



## **CRS Report for Congress**

# **The “Red-Dead” Canal: Israeli-Arab Efforts to Restore the Dead Sea**

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### **Summary**

Regional cooperation in halting continued overuse of scarce water resources has been a casualty of the long-running Arab-Israeli conflict. The Dead Sea has been a victim of this neglect, and scientists estimate that it will decrease substantially in the coming decades due to overexploitation of the Jordan River. One possible solution is to construct a canal from the Red Sea to the Dead Sea to pump sea water into the salt lake while generating hydroelectric power for use in desalination. The governments of Israel and Jordan have been enthusiastic proponents of the “Peace Canal,” and are calling on the international community, including the United States, to support its multi-billion dollar construction. However, opponents of the canal claim that it may do more environmental harm than good and suggest that the Dead Sea be naturally restored by allowing the Jordan River to flow southward unimpeded. Water cooperation is an essential element of the peace process and, with the renewal of Israeli-Palestinian negotiations, joint projects, such as the Red Sea-Dead Sea (Red-Dead) Canal, have been increasingly discussed. This report investigates the proposed Red-Dead Canal and analyzes its political significance and the debate surrounding its possible construction. It will be updated periodically.

**Overview.** In 2008, the World Bank is planning to launch an 18-month comprehensive assessment of the so-called “Red-Dead” Canal, a joint Arab-Israeli project designed to save the shrinking Dead Sea using water from the Red Sea.<sup>1</sup> The canal has been in the works for decades and is controversial. The Israeli and Jordanian governments are its staunch advocates, asserting that the only way to restore the Dead Sea’s water level is to construct a 112-mile pipeline to transfer water northward from the Red Sea. Officials claim that this water, while descending 1,870 feet on its journey to the Dead Sea, would generate enough hydroelectricity to power desalination plants for producing fresh water. This water could then be delivered to cities in Israel, Jordan and parts of the West Bank.

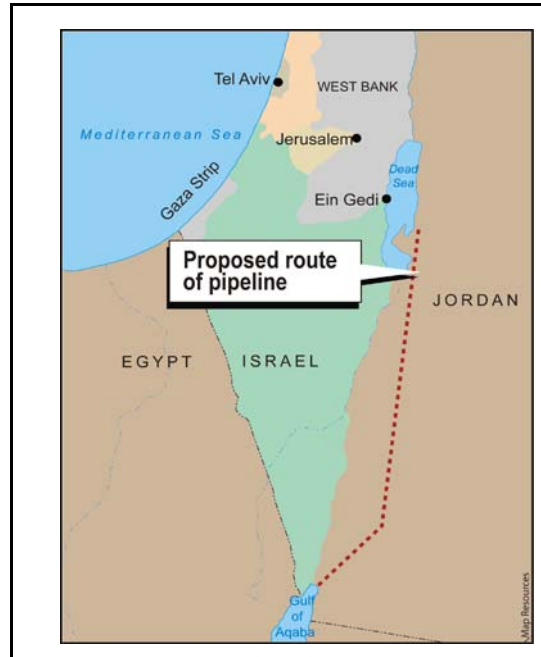
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<sup>1</sup> The Red-Dead Canal project is officially referred to as the Red Sea-Dead Sea Water Conveyance Concept. See, “Red Sea - Dead Sea Water Conveyance Feasibility Study and Environmental and Social Assessment,” Information Note- July 2007, The World Bank, Middle East and North Africa.

The canal's Arab and Israeli supporters believe that the proposal is not only a creative solution to an environmental challenge, but a potential model for Arab-Israeli cooperation.

Opponents of the canal charge that Israel and Jordan are exaggerating its political symbolism in order to generate the needed \$5 billion dollars (or more) in international financing for what is in essence a desalination and hydroelectricity project with potentially serious environmental drawbacks. As an alternative, environmental and peace activists have called on regional governments and the international community to push for a comprehensive settlement to the Arab-Israeli conflict that would include water sharing agreements and the restoration of the Jordan River and Dead Sea. Scientists assert that the Red-Dead Canal could potentially harm the Dead Sea further by changing its unique chemistry through the introduction of Red Sea water, and is too expensive to justify the costs of construction. Moreover, there is some concern that without an Israeli-Palestinian settlement that addresses the Dead Sea border and water rights, Israel and Jordan, which concluded a bilateral peace treaty in 1994, will disproportionately benefit from the canal at the expense of the Palestinians.

### The Red-Dead Canal

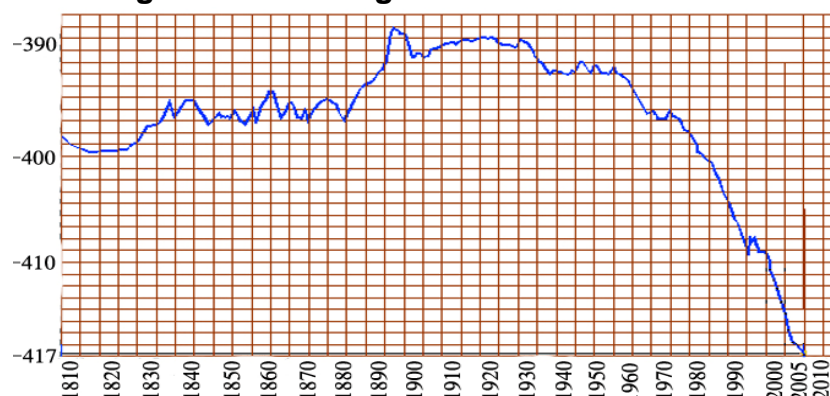


The United States government has, at times, played a key role in fostering cooperation on Arab-Israeli water issues.<sup>2</sup> The Bush Administration has donated a small sum (\$1.5 million) to facilitate the World Bank's feasibility study; however, no U.S. Administration has officially endorsed the project. If the current study supports the canal's construction, Israel and Jordan will most likely seek a significant U.S. pledge and appropriation from Congress to assist in financing the canal. Due to the slow progress in reviewing the canal's construction (some believe it may take as long as 20 years to build), few U.S. policymakers have addressed the issue. In November 2007, Senator Richard Lugar sponsored S.Res.387 (passed by the Senate November 16, 2007) which, among other things, called for more international attention to the serious and potentially irreversible degradation of the Jordan River and the Dead Sea.

<sup>2</sup> The 1955 "Johnston Plan" called for Arab-Israeli cooperation in sharing the Jordan River. Though most Arab states rejected the U.S.-sponsored plan, Jordan and Israel adhered to its suggested allocations for decades. In the 1990s, the United States helped establish the multilateral Working Group on Water Resources, which led to the founding of the Middle East Desalination Research Center in Muscat, Oman in December 1996.

**The Shrinking of the Dead Sea.** The Dead Sea, located at the lowest elevation on earth, is slowly vanishing. Due to gradual water loss, the Sea has split into two separate lakes and its coastline has receded significantly. For years, Israeli and Arab governments have diverted for agricultural and industrial purposes up to 95% of the southward flow of the Jordan River, which naturally replenishes the Dead Sea.<sup>3</sup> Israel diverts an estimated 60% of the river, while Syria and Jordan divert the rest. The Palestinian Authority has demanded that it receive a fair share of the river's flow.<sup>4</sup> In the last 55 years, the Dead Sea has lost 33% of its surface area. Scientists estimate that the water level of the salt lake drops approximately three feet per year. Israeli scientists estimate that even though the evaporation of the Dead Sea may slow in the coming decades, it may lose another 33% of its surface area. Observers are concerned that its disappearance will have severe ecological and economic repercussions and will deprive future generations of a historical and religious landmark.

**Figure 1. Declining Dead Sea Water Levels**



**Source:** World Bank, Red Sea - Dead Sea Water Conveyance Feasibility Study and Environmental and Social Assessment

**The “Red-Dead” Canal.** After years of study and evaluation, the current plan, as envisioned by the “beneficiary parties” (Israel, Jordan, the Palestinian Authority), is to construct a 112-mile, partially covered pipeline across the Wadi Araba (Arava), a desert region between Israel and Jordan that stretches from the Gulf of Aqaba in the south to the

<sup>3</sup> Like the Dead Sea, the Jordan River is under severe ecological strain. In addition to having its waters diverted, the river absorbs large amounts of raw sewage flowing untreated from East Jerusalem, Israeli settlements in the West Bank, and cities under the control of the Palestinian Authority. Political deadlock and ongoing violence have prevented Israelis and Palestinians from finalizing water management agreements tentatively reached during the Oslo peace process.

<sup>4</sup> In testimony before the House International Relations Committee, Dr. Ihab Barghothi, Advisor to the Palestinian Water Authority, stated that “As a result of water diversion of the upper Jordan River tributaries by the Israelis, there is no fresh water down stream of Lake Tiberias, and the negligible quantity that reaches the Palestinian Riparian in the West Bank is of a deteriorated quality.” Testimony of Ihab Barghothi, Ph.D. Advisor Palestinian Water Authority, Committee on House International Relations, “Water Scarcity in the Middle East,” May 5, 2004.

Dead Sea in the north. The canal would likely straddle the Israeli-Jordanian border, but remain almost entirely on Jordanian territory. Because of the Wadi Araba's hilly terrain, water traveling through the pipeline would initially have to be pumped between 500 and 550 feet upward before dropping 1,900 feet via natural elevation decline on its way to the Dead Sea. Theoretically, enough Red Sea water flowing into the Dead Sea could restore most of its water level over time. Moreover, hydroelectricity generated from the water coursing down the gradient would power a large desalination plant. Potable freshwater could then be delivered to urban areas, such as Jordan's capital Amman, to relieve existing shortages. In addition, the canal's supporters argue that construction could spark more joint Israeli-Jordanian-Palestinian tourism and development projects in the Wadi Araba region.

**Historical Background.** For over a century, Israelis and Zionist visionaries have called for a national undertaking to link the Dead Sea to either the Mediterranean (Med-Dead) or Red Sea (Red-Dead) via a canal. It was not until the peace process of the early 1990s that the Red-Dead canal evolved from a purely national Israeli project to a multilateral one associated with Arab-Israeli cooperation.<sup>5</sup> During the energy crisis of the early 1970s, the Israeli government began to pursue the construction of a Med-Dead canal seriously in order to generate hydroelectricity and end the country's dependence on oil. It commissioned several feasibility studies and, in one instance, actually broke ground for the canal's construction. Financial constraints eventually halted the project in 1985 (cost estimates then ranged between \$2 billion and \$5 billion). In addition, Jordan objected to a Med-Dead canal, claiming that, if built, it would illegally traverse the previously Israeli-occupied Gaza Strip and harm Jordan's potash mining industry in the Dead Sea.<sup>6</sup>

The optimism that accompanied the Arab-Israeli peace process of the early 1990s helped bring about a new canal proposal, one that linked the interests of Israel and Jordan. Its champion was, and still is, former prime minister and current Israeli President Shimon Peres. In his book, *The New Middle East*, Peres wrote that:

Politically, this earthshaking enterprise can help maintain peace and establish mutual long term interests. This benefits not only the nations of the Middle East but those outside the region.... I believe it will be built. The water will flow along the Arava, the power stations will give light, and the wasteland will bloom with life. The region will experience peace, serenity, and progress. People from other countries will use the sea port and airport, visit the spas and vacation centers, and enjoy the products of our flourishing desert.<sup>7</sup>

Though Peres has been praised for his positive vision, other observers perceive the Red-Dead Canal as having tangible benefits for Israel and Jordan that transcend more abstract notions of regional peace. Jordan is one of the ten most water-deprived countries in the

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<sup>5</sup> In 1855, English Admiral William Allen first proposed constructing a canal to link the Mediterranean and Red Seas with the Dead Sea as an alternative to the then-planned Suez Canal. Theodore Herzl, the founder of political Zionism, wrote in 1902 about a fictitious Med-Dead canal in his book *Altneuland* (The Old New Land).

<sup>6</sup> "Israel's Decision to Build a Canal Linking the Mediterranean Sea to the Dead Sea," Report of the United Nations Secretary General, A/39/142, August 1, 1984.

<sup>7</sup> Shimon Peres, *The New Middle East*, Element Book Ltd., 1993, p. 144.

world, and the estimated 850 million cubic meters of desalinated freshwater water that could be generated by the canal would help alleviate Jordan's chronic water shortages. The Canal also could help restore the Dead Sea's water levels, a task that neither Israel nor Jordan could undertake unilaterally for both political and financial reasons. Many experts assert that by marketing it as an essential component of the peace process, Israel and Jordan are able to solicit international financing for the multi-billion dollar project. According to Roni Milo, former Israeli minister for regional cooperation, "Jordan is the key to obtaining support from the World Bank. If the pipeline were situated on the Israeli side we would not be able to get this financing."<sup>8</sup>

Upon concluding a peace treaty in 1994, Jordan and Israel pledged to rehabilitate the Jordan Valley region and, since then, plans to construct the Red-Dead Canal steadily moved forward. In 2002, at the World Summit on Sustainable Development in Johannesburg, South Africa, a Jordanian official proclaimed that the announcement of the canal proposal sent "a message that we do live in one area with a common destiny. The environment, ecology, and nature know no boundaries and no political conflicts." However, other Arab countries and the Palestinians expressed their opposition to the announcement made at the height of the second Palestinian *intifadah* (uprising). A Palestinian representative at the conference claimed that "the project involves drawing a new border between Israel and Jordan at the expense of the Palestinian people."<sup>9</sup> Israeli-Palestinian violence continued to hamper efforts to advance the canal for the next three years. After the death of Palestinian President Yasir Arafat in November 2004, the process regained momentum. At the May 2005 World Economic Forum, held on the Jordanian side of the Dead Sea, Israel, Jordan, the Palestinian Authority (PA), and the World Bank announced that the beneficiary parties had agreed to launch a two-year \$15 million feasibility study for the Red-Dead Canal. After the 2006 Hamas victory in PA elections, the process stalled again, as Israel insisted that Palestinian moderates rather than Hamas members sit on the tripartite committee overseeing the project. As of early 2008, the World Bank is steadily moving the feasibility study process forward. It established a multi-donor trust fund for the study. The United States contributed \$1.5 million to the fund; other donors include France, Spain, Greece, Japan, Netherlands, Sweden, Spain, Britain and Germany.

**Environmental Concerns.** Israeli and Arab environmentalists argue that rather than undertake a complex and expensive engineering project, the region's governments should stop diverting the Jordan River and allow the Dead Sea to replenish naturally.<sup>10</sup> However, there is no consensus, even amongst the canal's opponents, as to how countries could use less water amidst rising demand or find new sources of freshwater. Moreover, some scientists believe that mixing water from the two seas would lead to algae blooms, causing the Dead Sea to both change color from turquoise to brown and lose its famous buoyancy.<sup>11</sup> If this were to occur, it could cripple the tourist industry on both banks of the Sea. Other experts suggest that saltwater leaking out of the canal could seep into the

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<sup>8</sup> John Williamson, "Dead Sea Under Threat," *Middle East*; Aug/Sep2003 Issue 337, p60.

<sup>9</sup> "Dead Sea Rescue Plan Unveiled," *BBC News*, September 2, 2002.

<sup>10</sup> In practical terms, this would require riparian states to irrigate less and may result in a shift to crops that require less water.

<sup>11</sup> "Better Red than Dead?" *The Economist*, March 17, 2007.

ground and contaminate aquifers, as the canal would lie along a major earthquake fault-line. Some engineers question the cost-benefit analysis justifying the canal given the large amounts of energy that would be needed to pump water uphill before it reaches the Dead Sea and to send it to urban areas for consumption after desalination. Some scientists suggest that there would be insufficient surplus hydroelectricity to power what would be the world's largest water pumping station and desalination plants.

**A Model for Regional Cooperation?** Israeli and Jordanian officials argue that the Red-Dead Canal would spark Israeli-Arab cooperation in a number of fields. According to Israeli National Infrastructure Minister Binyamin Ben-Eliezer, "The Peace Channel project will lead to regional and economic cooperation with our Jordanian colleagues in the areas of energy, water, and agriculture. Regional development is an important step in promoting the political process."<sup>12</sup> The canal's Israeli project manager, Erez Ron has argued that the canal may further integrate Israel and Jordan economically, stating, "We are not maximizing the potential that can be obtained from [the 1994 Israel-Jordan peace treaty]. Look how long a border we have with them, and how little is happening. But the moment you create shared economic interests, they will have to continue running with it.... It's a completely political project."<sup>13</sup>

Some critics believe that the project's "peace dividend" has been oversold. Gideon Bromberg, head of Friends of the Earth Middle East, stated that there was tremendous pressure on the World Bank to support the Red-Dead Canal because "it's the only joint project between Jordan and Israel to come out of the Palestinian *intifada*."<sup>14</sup> Uri Wirtzberger, who headed a company to develop the canal two decades ago, said "The project may make Shimon Peres a close friend of King Abdallah II, but that's its only virtue." Finally, other peace activists claim that the canal avoids the larger issues of managing transboundary water sources. According to one observer, "The World Bank and its sponsors have no intention of actually forcing regional actors to address their own responsibility in the water shortage, as this would present very awkward questions for the West's regional allies. Why, for example, is the average Israeli able to consume four times as much water, per capita, as the average Palestinian?"<sup>15</sup> Despite the vocal opposition to the Red-Dead Canal, many analysts believe that, barring a final settlement to the Arab-Israeli conflict, action is urgently needed to restore the Dead Sea and address other water issues, particularly as climate change may threaten further environmental degradation and water supply reliability. Some experts note that even if the canal is never built, it has already brought Israel and Jordan closer on issues related to water conservation and environmental restoration. Whether governments go even further in addressing regional water shortages and the deterioration of the Dead Sea depends on political will, external support, and the ability to withstand political pressures emanating from the expected continuation of Israeli-Palestinian conflict.

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<sup>12</sup> "Realizing Herzl's Pipe Dream," *Ha'aretz*, December 13, 2006.

<sup>13</sup> "Israel: Opposition to Government Plan To Build Red Sea-Dead Sea Canal Discussed," *Ma'ariv* (Tel Aviv), April 13, 2007, Open Source Center Document ID#GMP20070413743007.

<sup>14</sup> Joshua Hammer, "The Dying of the Dead Sea," *Smithsonian*; October 2005, Vol. 36 Issue 7, pp. 58-70.

<sup>15</sup> Isabelle Humphries, "World Bank's Red Sea-Dead Sea Feasibility Study Ignores the Source of the Problem," *Washington Report on Middle East Affairs*, March 2007, Vol. 26, Issue 2.