DRAFT Concept note

WASH focused on humanitarian assistance for the Gaza Strip

Introduction

This concept note is a part of *"Advancing Climate Resilience: Area C Solar Power for Gaza and West Bank and Regional Water Security"* - a Joint project of the European **European Commission's Foreign Policy Instruments** and **EcoPeace Middle East.** EcoPeace Middle East is a unique organization that brings together Jordanian, Palestinian, and Israeli environmentalists aiming to advance both sustainable regional development and the creation of necessary conditions for lasting peace in our region. EcoPeace has offices in Amman, Ramallah, and Tel Aviv, and its 30 years of work in Environmental Peacebuilding has been rewarded with a Nobel Peace Prize nomination in 2024.

This project's objective is to achieve increased regional cooperation and agreement on joint action on climate, energy, and human security, through the creation of (1) increased awareness and political will of key national and international decision makers on water security as central to national and regional security; and (2) evidence base for implementation of rapid response measures to build climate resilience for Palestinians.

This concept note will focus on immediate WASH focused humanitarian assistance for the Gaza Strip, aiming to promote immediate humanitarian assistance helping prevent public health, economic, and environmental catastrophes for all parties involved.

Situation Overview

Gaza Strip is experiencing an unprecedented humanitarian crisis, marked by massive displacement, the near collapse of essential services, a severe health emergency, and escalating regional risks. Approximately 1.9 million Palestinians, nearly 90% of Gaza's pre-conflict population, have been displaced since October 2023. Many have been forced to move multiple times, often seeking shelter in areas already overwhelmed by previous waves of displaced people. The majority reside in overcrowded shelters, including schools and informal camps, with extremely limited access to basic services[1].

[1] https://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-20-august-2025

The Water, Sanitation, and Hygiene (WASH) sector has been particularly devastated. Around 81% of public WASH facilities and assets are either located in conflict-affected zones or have been inaccessible due to military displacement orders. This has severely restricted access to essential water and sanitation services. Household water insecurity is widespread, with approximately 96% of families reporting insufficient or unsafe water supplies, and 90% noting worsening drinking water conditions. The destruction of water infrastructure, contamination of sources, and fuel shortages have forced many to rely on unsafe water, significantly increasing the risk of waterborne diseases.

Sanitation systems have similarly collapsed. Wastewater and solid waste collection are severely disrupted, leading to environmental contamination and heightened exposure to disease. The lack of functional sanitation facilities has contributed directly to outbreaks of diarrhea, jaundice, and other infectious diseases.

The health crisis is acute. Over 586,000 cases of acute respiratory infections and more than 220,000 cases of diarrhea have been reported since the conflict escalated. The destruction of hospitals and clinics, compounded by shortages of medical supplies and personnel, has drastically reduced the capacity to respond to these emergencies. Children and other vulnerable populations are particularly affected, with rising cases of scabies, skin rashes, and hepatitis A.

The humanitarian crisis also carries significant regional risks. The collapse of sanitation and waste management infrastructure has led to environmental contamination, threatening coastal ecosystems and food security. Large-scale population displacement and the spread of infectious diseases increase the potential for cross-border transmission to neighboring countries, including Israel and Egypt.

Overall, Gaza's situation is critical. Immediate and sustained international support is essential to address urgent humanitarian needs, prevent further deterioration, and mitigate potential regional spillovers.

The current situation of the WASH sector in the Gaza Strip

According to the World Bank June 2024 Gaza Damage Assessment[2] over 84% of all WASH assets and facilities are damaged or destroyed. All stormwater pumping stations, wastewater treatment plants, water supply connections, and water reservoirs, as well as more than 93% of sewage pumping stations, have been

[2] the World Bank Gaza Damage Assessment, June 2024: https://static.mediapart.fr/files/2024/08/27/gaza-strip-monthly-report-june-2024.pdf

impacted. 81 assets incurred damage during this reporting period, including 27 water wells, 19 sewage pumping stations, 13 water reservoirs, 12 brackish desalination plants, 8 stormwater basins, and 2 stormwater pumping stations. Governorates that sustained the most significant increases in damage include Khan Younis (32 assets) and North Gaza (22 assets), followed by Rafah (11 assets) and Gaza City (11 assets). The damage includes 1550 kilometers of water connection loss. Since then, the water and sewage systems in the Gaza Strip have suffered severe damage.

As of early May 2025, the overall average daily water production in the Gaza Strip from various resources was around 300,000 cubic meters per day. It should be noted the production doesn't represent the amount of water reaching households and population centers, as the transmission system suffers from high percent of water losses (estimated to be almost varies from 70 - 50%) and the fact that many civilians do not reside close to pots and rely on transmission through water trucks, limiting the received amount of water available for each individual.[3]

The Montar Mekorot water connection point in the north of Gaza which has experienced periods of closure and operation had a pre-war daily capacity of 20,000 cubic meters. The Bani Suhaila connection point was repaired after a long period of low supply, with a pre-war capacity of almost 15,000 cubic meters per day)[4]. The remaining BenSa'eed water connection point in the middle area has been damaged and nonfunctional since 22 January 2025 and has a capacity potential for 15,000 cubic meters per day.

The Gaza City desalination plant (located in the northern part of Gaza city with pre-war daily water production capacity of 10000 cubic meters is damaged and not operational. Two other desalination plants are still partially operating. Deir al-Balah's desalination plant is partially operational, primarily powered by diesel generators, with a daily average production of 1,100 cubic meters (compared to 6,000 cubic meters per day before the war). The southern desalination facility near Khan Younis, which had been reconnected to the Israel Electricity Corporation (IEC) grid in November 2024 but later disconnected following the collapse of the ceasefire, saw its production drop from more than 8,000 cubic meters per day to just 2,000 cubic meters per day (compared to a pre-war capacity of 20,000 cubic meters). On 27 July 2025, the plant was re-electrified by the IEC and has since resumed operations at a significantly higher output of 16,000 cubic meters per day.

[3] All data as of early May 2025 was published within the National SoP WASH Cluster Meeting Minutes of May 7, 2025: https://drive.google.com/file/d/1CtnSLdotmnDPTkFwB1_e-kbC4jV7OK4d/view?usp=sharing
[4] How Israel worked to renew Gaza's water supply amid the war, with help from locals: 5 june 2024: https://www.timesofisrael.com/how-israel-worked-to-renew-gazas-water-supply-amid-the-war-with-help-from-locals/

In response to the acute water crisis in Gaza, the United Arab Emirates (UAE) established six desalination plants on the Egyptian side of Rafah, as part of its *Gallant Knight* humanitarian operation. These facilities have collectively produced between 1.2 and 2 million gallons of water per day, benefiting approximately 600,000 Palestinians[5]. By mid-2024, the UAE had already delivered more than 130 million gallons of clean water to Gaza through these plants. In May 2024, when Israel seized full control of the Philadelphi Corridor, humanitarian operations through Rafah were severely disrupted, and the delivery of desalinated water from the Egyptian side was largely halted[6][7].

Groundwater wells production, based on fuel supply and in need for treating and desalination equipment due to high salinity, dropped significantly compared to the beginning of the war. As of early May 2025, UNRWA, municipal, and private sectors operated wells that pump approximately 68,783 cubic meters per day (29,500 cubic meters per day north of Wadi Gaza and 39,284 south of it). Shelters in Rafah started receiving potable water through tankers from the Coastal Municipalities Water Utility (CMWU) as well.

All elements of the WASH system, including plants, pumps, wells, and other WASH facilities that demand consistent electricity, are almost entirely unavailable since the grid is shut down (with the exception of the Southern desalination plant). Thus, the WASH sector is in crucial need of fuel entering the Strip to operate its generators.

On the field of winterization and flood prevention, on November 16th 2024, the Municipality of Khan Younis reported that the lack of fuel is severely hindering its ability to collect and transport waste as well as clear stormwater trains in over 60 identified locations at high risk of flooding, among other essential services, further exacerbating the challenges faced by residents in these vulnerable areas.[8]

As of the end of August 2025, water resilience in southern and central Gaza has relatively improved. This is due to the several sources of water intermittently available, including two Mekorot pipes from Israel, ground water, and two desalination plants connected to the Israeli electricity grid. In addition in this last month 47 truck loads of piping were allowed into Gaza to lay the new water pipeline to southern Gaza from Egypt, supported by the UAE, and importing desalinated

[5] https://una-oic.org/en/palestinians/2025/07/30/The-UAE-brings-hope-to-the-Gaza-Strip-and-breaks-the-siege./
[6] https://apnews.com/article/israel-iran-hamas-latest-05-29-2024-c5f48e99dd5b7704df7c9b37ba6d16c2
[7] https://www.aa.com.tr/en/middle-east/israel-captures-all-points-of-aid-access-to-gaza-after-seizing-philadelphi-corridor/3237096
[8] Humanitarian Situation Update #239 | Gaza Strip, https://www.ochaopt.org/content/humanitarian-situation-update-239-gaza-strip

water from Egypt. These various water supply sources are allowing the CMWU to better supply the population with much needed water in south and central Gaza.

In contrast, the situation in north Gaza, is one of dire dependency. With the northern desalination plant destroyed, the only source of large quantities of water for the over one million people in the north is the northern Mekorot pipeline from Israel. Every time this pipeline gets damaged, which is often, then the population is left dependent on small privately owned desalination of ground water, dependent on fuel for their operations, that can produce no more than 2 to 3 thousand liters of water per day. This has resulted in dire intermittent periods where the population in north Gaza is left with an average water supply of 2 to 3 liters of water per person. This situation leaves the elderly, sick and young highly vulnerable, with some of the population receiving less than two liters of water a day, until the Mekorot line is repaired. There is therefore an urgent need to focus on rebuilding the water supply resilience of northern Gaza as detailed below.

In summary, the situation demands immediate and sustained efforts to restore essential WASH services, mitigate public health risks, and provide life-saving support to the affected populations.[9]

Immediate Humanitarian needs and interventions

The humanitarian crisis in Gaza has reached catastrophic levels, with the collapse of essential water, sanitation, and hygiene (WASH) services. As of June 2025, 93% of households in Gaza experienced water insecurity, a significant increase from previous months . This dire situation is compounded by the destruction of over 85% of WASH infrastructure, including desalination plants, sewage treatment facilities, and water wells[10]. The ongoing fuel shortage, which has persisted since March 2025, has further exacerbated the crisis, leading to the shutdown of essential services such as hospitals and water pumping stations.

The lack of access to clean water has resulted in a public health emergency, with rising cases of waterborne diseases such as diarrhea and Hepatitis A and E. Children under five are particularly vulnerable, with over 320,000 at risk of acute malnutrition.

[9] Flash Appeal Occupied Palestinian Territory: https://www.ochaopt.org/sites/default/files/OPT_Flash_Appeal_EN_Rev_2.pdf

[10] https://www.acaps.org/fileadmin/Data_Product/Main_media/20250117_ACAPS_Briefing_note_Palestine_Gaza_ceasefire.pdf?utm_source=chatgpt.com

The situation is further aggravated by the accumulation of untreated sewage in residential areas, leading to flooding and increased risk of disease outbreaks[11].

An urgent focus needs to be on rebuilding the water resilience of northern Gaza. This can be achieved by COGAT responding to the request of the CMWU and UN agencies allowing for the import of over 20 small desalination plants and having them clustered in a manner that could allow electricity grid connection from Israel. In addition, duplicating the efforts of the UAE in the south, the rapid building of a new pipeline from either Zikim or Erez, connected to mekorot pipes in the north, could supply relatively large water quantities along the Gaza coast directly to the population centers in Gaza city. This combination of several water resources would build the needed resilience for the north of Gaza, as exists in the south and center. As long as over one million people remain in the north, Israeli military orders for the Gaza city population to vacate the north, can not justify any delay in building the water resilience here urgently needed.

In this context, immediate intervention is critical to prevent further loss of life and to stabilize the humanitarian situation. This includes restoring access to clean water, ensuring proper sanitation, and providing essential hygiene services.

Possible Scalable Pilot Projects

In response to the urgent needs, several scalable pilot projects have been proposed to address the immediate humanitarian crisis while laying the groundwork for long-term resilience.

Small Local Wells: Establishing wells producing 70–120 cubic meters per day can serve displaced clusters. A pilot project in Deir al-Balah has successfully established a new public water well, supplying an additional 60 cubic meters per hour to approximately 16,000 people . Scaling this model could involve creating a network of over 200 community wells across Gaza and the West Bank, integrated with municipal water grids[12].

Mobile Desalination Units: Deploying solar-powered desalination units capable of producing 50–120 cubic meters per day can provide emergency potable water. A pilot initiative has demonstrated the feasibility of such units, and scaling this model

11 https://www.unrwa.org/resources/reports/unrwa-situation-report-182-situation-gaza-strip-and-west-bank-including-east-jerusalem?utm_source=chatgpt.com

12 https://www.ochaopt.org/content/gaza-humanitarian-response-update-20-july-2-august-2025?utm_source=chatgpt.com

could involve the deployment of over 100 renewable-powered desalination systems, forming a decentralized backup water supply .

Water Trucking: Utilizing a fleet of trucks, each delivering 5–10 cubic meters, can address immediate water needs during crises. Establishing a permanent emergency water fleet, linked to logistics hubs and desalination plants, would ensure sustained water delivery during emergencies.

Drinking Water Containers: Distributing units (10 liters each) in shelters can provide immediate relief. Scaling this model involves creating a nationwide household-level emergency water storage program, including containers and a refill network, to ensure access to clean water during crises.

Mobile Toilets: Deploying units in displacement camps can address immediate sanitation needs. Expanding this to 10,000 mobile sanitation units with rapid deployment capacity across conflict zones would significantly improve sanitation conditions.

Hygiene & Disinfection Kits: Providing hygiene kits for shelters can mitigate health risks. Institutionalizing a hygiene supply system with pre-positioned stockpiles for over 1 million people would ensure preparedness for future crises.

Build Water Resilience in North Gaza: Importing sufficient numbers of smaller desalination plants to north Gaza that can be clustered together, connected to a repaired electricity line from Israel, and produce larger quantities of water. Lay a new pipeline along the Gaza coast connecting Northern Gaza and Gaza city with mekorot water pipes, in the Zikim and Erez area in Israel. Such a combination of actions will rebuild the needed water resilience for the one million people in north Gaza. These scalable models not only address immediate needs but also contribute to building long-term resilience in Gaza's WASH sector.

Energy for WASH

To ensure continuous WASH service provision, energy access must be prioritized. While re-operating the electricity grid connection to the Israel Electric Corporation (IEC) remains the most effective long-term solution, interim measures are needed to meet urgent needs. Building on the precedent of reconnecting the southern seawater desalination plant to the IEC (expanding capacity to over 15,000 m^3/day), EcoPeace advocates for coordinated efforts to secure:

- The entry of solar panels, fuel, and gas generators as portable, off-grid energy sources for WASH facilities.

- A mechanism of protection and monitoring that ensures solar panels provided for WASH are not diverted for other uses, as has been reported in hospitals. EcoPeace suggests that the Arab International Organization for Construction in Palestine (AIOCP) could serve as guarantor, ensuring panels remain dedicated to WASH infrastructure.
- Supplying the main facilities with a permanent power line, similar to the one connected at the Southern Gaza Desalination Plant

This arrangement would differ from prior failed attempts at equipment entry, as it would be coordinated through COGAT with oversight mechanisms, increasing the likelihood of approval and successful implementation.

Storage & Logistics

Instead of establishing new sites in insecure zones, EcoPeace advocates for strengthening the protection and coordinated usage of CMWU's existing warehouses, with prior coordination through COGAT to allow entry and controlled use of sensitive WASH-related equipment.

This approach draws on the success demonstrated in earlier coordinated interventions and can serve as a scalable model for ensuring both sides accept the mechanism.

EcoPeace's Unique Role in the Gaza WASH Crisis

EcoPeace Middle East is uniquely positioned to help implement and coordinate these interventions. With established relationships with the Palestinian Water Authority, Coastal Municipal Water Utility, Israeli Water Authority, and COGAT, EcoPeace acts as a trusted mediator and facilitator between local technical teams and military authorities, ensuring safe and approved access to critical infrastructure. The organization has successfully demonstrated the feasibility of cross-border technical interventions, including the coordination of portable desalination units and spare parts entry during highly sensitive periods. By leveraging this experience, EcoPeace facilitates the repair and operation of Mekorot pipelines, groundwater wells, and sewage systems, reducing risk to personnel and ensuring operational efficiency.

EcoPeace may also coordinate logistics for the entry, storage, and distribution of emergency WASH equipment. The establishment of protected buffer-zone hubs for storage of water, fuel, mobile toilets, pumps, and repair facilities enables rapid deployment of lifesaving services while minimizing risk to staff and equipment. Beyond operational coordination, EcoPeace advocates for the protection of water and sanitation as fundamental human rights. It engages simultaneously with Palestinian and Israeli authorities, as well as the international community, to secure fuel supplies, approvals for dual-use equipment, and support for scalable emergency measures. By linking immediate interventions with longer-term solutions, EcoPeace ensures that lifesaving measures today contribute to sustainable, resilient WASH infrastructure for the future.

In sum, EcoPeace's combination of technical expertise, cross-border access, operational coordination, and advocacy capacity makes it an indispensable partner in preventing a humanitarian disaster in Gaza and in building resilience for future crises.

Advocacy strategy for the international community and for EcoPeace

As the Israeli authorities fully control all flows of aid, an effective advocacy strategy is necessary in order to bring better solutions on the ground when aiming to change the WASH situation in the Gaza Strip. In the specific field of WASH, it was found along the war that the unique impact of the WASH situation in the Gaza Strip on the Israeli interests. As the WASH crisis directly affects matters of public health (spread of epidemics, disease vectors and other kinds of pollution) it knows no borders and puts the lives of Palestinians and Israelis in danger.

Those facts were proven to be effective in changingIsraeli policies regarding WASH-related humanitarian assistance. Soon after the beginning of the war, in November 2023, Israeli National Security Council head Tzachi Hanegbi justified the cabinet's decision to re-allow entry of fuel into Gaza by saying that failing to allow fuel would lead to the mass spread of disease in Gaza, which would impact both Palestinians and Israelis. Another Israeli diplomatic official said that the entry of fuel was aimed *"to enable the minimal maintenance necessary for water, sewer and sanitary systems to prevent pandemics that could spread to the entire area, hurting residents of the Strip as well as our own forces and potentially spreading into Israel as well."*[13]

[13] In shift, Israel agrees to regularly let fuel into Gaza, drawing outrage in coalition, The Times of Israel, 17 November 2023: https://www.timesofisrael.com/in-shift-israel-agrees-to-regularly-let-fuel-into-gaza-drawing-outrage-in-coalition/

Utilizing the specific impact of the WASH sector on Israeli interest has proven to be somewhat effective when trying to promote immediate relief and assistance activities within the WASH sector. That language is already used by EcoPeace when working with the relevant Israeli authorities and it might be similarly effective when used by the relevant international actors communicating with the same authorities.

Beyond immediate relief, this advocacy strategy can also support the mediation and coordination of broader WASH-related priorities. It can be used not only when promoting the immediate assistance priorities as described above, but also as a tool when mediating and coordinating other WASH-related priorities, needs and initiatives. In this sense, parallel communications with Israeli authorities, Palestinian authorities and relevant INGOs, such as those supported by the European Union, could be more beneficial and make the EU a more effective actor in solving various challenges and needs in this field.

In this way, advocacy that recognizes both humanitarian imperatives and regional security interests can help secure urgent WASH access today while also laying the groundwork for longer-term resilience and cooperation.

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