

December 3, 2009

Dear friend,

Subject: **Your letter regarding the Amnesty International Report on Water Issues**

Thank you for your interest in the issue of water between Israel and the Palestinians. Your letter shows a sincere desire to understand the facts and to assist, to the extent that it is possible, in improving the situation here.

The recent Amnesty International Report to which your letter refers was prepared, as we know, over a long period of time and was completed in October 2009. The authors of the report had access to information that was provided by the Palestinian side and also to a detailed Israeli report, entitled "**The Issue of Water between Israel and the Palestinians**", as published on the Israeli Water Authority's website.

(See: <http://www.water.gov.il/NR/rdonlyres/A111EFEF-3857-41F0-B598-F48119AE9170/0/WaterIssuesBetweenIsraelandthePalestinians.pdf>)

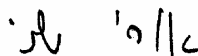
Unfortunately, notwithstanding their free access to all of the relevant information, it would appear that the Amnesty International report's authors did not take a comprehensive approach in dealing with the facts of the situation. Instead, they chose to rely almost exclusively on claims presented by the Palestinian side, without seeking to verify those claims or meet with representatives from the Israel Water Authority. As a result, the information presented in the report is distorted, giving an inaccurate and misleading presentation of the water supply situation in the region.

Since the Amnesty International report ignores important facts and data, I have provided a link (above) to a paper written in English, appearing on the Israel Water Authority's website, and attached some further information below, relating to the issue of water between Israel and the Palestinians, for your further consideration.

It is my sincere hope that the information provided in the said paper will be of assistance in providing those interested with a more accurate overview of the water issues between Israel and the Palestinians.

Thank you again for your interest.

Sincerely,



Prof. Uri Shani
Director General of the Israel Water Authority

Facts regarding the Water Supply

Pre-1967 and Today

(Note: the following information refers to available natural freshwater only, since there is no disagreement in relation to desalinated or purified water.)

Before the Six Day War (1967), as a result of which the West Bank came under Israel's control, Israel used about **1400** million cubic meters per year (MCM/yr): about **500** cubic meters per capita per year (m³/cap/yr) for all uses. At that time, the Palestinians in the West Bank used **60** MCM/yr: **86** m³/cap/yr for all needs.

Today, the average annual quantity of natural freshwater available to Israel for all purposes (domestic, agricultural, industrial) is about **1100** MCM/yr: **149** m³/cap/yr. The quantity available to the Palestinians in the West Bank is **200** MCM/yr: **105** m³/cap/yr.

(note that the number of Palestinians in West Bank is subject to debate. In this document we chose to take the average between the numbers published by the Palestinian Central Bureau of Statistics and those of the Israeli-American team that examined the issue of the "Ettinger Report.")

In light of these findings, it is very clear that since 1967, the total and per capita quantities of Israel's natural freshwater has decreased substantially, while those of the Palestinians have increased significantly.

From 1967 and until the Water Agreement was signed between Israel and the Palestinians in 1995 (as part of the Oslo agreements), Israel increased the supply of water to the Palestinians by 100 % (!) – from about **60** MCM/yr to almost **120** MCM/yr.

Before the Six Day War in 1967, only about **10%** of Palestinian households in the West Bank were connected to a central water system, while today more than **90%** receive regular supply of water. This significant development of the water infrastructure in the West Bank was carried out principally due to Israeli efforts.

The above facts alone suffice to refute the alleged claims made by Amnesty International and the Palestinians against Israel in relation to the water situation. However, we will continue with additional information that elucidates the real situation.

The Water Agreement and Its Implementation by Israel and the Palestinians

The Interim (Oslo II) Agreement signed in September 1995 between Israel and the Palestinian Authority contains a detailed and specific section on the water issue. In this context, both parties agreed that in relation to natural freshwater, "**the future needs**" of the Palestinians in the West Bank - which would be covered by a permanent agreement - would amount to an additional **70- 80 MCM/yr** - in addition to the **118 MCM/yr** used by the Palestinians in the West Bank at the time the Agreement was signed. In other words, it was expressly agreed by both parties that the total Palestinian share from the common water sources would eventually amount to **188-198 MCM/yr**.

From the additional amount which was allotted for "**future needs**" (70-80 MCM/yr), it was agreed that 28.6 MCM/yr (**23.6** in the West Bank, and **5** in the Gaza Strip) were to be supplied during the interim period of the Interim Agreement. However, as the parties have not yet arrived at a permanent settlement, since 1995, Israel has continuously responded to the Palestinian side's needs for additional potable water, beyond the obligations specified in the Interim Agreement, and has, thus far, made **available to the Palestinians almost 80 MCM/yr of water**, far exceeding the agreed amount of 23.6 MCM/yr in the West Bank. Water is provided both through direct transfers from the Israeli water system and also through permits allowing the Palestinians to drill wells. These infrastructure projects are jointly authorized by the parties in the framework of the Joint Water Committee (JWC). In this regard, it should be further noted that the Palestinians have not developed their full share from the Eastern Aquifer, which would have increased their available water supplies.

In contrast, the Palestinians are acting in breach of the Water Agreement by drilling unauthorized wells, particularly in the Northern Aquifer, without the required approval of the JWC. More than 250 such unapproved and uncontrolled wells have been drilled, adversely affecting Israeli water production in the northern valleys.

Furthermore, the Palestinian side has continuously failed to treat their sewage, in breach of the Interim Agreement, and continues to allow such sewage to flow towards Israel, contaminating both the environment and the joint aquifer. As a result, Israel is forced to treat the sewage and deal with the damaged areas.

Comparison of Israeli and Palestinian Water Consumption

Water consumption efficacy is related to a number of factors:

- a) The quantity of water available;
- b) The efficiency of utilization;
- c) The technological status of the consumer sectors (urban, agricultural, industrial);
- d) The value(s) attached to the use of water;

One possible reason for the difference in water consumption levels between Israel and the Palestinians results from differences in lifestyle. Indeed, a similar gap can be observed among different segments of the population within Israel. For example, the per capita consumption in Tel Aviv is considerably greater than in Jerusalem or Bnei Brak, due to the different life style in Bnei Brak and to the traditional water saving attitude of Jerusalemites. There is no claim that this difference in consumption is intentionally imposed by planning; rather, it is the result of an internal behavioral pattern.

A table in the Appendix contains the per capita water consumption in Israel and the neighboring territories. As can be seen, Jordan, Israel and the West Bank are placed at the bottom of the list of available natural freshwater, with **172, 153 and 105** m³/cap/year, respectively; which may be compared with **949, 861 and 732** m³/cap/year of available freshwater in Lebanon, Syria and Egypt, respectively. Indeed, Israel only has access to a small quantity of natural freshwater (1100 MCM/yr). Faced with a growing water shortage and an increasing population, Israel is undertaking several dramatic and effective measures in order to address the situation, including: **infrastructural and maintenance improvements for further reduction of systemic water loss (notwithstanding that current losses are very low by international standards); continued treatment and reuse of wastewater; reduction of the amount of freshwater allocated for agricultural use and its replacement by reclaimed wastewater; desalination of seawater and brackish water; and raising water prices for consumers.** Such efforts taken by Israel have produced significant results, facilitating optimal utilization of water resources and substantial increases in quantities of water consumption, despite the shortage of natural water sources.

In light of the above, it is suggested that the Palestinian Authority can, and should, take similar steps in order to improve their water systems and increase their water supplies.

Indeed, the Water Agreement expressly requires this of them. In the current environment, donor states are ready to assist the Palestinian Authority with funding, and Israel has offered to help with any necessary technical support and training. Unfortunately, instead of undertaking such measures, the Palestinian side continues to focus almost exclusively on the use of freshwater sources, and allows their untreated sewage to flow downstream into Israel's territory.

Even with respect to increasing the supply of fresh water, there are more than 20 wells and other infrastructure projects that have received the necessary permits from the Israeli-Palestinian Joint Water Committee (JWC), but have yet to be implemented by the Palestinians.

In relation to the water crisis in the Gaza Strip, this mainly derives from the rapid increase in the number of wells drilled in the Gaza Strip in recent years – from 1600 in 1994 to about 5000 today. Over-pumping of water and the seepage of raw sewage into the water sources have contributed to the pollution and rising salinity of the groundwater. The necessary response to the Gaza Strip's water problems must come from their own treatment of the sewage produced in the Gaza Strip and the desalination of seawater. The establishment of a desalination facility was proposed by USAID, but the project was postponed due to Palestinian terrorist activity within the Gaza Strip. As of late, the Palestinians have finally begun to talk about building such a facility in the Gaza Strip as a solution to the water crisis there.

(Note: Most of the discussion above has focused primarily on the West Bank, since the Gaza water sources and water systems are separate from those of Israel, and are to be managed internally, by the Palestinians.)

As mentioned above, a majority of Palestinian communities are connected to a central water supply system. In places where the Palestinian system is insufficient, Israel's National Water Company, "Mekorot", assists the Palestinian Water Authority by directly providing additional water, thereby fully meeting the humanitarian needs of the Palestinians.

About 10% of the Palestinian population within the West Bank does not have internal water systems.

Better internal organization would help the Palestinian Water Authority to solve this remaining problem. Furthermore, water losses of up to **36%** (!) from Palestinian water systems (some of this may be due to theft) exacerbate the problem.

The World Health Organization recommends a minimum consumption of **100 liters of water per person per day**, i.e. **36 cubic M3/cap/year**. The Palestinians in the West Bank currently use 180 MCM/yr, which amounts to **94 M3/cap/year** for all uses for a population of 1.9 million. If the amount of water for agriculture (90 MCM/yr) is factored out, the urban consumption per capita is still higher than the WHO recommendation by **129 liters per person per day**, i.e. **47 MCM M3/cap/year**.

It is worth noting that existing water supply to Palestinian towns and cities in the West Bank is more regular and reliable than the water supply to the Capital cities of Jordan and Syria. Nevertheless, this is still below the standard that Israel wishes to reach for the Palestinians.

International Law Relating to Water

The rules of modern international law relating to the use of Shared water resources are outlined in a number of legal documents. Principally, we can mention the ILA Helsinki Rules on the Uses of the Waters of International Rivers of 1966, the UN Convention on the Law of the Non-navigational Uses of International Watercourses of 1967, and the ILA Berlin Rules on Water Resources of 2004.

Two basic rules are viewed as customary in relation to the use of shared international water resources.

First – the principle of "equitable and reasonable utilization":

According to this principle, the use of a shared water resource should be determined on the basis of an equitable and fair balancing of the various factors, applicable to the specific case. Many different factors are specified in the legal documents mentioned above, as being relevant in applying this principle, and it is widely accepted that the list of factors is not an exhaustive one and that no clear preference is given to one factor over another.

Second – the principle of prevention of significant harm:

Under this principle, a riparian State is obligated, when using its equitable share of the shared international water resource, to ensure that its use does not unreasonably harm the uses of its co-riparian.

The implementation of these two principles in reality is complex. None of the legal frameworks available provides a clear mathematical formula for the division of shared water sources, limiting themselves instead to providing only guiding criteria, which should need to be weighed and assessed in accordance with the circumstances of each and every case. It is for this reason that the majority of water-related disputes worldwide are resolved primarily through pragmatic solutions, achieved in negotiations between the relevant parties.

Some Remarks on the Water-related Aspects of the Relations between Israel and the Palestinians

The Natural/Hydrological Aspect: Most of the natural springs and areas of accumulation in the **Western and Northern basins** of the Mountain Aquifer are located in **the territory of the State of Israel**. Most areas of seepage, on the other hand, are located in the West Bank.

Most of the natural springs and areas of accumulation in the **Eastern basin** of the Mountain Aquifer are located in **Palestinian-controlled territory**.

The Humanitarian Aspect: It must be noted that the Palestinian Authority has access to sufficient quantities of water in order to reasonably meet all of its municipal needs.

The 'Alternative Use' Aspect: Taking into account the scarcity of water and the need to sustain and preserve this resource, it is important that the Palestinians also fulfill their responsibilities according to existing signed agreements; namely, in this respect, they must increase the use of alternative water sources, for example by increased pumping of water from the Eastern basin. Additionally, the Palestinian Authority must take measures to treat their sewage and make reuse of the effluent for agricultural purposes (as done in Israel), thereby freeing freshwater for domestic use. They also must prevent the wasting of water from flood irrigation and in particular from leaks in the municipal water pipeline system, which cause water losses of up to 36%.

Appendix

Total Average Quantity of Freshwater available in Israel and Neighbouring countries ¹

No.	Country	Quantity of freshwater: multi-annual average MCM/yr	Population (millions)	Per capita quantity of water: multi-annual average m3/yr	Remarks
1	Lebanon	3,700	3.9	949	Based on UN reports and Lebanese and international data (*)
2	Syria	17,000	19.8	861	Based on Syrian and international reports (**)
3	Egypt	60,000	82	732	Based on international reports (***)
4	Jordan	985	5.7	172	Based on Jordanian studies and reports (****)
5	Israel	1,100	7.2	153	Based on the reports of the Water Authority and CBS
6	Palestinians West Bank	200	1.9	105	Based on the Water Agreement, Palestinian CBS reports and Israeli-US studies
	Total	82,985	120.5	689	Hypothetical situation of equitable distribution

¹ Including renewable fresh water resources. Not including desalinated water and marginal water (brackish water, wastewater effluent, etc.).

The data are based on cross-referencing of a number of sources, some of which are detailed below:

(*) Aquastat 2008; EMWIS-SEMIDE, World Bank.

(**) Syrian Arabic Republic M.O.I. 2004; Aquastat 2008.

(***) Aquastat 2007; ESCWA.

(****) Aquastat 2008; ESCWA; M.O.I., World Bank.

Note:

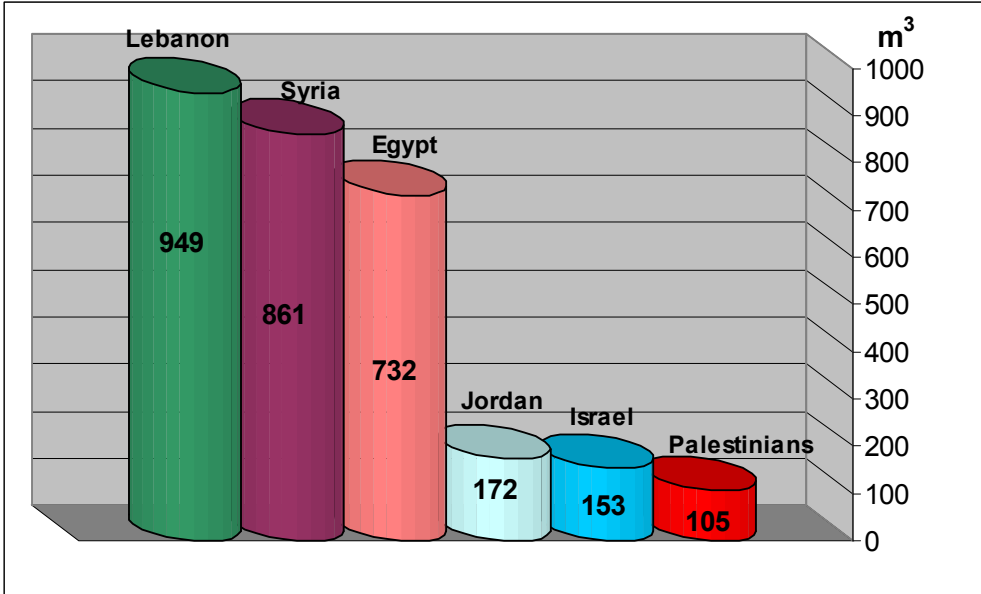
Water utilization – Israel and Jordan use *all* their renewable water resources and often overdraw the shortage. Syria, Egypt, and the Palestinians use *almost all* of their renewable water resources (about 90%). Lebanon uses only about 2.7 billion m³ of the 3.7 billion m³ available.

Long term average natural water availability - for Israel and the Palestinians, the value relates to the last 15 years, from 1993, which is shorter than the time-span frequently quoted. It is more relevant for the present and future as it reflects the already noticed and the forecasted reduction in averages that may be due to the global climate

changes. Current studies indicate further that while the average is dropping, the variability is increasing, which means more extremes at both ends. Increased variability exacerbates the difficulties in providing reliable and sustainable supplies.

For the remaining countries, the multi-annual average is calculated according to a longer period of time; however, it is possible that due to climatic changes there will be a deviation of about 10% with respect to the quantity of water actually available to them, as above.

Total Quantities of Freshwater per Capita on Multi-Annual Average, in Countries Bordering Israel



Remarks: This chart is a graphic depiction of the previous table showing the total quantities of fresh water (for agricultural, industrial and municipal use) available to each country annually on a per capita basis.

General Clarification:

The discussions and comparisons presented in this document focus on the **situation in Israel vis-à-vis the Palestinians in the West Bank.**

As regards the Gaza Strip, it should be noted that the Gaza Aquifer has no impact on Israel and Israel does not prevent the flow of surface water or groundwater to the Gaza Aquifer. Clearly, the source of any additional water to the Gaza Strip must be desalination of seawater. General plans have been prepared (by donors such as USAID) for seawater desalination, and their implementation can provide a separate, general solution for the population of the Gaza Strip.