

ARTICLES

PRIVATIZING PEACE: How Private Sector Investment Can Address the West Bank Water Crisis and Wash Away Oslo II

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The people of Israel camped at Rephidim, but there was no water for the people to drink. Therefore the people quarreled with Moses and said, "Give us water to drink." And Moses said to them, "Why do you quarrel with me?" But the people thirsted there for water, and the people grumbled against Moses and said, "Why did you bring us up out of Egypt, to kill us and our children and our livestock with thirst?" So Moses cried to the Lord, "What shall I do with this people? They are almost ready to stone me." And the Lord said to Moses, "Take in your hand the staff with which you struck the Nile, and go. Behold, I will stand before you there on the rock at Horeb, and you shall strike the rock, and water shall come out of it, and the people will drink."

—*Exodus 17:1-7, The Old Testament*

* * * *

INTRODUCTION

In the promised land of milk and honey, the most basic of human elixirs is still the most precious. Myriad disagreements paralyze the Israeli-Palestinian peace process in 2011, but the water crisis may be the most intractable.

Israeli NGOs estimate an average West Bank Palestinian's water consumption to be about 37 liters per day, and an average Israeli's to be about 211 liters.¹ By comparison, "First World" countries like the U.S. and Canada

¹ *The Gap in Water Consumption Between Palestinians and Israelis*, B'TSELEM ONLINE (Jan. 1, 2013), available at http://www.btselem.org/english/water/consumption_gap [hereinafter *Water Consumption*]; see also Hilal Elver, *Palestinian-Israeli Water Conflict and Implementation of International Water Law Principles*, 28 HASTINGS INT'L & COMP. L. REV. 421, 427 (2005) (indicating that per capita Palestinian consumption is

typically afford around 700 liters per capita; and according to World Health Organization standards, people with an annual per capita consumption of less than 100 liters live in a condition of "severe water stress."² The Israeli and Palestinian statistics become even more ominous when one considers that the majority of Israeli "consumption" is allotted to agricultural irrigation, rather than potable use, and that most of an average Palestinian's drinking water is horribly polluted by ground minerals and mismanaged sewage disposal tracts.³ Moreover, regional forecasts look dry: the current fifteen year-long drought is projected to continue, and the Israeli-Palestinian population will double in the next 25 years.

The water shortage is largely due to geography and climate. There are two major water sources in the region: the surface waters of the Jordan River Basin—shared by Israel with the surrounding Arab countries—and the groundwater of the mountain aquifers extending beneath the West Bank and across the Green Line into Israel. Climate change and over-exploitation of the surface waters have greatly depleted the mighty Jordan of biblical times. "When I was a boy," Mark Twain wrote upon first glimpsing the river, "I somehow got the impression that [it] was four thousand miles long and thirty-five miles wide. It is not any wider than Broadway in New York."⁴ Today, the Jordan alternates in size between rivulet and creek.

Still, Israel extracts fresh water from Lake Tiberias (the biblical "Sea of Galilee") and it has already diminished the Jordan tributary for much of its

realistically much lower because of the large proportion of consumption devoted to agricultural irrigation).

² Elver, *supra* note 1, at 426.

³ *Water Consumption, supra* note 1, at 427; *see, e.g.*, YEHEZKEL LEIN, THIRSTY FOR A SOLUTION: THE WATER CRISIS IN THE OCCUPIED TERRITORIES AND ITS RESOLUTION IN THE FINAL-STATUS AGREEMENT 14, 59–60 (2000), *available at* http://www.btselem.org/publications/summaries/200007_thirsty_for_a_solution [hereinafter B'TSELEM POSITION PAPER].

⁴ MARK TWAIN, THE INNOCENTS ABROAD 597 (Shelley Fisher Fishkin ed., Oxford Univ. Press 1996) (1869).

domestic use, leaving the downstream Palestinian population with what has been described as a "drainage ditch."⁵ The mountain aquifer's underground chambers—divided between the Western, Northeastern, and Eastern sub-basins—are therefore critical; they are also, however, the subject of contention between the Israelis and Palestinians because the basins cross political lines, complicating issues of ownership and control.

While about eighty percent of the aquifer resides below West Bank soil, collecting mostly from rainfall in the West Bank, eighty percent of the potable water flows into Israeli territory and is stored there;⁶ it is indisputable that most of the aquifer water originates in the Palestinian territories, but comes to rest in Israel. Mekorot, the private Israeli company that has enjoyed a monopoly on water utility management since 1982, then pumps the collected water throughout the country and into the territories at fixed prices (before distribution costs). Estimates vary, but on balance, it appears that Israelis consume roughly ten times as much water as the Palestinians do from these sub-basins.⁷

It is perhaps unsurprising how little attention the world devotes to the Israeli-Palestinian water conflict compared to suicide bombings and refugees. The battle lines here do not appear on CNN; they are literally subterranean, hidden from view beneath the arid soil. The 1990s peace process brought water allocation to the forefront of negotiations for the first time, and Article 40, Annex III of the 1995 Oslo II Interim Agreement provided a framework for cooperation. Israel turned over water distribution responsibilities in the West Bank to the Palestinian Authority, while effectively retaining control over well license permits. It also set concrete benchmarks for short-term

⁵ Brandon Hollinder, Note, *A Golden State Solution to the Israeli-Palestinian Water Conflict*, 30 HASTINGS INT'L & COMP. L. REV. 103, 109–10 (2006).

⁶ See, e.g., David J. Scarpa, *Hydropolitics in Recent Israeli-Palestinian Relations*, 2 HYDROLOGY: SCI. & PRACTICE FOR THE 21ST CENTURY 147, 150 (British Hydrological Society 2004).

⁷ See, e.g., Elver, *supra* note 1, at 427.

Palestinian water needs, with full water rights to be defined at Final Status Negotiations.⁸

Since 1995, the peace process has repeatedly collapsed, and Final Status talks appear unlikely in the near future. Both parties have resorted to inflammatory allegations that the other is violating the Interim Agreement: the Palestinian Authority (P.A.) claims Israel is violating international law by denying the Palestinians their sovereign water rights and engaging in discriminatory pricing, while Israel claims the P.A. is negligently mismanaging water and stubbornly refusing to optimize alternative water resources.⁹ The two parties stare across the diplomatic impasse, and all the while, the Sea of Galilee is at its lowest level in recorded history, annual rainfall continues to drop, and the Palestinian population is skyrocketing.¹⁰

This article argues that the legal debate over "water rights" of the West Bank aquifer is counter-productive; the seemingly relevant international law is largely inapposite, and the 1995 Interim Agreement, intended as a temporary framework rather than a lasting resolution, creates disputes rather than resolving them. Instead of wrangling over problematic legal frameworks, the Palestinian Authority should recruit private sector investment of foreign and domestic capital to develop alternative West Bank water sources, such as desalination and wastewater treatment, and they should modernize their inefficient water delivery infrastructure. Focusing on privatization

⁸ Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, Isr.-PLO, Sept. 28, 1995, 36 I.L.M. 551, Annex III, art. 40, cl. 3-4 [hereinafter Oslo II]. See APPENDIX I for the full text of Oslo II's water article.

⁹ See WATER AUTHORITY STATE OF ISRAEL, THE ISSUE OF WATER BETWEEN ISRAEL AND THE PALESTINIANS 21, 27 (2009) [hereinafter "IWA REPORT"], available at <http://siteresources.worldbank.org/INTWESTBANKGAZA/resources/israelwaterauthorityresponse.pdf>.

¹⁰ Alon Tal, *Thirsting for Pragmatism: A Constructive Alternative to Amnesty International's Report on Palestinian Access to Water*, 4 ISR. J. FOREIGN AFF., No. 2, 2010, at 59, 64.

techniques¹¹ to increase the quantity and quality of usable water would offer the following advantages: (1) it would dramatically increase Palestinians' access to potable water; (2) reduce West Bank Palestinians' dependence on Mekorot and Israeli pricing; (3) remove the water conflict from the diplomatic arena's clogged channels and diffuse tensions in the peace process; and (4) perhaps most importantly, deprive Israel of its primary political argument against the Palestinian water rights claims—that the P.A. ignores its governing responsibilities by wastefully mismanaging its resources, refusing to explore alternative water supply techniques, and holding progress hostage to Final Status talks. Water privatization is a chance for the Palestinian Authority to disprove the famous quote by Israeli diplomat Abba Eban that "the Palestinians never miss an opportunity to miss an opportunity."

In Part I, this article will discuss the unworkable deficiencies of both international water law and the 1995 Interim Agreement as applied to the mountain aquifer dispute. Part II will explain how private sector recruitment offers an ideal solution to the Palestinians' political concerns; discuss the challenges associated with private participation in water management; outline how the recent economic growth, relative political stability, and surge of 'Fayyadist' state-building philosophy in the West Bank offer a unique and unprecedented opportunity for privatizing water development; and then apply the lessons of Gaza's water market experiment to West Bank prospects.

This article does not dismiss the normative claims of the Palestinians to the region's water, nor bless Israel's historical water allocation to the West Bank. It merely argues that international water law is inadequate for adjudicating the dispute and that recent demographic and climate trends have rendered the region's available resources unsustainable. Circumstances demand more than politically charged redistribution at the expense of one party. They demand innovative development of new water sources and optimization of existing ones—demands the private sector can help meet.

¹¹ It is important to note that I am not advocating full privatization of the entirety of the Palestinian water supply, but, rather, suggesting a role for the private sector in helping develop alternative water sources.

I. LEAKS AND LOOPHOLES: THE LIMITATIONS OF INTERNATIONAL WATER LAW

The majority global perception casts Israel as a nation flouting its international legal obligations—a state that feels entitled to exceptional treatment, either as a result of its people's troubled history, its unique alliance with the United States, or other reasons.¹² This view, at least in the abstract, is misplaced. Although Israel reserves the right, like most nations (including the United States), to interpret customary international law, it does not require

¹² Much of this criticism is founded upon the belief that Israel is illegally occupying Palestinian territory, and interfering with the Palestinians' right to self-determination. The most oft-cited international law on occupation, however—Article 4 of the 4th Geneva Convention and Article 43 of the Hague Regulations—does not address the distinction between "lawful" and "unlawful" occupation, but rather the obligations of the occupying power once military occupation has occurred. For a recent discussion of the notable absence of occupation legality language in international law, see *Armed Activities on the Territory of the Congo (Dem. Rep. Congo v. Uganda)*, 2005 ICJ 64 (Dec. 19) separate opinion of Judge Kooijmans.

Although Aharon Barak of the Israeli High Court of Justice has described Israel's presence in the West Bank as "belligerent occupation," H CJ 393/82 *Teachers' Housing Cooperative Society v. The Military Commander of the Judea and Samaria Region* PO 37 [4] 785 [1983] (Isr.), such terminology remains politically charged in Israel because of the inflammatory dispute over original land ownership from biblical times through the 1967 Six-Day War.

The legal debate over "occupation" is, however, outside the scope of this Paper, which is focused on international water law. A discussion of specifically "occupation"-related legal obligations necessarily implicates the larger debate over the nature of the conflict, a realm of virtually unlimited complexity that I do not enter here. But more importantly, the international law of occupation—as codified in provisions like the 4th Geneva Convention and Hague Regulations—does not specifically address water rights.

treaty ratification or statutory execution for international law to bind its government.¹³ The Israeli High Court of Justice has ruled numerous times, most recently in the 2008 *Al-Bassiouni v. Prime Minister* case, that Israel is bound by all customary international law that does not specifically contradict domestic statutory provisions.¹⁴ All international water law that is both customary—that is, generally recognized and practiced by the community of nations—and applicable to Israel is, therefore, relevant and binding.

A. INTERNATIONAL WATER LAW PRE-OSLO

The Palestinians build their case for water rights in the West Bank upon international water law and the 1995 Oslo II Interim Agreement. These documents, however, are ultimately of limited utility as each is either legally inapplicable, non-binding, or diluted of all meaning.

The United Nations Declaration of Human Rights proclaims that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family."¹⁵ In addition to the 1948

¹³ Cf. Jed Reubenfeld, *Unilateralism and Constitutionalism*, 79 N.Y.U. L. REV. 1971 (arguing that the United States practices "democratic constitutionalism" rather than "international constitutionalism" in attempting to observe international law consistent with our democratic processes, rather than transnational norms).

¹⁴ See HCJ 9132/07 Jaber Al-Bassiouni v. Prime Minister, [2008] (Isr.), http://elyon1.court.gov.il/Files_ENG/07/320/091/n25/07091320.n25.htm; see also HCJ 606/78 Ayoub v. Minister of Defense 38(2) PD I 13 (*Beth El* case) [2000] (Isr.); HCJ 393/82 Teachers' Housing Cooperative Society v. The Military Commander of the Judea and Samaria Region PO 37 [4] 785 [1983] (Isr.) (affirming the proposition that customary international law is automatically inducted into Israeli domestic law unless a specific statute or basic law contradicts it).

¹⁵ Universal Declaration of Human Rights, G.A. Res. 217 (III)A, at 75, U.N. GAOR, 3d Sess., 1st plen. mtg., U.N. Doc A/810 (Dec. 10, 1948).

Declaration, the 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR) and International Covenant on Civil and Political Rights (ICCPR) also implicitly incline toward a human right to water.¹⁶ In 2003, the U.N. Economic and Social Council recently made the right explicit: "The human right to water is indispensable for leading a life of human dignity. It is a prerequisite for the realization of other human rights."¹⁷ These abstract proclamations have never been understood to impose obligations on countries,¹⁸ however, and the current Palestinian position grounds its allegations of Israeli legal violations on more substantive, specific documents.

Among these documents are The Helsinki Rules ("the Rules"), which were drafted by the International Law Association ("ILA") in 1966, and offered the first comprehensive expression of *equitable utilization* water doctrine. In relevant part, the Rules state that "each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin," and thereafter, proceed to enumerate an extensive list of factors to be considered in defining what constitutes "a reasonable and equitable share"—these include geography,

¹⁶ See International Covenant on Economic, Social and Cultural Rights, Dec. 19, 1966, 993 U.N.T.S. 3; International Covenant on Civil and Political Rights, Dec. 16, 1966, 999 U.N.T.S. 171. See also IGNACIO J. ALVAREZ, *The Right to Water as a Human Right*, in LINKING HUMAN RIGHTS AND THE ENVIRONMENT 71, 72 (Romina Picolotti & Jorge Daniel Taillant eds., 2003) (discussing the absence of specific mention of the right to water in the ICCPR, ICESCR, and the Universal Declaration on Human Rights).

¹⁷ U.N. Econ. & Soc. Council [ECOSOC], Comm. on Econ., Soc. & Cultural Rights, Nov. 11–Nov. 19, 2002, U.N. Doc. E/C.12/2002/11, General Comment No. 15, art. 11, at 1 (Jan. 20, 2003).

¹⁸ See, e.g., Stephen C. McCaffrey, *A Human Right to Water: Domestic and International Implications*, 5 GEO. INT'L ENVTL. L. REV. 1, 2 (1992).

hydrology, climate, past utilization, economic and social needs, dependent population, avoidance of waste, and the availability of other resources.¹⁹

If the list of relevant factors did not create enough opportunity for disagreement on their own, Article Five ensures that the Rules can be shaped to support virtually any position by any basin state. It provides that "the weight to be given to each factor is to be determined by its importance in comparison with that of the other relevant factors."²⁰ These balancing addenda virtually eviscerate any possibility for bright-line enforcement, and guarantee that either party in a dispute will shape the Rules' amorphous language in their favor.²¹ The Helsinki Rules thus constitute an interpretive nightmare: they beg the outcome-determinative question, and create arguments, rather than resolving disputes.

In an effort to codify the principles outlined in Helsinki as binding international water law, the U.N. drafted the Convention on the Law of Non-Navigational Uses of International Watercourses in 1997. The Convention drew heavily upon Helsinki's factors in determining *equitable utilization*; materially deviating only to add an important clause on *optimal utilization*, whereby riparian states must achieve the optimal use of the watercourse as if no State boundaries existed.²²

¹⁹ See INT'L LAW ASS'N (ILA), HELSINKI RULES ON THE USES OF THE WATERS OF INTERNATIONAL RIVERS 1 (1966), *available at* http://webworld.unesco.org/water/wwap/pccp/cd/pdf/educational_tools/course_modules/reference_documents/internationalregionconventions/helsinkirules.pdf [hereinafter HELSINKI].

²⁰ *Id.* at 2.

²¹ For a discussion of the notorious difficulty of enforcing laundry lists of affirmative rights as operational rules, see CASS R. SUNSTEIN, *Against Positive Rights*, in WESTERN RIGHTS? POST-COMMUNIST APPLICATION (A. Sajo ed., 1996).

²² See Convention on the Law of Non-Navigational Uses of International Watercourses, May 21, 1997, 36 I.L.M. 700 (1997), *available at* <http://>

Palestinians and human rights activists have repeatedly cited these provisions as defining customary international water law, indicting Israel's allegedly inequitable practices.²³ For example, Gamal Abouli, who served as legal advisor to the Palestine Liberation Organization ("PLO") during its 2000 Camp David Summit negotiations with Israel, wrote extensively on the importance of the Helsinki Rules and Convention to the Israeli-Palestinian water dispute. In his oft-cited article, *Natural Resources Under Occupation: The Status of Palestinian Water Under International Law*, Abouli writes that Israel's "lopsided use of shared resources [is] inequitable under evolving norms of international transboundary water law," and, referring to Helsinki and the Convention, that "participants in the current process of negotiations should heed these prescriptions."²⁴

This international water law is problematic for a number of reasons. First, neither the Helsinki Rules nor the Convention constitute binding customary international law; only sixteen countries (which do not include Israel) have ratified the Convention worldwide, and Helsinki has no enforceability as a treaty due to the ILA's unofficial status.²⁵ Second, the two

untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf
[hereinafter Convention].

²³ See, e.g., SHARIF ELMUSA, WATER CONFLICT: ECONOMICS, POLITICS, LAW AND PALESTINIAN-ISRAELI WATER RESOURCES 306 (Institute for Palestine Studies, Washington, DC 1997); B'TSELEM POSITION PAPER, *supra* note 3, at 73; Philip Baumgarten, *Israel's Transboundary Water Disputes*, 30 J. LAND RESOURCES & ENVTL. L. 179, 190–95 (2010).

²⁴ Gamal Abouli, *Natural Resources Under Occupation: The Status of Palestinian Water Under International Law*, 10 PACE INT'L L. REV. 411, 573–74 (1998).

²⁵ J.W. Dellapenna, *The Customary International Law of Transboundary Fresh Waters*, 1 INT. J. GLOBAL ENVTL. ISSUES 264, 273 (2001) (recognizing that, while the ILA is "a highly regarded non-governmental association of legal experts," it nevertheless has "no legal standing as [a] lawgiver"). Cf. Ian J. Silverbrand, *Israeli-Palestinian Water Literature's Misplaced Dependence upon Customary International Law*, 37 ENVTL L. REV. 603, 614 (2007).

documents appear to not include relations between nations and non-state populations like the Palestinians. For example, the Helsinki Rules apply to "the use of waters in an international drainage basin," defined as "geographical area[s] extending over two or more States," and consistently refers to "each basin state."²⁶ The Convention likewise refers exclusively to "international watercourse[s], [defined as] a watercourse, parts of which are situated in different states."²⁷ Many argue that Israel's non-state argument is a technicality-waving delay tactic that fails to appreciate the imminent sovereignty of a future Palestinian state.²⁸ From Israel's perspective, Palestinian statehood is anything but imminent and any Israeli concession that can be interpreted to imply Palestinian sovereignty before Final Status Talks is politically perilous.²⁹

Perhaps more fundamentally, international water law, and the Convention and Helsinki Rules in particular, likely does not apply to subterranean groundwater chambers like the West Bank aquifer. The Helsinki Rules refer to surface basins, and the Convention only applies to aquifers if they are part of a "system of surface waters and groundwaters constituting . . . a unitary whole . . . flowing into a common terminus."³⁰

Mr. Abouli's argument that the Convention still holds because an aquifer can be considered as an "underground terminus of waters from precipitation

²⁶ HELSINKI, *supra* note 19, art. I; *see, e.g., id.* at art. IV.

²⁷ Convention, *supra* note 22, art. II(b).

²⁸ *See, e.g.,* Baumgarten, *supra* note 23, at 196.

²⁹ When Israel first recognized the Palestinian right to water in the Oslo II Agreement (soon to be discussed), the Israeli press warned that "by the explicit recognition of Palestinian water rights Israel has opened . . . a Pandora's Box and created the most dangerous precedent in her history." MARTIN SHERMAN, THE POLITICS OF WATER IN THE MIDDLE EAST: AN ISRAELI PERSPECTIVE ON THE HYDRO-POLITICAL ASPECTS OF THE CONFLICT 100 (1999).

³⁰ Convention, *supra* note 22, at art. 2(a).

and seasonal rivers"³¹ ignores the fundamental hydrology of the West Bank Aquifer. It not only flows into three divergent termini and has "no physical relationship with any surface body of water, and is, in fact, unrelated to any other identifiable water resource."³² This is not a mere loophole in the Convention, but rather, reflects the difficulties in legally applying equitable utilization principles to confined groundwater resources. Technical knowledge about aquifers is more recent and controversial than that of surface water resources, pollution is a much greater risk with groundwater, and much of the hydrological science is unknown, like flowing patterns, permeability, and soil-water connections.³³ For example, some Israelis insist that the ideal well-sites for accessing the western sub-basins of the Mountain Aquifer are in Israel because the chambers are closer to the surface and can be tapped by shallow wells, thus allowing for fresher extraction³⁴—a scientific metric which would leave the Palestinians with no legal right to divert such waters out of Israeli territory without government consent.³⁵

Even apart from questions surrounding its binding effect and its applicability, the principal deficiency of international water law is that it appears incapable on its face of resolving anything. The relative weight granted to each of the laundry list of "equitable utilization" criteria depends entirely on the interpreter, effectively relocating the dispute to the question of which factor should govern. The Israelis cite the "past and existing utilization" factor to emphasize their extensive development of the region's resources since the beginnings of the Zionist movement; the "economic and social needs" factor because of Israel's far greater economic activity; "the availability of other resources" and "avoidance of waste" factors to point out the sophisticated efficiency with which Mekorot distributes water within

³¹ Abouli, *supra* note 24, at 540.

³² Silverbrand, *supra* note 25, at 623.

³³ See Elver, *supra* note 1, at 439.

³⁴ *Id.*

³⁵ *Id.*

Israel compared to woeful Palestinian infrastructure.³⁶ The Palestinians, for their part, emphasize the "geography," "dependent population," and "substantial injury" factors as advantageous to their position, and retort with understandable exasperation that Israel can only cite their economic efficiency-based criteria *because* their inequitable water use has nourished socio-economic growth at the Palestinians' expense.³⁷

One might well argue that Israel should simply elect to embrace these two documents, loopholes and all, as a matter of principled policy because it is the right thing to do, legalistic formalism be damned. Indeed, this article argues later that it is in Israel's interest for the Palestinians to have access to sufficient water resources. Palestinian frustrations with "inapplicability to non-state actors" and "underwater aquifer exception" arguments are understandable. But exasperation over technicalities misses the point: the Convention and Helsinki Rules are not just toothless, inapposite legal instruments that the Palestinians should not rely on for a "water rights" argument, they are also terribly useless from a political perspective. The abstraction with which these two documents seek to plug all the holes of water conflict render them utterly unhelpful from a practical standpoint of dispute resolution. They would credibly resolve nothing. Even Sharif Elmusa, one of the most vocal and articulate advocates of Palestinian water rights, acknowledges that different parameters to be considered in equitable utilization "may be faulted for being too numerous and stated in too general a

³⁶ *Id.* at 436–41.

³⁷ *Id.* at 440. See ELMUSA, *supra* note 23, at 311. For an empirical discussion of how multi-factor legal decision-making precludes consistent, impartial application, see Barton Beebe, *An Empirical Study of the Multifactor Tests for Trademark Infringement*, 94 CALIF. L. REV. 1581 (2006). Beebe found that, in applying the multi-factor trademark litigation tests meant to determine the likelihood of consumer confusion, judges from the thirteen circuit courts would discriminately pick and choose which factors to weight heavily, and "stampede" the remaining factors in order to conform to a preferred outcome. *Id.* at 1581–82.

fashion to be useful for negotiations."³⁸ Mr. Elmusa is far too generous. As an idiosyncratic conflict, the Israeli-Palestinian water debate has always required something a bit more customized.

B. OSLO II

In September 1995, the Israelis and Palestinians signed an agreement governing water rights for the first time. The Oslo II accords included an Annex III, Article 40 addressing the issues of water and sewage management. Compared to the Helsinki Rules, the accords are admirably concrete. The agreement has proved unworkable in the long run, but it was never intended to serve as anything but a temporary provision. The disputes left unresolved by Oslo II have been exacerbated, in part, by the fact that Oslo II undermined its own limited authority with the promise of Final Status Negotiations that have yet to take place.

The Interim Agreement was unprecedented in its statement that "Israel recognizes the Palestinian water rights in the West Bank," but neutered by the following sentence: "These will be negotiated in the permanent status negotiations and settled in the Permanent Status Agreement relating to the various water resources."³⁹ Nevertheless, despite arising under the title "Israeli-Palestinian Interim Agreement," Oslo II's water article lays out specific metrics for Palestinian future water needs, as well as obligations for both parties.

Oslo II articulated that the West Bank Palestinians required water quantities of 70-80 MCM/yr, which meant that supplies must be increased by 20%, or 23.6 MCM/yr, either by new wells or Israeli allocation.⁴⁰ In addition, the Interim Agreement acknowledged the water shortage on both sides, and the imperative of developing additional sources of water—from the Eastern Aquifer sub-basin, as well as recycling from wastewater treatment and

³⁸ *Id.* at 307.

³⁹ Oslo II, *supra* note 8, at art. 40, cl. 1.

⁴⁰ *See id.* cl. 6.

desalination.⁴¹ It further prohibited any activities that would lead to pollution of the environment, and compelled proper wastewater treatment responsibilities.⁴²

In addition, the Interim Agreement established the framework for the formation of a Joint Water Committee (JWC) of both Israelis and Palestinians to implement its terms and "deal with all water and sewage related issues in the West Bank."⁴³ Since Oslo II, the JWC has continued to meet and function despite the multiple outbreaks of violence, including the brutal Al-Aqsa Intifada of 2000, while "nearly all the other Oslo mechanisms have ground to a halt."⁴⁴

Both sides have resorted to charging the other party with rampant violations of Oslo II. This legal crossfire is a result of inappropriately treating Oslo II as a permanent accord rather than the stop-gap truce it was intended to be. The Palestinians claim Israel has refused to meet their water needs, engaged in discriminatory pricing, and used its control over the JWC to repeatedly deny Palestinian requests for licenses to drill wells over the Aquifer.

These accusations have varying degrees of merit. First, Israel has technically met its Oslo II metrics; water supply to the West Bank has increased by 50%, or an additional 60 MCM/yr—22 million supplied by Israel directly and 40 MCM more from ninety new wells approved by the JWC—far more than the 20% increase of 23.6 MCM/yr mandated.⁴⁵ But the reality is that West Bank water supply is utterly insufficient, both because the

⁴¹ *Id.* cl. 2–3.

⁴² *Id.* cl. 3.

⁴³ *Id.* cl. 11–12.

⁴⁴ Silverbrand, *supra* note 25, at 620.

⁴⁵ See, e.g., IWA REPORT, *supra* note 9, at 6–7; Tal, *supra* note 10, at 62.

original PLO-negotiated allocation was and is "abysmally low,"⁴⁶ and as a result of Palestinian demographic trends. The West Bank population has roughly tripled in the last two decades, with the population currently estimated at 2.46 million, with a growth rate of 2.1 percent per year.⁴⁷ The calculus of "future Palestinian water needs" has exploded since Oslo II was drafted, thus exposing the Agreement's limitations as a temporary document forced to carry water beyond its service date.

The Palestinian complaint of discriminatory pricing appears valid on its face, although the Oslo II framework does not speak to pricing comprehensively. Palestinians can effectively pay as much as six times more than Israeli settlers in the West Bank per water unit.⁴⁸ Israelis assert that this discrepancy is incidental, due to generally applicable agricultural subsidies to farmers (most Israeli settlers are agricultural) and the inefficient infrastructure of Palestinian Water Authority transport.⁴⁹ Although the PWA purchases water from Mekorot at a price equal to Israelis (before agricultural subsidies), Palestinian municipalities will often charge an elevated price for distribution.⁵⁰ There is reason to believe that annual water price increases in cities like Ramallah are due almost entirely to wasteful Palestinian administration policies.⁵¹ Israelis also point out that the JWC's price-setting collaboration with Mekorot is legitimated by the fact that the JWC is a creature of Oslo II.⁵²

⁴⁶ Silverbrand, *supra* note 25, at 620.

⁴⁷ In 1989, only 860,000 Palestinians lived in the West Bank. *See, e.g.,* Tal, *supra* note 10, at 64.

⁴⁸ *See* Elver, *supra* note 1, at 427.

⁴⁹ *See id.* at 427–28.

⁵⁰ *See, e.g.,* Hadeel Wahdan, *Who's Gauging the Water Flow?*, MIDDLE EAST NEWS ONLINE, Feb. 23, 2000.

⁵¹ *Id.*

⁵² *See, e.g.,* Baumgarten, *supra* note 23, at 189.

Still, Palestinians argue that the JWC is, in reality, not a jointly managed committee, but an Israeli-dominated entity that has merely formalized discriminatory practices, and consistently refuses to grant licenses for Palestinian aquifer infrastructure construction.⁵³ Close scrutiny of the Committee's minutes reveals a more complicated reality: the JWC Hydrological Committee has approved the drilling of seventy new water wells and twenty-two observation wells for the West Bank Palestinians in the eastern sub-basin (of which only half have been implemented), the Water Works committee has approved more than twenty reservoirs and pumping stations, and the Sewage Committee has approved numerous wastewater treatment plants in all major Palestinian cities, to be funded by donor countries, only one of which has been constructed in El-Bireh.⁵⁴

Nevertheless, the water needs of Palestinians are not being met, and they have some legitimate legal grievances. Israel has not adequately policed Mekorot pricing, and the Joint Water Committee might well be capable of granting more Palestinian well licenses. However, these claims can be attributed, in part, to Oslo II's deficiencies. The Interim Agreement is nowhere close to sufficiently exhaustive when it comes to pricing, joint management, and public policy issues (like government subsidies)—and for good reason: the Interim Period was originally determined to extend no more than five years from its signing.⁵⁵ It cannot possibly account for recent demographic, political, and environmental contingencies like droughts and population growth and has not been filled in by Final Status talks in 16 years.

Much the same can be said of Israel's accusations of Palestinian violations. Israel alleges that Palestinians are drilling illegal wells outside the Interim Agreement's parameters. Since the signing of Oslo II, more than 250 "unapproved" wells have been drilled—mostly in the northern basin in the area of Jenin and the western basin near Qaqilya and Tulkrum—from which

⁵³ *Id.*

⁵⁴ IWA REPORT, *supra* note 9, at 5.

⁵⁵ *Id.* at 6.

the Palestinians are extracting about 10 MCM/yr.⁵⁶ The Agreement, however, states in § 7(b)(6) that the additional 28.6 MCM/yr earmarked for "future Palestinian needs" "shall be developed by the Palestinians from the Eastern Aquifer and other agreed sources in the West Bank,"⁵⁷ yet the JWC has failed to approve these illegal wells.

Additionally, West Bank Palestinians have adopted the recent practice of attaching unauthorized "pirate" connections to Mekorot water supply pipelines.⁵⁸ Israel has reported water shortages in Hebron, Kiryat Arba, Bani Naim, and other outposts, allegedly caused by water theft by inhabitants of the Sair and Shuyukh villages for irrigating fields along the fringes of the Judean desert.⁵⁹ The aqua-piracy, estimated at about 3.5 MCM/yr, has forced Israel to lay new pipelines across the West Bank.⁶⁰

These difficulties all ultimately reflect the extent to which Oslo II has out-lived its welcome. As the West Bank population has out-raced Oslo's obsolete water metrics, Israel's technically legal compliance has translated to dwindling Palestinian per-capita consumption.⁶¹ This has led to understandable acts of desperation. Crowing about successfully approved JWC wells (with numerous license requests pending)⁶² and satisfied

⁵⁶ *Id.* at 9–10.

⁵⁷ Oslo II, *supra* note 8, § 7(b)(6).

⁵⁸ IWA REPORT, *supra* note 9, at 11.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ E.g., Elver, *supra* note 1, at 428.

⁶² *Exposing Life Under Occupation: West Bank Water Fact Sheet*, PALESTINE MONITOR, (Dec. 18, 2009), available at <http://www.palestinemonitor.org/spip/spip.php?article14> (stating that over 140 well license requests have been pending for ten years. This statistic is almost certainly exaggerated, however, according to most unbiased estimates. *See, e.g.*, THE WORLD BANK, MIDDLE EAST AND NORTH AFRICA REGION

benchmarks offer little consolation to West Bank inhabitants when the principal purpose of Oslo II's water article—meeting Palestinian water needs—has been warped by the swift passage of time.

Yet water robbers and unlicensed well drilling are not what Israelis find most objectionable about Palestinian Oslo compliance.⁶³ When asked to point fingers across the diplomatic divide at specific violations—and these parties rarely await a request—Israel focuses on Palestinian failures at water infrastructure development. Sections Two and Three of the Interim Agreement state the responsibility of both parties to make efforts to develop alternative water supply sources (like wastewater recycling and desalination) and to maximize conservation by reducing inefficient distribution. In an interview, Lieutenant Colonel Sharon Davidovich, the Israeli National Director of the Jewish National Parsons Water Fund, articulated his side's exasperation: "Use foreign donations to build a wastewater treatment or desalination plant," he insists, "and I guarantee you, you will never hear another Israeli mention the word piracy again."⁶⁴

Israel perceives the Palestinian Authority as willfully refusing to cooperate on these issues, and thus, failing to meet their §§ 2-3 obligations. Palestinian experts themselves acknowledge, for example, that about thirty percent of the scarce water allocated to West Bank cities leaks out of poorly maintained pipes, despite the availability of technologies that could quickly identify and plug such leaks.⁶⁵

SUSTAINABLE DEVELOPMENT, WEST BANK AND GAZA: ASSESSMENT OF RESTRICTIONS ON PALESTINIAN WATER SECTOR DEVELOPMENT NO. 47657-GZ (Apr. 2009) [hereinafter THE WORLD BANK].

⁶³ See Interview with Lt. Col. (Res.) Sharon Davidovich, National Director, JNF Parsons Water Fund, in New York, N.Y. (Feb. 11, 2011) [hereinafter Davidovich Interview].

⁶⁴ *Id.*

⁶⁵ See Ziad Abdeen, *Water Culture in Palestine*, in WATER WISDOM 67, 67–70 (Alon Tal & Alfred Abed Rabbo eds., 2010); see also Avi Rabinovich, *Israeli Firms Aim to Plug World's Water Leaks*, REUTERS, Nov. 3, 2009,

Nor have the Palestinians endeavored to develop new, alternative water sources. Israel has responded to the water crisis by utilizing desalination plants, wastewater treatment, and stormwater impoundment to increase its overall water supply by about 2,000 MCM/yr.⁶⁶ Unlike desalinated water, recycled wastewater is not usually drinkable; however, wastewater facilities can produce irrigation-quality water, thus liberating potable freshwater supplies that otherwise would have been siphoned off to agricultural uses. Israel has cut the amount of fresh water earmarked for agriculture by half in the last decade by increasing the percentage of municipal sewage that is treated and used for irrigation by 72%. Sewage treatment therefore presents an opportunity to not only protect scarce environmental resources (like groundwater) from contamination, but to *increase* those resources as well.

With the exception of the treatment plant at El-Bireh, Palestinians have not constructed any new desalination or recycling facilities in the last decade.⁶⁷ This has already resulted in cataclysmic environmental hazards. Of the roughly 52 MCM/yr of sewage produced by West Bank inhabitants, only about 4 MCM/yr is treated by plants, with the rest flowing downhill into Israeli and Palestinian soil, a violation of § 3(f) of the Interim Agreement (sewage obligations).⁶⁸ This has converted the Kishon, Alexander-Nablus, Modiin, Kidron, and Hebron streams into foul sewage tracts, and

<http://www.reuters.com/article/2009/11/04/us-water-israel-leaks-idUSTRE5A303X20091104> (describing the readily available technology with which countries can retro-fit and modernize their water pipes in order to minimize wasteful leakage).

⁶⁶ IWA REPORT, *supra* note 9, at 15.

⁶⁷ *Id.* at 13. Plans for a new \$6.2 million wastewater facility in Jenin to be jointly managed by the Palestinian Water Authority, Japanese government, and U.N. Development program were announced three years ago, but construction has appeared to stall. See *Palestine: Japan, Palestinian Water Authority and UNDP/PAPP Sign a 6.2 Million Dollar Agreement to Manage Wastewater*, WASH. NEWS, MIDDLE EAST & NORTH AFRICA BLOG (Mar. 20, 2009), <https://washmena.wordpress.com/tag/palestinian-water-authority/>.

⁶⁸ IWA REPORT, *supra* note 9, at 12.

contaminated wells in Bethlehem, the Jordan Valley, and Jerusalem, leading to their closure, and thereby exacerbating supply shortages.⁶⁹

Lack of Palestinian economic resources cannot account for the conspicuous absence of wastewater and desalination plant projects (or, for that matter, stalled pipe modernization), as some argue.⁷⁰ A host of donor countries (including Germany, the USA, and Japan as well as the World Bank) have expressed their willingness to allocate considerable funds of over \$300 million per year for facility construction, but the Palestinians have not advanced the projects.⁷¹ From 2002–2007, of the \$130 million of foreign aid earmarked for sewerage systems, only \$25 million has been invested in the El-Bireh plant; the Palestinian Authority has declined foreign funding for desalination and sewage treatment facilities in Nablus, Tulkarm, Jenin, Salfit, Ramallah, Kidron, Hebron, and other villages.⁷² This extends to urban delivery system neglect: Alon Tal observes,

Regardless of one's view, even the most avid Palestinian advocates would have a hard time making the case that a fair share of the prodigious humanitarian assistance has been allotted to Palestinian water infrastructure. Despite the generosity of the international community, investment in improving municipal water delivery has been insignificant.⁷³

So, why on earth is the Palestinian Authority refusing to allocate foreign aid to Oslo II water supply goals? The answer, once again, originates with

⁶⁹ *Id.*

⁷⁰ *See, e.g.,* ELMUSA, *supra* note 23, at 321 (arguing that economic imbalances between Palestinians and Israelis account for the discrepancy in alternative water resource development projects).

⁷¹ IWA REPORT, *supra* note 9, at 14.

⁷² *Id.*; *see also* Palestine, *supra* note 67 (reporting on the Palestinian Authority's refusal to accept foreign funding).

⁷³ Tal, *supra* note 10, at 7.

Oslo II's flaws as an ad hoc document of fleeting usefulness. By dangling the notion of final status negotiations in the near future, Oslo II de-legitimized its own authority, and created an incentive for prospective bargaining tactics. The Palestinian Authority views any acceptance of foreign aid for water recycling purposes as potentially fraught with invisible strings attached—namely, that acceptance could be interpreted as a forfeiture of the Palestinians' sovereign claim to the entire mountain aquifer.⁷⁴ Final negotiations would surely be sponsored by the U.S. and chaperoned by the international community, and Palestinians are wary of weakening their position at the proverbial future table—both regarding claims to the freshwater sources they believe are theirs and to innumerable other associated issues.

The specter of Final Status Talks increasingly resembles a fading mirage in the desert—it wavers on the horizon, and each party sees in it what it wishes to see. For the Palestinians, that means refugees, the "right of return," final status of Jerusalem, and water sovereignty. "The Palestinians will not take funds gift-wrapped for alternative water resource development," Lt. Col. Davidovich said, "they view it as a white flag in the aquifer conflict, and perhaps not entirely unreasonably."⁷⁵

A prime example was the Palestinian Authority's response to a March 2009 joint Israeli-American offer to donate a portion of land in Hadera for building a desalination plant for Palestinian use. The official Palestinian Water Authority statement read: "The Palestinian side refuses to resort to alternative water supplies, such as desalination, before regaining its rights to the water from the aquifers and the River Jordan. Desalination plants do not deal with the issue of Palestinian water rights."⁷⁶ Nor will the Palestinian Authority agree to purchase from Israeli desalination plants operating only a

⁷⁴ *See, e.g., id.* at 11.

⁷⁵ Davidovich Interview, *supra* note 63.

⁷⁶ *Palestine*, *supra* note 67.

few kilometers away and which produce one thousand liters of crystal-clear water for fifty cents.⁷⁷ "Rights," in other words, are holding "needs" hostage.

Both parties' alleged Oslo II breaches are symptomatic of the Interim Agreement's limitations. This is not to say that the Israelis and Palestinians are blameless. Each has probably breached Oslo: the Israelis have been too lenient with Mekorot's discriminatory pricing, whatever they say on the subject of agricultural subsidies for Jewish settlers, and the Palestinians have failed to develop their infrastructure or consistently follow JWC channels before drilling illegal wells and pirate connections.

But Oslo II itself remains the real culprit. It could not account for changing demographic, hydrological, and climate trends fifteen years later; it left numerous issues purposefully unsettled; and most problematic, it declared a nebulous date with a destiny that left both parties scrambling to tactically outmaneuver one another and gain future leverage. It thus offers slightly more help than the rest of the international water law in providing practical solutions.

The West Bank Palestinians are therefore suspended in a physical and diplomatic drought with a deficit of legal authority upon which to state a claim.

In biblical times, this is where God would come in.

II. PRIVATIZATION AND THE NEW "STAFF OF MOSES"

In the Bible's *Exodus* passages, the weary Israelites demand water of Moses. But their prophet has no water in his possession to give, and the miracle comes from an untapped source.

In the Middle East, history often (tragically) repeats itself. The Israelis do not have sufficient water to satisfy the Palestinians' growing demand. If annual precipitation continues to drop, Israel will soon be approaching

⁷⁷ See Tal, *supra* note 10, at 11.

minimal WHO standard levels of potable drinking water;⁷⁸ it cannot realistically (or politically) be expected to further deprive its citizens of fresh water sources before Final Status Talks offer them something in return. Even if Israel was willing to do the unthinkable, it would still not be enough; a recent study by the Palestine Economic Policy Research Institute projected that, if current demographic, economic, and environmental trends continue in the region and no new water resources are developed, *total* regional demand for water would be three times the supply by 2020.⁷⁹ The bottom line is this: if Palestinians do not begin investing in retro-fitting urban water delivery, desalination plants, and modern sewage infrastructure, all the new allocation schemes and legal indictments in the world will not save them from thirst.

The Palestinians dream of an equitable two-state solution that safeguards their water rights in the West Bank; and who can possibly blame them? Yet, in hearing only the tempting siren call of Final Status Talks, they sacrifice available remedies in the present. So, how can they be convinced to plug their own ears with Odyssean wax and sail past such concerns? The challenge is to craft a solution to ameliorate the water supply problem while persuading the Palestinians that developing alternative water sources will not divest them of their future "water rights." The solution may lie in an alternative vehicle to a state-run development project: privatization.

Private sector investment is not accompanied by the same "strings attached" paranoia as foreign aid. Even if the Palestinians protest abandoning Oslo II's "rights" language, privatization would actually *strengthen* the Palestinians' argument, stripping Israel of its §§ 2–3 "infrastructure clause" allegation: The Palestinian Authority would be utilizing private sector expertise to minimize inefficiency, develop new supply sources, and manage their waste—all without the charity of foreign governments. Moreover, expanded privatization would reduce Palestinian dependency on Mekorot supply and prices, diffusing tensions in the peace process.

⁷⁸ See, e.g., Elver, *supra* note 1, at 427.

⁷⁹ See Anan Jayyousi & Fathi Srouji, *Future Water Needs in Palestine*, 2009 PALESTINE ECON. POL'Y RES. INST. 49.

There is the possibility, of course, that the Palestinians will view alternative water source development *of any kind* as a waiver of aquifer sovereignty, regardless of whether the funding comes from private investment or foreign aid. This seems unlikely, given the incontrovertibly independent self-sufficiency of private sector investment compared to foreign donations. Nevertheless, a voluntary stipulation by Israel that any Palestinian partnerships with private firms to construct development facilities will not affect future rights claims could certainly alleviate any remaining Palestinian reservations. The Palestinians willingly signed Oslo II, in part, because of a similar stipulation in Article 40's clause 8: "The provisions of paragraphs 6–7 above shall not prejudice the provisions of paragraph 1 to this Article"—in other words, that the established metrics of Palestinian water needs would not dilute the previous recognition of their sovereign rights claims.⁸⁰ It is in the interests of both parties to ameliorate the region's water shortages, and Israel would likely be more than willing to incentivize Palestinian water development.⁸¹

The West Bank's Palestinians can do more than pray to the heavens for salvation. They do not require a divine staff to spring water from rock as the Israelites did; their key to unlocking life from the seemingly barren surrounding terrain may well be the private sector.

Part II will first summarize the general critique of privatizing an essential humanitarian good, like water, and the difficulties recent water privatization projects have encountered, then argue that the current opportunities in the West Bank outweigh those concerns. It will then explain how the Fayyadist state-building in the West Bank has recently established a regulatory and economic environment that is amenable to private investment, briefly note the legal hurdles to increased privatization in the water sector, and then apply the lessons offered by a case study of the private water market in Gaza.

⁸⁰ Oslo II, *supra* note 8, cl. 8.

⁸¹ See Davidovich Interview, *supra* note 63.

A. THE CHALLENGE

Critics of water privatization argue that water is a public good and a basic human right that cannot be surrendered to private control.⁸² The concern is that private companies have the welfare of their investors at heart, not the health of the general population; they will exclusively pursue profits, raise prices to unaffordable levels, disregard notions of equity, and reduce access to quality water. If these corporations encounter difficulties or if returns are insufficient, they may well abandon their project. Thus, because sovereign governments are bound by an imperative duty to provide access to water for its citizens, deferring to private companies to commoditize a natural resource constitutes a per se violation of human rights. So goes the reasonable critique.

There is no reason, however, that states cannot fulfill their obligations to the general population with proper regulation and oversight of any private role in water infrastructure. As noted previously, the ICESR is one of the documents cited by water rights advocates as outlining a basic human right to water. General Comment 15, however, states the following:

Where water services . . . are operated or controlled by third parties, States parties must prevent them from compromising equal, affordable, and physical access to sufficient, safe and acceptable water. To prevent such abuses an effective regulatory system must be established, in conformity with the Covenant and this General Comment, which includes independent

⁸² See, e.g., Sarah I. Hale, *Water Privatization in the Philippines: The Need to Implement the Human Right to Water*, 15 PAC. RIM L. & POL'Y J. 765, 765 (2006); Violeta Petrova, *At the Frontiers of the Rush for Blue Gold: Water Privatization and the Human Rights*, 31 BROOK. J. INT'L L. 577, 582 (2006).

monitoring, genuine public participation, and imposition of penalties for non-compliance.⁸³

The human rights regime itself, therefore, contemplates the notion of non-state third parties controlling a state's water supply. Private sector involvement in water distribution raises a number of critical challenges, but it is difficult to insist that privatization itself is, by definition, a violation of water rights.

The recent record of water projects in the developing world is admittedly mixed. The Phillipines' 1997 privatization of Manila's Metropolitan Waterworks and Sewerage System, for example, led to skyrocketing prices and a complete failure to provide affordable, clean drinking water and sewer services.⁸⁴ The plan's goal was to expand access to all of the city's 11 million residents and streamline municipal efficiency, but it failed to deliver meaningful improvements.⁸⁵

The privatization disaster in Cochabamba, Bolivia is often cited as the prototypical cautionary tale.⁸⁶ A municipal company, SEMAPA, had controlled the water system in Cochabamba before privatization, but only provided it to 57% of the population, and the system's inefficiencies lost half the water supply in transport leaks.⁸⁷ Water was rationed and those without

⁸³ ECOSOC, Comm. on Econ., Soc. & Cultural Rights, Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social, and Cultural Rights: General Comment No. 15 (2002), U.N. Doc. E/C.12/2002/11 (Jan. 20, 2003).

⁸⁴ Hale, *supra* note 82, at 768.

⁸⁵ *Id.*

⁸⁶ See, e.g., Maria McFarland Sanchez-Moreno & Tracy Higgins, *No Recourse: Transnational Corporations and the Protection of Economic, Social, and Cultural Rights in Bolivia*, 27 FORDHAM INT'L L.J. 1663, 1725 (2004).

⁸⁷ See Melina Williams, *Privatization and the Human Right to Water: Challenges for the New Century*, 28 MICH. J. INT'L L. 469, 496–98 (2007).

access purchased water from private wells and vendors.⁸⁸ In 1998, the World Bank pressured Bolivia to privatize the system as a condition of a massive foreign aid loan.⁸⁹ The project was awarded to Aguas del Tarini, a transnational subsidiary of American company Bechtel. The concession agreement mandated an expansion of services but failed to regulate price hikes with any specificity beyond the vague command of the system being "accessible, fair, and efficient" when dealing with users.⁹⁰ Aguas del Tarini raised rates by 35%, and some citizens reported increases in water prices as high as 200%.⁹¹ When workers began receiving monthly bills amounting to half their total income, the population began to revolt.⁹² The passionate and, at times, violent protests that followed have been termed the "Water War." Eventually, the Bolivian government was forced to cancel the concession.

The developing world landscape is littered with failed water privatization projects, but it is no graveyard. There have also been some notable triumphs.⁹³ A less than stellar success rate should not dissuade the West Bank Palestinians from considering the merits of partial privatization.

Much distinguishes a potential West Bank private sector effort from the fiascos in Bolivia and the Philippines. First, this article is not advocating wholesale privatization or "divestiture" of the West Bank Palestinians' water supply, which is what most failed development projects have attempted. It advocates instead an increased role for the private sector in building infrastructure like wastewater and desalination plants, which will, in turn, *add* to the Palestinian water supply. This would look far less like the notorious

⁸⁸ See Sanchez-Moreno & Higgins, *supra* note 86, at 1748.

⁸⁹ See Williams, *supra* note 87, at 496.

⁹⁰ See Sanchez-Moreno & Higgins, *supra* note 86, at 1756.

⁹¹ Williams, *supra* note 87, at 497. Also critical is the fact that the concession agreement forced Aguas del Tarini to take on all of SEMAPA's debt, thus creating a likelihood of escalating prices. *Id.*

⁹² *Id.*

⁹³ See *infra* pp. 228–29.

past divestiture failures and more like the kind of "public-private partnerships" proposed by world leaders at the Third World Water Forum in Kyoto, Japan in 2003.⁹⁴

Second, past privatization disasters have turned largely on insufficient government regulation,⁹⁵ a shortcoming that the increasingly robust Palestinian Authority government can avoid with proper supervision through regulatory frameworks. I will argue in the following sections that the current economic and political environment in the West Bank presents an unprecedented opportunity for successful private sector investment in water development, and that recent water experiments in Gaza and Israel's Middle Eastern neighbors may prove instructive for the West Bank.

Perhaps most importantly, the Palestinians are already dependent on the prices of an Israeli water company, Mekorot, and the region's total water supply is unsustainable. Pursuant to the state regulatory obligations outlined in the ICESR's General Comment 15, private sector recruitment is the best option for increasing Palestinian control over their water destiny.

B. THE MOMENT

"I have to admit, we, the private sector, have changed. The mood used to be all the time to complain and say there is nothing we can do. And then the politicians were trying to create this atmosphere of resistance—no development under occupation. Now, Fayyad and his boss, President Mahmoud Abbas, changed that. Now the mood, said Hulileh, is that improving the Palestinian economy "is what will enable you to resist and be

⁹⁴ See Third World Water Forum, Mar. 22–23, 2003, Kyoto, Japan, *Ministerial Declaration: Message from the Lake Biwa and Yodo River Basin*, para. 6 (Mar. 23, 2003), <http://www.un-documents.net/a57-785x.htm> [hereinafter *Ministerial Declaration*].

⁹⁵ See Hale, *supra* note 82, at 768; Petrova, *supra* note 82, at 587; Williams, *supra* note 87, at 499.

steadfast. Fayyad said to us: 'You, the business community, are not responsible for ending occupation. You are responsible for employing people and getting ready for the state. And that means you have to be part of the global world, to export and import, so when the state will come you will not have a garbage yard. You will be ready.' " Samir Ulileh, CEO of Palestine Development and Investment, which owns the Al-Quds Index.⁹⁶

The traditional reasons private sector investment in the Palestinian territories has been viewed as unattractive are risk and economic underdevelopment. Instability, governmental non-transparency, and a lack of access to capital do not make for a happy investor. As long as Israeli security unpredictably restricted movement, capital flow was dubious, and institutional corruption remained systemic, an increased private sector role in water infrastructure development in the West Bank seemed out of the question. In 1997, Sharif Elmusa captured the conventional wisdom, writing that private contracting to build water recycling facilities was "precluded for the foreseeable future."⁹⁷

That was the case under Yasser Arafat's Fatah-led Palestinian government, which is no longer the case today, thanks to what some have labeled "Fayyadism." This emerging philosophy refers to the leadership of Palestinian Authority Prime Minister Salam Fayyad, a former World Bank economist, who, in collaboration with his boss, President Mahmoud Abbas, has emphasized bottom-up state building in the West Bank over violent and rhetorical resistance to Israeli occupation. The theory is that if Palestinians can build a real economy, a professional security force, and an effective,

⁹⁶ Thomas Friedman, *The Real Palestinian Revolution*, N.Y. TIMES, June 29, 2010.

⁹⁷ ELMUSA, *supra* note 23, at 323. *See also* Elver, *supra* note 1, at 427 (stating that West Bank Palestinians "lacks the financial means for new investment and the necessary institutions to impose good management to ensure that the best use is made of limited water resources").

transparent government bureaucracy, it will eventually leave the Israelis no choice but to formally recognize a de facto Palestinian state.

The strategic shift has begun to pay dividends. With annual outbreaks of violence continuing to decrease since the last Intifada, senior Israeli military officials have acknowledged that Fayyad's trained security forces are "the real deal."⁹⁸ The approval is not merely symbolic; Israel has relaxed its checkpoint restrictions and road-blocks within the West Bank, which has led to an increased flow of investment and commerce.⁹⁹ The Palestinian economy grew by a resounding 9% last year, the Al-Quds Index (Palestinian Securities Exchange) increased by 18%, and wages are skyrocketing.¹⁰⁰

In its September 2010 report, the IMF attributed the West Bank's newly flourishing economy to a number of factors beyond improved security. It praised aggressive financial sector reforms implemented by the P.A., which brought territory banks into line with international lending standards and established a modern credit-scoring system to facilitate borrowing.¹⁰¹ On the fiscal side, The Palestinian Authority cut public payrolls and subsidy spending, allowing it to decrease dependence on foreign aid—from Europe,

⁹⁸ Friedman, *supra* note 96.

⁹⁹ See Charles Levinson, *IMF: Palestinian Economy Is Growing*, WALL ST. J., Sept. 13, 2010, <http://online.wsj.com/article/SB10001424052748704621204575487753108024146.html>.

¹⁰⁰ See Michael Oren, *The West Bank Serves as Model of Prosperity*, WALL ST. J., Aug. 13, 2010, <http://online.wsj.com/article/SB10001424052970203863204574348292035667088.html>.

¹⁰¹ Staff Report for the Mtg. of the Ad Hoc Liaison Comm. Int'l Monetary Fund, *Macroeconomic and Fiscal Framework for the West Bank and Gaza: Sixth Review of Progress*, at 3 (N.Y.: Sept. 21, 2010) <http://www.imf.org/external/country/WBG/RR/2010/092110.pdf> [hereinafter IMF Report].

the U.S. and Arab countries—from \$1.8 billion in 2008 to \$1.2 billion in 2010.¹⁰²

Of particular interest to utility privatization prospects is the P.A.'s gradual phasing-out of electricity subsidies by transferring distribution from municipalities to private companies. In early 2010, the P.A. sold the city of Nablus' electrical utilities to the Northern Electricity Distribution Company (NEDCO), which promptly installed about 170,000 pre-paid meters to improve bill payment.¹⁰³ Thus far, the move appears to have been both fiscally efficient and beneficial to consumers.¹⁰⁴

But potentially most advantageous for prospective water investors are the new regulations the P.A. and IMF have been preparing. The New Companies Law removes bureaucratic red tape for infant companies. The New Investment Law and New Industry Law both, in the IMF's words, "ensure a fair treatment of private companies independently of the sector of operation," And the Movable Assets Law facilitates access to finance by enabling the use of movable assets as collateral.¹⁰⁵

Other legal hurdles to altering the public-private balance of water administration would ultimately be negligible, given the reality of West Bank politics. Regarding possible foreign investment, the Palestinian Authority's 1998 Law on the Encouragement of Investment in Palestine is rather accommodating: rife with incentives like customs and income tax breaks,¹⁰⁶ it also prohibits national seizure and expropriation except in extraordinary

¹⁰² *Id.* at 24.

¹⁰³ *Id.* at 20.

¹⁰⁴ *Id.*

¹⁰⁵ Each of these provisions are currently awaiting President Abbas's signature. *Id.* at 21.

¹⁰⁶ Palestinian National Authority, Law on the Encouragement of Investment in Palestine, L. No. 1, art. 22 (1998), available at http://www.pic-palestine.ps/userfiles/file/pdfs/invest_law_e.pdf.

circumstances.¹⁰⁷ Although water is not one of the specially protected public sectors in Article 4, Article 3 provides that "any investor may invest in any sector of the Palestinian economy, unless it contravenes other laws."¹⁰⁸ This, as one might guess, implicates the 2002 Public Water Law No. 3, which establishes all water in the Palestinian territories as public property and grants the Palestinian Authority exclusive control over its supply, management, and distribution.¹⁰⁹

At first blush, The 2002 Public Water Law would appear to fatally clog the private investor's faucets. Fortunately, this is not the case for a number of reasons. First, as this article has argued, the most critical contribution the private sector could make to water management in the West Bank is the construction and management of alternative supply facilities, such as wastewater treatment and desalination plants. Modernization of existing infrastructure so as to minimize leaks, while important, does not offer the same potential for a dramatic increase in supply. In this context, it is entirely possible that the Palestinian Authority would choose not to interpret such activity as *privatization* per se—meaning the transferred ownership of the West Bank's existing water resources—but rather, construction contracts to produce a new supply for state-regulated distribution. Even if the P.A. does not so interpret the Public Law, this very year the newly Fayyadist P.A. government did not hesitate to transfer control of its electrical utilities to a private company in order to cut subsidies and maximize efficiency. If, in order to increase the Palestinians' water supply, it takes the repeal of a legislative act rather than approval of the Council of Ministers—as it did for electrical distribution, under LEIP, art. 4—that may well be the course of Fayyad and Abbas. It is nonetheless an existing obstacle.

¹⁰⁷ *Id.* art. 7.

¹⁰⁸ *Id.* arts. 3, 4.

¹⁰⁹ Palestinian National Authority, Water Law No. 3, art. 3 (2002), available at http://www.pwa.ps/Portals/_PWA/water%20law3-2002.pdf.

C. A GAZA CASE STUDY: LESSONS AND OPPORTUNITIES

This article has thus argued for the *necessity* of developing alternative water sources in the West Bank and the unprecedented, political and economic *feasibility* of private investment in West Bank water production. This section will briefly turn to the question of *practicability* of private sector development of alternative sources.

Can wastewater and desalination plant contractors turn a profit producing high-quality, recycled water in the West Bank while keeping prices reasonable? Lt. Col. Sharon Davidovich believes it is possible: "I think that, given the governing climate emerging under Fayyad, the question now becomes whether the P.A. can engage in a productive partnership with private firms to balance consumer welfare with private incentives. Look at our fellow Middle Eastern countries. Look at Gaza. It can be done."¹¹⁰

The recent experiences of the West Bank Palestinians' regional neighbors suggest an array of different public-private policy options. In Amman, Jordan, service quality improved considerably under a four-year wastewater management contract awarded in 1999 to a consortium led by Suez Lyonnaise des Eaux.¹¹¹ The Jordanian government contributed minor subsidies in order to keep prices stable, while harnessing private sector expertise to streamline efficiency.¹¹² Abu Dhabi has taken a slightly different route: it contracted the private IWPP water and power company to build it a state-of-the-art water plant in 1998, provided minor subsidies for a few years while IWPP managed production, then bought back control; it now uses the plant technology to provide clean water to locals for almost nothing.¹¹³

¹¹⁰ Davidovich Interview, *supra* note 63.

¹¹¹ Digby Lidstone, *To the Last Drop: Private Sector Expertise Can Provide a Solution to Some of the Problems Facing the Middle East Water Sector*, MIDDLE E. ECON. DIG., Aug. 27, 2004.

¹¹² *Id.*

¹¹³ *Id.*

But the closest analogue to the West Bank is the other Palestinian territory, the seaside Gaza Strip. In the 1990s, potable water quality and availability in Gaza was dreadful. The 1.3 million inhabitants were wholly dependent on the coastal aquifer, a groundwater chamber comparable to the West Bank's mountain counterpart, quickly overdrew the reserve.¹¹⁴

At first, market solutions encountered difficulties. In 1998, a UK company, Acqua, invested in a project to build a small desalination plant of 200 cubic meters a day to provide water to Shejaia, an East Gaza City governorate.¹¹⁵ At 78 cents per jerry can, which is approximately 20 liters, most poor households could not afford the water.¹¹⁶ Further, by 2000, the overdrawn aquifer was providing undrinkable water with ultra-high salinity.¹¹⁷ Soon, however, an active entrepreneurial private sector responded by recruiting micro-financers to install "reverse-osmosis" (RO) desalination units in household kitchens for about 300 dollars each, filtering out the dangerous nitrates from the aquifer water.¹¹⁸ According to the World Bank, Gaza's private sector supplied over 100,000 households with RO plants.¹¹⁹

Over the next few years, many commercial desalination plants have been built in Gaza for investment costs of between \$20,000 and \$40,000, most of which private investors covered with their own resources, rather than with bank loans.¹²⁰ These plants have reached the poor households that could not afford the RO plants.¹²¹ In this new system, 200 liter polyethylene tanks

¹¹⁴ See THE WORLD BANK, *supra* note 62, at 118.

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.* at 119.

¹²⁰ *Id.*

¹²¹ R. El Sheikh, *Regulatory Challenges of Palestinian Strategies on Distribution of Desalinated Water*, 165 ESLEVIER B.V. 84, Feb. 23, 2004.

are filled by a tanker once a week and transported to households, which pay about 15 cents per jerry can—above the public prices, but far less than Acqua's original rates.¹²² Private investors have helped increase the number of Gazans with access to water, and reportedly made a profit doing it.¹²³ The World Bank calls the desalination plants a "viable commercial market with further growth potential;" they are generally considered to be an "affordable, self-sufficient, and sustainable way to supply water to Gaza's citizens."¹²⁴

Gaza's private water sector activity, however, is not perfect. First, lack of regulatory oversight by Hamas (the Palestinian ruling party in Gaza) has led to lowered water quality standards.¹²⁵ Without sufficient monitoring, recycled water can be dangerous; the commercial desalination plants in Gaza produce water with lower levels of healthy minerals than the public water supply, and experts contend that lax regulation is part of the reason investors have been financially successful.¹²⁶ Second, the energy costs accompanying desalination industry have been extensive. For the commercial desalination plants, about 60% of costs cover energy; for households, installation of RO desalination units can push up monthly electrical bills by 25%.¹²⁷ The World Bank has advocated the construction of a Gaza power plant to alleviate the problem.¹²⁸

The West Bank can appropriate the best of Gaza's experiment and address its deficiencies. First, unlike Gaza, the West Bank is land-locked; private investors would therefore have to install brackish water plants (and units) to desalinate the eastern aquifer water at the chamber's edges that is

¹²² THE WORLD BANK, *supra* note 62, at 119.

¹²³ *Id.* at 118.

¹²⁴ *Id.* at 119.

¹²⁵ *See, e.g.*, Sheikh, *supra* note 121.

¹²⁶ *See, e.g., id.*

¹²⁷ THE WORLD BANK, *supra* note 62.

¹²⁸ *Id.*

otherwise too mineral-heavy for drinking. The technology costs of both this process and wastewater treatment is cheaper than the seawater-desalination in Gaza: wastewater treatment costs about 60 cents per cubic meter, while brackish desalination is approximately 70 cents per cubic meter and saltwater desalination roughly \$1.50 per cubic meter.¹²⁹ This should lower production costs and suppress prices.

Second, the West Bank's electrical utility privatization has already lowered energy prices and streamlined efficiency in multiple municipalities, and the P.A. plans to extend the ownership transfer to the rest of the territory.¹³⁰ An extension may well alleviate the energy price escalation that has plagued Gaza's water production. Finally, the Palestinian Authority has earned credibility in recent years at issuing tough regulations across multiple sectors.¹³¹ The West Bank P.A. must not carelessly issue licenses to new plants without continuously monitoring mineral levels in the brackish and wastewater recycled product. In so doing, the West Bank can replicate Gaza's successes while averting its regulatory failure.

CONCLUSION

Any Middle Eastern government might balk at the notion of privatizing its water supply, even if the privatization is partial. There is no shortage of developing countries that have suffered the potential perils of water privatization disasters. Although inhabitants of Ramallah, Bethlehem, and Hebron have long known that, where water is concerned, "the private sector is the key to better services,"¹³² hesitancy about surrendering control of a scarce resource is understandable.

¹²⁹ ELMUSA, *supra* note 23, at 322.

¹³⁰ IMF Report, *supra* note 101.

¹³¹ *See, e.g.*, Friedman, *supra* note 96.

¹³² Lidstone, *supra* note 111.

This article, however, has argued that the water scarcity in the West Bank is the *very reason* why private sector involvement may be the best option for the future. International water law, including Oslo II, has proved inadequate at addressing the needs of the West Bank Palestinians. Even if the P.A. were able to extract massive, unrealistic allocations from Israel's water supply, alternative resource development would still be imperative, given demographic and environmental trends.

As long as Final Status Negotiations linger on the horizon, the Palestinians are intent on focusing the water debate on sovereign rights, rather than humanitarian needs. They view foreign donations offering funding for development facilities as Trojan Horses stuffed with rights waivers. This Catch-22 leaves the P.A. stranded, without help from the law, and without help from abroad.

But the Palestinians can help themselves. Private sector recruitment offers a way to sidestep foreign aid's attached strings (real or imagined) and reduce tensions with Israel over allocation. Not only could (partial) privatization increase the West Bank's water supply by treating wastewater for agricultural use and desalinated water for domestic use, it would also undercut Israel's Oslo argument that the Palestinians are violating their obligations to optimize water system efficiencies and treat sewage.

The anxiety that privatizing water management would sacrifice control over a critical public good and create a national security risk has it backwards: Contracting with private investors to build alternative water sources would buttress Palestinians' control over their destiny, not destabilize it. Today, the West Bank Palestinians are wholly dependent on Israeli Mekorot prices and wasteful municipal administration, and drought forecasts and population growth have them on a calamitous humanitarian crash course. As is, it would be difficult for Palestinians to have less control over their water supply than they currently enjoy.

Moreover, the current political and economic environment is as ripe as ever for private investment in the West Bank. Fayyadism has re-calibrated notions of Palestinian state-building. Increased security, governmental reform, and economic growth have combined to produce a unique moment in recent Palestinian history. The P.A. should learn from the successes and

failures of Gaza's experiment with private water management, and pursue an effective mix of regulation, investment incentives, and possible subsidy support to meet Palestinian needs.

Finally, privatizing water development in the West Bank can have a salutary effect on the peace process. Legal feuding over Oslo II has exacerbated tensions between Israel and the Palestinian Authority and added another conflict to the long list of disagreements contributing to the diplomatic dead-lock. Removing the water issue from the negotiations arena and reducing Palestinian dependence on Israeli water allocation could help diffuse the atmosphere. There is no guarantee that such efforts will help lay the road to Final Status Negotiations—there are myriad of other boulders obstructing that path, but it certainly cannot hurt.

Some things in the Middle East never change; a permanent water scarcity may well be one of them. Still, while Moses and the Israelites needed God in order to strike water from rock, the West Bank Palestinians of the 21st century do not.

APPENDIX I

The Israeli-Palestinian Interim Agreement on the West Bank and Gaza Strip, September 28, 1995 (OSLO II). ANNEX III, ARTICLE 40.

On the basis of good-will, both sides have reached the following agreement in the sphere of Water and Sewage:

Principles

1. Israel recognizes the Palestinian water rights in the West Bank. These will be negotiated in the permanent status negotiations and settled in the Permanent Status Agreement relating to the various water resources.
2. Both sides recognize the necessity to develop additional water for various uses.
3. While respecting each side's powers and responsibilities in the sphere of water and sewage in their respective areas, both sides agree to coordinate the management of water and sewage resources and systems in the West Bank during the interim period, in accordance with the following principles:
 - a. Maintaining existing quantities of utilization from the resources, taking into consideration the quantities of additional water for the Palestinians from the Eastern Aquifer and other agreed sources in the West Bank as detailed in this Article.
 - b. Preventing the deterioration of water quality in water resources.
 - c. Using the water resources in a manner which will ensure sustainable use in the future, in quantity and quality.
 - d. Adjusting the utilization of the resources according to variable climatological and hydrological conditions.

- e. Taking all necessary measures to prevent any harm to water resources, including those utilized by the other side.
- f. Treating, reusing or properly disposing of all domestic, urban, industrial, and agricultural sewage.
- g. Existing water and sewage systems shall be operated, maintained and developed in a coordinated manner, as set out in this Article.
- h. Each side shall take all necessary measures to prevent any harm to the water and sewage systems in their respective areas.
- i. Each side shall ensure that the provisions of this Article are applied to all resources and systems, including those privately owned or operated, in their respective areas.

Transfer of Authority

- 4. The Israeli side shall transfer to the Palestinian side, and the Palestinian side shall assume, powers and responsibilities in the sphere of water and sewage in the West Bank related solely to Palestinians, that are currently held by the military government and its Civil Administration, except for the issues that will be negotiated in the permanent status negotiations, in accordance with the provisions of this Article.
- 5. The issue of ownership of water and sewage related infrastructure in the West Bank will be addressed in the permanent status negotiations.

Additional Water

- 6. Both sides have agreed that the future needs of the Palestinians in the West Bank are estimated to be between 70–80 mcm/year.

7. In this framework, and in order to meet the immediate needs of the Palestinians in fresh water for domestic use, both sides recognize the necessity to make available to the Palestinians during the interim period a total quantity of 28.6 mcm/year, as detailed below:
 - a. Israeli Commitment:
 - (1) Additional supply to Hebron and the Bethlehem area, including the construction of the required pipeline—1 mcm/year.
 - (2) Additional supply to Ramallah area—0.5 mcm/year.
 - (3) Additional supply to an agreed take-off point in the Salfit area—0.6 mcm/year.
 - (4) Additional supply to the Nablus area—1 mcm/year.
 - (5) The drilling of an additional well in the Jenin area—1.4 mcm/year.
 - (6) Additional supply to the Gaza Strip—5 mcm/year.
 - (7) The capital cost of items (1) and (5) above shall be borne by Israel.
 - b. Palestinian Responsibility:
 - (1) An additional well in the Nablus area—2.1 mcm/year.
 - (2) Additional supply to the Hebron, Bethlehem and Ramallah areas from the Eastern Aquifer or other agreed sources in the West Bank—17 mcm/year.
 - (3) A new pipeline to convey the 5 mcm/year from the existing Israeli water system to the Gaza Strip. In the future, this quantity will come from desalination in Israel.

- (4) The connecting pipeline from the Salfit take-off point to Salfit.
 - (5) The connection of the additional well in the Jenin area to the consumers.
 - (6) The remainder of the estimated quantity of the Palestinian needs mentioned in paragraph 6 above, over the quantities mentioned in this paragraph (41.4—51.4 mcm/year), shall be developed by the Palestinians from the Eastern Aquifer and other agreed sources in the West Bank. The Palestinians will have the right to utilize this amount for their needs (domestic and agricultural)
8. The provisions of paragraphs 6-7 above shall not prejudice the provisions of paragraph 1 to this Article

The Joint Water Committee

11. In order to implement their undertakings under this Article, the two sides will establish, upon the signing of this Agreement, a permanent Joint Water Committee (JWC) for the interim period, under the auspices of the CAC.
12. The function of the JWC shall be to deal with all water and sewage related issues in the West Bank including, inter alia:
 - a. Coordinated management of water resources.
 - b. Coordinated management of water and sewage systems.
 - c. Protection of water resources and water and sewage systems.
 - d. Exchange of information relating to water and sewage laws and regulations.
 - e. Overseeing the operation of the joint supervision and enforcement mechanism.

- f. Resolution of water and sewage related disputes.
 - g. Cooperation in the field of water and sewage, as detailed in this Article.
 - h. Arrangements for water supply from one side to the other.
 - i. Monitoring systems. The existing regulations concerning measurement and monitoring shall remain in force until the JWC decides otherwise.
 - j. Other issues of mutual interest in the sphere of water and sewage.
13. The JWC shall be comprised of an equal number of representatives from each side.
14. All decisions of the JWC shall be reached by consensus, including the agenda, its procedures and other matters.
15. Detailed responsibilities and obligations of the JWC for the implementation of its functions are set out in Schedule 8.

Supervision and Enforcement Mechanism

16. Both sides recognize the necessity to establish a joint mechanism for supervision over and enforcement of their agreements in the field of water and sewage, in the West Bank.
17. For this purpose, both sides shall establish, upon the signing of this Agreement, Joint Supervision and Enforcement Teams (JSET), whose structure, role, and mode of operation is detailed in Schedule 9. . . .

APPENDIX II

Map of West Bank Mountain Aquifer
(<http://mapsomething.com/demo/waterusage/hydrology.php>)

Mountain and Coastal Aquifers

