnston’s shuttle diplomacy (1953–1955), two political considerations stood in the way of ratification by the Arab League Council of the final version of the Jordan Valley Plan. One was the plight of the Palestinian refugees, whose return to their homes had been called for by the United Nations in 1948 (UNGA 1948);
the other was the fact that cooperation with Israel could be interpreted as political recognition of Israel when the issues that caused the Arab-Israeli conflict had not been resolved.

The staged development of the Jordan Valley in Jordan took a significant turn in 1973 when the integrated social and economic development approach was adopted. In this approach a single government organization was entrusted with the integrated development. The approach entailed the implementation of infrastructure projects for social and economic development and the creation of nongovernmental institutions to enhance such development. The backbone of Jordan Valley development was irrigated agriculture, around which population centers would be established or expanded. Schools, health centers, government buildings, and community centers, as well as housing units, streets, and parking lots were built. Municipal water, electricity, and telecommunications were provided. Highways, market centers, and tourism facilities were built. Farmers were organized into a farmers association. The outcome was very positive economically, socially, environmentally, and politically (Haddadin 2006). For the most part, Jordanians have supported the development drive and worked to protect its achievements. The Jordan Valley was never allowed to become a military front or a war zone because there were too many achievements and benefits there to protect.

CONFLICT WITH SYRIA

Jordan shares the Yarmouk River with Syria upstream and Israel downstream. It has always been inferior to its riparian neighbors in economic and military power and has chosen to resolve conflicts with them through peaceful means.

Jordan’s relations with Syria have not been very brotherly. Since 1954, Syria has been ruled by leftist regimes that extended a hand to Jordan only intermittently in accordance with Syria’s interests. Headaches for Jordan relating to Syria started immediately after the June war of 1967. While Jordan was preoccupied with the consequences of Israel’s occupation of East Jerusalem and the West Bank, Syria started constructing earthen dams on the Yarmouk tributaries inside its borders, violating a 1951 treaty between the two countries. Syria also prepared plans to expand its use of the Yarmouk headwaters beyond the 90 mcm/year allocated to it both in this treaty and in the Jordan Valley Plan. It further allowed Syrian farmers to expand their use of the aquifer that feeds the Yarmouk springs allocated to Jordan under the bilateral treaty. Extensive pumping from the Yarmouk aquifer was and is being practiced by Syrian users.

Jordan and Syria held bilateral talks between 1976 and 1987, interrupted from 1981 to 1986 due to tensions arising from Jordan and Syria’s support for opposite sides in the Iraq-Iran War (1980–1989). During those talks, Syria represented to Jordan that its increased use of water from the Yarmouk River

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5 The Jordanian delegation was headed by the author.
was meant to deny Israel, their common enemy, access to that water (Haddadin
2001). Jordan responded that, even if such action appeared legitimate, it caused
appreciable harm to Jordan.

Political relations between Jordan and Syria, which deteriorated between
1980 and 1985, improved in 1986 as Prime Minister Zeid S. Al Rifai, known to
be friendly to Syria, took office in Jordan. A new bilateral treaty on the Yarmouk,
concluded in 1987, replaced the original 1953 treaty. From the Jordanian perspec-
tive, the new treaty was unfair because it conceded to Syria, whose consent was
required for Jordan to build the dam at Maqarin, the right to impound floodwaters
in its territory that would otherwise be stored at Maqarin. That dam was completed
in 2005. By 2010 the Al Wahda Dam had impounded a cumulative total over
five years of no more than 25 mcm of Yarmouk water, although it has a storage
capacity of 125 mcm.

Hopes were high that the new treaty would define the rights and obligations
of each party, and that the two parties would honor it. In reality, however, Syrian
behavior in the Yarmouk catchment did not change, and Jordan continues to be
adversely affected by Syrian actions. Conflict with Syria over the Yarmouk
continues, and efforts are made intermittently to bridge the differences through
joint assessments of the catchment yield.

OBSTACLES TO DEVELOPMENT

Jordan adopted a comprehensive plan in 1973 for the social and economic
development of the Jordan Valley on the river’s East Bank, as described above.
Irrigated agriculture was the backbone of the plan, and the role of the Yarmouk
River was and is pivotal. The plan called for the expansion of irrigated agriculture
in two stages. The first would add 8,300 hectares and convert an additional 1,000
hectares to piped distribution networks, and the second would involve the con-
struction of a dam at Maqarin and the expansion of irrigated agriculture to 36,000
hectares. Ambitious infrastructure projects were included, and a score of donor
agencies assisted, led at first by the U.S. Agency for International Development.

By the time the first stage ended in 1979, the water supply from various
sources, particularly the Yarmouk River, had diminished because of increased
Syrian water use upstream. The efficiency of water diversion from the Yarmouk
to the East Ghor Canal, the main water carrier for the Jordan Valley, was also
diminished by deposits of sediment at the diversion point, which formed the
sandbar described above. Thus the water supply to the Jordan Valley suffered both
from Syrian overuse upstream and from diminishing diversion efficiency caused
by the sandbar.

Israel saw in Jordan’s need to clean the sandbar a chance to initiate top-level
meetings between the water officials of the two countries, a political gain indeed
at the time of the Arab boycott of Israel. Furthermore, Israel benefited from the
reduced efficiency of water diversion to Jordan because whatever water Jordan
could not divert became available for Israeli use. Israel responded slowly to
UNTSO’s requests for a meeting to address the problem. The impact on Jordan’s
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The sandbar at the diversion point made it more difficult to divide the reduced Yarmouk River flow between Jordan and Israel. The reduced flow also forced the Jordan Valley Authority to shift its irrigation development strategy from surface canals to more costly pressure pipe networks, and to urge farmers to adopt advanced on-farm irrigation methods with financing from the government’s Agricultural Credit Corporation. Increased water use efficiency in the Jordan Valley made up for the reduction in water supply, but it required costly efforts by Jordan to mitigate the impact of both Syrian and Israeli water policies.

Although Jordanian and Syrian negotiators met frequently between 1977 and 1981, Jordan had practically no success in curbing Syrian water extraction or obtaining Syria’s consent to build the Maqarin dam. High-level meetings between Jordan and Israel were a taboo at the time, and water issues could not be resolved. However, meetings of the Armistice Commission under the chairmanship of UNTSO, designed to look into transient problems, yielded an understanding with Israel on the mechanism and ratios of water diversion from the Yarmouk. Water diversion was controlled by sandbags set across the river by Jordanian and Israeli technicians overseen by UNTSO. UNTSO meetings took place at the diversion site, and although they were transient in scope, they contributed to Israel’s understanding of the difficulties Jordan was facing in water supply, something that Syria did not display in its direct high-level talks.

Increased trust between water technicians from both countries finally paved the way for the removal of the sandbar discussed above. Political developments helped accelerate that step. Under President Ronald Reagan, the United States initiated a Middle East initiative after the Sabra and Shatila massacre of Palestinians during the Israeli invasion of Lebanon in 1982. U.S. Secretary of State George Schultz shuttled between Arabs and Israelis in an attempt to work out a platform for the resolution of the Middle East conflict. In the positive atmosphere this U.S. intervention generated in the mid-1980s, Israel finally agreed to have the sandbar removed. That step, implemented in September 1985, improved the efficiency of water diversion to Jordan and enhanced mutual understanding between the two countries.

THE JORDAN-ISRAEL PEACE TREATY

After the liberation of Kuwait in 1991 from Iraqi occupation, U.S. President George H. W. Bush resumed efforts started by his predecessor, Ronald Reagan, to make peace in the Middle East. Secretary of State James Baker designed a Middle East peace process that responded to the demands of the adversaries. It involved, first, a conference consisting of four separate and parallel bilateral negotiation tracks to settle fundamental political disputes between Israel on the
one hand and Jordan, the Palestinians, Syria, and Lebanon on the other; and second, a multilateral conference, consisting of five working groups and a steering committee, in which thirty-eight countries participated. In the bilateral peace negotiations that commenced in Washington, D.C., in December 1991, Jordan met Israel face to face without the intermediaries who had played such an important role since 1953. The negotiations between Jordan and Israel lasted until October 1994, when the two countries concluded a peace treaty.

In the multilateral conference that opened in Moscow in January 1992, one working group was dedicated to water resources while others were dedicated to the environment, economic development, refugees, and regional security and arms control. The conference aimed to devise ways to consolidate the peace once it was reached. The multilateral working groups held intermittent sessions in different capitals of the world, but these were stalled in 1996 when difficulties, emanating from the ascent of the rightist Likud party to power in Israel, interrupted the bilateral negotiations between Israel and Syria, Lebanon, and the Palestinians.

In the bilateral negotiations between Jordan and Israel, water was an important agenda item. Before settlement of their dispute, the water demand in Amman, the capital city of Jordan, increased drastically because so many Jordanians had returned from the Gulf states after the Iraqi invasion of Kuwait in 1990. The Yarmouk River was a key water source for Jordan, and the Israeli delegation to the bilateral negotiations responded positively to a request from their Jordanian counterparts to temporarily augment Jordan’s share in the Yarmouk with as much as Israel could afford to relinquish. Israel’s response built confidence and helped create a positive atmosphere in the negotiations. By October 17, 1994, the two sides arrived at a peace treaty that was signed on October 26 and ratified on November 11. The Treaty of Peace between the Hashemite Kingdom of Jordan and the State of Israel became effective on that date. Annex II to the treaty was devoted to water-related matters.

THE WATER ANNEX

Article 6 of the Jordanian-Israeli peace treaty committed both sides to recognize each other’s rightful water shares, cooperate bilaterally and regionally, share information, and protect each party’s water resources from degradation by using sound water management and development practices. These commitments were detailed in Annex II: Water-Related Matters, which was negotiated between March 1992 and October 1994.7

6 For the complete text of the treaty, see www.kinghussein.gov.jo/peacetreaty.html.
7 The author of this chapter drafted the Water Annex in September 1994 and negotiated its contents with two Israeli delegates the following month. The annex reflected the substance of negotiations between March 1992 and September 1994. Serious water negotiations started on August 8, 1994, and ended on October 17, 1994.
The Jordanian and Israeli sides agreed in March 1992 to negotiate simultaneously the issues of water, energy, and the environment. A common negotiating agenda was approved by both sides in late October 1992. Its ratification by the Jordanian government awaited similar progress on the Israeli-Palestinian track. Progress on that track surprised the world when the Oslo Accords between Israel and the Palestine Liberation Organization (PLO) were signed on September 13, 1993. Jordan and Israel signed their common agenda the following day.\textsuperscript{8} Negotiators for Jordan and Israel on water, energy, and the environment reached similar agreement on agendas for negotiations on the three topics in June 1994. These agendas formed the basis for resolution of many aspects of the conflict.

Throughout the 1992–1994 water negotiations, Jordan’s stance was based partly on the Jordan Valley Plan of 1955, endorsed by the Arab League’s Arab Technical Committee but not ratified by the Arab League’s Political Committee. This position was shielded against potential criticism by other Arab countries since it was identical to what the Arab Technical Committee had accepted in 1955. The resurrection of the Jordan Valley Plan in 1992 served Palestinian rights in the Jordan River. The Palestinians were engaged in negotiations with Israel over interim self-government arrangements, and negotiations over water were to be started three years after that. Bilateral talks between Israel and the Palestinians postponed negotiations over water, territories, refugees, and Jerusalem until the Final Status negotiations. Jordan would reach agreement with Israel before that time.

The Jordan Valley Plan had stipulated the water shares of Jordan, which prior to 1988 had included the West Bank. On June 1, 1994, Jordan’s King Hussein bin Talal directed that the Jordanian delegation should negotiate only Jordan’s share of the water, leaving the shares of the West Bank for the PLO to negotiate with Israel. The PLO and Israel had exchanged political recognition in September 1993. Guided by the Jordan Valley Plan, the Jordanian chief negotiator delineated the water shares of the West Bank and East Bank separately. The West Bank share, amounting to 241 mcm/year, was delineated as follows:

- 52 mcm/year from west-side wadis discharging into the Lower Jordan River within the West Bank.
- 8 mcm/year from groundwater in the Jordan Valley within the West Bank.
- 81 mcm/year from the Yarmouk River (calculated as part of Jordan’s share, which was estimated at 377 mcm/year).
- 100 mcm/year from Lake Tiberias, including a maximum of 15 mcm/year of brackish water.

\textsuperscript{8} Negotiations had been suspended between December 1992 and April 1993 because of Israel’s deportation of 316 Palestinian activists to Marj Al-Zuhour in Lebanon. Another reason was the need to modify a sentence in the common agenda related to the occupied Palestinian territories. For details, see Majali, Anani, and Haddadin (2006).
The share of the East Bank amounted to 479 mcm/year and was delineated as follows:

- 175 mcm/year from east-side wadis within Jordan.
- 8 mcm/year from groundwater in the Jordan Valley within the East Bank.
- 296 mcm/year from the Yarmouk River.

Based on the Jordan Valley Plan, the only water source for Jordan and Israel to negotiate was the Yarmouk River, which they also shared with Syria. The rest of the water sources awarded to Jordan were not contested and had been put to use in the development of the Jordanian side of the Jordan Valley by 1979.

The Jordan Valley Plan stipulated Jordan’s share of the Yarmouk River as the residual flow after deducting annual allocations to Syria (90 mcm/year) and Israel (25 mcm/year, though Israel contested this allocation and claimed 40 mcm/year). Jordan’s annual share was calculated at 377 mcm/year. But by the time of the water negotiations in 1994, Israel was using between 70 and 95 mcm/year depending on the rainfall, and Syria was using about 265 mcm/year. Both had exceeded their allocations at the expense of Jordan and the Palestinians.

The water annex to the Jordanian-Israeli treaty contained seven articles. The first addressed water allocation; as discussed above, it echoed many of the provisions of the Jordan Valley Plan. Syria’s violation of that plan was not on the agenda of Jordan’s negotiations with Israel, but Israel’s violations were. Jordan pressed for a greater share of the Jordan River than had been allocated under the earlier plan, based on municipal and industrial water needs that had not been taken into account by that plan but had become apparent over time. Agreement was reached to allow Israel to pump 20 mcm from the Yarmouk winter flow in return for a summer share for Jordan from Lake Tiberias. Full use by Jordan of the Yarmouk winter flow would be possible only by building a dam at Mukheiba in the lower catchment or by using Lake Tiberias as a storage facility for Yarmouk water. Building of a dam at Mukheiba would require the use of the opposite, Syrian bank of the river, which had been occupied by Israel since 1967. Any attempt to talk about building such a dam would be placed in political limbo. Syria would want to await liberation of its territories from Israeli occupation, and Jordan would not negotiate with Israel, the occupying power, over the use of Israeli-occupied Syrian territory.

The mutual concessions by Jordan and Israel amounted to free virtual storage for Jordan and a way to capture otherwise unregulated Yarmouk winter floodwaters. Physical storage of Yarmouk floods in Lake Tiberias had been envisaged in the Jordan Valley Plan and was then estimated at 90 mcm/year. This article of the water annex has been and is observed by both parties.

The water annex allocated an additional 50 mcm/year of water to Jordan over that allocated in the Jordan Valley Plan. This provision has been partially observed by Israel, which has been supplying Jordan with 25 mcm/year from Lake Tiberias since 1997. In other allocations that go beyond the Jordan Valley
Plan, the water annex allowed Israel to use 10 mcm/year of additional groundwater from Jordanian sources in Wadi Araba and committed Israel to supply Jordan with 10 mcm/year of water from a planned desalination plant to be built near Lake Tiberias. This provision has been observed since 1995. Israel is delivering 10 mcm/year to Jordan from Lake Tiberias until the desalination plant is built.

The second article of the water annex addressed water storage and stipulated the construction of two small dams on the Jordan River on the border between the two countries. Jordan was allocated a minimum of 20 mcm/year of the water so impounded, and Israel was allocated up to 3 mcm if additional storage is possible. The article also stipulated the construction of a diversion dam (also envisioned in the Jordan Valley Plan) to control water diversion from the Yarmouk River to both Jordan and Israel.

The water annex addressed additional issues that were not addressed in the Jordan Valley Plan, including water quality and protection, establishment of a joint water committee, bilateral cooperation, and groundwater outside the Jordan River Basin.

**THE IMPACT OF THE WATER ANNEX**

The progress achieved on water sharing facilitated the successful conclusion of the peace treaty as well as continued confidence building and peacebuilding after the treaty was signed and ratified. Despite the cold relations that have dominated the political scene between Israel and Jordan since 1999, the two countries have continued to implement the water agreement. This has been a primary factor in avoiding major water-related crises in the Jordan Valley and in Amman. The water that flows to Jordan from Israel has been key to Jordan’s ability to mitigate the damage imposed by the drastic reduction in the Yarmouk River flow.9

The implementation of the water agreement thus far has enhanced the credibility of the peace treaty and the ability of the two parties to deliver on their commitments. Despite political turmoil in the region, the water agreement has remained almost intact, and its implementation has benefited both sides, particularly Jordan. It is hoped that water agreements will also be concluded between Israel, Lebanon, Syria, and the future Palestine state, and that a settlement will be reached between Jordan and Syria over the Yarmouk River in accordance with their treaties. The water agreements should address the Jordan River Basin as a whole, including the groundwater aquifers. Agreement over water could propel progress toward agreement on other issues of dispute.

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9 Jordan blames the reduction in flow on Syrian water use, while Syria argues that it is due to climate change.
LESSONS LEARNED

Jordan and Israel’s handling of their water conflicts, both before and since the conclusion of the peace treaty, has provided valuable lessons for conflict management and peacebuilding.

Period of conflict

Conflict between Jordan and Israel arose as soon as the State of Israel was established in 1948. Jordan, like all Arab countries, did not recognize Israel’s legitimacy and participated in the war that ensued after the proclamation of the State of Israel in 1948. That war ended in an armistice supervised by the United Nations, but Israel and Jordan remained enemies. In the absence of mutual diplomatic recognition, it was not possible for Jordan to engage directly with Israel in negotiations to resolve disputes. The first lesson learned was the value of a third party, friendly to both sides, in mediating the conflict. The involvement of the United States beginning in 1953 in the water conflict between Jordan and Israel was a decisive factor in their ability to develop the water resources of the Jordan River system without a peace treaty or even mutual political recognition.

Throughout the years of conflict, it was important for each side to respect its adversary. Credibility, also crucial, was achieved by honoring commitments and by not promising more than one could deliver. Transparency and credibility were crucial in adversaries’ dealings, not only with each other, but also with the intermediary.

It was important to make clear the impact of water on all sectors—economic, social, environmental, and political—to both adversaries and the intermediary. Just as water serves to extinguish fires, it should propel cooperation and not violent confrontation. This lesson was learned in the wake of the military response (i.e., the sandbar incident described above) of both Jordan and Israel (in that order) to their differences over water sharing in 1979.

Above all, particularly during negotiations, adversaries need to understand each other’s point of view. In this respect, Israel on more than one occasion appreciated difficulties Jordan was facing in water supply and agreed to augment supplies to Jordan from its share in the Yarmouk River. Such gestures deeply affected Jordanian officials’ attitudes toward Israel.

Negotiation

The 1991 negotiations were the first direct contact between the states of Israel and Jordan. An important lesson Jordanian negotiators learned at the outset was that the Israelis were not supermen but peers, no matter how impressive their repeated military victories over the Arabs had been since 1948. Another was the importance of negotiators being able to show that they had done their homework and were aware of the history of the conflict and its development. For example,
after Jordanian negotiators proposed to save time and energy by adopting the Jordan Valley Plan, the Israelis cross-examined them on the details of that plan to make sure both sides had the same understanding of it.

Another important lesson was the importance of being honest with the adversary and clear about one’s disagreements and the proposed solutions. “Beating around the bush” wastes time and energy.

Also important was the need to display respect and, whenever possible, understanding for the adversary’s position. This is not a question of agreement or submission but simply of humanitarian consideration. Putting oneself in the shoes of one’s adversaries and imagining how one would act in their position helps promote cooperation in finding a solution acceptable to both sides.

Water should be treated like the life-giving commodity that it is and should be considered in connection with other social, economic, and environmental issues. It was easy for Jordan and Israel to agree, almost without hesitation, to Jordan’s proposal to negotiate water, energy, and environmental issues in one negotiation package.

Post-conflict period

The most important lesson learned since the treaty was concluded is the importance of transparency and credibility. Jordan has lived up to this standard.

An unfortunate factor has clouded Jordanian-Israeli relations since the ascent to power of the Israeli right in 1996 in the wake of the assassination of Israeli peacemaker Yitzhak Rabin. That factor is Israel’s management of its affairs with the Palestinians and its deliberate delay of the Final Status negotiations between them. The goal of the Jordanian-Israeli negotiations as set out in their common agenda was “the achievement of just, lasting and comprehensive peace between the Arab States, the Palestinians and Israel as per the Madrid Invitation” (Haddadin 2001, 496). Also, the preamble to the Jordan-Israel peace treaty stated as a justification for the treaty “the achievement of a just, lasting and comprehensive peace [in the Middle East] based on Security Council resolutions 242 and 338 in all their aspects.”

Violence between Israelis and Palestinians beginning in 1999, which peaked in an all-out war on Gaza in 2008 and continues intermittently, has hindered the growth of positive relations between Jordan and Israel. Despite this, the water annex has continued to be honored by both parties, a statement that cannot be made about other important agreements concluded under the treaty. There has been a lull in achieving the full implementation of the water annex provisions. Construction has not begun on the desalination plant near Lake Tiberias or the two dams on the Jordan River. Both require foreign assistance, which has not been forthcoming due to continuing hostilities in the region. The full delivery of the additional 50 mcm/year of water to Jordan hinges on the desalination plant installation. Until that is achieved, only half of that quantity is delivered by Israel from Lake Tiberias.
A post-conflict development that has created a setback in the cooperative approach to peacebuilding has been the shift to the right in Israeli politics. This has been the result of the actions by extremists on both the Israeli and Palestinian sides. Each side wants peace according to its own terms, which are mutually contradictory. The Israeli political right aspires to have peace and keep territories, and the Palestinian extremists desire to have peace and more territory. The political clash inside Israel resulted in the assassination of Prime Minister Yitzhak Rabin, who was able to engineer a peace agreement with the Palestinians as he had done with Jordan. His demise diminished the chances for comprehensive peace in the region. Since the Israeli right ascended to power in 1996, the peace process has, for the most part, been stalled.

The Palestinian reaction to the political shift in Israel has been a shift toward the right. It looked like opponents to comprehensive peace were reinforcing each other on both sides. The return of Israeli moderates to power in 1999 did not help reverse the trend. A second Palestinian intifada in 2000 spread violence and bloodshed. The Israeli right returned to power and is still ruling Israel, and the Palestinian right ascended to power in 2006. There exists little chance for resumption of peace talks.

The Israeli peace talks with Syria were stalled in 2000; indirect talks through Turkey were terminated, and little hope exists today to resume peace talks on that front.

The involvement of the United States gives some hope for the resumption of peace talks. President George W. Bush announced U.S. support for a two-state solution: a Palestinian state next to Israel. President Barack Obama is trying through active engagement of the United States to initiate indirect talks in the hope that they will lead to bilateral negotiations between the Palestinians and Israel. Several bilateral and regional political factors stand in the way.

Even this troubled situation offers a lesson about the need for a comprehensive vision of water, which affects and is affected by every aspect of life, in ways that are not always obvious. The channel of communication over water has always been kept open between Jordan and Israel; mutual visits by high-ranking officials have been made, albeit not publicized.

The main lesson learned during and after the conflict is that water can promote cooperation between adversaries as well as between allies. Both Jordan and Israel realize that their water needs cannot be met even by the entire yield of the Jordan River system. They further realize that conflict would not bring about more water for them but would create a zero-sum game. Conversely, cooperation can yield a positive result from which all parties can benefit.

REFERENCES


