

Water in the Israeli-Palestinian conflict

SUMMARY

The Palestinian population in the West Bank and Gaza is one of the fastest growing in the world and its demand for water is increasing. Access and distribution of water in these territories has been an issue within the context of the Israeli-Palestinian conflict since 1967. In 1995, the Oslo II Accord adopted a quantitative approach to the water issue, detailing the quantities to be allocated to Israel, the West Bank and Gaza, but did not sufficiently take into account the natural, political and socio-economic developments that have affected water supply and demand in the region since. Economic disparities, lack of substantial and sufficient infrastructure and of effective water resources management, compounded by pollution and climate change have led to disproportionate allocation of water and to substantial depletion and contamination of water resources.

Water consumption by Israelis and Palestinians reflects stark inequalities. Due to the allocations of trans-boundary water resources agreed upon under Oslo II, Israel currently controls approximately 80% of water reserves in the West Bank. Military conflict in Gaza in the summer of 2014 left over a million residents without access to water. The international community and the EU have expressed concern over the limited access to water in the West Bank and Gaza, and have become active on the issue of water management. Reports from the European Commission (EuropeAid) highlight that technical and humanitarian assistance on water issues has to go hand in hand with progress on the political front, in order for effectiveness to be maximised and for long-term results to be achieved.



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Water diplomacy

In its 2013 [Conclusions on EU water diplomacy](#), the EU's Foreign Affairs Council underscored that tensions over access to water are likely to arise in the next decade, endangering stability in many [parts of the world](#), particularly eastern Africa and [Central Asia](#). It further emphasised that the EU seeks to 'proactively engage in trans-boundary water security challenges with the aim of promoting collaborative and sustainable water management arrangements and to encourage and support regional and international cooperation in the context of agreed policies and programmes'.¹ The Middle East was mentioned as an area critical to cross-border water security, which EU water diplomacy should monitor closely. In February 2015, Israel and Jordan signed a historic but controversial [deal](#) for shared management of fresh water resources, which marks a step forward for water diplomacy in the region. The agreement's provisions include the construction of a desalination plant in Jordan, near the Red Sea, to supply water to southern Jordan and Israel, and a commitment by Israel to sell more water to Jordan.

Due to the unresolved conflict between the parties, the situation is more complex with regard to cooperation on water management between Israelis and Palestinians. Contrary to a previous trilateral [water-sharing initiative](#) signed in 2013 at the World Bank in Washington DC, the February deal does not include provisions for Palestine. Israeli officials have stated that this is an issue to be dealt with separately. Water has been an issue in the Israeli-Palestinian conflict since 1967, and more so since the expansion of Israeli control over water resources in the West Bank. The European Parliament has expressed ongoing concern about the water situation in the West Bank and Gaza, inter alia through its 2014 resolution on 'Israel-Palestine after the Gaza war and the role of the EU' ([2014/2845\(RSP\)](#)), in which it urged all EU institutions to encourage 'water relations' between Israel and its neighbours. In his 2014 [speech to Israel's Parliament](#), the Knesset, European Parliament President, Martin Schulz, referred specifically to the issue of limited access to water for Palestinians compared to Israelis. In the period [2008-2013](#), the European Commission, through its Directorate-General for Development and Cooperation – EuropeAid (DG DEVCO), committed nearly €55.4 million to water and sanitation projects for Palestinians. Following the 2014 Israeli offensive, the Commission's Directorate-General for Humanitarian Aid and Civil Protection (ECHO) has been providing humanitarian assistance, including trucking safe water into Gaza and the West Bank. The new EU programming document, the 2014-2015 [Single Support Framework](#) signed by the EU and the Palestinian Authority, includes water development as one of its main focus areas.

This briefing outlines the main parameters of water supply and consumption in Israel and in the West Bank and Gaza, which constitute the backdrop of the issue at hand. It then examines the shortage, access to and quality of water as an element in the Middle East Peace Process, keeping in mind the EU's approach and its commitment to the United Nations Economic Commission for Europe (UNECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes ([Water Convention](#)) and the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses ([UN Watercourses Convention](#)).

Water in the region

The area between the [Jordan River](#) and the Mediterranean Sea is generally characterised by a shortage of [water reserves](#). Climate issues, such as frequent [droughts](#), [lack of rain](#), and evaporation of rainwater increase the ensuing gap between supply and demand. The withdrawal of river water for industrial and household use by Israelis, Palestinians and Jordanians living in the Jordan River Valley north of the Dead Sea increases its depletion rate. At the same time, given that the West Bank and Gaza have one of the [fastest-growing populations](#) in the world, their demand for water is increasing. International organisations, Western and regional NGOs and think-tanks concur that water distribution and allocation between the Israelis (both those residing in Israel and in the West Bank and Gaza) and the Palestinians residing in the West Bank and Gaza are disproportionate. While Israelis have unlimited running water year-round, the hundreds of thousands of other residents in the territories suffer from water shortages that drastically affect their health and economic wellbeing. According to the [World Bank](#), these residents have the lowest access to fresh water resources by regional standards. While the land in the [West Bank](#) and [Gaza](#) is arable, inadequate water supply has contributed to soil degradation and desertification. In addition, economic disparities, lack of substantial and sufficient infrastructure and the lack of effective management of water resources have led to substantial depletion and contamination of water resources which further aggravate the problem and pose risks to the humanitarian and environmental state of the region.

Regional water resources

There are three key sources of natural freshwater in Israel, the West Bank and Gaza (see figure 1):

Lake Tiberias

Constituting the largest freshwater storage repository along the Jordan River, [Lake Tiberias](#) (Lake Kinneret in Hebrew; Sea of Galilee in English) is the recipient of the flow of the Upper Jordan River. It then drains into the Lower Jordan River which ultimately flows into the [Dead Sea](#). In 1964, Israel constructed the [National Water Carrier](#) (NWC), a 130 kilometre-long canal and pipeline system that carries water from the lake to northern Israel, Tel Aviv and Haifa. The NWC also serves power plants and industries along the country's Mediterranean coastline, as well as farms extending as far south as the Negev Desert. According to the [National Geographic](#), the NWC diverts an average of 329 million cubic meters (mcm) of water from the Jordan each year, amounting to more than a quarter of its total flow. This has contributed to the river's depletion, which in turn has led to a significant drop in the Dead Sea's water levels and damaged dependent ecosystems, according to [Human Rights Watch](#). In addition, there are concerns about sewage rendering water quality increasingly worse.

The Mountain Aquifer

[The Mountain Aquifer](#) (Yarkon Tanninim Aquifer) is the largest and highest-quality water resource in the region. It extends over 130 km from Mount Carmel in the north to Beersheva in the south and is roughly 35 km wide. It is divided into three basins: the Western Aquifer Basin (WAB), the North-Eastern Aquifer Basin (NEAB) and the Eastern Aquifer Basin (EAB). Approximately 80% of its recharge area is from rainfall in the West Bank (WAB), according to a [report](#) by the Israel Water Authority. Due to its hydrological characteristics, it is vulnerable to groundwater pollution which puts the high quality of its water at risk. Seepages of

large quantities of untreated sewage or waste into the ground threaten the continued use of the aquifer's water and there is already evidence of pollution in some locations. Unauthorised drilling has also been [cited](#) as a problem.

The Coastal Aquifer

[The Coastal Aquifer](#) is located under the coastal plain of Israel, the Gaza Strip and the Sinai Peninsula (Egypt). It is replenished by direct rainfall and by artificial recharge (wells, reservoirs and wastewater effluents), agricultural return flows, lateral groundwater, infiltrations and seawater intrusions. For this reason, in recent years it has faced [problems](#) such as pollution from agricultural chemicals, increased sea-salt build-up and over-pumping. In 2012, the UN Country Team [reported](#) that the groundwater levels in the aquifer had fallen below sea level, leading to seawater and sewage infiltration, rendering 90-95% of the water unfit for human consumption.

A number of coastal rivers constitute smaller sources of water. These have been heavily exploited for local water needs and wastewater disposal, and as a result have been heavily polluted.

Figure 1 - Mountain and coastal aquifers



Data source: [United Nations Environment Programme \(UNEP\), DEWA/GRID-Geneva](#), 2015.

Water consumption: scarcity and inequality

Israel

Around 60% of Israel's water supply is covered by the three aforementioned sources, while the rest is covered by wastewater recycling and desalination. The exploitation of approximately 50% of the Jordan River Basin through the NWC alone ensures one third of the country's water needs. The Mountain Aquifer [provides](#) about a quarter of the water used by Israel, including its settlements in the West Bank. Israel – a global leader in this regard – treats 86% of its domestic wastewater and recycles it for agricultural use (domestic wastewater constitutes 55% of the total water used for agriculture). In the past six years, the country has also made significant advances in [desalination](#), with four desalination plants already operational and a fifth planned to be functioning soon. The combination of these projects should ensure that all consumer water needs are covered.

The West Bank

At present, West Bank residents are completely dependent on the Mountain Aquifer as the source of natural fresh water. The [Palestinian Authority](#) (PA) does not desalinate or treat water for agriculture, which is an important part of the Palestinian economy, providing employment to around 12% of the working-age population (the same as in Gaza). In addition, one third of water supplied to the West Bank is [lost](#) due to aging infrastructure and leakages. Since 1967, when Israel's national water company [Mekorot](#) took control of the West Bank's water resources, to meet their needs its residents have had to purchase water extracted from the Mountain Aquifer. According to most sources, water consumption by Israelis and Palestinians in the West Bank reflects stark inequalities, with Palestinians having access to circa 73 litres/capita/day (l/c/d) – considerably lower than the 100 l/c/d minimum recommended by the World Health Organization (WHO). The [Palestinian Central Bureau of Statistics](#) and the Palestinian Water Authority (PWA) report that only 73.5% of families in the West Bank consider their water to be [good enough to drink](#). The development of intensive modern [agriculture](#) by Israeli settlers in the Jordan Valley has led to an increase in their relative consumption of water.

Gaza

Gaza's population gets most of its water from the Coastal Aquifer, as the Gaza Strip has no substantial quantities of surface water. As consumption rates exceed those of replenishment, sea water from the Mediterranean seeps in, creating a [saline level](#) higher than that recommended by the WHO guidelines for safe drinking water. The [EU and Unicef](#) estimate that 90-95% of the water in the Gaza Strip is unfit for human consumption. To make things worse, according to the Palestinian Water Authority, the aquifer is also [threatened](#) with exhaustion by 2020. In 2014, the [Human Rights Committee](#) raised concerns about the situation of the Gaza Strip residents and their access to water. Only 5.8% of families living there consider their water to be [good enough to drink](#).

Water in the West Bank and Gaza

- Palestinians have access to 70 litres/capita/day (l/c/d) on average for domestic use and personal hygiene. The WHO recommended minimum is 100 l/c/d.
- In some areas of the West Bank located in Area C, where Israel has full military control, some communities survive on as little as 20 l/c/d.
- Around 200 000 people in West Bank rural areas have no connection to the water network and rely on tankered water to meet their basic needs. They pay up to 400% more for every litre than those connected to the water network.
- Due to the low quantities of water available to Palestinian farmers, only 6.8% of the cultivated land in the West Bank is irrigated.

Source: [EWASH](#) and [United Nations Office for the Coordination of Humanitarian Affairs](#).

This is crucially linked to the lack of infrastructure and resources for wastewater management. According to a [study](#) by the European Environment Agency (EEA), waste-water management in this area is mostly limited to sewage networks and cesspits. The wastewater collection network does not cover all villages and communities. Just over half of households are connected to the sewage collection system, although there is a notable increase in the trend. The first regional wastewater treatment plant, a World Bank-managed project, was completed in northern Gaza in early 2014, but is still not operational. In the summer of 2014, the hostilities between Israel and the Islamic resistance movement, Hamas, in Gaza led to the destruction and damage of [two](#) major sewage treatment plants and to 20-30% of the sewage and water networks, leaving nearly half a million people without running water, according to [Human Rights Watch](#).

A significant part of Gaza's water demand is covered by purchases. Israel sells an average of 4.7 mcm of drinking water to Gaza, delivered through two grid [connections](#): the Bani Suhaila connection east of Khan-Younis, and the Ben Said connection east of Deir el-Balah. Limited water supply has, however, led to very high prices. A third Israeli pipeline connection at Nahal Oz, which runs into northern Gaza, was also completed in 2014. The [International Fact-Finding Mission on Settlements](#) estimated in 2013 that Mekorot supplies almost 50% of the water consumed by communities in the West Bank and Gaza.

Water as an element in the conflict

Prior to 1967, Israel developed the water sources at its disposal and created its water company, Mekorot, to convey and distribute water for agricultural, industrial and domestic consumption. [After 1967](#), Israel took control of the West Bank's water resources and particularly the Mountain Aquifer, and started connecting settlements to the Mekorot water supply network. Following the [Six-Day War](#), Israel assumed control over the largest part of the water in the West Bank. Israeli authorities imposed [drastic restrictions](#) on the drilling of new wells.

Water has been part of the peace negotiations since 1991, immediately after the [Madrid Conference](#). [The Working Group on Water Resources](#) became one of the most active groups following the launch of the [Multilateral Track](#) talks in Moscow in 1992. On the bilateral level, the [Oslo Accords](#) of 1993 established the basis for cooperation on water resources, and for research on subjects such as water infrastructure and desalination. The 1995 Oslo Interim Accord ([Oslo II](#)), signed between Israel and the [Palestine Liberation Organization](#) (PLO), dealt with the water issue in depth. Article 40 entitled 'Water and Sewage' in [Annex III](#), stipulated that Israel recognises the 'Palestinian water rights' in the West Bank. It also allocated the [quantities of water](#) to each party, maintaining the then-quantities of usage, and defined the future needs for each party. The 'Palestinian' side was given the right to extract 20% of the annual renewable volume of the Mountain Aquifer and to extract water from the Coastal Aquifer according to its needs. It was also agreed that, in the five-year interim period, Israel would transfer 23.6 mcm/year of water to the West Bank and 5mcm/year to the Gaza Strip. The [Joint Water Committee](#) (JWC), made up of an equal number of experts from each side, was set up to regulate and ensure implementation of water and sewage-related issues in the West Bank. The JWC works closely with the [Palestinian Water Authority](#) and the [Water Authority](#) of Israel. Finally, Oslo II also provided for the regulation of the purchase of water from one side by the other to reflect the full real cost incurred by the supplier, including production costs.

The Oslo Accords followed a [quantitative approach](#) to the water issue, detailing what quantities of water from the Western Aquifer would be allocated to Israel, the West Bank and Gaza. This approach has been [criticised](#) for not taking into consideration natural factors (adjustment to natural changes) and socio-economic developments (for instance, population increase). In addition, Oslo II was meant to regulate matters for an interim period of five years, but as the parties did not reach a final status agreement, it is still in place, reflecting population sizes and needs that have become obsolete. Other [criticisms](#), including by the [World Bank](#), address: (1) the asymmetric power that the JWC represents, which renders the planning and development of infrastructure in the West Bank and Gaza extremely difficult; and, (2) the restrictive Israeli measures on local and international investors in the two territories, which render operations costly and time-consuming.

The Accords paved the way for [foreign assistance](#) to start flowing into the West Bank and Gaza: 29 states and organisations pledged US\$2.5 billion in aid, of which US\$365 million was specifically for water and sanitation projects. However, Israel's blockade of the Gaza Strip which began in 2007, following Gaza's takeover by Hamas, and the conflict in Gaza in 2008 and 2009, led to the destruction of significant [WASH](#) (water, sanitation and hygiene) infrastructure. Shortages in fuel and electricity rendered sewage treatment projects impossible, contributing to further contamination of aquifer water and increasing hygiene risks. The destruction [continued](#) in 2010-2012. The military [conflict](#) between Israel and Hamas in the summer of 2014 had similarly devastating consequences. In the first weeks following the ceasefire, an estimated 1.2 million Gaza residents had no access to running water. Insufficient electricity to treat or pump out sewage led to increased health risks and fears of epidemic outbreaks.

Water has also been an issue in the context of the [Israeli barrier](#) (also known as Separation Wall or Annexation Wall), which Israel has built in the West Bank. The International Court of Justice has expressed [concern](#) regarding the effects of the barrier on access to the agricultural water wells of residents on the eastern side of the wall.

The above circumstances have led several agencies, NGOs and international organisations, including the UN Human Rights bodies, to repeatedly raise concerns about water shortages. [Estimates](#) indicate that residents in Israel and in Israeli settlements consume about three times as much water per person per day (250 litres) as West Bank residents (84 litres) do. In 2010, the Human Rights Committee [stated](#) that it was 'concerned at water shortages affecting disproportionately the population of the West Bank, due to prevention of construction and maintenance of water and sanitation infrastructure, as well as the prohibition of construction of wells', linking its concerns to the provisions of the [International Covenant on Civil and Political Rights](#) on the 'right to life and non-discrimination'. A number of NGOs are carrying out projects in the region in the area of water and sewage, including [EWASH](#) (Emergency Water, Sanitation and Hygiene group), a coalition of 27 organisations, including UN agencies, and [Eco Peace Middle East](#) (formerly Friends of the Earth Middle East).

The EU and Unicef together with the PWA and Gaza's Coastal Municipalities Water Utilities (CMWU) have initiated a project to build a [desalination plant](#) in the Gaza Strip to provide drinking water for 75 000 people [by 2020](#). This project may prove to be an asset in the peace process. Israel's growing desalination capacity may lead to more flexibility with regard to the quantity of water available to Palestinians. Furthermore, it can work as a stepping stone for progress in the broader region.

A final observation should be made regarding the role of international law. In January 2015, the 'State of Palestine' acceded to the [UN Watercourses Convention](#). However, Israel is the only state in the Jordan basin that has not joined the Convention. [Analysts](#) maintain that the region's wide participation in the Convention may mean that it will act as a basis for future trans-boundary water-related negotiations and for states in the region to reach consensus with each other. Israel's absence might however mean that this does not apply to dealings with Israel.

Water as a potential area for trans-boundary cooperation?

The Commission's January 2014 final report on the [Evaluation of EU cooperation with the occupied Palestinian territory and support for the Palestinian people](#) concluded that without a 'political settlement, abatement of binding constraints and establishment of accountability mechanisms', cooperation in the area of water development between the EU and the Palestinian Authority is only marginally effective. This is aggravated by the depleting institutional capacity, ownership and legitimacy of the PA. It emphasised that the key constraints in the area of water, primarily the high level of regional risk, require 'movement on the political front'. At the same time, a recent [study](#) by the European Parliament's Directorate-General for External Policies (DG EXPO) shows that on the issue of trans-boundary water disputes, empirical data indicate that cooperation is much more likely to occur than violent conflict. The study points out that in modern times, violent conflict has rarely erupted over water. In the case of the Israeli-Palestinian conflict, cooperation on water issues might be a way forward in fostering better relations between the two sides. As both the report and the study show, technical and humanitarian assistance goes hand in hand with continued efforts for a political settlement.

Main references

[Down the drain Israeli restrictions on the WASH sector in the Occupied Palestinian Territory and their impact on vulnerable communities](#), Report by the Emergency Water Sanitation and Hygiene group (EWASH) in the Occupied Palestinian Territory, March 2012.

[The Issue of Water between Israel and the Palestinians](#), State of Israel, Water Authority, 2009.

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Endnote

¹ Council of the EU, [Conclusions on Water Diplomacy](#), 2013: paragraph 4.

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