2. Overview of Transboundary Waters in the MENA Region

The Middle East and North Africa region is known to have very low average per capita water availability. The region today has one percent of the total freshwater of the world and five percent of the total population of the world. Table 1 ranks each of the countries in terms of water availability.

Table 1. Water Availability in the MENA Region.

Global Ranking	Country	Total internal renewable water resources (km^3/year)	Groundwater produced internally (km^3/year)	Surface water produced internally (km^3/year)	**Total renewable per capita (m^3/capita/year)**
108	Iraq	35.20	1.20	34.00	**3 287**
131	Iran	128.50	49.30	97.30	**1 955**
141	Syria	7.00	4.20	4.80	**1 622**
149	Lebanon	128.50	49.30	97.30	**1 261**
155	Morocco	29.00	10.00	22.00	**971**
156	Egypt	1.80	1.30	0.50	**859**
162	Tunisia	4.15	1.45	3.10	**482**
163	Algeria	13.90	1.70	13.20	**478**
164	Djibouti	0.30	0.02	0.30	**475**
165	Oman	0.99	0.96	0.93	**388**
167	Israel	0.75	0.50	0.25	**276**
168	Yemen	4.10	1.50	4.00	**223**
169	Bahrain	0.004	0.00	0.004	**181**
170	Jordan	0.68	0.50	0.40	**179**
172	Malta	0.05	0.05	0.00	**129**
173	Saudi Arabia	2.40	2.20	2.20	**118**
174	Libya	0.60	0.50	0.20	**113**
176	Qatar	0.05	0.05	0.001	**94**
178	United Arab Emirates	0.15	0.12	0.15	**58**
179	Palestine (Gaza)	0.05	0.05	0.00	**52**
180	Kuwait	0.00	0.00	0.00	**10**

Source: World Water Development Report 2003. (The country selection is based on the World Bank's definition of the MENA region).

2.1. Dependency of MENA Countries on Transboundary Water Resources

The water dependency of some countries is extremely high, as shown in Table 2. The water dependency ratio indicates to what extent a country is reliant on water that has its source outside of its own territory. Egypt, Syria and Jordan are obliged to rely almost exclusively on transboundary water resources emanating from outside its own borders. The Palestinian Territories are almost entirely dependent on waters transboundary with, and essentially controlled by, Israel. The increasing population of the MENA region together with urbanization and economic development create a steep increase in demand for water. The population is growing from around 100 million in 1960, through a present 311 million to a projected figure higher than 430 million by 2025. In 2004 the population growth rate in the Middle East was 2.3% and in North Africa 2.1%. The average amount of water per capita in the region will continue to drop. A hidden problem is the use of groundwater, which many countries are over-extracting and polluting at unsustainable rates. The current total available water that is used for agriculture in the MENA region stands at 88%, and may continue to grow as the resource undergoes ever-increasing strain.

Table 2. Water Dependency Ratio

Country	Water Dependency ratio (percent)
Kuwait	100
Egypt	97
Bahrain	97
Syria	80
Palestine	75
Israel	55
Iraq	53
Jordan	23
Tunisia	9
Iran	7
Lebanon	7
Algeria	4
Qatar	4
Morocco	0
Djibouti	0
Oman	0
Yemen	0
Malta	0
Saudi Arabia	0
Libya	0
United Arab Emirates	0

Source: World Water Development Report 2003. The water dependency ratio refers to surface water. Many of the countries that have 'zero' water dependency ratio do in fact share transboundary groundwater aquifers with other countries.

A qualified overview of the relevant MENA countries' dependency on transboundary waters follows.

Turkey

Some 40% of water resources in Turkey are of transboundary nature. Although the most significant of these is the Euphrates and Tigris Rivers, there are other rivers that will also be on the agenda for the years to come, such as the Orontes River, which is shared with upstream Syria and Lebanon. The resources are shown in table 3

Palestinian Territories

All of the relatively important surface waters of the Palestinian Territories are transboundary to four entities: Syria, Lebanon, Jordan and Israel, and particularly to the last two. All Palestinian sources of groundwater (in four aquifers) are shared with Israel These are shown in table 4.

Iraq

Iraq has a water dependency ratio of 53%, meaning that more than half of the water it depends upon originates outside of its borders. The most important water resource in the country is the Shatt Al-Arab River, formed by the confluence of the Euphrates and Tigris Rivers. The Tigris and the Euphrates and their tributaries flow through Syria, Iran and Turkey before entering Iraq.

Syria

Syria shares some 80% of its most important water resources with its neighbours. These resources form a large percentage of the presently exploited water resources upon which the country depends for meeting present and future water demand. There are 6 main

transboundary rivers in the country; the Tigris, the Euphrates, the Afrin, the Orontes, the Yarmouk and the Al Khabeer.

Lebanon
Lebanon is drained by 17 perennial and several seasonal rivers. Almost all of the perennial rivers are coastal, and contained within the country's political borders. Lebanon is upstream on three transboundary rivers: the Hasbani flows southwards to Israel, while the Al Khabir and Orontes flow northwards to Syria.

Jordan
Jordan shares all of its most important water resources with its neighbouring countries. The primary transboundary water resources of Jordan include: the Yarmouk River and the Jordan River shared with Syria, the Palestinian Territories and Israel; the Disi Aquifer, shared with Saudi Arabia; and the Basalt Aquifer, shared with Syria. The flows of the Yarmouk River have been decreasing due to decreasing rainfall and climatic changes as well as the construction of a number of Syrian dams on its tributaries.

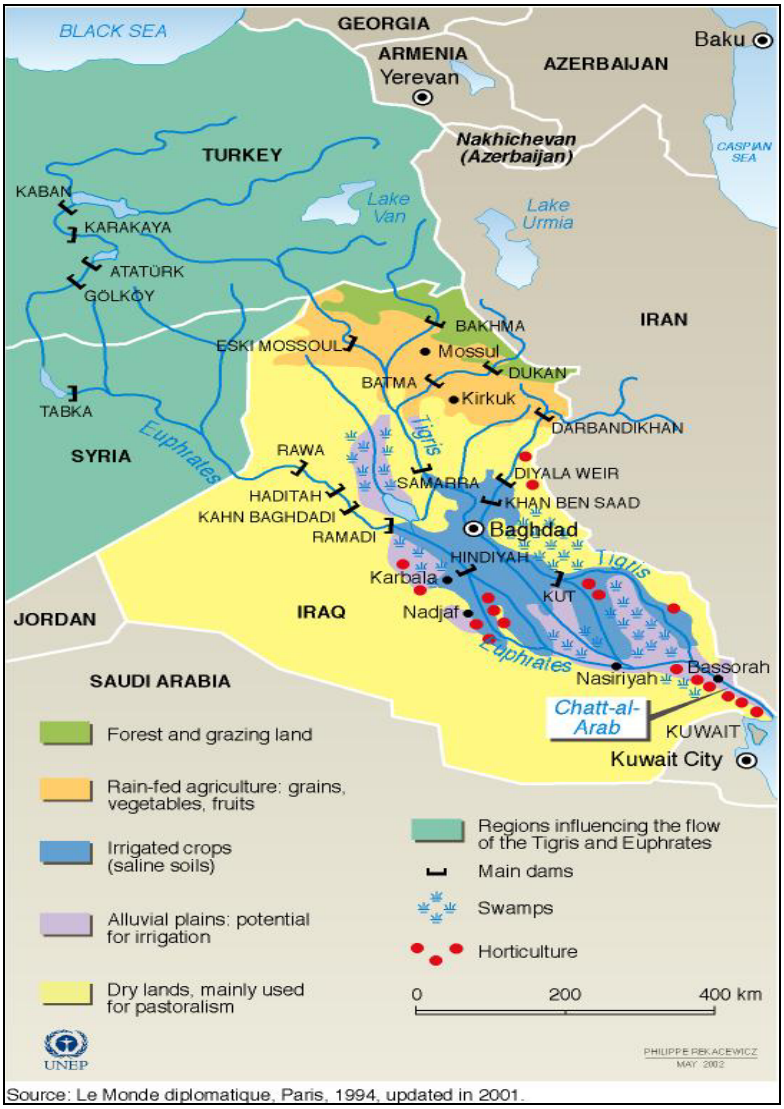
2.2. Transboundary Surface Water Resources

The surface water resources of the eastern MENA region are well-known both for their history as well as their potential sources of violent conflict. The physical features of three main resources are briefly reviewed following: the Euphrates and Tigris River Basins, the Orontes River Basin and the Jordan River Basin.

The Euphrates and Tigris River Basins
Figure 1 shows a map of the Tigris and the Euphrates Rivers. Table 3 provides base river data.

Syria, Turkey and Iraq share the Euphrates basin, which has a surface area of 450,000 km^2 and whose river is 2,735 long. The river rises in Turkey and flows through Syria before entering Iraq on its way to the sea, where after it joins the Tigris forms the Shatt al-Arab. The Tigris basin is shared by the same three riparians, plus Iran to a much lesser degree. The basin covers about 110,000 km^2 and the river is roughly 1,900 km long. Before the confluence of the Euphrates and Tigris, the Euphrates and Tigris flow within Iraqi territory for about 1,000 km and 1,300 km respectively. Table 3 provides additional information on the contribution of each country to the rivers' flows.

Figure 1. The Euphrates and Tigris River Basins



Source: Le Monde diplomatique, Paris, 1994, updated in 2001.

Table 3. Contribution and Distribution of Euphrates and Tigris Flows.

		Length (km)	**Length (%)**	**Distribution of basin area (km^2)**	**Distribution of basin area (%)**
Turkey	Euphrates Tigris	1 230 400	41 22	124 320 46 512	28 12
Syria	Euphrates Tigris	710 44	24 2	75 480 776	17 0,2
Iraq	Euphrates Tigris	1 060 1 418	35 76	177 600 209 304	40 54
Iran	Euphrates Tigris	0 0	0 0	0 131 784	0 34

Source: UNESCO

Background to the conflict on the Euphrates and Tigris Rivers

Bilateral and tripartite meetings between the three riparians, occasionally with Soviet involvement, started in the mid-1960's. Even so, no formal agreements had been reached by the time the Keban Dam in Turkey and the Tabqa dam in Syria began to be filled late in

1973, resulting in decreased flow down-stream. Syria agreed in 1974 to an Iraqi request that Syria increase the flow from the Tabqa dam by 200 MCM/y. The following year, however, the Iraqis claimed that the flow had been dropped from the normal 30,000 MCM/y (920 m^3/sec) to an "intolerable" 6,200 MCM/y (197 m^3/sec), and asked that the Arab League intervene. The Syrians claimed that less than half the river's normal flow had reached its borders that year and, after a barrage of mutually hostile statements, pulled out of an Arab League technical committee formed to mediate the conflict. In May 1975, Syria closed its airspace to Iraqi flights and both Syria and Iraq reportedly transferred troops to their mutual border. Only mediation on the part of Saudi Arabia was able to break the increasing tension, and in June the parties arrived at an agreement that averted the impending violence. Although the terms of the agreement were not made public, Iraqi sources are cited as privately stating that the agreement called for Syria to keep 40% of the flow of the Euphrates within it borders, and to allowing the remaining 60% to Iraq.

The Southeast Anatolia Development Project (better known by its Turkish acronym 'GAP') has given a sense of urgency to resolving allocation issues between the concerned riparians. The GAP is a massive undertaking for energy and agricultural development that, when completed, will include the construction of 21 dams and 19 hydroelectric plants on both the Tigris and the Euphrates. 1.65 million hectares of land are to be irrigated and 26 billion kWh will be generated annually with an installed capacity of 7,500 MW. If completed as planned, GAP could significantly reduce downstream water quantity and quality which is also a major concern of both Iraq and Syria.

Attempts at Conflict Management

A Protocol of the Joint Economic Committee was established between Turkey and Iraq in 1980, which allowed for Joint Technical Committee meetings relating to water resources. Syria began participating in 1983, but meetings have been intermittent at best. A 1987 visit to Damascus by Turkish Prime Minister Turgut Ozal reportedly resulted in a signed agreement for the Turks to guarantee a minimum flow of 15,750 MCM/y (500 m^3/s) across the border to Syria. According to Kolars and Mitchell (1991), this is in accordance with prior Syrian requests. However, according to Naff and Matson (1984), this is also the volume that Iraq insisted on in 1967, leaving a potential shortfall. A tripartite meeting between Turkish, Syrian and Iraqi ministers was held in November 1986, but yielded few results.

Talks between the three countries were held again in January 1990, when Turkey closed the gates to fill the reservoir behind the Ataturk Dam, the largest of the GAP dams, essentially shutting off the flow of the Euphrates for 30 days. At this meeting, Iraq again insisted upon a flow of 15,750 MCM/y (500 m^3/s) across the Syrian – Iraqi border. The Turkish representatives responded that this was a technical issue rather than one of politics and the meetings stalled. The Gulf War, which broke out later that month, precluded additional negotiations. The first tri-lateral meeting after the war (September 1992) broke up after Turkey rejected an Iraqi request that flows crossing the Turkish border be increased from 15,750 (500 m^3/s) to 22,050 (700 m^3/s).

In bilateral talks in January 1993, the Turkish Prime Minister and the Syrian President discussed a range of issues intended to improve relations between the two countries. Among them were the issue of water allocations, and the two agreed to resolve the issue of allocations by the end of the same year. Although an agreement has not to date been reached, the Turkish Prime Minister declared at a press conference closing the summit that, "There is

no need for Syria to be anxious about the water issue. The waters of the Euphrates will flow to that country whether there is an agreement or not".

Tensions continue, however, particularly around the issue of the Illisu dam. Syrian efforts at blocking financing for the project in 2001 succeeded through alliances with environmental and Kurdish human rights activists. Construction on the dam re-started, however, in September 2006, demonstrating that if the conflict has been managed, it has not been resolved.

The Orontes River

The Orontes rises in the Lebanese Bekaa Valley, as shown in Figure 2. The basin's area covers 37,900 km^2. It flows through Syria then flows west into the Ghab plain and on into Hatay province in Turkey before discharging into the Mediterranean. Its annual flow is 400 MCM/y of which Lebanon's share is about 80 MCM/y. A draft agreement concerning the distribution of the Orontes waters originating in the Lebanese territory was signed in 1994. It includes an annex that was added in 1997 which sets out certain conditions relating to the agreement but was only ratified by the Syro-Lebanese Higher Council in 2001.

Figure 2. The Orontes River

The Syro-Lebanese Higher Council agreed upon a Lebanese project for a dam on the Orontes in 2002. This was regardless of the view of some that the project was unfair to the Lebanese side and that the quantity of water allocated to Lebanon was not sufficient for the expansion of agriculture in the Bekaa valley. That allowed a new agreement to be reached in December 2002 on the irrigation of 6,600 hectares of agricultural land in the Hermel and Bekaa regions in Lebanon. The Orontes dam currently operates with a capacity of 37 million m^3.

The Jordan River Basin System[5]

The Jordan River System (JRS) is composed of several key elements, as shown in Figure 3 and discussed in Appendix 3. The Jordan River Basin is of great importance to Jordan, the Palestinian Territories and Israel. Syria and Lebanon also contribute to the basin, but rely much less heavily upon it. The Jordan River suffers from both over-extraction and severe pollution and salinity problems. This is especially significant in years of drought.

[5] For a description of disputes over the Jordan Basin system see Appendix 2.

Figure.3 Transboundary Surface Water and Groundwater Resources of the Palestinian territories and Israel: Jordan River System and Four Aquifers.

The 1994 Peace Treaty between Israel and Jordan distributed the Jordan River flows roughly 2/3 for Israel and 1/3 for Jordan.[6] The Israeli-Palestinian 'Oslo II' Agreement of 1995 did not mention the Jordan River, thereby maintaining the status quo, and denying Palestinians all access to the river. One problematic factor with the agreements is their bilateral nature. Bilateral agreements are an obstacle to a perspective that covers the whole Jordan River Basin, which is considered a prerequisite for sustainable use of the resource. Moreover the bilateral agreements are rather fragile since any future allocations to another state (in this case Lebanon, Syria and a future Palestinian state on the issue of water from the Jordan River System) could lead to a dispute over the allocations agreed upon between Israel and Jordan and between Israel and the Palestinian Authority.

Apart from the Jordan River System, there are also seasonal flows in wadis that flow from the West Bank westwards across Israel to the Mediterranean Sea. The most significant of these is Wadi Gaza, which rises south of Hebron and flows westwards through Israel and Gaza.

2.3. Transboundary Groundwater Resources

Groundwater is a very significant source of water in the region. Much of the resource is internal but a large degree is transboundary. It comes naturally to the surface in the form of springs or is extracted from wells that vary in depth from 20 – 700m.

[6] For a good description of the water agreements see Liebszewski, Stephan, *Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab–Israeli Conflict*, Occasional Paper no. 13 (Zurich: Environment and Conflict Project (ENCOP), Aug. 1995). It is important, however, to acknowledge the differences between the 1994 Israeli–Jordanian agreement on water and the 1995 Israeli–Palestinian interim agreement on water. The former is detailed on water issues while the latter is sparse on details and refers most of the crucial issues to the final status negotiations. This means that Israel still has control over most of the water resources in the West Bank and Gaza. In the 1995 agreement, however, Israel did, for the first time, acknowledge Palestinian water rights in the West Bank.

Groundwater shared between Israel and Palestinian Territories

The Western Aquifer Basin (WAB). The estimated sustainable recharge rate of the WAB is 362-366 MCM/y. Under the terms of Article 40 of the 1995 Oslo II Interim Agreement, Israel is allocated 340 MCM/y, Palestinian Territories 22 MCM/y.

The North Eastern Aquifer Basin (NEAB). The estimated sustainable recharge rate of the NEAB is 145 MCM/y. Under the terms of the 1995 Oslo II Agreement, Israel is allocated 103 MCM/y, Palestinian Territories 42 MCM/y.

The Eastern Aquifer Basin (EAB). The estimated sustainable recharge rate of the EAB is a subject of much controversy. Under the terms of the 1995 Oslo II Agreement, Israel is allocated 40 MCM/y, Palestinian Territories 54 MCM/y. Article 40 also refers to 78 MCM/y "remaining quantities" available for development by Palestinian Territories, though it is generally accepted that this volume is not practically extractable.

The Coastal Aquifer Basin (CAB). The estimated sustainable recharge rate of the CAB is roughly 485 MCM/y, and extends the full length of the Gaza Strip. Unlike the aquifers transboundary to Israel and the West Bank, the allocations for this aquifer were not defined under the terms of the Oslo II Interim Agreement. In 2003 Israel extracted an estimated 429 MCM/y from the CAB, Palestinian Territories, 135 MCM/y. Roughly 80 MCM/y of the Palestinian extraction is considered over the estimated recharge rate for the Palestinian portion, which is 55 MCM/y.

Groundwater shared between Jordan and Syria

The Basalt Aquifer. The Basalt Aquifer (Figure 4) shared between Jordan and Syria is one of the main water supply sources for Greater Amman. It also serves various purposes in the southern part of Syria, and is decreasing in both quantity and quality. Planned additional groundwater extractions may worsen the situation. The overuse of the aquifer has led to failure of springs, with subsequent shortfall in surface water flows and a consequent negative environmental impact, as occurred in the Azraq oasis.

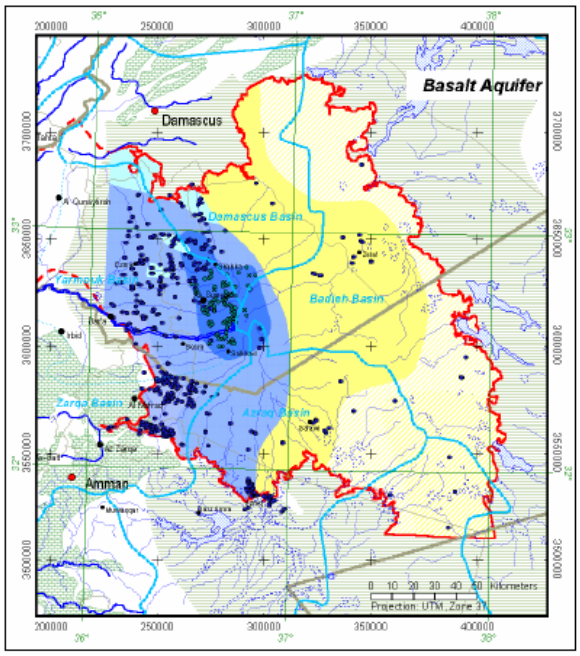


Figure 4. The Basalt Aquifer between Syria and Jordan. (ESCWA 1995)

A protocol and set of priorities was established for a joint Jordanian-Syrian committee in 1995 at a workshop hosted by the Economical and Social Commission for Western Asia (ESCWA). The committee is intended to manage the shared basalt aquifer under the supervision of ESCWA and with support from the Federal Institute for Geosciences and Natural Resources, Germany (BGR). A memorandum of understanding was drafted, but is still to be signed by the two countries. In October 2005, a new phase of the German cooperation project began that will lead to the revival of the cooperation project and steps to establish the joint committee. The basic goal of development of the aquifer is

the preparation and implementation of a comprehensive multilateral plan to improve methods of managing the shared water resources, with regards to the social and economic factors which prevail in the two countries.

Groundwater between Jordan and Saudi Arabia

The Disi Aquifer is shared by Saudi Arabia and Jordan, with the largest section situated underneath Saudi Arabia. It is a deep sandstone aquifer that is 320 km long, by far the largest in the region. As it is a fossil aquifer, it is not recharged annually and contains a limited amount of water. The Disi Aquifer is currently being drained by both sides to support the production of agricultural products and other uses. At present there is no agreement between the countries concerning the Disi and analysts describe the current practice as a "race to the bottom".

Groundwater issues in the Euphrates and Tigris basins

The groundwater resources of Iraq, Syria and Turkey remain a topic of further research and investigation. There are localities and sub-basins that have more data than others but the information about the countries' groundwater resources is general, and that of the respective portions of the international aquifer in particular are sporadic and inadequate. There are no agreements or rules regarding the use and management of the transboundary groundwater in this region. Please refer to Appendix 4 for further information on groundwater resources in the region.

2.4. Inequitable Distribution

When discussing transboundary waters in the MENA region it is important to view them from international legal and political perspectives. To understand part of the problem of why an inequitable distribution between riparians occur it is useful to draw on the concept of "hydro-hegemony". A hydro-hegemon is able through various expressions of power to maintain a situation in a basin in which it receives more than its equitable share of the water. In the Jordan River Basin, Israel is in such a position; in the Nile Basin, Egypt is clearly the hegemon; and along the Euphrates and Tigris, Turkey is dominant. The hegemonic position is less related to riparian position than it is a reflection of the relative economic and political power in the basin (Zeitoun, 2005). To level the playing field in these basins donors could engage in building capacity of the weaker parties in a basin, thereby enabling them to engage in negotiations and relations with the basin hegemons on more equal terms (Jägerskog and Phillips, 2006).

International Water Law[7] states three main principles of transboundary water use: 'equitable and reasonable utilisation', 'no harm' and 'provision of timely advance notice' (McCaffrey 2005a). Determination of equitable and reasonable utilisation is based upon such factors as social and economic needs, size of population, access to other water sources, etc.

Palestinian Territories

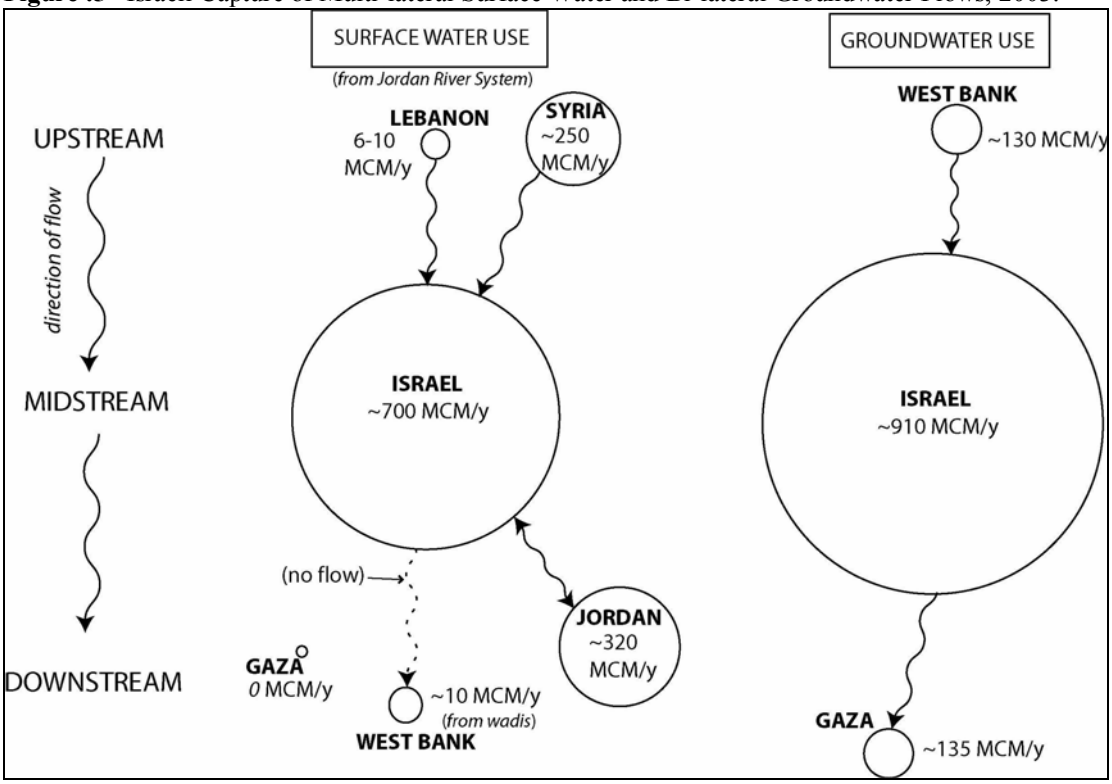
The highly inequitable distribution of surface water and groundwater resources transboundary to the Palestinian Territories and Israel remains in violation of the basic principles of International Water Law. The distribution remains an issue, at least for the Palestinian side. Table 4 shows this distribution to be roughly 1,600 MCM/y for Israel and 330 MCM/y for the Palestinian Territories. The figures do not include water sources that

[7] As embodied in the 1997 UN Convention on the Non-navigational Uses of Transboundary Waters.

Israel alone has access to, nor do they include 'new' water sources such as desalination or wastewater re-use.

The figures reflect Israel's hegemonic role in the basin. The inequitability of the roughly 5:1 distribution is diminished when considering per capita use, with Israel's population being roughly double that of the Palestinian Territories. The asymmetry increases, however, considering a) that the allocation for the Palestinian Territories from the EAB refers to flows that are economically unfeasible to extract, or non-existent and b) that Israel regularly exceeds its allocation from the WAB. Data taken from the Hydrological Survey of Israel 2004 Annual Report shows average abstractions from 1995 onwards to be 88 MCM/y over the Israeli limit of 340 MCM/y determined by the Oslo II Agreement, as in Figure 5.

Figure .5 Israeli Capture of Multi-lateral Surface Water and Bi-lateral Groundwater Flows, 2003.



(Roughly to scale).

Table 4. Allocations or Consumption of Transboundary Water Resources between the Palestinian Territories and Israel, 2003.

Transboundary Water Source	**Allocation or consumption (MCM/y)**	
	Israel	**Palestinian Territories**
Surface Water		
Jordan River System [8]	660	0
Wadi al Fara' [9]	6	9
Wadi Gaza [10]	25	0
sub-total	***691***	***9***
Groundwater		
Eastern Aquifer Basin [11]	40	132
North Eastern Aq. Basin [5]	103	42
Western Aquifer Basin [5]	340	22
Coastal Aquifer Basin [12]	429	135
sub-total	***912***	***331***
Total	**1,603**	**331**

The asymmetry remains an issue basin-wide as well. A recent attempt to address the concerns of Jordan, Lebanon and Syria as well is offered in the Swedish Ministry of Foreign Affairs' *Trans-boundary Water Co-operation as a Tool for Conflict Prevention and Broader Benefit Sharing*. Addressing the issue is (apparently) politically infeasible yet at the same time crucial to ensuring genuine water security for all parties.

Jordan

Jordan signed an agreement with Israel in 1994 on the sharing of the river Jordan and its tributaries. Some analysts argue that the agreement is skewed in favour of Israel, and though the issue currently lies dormant, the conflict has the capacity to increase in intensity. Jordan also has a conflict on the Yarmouk River with Syria. Though precise figures are difficult to acquire, it appears clear that Syria uses more water upstream than it is entitled to under the principle of 'equitable and reasonable utilisation' of international water law.

[8] (SUSMAQ 2001b: Table 5.1). This includes all sources from the Upper Jordan River, but not the return flows from groundwater into the Lower Jordan River. Estimates of the amount abstracted by Israel from the Lake of Tiberias through the NWC vary from 345 (HSI 2004: 288) to 500 MCM/y (UNEP 2003: 11). The maximum pumping capacity of the NWC is elsewhere cited as 1.5 MCM/day, or 550 MCM/y (Cohen 2004a). Local use of Tiberias water is estimated at 70 MCM/y (SUSMAQ 2001b: Table 5.1).

[9] Wadi al Far'a is technically not a transboundary resource as it lies completely within the political borders of the West Bank (Figure 2.1). An estimated 6 MCM/y is captured by Israeli sources inside the closed military zone through the 'Tirzah Reservoirs', which are observable from Highway 90 in the Jordan River Valley.

[10] (SUSMAQ 2001b: 150). Estimated average annual flow. This flow in particular is highly variable, ranging from 0-100 MCM/y, depending on climatic conditions.

[11] Official allocation figures from the Oslo II Interim Agreement, Article 40 (Oslo II 1995).

[12] Allocations from the Coastal Aquifer were not specified by Oslo II. The figure of 429 MCM/y is actual Israeli abstraction in 2002/2003 (HSI 2004: VII); the Palestinian figure of 135 is actual consumption, estimated at 80 MCM/y *over* the estimated sustainable yield (NSU 2005a: Table 2.1).

Syria

Syria is in an upstream position on the Yarmouk River, and has built a series of small dams on its tributaries. The reduced flows are affecting Jordan as discussed above. The joint Syrian-Jordanian al Wehda dam currently being built on the Yarmouk may serve to reduce tensions there, but will further reduce flows also to the lower Jordan River. Syria is downstream on the Euphrates and Tigris Rivers and views the development of the Turkish GAP project very carefully. The fear in Syria is that with a fully-developed GAP it would not receive the share of flows it is entitled to. Upstream of Iraq on the same system, Turkey has stopped the flows on the Euphrates on at least one occasion, as previously discussed.

Iraq

Like Syria, Iraq is dependent on water coming from upstream Tigris and Euphrates rivers. Iraq also views the developments in the GAP project with great concern. Its latest demands are for an assured flow of 22,050 MCM/y (700 m^3/s) (Scheumann 1998: 125, Williams 2001: 18, Dellapenna 2003: 290-93) to 25,200 MCM/y (800 m^3/s) (25,000 MCM/y) (al-Najim 2005a: 8).

Lebanon

Lebanon's main source of water conflict is with the Hasbani River, which is one of the three main sources of the Upper Jordan River. According to the 1955 'Johnston Proposals', Lebanon's fair share from the Jordan River System was 30 MCM/y. Though Lebanon extracts less than 10 MCM/y, even this lesser amount is a source of conflict.

The conflict nearly erupted in 2002, in what became known as the 'Wazzani Springs Dispute'. Israel threatened to bomb Beirut due to its planned extraction from the springs, which flow directly into the Hasbani River. Tensions were reduced through UN, US and EU intervention, and the drinking water project was completed in 2003, extracting 6-10 MCM/y. The main components of the project in fact suffered minor damages inflicted by Israel during the summer 2006 war. The Israeli threats and actions result in ensuring that Lebanon at least does not develop yet *more* of the Hasbani. In his 'victory' speech of September 2006, Hezbollah's leader Hassan Nasrallah mentioned the inequitable sharing of transboundary waters on at least five occasions. The issue can be expected to stay on the agenda for the short-term.

2.5. Water Governance

As outlined in the Swedish MENA strategy some of the largest challenges in the MENA region are to achieve sound governance systems (see also the 2005 UNDP Human Development Report – Arab States). The region thus faces the double challenge of improving the management of water and environment as well as governance systems. Indeed, the MENA region in many respects lacks useful and proper legislation for water governance. And in cases where proper legislation is in place, implementation is random or non-existent. Water and land rights are seldom clearly defined and well-functioning institutions are in short supply.

Some Arab countries including Egypt, Jordan and the Palestinian Territories have approved national water resources plans. Other countries have developed frameworks which contain elements of policy, in the form of strategy or master plans. But most of these policies, plans or strategies fall short of full IWRM plans. In general, Arab countries are beginning to recognize the importance of an integrated approach to water management (UNDP, 2004). The development and regional harmonisation of such IWRM plans can also be instrumental