

**Israel and Palestine:
Legal and Policy Aspects of the Current and Future Joint
Management of the Shared Water Resources¹**

Dr. Shaddad Attili,
Policy Advisor,
The Negotiation Support Unit
Ramallah, West Bank, June 2004

I. Introduction:

This paper discusses the current water status of Israel and the Palestinian Authority (hereinafter “Palestine”), and presents a vision for a future regime of joint management of the water resources after reaching a final agreement on water between Israel and Palestine.

Not until the Declaration of Principles in 1993¹, ratified by the Oslo II Accord, did the principles of equitable utilization and the shared management of regional resources between Israel and Palestine receive official recognition by Israel and become part of the negotiating agenda.

The definition of Palestinian water rights is a key element of the resolution of the present conflict. Any solution to be attained should include comprehensive joint monitoring and management of the water resources, as most water resources are shared (international), including the Jordan River. Water rights should be defined as an element of the permanent settlement, and to mark the end of conflicts and claims.²

Oslo II – as an Interim Agreement – only permitted a relatively small increase in the utilization of water resources by Palestinians, and otherwise preserved the *status quo* on other abstraction until a permanent status agreement. Article 40 of the Interim Agreement allocated an additional amount (70-80 million cubic meters/year) to Palestine, described as “the future need for the Palestinians” during the five year interim period³.

The definition of the water rights of the Parties should comply with international law, which calls for an equitable and reasonable allocation of the region’s shared freshwater resources. This will secure the rights of *both* Parties, and will provide an important tool for the sustainable management of the water resources.

¹ This paper has been reviewed by Dr. David Phillips, international transboundary water and environmental expert and Prof. Stephen McCaffrey, international legal advisor on transboundary watercourses.

II. Components of the water conflict:

The conflict between the Israelis and the Palestinians over shared water resources consists of three main elements:

II.1 Reallocation of the water resources:

International law governs the manner in which the freshwater resources shared by Israel and the future State of Palestine should be allocated. Under the Helsinki Rules of 1966⁴ and the 1997 United Nations Convention⁵ on the subject, Palestine is entitled to an equitable and reasonable allocation of shared freshwater resources, including those in the four main aquifers and the Jordan River (see Map 1). The equitable and reasonable allocation of these international watercourses will resolve the water rights of the two Parties. The attainment of the water rights of the Parties is a critical element for future political stability in the region as a whole⁶.

II.2 Joint monitoring and management of the shared water resources:

Experience elsewhere has shown that joint monitoring and management helps to secure each Party's rights and to enhance sustainable management and cooperation. Management of water resources in a pragmatic and practical way is the stated Israel preference, as against the Palestinian proposal for the joint management of the existing international watercourses, after their reallocation based on the principles of international law.

II.3 Compensation for damage:

Under international law, Israel as the occupying power must pay compensation for the past and ongoing illegal use of Palestinian water resources

Other elements of concern will be discussed between the Parties as aspects of cooperation. These include joint projects, desalination, the re-use of wastewater, pollution, etc.

III. An overview of shared water resources:

Israel and Palestine share the Jordan River with three other riparian countries: Lebanon, Syria and Jordan. Israel and Palestine also share four groundwater aquifer basins, three in the West Bank, and one in the Gaza Strip. The last of these is the Coastal Aquifer and lies in part under the Gaza Strip, extending along the Mediterranean coast (see Map 2).

A. Surface Water: the Jordan River Basin

The headwaters of the Jordan River (Hasbani, Dan and Baniyas Rivers) lie in Lebanon, Israel and Syria. These join to form the Upper Jordan River, which flows into Lake Tiberias (also called the Sea of Galilee and the Kinneret). After leaving Lake Tiberias, the Lower Jordan River forms the boundary between Israel and Jordan and then between the West Bank and Jordan, before flowing into the Dead Sea. There are thus five riparians to the Jordan River: Lebanon, Israel, Jordan, Syria and the Occupied Palestinian Territory of the West Bank. The total natural flow of the Jordan River varies between 1,287 million cubic meters (MCM)/year and 1,671 MCM/yr. Israel withdraws water from the north-western portion of Lake Tiberias and transports it out of the Jordan River Basin through its National Water Carrier to the coastal cities and the Negev desert. Israel has denied Palestinians access to the entire Lower Jordan River since 1967⁷. After the Six Day War in that year, Israel declared the West Bank land adjacent to the Jordan River a “closed military zone,” to which Palestinians have been denied access, to the present day⁸.

B. Groundwater: the West Bank and the coastal aquifer basins

A large groundwater aquifer basin underlies the West Bank and supplies high quality water to both Israelis and Palestinians. It is composed of three sub aquifers: the Western, the Eastern and the North-eastern Aquifer Basins. All three basins are fed chiefly by rainfall on the West Bank, responsible for 85% of the recharge to the aquifers.

Another aquifer system, the Coastal Aquifer Basin, underlies the coastal areas of Israel and the Gaza Strip. The Gaza Aquifer is part of this basin.

The total natural recharge of these shared aquifer basins averages 986 MCM/yr. According to the hydrological year 1999 data published in the hydrological service of Israel⁹, the total discharge and the abstraction from these was 1,256 MCM in that year. This quantity exceeds the natural recharge by 271 MCM, causing the depletion and damage of the aquifers. Recent data from the Palestinian Water Authority (PWA)¹⁰ shows that Palestinians are actually able to use only 114 MCM/yr in the West Bank. Table 1 shows the natural recharge, discharge and abstraction of the shared aquifers.

There are other ground water resources in the region, but these are either endogenous to Israel, as in the case of the Karmel basin (the boundaries of the basin lie wholly within Israel) or extend beyond the Israeli borders but have never been claimed by the neighbouring countries as shared basins. Table 2 presents the water balance of these basins. The nature and yields of these basins are not of sufficient importance for them to be claimed by neighbouring countries as transboundary watercourses. Hence in the Palestinian-Israeli water conflict these basins have been considered as being endogenous to Israel. Map 3 shows the surface waters and groundwater aquifers in the region.

Table1: Water balances for the groundwater basins shared by Israel and Palestine.

Basin	Natural Recharge	Well Abstractions	Spring Discharge	Total Discharge	
Coastal	299	420	-	420	

Basin	Natural Recharge	Well Abstractions	Spring Discharge	Total Discharge	Oslo II yields
Western,	366	399	52	451	362
Eastern /North-eastern aquifers	330	148	238	386	317
Total	995	967	290	837	679

Source: Hydrological Service of Israel, HSI (1999). All values in MCM/yr.

Table 2: Water balances for the other groundwater basins in Israel.

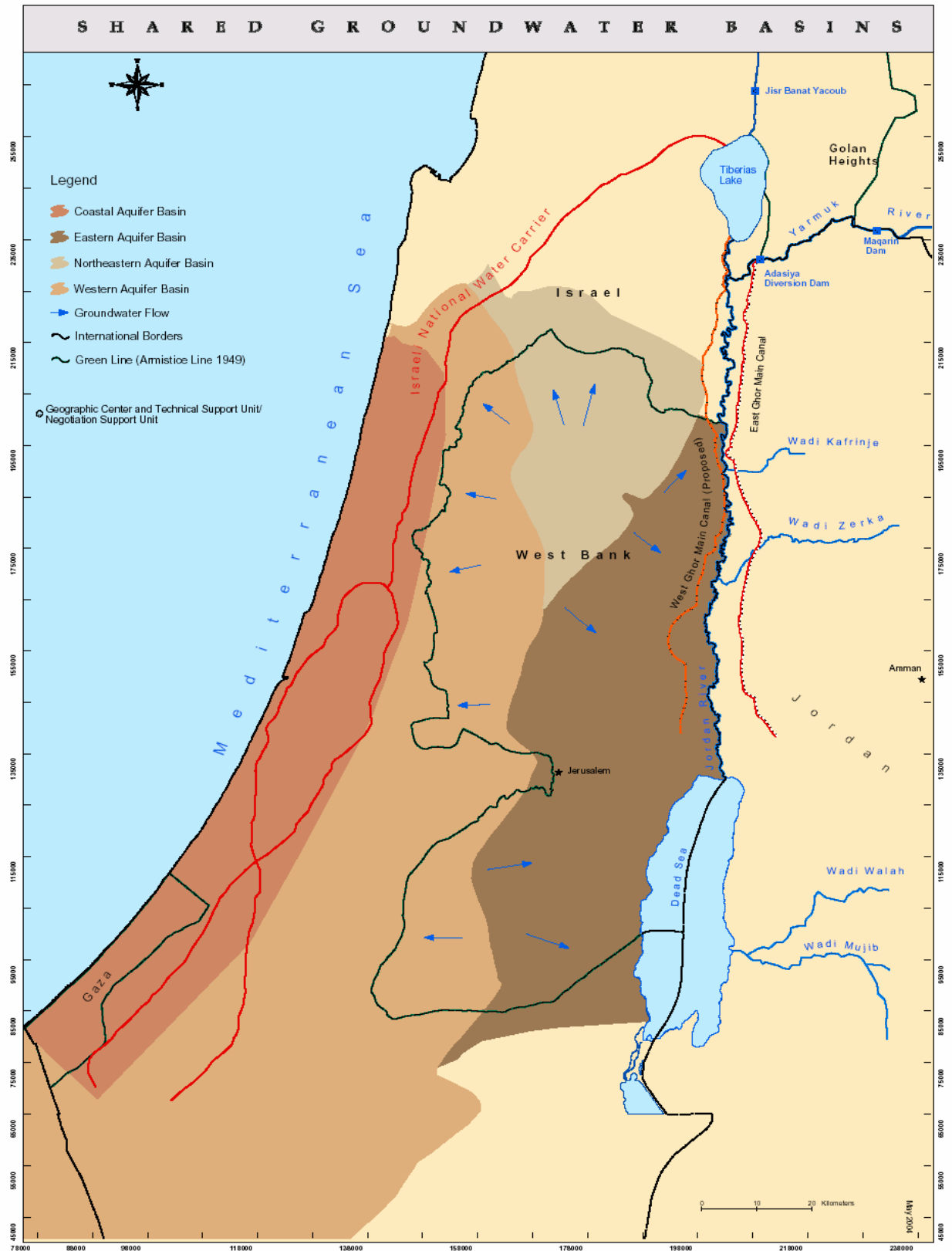
Basin	Natural Recharge	Return Flow	Well Abstractions	Spring Discharge	Total Discharge
Western Galilee	194	-	82	51	133
Carmel	39	-	36	6	42
Tiberias ground water	550 (as surface and ground water)	-	58	466 (part of Jordan river basin)	524
Naqab & Arabah	55	67	89	-	89
Total					788

Source: Hydrological Service of Israel, HSI (1999). All values in MCM/yr.

Map1: The Jordan River Basin.



Map2: Shared groundwater resources.



C. Estimate of the water resources available to Israel and the Palestinians:

The above Tables show that Israel and the Palestinians share available water resources composed of the total of shared groundwater resources (1,287 MCM/yr), the endogenous Israeli groundwater resources (322 MCM/yr, i.e. 788 MCM/yr as a total minus 466MCM/yr spring discharge flow to the Jordan River) and the equitable shares of Israel and the Palestinians from the Jordan River Basin. The combined share of the last of these, currently used almost exclusively by Israel, is more than 800 MCM/yr. The sum of these resources is 2,409 MCM/yr. If one considers the natural recharge, which is comparable to the sustainable yield of these aquifer basins (without over-exploitation), the total water resources available to the Palestinians and the Israelis is 2,086 MCM/yr. This amount of water does not include desalinated and recycled water, which amounts to around 500 MCM/yr and is mainly produced and used by Israel.

IV. The Joint Water Committee and Article 40

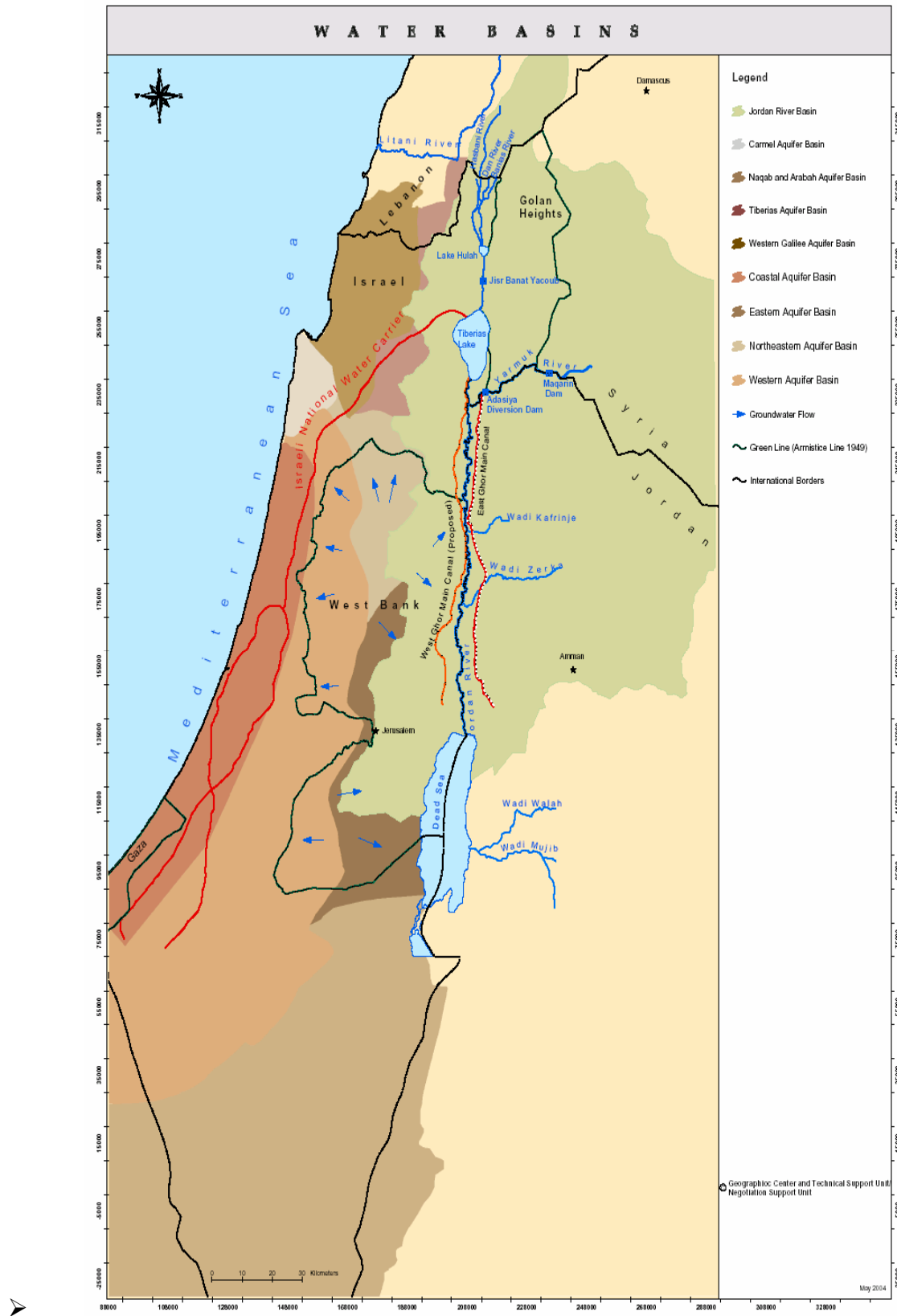
The basis for cooperation in the field of water and sewage was established with the signature of the Oslo II Agreement on 18 September 1995. A Joint Water Committee was formed under Clause II of Article 40. Article 40 shows the agreed additional water for the Palestinians during the Interim Period as 70- 80 MCM/yr, including an additional 5 MCM/yr to be supplied to the Gaza Strip. The immediate fresh water domestic needs to be supplied to Palestinians during the Interim Period were 28.6 MCM/yr and the Agreement specifically outlines the areas and quantities as well as the Party responsible financially for each task.

The designated 28.6 MCM/yr of additional water was to be supplied to the Palestinians for immediate needs in the domestic sector, as a priority. Both Israeli commitments and Palestinian responsibilities were outlined in Article 40 of the Agreement. It was the responsibility of the PWA to deliver additional supplies through main lines, networks, reservoirs, etc.

It is important to note that Article 40 of the Oslo II Agreement stated that these quantities shall be developed from the Eastern Aquifer and other agreed sources in the West Bank. The Palestinians have the right to utilize this amount for their needs - domestic and agricultural. The PWA recently developed a chart showing how Article 40 has actually been implemented. The following points and Tables summarize the available data.

- For the immediate needs, both sides agreed on securing 28.6 MCM/yr for Palestinians. Israel is committed to supply 9.5 MCM/yr, while the Palestinians are responsible to the remaining amount (19.1 MCM/yr).

Map 3: Surface water and groundwater Basins.



- A total of 24.4 MCM/yr has been made available (4.5 MCM/yr as an Israeli commitment, and 19.1 MCM/yr as a Palestinian responsibility). The Israeli commitment of 5 MCM/yr allocated for Gaza Strip will be implemented once the needed infrastructure inside Gaza is finished.
- The remainder of the agreed upon additional water quantities amounts to 51.4 MCM/yr. The Joint Water Committee approved the drilling of wells that will produce 19.1 MCM/yr, while the PWA submitted five lists for the approval of the JWC for the remaining quantity (31.5 MCM/yr). As of June 2004, these lists remain to be approved.

Focusing on Article 40, the PWA data show abstraction and discharge from the various aquifer basins in the West Bank as follows:

Table 3: Palestinian “Oslo II allocation” from the aquifers in the West Bank and actual Palestinian use. All data as MCM/yr.

	Eastern Aquifer	North-eastern Aquifer	Western Aquifer	Total
Oslo II Article 40	54 (+ 78)	43	22	121 (+78) ***
Wells	17.39	13	20	50.39
Spring	45	17	2	64
Total	62	30	22	114,39

***Article 40 states that the Palestinians have the right to develop an extra 70-80 MCM/yr from the Eastern aquifer or other agreed resources. Nine years after the agreement, the Palestinians have not been accorded their entitled amount (121 MCM/yr + 80 MCM/yr).

The Table shows that the Oslo II Agreement has not been implemented in full, in particular with reference to the extra amount that that the Parties agreed could be used by the Palestinians. The Palestinians consider that they were misled and that the sustainable yield of the Eastern Aquifer is much less than that stated in the Agreement. This position is supported by many studies carried out by different organizations, i.e. Tahal, ANTEA and the CH2MHILL¹¹.

V. Available water resources for the parties as at 2004:

This section provides an overview of the availability of water to both Parties, more than eight years after the signature of the Oslo II Agreement. The Statistical Abstract for Israel of 2003¹² shows the following data (Table 4) for water production and uses of different sectors.

Table 4: Water production and consumption in Israel. All data as MCM/yr.

	2001	2000	1999	1998	1997
Water production* in Israel	1885	1996	2151	2226	2074
Domestic water	658	662	682	672	621
Industrial	120	124	127	124	123
Agriculture	1022	1134	1264	1365	1264
Total for Israel	1800	1920	2073	2161	2008

* The sum of water used in different sectors is less than the water produced in Israel.

The PWA have produced the data shown in Table 5 on the total utilisation of water under Israel and Palestinian control, respectively, as an average for the hydrological years between 1980 and 1999¹³.

Table 5: Water resources in Israel and Palestine. All data as MCM/yr.

Resource	Natural Flow / Recharge	Total Utilization	Palestinian Water Control			Israeli Water Control		
			Volume	% from Total Utilization	% from Recharge	Volume	% from Total Utilization	% from Recharge
Groundwater	1454	1503	251	17%	17%	1252	83%	86%
Jordan River	965	870	0	0%	0%	870	100%	100%
Runoff	215	197	20	10%	9%	177	90%	82%
Total	2634	2570	271*	11%	10%	2299	89%	87%
There are 448 MCM/yr leaving groundwater and flowing into the Jordan River (on average)								
The groundwater resources are over-utilized in the amount of 49 MCM/yr over the renewable volume (recharge) on average								
As little as 95 MCM/yr, much of which is the highly saline wastewater Israel pumps into the Lower Jordan River, can reach the Dead Sea after Israeli withdrawals from the Jordan River system.								

*This volume includes an over-pumping of about 87 MCM/yr in the Gaza Strip.

The average (renewable) quantity of freshwater available in Israel and the Occupied Palestinian Territories per year is slightly over 2.4 billion cubic meters. Israel unilaterally allocates more than 89% of this amount to itself, leaving the Palestinians just over 10%. According to the PWA, the Palestinians used only 271 MCM in 2002¹⁴.

Based on PWA published data, Table 6 shows the average Palestinian use of water during the period 1998-2002.

Table 6: Water consumption for 1999-2003 (PWA data, MCM/yr).

	Domestic	Industrial	Agriculture	Total
West Bank	46.3	8.8	65.3	120.4
Gaza Strip	41.2	7.8	83 *	132
Total	87.5	16.6	148.3	252.4 **

*Around 60 MCM/yr is over-abstracted from the Gaza sub-Aquifer

**The Palestinian Authority pays Mekorot, the Israeli water company, for a portion of this amount

VI. Palestinian water *per capita*:

Comparison of the amount of water available to Palestinians *per capita* prior to the Interim Agreement (based on United Nations data for the mid-1980s)¹⁵ with the water available *per capita* nine years after the Agreement shows that the *per capita* allocations have decreased markedly.

In terms of total quantity, only an additional 22-26 MCM/yr of water has been made available nine years after the signature of Oslo II. Table 7 shows estimates of water consumption for various uses in Palestine and Israel during various periods. Table (8) shows the *per capita* allocations, based on the volumes shown in Table 7.

Table 7: Water allocations on a total volumetric basis (MCM/year).

Type of Use	<i>Palestine</i>		<i>Israel</i>		<i>Total</i>	
	Mid-1980s*	1999-2003	Mid-1980s	1997-2001	Mid-1980s	2002
Domestic	47	87.5	325	659	372	697
Industrial	5	16.5	125	124	130	141
Agricultural	175	143.3	1,320	1210	1,495	1,354
TOTALS	227	252.4	1,770	1993	1,997	2,191

*Data for the mid-1980s are from the United Nations report of 1992, entitled *Water Resources of the Occupied Palestinian Territory*

Table 8: Water allocations on a per capita basis (cubic metres/person/year).

Parameter/ Type of Use	<i>Palestine</i>		<i>Israel</i>	
	Mid-1980s	2003	Mid-1980s	2003
Population (millions)	1.47	3.5	4.3	6.5
Domestic	32	25	76	107.2
Industrial	3.4	4.7	29	21.7
Agricultural	119	40.8	307	208.3
Total Allocations	156	49	412	337.2

Based on the 2003 population estimates (3.5 million and 6.5 million people in the Occupied Territories and Israel, respectively), Table 8 shows the dramatic drop in *per capita* availability of water to the Palestinians across the time of the Interim

Agreement. The Interim Agreement clearly failed to address the water issue between the Parties, and did not lead to an equitable or reasonable allocation of the available resources.

In relation to the present consumption rates, Table 8 shows a *per capita* supply to Palestinians for all uses of 134 liters *per capita* per day (l/c/d) whereas for Israelis the *per capita* use is 924 l/c/d. For domestic purposes, the current *per capita* use is 68.5 l/c/d for Palestinians while for Israelis it is 294 l/c/d. These rates do not take into account losses of water through leaks, etc.

The PWA has documented unaccounted-for-water (UFW) rates to vary between 25% (in Ramallah) and 65% (in Jericho), with an average of 44% of the total supply. When these losses are taken into account, the *per capita* use by Palestinians for domestic purposes is less than 30 l/c/day, which is less than 30% of the accepted minimum value of 100 l/c/d.

VII. Joint monitoring and management of the shared water resources:

The denial of Palestinian water rights during the period of occupation has resulted in an inappropriate allocation of the existing water resources between the Parties. Figure 1 shows the distinction between the Israeli and Palestinian positions, in relation to the need to redress this imbalance.

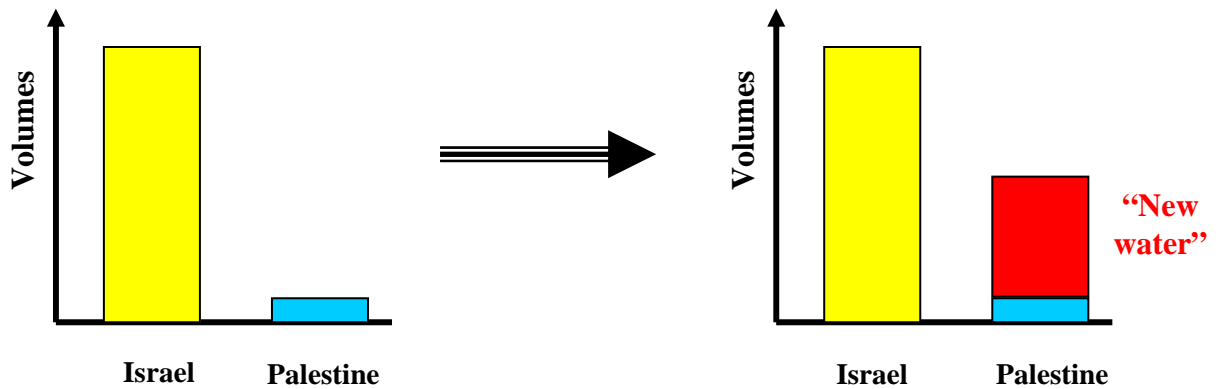
Three important principles of customary international water law will also need to be discussed by the Parties. These are:

- the need for each Party to avoid significant harm to resources enjoyed by the other Party;
- the principle of permanent sovereignty over natural resources; and
- the principle that shared watercourses should be allocated in an equitable and reasonable fashion between co-riparians.

The need to avoid significant harm should be reasonably non-controversial in the permanent status negotiations. The fragility of the five shared watercourses and their critical nature for both Parties imply that the need to avoid significant harm is of key importance in the region. Furthermore, the fact that each of the Parties has an upstream position for some of the shared water resources and a downstream position with respect to others also lends weight to the need to protect the quality and integrity of each of the shared watercourses (and to the argument that cooperation between the Parties must occur).

Several of the previous agreements between the Parties have noted the need to protect and conserve the resources (amounting to a demand for avoiding “significant harm”). This includes the following statement in Article 40 [3] of Annex III to the Interim Agreement:

The Israeli position: There is “no more water”, and Palestine must develop new water resources.



The Palestinian demand: The existing water resources must be allocated equitably and reasonably, with “new water” being added to the resulting allocations of both Parties.

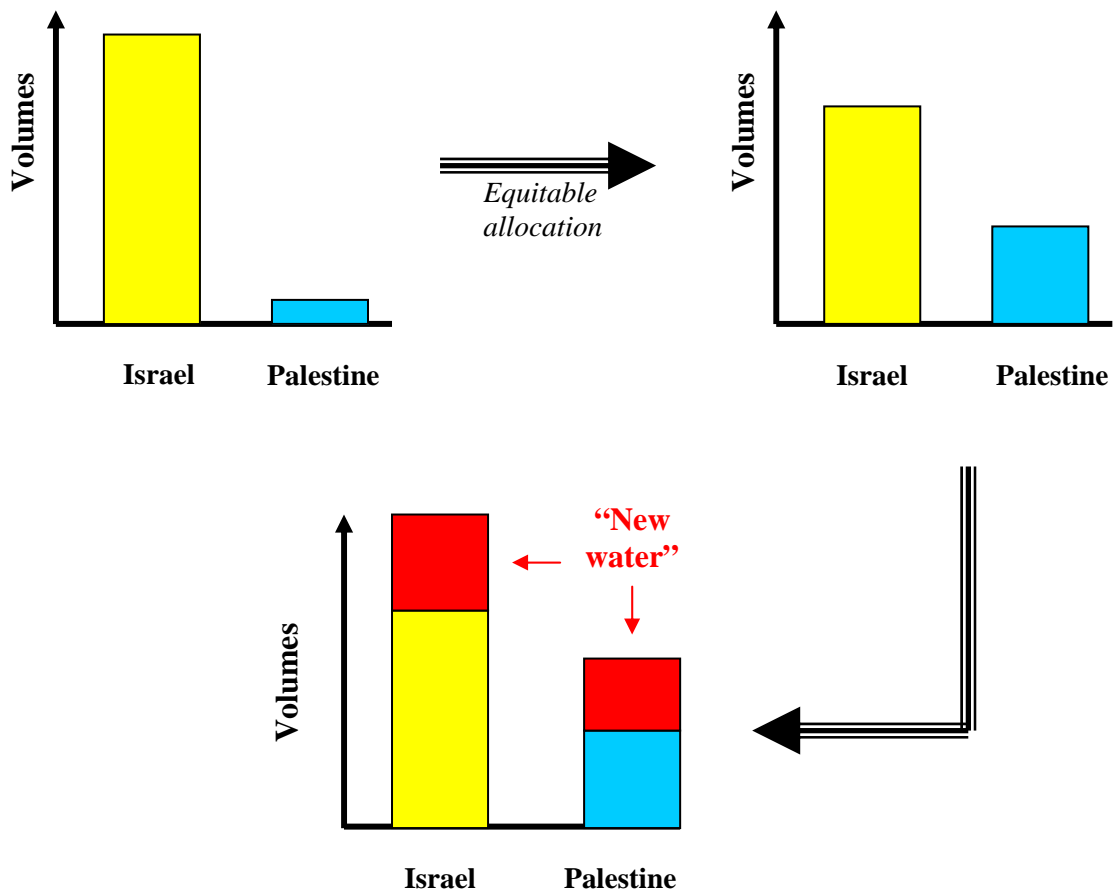


Figure 1. The distinction between the Israeli and Palestinian positions on reallocation.

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:*

...Preventing the deterioration of water quality in water resources.

...Taking all necessary measures to prevent any harm to water resources, including those utilized by the other side.

...Treating, reusing or properly disposing of all domestic, urban, industrial and agricultural sewage.

...Each side shall take all necessary measures to prevent any harm to the water resources and sewage systems in their respective areas.

The need to protect the water resources is repeated in sections [21] to [23] of Article 40, and also in Schedule 11 of Annex III in reference to the Gaza Strip.

The Palestinian sovereign right to natural resources has been recognized by many of the resolutions of the United Nations General Assembly, dating from 1972 to the present¹⁶. These resolutions are strong evidence of the position of the international community on the matter, and reinforce Palestinian water rights under international law. However, the parties are bound by customary international water law. This means that the demand for equitable and reasonable utilization of shared watercourses is effectively overlaid on the issue of permanent sovereignty.

The equitable and reasonable allocation of shared watercourses is the key standard of international law that governs the entitlement of Palestine and Israel to the shared water resources. Several previous statements by Israel and agreements between various parties support the use of such an approach, as follows:

- In an official response to the United Nations in 1981, Israel stated the following with respect to regional water resources: *“Under international law this principle of equitable distribution among riparians is a well-established right.”*¹⁷
- Annex III to the Declaration of Principles included the following statement: *“The two sides agree to establish an Israeli-Palestinian continuing Committee for Economic Cooperation, focusing, among other things, on the following: 1. Cooperation in the field of water, including a Water Development Program prepared by experts from both sides, which will also specify the mode of cooperation in the management of water resources in the West Bank and Gaza Strip, and will include proposals for studies and plans on water rights of each party, as well as on **the equitable utilization of joint water resources for implementation in and beyond the interim period.**”* [emphasis added]. The Declaration of Principles remains binding upon the Parties during the permanent status negotiations.
- The Bahrain Environmental Code of Conduct for the Middle East cites the following principle in Article 1 [2]: *“The Parties will strive for a fair and just*

utilization and coordinated management policies of the shared natural resources in the region.” This Code of Conduct is not a binding legal document, but was signed by Israel and by many other Middle Eastern States¹⁸.

It is clear from these citations that the Israeli authorities have long been aware of the principles of international law, as these relate to water resources. Article 2 [h] of the Bahrain Environmental Code of Conduct for the Middle East states that the regional parties should: *“resolve all their environmental disputes peacefully and by appropriate means in accordance with the UN Charter and in conformity with relevant provisions of international law and declarations.”* It is not reasonable to assume that the Israeli negotiators are ignorant of the principles of international law (on water or other topics).

The monitoring of water supplies is also of very considerable importance, as each Party has a duty of care to supply consumers (and each other) with water of the appropriate quantity and quality. The current level of monitoring effort in both Palestine and Israel is insufficient to guarantee the safety of consumers. In addition, both Parties will wish to have access to data on water quantity, to ensure that the other side is adhering to its rightful allocations from the five shared watercourses.

To ensure the allocation of water of appropriate quality to each Party, it will be necessary to introduce a comprehensive monitoring system, covering all elements of the water supply network. This monitoring system should be accessible by both Parties, and should constitute a major component of the joint management of the shared watercourses.

VIII. Conclusion:

The key concept of international water law in relation to shared watercourses involves the attainment of “equitable and reasonable” allocations of water to the two or more parties who possess a claim to the resources. The attainment of this objective is very distant in relation to the watercourses shared by Palestine and Israel. The main watercourses Palestine shares with Israel involve four underground aquifers (three in the West Bank area, and one in Gaza), and the surface waters of the Jordan River. International water law states that co-riparians to shared watercourses should allocate the volumes available in an equitable and reasonable fashion. However, this has never occurred in the case of Palestine, since 1948. In addition, the situation has become much more inequitable since the occupation of Palestine in 1967. This deeply inequitable situation is of course also reflected in the water allocations from the shared resources.

The Interim Agreement of 1995 did not address these problems in the correct fashion. The Agreement noted that Israel recognises the water rights of the Palestinians in the West Bank. However, the Agreement then sought to allocate further minor volumes of water (a total of only 70-80 MCM/year) to the Palestinians, this does not reflect equitable and reasonable allocation of water resources, in any way. Even once the Interim Agreement was signed, the Israelis

used their veto powers through the administrative process to deny Palestinian access to the meagre water resources which were theoretically ceded to Palestine in the Agreement. Of the 70-80 MCM/year in total which was included in the Interim Agreement, about 25 MCM/year has been made available to the Palestinians to date Palestine now demands that the existing shared water resources of the West Bank and Gaza be reallocated, to produce their equitable and reasonable allocation as mandated by international law.

Water is a vital resource in the region, and its use should be carefully controlled and regulated. In the future, both Israel and Palestine must manage their regional water resources with greater care, and must show a more developed sense of responsibility towards this critical facet of their existence. For Palestine to be able to do this, Israel must allow the Palestinian authorities access to the water-related infrastructure within the West Bank and the Gaza Strip.

¹ Declaration of Principles on Interim Self-Government Arrangements, September 13, 1993. Annex III, Protocol on Israeli-Palestinian Cooperation in Economic and Development Programs.

² Gamal Abouali, 1998. *Continued Control: Israeli - Palestinian Water and Interim Agreement*. *Palestine Yearbook of International Law*, Vol. 9, Kluwer Law International.

³ Article 40 on water : <http://www.nad-plo.org/fact/annex3.pdf>

⁴ The Helsinki Rules on the Uses of the Waters of International Rivers. Adopted by the International Law Association at the fifty-second conference, held at Helsinki in August 1966. Report of the Committee on the Uses of the Waters of International Rivers (London, International Law Association, 1967).

See http://www.internationalwaterlaw.org/IntlDocs/Helsinki_Rules.htm.

⁵ Convention on the Law of the Non-navigational Uses of International Watercourses, Adopted by the UN General Assembly and open to signature on 21 May 1997 (United Nations Document A/51/869). See <http://allserv.rug.ac.be/~sdconinc/waternet/convention.htm>.

⁶ Sharif Elmusa, 1997. *Water Conflict - Economics, Politics, Law and the Palestinian Israeli Water Conflict*, Institute for Palestine Studies, Washington.

⁷ For more details on the Jordan River Dispute, see <http://www.american.edu/TED/ice/jordan.htm>.

⁸ See the following:

- Military Order No. 2 (7 June 1967): All water resources in newly occupied territories and in the West Bank and Gaza Strip are considered State property.
- Military Order No. 92 (15 July 1967): Full authority over all issues concerning water is granted to an Israeli officer appointed by a decision by the military area commander. This officer enjoys full control over water resources, and will have the jurisdiction to control all licenses and permits for established and new water installations, methods of operation and appointment of directors for all water interests and authorities.
- Military Order No. 158 (19 November 1976): Prevents the establishment of any water installation without a license, and grants the appointed Israeli officer in the area the authority to reject licenses, or amend any license without justification.
- Military Order No. 241 (19 December 1968): Declaring all water resources as State property, making the water resources in the West Bank and Gaza Strip subject to the Israeli Water Law of 1959.

-
- Military Order No. 1376 (24 July 1992): Provides a detailed description of the range, responsibilities, structure, budget, ownership and the employment policy of the Water and Sewage Authorities in Bethlehem, Beit Jala and Beith Sahour.
 - Military Order No. 498 in the Gaza Strip (November 1974): Covers the issues of preserving water, supervision of water quality, licenses, distribution, supply, and determining tariffs and fines. Requires the military area commander to appoint an officer for the agricultural team.

⁹ Hydrological Service of Israel, 2000

¹⁰ PWA website, water resources, <http://www.pwa-pna.org/status/res.php>

¹¹ Various studies by CH2MHill, CDM, Tahl and the ANTEA modelling project carried out on the Eastern Aquifer Basin suggest sustainable yields for this Basin varying between 70 and 130 MCM/year.

¹² Israel Central Bureau of Statistics, *Statistical Abstract*, 2003, see www.cbs.gov.il

¹³ see PWA website, water resources, <http://www.pwa-pna.org/status/res.php>

¹⁴ According to PWA internal report Water sector in Palestine, 2003. see PWA website, water resources, <http://www.pwa-pna.org/status/res.php>

¹⁵ Data for the mid-1980s are from the United Nations report of 1992, entitled *Water Resources of the Occupied Palestinian Territory*. United Nations, New York, 1992.

¹⁶ United Nation Information System on the Questions of Palestine, <http://domino.un.org/UNISPAL.NSF/9a798adbf322aff38525617b006d88d7!OpenView>

¹⁷ [United Nations General Assembly, A/36/260/Add. 1, 25 September 1981: Thirty sixth session, Agenda item 69 (k); response by Israel of 25 March 1981; paragraph 41].

¹⁸ The Multilateral Working Group, on the **Environment** of the **Middle East** peace process, see www.mofa.go.jp/region/middle_e/peaceprocess/ewg/bcc.pdf