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HUMAN
RIGHTS
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Extermination and Acts of Genocide

Israel Deliberately Depriving Palestinians in Gaza of Water



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Extermination and Acts of Genocide

Israel Deliberately Depriving Palestinians in Gaza of Water

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Summary

Since October 2023, Israeli authorities have deliberately obstructed Palestinians' access to the adequate amount of water required for survival in the Gaza Strip.

According to the World Health Organization (WHO), a person needs between 50 and 100 liters of water per day in order to ensure that their “most basic needs are met.”¹ In protracted emergency situations, the minimum amount of water required is 15 liters of water per person per day for drinking and washing.² Yet, between October 2023 and September 2024, Israeli authorities' actions have deprived the majority of the more than 2 million Palestinians living in Gaza of access to even that bare minimum amount of water, which has contributed to death and widespread disease.³ For many in Gaza, much or all of the water they have had access to is not suitable for drinking.

“If we can't find drinkable water, we drink the sea water,” one father displaced to a school in Rafah told Human Rights Watch in December 2023.⁴ “It happened to me many times when I had to drink the sea water. You don't understand how much we are suffering.”⁵

¹ UN-Water Decade Programme on Advocacy and Communication and Water Supply and Sanitation Collaborative Council, “The Human Right to Water and Sanitation,” Media Brief, n.d., https://www.un.org/waterforlifedecade/pdf/human_right_to_water_and_sanitation_media_brief.pdf (accessed September 28, 2024).

² World Health Organization, “How much water is needed in emergencies,” July 2013, <https://cdn.who.int/media/docs/default-source/wash-documents/who-tn-09-how-much-water-is-needed.pdf> (accessed November 14, 2024); see also “Water Supply, Sanitation and Hygiene Promotion” in Sphere Handbook, “Humanitarian Charter and Minimum Standards in Humanitarian Response,” 2018, <https://handbook.spherestandards.org/en/sphere/#choo6> (accessed November 26, 2024).

³ Oxfam, “Water War Crimes: How Israel has weaponised water in its military campaign in Gaza,” July 18, 2024, <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf> (accessed December 2, 2024); State of Palestine WASH Cluster, “The National WASH Cluster Minutes of Meeting,” April 17, 2024, copy on file with Human Rights Watch: “3-7 liters [of water] is the median to average available water per person daily for IDPs in Rafah/Gaza;” State of Palestine WASH Cluster, “Notes: WASH Situation Update May 31st,” May 31, 2024, copy on file with Human Rights Watch: “Currently, water availability ranges from 2 to 9 liters per capita per day, a significant reduction from the pre-October level of 85 liters per day;” OCHA, “Humanitarian Situation Update #199 | Gaza Strip,” August 2, 2024, <https://www.ochaopt.org/content/humanitarian-situation-update-199-gaza-strip> (accessed December 2, 2024): “Field observations and site visits by WASH partners suggest that the range of water availability and consumption in the Gaza Strip is between two and nine litres per capita per day;” State of Palestine WASH Cluster, “Gaza Rapid Wash Assessment Household Survey for Access to Wash Services,” September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAKdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024).

⁴ Human Rights Watch interview with Tarek (a pseudonym), via phone, December 20, 2023.

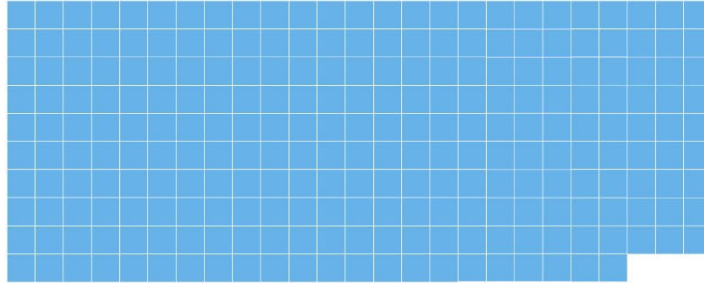
⁵ Ibid.

Water Access in Gaza

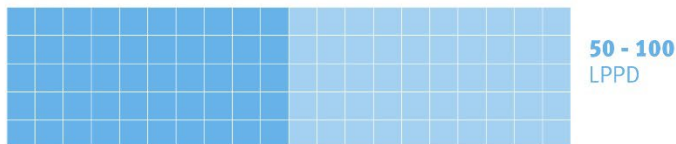
Comparison of liters per person per day (LPPD)

In Israel (2020)

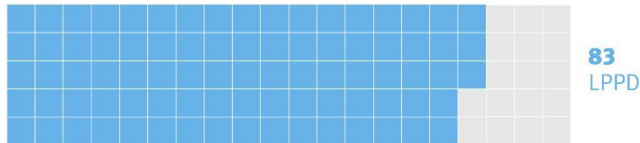
247 Liters/Person/Day



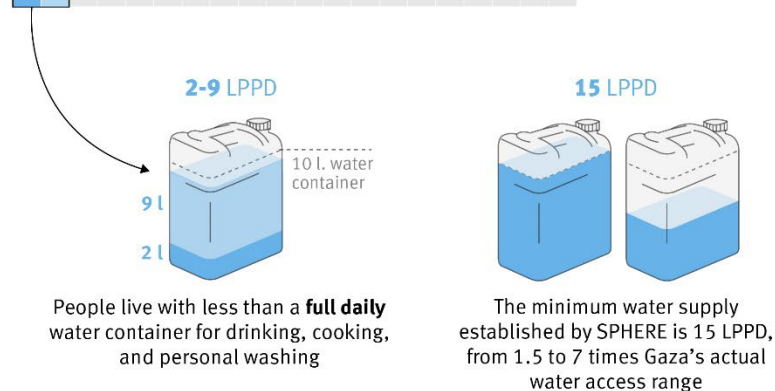
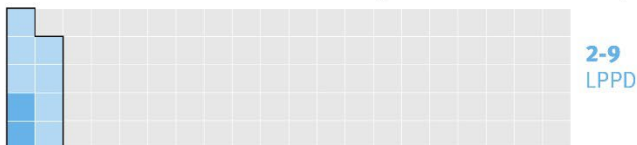
WHO minimum to meet basic needs



In Gaza before the current hostilities (2021)



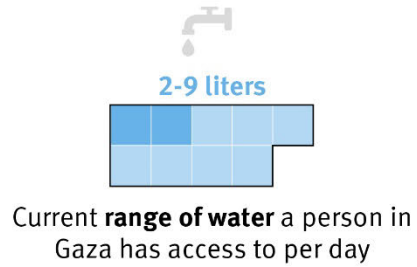
In Gaza since the current hostilities (October 2023-onwards)



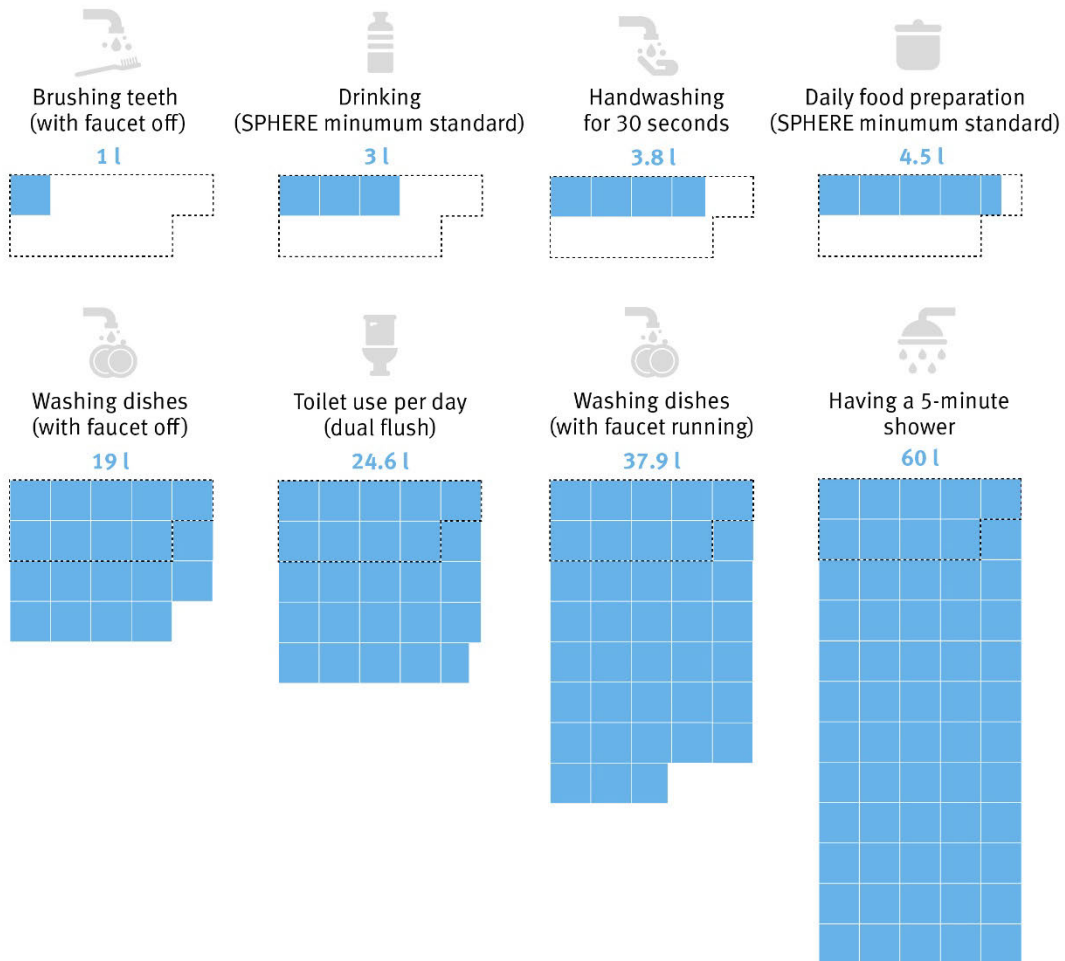
Source: Israel Water Authority, Water Consumption for 2020 - Summary Report, 21 October 2021; UN-Water Decade Programme on Advocacy and Communication and Water Supply and Sanitation Collaborative Council, "The Human Right to Water and Sanitation," Media Brief; UNOCHA - Gaza Humanitarian Response Update | 24 June - 7 July 2024; Palestinian Central Bureau of Statistics, Table 10; Sphere Association, The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response, Fourth Edition, Geneva, Switzerland, 2018.

Living with 2-9 Liters of Water per Day

Comparison of available water in Gaza to amount of water used in common daily activities



How many liters do we use for...?



Source: UNOCHA - Gaza Humanitarian Response Update | 24 June - 7 July 2024; United States Environmental Protection Agency; USGS, "How Much Water Do You Use at Home?"; Arjen Y. Hoekstra, Ashok K. Chapagain and Mesfin M. Mekonnen, Water Footprint Network, Water Footprint Calculator; Sphere Association. The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response, Fourth Edition, Geneva, Switzerland, 2018.

Because of the decimation of the healthcare system in Gaza since October 2023, including disease tracking, the true scale of those harmed or killed by Israeli authorities' actions that have deprived Palestinians of adequate water is unknown and may likely never be fully understood. However, these policies have likely contributed to thousands of deaths.⁶ Doctors and nurses told Human Rights Watch that they had seen numerous infants, children, and adults die from a combination of malnutrition, dehydration, and disease.⁷

Human Rights Watch interviewed 66 Palestinians in Gaza between October 18, 2023, and July 23, 2024. They described the near-impossibility of securing water for themselves and their families. Human Rights Watch also spoke to four of Gaza's Coastal Municipalities Water Utility (CMWU) employees, 31 doctors and healthcare professionals, and 15 individuals working with UN agencies and international aid organizations in Gaza, who described Israeli forces' actions that have deprived Palestinians in Gaza of water, as well as the devastating health impacts, including death. Human Rights Watch also analyzed satellite imagery and verified photographs and videos captured between the beginning of the hostilities and August 2024. These show extensive damage and destruction to water and sanitation infrastructure, including the apparently deliberate, systematic razing of the solar panels powering four of Gaza's six wastewater treatment plants by Israeli ground forces, as well as Israeli soldiers filming themselves demolishing a key water reservoir.⁸

⁶ وزارة الصحة الفلسطينية / غزة Palestinian Ministry of Health Facebook page post, March 9, 2024, <https://www.facebook.com/MOHGaza1994/posts/732414325730179> (accessed August 26, 2024); Human Rights Watch interview with Dr. Feroze Sidhwa, via Microsoft Teams, August 6 and Asma Taha, via Microsoft Teams, August 9, 2024; see also Gaza Healthcare Letters, "Letter to President Biden and Vice President Harris," October 2, 2024, <https://www.gazahealthcareletters.org/usa-letter-oct-2-2024> (accessed November 29, 2024); Rasha Khatib, Martin McKee, Salim Yusuf, "Counting the dead in Gaza: difficult but essential," *The Lancet*, July 5, 2024, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01169-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01169-3/fulltext) (accessed August 26, 2024); Aya Batrawy, "Gaza's sick and malnourished children die as hospitals collapse from Israel's war," *NPR*, June 5, 2024, <https://www.npr.org/2024/06/05/nx-s1-4990196/gazas-sick-and-malnourished-children-die-as-hospitals-collapse-from-israels-war> (accessed August 26, 2024); Nidal al-Mughrabi, "Israel storms Gaza City neighbourhood, orders Palestinians to go south," *Reuters*, June 27, 2024, <https://www.reuters.com/world/middle-east/girl-dies-malnutrition-gaza-israel-bombs-north-south-2024-06-27/> (accessed August 26, 2024); "Devastating new figures reveal Gaza's child hunger catastrophe," *Save the Children* press release, June 25, 2024, <https://www.savethechildren.net/news/devastating-new-figures-reveal-gaza-s-child-hunger-catastrophe> (accessed August 26, 2024).

⁷ Human Rights Watch interview with Asma Taha, via Microsoft Teams, August 9, 2024.

⁸ Yaniv Kubovich, "Israeli Army Commanders Gave Order to Blow Up Rafah Reservoir. IDF Suspects Breach of Int'l Law," *Haaretz*, July 29, 2024, <https://www.haaretz.com/israel-news/2024-07-29/ty-article/.premium/idf-commanders-gave-order-to-blow-up-rafah-reservoir-army-suspects-breach-of-intl-law/00000190-fd90-d5ef-a5fe-ff9ec3ea0000> (accessed August 26, 2024).

Israeli authorities did not reply to letters sent on June 10 and November 29, 2024, requesting information regarding specific attacks on water and sanitation infrastructure that Human Rights Watch documented.

Israeli authorities made clear their intention to deprive the population of Gaza of necessities after October 7, 2023. On October 9, then-Israeli Defense Minister Yoav Gallant ordered “a complete siege” on Gaza, stating “[t]here will be no electricity, no food, no water, no fuel, everything is closed.”⁹ On October 11, 2023, then-Energy Minister and current Minister of Defense Israel Katz echoed the call for electricity, water, and fuel to be cut, and on October 12, 2023, he called for humanitarian aid to be cut as well.¹⁰

Since then, Israeli authorities and military forces have matched these statements with actions. Israeli authorities and forces cut off the water supply piped into Gaza from Israel and later restricted the supply, cut off the electricity supply from Israel to Gaza that was needed to operate water pumps, desalination plants, and sanitation infrastructure within Gaza, and blocked and restricted the fuel needed to run generators in the absence of electricity. They have also blocked United Nations agencies and humanitarian aid organizations from delivering critical water-related materials and other humanitarian aid from entering Gaza, damaged, and in some cases, deliberately destroyed water and sanitation infrastructure, including where Israeli forces were in control of the area, and prevented repairs by blocking imports of nearly all water-related material. Some Israeli strikes have killed water utility workers as they were trying to make repairs, while others have destroyed the main water-utility warehouse in Gaza which housed spare parts, equipment, and supplies critical to water production.¹¹

⁹ Yoav Gallant (@yoavgallant) post to X (formerly known as Twitter), October 9, 2023, <https://twitter.com/yoavgallant/status/1711335592942875097> (accessed August 26, 2024).

¹⁰ Israel Katz (@Israel_katz) post to X (formerly known as Twitter), October 11, 2023, https://twitter.com/Israel_katz/status/171208312227909116?t=nd9aPqyMtpUXy4AoHhQFMw&s=09 (accessed August 28, 2024); Israel Katz (@Israel_katz) post to X (formerly known as Twitter), October 12, 2023, https://twitter.com/Israel_katz/status/1712356130377113904 (accessed August 28, 2024).

¹¹ “Intensifying conflict, malnutrition and disease in the Gaza Strip creates a deadly cycle that threatens over 1.1 million children”, UNICEF, press release, January 5, 2024, <https://www.unicef.org/press-releases/intensifying-conflict-malnutrition-and-disease-gaza-strip-creates-deadly-cycle> (accessed August 26, 2024); Human Rights Watch interview with WASH response actor, via Microsoft Teams, January 24, 2024, January 24, 2024; Human Rights Watch interviews with CMWU employee 2 and 3, Egypt, April 6, 2024.

On January 26, 2024, the International Court of Justice (ICJ) issued provisional measures that included requiring Israel to prevent genocide against Palestinians in Gaza, enable the provision of basic services and humanitarian assistance, and prevent and punish incitement to commit genocide.¹² The measures were adopted as part of a case brought by South Africa alleging that Israel was violating the Genocide Convention of 1948. At the time, the ICJ determined that “many Palestinians in the Gaza Strip have no access to the most basic foodstuffs, potable water, electricity, essential medicines or heating.”¹³ Since then, the ICJ has issued two further provisional measures, reaffirming its prior orders, and stated in May that the orders should be “immediately and effectively implemented.”¹⁴

Since that time, Israel has violated the ICJ’s measures, including preventing “the deprivation of access to adequate food and water.”¹⁵

Water Deprivation as a Deliberate Act

In the days after the Hamas-led attacks by Palestinian armed groups in southern Israel on October 7, 2023, senior Israeli officials, including former Defense Minister Yoav Gallant, National Security Minister Itamar Ben-Gvir, and former Energy Minister and current Defense Minister Israel Katz made public statements expressing the government’s aim to deprive civilians in Gaza of water.¹⁶

¹² *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024.

¹³ *Ibid*, para. 70.

¹⁴ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024.

¹⁵ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024.

¹⁶ Emanuel Fabian, “Defense minister announces ‘complete siege’ of Gaza: No power, food or fuel,” *The Times of Israel*, October 9, 2024, https://www.timesofisrael.com/liveblog_entry/defense-minister-announces-complete-siege-of-gaza-no-power-food-or-fuel/ (accessed August 26, 2024); Hadas Gold, Eyad Kourdi, Jonny Hallam, Ibrahim Dahman, Helen Regan, Tara John, “Israeli defense minister orders ‘complete siege’ of Gaza, as Hamas threatens hostages,” *CNN*, October 9, 2024, Israeli defense minister orders ‘complete siege’ of Gaza, as Hamas threatens hostages | CNN (accessed August 26, 2024); “‘Barely a drop to drink’: children in the Gaza Strip do not access 90 per cent of their normal water use,” UNICEF, press release, December 19, 2023, <https://www.unicef.org/lac/en/press-releases/barely-drop-drink-children-gaza-strip-do-not-access-90-cent-their-normal-water-use#:~:text=According%20to%20humanitarian%20standards%2C%20the, is%203%20litres%20per%20day>

(accessed September 12, 2024); Universal Declaration of Human Rights (UDHR), adopted

December 10, 1948, G.A. Res. 217A(III), U.N. Doc. A/810 at 71

(1948); “Interview: Building the Evidence for Crimes Committed in Israel on October 7”, Human Rights Watch interview, January 31, 2024, <https://www.hrw.org/news/2024/01/31/interview-building-evidence-crimes-committed-israel-october-7>.

Since that time, Israeli authorities have continued to call for the collective punishment of the population of Gaza, including through cutting off water and other items essential to life. While Israeli authorities have also made statements calling for measures to be taken to specifically target Hamas and Palestinian armed groups in Gaza, authorities' actions have amounted to cutting off or restricting water and other items essential to life to the whole of the population of Gaza. These measures persisted after the ICJ ruling in January 2024, and subsequent ICJ rulings, ordered Israeli authorities to end the risk of violations of the Genocide Convention. On August 5, for example, Israeli Finance Minister and Minister in the Ministry of Defense Bezalel Smotrich reiterated that Israel would be justified in depriving the civilian population of Gaza of water.¹⁷

Cutting off and Restricting Water, Electricity, and Fuel

Immediately following their statements about plans to cut off water to Gaza in the aftermath of the Hamas-led armed groups' October 7 assault, Israeli authorities proceeded to do exactly that. On October 9, 2023, they cut off water being piped into Gaza from Israel, which accounted for about 12 percent of Gaza's total water supply and more than half of its drinking water.¹⁸

While Israeli authorities resumed piping some water into Gaza from Israel at the end of October 2023, as of September 2024, they have continued to restrict the amount of water entering through the pipelines.¹⁹ The water from the pipelines has been insufficient to offset the decrease in water production caused by Israeli authorities' cutting off of electricity supply and blocking and restricting of fuel imports, and by the damage or destruction of water infrastructure.

Israeli authorities also cut off the electricity that Israel supplies to Gaza, plunging the strip into darkness and impairing the operability of nearly all of Gaza's water and sanitation

¹⁷ "WATCH: Israeli Minister Advocates For Starving 2 Million Palestinians", August 7, 2024, video clip, YouTube, <https://www.youtube.com/watch?v=kzOITkwZ4ok> (accessed August 26, 2024).

¹⁸ Oxfam, "Water War Crimes: How Israel has weaponised water in its military campaign in Gaza," July 17, 2024, <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf> (accessed September 12, 2024), citing Palestinian Water Authorities (April 2022). Water Resources Summary Report 2021 - Gaza Strip. Water Resources Directorate.

¹⁹ Minutes of WASH cluster meeting January – September 2024, on file with Human Rights Watch; Human Rights Watch correspondence with CMWU employee 3, via WhatsApp, November 26, 2024.

infrastructure, as well as other infrastructure necessary for the delivery of goods and services essential to life, including hospitals.²⁰

On October 12, 2023, the UN Office for the Coordination of Humanitarian Affairs (OCHA) reported that “most residents in the Gaza Strip no longer have access to drinking water from service providers or domestic water through pipelines.”²¹

Israeli authorities also initially blocked completely, and later severely restricted, the entry of fuel into Gaza. Israel’s obstruction of the entry of fuel has been particularly “debilitating” to water, sanitation and hygiene (WASH) infrastructure in Gaza, which relied on fuel-powered generators after Israeli officials cut off electricity.²² After an initial five-week cut-off of all fuel imports into Gaza, Israeli authorities only allowed in an average of about one-fifth of the needed fuel for essential humanitarian activity from November 15, 2023, to August 31, 2024.²³

As a result, most water and sanitation infrastructure across Gaza has been unable to operate, according to the United Nations.²⁴ Fuel is also needed for hospitals, rescue efforts, the delivery of aid, and to run bakeries, among other essential needs.²⁵ Though Israeli authorities have allowed in varying amounts of fuel since the start of hostilities, it has been too little to power major water and sanitation infrastructure in the absence of electricity, and has been well-below pre-October 7 levels despite the greater need.

²⁰ Tal Schneider, “Israel cuts electricity supply to Gaza,” *The Times of Israel*, October 7, 2023, https://www.timesofisrael.com/liveblog_entry/israel-cuts-electricity-supply-to-gaza/ (accessed August 26, 2024).

²¹ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #7, October 13, 2023,” <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-7> (accessed August 26, 2024).

²² Human Rights Watch interview with WASH response actor, via Microsoft Teams, January 24, 2024.

²³ UNRWA, “Gaza Supplies and Dispatch Tracking,” Power BI dashboard, <https://app.powerbi.com/view?r=eyJrIjoizTVkYmEwNmMtZWYxNyooODhlLWl2ZjctNjIzMzQ5OGQxNzY5liwidCI6IjIzMmY2YTQxLTlwZTktdEoMCo4ZDNiLWZkZjVlZWNiNDE1NyIsImMiOiJl9&pageName=ReportSection3306863add46319dc574> (accessed November 26, 2024); UN Secretary General, “Remarks to the Press on Extreme Heat,” July 25, 2024, <https://www.un.org/unispal/document/highlights-of-the-noon-briefing-25jul24/#:~:text=Since%20the%20beginning%20of%20this,basic%20humanitarian%20operations%20each%20day> (accessed November 26, 2024); Gisha, “Timeline of restrictions on entry of fuel into Gaza,” December 26, 2023, <https://gisha.org/en/graph/1-timeline-of-restrictions-on-entry-of-fuel-into-gaza/> (accessed November 26, 2024).

²⁴ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #54,” November 29, 2023, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-54> (accessed August 26, 2024).

²⁵ Rachel Wilson, Lou Robinson, Amy O’Kruk, “Fuel is a vital lifeline in resource-strapped Gaza. Here’s why.,” *CNN*, October 30, 2023, <https://www.cnn.com/2023/10/30/middleeast/fuel-gaza-crisis-map-dg/index.html> (accessed August 26, 2024).

On February 29, 2024, the Union of Gaza Strip Municipalities stated that “[t]he depletion of fuel has severely affected the provision of essential services, resulting in [a] significant deficit in water supplies, solid waste accumulation, and wastewater leakage onto streets and residential areas.”²⁶

According to OCHA, between October 2023 and mid-February, 2024, water production in Gaza stood at just 5.7 percent of what it was before the current hostilities.²⁷ Oxfam has also estimated that about 80 percent of the produced water is lost in leakages due to damage to the water network during the hostilities, meaning that the amount of water that people are receiving is far less than what is produced.²⁸

On March 28, the ICJ reaffirmed its January order and indicated additional measures ordering Israeli authorities to provide “unhindered” and “at scale ... urgently needed basic services and humanitarian assistance including food, water, electricity, fuel, shelter, clothing, hygiene and sanitation requirements.”²⁹ Israeli authorities have flouted these orders.³⁰

As of September 2024, Israeli authorities continued to cut electricity to Gaza. Though Israeli authorities resumed piping some water into Gaza at the end of October 2023, and increased water piping in April 2024, the total combined water production—including water from the pipelines, desalination facilities, wells, and other sources—only rose to about 10 to 25 percent of pre-October 7 levels.³¹ As of August 2024, water production

²⁶ بلدية غزة - Municipality of Gaza Facebook page post, March 1, 2024, https://www.facebook.com/story.php?story_fbid=742540207981265&id=100066758767172&mibextid=WC7FNe (accessed August 26, 2024).

²⁷ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #120,” February 16, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-120> (accessed August 26, 2024). See also OCHA, “Immediate Needs Document in the State of Palestine (October – December 2023),” October 17, 2023, <https://reliefweb.int/report/occupied-palestinian-territory/immediate-needs-document-state-palestine-october-december-2023> (accessed October 17, 2023).

²⁸ Oxfam, “Water War Crimes: How Israel has weaponised water in its military campaign in Gaza”, July 17, 2024, <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf> (accessed September 12, 2024).

²⁹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024.

³⁰ “Gaza: Israel Flouts World Court Orders,” Human Rights Watch news release, May 7, 2024, <https://www.hrw.org/news/2024/05/07/gaza-israel-flouts-world-court-orders>.

³¹ Jeremy Sharon, “Israel reopens second of three water pipelines into Gaza,” *The Times of Israel*, October 29, 2023, <https://www.timesofisrael.com/israel-reopens-second-of-three-water-pipelines-into-gaza/> (accessed August 26, 2024); State of Palestine WASH Cluster, “Notes: WASH Situation Update May 31st,” May 31, 2024, copy on file with Human Rights Watch; State of Palestine WASH Cluster, “WASH Cluster Updates,” August 4, 2024, copy on file with Human Rights Watch. It’s

levels remained at about 25 percent of pre-October 7 levels, and the amount of water Palestinians in Gaza had access to was still far below the amount of water the population of Gaza requires for survival.³²

In the most recent, and most rigorous, study measuring water access throughout Gaza, nearly two-thirds of assessed households in August 2024 reported receiving less than six liters of water for drinking and cooking per person per day, below the nine recommended by international standards, and “approximately 1.4 million people face unsafe conditions when accessing sanitation facilities.”³³ The survey was unable to gather data from some areas considered to be “hard to reach.”³⁴

Nearly every civilian in Gaza has also been displaced since the start of hostilities, many to areas that lack adequate water infrastructure, undermining people’s access to water regardless of the negligible improvements in the amount of water production.³⁵

Blocking Water-Related Aid

Israeli authorities have also significantly restricted humanitarian aid from entering Gaza, prevented aid deliveries to different areas within Gaza at various times, and have

important to note that water production levels do not account for water loss resulting from damage to the water network during the hostilities, which Oxfam estimates to be about 80 percent of the total water being produced. See Oxfam, “Water War Crimes: How Israel has weaponised water in its military campaign in Gaza”, July 17, 2024, <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf> (accessed September 12, 2024).

³² State of Palestine WASH Cluster, “WASH Cluster Updates,” August 4, 2024, copy on file with Human Rights Watch; State of Palestine WASH Cluster, “Gaza Rapid Wash Assessment Household Survey for Access to Wash Services,” September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAkdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024).

³³ State of Palestine WASH Cluster, “Gaza Rapid Wash Assessment Household Survey for Access to Wash Services,” September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAkdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024); World Health Organization, “How much water is needed in emergencies,” July 2013, <https://cdn.who.int/media/docs/default-source/wash-documents/who-tn-09-how-much-water-is-needed.pdf> (accessed November 14, 2024); “Water Supply, Sanitation and Hygiene Promotion” in Sphere Handbook, “Humanitarian Charter and Minimum Standards in Humanitarian Response,” 2018, <https://handbook.spherestandards.org/en/sphere/#choo6> (accessed November 26, 2024).

³⁴ State of Palestine WASH Cluster, “Gaza Rapid Wash Assessment Household Survey for Access to Wash Services,” September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAkdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024).

³⁵ Human Rights Watch, “*Hopeless, Starving, and Besieged: Israel’s Forced Displacement of Palestinians in Gaza*,” November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza>.

specifically blocked supplies related to water treatment and production.³⁶

Before October 7, 2023, about 500 trucks per working day entered Gaza with commercial and humanitarian goods.³⁷ From October 21, 2023, to May 5, 2024, when Israel seized and closed the Rafah border crossing, only an average of 132 trucks per day entered; from May 5 to August 3, only an average of 33 trucks per day entered.³⁸

Of the aid that has entered Gaza, the Israeli military blocked much of it from reaching the north. Though the Israeli military ordered the entire population of over 1 million people to evacuate northern Gaza on October 13, 2023—one of the Israeli government’s many forced evacuations amounting to the war crime of forced displacement—many remained there, including people who could not flee due to age, disability, or other reasons, and others later returned.³⁹ Those who remained did not have access to potable water from November 13, 2023, to at least April 15, 2024.⁴⁰ Israel’s “evacuation system,” which has forcibly

³⁶ Sari Bashi (Human Rights Watch), “Gaza’s Blocked Relief,” Op-ed, *The New York Review*, October 30, 2023, <https://www.hrw.org/news/2023/10/30/gazas-blocked-relief>; “Israel Not Complying with World Court Order in Genocide Case,” Human Rights Watch news release, February 26, 2024,

<https://www.hrw.org/news/2024/02/26/israel-not-complying-world-court-order-genocide-case>; interviews with seven humanitarian aid workers (names withheld), Egypt, April 2024.

³⁷ “Gaza war inflicts catastrophic damage on infrastructure and economy,” *Reuters*, November 17, 2023, <https://www.reuters.com/middle-east/gaza-war-inflicts-catastrophic-damage-infrastructure-economy-2023-11-17/#:~:text=On%20average%20500%20trucks%20of,21> (accessed August 26, 2024); UNRWA, “Gaza Supplies and Dispatch Tracking”, Power BI Dashboard, <https://app.powerbi.com/view?r=eyJrJoiZTVkYmEwNmMtZWYxNyooODhLLWl2ZjctNjIzMzQ5OGQxNzY5liwidCI6IjIzMmY2YTQxLTlwZTktdNEoMCo4ZDNiLWZkZjVlZWNIiDE1NyIsImMiOiJl9&pageName=ReportSection3306863add46319dc574> (accessed August 27, 2024). Israel blocked all aid from entering Gaza from October 7 to October 21.

³⁸ “Key aid crossing into Gaza closed after rocket attack kills Israeli soldiers,” *The Guardian*, May 5, 2024, <https://www.theguardian.com/world/article/2024/may/06/key-aid-crossing-into-gaza-closed-after-rocket-attack-kills-israeli-soldiers> (accessed August 27, 2024);

OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #163”, May 8, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-163> (accessed August 27, 2024);

UNRWA, “Gaza Supplies and Dispatch Tracking”, Power BI Dashboard, <https://app.powerbi.com/view?r=eyJrJoiZTVkYmEwNmMtZWYxNyooODhLLWl2ZjctNjIzMzQ5OGQxNzY5liwidCI6IjIzMmY2YTQxLTlwZTktdNEoMCo4ZDNiLWZkZjVlZWNIiDE1NyIsImMiOiJl9&pageName=ReportSection3306863add46319dc574> (accessed August 27, 2024); No aid entered Gaza from October 7 to October 21, 2023. United Nations, “UN welcomes first Gaza aid convoy, but more are needed,” October 21, 2023, <https://news.un.org/en/story/2023/10/1142637> (accessed December 2, 2024).

³⁹ Human Rights Watch, “*Hopeless, Starving, and Besieged: Israel’s Forced Displacement of Palestinians in Gaza*,” November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza>; Sari Bashi, “Why Israel’s Gaza Evacuation Order is So Alarming”, Op-ed, *MSNBC*, October 16, 2023, <https://www.hrw.org/news/2023/10/16/why-israels-gaza-evacuation-order-so-alarming>.

⁴⁰ Human Rights Watch interview with CMWU employee 1, via phone, January 16, 2024. According to OCHA, there was “no access to clean water in northern governorates” as of November 13, OCHA, “Hostilities in the Gaza Strip and Israel - reported impact | Day 38,” November 13, 2023, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-reported-impact>

displaced the majority of people in Gaza, amounts to war crimes and crimes against humanity.⁴¹

For several months Israeli authorities repeatedly blocked aid that entered Gaza, including fuel needed to run generators for water and sanitation, from reaching areas in the north, despite reports of the severe hunger and thirst the population there was facing, a pattern that OCHA has described as “systematic.”⁴²

On February 24, a consortium of humanitarian organizations working in Gaza stated that “almost no aid is distributed beyond Rafah,” the southernmost of Gaza’s four governorates.⁴³

The ICJ, in its third set of provisional measures in May 2024, reaffirmed its previous two orders, and ordered Israel to keep the Rafah crossing open “for unhindered provision at scale of urgently needed basic services and humanitarian assistance.”⁴⁴ Israel violated these orders.⁴⁵ Israeli forces have closed the Rafah crossing since May 5, 2024.

For at least one month after the Israeli military began its ground attack on Rafah, almost no water or other humanitarian aid was accessible in the city, as the military further displaced

day-38 (accessed August 27, 2024); OCHA, “Hostilities in the Gaza Strip and Israel - reported humanitarian impact, 15 April 2024 at 15:00,” April 15, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-reported-humanitarian-impact-15-april-2024-1500> (accessed November 14, 2024).

⁴¹ Human Rights Watch, “Hopeless, Starving, and Besieged”: Israel’s Forced Displacement of Palestinians in Gaza, November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza>.

⁴² Gabrielle Tétrault-Farber, “UN deplores Israel’s ‘systematic’ refusal to grant access to north Gaza,” *Reuters*, January 12, 2024, <https://www.reuters.com/world/un-deplores-israels-systematic-refusal-grant-access-north-gaza-2024-01-12/> (accessed August 27, 2024); Sana Noor Haq, Rosa Rahimi, “‘We are dying slowly’: Palestinians are eating grass and drinking polluted water as famine looms across Gaza,” *CNN*, <https://edition.cnn.com/2024/01/30/middleeast/famine-looms-in-gaza-israel-war-intl/index.html> (accessed August 27, 2024); “Over one hundred days into the war, Israel destroying Gaza’s food system and weaponizing food, say UN human rights experts,” OHCHR, press release, January 16, 2024, <https://www.ohchr.org/en/press-releases/2024/01/over-one-hundred-days-war-israel-destroying-gazas-food-system-and> (accessed August 27, 2024).

⁴³ Association of International Development Agencies, “Snapshot of deprivation of humanitarian aid in the Gaza Strip since January 2024,” February 15, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/snapshot-deprivation-humanitarian-aid-gaza-strip-january-2024> (accessed August 27, 2024).

⁴⁴ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024.

⁴⁵ “Gaza: Israel Flouts World Court Orders,” Human Rights Watch news release, May 7, 2024, <https://www.hrw.org/news/2024/05/07/gaza-israel-flouts-world-court-orders>.

most of the roughly 1 million people who had fled there from elsewhere.⁴⁶ In many cases, people were displaced to areas with no access to services, including food, water, and aid.⁴⁷ As part of the Israeli military's ground attack on Rafah, they also seized and shut down the Rafah border crossing, which was a critical entry point for aid.⁴⁸

Israeli authorities have barred nearly all water-related humanitarian aid from entering Gaza, including water filtration systems, water tanks, and materials needed to repair water infrastructure.⁴⁹ Several individuals working with humanitarian aid organizations told Human Rights Watch that Israeli authorities bar items they consider "dual use," which they say could be used for military purposes. The humanitarian aid workers said that Israeli authorities have not provided a list of what items are included and do not provide written explanations or allow appeals of the rejection of life-saving items.⁵⁰

Israeli forces have also carried out attacks on humanitarian aid workers. Israeli forces have carried out at least eight attacks on aid workers' convoys and premises in Gaza since October 2023, killing or injuring at least 31 aid workers and those with them, even though aid groups

⁴⁶ "On the ground in Rafah: UNICEF reports 'lethal' lack of water, services," *UN News*, June 15, 2024, <https://news.un.org/en/interview/2024/06/1151131> (accessed December 2, 2024). "Gaza: We must prevent a large-scale offensive in Rafah, UN pleads," *UN News*, May 14, 2024, <https://news.un.org/en/story/2024/05/1149631> (accessed December 2, 2024).

⁴⁷ OCHA, Gaza Humanitarian Response Update | 13 - 19 May 2024," May 20, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/gaza-humanitarian-response-update-13-19-may-2024> (accessed December 2, 2024); Save the Children, "'It's not safe and it's not clean, but people believe they are leaving something worse behind' - Families flee Rafah for areas with no services", May 9, 2024, <https://www.savethechildren.net/news/it-s-not-safe-and-it-s-not-clean-people-believe-they-are-leaving-something-worse-behind> (accessed September 13, 2024).

⁴⁸ "Israel's Rafah invasion must stop now, say UN experts," OHCHR, press release, May 10, 2024, <https://www.ohchr.org/en/press-releases/2024/05/israels-rafah-invasion-must-stop-now-say-un-experts> (accessed December 2, 2024).

⁴⁹ Human Rights Watch interviews with seven humanitarian aid workers, Egypt, April 3 – 8, 2024; Human Rights Watch interview WASH response actor, via Microsoft Teams, January 24, 2024; Human Rights Watch interview with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024; The United Nations, "Secretary-General's statement to the press - on the Middle East," January 15, 2024, <https://www.un.org/sg/en/content/sg/statement/2024-01-15/secretary-generals-statement-the-press-the-middle-east> (accessed August 29, 2024); "Preventing famine and deadly disease outbreaks in Gaza requires faster, safer aid access and more supply routes," WFP/UNICEF/WHO joint press release, January 15, 2024, <https://www.unicef.org/press-releases/preventing-famine-and-deadly-disease-outbreaks-gaza-requires-faster-safer-aid-access> (accessed August 27, 2024).

⁵⁰ Human Rights Watch interviews with 11 humanitarian aid workers, Egypt, April 3 – 8, 2024.

had provided their coordinates to the Israeli authorities to ensure their protection.⁵¹ As of August 28, 2024, more than 294 aid workers have been killed in the hostilities.⁵²

Furthermore, a number of governments suspended all funding to the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), which has been critical to providing water, food, shelter, and other vital services to hundreds of thousands of Palestinians in Gaza, after the Israeli government alleged that 19 of the agency's 30,000 staff participated in the Hamas-led attacks on October 7, 2023.⁵³ On August 5, 2024, the UN Office of Oversight (OIOS) investigation found that in 10 cases there was insufficient or no evidence obtained to support the staff's involvement, and that the nine remaining staff members may have been involved in the attacks, all of whom were fired or have since died.⁵⁴ Another independent review found that the agency itself was not at fault.⁵⁵ While all countries outside of the US have resumed funding to UNRWA, the funding cuts, and the US government's refusal to fulfill outstanding pledged contributions from late 2023 as well as its ban on new funding through at least March 2025, have had a severe impact on the agency's ability to respond to the immense needs in Gaza.⁵⁶

⁵¹ "Gaza: Israelis Attacking Known Aid Worker Locations," Human Rights Watch news release, May 24, 2024, <https://www.hrw.org/news/2024/05/14/gaza-israelis-attacking-known-aid-worker-locations>; "Gaza City-bound UN aid convoy comes under Israeli fire, says UNRWA," *UN News*, July 22, 2024, <https://news.un.org/en/story/2024/07/1152351> (accessed September 12, 2024); "UN food agency suspends staff movements in Gaza following attack," *UN News*, August 28, 2024, <https://news.un.org/en/story/2024/08/1153701> (accessed September 12, 2024).

⁵² OCHA, "Reported Impact Snapshot - Gaza Strip," August 28, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/reported-impact-snapshot-gaza-strip-28-august-2024-1500> (accessed September 3, 2024).

⁵³ Human Rights Watch, "Gaza: Suspending UNRWA Aid Risks Hastening Famine," January 31, 2024, <https://www.hrw.org/news/2024/01/31/gaza-suspending-unrwa-aid-risks-hastening-famine>; France 24, "Western countries suspend funding for UN agency in Gaza after Israeli accusations," January 27, 2024, <https://www.france24.com/en/middle-east/20240127-%F0%9F%94%B4-live-un-security-council-to-meet-after-icj-issues-gaza-ruling> (accessed August 27, 2024).

⁵⁴ UNRWA, "Investigation completed: allegations on UNRWA staff participation in the 7 October attacks," August 5, 2024, <https://www.unrwa.org/newsroom/official-statements/investigation-completed-allegations-unrwa-staff-participation-7-october> (accessed September 12, 2024).

⁵⁵ Independent Review Group on UNRWA, "Final Report: Independent Review of Mechanisms and Procedures to Ensure Adherence by UNRWA to the Humanitarian Principle of Neutrality," April 20, 2024, <https://www.un.org/unispal/document/report-independent-review-group-on-unrwa-22april2024/> (accessed August 27, 2024); "Relief agency UNRWA targeted politically over partiality claims, funding must resume: UN experts," OHCHR, press release, May 17, 2024, <https://www.ohchr.org/en/press-releases/2024/05/relief-agency-unrwa-targeted-politically-over-partiality-claims-funding-must> (accessed August 27, 2024).

⁵⁶ Human Rights Watch, "Gaza: US, UK Outliers in Holding Back UNRWA Funding," July 1, 2024, <https://www.hrw.org/news/2024/07/18/gaza-us-uk-outliers-holding-back-unrwa-funding>; US Congressional Research Service, "The United Nations Relief and Works Agency for Palestine Refugees (UNRWA): Overview and US Funding Prohibition," June 14, 2024, <https://crsreports.congress.gov/product/pdf/IN/IN12316> (accessed November 13, 2024); UNRWA, "'More people will die': How Israel's UNRWA ban affects Palestinians in Gaza and beyond," November 10, 2024, <https://www.unrwa.org/newsroom/official-statements/%E2%80%98more-people-will-die%E2%80%99-how-israel%E2%80%99s-unrwa-ban-affects-palestinians-gaza-and-beyond> (accessed December 3, 2024).

The government of Israel has long campaigned against UNRWA and called for its closure.⁵⁷ On October 28, 2024, the Israeli parliament passed two bills set to come into effect in January 2025, which aim to prevent UNRWA from operating within Israel's "sovereign territory," prohibit Israeli authorities from having any contact with UNRWA and its representatives, and terminate the June 1967 agreement between Israel and UNRWA, which facilitates the agency's operations in the occupied Palestinian territory.⁵⁸ UN Secretary-General António Guterres stated that the bills "could prevent UNRWA from continuing its essential work" in Palestine.⁵⁹ The legislation would not only threaten aid for Gaza but also undermine UNRWA's regional capacity to provide humanitarian assistance, education, and other essential services.⁶⁰

The State of Palestine Water, Sanitation, and Hygiene Cluster (WASH) Cluster is a consortium of international organizations, United Nations agencies, international non-governmental organizations, and academic institutes led by the United Nations Children's Fund (UNICEF) that coordinates humanitarian response on WASH-related issues in the West Bank and Gaza.⁶¹ An individual working on the WASH response in Gaza said the cluster faced a range of challenges from Israeli authorities, including preventing repairs to WASH infrastructure, blocking needed WASH materials from entering Gaza, and not ensuring the safety of those providing WASH-related aid.⁶² He said: "I've never been in a response where two months

⁵⁷ Louis Charbonneau (Human Rights Watch), "UNRWA's Demise Would Be Catastrophic for Gaza," Op-ed, *The Nation*, <https://www.hrw.org/news/2024/02/12/unrwa-demise-would-be-catastrophic-gaza>.

⁵⁸ "Israeli laws blocking UNRWA – devastating humanitarian impact for Palestinians?," *UN News*, October 31, 2024, <https://news.un.org/en/story/2024/10/1156326> (accessed December 2, 2024); "Bill for the Cessation of UNRWA Activities in the Territory of the State of Israel, 5784–2024," January 15, 2024, Bill for second and third reading, unofficial translation by Adalah, https://www.adalah.org/uploads/uploads/UNRWA_bills_translation_October_2024.pdf (accessed December 2, 2024).

⁵⁹ UN General Assembly, "Letter from President General Assembly on the UNRWA SG letter," 30 October, 2024, https://www.un.org/pga/79/2024/10/30/letter-from-president-general-assembly-on-the-unrwa-sg-letter/?_gl=1*rw4xgl*_ga*NjU3Mjc0MTgyLjE3MjM4MDUwOTI.*_ga_TK9BQL5X7Z*MTczMTY3NDkyOC4zNi4wLjE3MzE2NzQ5MjguMC4wLjA.*_ga_S5EKZKSB78*MTczMTY3NDkyOC4zNC4xLjE3MzE2NzQ5MzAuNTguMC4w (accessed December 2, 2024).

⁶⁰ "Israel's parliament votes to ban UNRWA," *The New Humanitarian*, October 29, 2024, <https://www.thenewhumanitarian.org/news/2024/10/29/israels-parliament-votes-ban-unrwa> (accessed December 2, 2024); Louis Charbonneau, "Israel Should End Campaign to Destroy Lifesaving UN Palestinian Aid Agency," Human Rights Watch dispatch, <https://www.hrw.org/news/2024/10/15/israel-should-end-campaign-destroy-lifesaving-un-palestinian-aid-agency>.

⁶¹ UNICEF and WASH Cluster, "WASH Cluster State of Palestine Partners' Profile 2022," July 1, 2022, <https://reliefweb.int/report/occupied-palestinian-territory/wash-cluster-state-palestine-partners-profile-2022> (accessed August 27, 2024).

⁶² Human Rights Watch interview with WASH response actor, via Microsoft Teams, January 24, 2024.

after my arrival the situation is worse for the people than when we arrived. It's the whole thing. We are stopped at so many levels [by Israeli authorities].”⁶³

Destruction of Water Infrastructure and Obstruction of Repairs

Human Rights Watch research found that since the start of hostilities, Israeli forces deliberately attacked and damaged or destroyed several major WASH facilities, including four of the Gaza Strip’s six wastewater treatment plants and an important water reservoir supplying water to people in Rafah in southern Gaza. In several cases, Human Rights Watch found evidence that Israeli ground forces were in control of the areas at the times they destroyed WASH infrastructure, including evidence such as a video of troops methodically laying and wiring up explosives inside a water reservoir, and satellite imagery showing bulldozer tracks on razed large solar-panel arrays which power wastewater plants. This evidence indicates that the destruction was not incidental to attacks on military objects, but rather, deliberate.

The overall damage to water infrastructure in Gaza during the hostilities has been massive. In January 2024, the World Bank and Ipsos, a market research firm, estimated that nearly 60 percent of Gaza’s water and sanitation infrastructure had been damaged or destroyed by the hostilities.⁶⁴ By August 2024, they reported that the percentage of WASH infrastructure that had been destroyed or damaged had risen to 84.6 percent.⁶⁵ While it was not possible to determine the party responsible for the damage or destruction from these reports, the devastating impact on WASH infrastructure during the hostilities increases the likelihood of civilian harm in the deliberate cases of Israeli forces’ destruction of WASH infrastructure that Human Rights Watch documented.

OCHA reported on July 24 that the “water situation [in Gaza] was [continuing] to deteriorate.”⁶⁶ Between July 24 and July 27, 2024, an Israeli soldier posted a video of himself and other soldiers laying explosives to destroy an important water reservoir

⁶³ Ibid.

⁶⁴ UN, EU and World Bank, “Gaza Strip Interim Damage Assessment,” March 29, 2024, <https://palestine.un.org/sites/default/files/2024-04/Gaza-Interim-Damage-Assessment-Final.pdf> (accessed August 27, 2024).

⁶⁵ World Bank and Ipsos, “Gaza Damage Assessment Monthly Report,” August 2024, on file with Human Rights Watch.

⁶⁶ OCHA, “Gaza Humanitarian Response Update | 8-21 July 2024,” July 24, 2024, <https://www.ochaopt.org/content/gaza-humanitarian-response-update-8-21-july-2024> (accessed August 27, 2024).

serving Rafah in the south. The video, which was later deleted but reshared by other accounts, ends with a wide shot of the reservoir being destroyed in an explosion.⁶⁷

Obstruction of Repairs and Aid and Attacks on Water Workers

Israeli forces have also attacked and killed water workers while they were carrying out repairs and other activities to bring the population more water, and have destroyed materials needed for water repairs. In January 2024, Israeli forces also attacked the Gaza's water authority's—the Coastal Municipalities Water Utility (CMWU)—main warehouse, where many employees and their families were sheltering, and subsequently set fire to the US\$8 million of WASH equipment being stored there, virtually destroying the CMWU's ability to repair damaged infrastructure.⁶⁸

They have also attacked water workers who were attempting to make repairs or conducting other water-related work. Following a process known as deconfliction meant to enable the safe passage of humanitarian workers in conflicts, the water workers' coordinates had been shared with the Israeli military ahead of being sent out to make the repairs, CMWU employees said.⁶⁹

The amount of destruction to the water network caused by hostilities, and the general inability to make repairs, has led to significant water loss from the water entering Gaza's water network. The CMWU and Oxfam estimated that approximately 80 percent of water produced in Gaza, as of July 2024, was being lost in leakages in the network as well as in spillage from water being delivered by trucking.⁷⁰

⁶⁷ Yaniv Kubovich, "Israeli Army Commanders Gave Order to Blow Up Rafah Reservoir. IDF Suspects Breach of Int'l Law," *Haaretz*, July 29, 2024, <https://www.haaretz.com/israel-news/2024-07-29/ty-article/.premium/idf-commanders-gave-order-to-blow-up-rafah-reservoir-army-suspects-breach-of-intl-law/00000190-fd90-d5ef-a5fe-ff9ec3ea0000> (accessed August 27, 2024); Younis Tirawi (@ytirawi) post to X, July 27, 2024, <https://twitter.com/ytirawi/status/1816965332952555683> (accessed August 27, 2024).

⁶⁸ Human Rights Watch interviews with CMWU employee 1, via phone, February 4, 2024, CMWU employee 2, via phone, March 11, 2024; and CMWU employee 3, Egypt, April 6, 2024.

⁶⁹ Human Rights Watch interview with CMWU employee 2, via phone, March 11, 2024; Human Rights Watch text message correspondence with CMWU employee 3, June 1, 2024.

⁷⁰ Oxfam, "Water War Crimes: How Israel has weaponised water in its military campaign in Gaza," July 17, 2024, <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf;jsessionid=4F565CA205F01E55DB267770C93E506C?sequence=1> (accessed August 27, 2024).

Illness and Death from Deprivation of Water and Sanitation

In November 2023, Pedro Arrojo-Agudo, the UN special rapporteur on the human rights to safe drinking water and sanitation, stated that Israel was using water “as a weapon of war” by making the provision of this basic service contingent on meeting its objectives in the fighting.⁷¹ Arrojo-Agudo said that “[e]very hour that passes with Israel preventing the provision of safe drinking water in the Gaza strip, in brazen breach of international law, puts Gazans at risk of dying of thirst and diseases related to the lack of safe drinking water.”⁷²

In July 2024, after conducting tests in Jordan, the Ministry of Health in Gaza announced that the poliovirus was found in sewage that runs between overcrowded tents of people who have been displaced by Israeli air strikes.⁷³ One month later, on August 16, the Palestinian Ministry of Health confirmed the first case of polio in an unvaccinated 10-month-old child in Gaza, the first case present in Gaza in 25 years.⁷⁴ On the same date, the World Health Organization (WHO) reported that three children were showing symptoms of acute flaccid paralysis, raising concern that the virus could be spreading among children in Gaza. On August 23, the WHO confirmed that the 10-month-old child in whom the first case of polio was found is paralyzed.

The WHO has reported that the consumption of contaminated water has significantly increased the risk of bacterial infections like diarrhea.⁷⁵ According to UNICEF, “cases of diarrhea in children under five years of age rose from 48,000 to 71,000 in just one week

⁷¹ “Israel must stop using water as a weapon of war: UN expert,” OHCHR, press release, November 17, 2023, <https://www.ohchr.org/en/press-releases/2023/11/israel-must-stop-using-water-weapon-war-un-expert> (accessed August 27, 2024).

⁷² Ibid.

⁷³ “Gaza: Israeli Aid Obstruction Inflaming Polio Outbreak,” Human Rights Watch news release, August 26, 2024, <https://www.hrw.org/news/2024/08/26/gaza-israeli-aid-obstruction-inflaming-polio-outbreak>; Palestinian Ministry of Health in Gaza’s Facebook page post, July 18, 2024, <https://www.facebook.com/MOHGaza1994/posts/808519878119623> (accessed August 27, 2024).

⁷⁴ “First case of polio confirmed in a 10-month-old child in Gaza, Palestinian health officials say,” *Associated Press*, August 16, 2024, <https://apnews.com/article/gaza-israel-war-polio-first-case-871ee7c69be00424400d2667fee61958> (accessed August 27, 2024); Ibrahim Dahman, Caitlin Danaher and Christian Edwards, “Polio detected in Gaza sewage water, threatening new health disaster,” *CNN*, July 19, 2024, <https://edition.cnn.com/2024/07/19/middleeast/israel-gaza-polio-detected-water-sewage-intl/index.html> (accessed August 27, 2024).

⁷⁵ WHO, “Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted,” November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 27, 2024).

starting 17 December.”⁷⁶ The 3,200 new daily cases recorded in December represented a 2,000 percent increase from the average rate of cases prior to October 7.⁷⁷ As of October 17, there were at least 669,000 recorded cases of acute watery diarrhea since October 7, 2023, according to the WHO.⁷⁸

The total number of diarrhea cases, as well as of other diseases, is likely to be much higher, according to several doctors and health officials who spoke to Human Rights Watch.⁷⁹

A doctor who volunteered in Gaza in March and April 2024 told Human Rights Watch that during his two weeks treating patients there, he, other doctors, and virtually every person he encountered had diarrhea.⁸⁰

One man, describing what happened after he was forced to resort to getting unclean water from a well in his neighborhood rather than from the regular water network, said, “I was getting sick, my kids [ages 2 and 3] were vomiting and had diarrhea, and I had diarrhea. This was from the moment we started drinking the [dirty] water.”⁸¹

The WHO also reported that there have been over 132,000 cases of jaundice, a sign of hepatitis A, as of October 2024.⁸² A doctor and a nurse described having multiple patients, mostly children, who died from hepatitis A, a disease that is treatable under normal circumstances.⁸³ Dr. Hussam Abu Safiyeh, the director of Kamal Adwan hospital, said that

⁷⁶ “Intensifying conflict, malnutrition and disease in the Gaza Strip creates a deadly cycle that threatens over 1.1 million children”, UNICEF, press release, January 5, 2024, <https://www.unicef.org/lac/en/press-releases/intensifying-conflict-malnutrition-and-disease-gaza-strip-creates-deadly-cycle> (accessed August 27, 2024).

⁷⁷ Ibid.

⁷⁸ WHO, “Gaza Communicable Disease Surveillance,” Power BI Dashboard, July 7, 2024 (last update date), <https://app.powerbi.com/view?r=eyJrIjoIODAxNTYzMDYtMjQ3YSooOTMzLTkxMWQ4OTU1NWUwMzE5NTMwIiwidCI6ImY2MTBjMGI3LWJkMjQ0NGIzOSo4MTBiLTNkYzI4MGFmYjU5MCIsImMiOiJh9> (accessed August 27, 2024); WHO, Health Cluster, “Occupied Palestinian Territory: A Year of Crisis - Health Cluster Overview,” October 17, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/occupied-palestinian-territory-year-crisis-health-cluster-overview> (accessed November 27, 2024).

⁷⁹ Human Rights Watch interviews with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024 and a public health physician at an international organization (name withheld), via Microsoft Teams, February 12, 2024.

⁸⁰ Human Rights Watch interview with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024.

⁸¹ Human Rights Watch interview with Abdulhafith Faisal al-Khalidi, Qatar, June 25, 2024.

⁸² WHO, Health Cluster, “Occupied Palestinian Territory: A Year of Crisis - Health Cluster Overview,” October 17, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/occupied-palestinian-territory-year-crisis-health-cluster-overview> (accessed November 29, 2024).

⁸³ Human Rights Watch interviews with Abeerah Muhammed, via Microsoft Teams, August 14, 2024, and Dr. Hussam Abu Safiyeh, Kamal Adwan hospital, via phone, August 13, 2024.

about 5-10 percent of the children who came to Kamal Adwan hospital with suspected cases of hepatitis A died “due to lack of capabilities to diagnose, treat, and monitor them,” compared with a normal mortality rate of 0.1 percent in children under 15 years old.⁸⁴

The inability to effectively wash and shower, and the unsanitary conditions people are living in, have also led to over 225,000 cases of skin diseases, and contributed to the spread of over 1 million cases of acute respiratory infections as of October 17, 2024, according to the WHO.⁸⁵

“When we cannot get drinking water, taking a shower is a dream,” said a 36-year-old woman who was displaced to Khan Younis.⁸⁶

Dehydration and malnutrition also undermine people’s abilities to heal from wounds and disease, leading to infections, illnesses, and deaths. Several healthcare professionals told Human Rights Watch that they saw many people unable to heal from wounds, including surgical wounds, or had patients who succumbed to disease because of their weakened immune systems from malnutrition and dehydration.⁸⁷ One emergency room nurse told Human Rights Watch that they were often forced to make the decision not to resuscitate children who were severely malnourished and dehydrated, explaining that “it was difficult to even resuscitate [people with] severe burns or wounds, because when [they] don’t have the hydration they die very quickly.”⁸⁸

The WHO has reported that “damaged water and sanitation systems, and dwindling cleaning supplies have made it almost impossible to maintain basic infection prevention

⁸⁴ Human Rights Watch interview with Dr. Hussam Abu Safiyeh, via phone, August 13, 2024; WHO, “Hepatitis A: Vaccine Preventable Diseases Surveillance Standards”, September 4, 2018, <https://www.who.int/publications/m/item/vaccine-preventable-diseases-surveillance-standards-hepa#:~:text=The%20estimated%20case%20fatality%20ratio,%E2%89%A5%2040%20years%20of%20age>. (accessed September 12, 2024).

⁸⁵ WHO, Health Cluster, “Occupied Palestinian Territory: A Year of Crisis - Health Cluster Overview,” October 17, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/occupied-palestinian-territory-year-crisis-health-cluster-overview> (accessed November 27, 2024).

⁸⁶ Human Rights Watch interview with Dr. Yusra, (a pseudonym), November 29, 2024.

⁸⁷ Human Rights Watch interviews with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024; Abeerah Muhammed, via Microsoft Teams, August 14, 2024; Dr. Abed al-Rahman Basem, via Microsoft Teams, August 22, 2024; Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024; Dr. Nick Maynard, via Microsoft Teams, August 27, 2024; Dr. James Smith, via Microsoft Teams, August 27, 2024, and interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024.

⁸⁸ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

and control measures” in health facilities.⁸⁹ The lack of clean water and sanitation has also made it difficult, if not impossible, to treat water- and sanitation-related diseases, according to a public health physician at an international organization.⁹⁰

Devastating Impacts for Infants, Pregnant and Breastfeeding Women, and People with Disabilities

Several doctors and nurses described seeing large numbers of infants suffering from malnutrition, dehydration, and infection within their first few months of life, in some cases leading to death.⁹¹ Asma Taha, a pediatric nurse practitioner who volunteered in Gaza in May 2024, said that she saw one to three babies die “every day” from a combination of these causes.⁹²

Breastfeeding mothers often did not have the ability to breastfeed due to malnutrition and dehydration, leaving them to feed infants formula mixed with dirty water.⁹³ An emergency room nurse who volunteered in Gaza, Abeerah Muhammed, also described seeing many pregnant women who were dehydrated, causing their fetuses’ heartbeats to slow down.⁹⁴ She said that many pregnant women also came in with toxic shock or septic shock due to a combination of disease and malnutrition.⁹⁵

Bader Mosleh, a disability rights activist with a visual disability and father of three, told Human Rights Watch in October 2023 that he walked three kilometers each day to fill one plastic container of water, which holds several liters of water, for his family and five other families he was hosting.⁹⁶ “Having 40 people in my house, that was not enough. We used

⁸⁹ WHO, “Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted”, November 8, 2024, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 27, 2024).

⁹⁰ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁹¹ Human Rights Watch interviews with Asma Taha, via Microsoft Teams, August 9, 2024; Abeerah Muhammed, via Microsoft Teams, August 14, 2024; Dr. Hussam Abu Safiyeh, Kamal Adwan hospital, via phone, August 13, 2024; MSF employee, via Microsoft Teams, August 16, 2024.

⁹² Human Rights Watch interview with Asma Taha, via Microsoft Teams, August 9, 2024.

⁹³ Human Rights Watch interviews with Asma Taha, via Microsoft Teams, August 9, 2024, and MSF employee, via Microsoft Teams, August 16, 2024.

⁹⁴ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

⁹⁵ Ibid.

⁹⁶ Human Rights Watch interview with Bader Mosleh, via phone, October 21, 2023.

small coffee cups to drink water to make sure everyone gets some.” Mosleh was reportedly killed in an Israeli airstrike on December 7, 2023.⁹⁷

Accessing water is especially hard for people with disabilities and UNICEF had previously reported that children with disabilities generally face additional difficulties accessing water, sanitation, and hygiene compared to other children.⁹⁸

A.J., 27, who uses a wheelchair and was sheltering in a school in Rafah in December 2023 together with his father who has quadriplegia and a sister who is blind, said that it is harder for both children and adults with disabilities to physically access adequate water because of their disabilities. “Because I am in a wheelchair, I am not able to go out and look for water,” he said. The amount of water available at the school where A.J. and his family were staying was scarce: they received only one liter per person each day, and there were days when they received none.⁹⁹

The mother of 14-year-old Ghazal, who has cerebral palsy, said that her daughter struggled to access sanitation and wash facilities due to inaccessibility and could only use the toilet or shower if her mother or sister were present to help her.¹⁰⁰

As of September 2024, Ghazal had fled Rafah and was sheltering with her family in a tent in al-Qarara, in Khan Younis. Accessing water remains a problem for her and her family. “We all now drink toxic, contaminated, and undrinkable water. [Ghazal’s] stomach pains haven’t stopped... We don’t have enough money to buy bottled water. We can’t afford it.”¹⁰¹

Underreporting of Deaths, Disease Caused by Denial of Access to Water

Deaths in Gaza attributable to dehydration, water-borne diseases, and other complications resulting from a lack of clean water and sanitation are likely vastly underreported.

⁹⁷ Frontline Defenders, “Bader Mosleh,” Profile, n.d., <https://www.frontlinedefenders.org/en/profile/bader-mosleh> (accessed December 2, 2024).

⁹⁸ UNICEF, “UNICEF Fact Sheet: Children with Disabilities,” August 2022, https://www.unicef.org/sites/default/files/2022-10/GIPo2115_UNICEF_Children-with-Disabilities-Factsheet-final%20-%20accessible.pdf (accessed September 12, 2024).

⁹⁹ Human Rights Watch interview with A.J. (name withheld), via phone, December 22, 2023.

¹⁰⁰ Human Rights Watch interview with Ghazal (last name withheld), via phone, January 15, 2024.

¹⁰¹ Human Rights Watch interview with Hala (last name withheld), via phone, September 6, 2024.

The decimation of the healthcare system, including disease tracking, has meant that confirmed cases of disease, as well as illnesses and deaths suspected to be linked to water-borne disease, dehydration, and starvation are not being systematically tracked or reported.¹⁰²

Taha stated that she believed many deaths at the clinic where she was volunteering went unregistered with Gaza's Ministry of Health. "We had many babies brought in dead, malnourished. I don't know if anyone registered them... [The doctors] have no time, they were overworked. They worked 24 hour shifts, 36 hour shifts."¹⁰³ She added that "[a]t some point we didn't even have papers to write on."¹⁰⁴

In an October 2024 letter to the Biden administration, 99 American physicians and nurses who volunteered in Gaza between October 2023 and October 2024 stated:

Israel's continued, repeated displacement of the malnourished and sick population of Gaza, half of whom are children, to areas with no running water or even toilets available is absolutely shocking. It is virtually guaranteed to result in widespread death from viral and bacterial diarrheal diseases and pneumonias, particularly in children under the age of five. We worry that unknown thousands have already died from the lethal combination of malnutrition and disease, and that tens of thousands more will die in the coming months. Most of them will be young children.¹⁰⁵

The letter cited expert reports on food insecurity in Gaza since October 2023, which have quantified the number of people facing "emergency" and "catastrophic" levels of malnutrition. Based on the average daily death rates per-10,000-people at those levels of food insecurity, the healthcare providers estimated that more than 60,000 people in Gaza

¹⁰² Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

¹⁰³ Human Rights Watch interview with Asma Taha, via Microsoft Teams, August 9, 2024.

¹⁰⁴ Ibid.

¹⁰⁵ Gaza Healthcare Letters, "Letter to President Biden and Vice President Harris," October 2, 2024, <https://www.gazahealthcareletters.org/usa-letter-oct-2-2024> (accessed November 29, 2024).

had died from malnutrition between October 2023 and June 2024, in addition to the tens of thousands directly killed in the hostilities.¹⁰⁶

“Even if the war stops, the level of destruction and damage to water and sanitation infrastructure will mean that humanitarian efforts will not be able to respond in a timely manner to save lives,” said Lama Abdul Samad, a WASH technical advisor on Oxfam’s Global Humanitarian Team.¹⁰⁷ “That means that people may continue to suffer from a lack of water and food, and may become gravely sick due to a lack of sanitation and spread of diseases.”¹⁰⁸

Destruction of Health Infrastructure, Housing, Agriculture, and Forced Displacement

The impacts of Israeli forces’ destruction and damage to the water and sanitation infrastructure have been exacerbated by widespread destruction and damage during the hostilities to other elements critical for sustaining life and realizing human rights in Gaza, including healthcare facilities, housing, and agriculture.¹⁰⁹

In December, Médecins Sans Frontières (MSF, Doctors Without Borders) stated that Israeli authorities’ attacks on healthcare had led, by December 2023, to the “complete collapse ... of the healthcare system in Gaza.”¹¹⁰ The destruction of Gaza’s healthcare infrastructure has left hundreds of thousands of people with water-borne illnesses, dehydration, and other water- and sanitation-related health problems without adequate access to health care.

¹⁰⁶ “Appendix to letter of October 2, 2024 re: American physicians observations from the Gaza Strip since October 7, 2023,” <https://static1.squarespace.com/static/66e083452b3cbf4bbd719aa2/t/66f5f8afa82cdd4e0fcd607/1727396015767/Appendix+%281%29.pdf>; Daily death rates per 10,000 are based on assessments by the the Integrated Food Security Phase Classification (IPC), which classifies food insecurity in different countries based on scientific standards, see <https://www.ipcinfo.org/famine-facts/>.

¹⁰⁷ Human Rights Watch interview with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024.

¹⁰⁸ Ibid.

¹⁰⁹ World Bank Group, “Note on the Impacts of the Conflict in the Middle East on the Palestinian Economy – February 2024”, February, 2024, <https://thedocs.worldbank.org/en/doc/db985000fa4b7237616dbca501d674dc-0280012024/original/PalestinianEconomicNote-Feb2024-Final.pdf> (accessed August 27, 2024).

¹¹⁰ MSF, “Hospitals at breaking point in southern Gaza as bombing intensifies”, December 4, 2023, <https://www.doctorswithoutborders.org/latest/hospitals-are-breaking-point-southern-gaza-bombing-intensifies> (accessed August 30, 2024); see also, “With a near collapse of the healthcare system in Gaza and almost no access to safe water, the IRC warns of imminent spread of communicable and waterborne diseases,” International Rescue Committee, November 9, 2023, <https://www.rescue.org/press-release/near-collapse-healthcare-system-gaza-and-almost-no-access-safe-water-irc-warns> (accessed December 1, 2024).

Israeli forces have also apparently destroyed agricultural products and land, including razing orchards, fields, and greenhouses, according to Human Rights Watch's analysis of satellite imagery. As of December 30, 2023, The Wall Street Journal had already reported that as many as 80 percent of the buildings in northern Gaza had been damaged or destroyed in the hostilities, as well as half of the buildings across all of Gaza, based on analysis of satellite data.¹¹¹

Until significant reconstruction can take place, the widespread destruction to critical infrastructure, housing, and agricultural land will have severe consequences on people's abilities to access water and to maintain basic sanitation.

Israeli forces have also impacted people's lack of access to water through the repeated displacement of the population, including 1 million people who were displaced in May 2024 as part of Israel's incursion into Rafah, without providing or facilitating access to water in the areas where they were told to evacuate.¹¹² Article 49 of the Fourth Geneva Convention requires that parties to a conflict adhere to humanitarian standards when evacuating a population, including carrying out removals in "satisfactory conditions of hygiene, health, safety and nutrition."¹¹³ On May 18, UNRWA Commissioner-General Philippe Lazzarini stated, "[t]he areas that people are fleeing to now do not have safe water supplies or sanitation facilities."¹¹⁴

The third set of provisional measures by the ICJ found that "Israel has not provided sufficient information concerning ... the availability in the al-Mawasi area [where civilians from Rafah were ordered to evacuate] of water, sanitation, food, medicine and shelter."¹¹⁵

An employee of the CMWU told Human Rights Watch on May 30, 2024, "[u]nfortunately the situation is only getting more terrible. I don't know how [anyone] can say that the situation

¹¹¹ Jared Malsin and Saeed Shah, "The Ruined Landscape of Gaza After Nearly Three Months of Bombing," *The Wall Street Journal*, December 30, 2023, https://www.wsj.com/world/middle-east/gaza-destruction-bombing-israel-aa528542?mod=hp_lead_pos7 (accessed August 30, 2024).

¹¹² *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024, para. 46.

¹¹³ Fourth Geneva Convention, art. 49.

¹¹⁴ Philippe Lazzarini (@UNLazzarini) post to X (formerly known as Twitter), May 18, 2024, <https://x.com/UNLazzarini/status/1791867434518860143?lang=en> (accessed August 27, 2024).

¹¹⁵ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024, para. 46.

is improving. How could the situation be improving if the whole population is gathered in one area... on the beach side and in the middle area governorates... [where they] can't find water to wash themselves or to drink.”¹¹⁶

Human Rights Watch has previously found that Israeli authorities' displacement of the civilian population in Gaza combined with its failure to provide humanitarian safeguards in evacuation areas, and other breaches of article 49 of the Fourth Geneva Convention amount to multiple war crimes and crimes against humanity of forced displacement.¹¹⁷

Violations of International Law

International humanitarian law (IHL) requires Israel, as the occupying power in Gaza, to provide for the welfare of the occupied population and ensure that the needs of the civilian population are provided for.¹¹⁸

IHL also prohibits warring parties from attacking, destroying, removing, or rendering useless objects indispensable to the survival of the civilian population (OIS), including water and sanitation infrastructure.¹¹⁹ When done deliberately, destruction of OIS may amount to a war crime. In several instances, Israeli forces deliberately targeted water and sanitation infrastructure in Gaza, including in areas under their control. Israeli authorities have deliberately cut off electricity supplies and blocked fuel supplies into Gaza, rendering nearly all water and sanitation infrastructure useless.¹²⁰ Israeli authorities' intentional destruction of and rendering useless OIS therefore amounts to a war crime.

¹¹⁶ Human Rights Watch text message correspondence with CMWU employee 2, May 30, 2024.

¹¹⁷ Human Rights Watch, “*Hopeless, Starving, and Besieged*”: Israel’s Forced Displacement of Palestinians in Gaza, November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza>.

¹¹⁸ See the International Court of Justice, Legal Consequences Arising From the Policies and Practices of Israel in the Occupied Palestinian Territory, Advisory Opinion, July 19, 2024, paras. 93-94 (Israel’s obligations under the law of occupation” have remained commensurate with the degree of its effective control over the Gaza Strip,” including ” control of the land, sea and air borders, restrictions on movement of people and goods, collection of import and export taxes, and military control over the buffer zone,” <https://www.icj-cij.org/sites/default/files/case-related/186/186-20240719-adv-01-00-en.pdf>; ICRC, “What does the law say about the responsibilities of the Occupying Power in the occupied Palestinian territory?”, July 26, 2024, <https://www.icrc.org/en/document/ihl-occupying-power-responsibilities-occupied-palestinian-territories> (accessed November 22, 2024); “Gaza: Israel’s Open-Air Prison at 15,” Human Rights Watch news release, June 14, 2022, <https://www.hrw.org/news/2022/06/14/gaza-israels-open-air-prison-15>.

¹¹⁹ Protocol Additional of 1977 to the 1949 Geneva Conventions relating to the Protection of Victims of Non-International Armed Conflicts (Additional Protocol II), art. 14.

¹²⁰ See Section “III. Destruction of Water and Sanitation Infrastructure” and Section II “Cutting Off and Blocking Water, Fuel, and Electricity Supply.”

Using starvation as a method of warfare by destroying and rendering useless OIS is a war crime.¹²¹ Starvation includes water deprivation.¹²² Israeli authorities' and forces' actions of intentionally destroying and rendering useless water infrastructure essential to the survival of the civilian population in Gaza constitute the use of starvation as a method of warfare by deliberately destroying and rendering useless OIS, amounting to a war crime.

Israeli authorities' deprivation of water to the population of Gaza is a violation of the right to water and sanitation under international human rights law.¹²³

The governing authority over a population, which includes the occupying power, has, under international human rights law, a positive, "immediate" obligation to protect the population's right to water and to the highest attainable standard of physical and mental health.¹²⁴ Israeli authorities' actions have violated the rights of Palestinians in Gaza to water and to the highest attainable standard of physical and mental health.¹²⁵

Extermination is listed as a distinct crime against humanity under the Rome Statute of the International Criminal Court (Rome Statute). Extermination includes "the intentional infliction of conditions of life, *inter alia*, the deprivation of access to food and medicine, calculated to bring about the destruction of part of a population,"¹²⁶ and includes the following elements: "[t]he perpetrator killed one or more persons, including by inflicting conditions of life calculated to bring about the destruction of part of a population; [t]he conduct constituted, or took place as part of, a mass killing of members of a civilian

¹²¹ Rome Statute of the International Criminal Court (Rome Statute), A/CONF.183/9, July 17, 1998, entered into force July 1, 2002, art. 8(2)(b)(xxv).

¹²² ICRC, Customary International Humanitarian Law, Rule 54, "Attacks against Objects Indispensable to the Survival of the Civilian Population."

¹²³ UN Water, "Human Rights to Water and Sanitation," n.d., <https://www.unwater.org/water-facts/human-rights-water-and-sanitation> (accessed December 2, 2024).

¹²⁴ OHCHR, "Frequently Asked Questions on Economic, Social and Cultural Rights," n.d., <https://www.ohchr.org/sites/default/files/documents/publications/factsheet33en.pdf> (accessed March 15, 2024), p. 16; CESCR, Concluding observations on the fourth periodic report of Israel, E/C.12/ISR/CO/4 (2019), para. 46; UN Water, "Human Rights to Water and Sanitation," n.d., <https://www.unwater.org/water-facts/human-rights-water-and-sanitation> (accessed December 2, 2024); OHCHR, "Protection of economic, social and cultural rights in conflict," June 22, 2016, <https://www.ohchr.org/sites/default/files/Documents/Issues/ESCR/E-2015-59.pdf> (accessed December 2, 2024).

¹²⁵ UN Water, "Human Rights to Water and Sanitation," n.d., <https://www.unwater.org/water-facts/human-rights-water-and-sanitation> (accessed December 2, 2024); OHCHR, "Protection of economic, social and cultural rights in conflict," June 22, 2016, <https://www.ohchr.org/sites/default/files/Documents/Issues/ESCR/E-2015-59.pdf> (accessed December 2, 2024).

¹²⁶ Rome Statute of the International Criminal Court (Rome Statute), A/CONF.183/9, July 17, 1998, entered into force July 1, 2002, art. 7(2)(b).

population; [t]he conduct was committed as part of a widespread or systematic attack directed against a civilian population; and [t]he perpetrator knew that the conduct was part of or intended the conduct to be part of a widespread or systematic attack directed against a civilian population.”¹²⁷

Israeli policies have amounted to the intentional creation of conditions of life calculated to bring about the destruction of part of the civilian population of Gaza. Israeli authorities were responsible for the deliberate destruction of water and sanitation infrastructure, the prevention of repairs to damaged water and sanitation infrastructure, and the cutting off or severe restrictions on water, electricity and fuel, which have likely caused thousands of deaths, that is, a mass killing, and will likely continue to cause deaths into the future. As a state policy, these acts constitute a widespread or systematic attack directed against a civilian population. Israeli officials are therefore committing the crime against humanity of extermination.

Genocide is a crime under international law set out in both the Genocide Convention and the Rome Statute of the International Criminal Court.¹²⁸ The crime of genocide in international law involves the specific intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such, by killing its members or by causing serious bodily or mental harm to members of the group; or deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part; or imposing measures intended to prevent births within the group; or forcibly transferring children of the group to another group.¹²⁹

Human Rights Watch concludes that Israeli authorities have over the past year intentionally inflicted on the Palestinian population in Gaza “conditions of life calculated to bring about its physical destruction in whole or in part.” This policy, inflicted as part of a mass killing of Palestinian civilians in Gaza means Israeli authorities have committed the

¹²⁷ ICC Elements of Crimes, art. 7(1)(b).

¹²⁸ Convention on the Prevention and Punishment of the Crime of Genocide, adopted December 9, 1948, G.A. Res.260 A (III), entered into force January 12, 1951, Article II; Rome Statute of the International Criminal Court (Rome Statute), A/CONF.183/9, July 17, 1998, entered into force July 1, 2002, art. 6.

¹²⁹ Convention on the Prevention and Punishment of the Crime of Genocide, adopted December 9, 1948, G.A. Res.260 A (III), entered into force January 12, 1951, Article II; Rome Statute of the International Criminal Court (Rome Statute), A/CONF.183/9, July 17, 1998, entered into force July 1, 2002, art. 6.

crime against humanity of extermination, which is ongoing. This policy also amounts to an “act of genocide” under the Genocide Convention of 1948.

The crime of genocide requires acts of genocide to be committed with genocidal intent. The ICJ has said that to infer such intent from a pattern of conduct by the state, it needs to be “the only reasonable inference to be drawn” from the acts in question.¹³⁰ The pattern of conduct set out in this report together with statements suggesting some Israeli officials wished to destroy the Palestinians in Gaza may indicate such intent.

Direct and public incitement to genocide is also prohibited under article 3(c) of the Genocide Convention.¹³¹ The combination of certain public statements, including from persons in authority in Israel at the time they made the statements, calling for action that would target access to water and other conditions of life of Palestinians in Gaza; the action that followed the statements, by Israeli authorities in creating the conditions of life that have likely killed thousands of Palestinians; and the ICJ ruling on incitement, indicate that some of the statements have amounted to direct and public incitement to genocide. Israeli authorities are under a duty, as the ICJ ruled, to take all measures to prevent and punish such incitement.¹³²

These violations of international law entail both state responsibility and individual criminal liability of Israeli officials.

Key Recommendations

The Israeli government should immediately comply with the provisional measures ordered by the ICJ. It should cease its unlawful destruction of water infrastructure across Gaza and unlawful attacks on personnel and equipment needed for repairs. It should immediately lift its blockade of Gaza, restore water and electricity access, and allow desperately

¹³⁰ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Croatia v. Serbia)*, International Court of Justice, Judgment of 3 February 2015, February, 3, 2015, para. 148.

¹³¹ Rome Statute of the International Criminal Court (Rome Statute), A/CONF.183/9, July 17, 1998, entered into force July 1, 2002, art. 25(3)(e); See also ICTY Statute, art. 4(3)(c); ICTR Statute, art. 2(3)(c).

¹³² *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024 at para. 86; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024 at para. 51; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024 at para. 57.

needed water, food, medical aid, and fuel in, including via all land crossings.¹³³ The Israeli government should also immediately allow for and facilitate urgently-needed repairs to damaged water infrastructure.

States and international institutions, and especially those with leverage on the Israeli government such as the United States, the United Kingdom and European Union states, should take urgent action to prevent genocide and further atrocities. This includes measures like targeted sanctions, suspension of arms transfers and military assistance, and review of bilateral trade and political agreements, to put concrete pressure on the Israeli government to comply with the ICJ's provisional measures and its other obligations under IHL and human rights law.

¹³³ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024, para. 50.

Recommendations

To the Israeli Authorities

- Immediately ensure the supply of clean water, fuel, and electricity are sufficient to meet the human rights of all people in Gaza, and are adequate to ensure health and survival after prolonged deprivation of access to water.
- Allow and facilitate repairs to water infrastructure and end unlawful attacks on personnel and equipment needed for repairs.
- Stop obstructing humanitarian aid and civilian goods, including water, water-related infrastructure and supplies, and fuel, from entering Gaza by fully opening land crossings; publish a list of banned items; promptly provide written explanations and allow appeals of denials of entry; and ensure that humanitarian and civilian agencies can safely and regularly distribute aid to all parts of Gaza.
- End all disproportionate and indiscriminate attacks and attacks targeting civilians and civilian objects, including water and sanitation infrastructure.
- Avoid the use of explosive weapons that have a wide-area effect in populated areas.
- Immediately process the waiting list of medical patients referred for care outside of Gaza submitted by the World Health Organization and facilitate their safe evacuations.
- Lift the blockade of Gaza and permit free movement of people and goods to Gaza, subject to, at most, individual screenings and physical inspections for security purposes.
- Comply with all provisional measures ordered by the International Court of Justice.
- Ensure Palestinians in Gaza have access to water at least equal to what it grants Israeli citizens and dismantle all forms of systematic domination and oppression that privilege Jewish Israelis and systematically repress Palestinians.
- Withdraw the Israeli legislation preventing the United Nations Relief and Works Agency (UNRWA) from operating in Israel and the occupied Palestinian territory, facilitate UNRWA's and other humanitarian agencies' activities in the Gaza Strip, and halt the campaign to destroy the UN's most important aid agency for Palestinian refugees in Gaza and elsewhere.

- Cooperate with the International Criminal Court, including responding to requests for assistance and access.
- Provide reparations to people in Gaza for the months-long denial of access to water, including compensation to individuals, funding and facilitation of individual and public healthcare measures as needed to recover from and prevent the spread of illness caused by denial of access to water, and funding for and facilitation of repair and restoration of water and sanitation infrastructure, ensuring accountability, and providing guarantees of non-recurrence.
- Grant access to the occupied Palestinian territory to UN special procedures, independent human rights investigators, and journalists.
- Implement UN Security Council and General Assembly resolutions on Israel and Palestine, including all provisions relating to humanitarian aid delivery to the residents of Gaza and compliance with international humanitarian law.

To All States

- Take all measures within their power to prevent genocide by Israeli authorities in Gaza by pressuring Israel to lift the blockade and comply with the orders of the International Court of Justice, including by discontinuing any military assistance and arms sales or transfers, imposing targeted sanctions, and reviewing bilateral deals and diplomatic relations.
- Publicly condemn war crimes, crimes against humanity, and other violations of human rights and international humanitarian law and the genocide convention committed by the Israeli authorities, and urge them to immediately halt those violations and crimes and cooperate with international judicial bodies, investigative mechanisms, and UN special procedures.
- Increase public and private pressure on the Israeli government to comply with international humanitarian law in the conduct of hostilities, and ensure the entry and safe distribution at scale throughout Gaza of adequate aid and provision of basic services.
- Demand that Israel implement UN Security Council and General Assembly resolutions on Israel and Palestine, including all provisions relating to humanitarian aid delivery to the residents of Gaza and compliance with international humanitarian law.

- Review and possibly suspend bilateral agreements with Israel, such as the EU-Israel Association Agreement, whose review has been proposed by the Spanish and Irish governments.
- End all forms of support for and complicity in the atrocities being carried out by Israel, including suspending military assistance and arms transfers to the Israeli government so long as its forces commit serious rights abuses and war crimes against Palestinian civilians with impunity.
- Publicly support the ICJ's work and its decisions as an independent judicial institution and press Israel to comply with the ICJ's binding orders.
- Publicly support the work of the International Criminal Court across all situations under its jurisdiction, including the ongoing Palestine investigation, and render any assistance necessary to give effect to orders of the Court. Uphold the court's independence and publicly condemn efforts to intimidate or interfere with its work, officials, and those cooperating with the institution.
- Support foreign domestic investigations and prosecutions under the principle of universal jurisdiction, as relevant and appropriate, of those credibly implicated in serious crimes in Gaza.
- The United States should immediately reverse its decisions to suspend funding to UNRWA and state clearly the intention to continue to fund the agency, and all states should urge Israeli authorities to reverse Israel's decisions to bar UNRWA from operating within Israel.
- Fund repairs of damaged and destroyed water and sanitation infrastructure, and press Israel to urgently allow the infrastructure to be repaired.
- Support the creation of an international mechanism to address reparation for Palestinians and an international register of damages.
- Call on Israeli authorities to allow water filtration systems, water tanks, and other materials needed to repair water infrastructure and to improve the water supply into Gaza.
- Support the United Nations to establish a plan that would ensure Palestinians have access to water at least equal to what Israel grants Israeli citizens, and pressure Israel to facilitate and contribute to the plan.
- Address long-standing impunity by Israeli authorities and Palestinian armed groups for serious crimes under international law.

To the UN Special Rapporteur on the Human Rights to Water and Sanitation

- Request access to Gaza in order to monitor and report publicly on the human rights situation regarding access to water and sanitation, including damage and destruction of water and sanitation infrastructure; obstruction of repairs and targeting of repair workers; restrictions on the entry of fuel; and the human rights impacts stemming from these actions.

To the International Criminal Court Prosecutor

- Investigate Israeli authorities' actions and policies that have deprived the civilian population of Gaza of water, including as war crimes, as the crime against humanity of extermination, and as genocide.

Methodology

This report is based on interviews with 66 Palestinians from Gaza, as well as 4 individuals working with Gaza's Coastal Municipalities Water Utility (CMWU), 31 health care professionals, and 15 individuals working with UN agencies and international aid organizations in Gaza. All interviews took place between October 18, 2023, and November 28, 2024.

Most interviews were conducted remotely, while some were conducted in person with civilians who had been evacuated out of Gaza and with nongovernmental and UN personnel. Some interviews were conducted in Arabic and were later translated to English, some interviews were conducted in English with an Arabic translator, and other interviews were conducted in English. Human Rights Watch informed all interviewees of the nature and purpose of our research and our intention to publish a report with the information gathered. We informed each potential interviewee that they were under no obligation to speak with us, that Human Rights Watch does not provide legal or other assistance, and that they could stop speaking with us or decline to answer any question with no adverse consequences. We obtained oral consent for each interview. Interviewees did not receive material compensation for speaking with Human Rights Watch. In some cases where interviewees asked not to be named or where we assessed that naming them could jeopardize their security, we have used pseudonyms and have withheld potentially identifying information.

Human Rights Watch further reviewed and analyzed photos and documents provided by the CMWU and the State of Palestine Water, Sanitation, and Hygiene Cluster (WASH) Cluster that provided details regarding the destruction of Gaza's water and sanitation infrastructure. Human Rights Watch analyzed this information, as well as news reports, other maps, and dozens of high- and very high-resolution satellite images captured since October 7, 2023, until August 2024 over dozens of water facilities, as well as water infrastructure details provided by other international organizations and found on social media.

Human Rights Watch analyzed and verified photographs and videos posted online of attacks across Gaza. Researchers compared visual material to satellite imagery to identify exactly where each was recorded. In some cases, Human Rights Watch reviewed and

corroborated media reports and investigations which included photographs and videos found online to document findings included in this report.

Human Rights Watch also compiled and analyzed quantitative data on water access, sanitation, and other areas generated from various UN and humanitarian agencies. Data was often derived from mixed methods approaches including probability sampling, purposive sampling, and various qualitative and observational methods.

On June 10 and November 29, 2024, Human Rights Watch wrote to the Israeli military to seek further information regarding specific attacks on water and sanitation infrastructure that Human Rights Watch documents in this report, as well as information regarding the entry of water-related humanitarian aid. Israeli authorities did not reply.

The majority of the research and interviews conducted for this report took place between November 2023 and September 2024, and most of the information contained in the report is current as of September 2024.

Background

For nearly six decades, Israeli authorities have maintained overarching control over the Gaza Strip, including over the movement of people and goods, territorial waters, airspace, the infrastructure upon which Gaza relies, as well as the registry of the population.¹³⁴ Gaza's population, which Israel has subjected to an unlawful closure for 17 years, is almost entirely dependent on the Israeli government for access to fuel, electricity, medicine, food, potable water, and other goods and services essential to human rights.¹³⁵ Human Rights Watch has found that the Israeli government's prolonged closure of the Gaza Strip constitutes a form of collective punishment and is part of the crimes against humanity of apartheid and persecution that Israeli authorities are committing against Palestinians.

Gaza faced high levels of water scarcity before October 7, 2023, with 97 percent of groundwater, Gaza's only natural water source, "unfit for human consumption," as most of it is contaminated by over-pumping leading to seawater intrusion and by wastewater contamination, according to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) in 2022.¹³⁶ For years, tens of thousands of liters of untreated wastewater in Gaza flowed daily into the sea, contaminating the sea and impacting groundwater.¹³⁷ The problem has worsened since October 7 due to the shutdown of wastewater treatment facilities.

About 20 percent of Gaza's water supply came from water that the Gaza Coastal Municipalities Water Utility (CMWU),¹³⁸ a Palestinian non-governmental organization responsible for managing water and sanitation in Gaza, purchased from Israel and distributed via three pipelines controlled by the Israeli water authority, Mekorot, as well as

¹³⁴ Human Rights Watch, *Israel-Palestine—A Threshold Crossed: Israeli Authorities and the Crimes of Apartheid and Persecution*, April 17, 2021, <https://www.hrw.org/report/2021/04/27/threshold-crossed/israeli-authorities-and-crimes-apartheid-and-persecution>.

¹³⁵ Ibid.

¹³⁶ OCHA, "Reconnecting water, restoring lives," July 18, 2022, <https://www.ochaopt.org/content/reconnecting-water-restoring-lives> (accessed August 27, 2024).

¹³⁷ Institute for Middle East Understanding, "Fact Sheet: Israel's Environmental Apartheid in Palestine," November 3, 2022, <https://imeu.org/article/environmental-apartheid-in-palestine> (accessed August 27, 2024).

¹³⁸ Coastal Municipalities Water Utility CMWU مصلحة مياه بلديات الساحل <https://cmwu.ps/> (accessed December 2, 2024); CMWU Coastal Municipalities Water Utility مصلحة مياه بلديات الساحل Facebook page, <https://www.facebook.com/cmwigaza/> (accessed December 2, 2024).

from several water desalination facilities in Gaza.¹³⁹ Water from the Mekorot pipelines and the desalination facilities are distributed to the population through a network of pipes. Though the Mekorot lines and desalination plants only produced a fraction of Gaza's overall water supply, these sources provided Gaza with most of its drinking water prior to October 2023, as the remainder of Gaza's water is largely undrinkable.¹⁴⁰

The remaining 80 percent of Gaza's water supply came from a coastal aquifer that lies beneath Gaza, extracted from about 300 wells managed by the CMWU, the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), and unregulated private sector suppliers, according to the State of Palestine Water, Sanitation and Hygiene Cluster (WASH) Cluster.¹⁴¹ As noted, water from the aquifer is contaminated and unfit for human consumption.¹⁴²

Water and sanitation infrastructure in Gaza were powered by electricity supplied by Israel prior to the hostilities and from the Gaza power plant.¹⁴³ Gaza's power plant became operational in 2002, but immediately before October 7, 2023, it operated at only partial capacity, partly because of several Israeli aerial attacks in prior hostilities.¹⁴⁴

¹³⁹ Interviews with Lama Abdul Samad, via Microsoft Teams, January 11, 2024; WASH response actor, via Microsoft Teams, January 24, 2024, CMWU employees 2 and 3, Egypt, April 6.

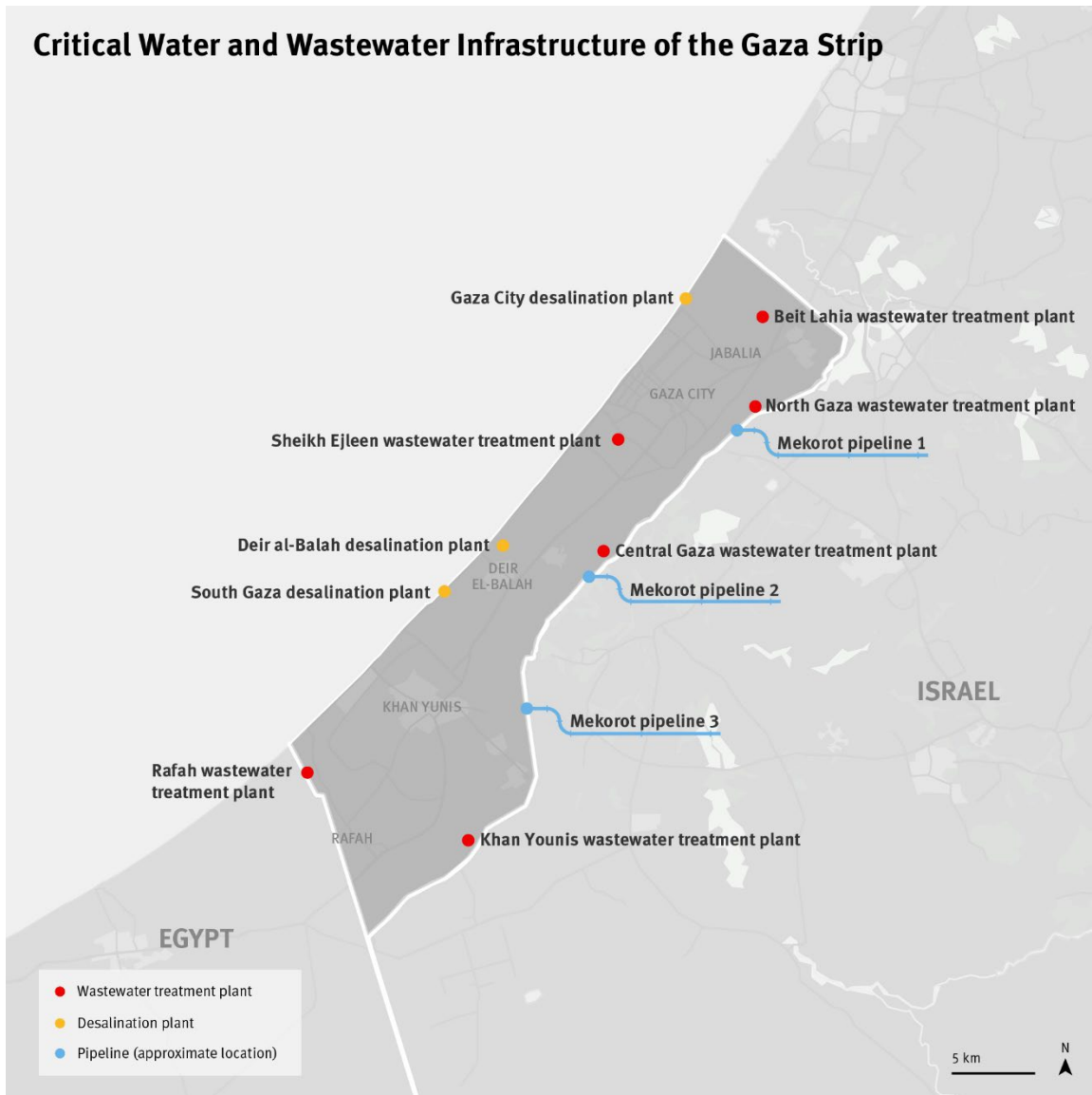
¹⁴⁰ Ibid; Gisha, "Still Waters," March 22, 2022, <https://gisha.org/en/still-waters/> (accessed September 2, 2024); WHO, *Guidelines for drinking-water quality*, Fourth edition, 2022, <https://iris.who.int/bitstream/handle/10665/352532/9789240045064-eng.pdf?sequence=1> (accessed September 24, 2024).

¹⁴¹ WASH Cluster, "Explainer: Water Supply & Fuel Relationship in The Gaza Strip," November 14, 2023, <https://www.arij.org/latest/explainer-water-supply-fuel-relationship-in-the-gaza-strip/> (accessed August 27, 2024).

¹⁴² OCHA, "Reconnecting water, restoring lives", July 18, 2022, <https://www.ochaopt.org/content/reconnecting-water-restoring-lives> (accessed August 27, 2024).

¹⁴³ Al Mezan Center for Human Rights, "Press Release: Energy crisis worsens humanitarian conditions in Gaza," June 1, 2021, <https://reliefweb.int/report/occupied-palestinian-territory/press-release-energy-crisis-worsens-humanitarian-conditions> (accessed August 27, 2024); Palestine Children's Relief Fund, "What You Need to Know About the Electricity Crisis in Gaza", <https://www.pcrf.net/information-you-should-know/electricity-in-gaza.html> (accessed August 27, 2024).

¹⁴⁴ "Gaza: Widespread Impact of Power Plant Attack," Human Rights Watch news release, August 10, 2014, <https://www.hrw.org/news/2014/08/10/gaza-widespread-impact-power-plant-attack>. Gisha, "Fourth turbine at Gaza's power plant temporarily activated", August 16, 2023, <https://gisha.org/en/fourth-turbine-temporarily-activated/> (accessed August 27, 2024); Gisha, "Hands on the Switch", January, 2017, <https://gisha.org/en/blogs-hand-on-the-switch/> (accessed August 27, 2024).



Map displaying the key water and wastewater infrastructure of the Gaza Strip. Data © WASH Cluster Palestine, OpenStreetMap. Graphic © Human Rights Watch.

In addition, Israeli authorities periodically restricted, sometimes punitively and other times over disputes in payments, the amount of industrial fuel they allowed Palestinians to purchase for the power plant, which the plant needs to operate.¹⁴⁵ Though solar energy contributes a small amount of the needed electricity to Gaza, Israeli authorities have also restricted the entry of solar panels and batteries, hampering efforts to develop alternative

¹⁴⁵ Gisha, “Hands on the Switch”, January, 2017, <https://gisha.org/en/blogs-hand-on-the-switch/> (accessed August 27, 2024).

energy sources that would give Gaza a degree of energy autonomy.¹⁴⁶ Gaza has remained “almost completely dependent,” as the Israeli Supreme Court put it in 2008, on Israel for its supply of electricity.¹⁴⁷

The restrictions that Israeli authorities have placed on Gaza’s electricity supply, as well as on imports of parts needed for repairs, impacted the amount of water access the population had prior to the current hostilities. According to B’Tselem, an Israeli nongovernmental organization, in 2014, though 97 percent of people in Gaza were connected to the public water network, “this does not ensure a steady supply of water, as the Gaza Strip suffers from shortages of water, shortages in the electricity needed to pipe water through the system, as well as from severe problems with infrastructure,” including due to past Israeli military bombardment of Gaza.¹⁴⁸ According to data from the Palestinian Water Authority, in 2021, Palestinians in Gaza consumed an average of 82.7 liters of water per day, within the World Health Organization’s minimum daily amount of 50 to 100 liters, but only one-third of Israeli water consumption.¹⁴⁹

On October 7, 2023, Hamas-led Palestinian armed groups breached the fences between Gaza and southern Israel and carried out an assault killing at least 815 civilians and taking 251 people as hostages. Human Rights Watch concluded that Palestinian armed groups committed numerous war crimes and the crimes against humanity of murder and unlawful

¹⁴⁶ Ibid; Human Rights Watch interview with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024; “Gaza: Israel Flouts World Court Orders,” Human Rights Watch news release, May 7, 2024, <https://www.hrw.org/news/2024/05/07/gaza-israel-flouts-world-court-orders><https://www.hrw.org/news/2024/05/07/gaza-israel-flouts-world-court-orders>. As far as Human Rights Watch is aware, Israel has not provided a reason to aid workers for blocking the entry of items with solar panels or batteries.

¹⁴⁷ *Albassiouni v. Prime Minister*, High Court of Justice, 9132/07, January 27, 2008, <https://versa.cardozo.yu.edu/sites/default/files/upload/opinions/Ahmed%20v.%20Prime%20Minister.pdf> (accessed August 27, 2024).

¹⁴⁸ B’Tselem, “Over 90% of water in Gaza Strip unfit for drinking,” February 4, 2014, https://www.btselem.org/gaza_strip/20140209_gaza_water_crisis (accessed August 27, 2024); UNDP, “Gaza Infrastructure Damage Assessment Report,” May 10, 2022, <https://www.undp.org/papp/publications/gaza-infrastructure-damage-assessment-report> (accessed November 29, 2024).

¹⁴⁹ Rachel Wilson, Mark Oliver and Alex Newman, “Gaza’s limited water access, mapped,” *CNN*, October 18, 2023, <https://www.cnn.com/2023/10/18/middleeast/gaza-water-access-supply-mapped-dg/index.html> (accessed August 27, 2024); B’Tselem, “Parched: Israel’s policy of water deprivation in the West Bank,” May 2023, https://www.btselem.org/publications/202305_parched (accessed August 27, 2024); Aditi Bhandari, Prasanta Kumar Dutta and Clare Trainor, “Water is running out in Gaza,” *Reuters*, October 16, 2023, <https://www.reuters.com/graphics/ISRAEL-PALESTINIANS/MAPS/movajdladpa/2023-10-16/water-is-running-out-in-gaza/> (accessed August 27, 2024).

imprisonment during the attack.¹⁵⁰ The same day, Israeli forces began its military operations in Gaza with airstrikes and artillery shelling, and ordered the mass evacuation of all residents of northern Gaza on October 13.

Israeli forces later launched a ground invasion, concurrently with an aerial bombardment, that bisected Gaza along an east-west axis, referred to by Israeli forces as the “Netzarim Corridor” and invaded many Gaza cities including Gaza City, Khan Younis, Rafah, and Deir al-Balah. More evacuations of civilians have occurred since then in the middle and southern areas in Gaza.¹⁵¹ By September 2024, 86 percent of the Gaza Strip remained under Israeli-issued evacuation orders, internally displacing 90 percent of the population, with nowhere safe to go.¹⁵²

Israeli authorities have cut off essential services, including water and electricity, to Gaza’s population and blocked the entry of all but a trickle of fuel and critical humanitarian aid, acts of collective punishment that are violations of international humanitarian law and amount to war crimes, including the use of starvation as a method of warfare.¹⁵³ As of November 14, 2024, Israeli military actions since October 2023 have resulted in the death of more than 43,000 Palestinians, injuring at least 102,000 others and reducing large parts of Gaza to rubble while damaging or destroying many of Gaza’s homes, schools, hospitals,

¹⁵⁰ Human Rights Watch, “*I Can’t Erase All the Blood from My Mind*: Palestinian Armed Groups’ October 7 Assault on Israel,” July 17, 2024, <https://www.hrw.org/report/2024/07/17/i-cant-erase-all-blood-my-mind/palestinian-armed-groups-october-7-assault-israel>.

¹⁵¹ “Israel: Rafah Evacuation Plans Catastrophic, Unlawful,” Human Rights Watch news release, February 9, 2024, <https://www.hrw.org/news/2024/02/09/israel-rafah-evacuation-plans-catastrophic-unlawful>.

¹⁵² Human Rights Watch, “*Hopeless, Starving, and Besieged*: Israel’s Forced Displacement of Palestinians in Gaza,” November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza>; OCHA, “Reported impact snapshot | Gaza Strip (25 September 2024),” September 25, 2024, <https://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-25-september-2024> (accessed November 29, 2024).

¹⁵³ Ibrahim Dahman, “Gaza’s sole power station stops working as fuel runs out, after Israel orders ‘complete’ blockade,” *CNN*, October 11, 2023, <https://edition.cnn.com/2023/10/11/middleeast/gaza-power-plant-shuts-down-intl/index.html> (accessed August 27, 2024); See also razing of solar panels, documented in Section “III. Destruction of Water and Sanitation Infrastructure”; “Israel: Starvation Used as Weapon of War in Gaza,” Human Rights Watch news release, December 18, 2023, <https://www.hrw.org/news/2023/12/18/israel-starvation-used-weapon-war-gaza>; Sari Bashi, “Israel Still Blocking Aid to Civilians in Gaza,” Human Rights Watch dispatch, October 23, 2023, <https://www.hrw.org/news/2023/10/23/israel-still-blocking-aid-civilians-gaza>; “Israel: Unlawful Gaza Blockade Deadly for Children,” Human Rights Watch news release, October 18, 2023, <https://www.hrw.org/news/2023/10/18/israel-unlawful-gaza-blockade-deadly-children>; “Gaza: Israel Flouts World Court Orders,” Human Rights Watch news release, May 7, 2024, <https://www.hrw.org/news/2024/05/07/gaza-israel-flouts-world-court-orders>.

and much of its civilian infrastructure.¹⁵⁴ While many people remain missing and bodies are unidentified, nearly 59 percent of identified deaths are of children, women, or older people, according to OCHA.¹⁵⁵

¹⁵⁴ OCHA, “Reported Impact Since 7 October 2023”, Occupied Palestinian Territory, landing page, n.d., <https://www.ochaopt.org> (accessed December 3, 2024); UN, “Briefing by the UN Senior Humanitarian and Reconstruction Coordinator for Gaza, Sigrid Kaag, to the Security Council,” September 16, 2024, <https://www.un.org/unispal/document/sigrid-kaag-securitycouncil-briefing-16sep24/> (accessed December 3, 2024). These numbers do not distinguish between civilians and combatants.

¹⁵⁵ OCHA, “Reported impact snapshot | Gaza Strip (12 November 2024),” November 12, 2024, <https://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-12-november-2024> (accessed December 3, 2024).

I. Water Deprivation as a Deliberate Act

In the days and months after the Hamas-led attacks in southern Israel, Israeli government officials made unambiguous statements about cutting off water as well as electricity and fuel, which are crucial for operating water and sanitation infrastructure, to the entire population of Gaza, and blocking humanitarian aid, including objects required for the production of potable water. The actions that Israeli authorities and military forces took in the months after October 7, 2023, were consistent with these statements, indicating a clear intent to deprive Gaza's civilian population of water.

Israeli authorities cut all electricity and fuel to the Gaza Strip on October 7, and water on October 9. On October 9, then-Defense Minister Yoav Gallant announced a “complete siege” of Gaza.¹⁵⁶ On October 10, then-Energy Minister and current Minister of Defense Israel Katz stated on his X account:

So far we have transferred 54,000 cubic meters of water and 2,700 megawatts of electricity to Gaza per day. It's over. Without fuel, even the local electricity will shut down within days and the pumping wells will stop within a week. This is what he will do to a nation of murderers and butchers of children. What was will not be.¹⁵⁷

On October 11, he stated:

For years, we have provided Gaza with electricity, water, and fuel. Instead of saying thank you, they sent thousands of human animals to butcher, murder, rape and kidnap babies, women and elderly people – so we decided to cut off the supply of water, electricity and fuel, and now, their local power plant has collapsed, and there is no electricity in Gaza. We will

¹⁵⁶ Yoav Gallant (@yoavgallant) post to X (formerly known as Twitter), October 9, 2023, <https://twitter.com/yoavgallant/status/1711335592942875097> (accessed August 28, 2024).

¹⁵⁷ Israel Katz (@Israel_katz) post to X (formerly known as Twitter), October 10, 2023, https://x.com/Israel_katz/status/1711659347590156417?s=20 (accessed December 6, 2024).

keep holding a tight siege until the Hamas threat is lifted from Israel and the world.¹⁵⁸

On October 12, Katz asserted on X that in addition to cutting off all commercial provision of utilities and fuel to Gaza, Israel was blocking humanitarian assistance:

Humanitarian aid to Gaza? Not a switch will be flicked on, not a valve will be opened, not a fuel truck will enter until the Israeli hostages come home. Humanitarian for humanitarian. Let no one lecture us about morality.¹⁵⁹

Many Israeli officials, members of the Knesset, Israel's parliament, and military officers have echoed the same rationale for the Israeli government actions: the Israeli government was cutting off water, electricity, fuel, and other essential utilities and goods to Gaza's population to pressure Palestinian armed groups to release hostages, or because doing so would help Israel to defeat Hamas.

- In a post on the platform X on October 9, 2023, Major General Ghassan Alian, the head of the Israeli Defense Ministry's Coordinator of the Government Activities in the Territories (COGAT), the unit responsible for coordinating humanitarian aid into Gaza, stated: "Hamas has become ISIS [the Islamic State], and the residents of Gaza, instead of being horrified, are celebrating. Human beasts will be dealt with accordingly. Israel has imposed a complete blockade on Gaza. There will be no electricity and no water, just destruction. You wanted hell, you will get hell."¹⁶⁰
- On October 16, Katz said, "I am vehemently opposed to lifting the blockade and letting goods into Gaza for humanitarian reasons. Our commitment is to the families of the murdered and to the kidnapped hostages – not Hamas murderers and the people who helped them."¹⁶¹

¹⁵⁸ Israel Katz (@Israel_katz) post to X (formerly known as Twitter), October 11, 2023, https://twitter.com/Israel_katz/status/171208312227909116?t=nd9aPqyMtpUXy4AoHhQFMw&s=09 (accessed August 28, 2024).

¹⁵⁹ Israel Katz (@Israel_katz) post to X (formerly known as Twitter), October 12, 2023, https://twitter.com/Israel_katz/status/1712356130377113904 (accessed August 28, 2024).

¹⁶⁰ COGAT (@cogatonline) post to X (formerly known as Twitter), October 10, 2023, <https://twitter.com/cogatonline/status/1711718883323752586?t=UAM2bzjS-PRdJv1hIQY-Wg&s=09> (accessed November 29, 2024).

¹⁶¹ Israel Katz (@Israel_katz) post to X (formerly known as Twitter), October 16, 2023, https://twitter.com/Israel_katz/status/1713807517816348906 (accessed August 28, 2024).

- On October 17, National Security Minister Itamar Ben-Gvir posted on X, “So long as Hamas does not release the hostages – the only thing that should enter Gaza is hundreds of tons of air force explosives – not an ounce of humanitarian aid.”¹⁶²
- On November 4, Finance Minister and additional minister in the Ministry of Defense Bezalel Smotrich stated that no fuel must enter Gaza “under any circumstances.”¹⁶³ He later called Israel’s war cabinet’s decision, reported on November 17, to permit small amounts of fuel to enter the strip, “a grave mistake” and said that it must “stop this scandal immediately and prevent fuel from coming into the Strip,” as reported by the Jerusalem Post.¹⁶⁴
- Explaining the rationale for the decision to cut fuel supplies to Gaza, in a televised interview with CNN on November 24, Mark Regev, senior adviser to Israeli Prime Minister Benjamin Netanyahu, said that Israel was depriving Gaza of fuel to strengthen Israel’s position when it came to negotiating with Hamas on the release of hostages.¹⁶⁵ “Had we done so [allowed in fuel] ... we would never have gotten our hostages out,” he said.¹⁶⁶

This rationale, which was immediately implemented, amounts to the collective punishment of the civilian population, a war crime. A party to an armed conflict cannot impose collective punishment on the civilian population – in this case Israel depriving civilians in Gaza of water and other supplies essential to their survival – to pressure the opposing warring party to act.

Furthermore, Israeli authorities were or should have been aware that cutting off water, electricity, fuel, and other essential items required for supplying water would have dire

¹⁶² Itamar Ben Gvir (@itamarbengvir) post to X (formerly known as Twitter), October 17, 2023, <https://twitter.com/itamarbengvir/status/1714340519487176791> (accessed August 28, 2024).

¹⁶³ “סמוטריץ': 'מ"מ" לעצ רק נפש חשבון אעשה, המלחמה אחרי בעזה נשלוט'”, *Mako*, November 4, 2023, <https://www.mako.co.il/news-military/6361323dde5a810/Article-bd24ac5125b9b81027.htm> (accessed August 28, 2024).

¹⁶⁴ Gadi Zaig, “Israeli minister demands change to war cabinet as fuel tankers sent to Gaza,” *The Jerusalem Post*, November 17, 2023,

<https://www.jpost.com/breaking-news/article-773745> (accessed August 28, 2024); Jacob Magid and Emanuel Fabian, “In shift, Israel agrees to regularly let fuel into Gaza, drawing outrage in coalition,” *The Times of Israel*, November 17, 2023, <https://www.timesofisrael.com/in-shift-israel-agrees-to-regularly-let-fuel-into-gaza-drawing-outrage-in-coalition/> (accessed August 28, 2024).

¹⁶⁵ Kaitlan Collins, “Netanyahu adviser pressed on why Israel won’t send fuel into Gaza,” video report, *CNN*, October 24, 2023, <https://edition.cnn.com/videos/world/2023/10/24/mark-regev-israel-gaza-fuel-collins-vpx.cnn> (accessed August 28, 2024).

¹⁶⁶ *Ibid.*

consequences for the entire population of Gaza. Israeli authorities, as the occupying power in Gaza, have for decades effectively controlled Gaza's means of water production, including through control of electricity and fuel. United Nations humanitarian agencies, the World Bank, rights groups and others, have documented the impact of longstanding Israeli government restrictions on water, electricity, and fuel on Gaza's population,¹⁶⁷ and international donors had to negotiate for years with Israeli authorities for approvals of water infrastructure projects in Gaza, providing detailed information as to the number of people whose basic needs would be met.¹⁶⁸ By calling for the cutting off and blocking of these items, Israeli authorities were calling for the population to be cut off from their means of producing water, which is essential for life.

Since the initial days of hostilities in October 2023, and particularly since the International Court of Justice (ICJ) ordered Israel in January 2024 to "take all measures within its power to prevent and punish the direct and public incitement to commit genocide in relation to members of the Palestinian group in the Gaza Strip," Israeli policymakers and politicians have made fewer statements calling for the cutting off of water, electricity, fuel, and aid, or have insisted that they are specifically at war against Hamas, and not the people of Gaza.¹⁶⁹ However, Israeli authorities' actions to deprive Palestinians in Gaza of water, electricity, fuel, and humanitarian aid have continued as of the writing of this report.

¹⁶⁷ See, for example, UN Country Team in the OPT, "Gaza in 2020: A Livable Place?," August 2012, <https://www.un.org/unispal/document/auto-insert-195081/> (accessed September 2, 2024); World Bank, "Assessment of Restrictions on Palestinian Water Sector Development," April 2009, <https://documents1.worldbank.org/curated/en/775491468139782240/pdf/476570SROp11511nsReport18Apr2009111.pdf> (accessed September 2, 2024); Gisha, "Still Waters," March 22, 2022, <https://gisha.org/en/still-waters/> (accessed September 2, 2024).

¹⁶⁸ See, for example, the World Bank-funded desalination project for central Gaza. International Development Association, "Project Appraisal Document," December 9, 2019, <https://documents1.worldbank.org/curated/en/185551581649257259/pdf/West-Bank-and-Gaza-Water-Security-Development-Gaza-Central-Desalination-Program-First-Phase-of-Associated-Works-Project.pdf> (accessed September 3, 2024).

¹⁶⁹ ICJ January 26 orders, <https://www.icj-cij.org/node/203447>; But see מלך הר סון לימור (@limor_sonhrmelh) post to X (formerly known as Twitter), January 28, 2024, https://twitter.com/limor_sonhrmelh/status/1751597625407569991 (accessed August 28, 2024). On January 28, Limor Son Har-Melech, a Member of the Knesset, went to Kerem Shalom crossing, where protesters have been blocking aid from entering the strip, to participate in the protests, stating, "We, Otzma Yehudit [the political party Har-Melech represents, which is part of the ruling coalition], will continue to fight for the closing of the crossings and the return of the abductees as soon as possible."; Middle East Monitor (@middleeastmonitor) post to Instagram, January 30, 2024, <https://www.instagram.com/reel/C2vYvF4NDHC/> (accessed August 28, 2024); Gilad Erdan, Israel's Permanent Representative to the UN, said in an interview on January 31, 2024, that humanitarian aid to Gaza must be stopped and called for an immediate end of humanitarian aid to Gaza and the dismantling of UNRWA; Itamar Ben Gvir (@itamarbengvir) post to X (formerly known as Twitter), February 6, 2024, <https://twitter.com/itamarbengvir/status/1754923436881674506> (accessed August 28, 2024); National Security Minister

II. Cutting Off and Restricting Water, Fuel, and Electricity Supply

On October 7, 2023, Israeli authorities cut the electricity that it supplies to Gaza, and on October 9, authorities cut off all water entering Gaza through the three Mekorot pipelines.¹⁷⁰

Before the hostilities, Israeli power lines supplied up to 120 megawatts of power to the Gaza Strip and Gaza's sole power plant produced around 70 megawatts, when the Israeli government allowed sufficient fuel imports for it to operate.¹⁷¹ The Israeli government thus retains crucial control over the Gaza Strip's supply of electricity, which is required to operate most water and sanitation infrastructure.¹⁷² As of September 2024, Israeli authorities continued to block electricity to Gaza. In August, a direct electricity line to power the southern Gaza desalination plant was established, but the Israeli provider had not begun to send electricity.¹⁷³

In the absence of electricity from power lines, the civilian population of Gaza is largely dependent on fuel for the electricity needed for survival, including to run Gaza's power plant, and the smaller backup or emergency diesel generators that hospitals, neighborhoods, and some water and wastewater facilities rely on.¹⁷⁴ Wastewater plants

Ben-Gvir on February 2 stated on his X account, "123 days I oppose the introduction of any humanitarian aid to the killers from Gaza."

¹⁷⁰ Tal Schneider, "Israel cuts electricity supply to Gaza," *The Times of Israel*, October 7, 2023, https://www.timesofisrael.com/liveblog_entry/israel-cuts-electricity-supply-to-gaza/ (accessed August 28, 2024); UNRWA, "A matter of life and death: water runs out for 2 million people in Gaza," October 14, 2023, <https://www.unrwa.org/newsroom/official-statements/matter-life-and-death-water-runs-out-2-million-people-gaza> (accessed August 28, 2024).

¹⁷¹ OCHA, "Today's top news: Occupied Palestinian Territory," July 25, 2024, <https://www.unocha.org/news/todays-top-news-occupied-palestinian-territory-12> (accessed September 12, 2024).

¹⁷² OCHA, "Electricity in the Gaza Strip," n.d., <https://www.ochaopt.org/page/gaza-strip-electricity-supply> (accessed August 28, 2024). Egyptian power lines provided 5 megawatts beginning in 2006, and up to 28 megawatts until 2018, when electricity supply to Gaza was cancelled. Sara Seif Eddin, "Gaza siege: years of darkness," *Mada Masr*, November 24, 2023, <https://www.madamasr.com/en/2023/11/24/feature/politics/gaza-siege-years-of-darkness/> (accessed September 3, 2024).

¹⁷³ OCHA, "Humanitarian Situation Update #212 | Gaza Strip," September 2, 2024, <https://www.ochaopt.org/content/humanitarian-situation-update-212-gaza-strip> (accessed September 12, 2024).

¹⁷⁴ Gisha, "The Gaza electricity crisis – FAQs," June 19, 2017, <https://gisha.org/en/blogs-the-gaza-electricity-crisis-faqs/> (accessed August 28, 2024).

had also recently turned to solar power for electricity.¹⁷⁵ Fuel was also needed to produce and deliver drinking water, irrigate crops and deliver food, and for rescue efforts.¹⁷⁶

The sale and entry of fuel into Gaza is controlled by Israel.¹⁷⁷ Between October 7, 2023, and the writing of this report, the Israeli government has significantly restricted the entry of fuel into Gaza.¹⁷⁸ For the first five weeks of hostilities, Israeli officials blocked all fuel from entering Gaza.¹⁷⁹ The power plant ran out of fuel reserves on October 11, leaving most major infrastructure, including wastewater treatment plants, desalination facilities, and hospitals without power and plunging Gaza into darkness.¹⁸⁰

After November 15, 2023, Israeli authorities began allowing in limited amounts of fuel, but they have continued to restrict the amount of fuel that has been allowed to enter. Between November 15, 2023, and August 31, 2024, an average of 80,586 liters of fuel per day were imported into Gaza—only about one-fifth of the 400,000 liters needed for “the most basic humanitarian operations each day,” according to the United Nations.¹⁸¹

¹⁷⁵ Will Todman, Joseph S. Bermudez Jr., and Jennifer Jun, “Gaza’s Solar Power in Wartime,” *CSIS*, November 21, 2023, <https://www.csis.org/analysis/gazas-solar-power-wartime> (accessed August 28, 2024).

¹⁷⁶ Rachel Wilson, Lou Robinson, and Amy O’Kruk, “Fuel is a vital lifeline in resource-strapped Gaza. Here’s why,” *CNN*, October 30, 2023, <https://www.cnn.com/2023/10/30/middleeast/fuel-gaza-crisis-map-dg/index.html> (accessed August 28, 2024).

¹⁷⁷ Gisha, “Hands on the Switch,” January, 2017, <https://gisha.org/en/blogs-hand-on-the-switch/> (accessed August 27, 2024).

¹⁷⁸ Gisha, “Timeline of restrictions on entry of fuel into Gaza,” December 26, 2023, <https://gisha.org/en/graph/1-timeline-of-restrictions-on-entry-of-fuel-into-gaza/> (accessed August 28, 2024); Rachel Wilson, Lou Robinson and Amy O’Kruk, “Fuel is a vital lifeline in resource-strapped Gaza. Here’s why,” *CNN*, October 30, 2023, <https://www.cnn.com/2023/10/30/middleeast/fuel-gaza-crisis-map-dg/index.html> (accessed August 28, 2024).

¹⁷⁹ Gisha, “Timeline of restrictions on entry of fuel into Gaza,” December 26, 2023, <https://gisha.org/en/graph/1-timeline-of-restrictions-on-entry-of-fuel-into-gaza/> (accessed August 28, 2024).

¹⁸⁰ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #25,” October 31, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-25> (accessed August 28, 2024). See also Amnesty International, “Israel/OPT: Israel must lift illegal and inhumane blockade on Gaza as power plant runs out of fuel,” October 12, 2023, <https://amnesty.ca/human-rights-news/israel-opt-israel-must-lift-illegal-and-inhumane-blockade-on-gaza-as-power-plant-runs-out-of-fuel/> (accessed August 28, 2024); Ruby Mellen and Szu Yu Chen, “See how Israel’s siege has plunged Gaza into darkness and isolation,” *The Washington Post*, October 30, 2023, <https://www.washingtonpost.com/world/2023/10/26/gaza-israel-siege-blackout-isolation/> (accessed August 28, 2024).

¹⁸¹ UNRWA, “Gaza Supplies and Dispatch Tracking,” Power BI dashboard, <https://app.powerbi.com/view?r=eyJrjoiZTVkYmEwNmMtZWYxNyooODhlLWl2ZjctNjIzMzQ5OGQxNzY5liwidCI6IjIzMmY2YTQxLTlwZTk0NDZkZjVIZWVlNDE1NyIsImMiOiJl9&pageName=ReportSection3306863add46319dc574> (accessed November 26, 2024); UN Secretary General, “Remarks to the Press on Extreme Heat,” July 25, 2024, <https://www.un.org/unispal/document/highlights-of-the-noon-briefing-25jul24/#:~:text=Since%20the%20beginning%20of%20this,basic%20humanitarian%20operations%20each%20day> (accessed November 26, 2024); Gisha, “Timeline of restrictions on entry of fuel into Gaza,” December 26, 2023, <https://gisha.org/en/graph/1-timeline-of-restrictions-on-entry-of-fuel-into-gaza/> (accessed November 26, 2024).

According to the State of Palestine Water, Sanitation, and Hygiene Cluster (WASH) Cluster experts who spoke to Human Rights Watch, the restriction and blocking of fuel supplies has been the most significant factor in the denial of access to adequate water to the population of Gaza.¹⁸² In the absence of electricity, most water and wastewater facilities became inoperable once there was no fuel available to operate the back-up generators many of them are connected to.¹⁸³

“Taking away the power source is already hugely debilitating to the entire water and sewage system of Gaza. The very tight control of fuel going in is equivalent—it’s a huge manipulation [of the WASH infrastructure],” a WASH response actor told Human Rights Watch.¹⁸⁴

In October 2023, the Israeli Defense Ministry’s Coordinator of the Government Activities in the Territories (COGAT), the unit responsible for coordinating humanitarian aid into Gaza, included fuel on its list of items that it prohibited the United Nations from providing as part of their humanitarian effort due to their so-called “dual use,” that is, items which have both a civilian and military purpose, a humanitarian official told Human Rights Watch, despite fuel being a vital resource to sustaining life in Gaza.¹⁸⁵

The Israeli military stated to news media in October 2023 that they were blocking fuel because militants “use fuel to propel the rockets they manufacture and fire into Israel, as well as for vehicles the fighters drive during operations.”¹⁸⁶ In response to the Israeli military’s claims that Hamas was diverting aid, Refugees International, in a report published in September 2024, stated that “[t]here is a broad consensus” amongst humanitarian actors providing aid “that ongoing combat between Hamas and the IDF has

¹⁸² Human Rights Watch interviews with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024; two WASH response actors (names withheld), via Microsoft Teams, January 24, 2024 and February 12, 2024.

¹⁸³ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #39,” November 14, 2023, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-39> (accessed August 28, 2023).

¹⁸⁴ Human Rights Watch interview with WASH response actor, via Microsoft Teams, January 24, 2024.

¹⁸⁵ Ibid; Sari Bashi (Human Rights Watch), “Gaza’s Blocked Relief,” Op-ed, *The New York Review*, October 30, 2023, <https://www.hrw.org/news/2023/10/30/gazas-blocked-relief>; Rachel Wilson, Lou Robinson, Amy O’Kruk, “Fuel is a vital lifeline in resource-strapped Gaza. Here’s why.,” *CNN*, October 30, 2023, <https://www.cnn.com/2023/10/30/middleeast/fuel-gaza-crisis-map-dg/index.html> (accessed August 28, 2024).

¹⁸⁶ Hazem Balousha, Miriam Berger, and Claire Parker, “Gaza gets some aid — but no fuel — as power crisis upends lives,” *The Washington Post*, October 22, 2023, <https://www.washingtonpost.com/world/2023/10/22/gaza-fuel-israel-hamas/> (accessed November 20, 2024).

disrupted aid flows, but we have found little evidence to support the allegation that Hamas is diverting humanitarian aid at a large scale.”¹⁸⁷

In February 2024, David Satterfield, the US special Middle East envoy for humanitarian issues, stated that Israeli authorities had not presented “specific evidence of diversion or theft” of UN aid.¹⁸⁸ Later, in April, USAID Administrator Samantha Power said in testimony to the Senate Foreign Relations Committee that USAID did “not have reports of diversion by Hamas from our partners.”¹⁸⁹ She added, “Israel is not shy about presenting to us evidence of things it finds problematic, and this is not something that has come to our attention.”¹⁹⁰

Human Rights Watch has not been able to independently verify allegations of aid diversion in Gaza. The United Nations has stated that “looting” and “attacks on aid convoys” have hindered humanitarian access in Gaza. However, it has not said that this is being done by Hamas or other armed groups involved in the hostilities, but rather “armed gangs in Gaza” in some cases.¹⁹¹ In February 2024, the United Nations stated that “[t]he combination of massive displacements, high levels of vulnerability and need, and degraded security has led to incidents of looting of aid convoys and violence.”¹⁹²

The restrictions of fuel have severely limited humanitarian aid organizations’ ability to carry out their operations, which include delivering aid and WASH activities. On November

¹⁸⁷ Jeremy Konyndyk, Jesse Marks, “Untangling the Reality of Famine in Gaza,” Refugee International, September 12, 2024, <https://www.refugeesinternational.org/reports-briefs/untangling-the-reality-of-famine-in-gaza/> (accessed November 29, 2024).

¹⁸⁸ Wafaa Shurafa and Samy Magdy, “U.S. envoy says Israel has not shown evidence that Hamas is diverting UN aid in Gaza,” *PBS News*, February 17, 2024, <https://www.pbs.org/newshour/world/u-s-envoy-says-israel-has-not-shown-evidence-that-hamas-is-diverting-un-aid-in-gaza> (accessed August 28, 2024); UNRWA, “UNRWA: Claims versus Facts – Press Release,” February 26, 2024, <https://www.un.org/unispal/document/unrwa-claims-versus-facts-press-release-26feb2024/> (accessed November 29, 2024).

¹⁸⁹ “WATCH LIVE: USAID Administrator Samantha Power testifies on America’s standing before House panel,” April 10, 2024, video clip, YouTube, <https://www.youtube.com/watch?v=nf8xPoG4zX8> (accessed November 26, 2024).

¹⁹⁰ Ibid.

¹⁹¹ “Daily Press Briefing by the Office of the Spokesperson for the Secretary-General,” UN Secretary General press briefing, November 14, 2024, <https://press.un.org/en/2024/db241114.doc.htm> (accessed November 26, 2024); OCHA, “Humanitarian Situation Update #215 | Gaza Strip,” September 9, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/humanitarian-situation-update-215-gaza-strip> (accessed November 26, 2024).

¹⁹² OCHA, “Humanitarian Access Snapshot - Gaza Strip | Mid-February 2024,” February 21, 2024, <https://www.ochaopt.org/content/humanitarian-access-snapshot-gaza-strip-mid-february-2024> (accessed November 26, 2024).

13, 2023, an Office for the Coordination of Humanitarian Affairs (OCHA) representative stated that “due to the lack of fuel, as of tomorrow the operations of receiving [aid] trucks will no longer be possible.”¹⁹³

On November 15, 2023, the UN Security Council passed Resolution 2712, which included the essential need to provide “water, electricity, fuel, food, and medical supplies” to Gaza.¹⁹⁴

Israeli authorities also obstructed the limited fuel that enters Gaza from reaching areas in the north. According to OCHA, for the first five weeks of hostilities, “around 95 per cent (18 of 19) of missions involving the allocation of fuel and medicines to water reservoirs, water wells and health facilities in the north of Wadi Gaza have been denied access by Israeli authorities.”¹⁹⁵

In late January 2024, an employee in Gaza’s Coastal Municipalities Water Utility (CMWU) told Human Rights Watch that despite continuous efforts by the CMWU to send fuel to the north, Israeli authorities repeatedly denied their requests.¹⁹⁶ Between December 2023 and late January 2024, “we haven’t been able to send a liter of fuel” to the north, he said, rendering water infrastructure, including wells, in the north inoperable.¹⁹⁷ “I have no idea how [people in northern Gaza] are living,” he added. “Some there have their own small wells operating on solar panels, they maybe get one bottle of water from that in a whole day.”¹⁹⁸

Between February 1 and 15, 2024, Israeli authorities facilitated only two of 21 planned missions to deliver fuel to the north of the Wadi Gaza area in central Gaza, and none of the 16 planned fuel delivery or assessment missions to water and wastewater pumping stations in the north.¹⁹⁹ They allowed fewer than 20 percent of planned humanitarian

¹⁹³ “Fuel shortage could put the brakes on trucks delivering aid to Gaza,” *UN News*, November 13, 2023, <https://news.un.org/en/story/2023/11/1143532> (accessed August 28, 2024).

¹⁹⁴ United Nations Security Council, Resolution 2712 (2023), S/RES/2712 (2023), November 15, 2023, <http://unscr.com/en/resolutions/doc/2712>, para. 2. (accessed November 29, 2024).

¹⁹⁵ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #93,” January 15, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-93> (accessed August 28, 2024).

¹⁹⁶ Human Rights Watch interview with CMWU employee 1, via phone, January 16, 2024.

¹⁹⁷ *Ibid.*

¹⁹⁸ *Ibid.*

¹⁹⁹ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #124,” February 22, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-124> (accessed August 28, 2024).

missions to deliver fuel and undertake assessments north of Wadi Gaza between January 1 and February 15, 2024, according to OCHA.²⁰⁰

The entry of fuel has continued to be extremely limited, insufficient to meet the population's needs, and has only reached some water and sanitation infrastructure. On April 20, Hossam Shabat, a journalist reporting from northern Gaza, stated on X that “[a]ll water wells in Gaza City have stopped due to running out of fuel.”²⁰¹ On June 4, the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) stated on X that “[w]ith almost no fuel available in Gaza, critical desalination plants have shut down. People don’t have near[ly] enough water... Survival is a struggle.”²⁰²

As of August 2024, Israeli authorities’ denial of fuel imports remained a major impediment to water and sanitation needs.²⁰³ On August 7, OCHA reported that, “[t]he lack of generators and alternative energy sources, combined with the shortage of fuel and spare parts to operate existing generators, continue to severely hamper water production and sewage pumping, exposing the population to major health risks across the Gaza Strip.”²⁰⁴

Limited Operability of Water Pipelines

According to the CMWU and the WASH Cluster, three pipelines operated by Mekorot, the Israeli national water carrier, previously provided approximately 52,800 cubic meters of water per day to Gaza, and the majority of Gaza’s drinking water.²⁰⁵

²⁰⁰ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #123,” February 21, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-123> (accessed August 28, 2024).

²⁰¹ Hossam Shabat (@HossamShabat) post to X (formerly known as Twitter), April 20, 2024, https://twitter.com/hossamshabat/status/1781717005403369968?s=46&t=_cxRNMaqWSMURc2rYGGmYA (accessed August 28, 2024).

²⁰² UNRWA (@UNRWA) post to X (formerly known as Twitter), June 4, 2024, <https://twitter.com/UNRWA/status/1797903247447118022> (accessed August 28, 2024).

²⁰³ OCHA, “Gaza Humanitarian Response Update | 22 July-4 August 2024,” August 7, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/gaza-humanitarian-response-update-22-july-4-august-2024> (accessed August 28, 2024). “In July, 75,460 litres of fuel were received by WASH partners, a 29 per cent increase compared with June, although it only addresses 70 per cent of the minimum operation threshold and 35 per cent of the essential critical needs to ensure the public health objectives of the WASH sector.”

²⁰⁴ OCHA, “Gaza Humanitarian Response Update | 22 July-4 August 2024,” August 7, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/gaza-humanitarian-response-update-22-july-4-august-2024> (accessed August 28, 2024).

²⁰⁵ Human Rights Watch text message correspondence with CMWU employee 3, August 20, 2024; WASH Cluster, “The National WASH Cluster Minutes of Meeting,” January 31, 2024, February 21, 2024, April 17, 2024, on file with Human Rights

Israeli authorities cut off all water entering Gaza through the three Mekorot pipelines between October 9 and October 31, 2023, when they reopened two of the pipelines—those serving central and southern Gaza.

The pipeline serving northern Gaza had at that point been damaged in the hostilities. Satellite imagery captured on October 9, 2023, of the area where the northernmost pipeline is believed to run, based on data from the World Bank and Ipsos, shows a large crater, indicating the use of explosive weapons in an Israeli attack.²⁰⁶ The crater was not visible on satellite imagery captured on October 7, 2023.

Following the reactivation of the southern and central lines on October 31, 2023, the line providing water to southern Gaza also sustained significant damage in the hostilities, and the supply was disrupted from December 5, 2023, until May 16, 2024, according to an employee of the CMWU and Abdul Samad, a WASH technical advisor at Oxfam.²⁰⁷ Human Rights Watch was unable to verify the cause of the damage to the southern pipeline.

According to OCHA, from October 2023 to April 2024, only the pipeline to central Gaza was operable, but between the end of October and February, it operated at less than 50 percent capacity.²⁰⁸

In February 2024, the United Arab Emirates (UAE) provided a new water line running from Egypt into Gaza that provides 2,400 cubic meters of water per day.²⁰⁹ However, the WASH Cluster reported that on June 7, the line was “discontinued due to severe damage to the newly constructed supply line following the Israeli military ground invasion of Rafah,”

Watch; Oxfam, “Water War Crimes: How Israel has weaponised water in its military campaign in Gaza,” July 17, 2024, <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf> (accessed September 12, 2024), citing Palestinian Water Authorities (April 2022). Water Resources Summary Report 2021 - Gaza Strip. Water Resources Directorate.

²⁰⁶ The World Bank and Ipsos, “Gaza Damage Assessment Bi-weekly,” February 2024,” copy on file with Human Rights Watch; UN, EU and World Bank, “Gaza Strip Interim Damage Assessment,” March 29, 2024, <https://palestine.un.org/sites/default/files/2024-04/Gaza-Interim-Damage-Assessment-Final.pdf> (accessed November 26, 2024).

²⁰⁷ Human Rights Watch interviews with CMWU employee 1, via phone, January 16, 2024 and Lama Abdul Samad, via Microsoft Teams, January 11, 2024.

²⁰⁸ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #123,” February 21, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-123> (accessed August 28, 2024).

²⁰⁹ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #120,” February 16, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-120> (accessed August 28, 2024).

which the US State Department, as well as a multitude of other actors, had warned could lead to a serious humanitarian crisis.²¹⁰

On March 28, 2024, the ICJ reaffirmed its January order and in a new ruling ordered Israeli authorities to provide “unhindered” and “at scale...urgently needed basic services and humanitarian assistance including food, water, electricity, fuel, shelter, clothing, hygiene and sanitation requirements.”²¹¹

One week later, on April 4, COGAT announced measures to increase drinking water to Gaza, including by refueling wells and desalination plants in northern Gaza, and repairing and re-opening the two other water pipelines.²¹²

In April, after the CMWU was able to make needed repairs, Israeli officials began allowing water to be piped in through the two Mekorot lines running to southern and northern Gaza.²¹³ However they have continued to restrict the amount of water entering through the three pipelines.²¹⁴ As a result, as of September 25, the pipelines were supplying 38,500

²¹⁰ Oxfam, “Water War Crimes: How Israel has weaponised water in its military campaign in Gaza,” July 17, 2024, <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf;jsessionid=4F565CA205F01E55DB26770C93E506C?sequence=1> (accessed August 29, 2024), citing WASH Cluster (2024), State of Palestine National update WASH Cluster. Minutes of Meeting, 12 June; U.S. Department of State, “Department Press Briefing – April 30, 2024,” April 30, 2024, <https://www.state.gov/briefings/department-press-briefing-april-30-2024/> (accessed August 28, 2024).

²¹¹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024.

²¹² COGAT (@cogatonline) post to X (formerly known as Twitter), April 11, 2024, https://x.com/cogatonline/status/1778347689299591631?s=46&t=5k4-DXLxB16a5XPVw_M39A (accessed November 26, 2024); COGAT (@cogatonline) post to X (formerly known as Twitter), April 4, 2024, https://x.com/cogatonline/status/1775847331780301230?s=12&t=5k4-DXLxB16a5XPVw_M39A (accessed November 26, 2024).

²¹³ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #161,” May 3, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-161-enarhe> (accessed August 28, 2024); “Water pumping resumes to Khan Yunis after pipes repaired,” Middle East Monitor, April 16, 2024, <https://www.middleeastmonitor.com/20240416-water-pumping-resumes-to-khan-yunis-after-pipes-repaired/> (accessed August 28, 2024).

²¹⁴ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #161,” May 3, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-161-enarhe> (accessed August 28, 2024); “Water pumping resumes to Khan Yunis after pipes repaired,” *Middle East Monitor*, April 16, 2024, <https://www.middleeastmonitor.com/20240416-water-pumping-resumes-to-khan-yunis-after-pipes-repaired/> (accessed August 28, 2024). WASH cluster updates from August and September, on file with Human Rights Watch, demonstrate that Mekorot lines were only operating between 72 and 83 percent of their potential, which two CMWU employees and a member of the WASH cluster working for an international organization (name withheld) explained was because Israeli authorities continued to restrict the amount of water entering through the pipelines.

cubic meters of water per day, 73 percent of the pre-October 7 level.²¹⁵ Human Rights Watch was unable to determine the reason why the Israeli authorities continued to restrict the flow of water into Gaza through the three pipelines.²¹⁶

An employee of the CMWU noted, however, that the improvement in potable water coming from the Mekorot lines also had little impact on the amount of water access people across Gaza have due to the immense amount of displacement and the resulting challenges in reaching people who are not in areas connected to the water network and who are not staying put in one place.²¹⁷ As of September 2024, 86 percent of Gaza had, at some point since October, been placed under Israeli military evacuation orders, meaning Palestinians are not always able to access water lines in areas under directions to leave.²¹⁸

The water provided through the pipelines has also not been enough to offset Israeli authorities' continued cutting off of electricity and restrictions on fuel used for other water-producing facilities and the water lost through damage to the pipelines. On July 1, the pipeline to northern Gaza was once again damaged in hostilities and was out of service until July 20 when CMWU workers were able to repair it and reopen it.²¹⁹

Between October 2023 and August 2024, the WASH cluster and UN agencies reported various estimates of average water access ranging between 2 to 9 liters per person per

²¹⁵ State of Palestine WASH Cluster, "WASH Cluster Updates," September 25, 2024, on file with Human Rights Watch; Human Rights Watch text message correspondence with CMWU employee 3, November 24, 2024 and CMWU employee 2, November 14, 2024; text message correspondence with a member of the WASH cluster working for an international organization (name withheld), December 4, 2024; text message correspondence with WASH response actor, December 6, 2024.

²¹⁶ Human Rights Watch text message correspondence with CMWU employee 3, November 24, 2024 and CMWU employee 2, November 14, 2024; text message correspondence with a member of the WASH cluster working for an international organization (name withheld), December 4, 2024.

²¹⁷ Human Rights Watch text message correspondence with CMWU employee 2, June 2024; See also Philippe Lazzarini (@UNLazzarini) post to X (formerly known as Twitter), May 18, 2024, <https://x.com/UNLazzarini/status/1791867434518860143> (accessed November 29, 2024): "The areas that people are fleeing to now do not have safe water supplies or sanitation facilities."

²¹⁸ Human Rights Watch, "*Hopeless, Starving, and Besieged*": Israel's Forced Displacement of Palestinians in Gaza, November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza>; OCHA, "Reported impact snapshot | Gaza Strip (25 September 2024)," September 25, 2024, <https://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-25-september-2024> (accessed November 29, 2024).

²¹⁹ OCHA, "Gaza Humanitarian Response Update | 8-21 July 2024," July 24, 2024, <https://www.ochaopt.org/content/gaza-humanitarian-response-update-8-21-july-2024> (accessed August 28, 2024); Human Rights Watch text message correspondence with CMWU employee 3, July 23, 2024.

day, far below the 15 liters needed for survival according to international standards.²²⁰ This range does not provide information about specific areas or populations, nor does it describe how much of the water was suitable for drinking. In December 2023, the United Nations Children's Fund (UNICEF) reported that recently displaced children in southern Gaza were “accessing only 1.5 to 2 litres of water each day.”²²¹ According to OCHA and the CMWU, there was no access to potable water in northern Gaza between November 2023 and April 2024.²²²

In August, the WASH cluster carried out a household survey to assess water and sanitation needs across Gaza, and found there to be a median of 16.44 liters per person per day of water.²²³ Nearly two-thirds of the assessed households reported receiving less than the six liters of water for drinking and cooking, under the nine liters per person per day recommended by international standards, and “approximately 1.4 million people face unsafe conditions when accessing sanitation facilities, despite the fact that in August OCHA reported the highest levels of water production in Gaza since the start of

²²⁰ Oxfam, “Water War Crimes: How Israel has weaponised water in its military campaign in Gaza,” July 18, 2024, <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf?sequence=1> (accessed December 2, 2024); State of Palestine WASH Cluster, “The National WASH Cluster Minutes of Meeting,” April 17, 2024, copy on file with Human Rights Watch: “3-7 liters [of water] is the median to average available water per person daily for IDPs in Rafah/Gaza;” State of Palestine WASH Cluster, “Notes: WASH Situation Update May 31st,” May 31, 2024, copy on file with Human Rights Watch: “Currently, water availability ranges from 2 to 9 liters per capita per day, a significant reduction from the pre-October level of 85 liters per day;” OCHA, “Humanitarian Situation Update #199 | Gaza Strip,” August 2, 2024, <https://www.ochaopt.org/content/humanitarian-situation-update-199-gaza-strip> (accessed December 2, 2024); “Field observations and site visits by WASH partners suggest that the range of water availability and consumption in the Gaza Strip is between two and nine litres per capita per day;” WHO, “How much water is needed in emergencies,” July 2013, <https://cdn.who.int/media/docs/default-source/wash-documents/who-tn-09-how-much-water-is-needed.pdf>, (accessed November 14, 2024). As a result of challenges due to the hostilities and Israeli restrictions placed on humanitarian access, as well as the continuous forced displacement of the population, UN agencies and INGOs focused on providing water and sanitation were unable to conduct a comprehensive study to assess water access across the whole of Gaza between October 2023 and August 2024.

²²¹ “‘Barely a drop to drink’: children in the Gaza Strip do not access 90 per cent of their normal water use,” UNICEF, press release, December 20, 2023, <https://www.unicef.org/press-releases/barely-drop-drink-children-gaza-strip-do-not-access-90-cent-their-normal-water-use> (accessed November 26, 2024).

²²² Human Rights Watch interview with CMWU employee 1, via phone, January 16, 2024. According to OCHA, there was “no access to clean water in northern governorates” as of November 13, OCHA, “Hostilities in the Gaza Strip and Israel - reported impact | Day 38,” November 13, 2023, https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-reported-impact-day-38?_gl=1*1g83ujd*_ga*OTMxMDE3MDkuMTcwODk1NTQ3Mw..*_ga_E6oZNXzF68*MTcwOTczMDUxOS42LjEuMTcwOTczMjM3OS4yOC4wLjA (accessed August 27, 2024); OCHA, “Hostilities in the Gaza Strip and Israel - reported humanitarian impact, 12 April 2024 at 15:00,” April 12, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-reported-humanitarian-impact-12-april-2024-1500> (accessed November 14, 2024).

²²³ State of Palestine WASH Cluster, “Gaza Rapid Wash Assessment Household Survey for Access to Wash Services,” September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAKdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024).

hostilities”²²⁴ The survey was unable to gather data from some areas considered to be “hard to reach.”²²⁵

How much water do people in Gaza have

Liters per person per day (LPPD) estimations gathered by Human Rights Watch

Minimum LPPD of water
established by SPHERE

15 liters

Measure	Region	Date	Metric	LPPD
HRW measure from UNOCHA bulletins	Gaza	October, 2023 to present	Range of total LPPD	2 9
UNOCHA	North Gaza	November, 2023 through the summer	Total LPPD	0
OXFAM	Gaza	July, 2024	Total LPPD	4.7
WASH Survey for Assessed Households	Gaza	October, 2024	Median drinking water LPPD	4.6
			Median domestic water LPPD	10

²²⁴ State of Palestine WASH Cluster, "Gaza Rapid Wash Assessment Household Survey for Access to Wash Services," September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAkdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024); WHO, "How much water is needed in emergencies," July 2013, <https://cdn.who.int/media/docs/default-source/wash-documents/who-tn-09-how-much-water-is-needed.pdf> (accessed November 14, 2024); "Water Supply, Sanitation and Hygiene Promotion" in Sphere Handbook, "Humanitarian Charter and Minimum Standards in Humanitarian Response," 2018, <https://handbook.spherestandards.org/en/sphere/#choo6> (accessed November 26, 2024).

²²⁵ State of Palestine WASH Cluster, "Gaza Rapid Wash Assessment Household Survey for Access to Wash Services," September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAkdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024).

Inoperable Desalination Facilities and Wells

After Gaza's power plant ran out of fuel reserves on October 11, 2023, Gaza's three major desalination facilities were forced to halt operations, according to a CMWU employee and to an UNRWA report.²²⁶ Later, in early November, after Israeli officials began allowing the UN and other relief agencies to bring small amounts of fuel into the strip, the two desalination facilities in central and southern Gaza became operational again at extremely limited capacity.²²⁷ On January 16, 2024, OCHA reported that they were producing a combined 2,400 cubic meters of water per day, compared with a combined 22,000 cubic meters produced by the three facilities prior to the hostilities.²²⁸

There are three major desalination facilities in Gaza that desalinate saltwater, as well as dozens of smaller facilities that desalinate brackish water (from the groundwater). The facilities are critical to producing potable water to supplement the water coming through the Mekorot pipelines, which is nowhere near enough water to serve the whole population of Gaza.²²⁹

Despite reports of increased entry of aid and fuel in April, the WASH Cluster reported on April 17 that the same two desalination facilities were only able to produce a combined 3,000 cubic meters of water per day.²³⁰ A UNICEF desalination plant in Deir al-Balah was only operating at 50 percent capacity due to lack of fuel, according to an individual working with the CMWU.²³¹ On July 7, OCHA reported that the two desalination plants that

²²⁶ Human Rights Watch interview with CMWU employee 1, via phone, January 16, 2024; UNRWA, "A matter of life and death: water runs out for 2 million people in Gaza," October 13, 2023, <https://www.unrwa.org/newsroom/official-statements/matter-life-and-death-water-runs-out-2-million-people-gaza> (accessed August 28, 2024).

²²⁷ Human Rights Watch interviews with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024, and CMWU employee 1, via phone, January 16, 2024.

²²⁸ OCHA, "Hostilities in the Gaza Strip and Israel | Flash Update #94," January 16, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-94> (accessed November 26, 2024); State of Palestine WASH Cluster, "The National WASH Cluster Minutes of Meeting," January 31, 2024, on file with Human Rights Watch.

²²⁹ OCHA, "Hostilities in the Gaza Strip and Israel | Flash Update #94," January 16, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-94> (accessed August 28, 2024).

²³⁰ State of Palestine WASH Cluster, "The National WASH Cluster Minutes of Meeting," April 17, 2024, on file with Human Rights Watch.

²³¹ Human Rights Watch interview with CMWU employee 3, via WhatsApp, October 28, 2024.

were “only intermittently operational due to lack of sufficient fuel consignments” had been shut down.²³²

There are also about 300 municipal wells throughout Gaza that provide communities with water from Gaza’s groundwater reservoir. Some of the wells have small desalination facilities linked with them to produce drinking water, but according to OCHA, the water that wells are producing is “known to be substandard given it is brackish (salty).”²³³

In January, a CMWU employee told Human Rights Watch that the vast majority of Gaza’s 300 municipal wells were no longer functioning due to the lack of fuel and electricity.²³⁴ He explained that the wells previously produced about 260,000 cubic meters of water per day. “Today, we’re talking about ... an estimated 160 wells [in northern Gaza] that aren’t functioning because no fuel, no electricity, and also destruction to many wells—60 percent [have been damaged or destroyed] either directly or indirectly,” he said.²³⁵ While the majority of the population of northern Gaza had already been forcibly displaced by Israeli forces to other areas of Gaza by January, a few hundred thousand people still remained and did not have adequate access to water.

“To bring water [from the well], we need a generator, but to have the generator work we need fuel,” said a 27-year-old man with a disability, describing his challenges in accessing water.²³⁶

²³² OCHA, “Gaza Humanitarian Response Update | 24 June-7 July 2024,” July 10, 2024, <https://www.un.org/unispal/document/gaza-humanitarian-response-update-ocha-10jul24/#:~:text=Due%20to%20the%20lack%20of%20fuel%2C%20water%20production%20has%20drastically,lack%20of%20sufficient%20fuel%20consignments> (accessed August 28, 2024).

²³³ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #99,” January 22, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-99> (accessed August 28, 2024).

²³⁴ Human Rights Watch interview with CMWU employee 1, via phone, January 16, 2024. OCHA also reported in February that 83 percent of water wells in Gaza were not operating, see OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #123,” February 21, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-123> (accessed August 28, 2024).

²³⁵ Human Rights Watch interview with CMWU employee 1, via phone, January 16, 2024.

²³⁶ Human Rights Watch interview with Jamal al-Rozzi, via phone, October 18, 2023.

On January 22, OCHA reported that wells were only producing about one tenth of what they produced prior to the hostilities.²³⁷

In April, the WASH Cluster reported that 40 of 300 municipal wells were operational, though this number continues to fluctuate depending on the amount of fuel that is allowed into Gaza, which remains very limited.²³⁸

On May 30, an employee of the CMWU told Human Rights Watch that the number of operational wells remained very small due to the lack of fuel entering Gaza since the Israeli government had closed the Rafah and Kerem Shalom crossings on May 5 and 6. “A small amount [of fuel] to operate some of the [undestroyed and undamaged] wells in northern Gaza has entered,” he said.²³⁹ But he added that this was minimal compared to what was needed.²⁴⁰ “We’re talking about a lack of fuel which also impacts a lack of water,” he said.²⁴¹

On July 7, OCHA reported that “[d]ue to the lack of fuel, water production has drastically decreased, driving down public water distribution by 38 percent since early July.”²⁴²

A doctor working for Gaza’s Ministry of Health stated that since the start of hostilities, these wells, which draw from groundwater largely unfit for human consumption, had become “primary sources of water” for people sheltering in and near hospitals.²⁴³ “All of this water is contaminated,” he said.²⁴⁴

²³⁷ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #99,” January 22, 2024, https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-99?_gl=1*1rgkorw*_ga*OTk1MjAxNjM1LjE3MDQ3MTcyNjY.*_ga_E6oZNX2F68*MTcwNjA5NDkoMy4yMS4xLjE3MDYwOTY1NjMuNjAuMC4w, (accessed August 28, 2024).

²³⁸ State of Palestine WASH Cluster, “The National WASH Cluster Minutes of Meeting,” April 17, 2024, on file with Human Rights Watch.

²³⁹ Human Rights Watch text message correspondence with CMWU employee 2, May 30, 2024.

²⁴⁰ Ibid.

²⁴¹ Ibid.

²⁴² OCHA, “Gaza Humanitarian Response Update | 24 June-7 July 2024,” July 10, 2024, <https://www.un.org/unispal/document/gaza-humanitarian-response-update-ocha-10jul24/#:~:text=Due%20to%20the%20lack%20of%20fuel%2C%20water%20production%20has%20drastically,lack%20of%20sufficient%20fuel%20consignments> (accessed August 28, 2024).

²⁴³ Human Rights Watch interview with Dr. Rami Heidar al-Abadleh, Deputy General Director of Public Health, Gaza Ministry of Health, via phone, January 25, 2024.

²⁴⁴ Ibid.

A journalist in southern Gaza told Human Rights Watch that he and his family, as well as the 80 displaced people sheltering with them, were getting water from “salty wells.”²⁴⁵ “The water is polluted, and people are getting sick, many people are suffering,” he said.²⁴⁶

Compounding concerns about the salinity of well water, in December and January Israeli forces pumped seawater into tunnels beneath Gaza that the Israeli authorities said Hamas was using for military operations.²⁴⁷ Pedro Arrojo-Agudo, the UN special rapporteur on the human rights to safe drinking water and sanitation, as well as other environmental experts, have stated that flooding tunnels with seawater could have a catastrophic impact on Gaza’s water by causing seawater to seep into Gaza’s aquifer, and even render Gaza uninhabitable.²⁴⁸ In a report issued in June 2024, the UN Environment Programme (UNEP) stated that “[Gaza’s] [w]ater supplies have also been contaminated by practices and military actions including the construction, flooding and destruction of the tunnel system.”²⁴⁹

Inoperable Wastewater Facilities and Sewage Pumping Stations

Gaza has six wastewater treatment plants and 65 sewage pumping stations.

By October 15, all of the wastewater treatment plants and most of the sewage pumping stations were forced to shut down due to the lack of fuel and electricity, which led to the overflow of sewage into the environment, including into the sea and soil, impacting the groundwater.²⁵⁰

²⁴⁵ Human Rights Watch interview with Mohammad (full name withheld), via phone, December 1, 2023.

²⁴⁶ Ibid.

²⁴⁷ Nancy A. Youssef, Carrie Keller-Lynn, Michael R. Gordon, and Dov Lieber, “Israel Begins Pumping Seawater Into Hamas’s Gaza Tunnels,” *The Wall Street Journal*, December 13, 2023, <https://www.wsj.com/world/middle-east/israel-hamas-war-pumping-seawater-gaza-tunnels-2ed3b3f2> (accessed August 28, 2024).

²⁴⁸ Damien Gayle and Nina Lakhani, “Flooding Hamas tunnels with seawater risks ‘ruining basic life in Gaza’, says expert,” *The Guardian*, December 23, 2023, <https://www.theguardian.com/world/2023/dec/23/israel-flooding-hamas-tunnels-seawater-risks-ruining-basic-life-gaza-expert> (accessed August 28, 2024).

²⁴⁹ UNEP, “Environmental impact of the conflict in Gaza: Preliminary assessment of environmental impacts,” June 2024, <https://wedocs.unep.org/20.500.11822/45739> (accessed August 28, 2024).

²⁵⁰ Bushra Khalidi, “The unfolding water catastrophe in Gaza,” *Oxfam Views & Voices*, November 10, 2023, <https://views-voices.oxfam.org.uk/2023/11/water-catastrophe-gaza/> (accessed August 29, 2024); OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #9,” October 15, 2023, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-9> (accessed August 29, 2024); HRW interview with WASH response actor, via Microsoft Teams, June 13, 2024.

Wastewater treatment is both critical for replenishing the groundwater supply with fresh water, and for ensuring that sewage and untreated wastewater are not entering the environment—which can lead to the spread of diseases.

On January 11, OCHA stated that “repeated denials of fuel delivery to water and sanitation facilities, have deprived people of access to clean water, escalating the risk of sewage overflows and rapidly intensifying the spread of communicable diseases.”²⁵¹

On February 9, OCHA reported that flooding around Zeitoun sewage pumping station, which was damaged by Israeli attacks, posed “a potential crisis” of sewage overflow in the area around the station.²⁵² “This is further compounded by fuel shortage, which impedes the operation of sewage stations,” OCHA added in the statement.²⁵³

On April 29, OCHA reported that the CMWU had informed them that the wastewater treatment plant in Rafah was overflowing with sewage due to the lack of electricity and fuel to operate the facility.²⁵⁴

On July 4, the Emergency Committee of Khan Younis Municipality in southern Gaza stated that the restrictions on fuel imports had caused the “complete crippling of services to the municipality,” including sewage pumping stations and water wells.²⁵⁵

²⁵¹ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #90,” January 11, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-90-enar> (accessed August 29, 2024).

²⁵² OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #115,” February 9, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-115> (accessed August 29, 2024) (Zeitoun sewage pumping station is referred to as “Pumping Station 7B”).

²⁵³ Ibid.

²⁵⁴ OCHA, “Hostilities in the Gaza Strip and Israel – OCHA Flash Update #159,” April 29, 2024, <https://www.un.org/unispal/document/hostilities-in-the-gaza-strip-and-israel-ocha-flash-update-159/> (accessed August 29, 2024).

²⁵⁵ Khan Younis Municipality Facebook page post, July 4, 2024, https://www.facebook.com/story.php?story_fbid=799224315685107&id=100067926365038&mibextid=WC7FNe&rdid=9U7n45UGtrZksyxm (accessed August 29, 2024).

III. Destruction of Water and Sanitation Infrastructure

Since October 7, 2023, military operations in Gaza have resulted in the destruction of or damage to a significant amount of Gaza's water and sewage infrastructure, including the Mekorot and UAE pipelines, wells, water treatment plants, portions of the water pipeline network, and sewage and wastewater treatment facilities.

In several cases, Human Rights Watch found that Israeli forces targeted water, sanitation and hygiene (WASH) infrastructure deliberately, without any apparent military objective present. As described below, in these cases, all available information indicates that the destruction was not incidental to attacks on military objects but deliberate, as Israeli ground forces were in control of the areas at the times they destroyed WASH infrastructure. Israeli forces demolished facilities in areas a few hundred meters from the Gaza/Israel perimeter, which were under Israeli military control from the early stages of the conflict.

Additional information suggests Israeli forces were not under fire or seeking a battlefield advantage over Palestinian armed groups when they destroyed water infrastructure, including the video troops posted of themselves methodically setting and wiring explosives inside a water reservoir, and satellite imagery showing military bulldozers and bulldozer tracks leading from Israeli territory to various wastewater plants, where the large solar-panel arrays powering the plants had been methodically bulldozed.

In other cases, Israeli attacks destroyed or damaged WASH infrastructure, but it was not possible to determine whether the attacks had targeted the infrastructure itself or Palestinian armed groups or other military objectives. Even in the case of a military presence, unless the infrastructure is solely being used for military purposes—which there is no evidence of—WASH infrastructure maintains its status as objects indispensable to the survival of the civilian population, which forces are prohibited from attacking, destroying, or rendering useless under the laws of war.²⁵⁶

²⁵⁶ ICRC, Customary International Humanitarian Law, Rule 54 (noting that “[i]t is doubtful, however, whether this exception also applies to non-international armed conflicts, because Article 14 of Additional Protocol II does not provide for it and there is no practice supporting it.”).

A third set of cases considered involve damage to or destruction of water infrastructure where the party responsible for the attack could not be determined.

Overall, the devastating impact of the hostilities on WASH infrastructure increases the likelihood of civilian harm in cases where Israeli forces have attacked WASH infrastructure, and the risk that such attacks were disproportionate compared with any expected military advantage.

Israeli military officials and authorities knew or should have known the devastating impact of Israeli attacks on the accessibility of water to civilians in Gaza. And yet, despite the consistent, overwhelming reporting since the escalation in October 2023 demonstrating that civilians in Gaza did not have access to adequate amounts of water for survival, Israeli forces have continued to intentionally destroy water and sanitation infrastructure, and Israeli officials have also continued to impose restrictions on water, fuel, electricity, and imports of supplies needed to repair or maintain WASH infrastructure in Gaza.

Destruction of Most Water, Sanitation and Hygiene Infrastructure in Gaza

Just four days into the hostilities, OCHA reported that “seven significant water and sewage facilities... were hit by airstrikes and severely damaged.”²⁵⁷ The facilities served over half of Gaza’s population. In the same update, OCHA also reported that, already, “sewage and solid waste [were] accumulating in the streets, posing a health hazard.”²⁵⁸

Since that time, Israeli forces have continued to attack water and sanitation facilities, despite awareness that Gaza’s WASH system was collapsing and that water-borne illnesses were spreading. As of late January 2024, most of Gaza’s WASH infrastructure had been destroyed or damaged during the hostilities, including 87 percent of WASH facilities in Gaza governorate, 82 percent in northern Gaza, 54 percent in Deir al-Balah, and 46 percent in Khan Younis, according to the United Nations.²⁵⁹ From October 2023 to August 2024, municipalities in northern Gaza and Gaza City reported the destruction of 97 water

²⁵⁷ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #5,” October 11, 2023, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-5> (accessed August 29, 2024).

²⁵⁸ Ibid.

²⁵⁹ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #101,” January 24, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-101-enarhe> (accessed August 29, 2024).

wells, 13 major sewage pumps, 57 generators used for wells, 204 waste collection vehicles and 255,000 meters of water and sewage lines.²⁶⁰ According to the United Nations and the World Bank, this infrastructure may take decades, and hundreds of millions of dollars, to rebuild.²⁶¹

While it is not possible to verify the cause of all of the damage and destruction to infrastructure that has been recorded, videos and photographs, which were shared with Human Rights Watch or posted on social media and which Human Rights Watch verified, as well as analysis of satellite imagery captured over the location and around the time of many of the incidents documented by Human Rights Watch, show elements that indicate that only Israeli attacks could have caused the damage and destruction, and that at least some of the attacks were intentional, knowing this to be WASH infrastructure. These elements include large craters consistent with the use of air-dropped munitions, the razing of solar panels fields by bulldozers, and the complete destruction of buildings.

The exact coordinates of all of Gaza's WASH infrastructure, including the CMWU warehouse and headquarters, had all been shared with Israeli authorities by an international humanitarian agency prior to the start of the hostilities, according to employees of the CMWU.²⁶² One employee explained that the aim of sharing the coordinates was to "protect the facilities from targeting [by Israeli forces] during conflicts."²⁶³ Several facilities, including the CMWU's warehouse, had been confirmed by Israeli forces to UNICEF and the Palestinian Water Authority (PWA), based in Ramallah, as being deconflicted after the start of hostilities in order to ensure that Israeli forces were aware of facilities that provide essential services to civilians in Gaza and could avoid damaging them.²⁶⁴ Despite these

²⁶⁰ OCHA, "Humanitarian Situation Update #212 | Gaza Strip," September 2, 2024, <https://www.ochaopt.org/content/humanitarian-situation-update-212-gaza-strip> (accessed September 4, 2024).

²⁶¹ "Planning the post-war reconstruction and recovery of Gaza," *UN News*, April 6, 2024, <https://news.un.org/en/story/2024/04/1148296> (accessed September 12, 2024); UNDP, "Gaza war: expected socioeconomic impacts on the State of Palestine," May 2024, https://www.undp.org/sites/g/files/zskgke326/files/2024-05/2400257e-gaza_war-_expected_socioeconomic_impacts-pb.pdf (accessed September 12, 2024); UN, EU and World Bank, "Gaza Strip Interim Damage Assessment," March 29, 2024, <https://palestine.un.org/sites/default/files/2024-04/Gaza-Interim-Damage-Assessment-Final.pdf> (accessed August 27, 2024).

²⁶² Human Rights Watch text message correspondence with CMWU employee 3, June 1, 2024; Human Rights Watch interview with CMWU employee 2, Egypt, April 6, 2024.

²⁶³ Human Rights Watch text message correspondence with CMWU employee 3, June 1, 2024.

²⁶⁴ Human Rights Watch interviews with CMWU employee 2 and CMWU employee 3, Egypt, April 6, 2024; Human Rights Watch text message correspondence with CMWU employee 2, April 18, 2024 and CMWU employee 3, June 1, 2024.

measures, Israeli forces still attacked the CMWU's central warehouse on January 21 and 22, 2024, damaging and destroying vast amounts of critical WASH materials.

An Oxfam analysis found that a significant portion of the infrastructure that Oxfam and its WASH partners installed or rehabilitated from 2017 to 2023 has been damaged or destroyed by Israeli attacks since October 7, 2023, rendering much of it inoperable.²⁶⁵ The locations of this infrastructure were deconflicted, or shared with relevant authorities to “avoid potential hazards” for humanitarian aid provision, through the appropriate channels in order to ensure that the Israeli government was aware of and could avoid damaging facilities that provide essential services to civilians in Gaza.²⁶⁶

A separate Oxfam report found that as of February 24, Israeli forces had damaged or destroyed 12 water and sanitation projects that had been built by Oxfam and Oxfam's partners, despite all having been deconflicted with the Israeli military in December.²⁶⁷ In the absence of valid military targets, these attacks would be unlawfully indiscriminate if not deliberate.

Israeli forces' use of explosive weapons with wide area affects in populated areas of Gaza raises significant concerns of indiscriminate attacks in violation of the laws of war. As of mid-December 2023, reports indicated that around half of all munitions dropped on Gaza were unguided “dumb bombs.”²⁶⁸ The Israeli military has repeatedly used 2,000-pound bombs on densely populated areas in Gaza, including where wells, water networks, and other critical water and sanitation infrastructure are also located in high density.²⁶⁹

²⁶⁵ “Israeli Forces’ Conduct in Gaza,” Human Rights Watch news release, March 19, 2024, <https://www.hrw.org/news/2024/03/19/israeli-forces-conduct-gaza>.

²⁶⁶ Deconfliction involves “the notification of humanitarian location, activities, movements and personnel in both static and non-static locations to the military for the purpose of protection against attacks and incidental effect of attacks under international humanitarian law.” Doctors Without Borders, “Deconfliction – Humanitarian Identification and Notification System,” n.d., <https://guide-humanitarian-law.org/content/article/3/deconfliction-humanitarian-identification-and-notification/> (accessed November 26, 2024).

²⁶⁷ Oxfam, “Water War Crimes: How Israel has weaponised water in its military campaign in Gaza,” July 17, 2024, <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621609/bp-water-war-crimes-180724-en.pdf;jsessionid=4F565CA205F01E55DB26770C93E506C?sequence=1> (accessed August 29, 2024).

²⁶⁸ John Hudson, Louisa Loveluck, Victoria Bisset and Karen DeYoung, “Unguided ‘dumb bombs’ used in almost half of Israeli strikes on Gaza,” *The Washington Post*, December 23, 2024, <https://www.washingtonpost.com/national-security/2023/12/14/israel-unguided-dumb-bombs-gaza/> (accessed August 29, 2024).

²⁶⁹ “Israeli Forces’ Conduct in Gaza,” Human Rights Watch news release, March 19, 2024, <https://www.hrw.org/news/2024/03/19/israeli-forces-conduct-gaza>.

In the context of Israeli authorities' cutting off and restricting of water, electricity, and fuel supplies into Gaza, Israeli forces' destruction of WASH infrastructure has significantly exacerbated the lack of access to water and sanitation across Gaza.

Deliberate Attacks on Wastewater Treatment and Sewage Facilities

Six wastewater treatment plants serve the whole of the civilian population of the Gaza Strip and are critical to maintaining a sanitary environment throughout the strip and contributing to groundwater reserves.

Of the six wastewater treatment plants, satellite imagery analysis shows that the solar panel fields of at least four plants were destroyed by Israeli military bulldozers, rendering the facilities inoperable as electricity and fuel also continue to be blocked. The extensive destruction of the solar panel fields, the presence in each case of bulldozer tracks, and the routes of these tracks coming from the Israeli border, indicate that Israeli authorities deliberately damaged the wastewater treatment plants.

The use of bulldozers to completely raze large solar panel fields also indicates that at the time they were razed, the Israeli military most probably had operational control of these areas. The razing of fields, orchards, buildings, and facilities are part of the Israeli military's "clearing operations" notably in the buffer zone and along the corridors, when the main hostilities have ceased in the area. Daily maps of Israeli forces' evacuation orders, clearance operations and advances, published by the Institute for the Study of War (ISW) based on the Israeli military's statements and other open-source information, corroborate these findings, and indicate that Israeli forces apparently controlled the areas where the facilities were located, often for weeks, before the dates when satellite imagery shows that the WASH facilities were destroyed.²⁷⁰

In addition, three of the four plants where solar panels were destroyed—the North Gaza, Central Gaza (al-Bureij refugee camp), and Khan Younis wastewater treatment plants—are located less than 500 meters from the eastern border of the Gaza Strip. Israeli officials

²⁷⁰ Institute for the Study of War, "Iran Update, December 27, 2023," December 27, 2023, <https://www.understandingwar.org/backgrounder/iran-update-december-27-2023> (accessed November 26, 2024); Institute for the Study of War, "Iran Update, January 3, 2024," January 3, 2024, <https://www.understandingwar.org/backgrounder/iran-update-january-3-2024> (accessed November 26, 2024).

stated their intention to create a “buffer zone” covering this area, claiming that it was necessary to allow residents of communities in the south of Israel to return to their homes without fear of another attack. “[All along] the Gaza Strip...we will have a margin. And they will not be able to get in. It will be a fire zone,” Avi Dichter, Israel’s agriculture minister, told reporters on October 19.²⁷¹ Analysis by the United Nations Satellite Centre (UNOSAT) shows that by February 29, 2024, 90 percent of the buildings located less than one kilometer from the border were damaged or destroyed.²⁷²

The fourth plant—the Sheikh Ejleen Wastewater Treatment Plant—that has had sections damaged and destroyed is located within the so-called Netzarim corridor in northern Gaza. The corridor, which includes a new road constructed by the Israeli military and large razed areas on either side, runs from the Israel/Gaza perimeter in the east to the sea in the west and bisects the territory into northern and southern parts. In satellite imagery from August 25, 2024, systematic destruction can be seen on both sides of the new road, where the vast majority of buildings, including individual houses, high-rise residential buildings, and universities have been destroyed.

Human Rights Watch did not find statements indicating the military intent of the destruction and damage to the four wastewater treatment plants from Israeli authorities. They did not respond to our requests for information about these incidents, including in a letter on June 10, 2024.

Intentionally attacking civilian objects is a war crime. Intentionally depriving civilians of objects indispensable to their survival, with an intention to starve them, which includes water, is also a war crime. Human Rights Watch’s research indicates that Israeli forces were aware of the nature and location of the plants and deliberately targeted the facilities.

Central Gaza Wastewater Treatment Plant

Satellite imagery reviewed by Human Rights Watch shows that, on October 10 or 11, 2023, an Israeli airstrike—indicated by the presence of three new craters of around 15 meters

²⁷¹ James Shotter and Neri Zilber, “Israel plans buffer zone in Gaza after Hamas war,” *Financial Times*, October 19, 2023 <https://www.ft.com/content/2139346d-1605-4a6f-bb58-340045c3cf44> (accessed December 2, 2024).

²⁷² UNOSAT, “UNOSAT Comprehensive Damage Assessment,” April 9, 2024, https://unosat.org/static/unosat_filesystem/3820/OCHA-OPT_011_UNOSAT_A3_GazaStrip_CDA_1kmArmisticeLine_09042024_v3.pdf (accessed September 29, 2024).

diameter on a road that runs alongside the plant—destroyed some of the solar panels of the Central Gaza wastewater treatment plant, located less than 500 meters from the border with Israel, east of the population center of al-Bureij refugee camp. Additional satellite imagery, alongside photographs shared by a CMWU employee, show that all the remaining solar panels powering the plant were razed between November 3 and 5, 2023, apparently by bulldozers. Satellite imagery from November 7 shows bulldozer tracks and debris throughout the solar panel field. The razing of fields, orchards, and buildings is also visible around the plant, as are bulldozer tracks coming from Israel.

Israeli forces ordered an evacuation of the area where the plant was located on December 25. By January 20, 2024, satellite imagery shows that one of the main buildings of the plant had been destroyed. New traces of razing by bulldozers on the perimeter of the plant also appeared by that date, including on parts of the solar panel field that had previously been razed and which had then been cleared of debris.

Israeli forces, having ordered the area evacuated, had advanced west of the area to the outskirts of al-Bureij refugee camp itself by December 27, according to maps based on information published by the Israeli authorities.²⁷³

The wastewater treatment plant, which opened in 2021 and was intended to serve one million people, had taken 20 years to plan and build due to “lengthy consultations with the Israeli authorities” as well as challenges to import restrictions, the German government development bank KfW reported.²⁷⁴ Germany invested 85 million euros into the facility.

²⁷³ Institute for the Study of War, “Iran Update, December 22, 2023,” December 22, 2023, <https://www.understandingwar.org/backgrounder/iran-update-december-22-2023> (accessed November 26, 2024); Institute for the Study of War, “Iran Update, December 27, 2023,” December 27, 2023, <https://www.understandingwar.org/backgrounder/iran-update-december-27-2023> (accessed November 14, 2024).

²⁷⁴ Kreditanstalt für Wiederaufbau (KfW), “Long breath required - wastewater treatment plant in Gaza put into operation,” March 23, 2021, <https://reliefweb.int/report/occupied-palestinian-territory/long-breath-required-wastewater-treatment-plant-gaza-put#:~:text=After%2020%20years%20of%20planning,a%20regulated%20manner%20in%20future>. (accessed August 29, 2023).



Satellite imagery comparison between October 15, 2023 and January 20, 2024 shows the progressive destruction of the Central Gaza wastewater treatment plant. Solar panels were first damaged in early October 2023 before being destroyed in November. As of January 20, 2024, one of the main buildings was completely destroyed and several areas of the plant appear to have been razed by bulldozers. Images © 2024 Planet Labs PBC. Graphics and analysis © Human Rights Watch.



Photograph shared by a Gaza Coastal Municipal Water Utility employee with Human Rights Watch on January 16, 2024 shows the solar panel field powering the Central Gaza wastewater treatment plant completely destroyed. © Private

North Gaza Wastewater Treatment Plant

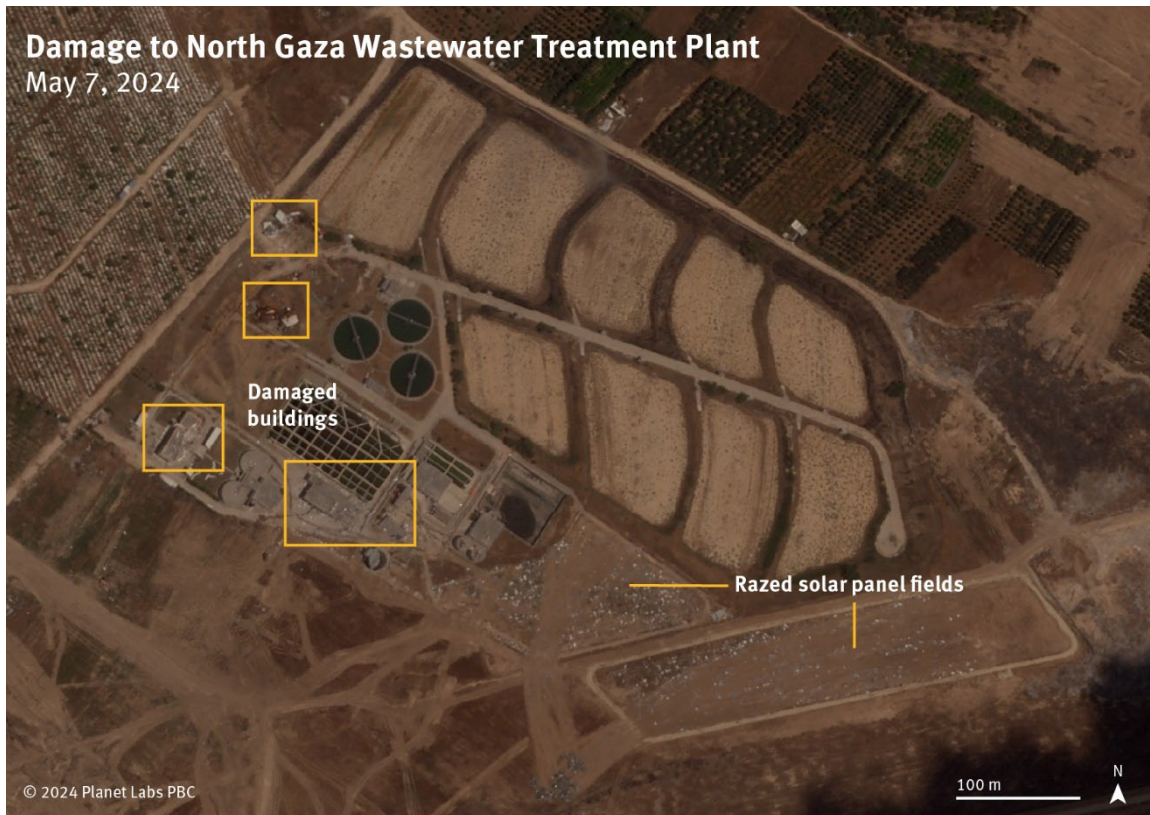
The North Gaza wastewater treatment plant also showed similar patterns of damage and destruction. Satellite imagery from December 20, 2023, shows the plant still intact. On January 10, 2024, several buildings within the plant complex appear heavily damaged. Large areas adjacent to the plant had been razed and new bulldozer tracks that appeared to come from across the border in Israel are visible.

According to satellite imagery analysis, about half of the plant's solar panels were razed on January 18 or 19, and the second half were razed on February 10 or 11, 2024. Throughout March and April, parts of the plant and the surrounding areas continued to be razed. From April 22 to 24, new bulldozer tracks appeared on the solar panel fields with some areas now cleared of the previous debris.

The Israeli military had ordered the area evacuated, was conducting clearing operations there by late December 2023, and had fully advanced into the area by early January, subsequently maintaining control of the area.²⁷⁵

²⁷⁵ Institute for the Study of War, "Iran Update, December 27, 2023," December 27, 2023, <https://www.understandingwar.org/backgrounder/iran-update-december-27-2023> (accessed November 26, 2024); Institute for the Study of War, "Iran Update, January 3, 2024," January 3, 2024, <https://www.understandingwar.org/backgrounder/iran-update-january-3-2024> (accessed November 26, 2024).

The World Bank-funded, US\$75 million facility was initially meant to protect 52,000 people in the area after sewage lakes collapsed in March 2007, killing five people. The World Bank reported that the facility ultimately served 400,000 people when construction was completed in 2018 after years of delays due to “years of blockade, restrictions on the entry of critical materials and equipment, [and] damages from war and conflict.”²⁷⁶



Satellite imagery from May 7, 2024 shows damaged buildings and razed solar panels at the site of the North Gaza wastewater treatment plant. Image © 2024 Planet Labs PBC. Graphics and analysis © Human Rights Watch.

²⁷⁶ World Bank Group, “North Gaza communities will finally benefit from sewage treatment services,” March 12, 2018, [https://www.worldbank.org/en/news/feature/2018/03/12/north-gaza-communities-will-finally-benefit-from-sewage-treatment-services#:~:text=The%20long%20awaited%20construction%20of,disaster%20due%20to%20sewage%20pollution.\(accessed March 12, 2018\)](https://www.worldbank.org/en/news/feature/2018/03/12/north-gaza-communities-will-finally-benefit-from-sewage-treatment-services#:~:text=The%20long%20awaited%20construction%20of,disaster%20due%20to%20sewage%20pollution.(accessed%20March%2012,%202018).).

Khan Younis Wastewater Treatment Plant

Satellite imagery also shows similar patterns of damage to the Khan Younis wastewater treatment plant in southern Gaza. The plant first sustained some damage to its solar panel field on October 20, 2023. Satellite imagery from that day shows that, between 11:57 a.m. and 2:19 p.m., Israeli bulldozers razed part of the solar panel field as well as some orchards and buildings around the plant. The plant's solar panels were later completely razed between February 26 and 29, 2024. New bulldozer tracks coming from across the Israeli border appear on the same dates.

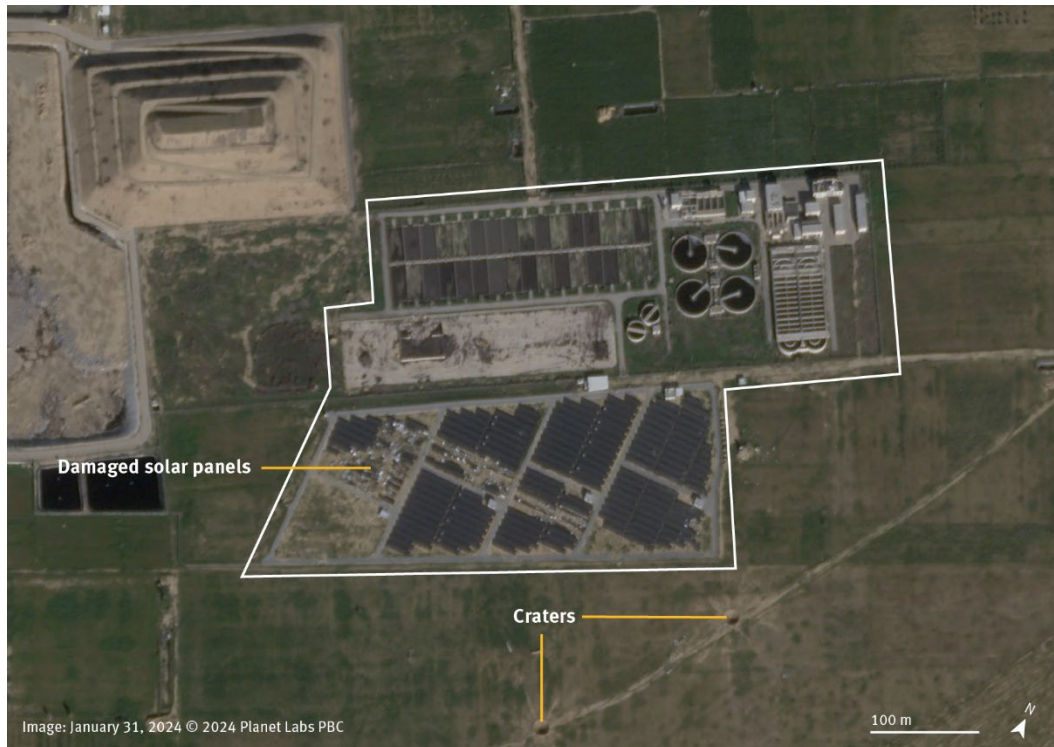
Israel had ordered the area evacuated by December 2, 2023, and Israeli forces had advanced into and maintained the advance into a populated area immediately to the north until March 1, 2024, when they began military operations in the area of the plant.²⁷⁷

Japan and Kuwait had funded the US\$58 million plant, construction of which began in 2015, after four children drowned in a sewage cesspool in the area in 2011.²⁷⁸ The facility was operational as of 2023, with an initial capacity of 26,600 cubic meters of treated wastewater per day, and “revolutionized the city’s infrastructure,” the United Nations Development Program (UNDP) reported.²⁷⁹

²⁷⁷ Institute for the Study of War, “Iran Update, December 2, 2023,” December 2, 2023, <https://www.understandingwar.org/backgrounder/iran-update-december-2-2023> (accessed November 26, 2024); Institute for the Study of War, “Iran Update, March 1, 2024,” March 1, 2024, <https://www.understandingwar.org/backgrounder/iran-update-march-1-2024> (accessed November 26, 2024).

²⁷⁸ UNDP, “Construction begins on Khan Younis Waste Water Treatment Plant in Gaza,” February 10, 2015, <https://www.un.org/unispal/document/auto-insert-199232/> (accessed September 2, 2024).

²⁷⁹ UNDP, “Khan Yunis wastewater treatment plant,” September 21, 2023, <https://www.undp.org/arab-states/stories/khan-younis-wastewater-treatment-plant-changing-lives-protecting-environment-and-advancing-sustainable-development-agenda> (accessed September 4, 2024).



Satellite imagery comparison shows the razing of the solar panels powering the Khan Younis wastewater treatment plant. Solar panels were first damaged on October 20, 2023, before being systematically destroyed in February 2024. Images © 2024 Planet Labs PBC. Graphics and analysis © Human Rights Watch.

Sheikh Ejleen Wastewater Treatment Plant

The Sheikh Ejleen wastewater treatment plant is located in northern Gaza, approximately 500 meters north of the so-called Netzarim corridor that Israeli forces created in early March, running through Gaza from the Israeli border to the Mediterranean Sea and splitting the strip in half south of Gaza City. The International Committee of the Red Cross (ICRC) had reported in 2017 that power shortages affecting the facility led to untreated wastewater flowing directly to the sea, affecting public health.²⁸⁰

From March 2024 onwards, satellite imagery shows progressive widespread destruction and razing of the land in the first hundreds of meters north and south of the road, similar to the destruction visible in the buffer zone adjacent to Gaza's perimeter. Satellite imagery from March 20 and 21 show that bulldozers razed wooded areas within the perimeter of the plant. One building was also damaged. The facility's solar panels were later largely razed between May 1 and May 3. Bulldozer tracks that run back and forth across the solar panel field, leaving clear tracks and some intact panels in-between them, are also visible in the satellite imagery.

Israeli forces were apparently in control of the plant's location long before it was destroyed, and had been conducting clearing operations there since November 2023.²⁸¹

²⁸⁰ ICRC, "Electricity shortages affect all aspects of life in Gaza," May 15, 2017, <https://www.icrc.org/en/document/Gaza-power-fuel-crisis> (accessed September 2, 2024).

²⁸¹ Institute for the Study of War, "Iran Update, November 20, 2023," November 20, 2023, <https://www.understandingwar.org/backgrounders/iran-update-november-20-2023> (accessed November 26, 2024).



Satellite imagery from May 3, 2024, shows that the solar panels powering the Sheikh Ejleen wastewater treatment plant had been largely razed. Bulldozer tracks are visible on the solar panel field and on razed areas in and around the plant perimeter. Image © 2024 Planet Labs PBC. Graphics and analysis © Human Rights Watch.

Damage and Destruction of Water Reservoirs

At least 31 of Gaza's 54 water reservoirs have been damaged or destroyed throughout the hostilities. Using satellite images from August 23 and 26, 2024, and coordinates provided by the CMWU, Human Rights Watch conducted a damage assessment and found that 11 of Gaza's 54 water reservoirs were completely or largely destroyed and 20 others showed signs of damage.

In July 2023, a video surfaced on social media that shows combat engineers in the Israeli military preparing and setting explosive charges to destroy a reservoir in Tal Sultan neighborhood of Rafah in southern Gaza, the main water reservoir serving Rafah.²⁸² Based

²⁸² Emanuel Fabian, "IDF investigating demolition of water facility by troops in southern Gaza," *The Times of Israel*, July 29, 2024, <https://www.timesofisrael.com/idf-investigating-demolition-of-water-facility-by-troops-in-southern-gaza/> (accessed September 12, 2024); Samira Mohyeddin (@SMohyeddin) post to X (formerly known as Twitter), July 28, 2024, <https://x.com/SMohyeddin/status/1817252372256829784> (accessed September 12, 2024).

on Human Rights Watch analysis of the video, the forces destroyed the reservoir by a controlled demolition. Satellite imagery analysis shows that the destruction happened sometime between July 24 and 27. According to Haaretz, an Israeli news outlet, the forces' commander had approved the demolition, but without approval from senior officers.²⁸³ Haaretz added that Tal Sultan "is near humanitarian areas that the army has designated as safe zones."²⁸⁴ The Times of Israel reported that the Israeli military was investigating the incident. Human Rights Watch wrote to the Israeli military on November 29, 2024, asking whether an investigation had taken place, and if so, what the findings were. Israeli authorities did not reply.



Satellite imagery from January 22, 2024 shows the damage to the Sheikh Zayed reservoir, located in northern Gaza, 150 meters south of the Indonesian Hospital. Both main buildings of the reservoir show large damage impacts on their rooftops. Image © 2024 Planet Labs PBC

²⁸³ Yaniv Kubovich, "Israeli Army Commanders Gave Order to Blow Up Rafah Reservoir. IDF Suspects Breach of Int'l Law," *Haaretz*, July 29, 2024, <https://www.haaretz.com/israel-news/2024-07-29/ty-article/.premium/idf-commanders-gave-order-to-blow-up-rafah-reservoir-army-suspects-breach-of-intl-law/00000190-fd90-d5ef-a5fe-ff9ec3ea0000> (accessed August 29, 2024).

²⁸⁴ *Ibid.*

While Human Rights Watch was unable to verify the cause of the damage and destruction to the other water reservoirs identified on satellite imagery, the loss of access to water resulting from their damage and destruction demonstrates the greater need for Israeli authorities and forces to ensure that Gaza’s remaining water sources are protected, and that the population has other means of water production and access to mitigate the harms from the loss of half of Gaza’s water reservoirs. Israeli authorities’ continued obstruction of water repair materials, fuel, and electricity despite clear evidence at the time that Palestinians in Gaza lacked adequate water, appear to demonstrate a decision to deprive civilians in Gaza of water. ²⁸⁵

Damage to Desalination Plants and Wells

Satellite imagery from November 24, 2023, shows damage to the Gaza City desalination plant’s main building, while numerous Israeli military vehicles are stationed around the plant.

Due to the inability of CMWU employees to access the destroyed or damaged sites without risking being targeted by Israeli forces or inadvertently harmed by attacks, “[w]e can’t estimate the damages anymore,” the CMWU employee said. ²⁸⁶

²⁸⁵ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024.

²⁸⁶ Human Rights Watch interview with CMWU employee 1, January 16, 2024.

Damage to Gaza City Desalination Plant and Surrounding Military Activity

November 24, 2023



Satellite imagery from November 24, 2023, shows damage to the south-west of Gaza City desalination plant's main building and a concentration of Israeli military vehicles stationed in military positions in the immediate vicinity of the plant. Image © 2024 Planet Labs PBC. Graphics and analysis © Human Rights Watch.

IV. Obstruction of Repairs and Aid and Attacks on Water Workers

Israeli authorities have obstructed water workers' attempts to repair damaged water infrastructure and have blocked replacement infrastructure from being brought into the Gaza Strip. Israeli forces have attacked and set fire to the Gaza Coastal Municipalities Water Utility (CMWU)'s main warehouse, which housed materials critical to repairing water and sanitation infrastructure and where displaced CMWU employees and their families were sheltering, as well as the CMWU's headquarters. They have also attacked water workers who were attempting to make repairs or conducting other water-related work. Following a process known as deconfliction meant to enable the safe passage of humanitarian workers in conflicts, the water workers' coordinates had been shared with the Israeli military ahead of being sent out to make the repairs, the employees said.²⁸⁷

Attack on the Gaza Coastal Municipalities Water Utility Warehouse

Three individuals working with the CMWU told Human Rights Watch that on January 21, 2024, Israeli forces conducted aerial attacks, shelled, and then set fire to the water utility's main central warehouse in Khan Younis, which housed spare parts and equipment for water infrastructure. The three individuals, who were sheltering there with their families, said the attacks killed four people displaced at the warehouse, including one of their mothers.²⁸⁸

Human Rights Watch verified photographs and videos from the CMWU and analyzed satellite imagery that shows the damage and destruction caused by Israeli forces to the CMWU warehouse and to water and sanitation materials housed within the warehouse.²⁸⁹

One of the employees, whose mother was killed and whose son was injured by the attack, stated that, on the night of January 21, Israeli forces began to attack the warehouse around

²⁸⁷ Human Rights Watch interviews with CMWU employee 1, via phone, February 4, 2024, and CMWU employees 2 and 3, Egypt, April 6, 2024.

²⁸⁸ Ibid.

²⁸⁹ Human Rights Watch received the locations of WASH infrastructure from the CMWU.

11 p.m.²⁹⁰ An investigation by the CMWU concluded that a guided missile was used in the attack.²⁹¹

The Israeli military said, in response to a BBC report, that the warehouse was not targeted, but that “terrorists” operating nearby were struck and “it is possible that parts of the warehouse suffered damage as a result of the strike.”²⁹²

However, according to the BBC’s investigation and the CMWU employee’s account to Human Rights Watch, the next morning, when a few CMWU employees tried to go back to the warehouse to see if there were items they could salvage, they witnessed Israeli ground forces setting fire to equipment in the warehouse.²⁹³ Human Rights Watch has reviewed and verified a video from the CMWU that clearly shows burnt WASH equipment and materials.

According to the CMWU employees, as well as the CMWU investigation report that Human Rights Watch reviewed, the attack killed four displaced people and injured ten others, and damaged more than US\$8 million worth of water infrastructure parts and equipment.²⁹⁴ One employee added that the attack had severely compromised the entire system of water provision in Gaza due to the critical need for WASH equipment and spare parts, particularly in light of Israeli authorities’ blocking the entry of additional WASH equipment.²⁹⁵ The facility housed more than 2,000 water-infrastructure items and was a depot for UNICEF and the CMWU, a CMWU employee told the BBC.²⁹⁶

²⁹⁰ Human Rights Watch interview with CMWU employee 2, via phone, March 11, 2024.

²⁹¹ CMWU investigation document on file with Human Rights Watch.

²⁹² Kayleen Devlin, Maryam Ahmed, and Daniele Palumbo, “Half of Gaza water sites damaged or destroyed, BBC satellite data reveals,” *BBC*, May 9, 2024, <https://www.bbc.com/news/world-middle-east-68969239> (accessed September 10, 2024).

²⁹³ Human Rights Watch interviews with CMWU employees 2 and 3, Egypt, April 6, 2024; CMWU investigation document on file with Human Rights Watch; Kayleen Devlin, Maryam Ahmed and Daniele Palumbo, “Half of Gaza water sites damaged or destroyed, BBC satellite data reveals,” *BBC*, May 9, 2024, <https://www.bbc.com/news/world-middle-east-68969239> (accessed September 10, 2024).

²⁹⁴ Human Rights Watch interviews with CMWU employee 1, via phone, February 4, 2024; Human Rights Watch interviews with CMWU employees 2 and 3, Egypt, April 6, 2024; CMWU investigation document on file with Human Rights Watch.

²⁹⁵ Human Rights Watch interview with CMWU employee 1, via phone, February 4, 2024.

²⁹⁶ Kayleen Devlin, Maryam Ahmed and Daniele Palumbo, “Half of Gaza water sites damaged or destroyed, BBC satellite data reveals,” *BBC*, May 9, 2024, <https://www.bbc.com/news/world-middle-east-68969239> (accessed September 10, 2024).

Human Rights Watch reviewed images shared by CMWU employees of the damage to the warehouse, along with satellite imagery from January 29, 2024, of the CMWU warehouse located west of Khan Younis, close to al-Aqsa University compound, showing damage and traces of burning on the rooftop of the warehouse.



Satellite imagery from January 29, 2024 shows damage to the CMWU central warehouse in Khan Younis and military vehicles stationed nearby. Image © 2024 Planet Labs PBC. Graphics and analysis © Human Rights Watch.



Images analyzed by Human Rights Watch reportedly from January 22, 2024 shows damage to the CMWU central warehouse in Khan Younis. © 2024 Private.

Attacks on Water and Sanitation Repair Workers

Of 28 WASH facilities that were attacked between October 7 and December 1, 2023, 25 could not be repaired, the WASH Cluster reported.²⁹⁷ According to Abdul Samad, a WASH technical advisor at Oxfam, conducting essential repairs to damaged water and sanitation infrastructure across Gaza, and particularly in northern Gaza, is extremely challenging because the water utility maintenance teams would have to work “under fire” and are at “high risk of being injured or killed [by Israeli forces’ military action] as they carried out the repair works,” she said.²⁹⁸

²⁹⁷ State of Palestine WASH Cluster, “WASH Infrastructure Damage Registration,” on file with Human Rights Watch.

²⁹⁸ Human Rights Watch interview with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024 and March 14, 2024.

In some cases, water workers have been killed or injured despite advance coordination with Israeli officials. Two CMWU employees told Human Rights Watch that despite coordinating their plans to carry out repairs to water infrastructure with Israeli authorities, some of their colleagues still came under attack by Israeli forces.²⁹⁹ One stated:

We send them [information about] the materials, the size of the pipe, the nature of the intervention, who exactly is going to go there, the numbers and the names on their IDs so they can check whether or not they're wanted, [and] the information of the vehicles.³⁰⁰

Despite sharing this information, in several cases, the employee said workers were attacked when attempting to make repairs or engage in water distribution. “The Israelis had no excuse to target anything we had. It’s not a tunnel. ... It’s a water well,” the employee added.³⁰¹

Another CMWU employee stated that on December 26, 2023, an Israeli warplane attacked and killed one of his colleagues, a water engineer working with the CMWU, and his two children, while they were driving from Khan Younis to Rafah to pick up water tanks from the UNICEF warehouse at the border.³⁰² He stated that people in the car next to the CMWU employees witnessed the attack and reported to the CMWU that they had seen the warplane overhead and the munition that destroyed the car, killing the three civilians.³⁰³

The employee explained that all of the vehicles belonging to the CMWU, including the one that was struck in the attack, have “water” written on top of the vehicle, along with a code that has been shared with Israeli authorities and the ICRC, that are clearly visible from

²⁹⁹ Human Rights Watch interview with CMWU employee 2, via phone, March 11, 2024; CMWU employees 2 and 3, Egypt, April 6, 2024; Human Rights Watch text correspondence with CMWU employee 3, May 30, 2024.

³⁰⁰ Human Rights Watch text correspondence with CMWU employee 3, May 30, 2024.

³⁰¹ Ibid.

³⁰² Human Rights Watch interview with CMWU employee 2, via phone, March 11, 2024.

³⁰³ Ibid.

above.³⁰⁴ “He was also driving in a green area,” he added, referring to the routes designated as “safe” by Israeli authorities.³⁰⁵

The placement of Israeli forces near and around water infrastructure has prevented supplies and maintenance crews from reaching water sources and infrastructure because of the risks associated with getting close to the forces, according to employees of the CMWU as well as two employees of international organizations working on WASH.³⁰⁶ National Public Radio (NPR), a US-based non-profit media organization, reported that satellite imagery showed Israeli forces had occupied and stationed military vehicles close to Gaza City’s desalination plant and its sewage treatment plant by early November.³⁰⁷ Satellite imagery from November 24, 2023, that Human Rights Watch reviewed shows numerous military vehicles stationed in military positions around the Gaza City desalination plant.

An employee of the CMWU told Human Rights Watch, “We are in contact with our people in the north of Gaza, but as... the whole area [is] under war conditions and targeting, it is not safe to tour around and assess the damage there.”³⁰⁸

On June 21, 2024, the CMWU reported that an Israeli airstrike killed five municipal water workers while they were in a garage owned by the municipality to gather fuel to bring to water wells in the area.³⁰⁹ A CMWU employee told Human Rights Watch that a single

³⁰⁴ Human Rights Watch text message correspondence with CMWU employee 2, April 18, 2024.

³⁰⁵ Human Rights Watch text message correspondence with CMWU employee 2, April 18, 2024; There have been several reports of Israeli forces continuing to strike designated “safe zones,” killing civilians “As Israel’s bombing hits declared ‘safe zones’, see “Palestinians trapped in Gaza find danger everywhere,” *PBS*, October 19, 2024, <https://www.pbs.org/newshour/world/as-israels-bombing-hits-declared-safe-zones-palestinians-trapped-in-gaza-find-danger-everywhere> (accessed August 29, 2024); Forensic Architecture, “Humanitarian Violence: Israel’s Abuse of Preventative Measures in its 2023-2024 Genocidal Military Campaign in the Occupied Gaza Strip,” March 7, 2024, https://content.forensic-architecture.org/wp-content/uploads/2024/03/Humanitarian-Violence_Report_FA.pdf (accessed August 29, 2024).

³⁰⁶ Human Rights Watch interviews with CMWU employee 1, via phone, February 4, 2024; CMWU employee 2, via phone, March 11, 2024; WASH response actor (name withheld), via Microsoft Teams, January 24, 2024; and Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024.

³⁰⁷ Geoff Brumfiel, Alyson Hurt, and Brent Jones, “Satellite images show Israeli forces hold ground around Gaza City’s water facilities,” *NPR*, November 10, 2024, <https://www.npr.org/sections/goatsandsoda/2023/11/10/1211567204/satellite-images-israeli-military-hold-ground-around-gaza-water-facilities> (accessed August 29, 2024).

³⁰⁸ Human Rights Watch interview with CMWU employee 1, via phone, February 4, 2024.

³⁰⁹ Messages forwarded by two CMWU employees to Human Rights Watch on June 21, 2024, on file with Human Rights Watch.

airstrike struck the garage at about 10:40 a.m., and that one civilian outside of the building was also killed by shrapnel from the attack.³¹⁰

He added that the CMWU had been coordinating the fuel entry and their movements to bring fuel to wells with the Israeli military via the Palestinian Water Authority in Ramallah: “The workers had been performing this task for weeks without any warning from the IDF to stop this work.”³¹¹ In a statement, the Municipality of Gaza said that the workers “were performing their national duty and serving citizens despite extremely limited resources and high risks.”³¹²

³¹⁰ Human Rights Watch text message correspondence with CMWU employee 4, July 3, 2024.

³¹¹ Ibid.

³¹² Municipality of Gaza (@munigaza) post to X (formerly known as Twitter), June 21, 2024, <https://x.com/munigaza/status/1804095034230202712> (accessed August 29, 2024).

V. Obstructing the Entry and Movement of Water-Related Materials and Infrastructure

Israeli authorities have blocked repair materials and replacement and additional water infrastructure materials from entering Gaza.³¹³ Staff members of UN agencies and international nongovernmental groups providing and coordinating humanitarian aid to Gaza told Human Rights Watch that Israeli authorities had not allowed in any water filtration systems or any parts that might assist in water production since the start of the war, except when they were a part of a set-up for a temporary healthcare facility.³¹⁴

Water, sanitation and hygiene (WASH) Cluster staff also told Human Rights Watch that Israeli authorities had systematically barred chlorine, which is needed to disinfect water, from entering Gaza for months after the hostilities escalated.³¹⁵ Gaza's Coastal Municipalities Water Utility (CMWU) announced that they were able to secure chlorine for the first time since the start of hostilities on April 23.³¹⁶ On September 2, 2024, OCHA reported that chlorine bleach for water disinfection was supplied by UNICEF to Gaza City

³¹³ Human Rights Watch interviews with WASH response actor, via Microsoft Teams, January 24, 2024, and Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024; The United Nations, "Secretary-General's statement to the press - on the Middle East," January 15, 2024, <https://www.un.org/sg/en/content/sg/statement/2024-01-15/secretary-generals-statement-the-press-the-middle-east> (accessed August 29, 2024); "Preventing famine and deadly disease outbreaks in Gaza requires faster, safer aid access and more supply routes," WFP/UNICEF/WHO joint press release, January 15, 2024, <https://www.unicef.org/press-releases/preventing-famine-and-deadly-disease-outbreaks-gaza-requires-faster-safer-aid-access> (accessed August 29, 2024).

³¹⁴ Human Rights Watch interviews with seven humanitarian aid workers, Cairo and al-Arish, Egypt, April 3 – 8, 2024.

³¹⁵ Human Rights Watch interviews with a humanitarian aid worker, Cairo, April 8, 2024 and WASH response actor, via Microsoft Teams, January 24, 2024; see also Hardin Lang and Jeremy Konyndyk, "The Looming Famine in Gaza," *Foreign Affairs*, March 1, 2024, <https://www.foreignaffairs.com/palestinian-territories/looming-famine-gaza> (accessed August 29, 2024). Israeli has restricted the entry of chlorine to Gaza since at least early 2008. "Gazans told to boil water as chlorine runs low," *Reuters*, February 27, 2008, <https://web.archive.org/web/20180527002141/https://www.reuters.com/article/idUSL27799580/> (accessed September 24, 2024).

³¹⁶ CMWU Coastal Municipalities Water Utility, مصلحة مياه بلديات الساحل, Facebook page post, April 23, 2024, [https://www.facebook.com/cmwugaza/posts/pfbido2HaC46y1DFRT5VTptXhy1SnLKBNehhUSsZpRqFyTWN6KQgsY1MD99J8b65sDqk6Afl?__cft__\[o\]=AZUhtcMAaSP6yfhD-uG-9_unFe71pgO5YZoPzFo7NI88tLUPKNFeNc8rGXFXHvbP_bQvrkHp4uTrsSuXo426rvMZxHSNiqYvPRZo9lsgypvRD07VZk1gXBYtOTr72AVYGLwNcYaTsakF6TaFcUhhkby8H9286vLLffRQU39VwtVH_NxCxLuDnzZeVohaiCDPIjwY6CbA8ka8UbAx2WaQs&__tn__=%2CO%2CP-R](https://www.facebook.com/cmwugaza/posts/pfbido2HaC46y1DFRT5VTptXhy1SnLKBNehhUSsZpRqFyTWN6KQgsY1MD99J8b65sDqk6Afl?__cft__[o]=AZUhtcMAaSP6yfhD-uG-9_unFe71pgO5YZoPzFo7NI88tLUPKNFeNc8rGXFXHvbP_bQvrkHp4uTrsSuXo426rvMZxHSNiqYvPRZo9lsgypvRD07VZk1gXBYtOTr72AVYGLwNcYaTsakF6TaFcUhhkby8H9286vLLffRQU39VwtVH_NxCxLuDnzZeVohaiCDPIjwY6CbA8ka8UbAx2WaQs&__tn__=%2CO%2CP-R) (accessed August 29, 2024).

and Jabalya for the first time in three months, and that the CMWU had installed water chlorination and injection units across Gaza.³¹⁷

Lama Abdul Samad, a WASH technical advisor at Oxfam, told Human Rights Watch that Israeli authorities were severely restricting and blocking international NGOs and the UN from bringing into Gaza water supplies and repair materials essential to carry out basic repair works to augment water shortages stemming from damaged and destroyed infrastructure, without providing justifications for their actions.³¹⁸ She added that Oxfam had purchased six desalination units, but that Israeli authorities were not allowing their entry into Gaza. “There are millions of dollars in water and sanitation supplies purchased by NGOs and the UN that are just sitting at the border,” she said.³¹⁹

Several people working to provide WASH facilities said that Israeli authorities, in some cases, bar items for the stated reason that they are “dual use” which could be used for military purposes, but that there is no clear list of what items are banned.³²⁰ Aid workers said the Israeli authorities have not provided any list of banned items and Israeli inspections staff have rejected entire truckloads in an ad hoc manner with no explanation or possibility of appeal. “They refuse to give a list [of items that are barred from entry], saying it is an individual determination,” said one woman working for a government aid agency.³²¹

In response to a freedom of information request for lists of so called “dual use” items, Israeli authorities said that they were still using lists of dual use items that they had published in 2008.³²² Under the Israeli policy, the entry of dual use items is not prohibited, but rather requires additional approvals. However, in practice, international organizations report significant obstacles to getting them into Gaza.³²³ As Gisha, an Israeli NGO, reported, the Israeli government’s lists, which include “water disinfection materials,” are

³¹⁷ OCHA, “Humanitarian Situation Update #212 | Gaza Strip,” September 2, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/humanitarian-situation-update-212-gaza-strip> (accessed November 29, 2024).

³¹⁸ Human Rights Watch interview with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024.

³¹⁹ Ibid.

³²⁰ Human Rights Watch interviews with five humanitarian aid workers in Egypt, April 3 – 8, 2024.

³²¹ Human Rights Watch interview with an employee of a government aid agency, Cairo, Egypt, April 7, 2024.

³²² Gisha, “Freedom of Information requests regarding entry of goods to Gaza,” July 23, 2024, <https://gisha.org/en/freedom-of-information-requests-regarding-entry-of-goods-to-gaza/> (accessed December 2, 2024).

³²³ Human Rights Watch interviews with nine humanitarian aid workers in Egypt, April 3 – 8, 2024.

unilateral Israeli “additions to the items listed in the ‘Control List’ of dual-use items provided for in the Wassenaar Arrangement [on Export Controls for Conventional Arms and Dual-Use Goods and Technologies or any other international “dual use” standard], which is the international standard.”³²⁴

Oxfam reported that Israeli authorities blocked its attempts to import items such as water bladders, tap-stand kits, microbiological water testing kits, and chemical water quality testing kits.³²⁵ None of these items, as well as many other restricted items, are listed as “dual use”—serving both a civilian and military purpose—under the Wassenaar Arrangement.³²⁶

The arbitrariness of items that were rejected is further demonstrated by the fact that some items were allowed in on some days, and denied on others.³²⁷ In other cases, when a single item aboard a humanitarian convoy was deemed “dual use” by Israeli authorities, the truck was forced to exit the queue and be reloaded, a process that could take 20 days.³²⁸

Other critical materials, such as chlorine, which is required for water purification, as well as generators and fuel, have also been consistently rejected. “The dual use objects list already cuts out half of our activities, all the ones that would make all the difference—

³²⁴ Gisha, “Controlled dual-use items – in English,” n.d., https://gisha.org/UserFiles/File/LegalDocuments/procedures/merchandise/170_2_EN.pdf (accessed August 29, 2024); Gisha, “Information sheet: Dark-gray lists”, January 31, 2016, <https://gisha.org/en/information-sheet-dark-gray-lists/> (accessed August 29, 2024); Wassenaar Arrangement, “Criteria for the Selection of Dual-Use Goods, including Sensitive and Very Sensitive Items,” <https://www.wassenaar.org/app/uploads/2019/12/Selection-criteria.pdf> (accessed September 12, 2024).

³²⁵ Human Rights Watch, “Israeli Forces’ Conduct in Gaza,” March 19, 2024, <https://www.hrw.org/news/2024/03/19/israeli-forces-conduct-gaza>.

³²⁶ Wassenaar Arrangement, “Criteria for the Selection of Dual-Use Goods, including Sensitive and Very Sensitive Items,” <https://www.wassenaar.org/app/uploads/2019/12/Selection-criteria.pdf> (accessed September 12, 2024).

³²⁷ “Israeli Forces’ Conduct in Gaza,” Human Rights Watch news release, March 19, 2024, <https://www.hrw.org/news/2024/03/19/israeli-forces-conduct-gaza>.

³²⁸ Ibid. See also Oxfam, “Inflicting Unprecedented Suffering and Destruction: Seven ways the government of Israel is deliberately blocking and/or undermining the international humanitarian response in the Gaza Strip,” March 18, 2024, <https://www.oxfamamerica.org/explore/research-publications/inflicting-unprecedented-suffering-and-destruction-seven-ways-the-government-of-israel-is-deliberately-blocking-and-or-undermining-the-international-humanitarian-response-in-the-gaza-strip/> (accessed August 29, 2024); Human Rights Watch, “Israeli Authorities’ Cutting of Water Leading to Public Health Crisis in Gaza,” November 16, 2023, <https://www.hrw.org/news/2023/11/16/israeli-authorities-cutting-water-leading-public-health-crisis-gaza>.

chlorine, cement, generators, fuel—are all on that list, so that's what stops our response,” said a WASH response actor.³²⁹

On January 15, 2024, UNICEF Executive Director Catherine Russell said, “Some of the material we desperately need to repair and increase water supply remain restricted from entering Gaza. The lives of children and their families are hanging in the balance. Every minute counts.”³³⁰

The same day, UN Secretary-General António Guterres stated, “Vital materials – including life-saving medical equipment and parts which are critical for the repair of water facilities and infrastructure – have been rejected with little or no explanation, disrupting the flow of critical supplies and the resumption of basic services.”³³¹

One of the CMWU employees added on January 16, “We only have 11 water tankers, and we need more... but [the Israeli authorities] don’t allow water tanks to come in.”³³² Later on, the CMWU announced in a social media post on March 22 that the UAE had provided them with four trucks for transporting water, two of which they have been able to bring into the strip, according to one of the employees.³³³

According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), UN missions to “support critical hospitals and facilities providing water, hygiene and sanitation (WASH) services” in 2024 were also “overwhelmingly denied.”³³⁴

³²⁹ Human Rights Watch interview with WASH response actor, via Microsoft Teams, January 24, 2024.

³³⁰ “Preventing famine and deadly disease outbreaks in Gaza requires faster, safer aid access and more supply routes,” WFP/UNICEF/WHO joint press release, January 15, 2024, <https://www.unicef.org/press-releases/preventing-famine-and-deadly-disease-outbreaks-gaza-requires-faster-safer-aid-access> (accessed August 29, 2024).

³³¹ The United Nations, “Secretary-General’s statement to the press - on the Middle East,” January 15, 2024, <https://www.un.org/sg/en/content/sg/statement/2024-01-15/secretary-generals-statement-the-press-the-middle-east> (accessed August 27, 2024).

³³² Human Rights Watch interview with CMWU employee 2, January 16, 2024.

³³³ CMWU Coastal Municipalities Water Utility, مصلحة مياه بلديات الساحل, Facebook page post, March 22, 2024, <https://www.facebook.com/cmwigaza/posts/pfbido2jpz7jZhAJnxKypuVHLfQPp4K4vCdf072iNMP7AS4chuQxCLNLhvhv4shstxmMPz2l>; (accessed August 29, 2024); Human Rights Watch text correspondence with CMWU employee 2, April 18, 2024.

³³⁴ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #117,” February 13, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-117-enhe> (accessed August 29, 2024).

In July 2024, OCHA reported on the urgent need for chlorine to be allowed into Gaza, as the spread of water-borne illnesses continued to expand.³³⁵

In August, the CMWU sent an urgent appeal for critical materials needed for WASH to be allowed into Gaza to avert “catastrophic disaster with irreversible consequences and impacts.”³³⁶ The list included “repair materials, chlorine, chemicals, [and] spare parts” as well as generators, stating that “[t]he existing backup generators...have been operated and heavily overused [for more than 10 months] under bleeding conditions with high risks of repetitive break down events and unavoidable deadly deterioration.”³³⁷ An employee of the CMWU told Human Rights Watch, “The situation is very difficult and our expectations are high that services systems may collapse at any time, really at any time.”³³⁸

Attacks on Humanitarian Aid

Due to the inability to produce adequate supplies of potable water in Gaza, humanitarian aid has been critical to providing fuel, bottled water, and other supplies that contribute to civilians’ water supply.

Israeli forces have carried out at least eight strikes on aid workers’ convoys and premises in Gaza since October 2023, killing or injuring at least 31 aid workers and those with them, even though aid groups had provided their coordinates to the Israeli authorities to ensure their protection.³³⁹

On February 5, 2024, Israeli naval gunfire hit an UNRWA aid truck, the agency said. The attack occurred while a convoy of 10 trucks flanked by marked UN vehicles was parked on

³³⁵ OCHA, “Gaza Humanitarian Response Update | 8-21 July 2024,” July 24, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/gaza-humanitarian-response-update-8-21-july-2024> (accessed November 29, 2024).

³³⁶ Coastal Municipalities Water Utility (CMWU), “Re-Appeal-Note for the Record,” August 9, 2024, on file with Human Rights Watch.

³³⁷ Coastal Municipalities Water Utility (CMWU), “Re-Appeal-Note for the Record,” August 9, 2024, on file with Human Rights Watch.

³³⁸ Human Rights Watch text message correspondence with CMWU employee 3, August 10, 2024.

³³⁹ “Gaza: Israelis Attacking Known Aid Worker Locations,” Human Rights Watch news release, May 24, 2024, <https://www.hrw.org/news/2024/05/14/gaza-israelis-attacking-known-aid-worker-locations>.

a road in western Nuseirat, waiting at a previously agreed holding point for permission from the Israeli military to proceed to an Israeli checkpoint.³⁴⁰

On April 1, 2024, just before 11 p.m., Israeli forces carried out a drone strike with three missiles targeting a convoy of three World Central Kitchen (WCK) vehicles, two marked with the organization's logo on the roof, in central Gaza, all carrying civilians, that were escorting eight aid trucks.³⁴¹ The convoy had just left a food warehouse in Deir al-Balah and was traveling a route that the organization said they had agreed upon with the Israeli military.

On July 21, 2024, Israeli forces attacked a UN convoy driving to Gaza city as it approached an Israeli military checkpoint, according to UNRWA Commissioner-General Philippe Lazzarini.³⁴² Lazzarini stated that "[t]he teams were traveling in clearly marked UN armoured cars & wearing UN vests," and that the convoy's movements had been coordinated with Israeli authorities in advance.³⁴³

On August 27, 2024, Israeli forces directly struck a World Food Programme (WFP) vehicle at least 10 times with gunfire while the vehicle was approaching an Israeli military checkpoint, despite being clearly marked and having received "multiple clearances by Israeli authorities."³⁴⁴ The WFP announced that it would be forced to suspend its operations after the incident.³⁴⁵

³⁴⁰ Thomas White (@TomWhiteCW8) post to X (formerly known as Twitter), February 5, 2024, <https://x.com/TomWhiteCW8/status/1754444582433996857> (accessed December 4, 2024); United Nations Palestine, "A food convoy waiting to move into northern Gaza was hit by Israeli naval gunfire," February 6, 2024, <https://palestine.un.org/en/259747-food-convoy-waiting-move-northern-gaza-was-hit-israeli-naval-gunfire> (accessed December 4, 2024).

³⁴¹ "7 WCK team members killed in Gaza," World Central Kitchen news release, April 2, 2024, <https://wck.org/en-us/news/gaza-team-update> (accessed August 29, 2024).

³⁴² "Gaza City-bound UN aid convoy comes under Israeli fire, says UNRWA," *UN News*, July 22, 2024, <https://news.un.org/en/story/2024/07/1152351> (accessed September 12, 2024).

³⁴³ Philippe Lazzarini (@UNLazzarini) post to X, July 22, 2024, <https://x.com/UNLazzarini/status/1815281731471048938> (accessed November 29, 2024).

³⁴⁴ UN food agency suspends staff movements in Gaza following attack," *UN News*, August 28, 2024, <https://news.un.org/en/story/2024/08/1153701> (accessed September 12, 2024).

³⁴⁵ *Ibid.*

As of August 28, at least 294 aid workers have been killed in Gaza since October 7, according to the United Nations.³⁴⁶

Israeli forces have fired on and killed Palestinians waiting to receive aid, including water supplies. Al Jazeera reported that in Khan Younis, an Israeli sniper shot and killed a girl trying to collect water from Nasser hospital on February 7, 2024.³⁴⁷ At the time, Nasser hospital was under siege by Israeli forces, and the area around the hospital was surrounded by Israeli tanks.³⁴⁸ OCHA reported that on February 7 in Gaza City, at least 13 people were killed while trying to get water from a truck that was struck.³⁴⁹

On the morning of February 29, Israeli forces reportedly fired artillery shells and gunshots on an aid convoy where Palestinians were gathered to receive food aid on al-Rashid road south of Gaza City.³⁵⁰ The Gaza Ministry of Health reported 112 Palestinians killed and 760 others injured during the attack.³⁵¹ Following pressure from the international community to investigate the incident,³⁵² the Israeli military denied striking the aid convoy and alleged

³⁴⁶ OCHA, “Reported Impact Snapshot - Gaza Strip,” August 28, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/reported-impact-snapshot-gaza-strip-28-august-2024-1500> (accessed September 3, 2024); ‘We want to know why’: UN chief questions Israel over 196 aid worker deaths in Gaza – video,” video report, *The Guardian*, April 5, 2024, <https://www.theguardian.com/world/video/2024/apr/05/we-want-to-know-why-un-chief-questions-israel-on-196-aid-workers-killed-in-gaza-video> (accessed August 29, 2024); Gaza: Israelis Attacking Known Aid Worker Locations,” Human Rights Watch news release, May 14, 2024, <https://www.hrw.org/news/2024/05/14/gaza-israelis-attacking-known-aid-worker-locations>.

³⁴⁷ “Israeli sniper kills Palestinian girl in front of Gaza hospital,” video report, *Al Jazeera*, February 8, 2024, <https://aje.io/gtaa32> (accessed August 29, 2024).

³⁴⁸ “How the Israeli army besieged Nasser Hospital,” Doctors Without Borders news and stories, April 15, 2024, <https://www.doctorswithoutborders.org/latest/how-israeli-army-besieged-nasser-hospital> (accessed August 29, 2024); the UN reported that on February 8, Israeli forces twice fired at people at or near the entrance of Nasser hospital, killing seven, OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #115,” February 9, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-115> (accessed August 29, 2024).

³⁴⁹ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #114,” February 8, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-114-enarhe> (accessed August 29, 2024).

³⁵⁰ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #129,” February 29, 2024, <https://www.ochaopt.org/content/hostilities-gaza-strip-and-israel-flash-update-129> (accessed August 29, 2024); “‘Massacre’: Dozens killed by Israeli fire in Gaza while collecting food aid,” *Al Jazeera*, February 29, 2024, <https://www.aljazeera.com/news/2024/2/29/dozens-killed-injured-by-israeli-fire-in-gaza-while-collecting-food-aid> (accessed August 29, 2024).

³⁵¹ Palestinian Ministry of Health Facebook page post, February 29, 2024, <https://www.facebook.com/MOHGaza1994/posts/727599482878330> (accessed August 29, 2024).

³⁵² Harriet Sherwood, Emma Graham-Harrison and Julian Borger, “Israel faces mounting pressure to investigate Gaza food aid deaths,” *The Guardian*, March 2, 2024, <https://www.theguardian.com/world/2024/mar/01/france-demands-investigation-palestinians-killed-aid-delivery-gaza> (accessed August 29, 2024).

that the majority of Palestinians were killed or injured as “a result of stampede.”³⁵³ However, a UN team visiting those wounded in the incident in al-Shifa hospital the following day reported seeing “large numbers of gunshot wounds.”³⁵⁴

Palestinians have also been wounded by attacks on other aid-distribution sites in Gaza. Ana Jeelani, a pediatric orthopedic surgeon who completed a two-week-long medical mission at al-Aqsa hospital in Deir al-Balah between March 11 and March 25, 2024, said the majority of the 30 adults with traumatic amputations she had treated had received their injuries at aid points.³⁵⁵

³⁵³ IDF, “Special Operational Press Briefing by IDF Spokesperson, Rear Admiral Daniel Hagari, March 2nd 2024,” March 2, 2024,

<https://www.idf.il/en/mini-sites/israel-at-war/briefings-by-idf-spokesperson-rear-admiral-daniel-hagari/march-24-press-briefings/special-operational-press-briefing-by-idf-spokesperson-rear-admiral-daniel-hagari-march-2nd-2024/> (accessed August 29, 2024).

³⁵⁴ “UN sees ‘large number of gunshot wounds’ after Israel’s ‘flour massacre’,” *Al Jazeera*, March 2, 2024, <https://www.aljazeera.com/news/2024/3/2/un-reports-large-number-of-gunshot-wounds-following-flour-massacre> (accessed August 29, 2024).

³⁵⁵ Human Rights Watch interview with Dr. Ana Jeelani, via phone, May 5, 2024.

VI. Deaths and Illnesses Caused by Israeli Obstruction of Water

According to the World Health Organization (WHO), lack of potable water and damage and destruction of sewage and wastewater infrastructure have led to the outbreak of water-borne diseases, including hepatitis A and diarrheal disease, as well as cases of severe dehydration in Gaza.³⁵⁶ As of June 30, 2024, the WHO reported over 1.8 million cases of diseases and infections among Gaza's population of just over 2 million people, since October 2023.³⁵⁷ The rapid spread and severity of these infections and diseases is linked to the population's lack of access to adequate water and sanitation, according to doctors and health officials.³⁵⁸

Based on statements from doctors and nurses, as well as data collected and estimates produced by doctors, epidemiologists, and humanitarian aid organizations, it is likely that thousands of Palestinians in Gaza have died as a result of malnutrition, dehydration, and disease as of August 2024, though these deaths are not being consistently tracked or reported.³⁵⁹

³⁵⁶ WHO, "Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted," November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 29, 2024); "WHO warns of 'imminent public health catastrophe' in Gaza," *Reuters*, October 31, 2023, <https://www.reuters.com/world/middle-east/who-warns-imminent-public-health-catastrophe-gaza-2023-10-31/> (accessed August 29, 2024); "Gaza: 'Frightening increase' in Hepatitis A cases," *UN News*, August 2, 2024, <https://news.un.org/en/story/2024/08/1152791> (accessed August 29, 2024); MSF, "Lack of clean water brings disease and suffering in Gaza," February 8, 2024, <https://www.msf.org/gaza-lack-clean-water-brings-disease-and-suffering> (accessed August 29, 2024).

³⁵⁷ WHO, "oPt Emergency Situation Update, Issue 39," August 5, 2024, https://www.emro.who.int/images/stories/Sitrep_-_issue_39b.pdf?ua=1 (accessed August 30, 2024).

³⁵⁸ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024; Human Rights Watch interviews with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024; Dr. Zaher Sahloul, August 29, 2024; see also State of Palestine WASH Cluster and Occupied Palestinian Territory Health Cluster, "The Gaza Strip on the brink of a public health catastrophe: Health and WASH Clusters reassert calls for immediate long-lasting ceasefire," February 20, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/gaza-strip-brink-public-health-catastrophe-health-and-wash-clusters-reassert-calls-immediate-long-lasting-ceasefire> (accessed December 4, 2024); World Health Organization, "Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted," November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 29, 2024).

³⁵⁹ See also Aya Batrawy, "Gaza's sick and malnourished children die as hospitals collapse from Israel's war," *NPR*, June 5, 2024, <https://www.npr.org/2024/06/05/nx-s1-4990196/gazas-sick-and-malnourished-children-die-as-hospitals-collapse-from-israels-war> (accessed August 29, 2024).

Asma Taha, an American nurse practitioner who volunteered in Gaza in May 2024, told Human Rights Watch, “[w]e saw babies pass away every single day” from a combination of malnutrition, dehydration, and disease.³⁶⁰ She said that, if these deaths were being recorded at all, the cause of death was not listed as malnutrition or dehydration, due to the conflation of different factors leading to the deaths.³⁶¹ She explained, however, that malnutrition and dehydration were the root of the problem: “You're not fed well, [therefore] you have a bad immune system.”³⁶²



A photograph of a severely malnourished and dehydrated infant at al-Hilal Emirates hospital. © 2024 Asma Taha

³⁶⁰ Human Rights Watch interview with Asma Taha, via Microsoft Teams, August 9, 2024.

³⁶¹ Ibid. Asma Taha also explained that many deaths went unrecorded due to many healthcare professionals working 24-hour or 36-hour shifts and not having the time to record cases. In some cases, she said that they also did not have paper or pen to record the deaths.

³⁶² Human Rights Watch interview with Asma Taha, via Microsoft Teams, August 9, 2024.

Another nurse who volunteered in Gaza, Abeerah Muhammed, said that out of 56 surgical patients she and her colleagues tracked during her two week stay in Gaza, 23 died.³⁶³ She explained that while she could not say how many deaths were directly caused by malnutrition and dehydration, “it was definitely a factor.”³⁶⁴

In February 2024, the WHO, World Food Programme (WFP), and UNICEF jointly reported that “at least 90 percent of children under 5 are affected by one or more infectious diseases,” including water-borne diseases, and that 70 percent of children under five had diarrhea.³⁶⁵

According to the WHO, a child who is malnourished is more likely to die if they get a disease, including from “common childhood illnesses such as diarrhea.”³⁶⁶ As of October 17, 2024, the Integrated Food Security Phase Classification (IPC), which classifies food insecurity in different countries based on scientific standards, reported that “about 1.84 million people across the Gaza Strip are experiencing high levels of acute food insecurity classified in IPC Phase 3 or above,” which is defined in part by the existence of households “high or above-usual acute malnutrition.”³⁶⁷

In November 2023, the UN special rapporteur on the human rights to safe drinking water and sanitation stated that “[t]he impact on public health and hygiene will be unimaginable and could result in more civilian deaths than the already colossal death toll from the bombardment of Gaza.”³⁶⁸

³⁶³ Human Rights Watch email correspondence with Abeerah Muhammed, August 18, 2024.

³⁶⁴ Ibid.

³⁶⁵ “Children’s lives threatened by rising malnutrition in the Gaza Strip,” WHO, WFP, UNICEF joint news release, February 19, 2024, <https://www.who.int/news/item/19-02-2024-children-s-lives-threatened-by-rising-malnutrition-in-the-gaza-strip> (accessed August 29, 2024).

³⁶⁶ WHO, “Children: improving survival and well-being,” September 8, 2020, <https://www.who.int/news-room/fact-sheets/detail/children-reducing-mortality> (accessed December 2, 2024); see also WHO, “Malnutrition,” March 1, 2024, <https://www.who.int/news-room/fact-sheets/detail/malnutrition> (accessed December 2, 2024).

³⁶⁷ Integrated Food Security Phase Classification (IPC), “Gaza Strip: IPC Acute Food Insecurity and Acute Malnutrition Special Snapshot,” October 17, 2024, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Gaza_Strip_Acute_Food_Insecurity_Malnutrition_Sep2024_Apr2025_Special_Snapshot.pdf (accessed November 29, 2024); Integrated Food Security Phase Classification (IPC), “Understanding the IPC Scale,” *n.d.*, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/communication_tools/brochures/IPC_Brochure_Understanding_the_IPC_Scales.pdf (accessed November 29, 2024).

³⁶⁸ “Israel must stop using water as a weapon of war: UN expert,” OHCHR, press release, November 17, 2023, <https://www.ohchr.org/en/press-releases/2023/11/israel-must-stop-using-water-weapon-war-un-expert> (accessed August 29, 2024).

In January 2024, UNICEF reported that displaced children and their families in Gaza were unable to maintain the hygiene levels necessary to prevent disease, which it attributed to the alarming lack of safe water and sanitation, with many resorting to open defecation.³⁶⁹ UNICEF had previously reported that children with disabilities generally face additional difficulties accessing water, sanitation, and hygiene compared to other children.³⁷⁰

On August 16, 2024, the Palestinian Ministry of Health confirmed the first case of polio in an unvaccinated 10-month old child in Gaza, who is now paralyzed.³⁷¹ On the same date, the WHO reported that three children were showing symptoms of acute flaccid paralysis, raising concern that the virus could be spreading among children in Gaza.³⁷² When the poliovirus was first detected in Gaza's sewage in July, Tedros Ghebreyesus, the Director-General of the WHO, stated:

The decimation of the health system, lack of security, access obstruction, constant population displacement, shortages of medical supplies, poor quality of water and weakened sanitation [in Gaza] are increasing the risk of vaccine-preventable diseases, including polio.³⁷³

³⁶⁹ "Intensifying conflict, malnutrition and disease in the Gaza Strip creates a deadly cycle that threatens over 1.1 million children," UNICEF, press release, January 5, 2024, <https://www.unicef.org/press-releases/intensifying-conflict-malnutrition-and-disease-gaza-strip-creates-deadly-cycle> (accessed August 29, 2024).

³⁷⁰ UNICEF, "UNICEF Fact Sheet: Children with Disabilities," August 2022, https://www.unicef.org/sites/default/files/2022-10/GIPo2115_UNICEF_Children-with-Disabilities-Factsheet-final%20-%20accessible.pdf (accessed December 3, 2024).

UNICEF, "UNICEF Fact Sheet: Children with Disabilities," August 2022, <https://www.unicef.org/sites/default/files/2022https://www.unicef.org/sites/default/files/2022->

³⁷¹ Gaza: Israeli Aid Obstruction Inflaming Polio Outbreak," Human Rights Watch news release, August 26, 2024, <https://www.hrw.org/news/2024/08/26/gaza-israeli-aid-obstruction-inflaming-polio-outbreak>; "Palestinian health ministry detects first case of polio in Gaza, statement says," *Reuters*, August 18, 2024, <https://www.reuters.com/world/middle-east/palestinian-health-ministry-detects-first-case-polio-gaza-statement-says-2024-08-16/> (accessed September 12, 2024); Tala Ramadan, "Baby paralysed in Gaza's first case of type 2 polio for 25 years, WHO says," *Reuters*, August 23, 2024, [https://www.reuters.com/world/middle-east/baby-paralysed-gazas-first-case-type-2-polio-25-years-who-says-2024-08-23/#:~:text=DUBAI%2C%20Aug%2023%20\(Reuters\),urgent%20vaccinations%20of%20every%20baby](https://www.reuters.com/world/middle-east/baby-paralysed-gazas-first-case-type-2-polio-25-years-who-says-2024-08-23/#:~:text=DUBAI%2C%20Aug%2023%20(Reuters),urgent%20vaccinations%20of%20every%20baby) (accessed September 24, 2024).

³⁷² Human Rights Watch, "Gaza: Israeli Aid Obstruction Inflaming Polio Outbreak," August 26, 2024, <https://www.hrw.org/news/2024/08/26/gaza-israeli-aid-obstruction-inflaming-polio-outbreak>; WHO, "Humanitarian pauses vital for critical polio vaccination campaign in the Gaza Strip," August 16, 2024, <https://www.who.int/news/item/16-08-2024-humanitarian-pauses-vital-for-critical-polio-vaccination-campaign-in-the-gaza-strip> (accessed September 12, 2024).

³⁷³ Tedros Adhanom Ghebreyesus (@DrTedros) post to X (formerly known as Twitter), July 19, 2024, <https://x.com/DrTedros/status/1814257615574028394> (accessed August 29, 2024).

In late August and September, 2024, the Israeli government and Hamas agreed to a three-day pause in hostilities in parts of Gaza to facilitate a public health campaign to vaccinate 640,000 children.

The damage and destruction of healthcare facilities presents challenges for treating the diseases caused by the lack of access to clean water and sanitation.³⁷⁴ In January 2024, UNICEF expressed concern that the very few functioning hospitals were unable to adequately treat disease outbreaks because of the high number of injured patients.³⁷⁵ Since then, the healthcare system in Gaza has further deteriorated.³⁷⁶

Dehydration

In November 2023, Human Rights Watch spoke to a doctor at al-Aqsa hospital in central Gaza who reported that they were already seeing a steep increase in cases of patients with severe dehydration. Since that time, according to healthcare professionals interviewed by Human Rights Watch, cases have sharply risen, and in some cases severe dehydration has directly or largely contributed to many deaths, particularly amongst infants.

In December 2023, Reuters reported that the head of the pediatric ward at Nasser hospital in Khan Younis “was overrun with children suffering extreme dehydration, causing kidney failure in some cases.”³⁷⁷ Dr. Rami Heidar al-Abadleh, the Deputy General Director of Public Health at the Gaza Ministry of Health, told Human Rights Watch on January 25, 2024, that the ministry was unable to record the number of cases coming into hospitals for dehydration.³⁷⁸ “We give them the [oral rehydration solution (ORS)] liquid and then they go. Most cases before the war would stay for daily care for 24 hours,” he said.³⁷⁹

³⁷⁴ “Gaza: Unlawful Israeli Hospital Strikes Worsen Health Crisis,” Human Rights Watch news release, November 14, 2023, <https://www.hrw.org/news/2023/11/14/gaza-unlawful-israeli-hospital-strikes-worsen-health-crisis>.

³⁷⁵ “Intensifying conflict, malnutrition and disease in the Gaza Strip creates a deadly cycle that threatens over 1.1 million children,” UNICEF, press release, January 5, 2024, <https://www.unicef.org/press-releases/intensifying-conflict-malnutrition-and-disease-gaza-strip-creates-deadly-cycle> (accessed August 29, 2024).

³⁷⁶ WHO, “oPt Emergency Situation Update Issue 41,” August 20, 2024, https://www.emro.who.int/images/stories/Sitreps/_issue_41b.pdf (accessed November 26, 2024).

³⁷⁷ Bassam Masoud and Saleh Salem, “Gaza faces ‘perfect storm’ of deadly diseases,” *Reuters*, December 14, 2023, <https://www.reuters.com/world/middle-east/gaza-faces-perfect-storm-deadly-diseases-2023-12-14/> (accessed August 29, 2024).

³⁷⁸ Human Rights Watch interview with Dr. Rami Heidar al-Abadleh, Deputy General Director of Public Health, Gaza Ministry of Health, via phone, January 25, 2024.

³⁷⁹ *Ibid.*

A humanitarian aid worker working with two clinics in Gaza said that the clinics frequently admit patients suffering dehydration.³⁸⁰ While patients would usually be treated for dehydration with oral rehydration solution (ORS), the “issue with ORS is that you need clean water,” which was often not available at the hospitals, she said.³⁸¹ In other cases, when children need antibiotics, “where you mix it [the antibiotics] with water, they're using IV fluid bags and mixing it in the bottle for these children, even though IV fluids aren't usually meant for oral consumption,” she added.³⁸²

Abeerah Muhammed, an emergency room nurse who volunteered at the European hospital in Gaza in May 2023, stated that she and her colleagues saw “lots of acute dehydration.”³⁸³ She explained that as part of the normal exams they would conduct with child patients, doctors and nurses would “pull their skin” (a skin turgor test) to see how hydrated they were, and that “a lot” of these children had skin that had low elasticity, indicating dehydration.³⁸⁴

Dr. Nick Maynard, who volunteered at al-Aqsa hospital in Gaza in December 2023 and again in April 2024, said that he noticed a significant difference in the level of malnutrition and dehydration he saw between the two trips.³⁸⁵ He said that in December, “We were beginning to see the effects of malnutrition and dehydration,” but that when he returned in April, “Everywhere I looked, there were dozens of patients who were severely malnourished and dehydrated.”³⁸⁶

In July 2023, the IPC stated that between May 1 and June 15, 643,000 people in Gaza were experiencing “emergency”-level food shortages, and 343,000 people were facing “catastrophic” shortages.³⁸⁷ According to the IPC technical manual, at emergency levels, at least 2 to 4 out of every 10,000 children under age five die per day; the daily death toll at

³⁸⁰ Human Rights Watch interview with a humanitarian aid worker, via Microsoft Teams, August 16, 2024.

³⁸¹ Ibid.

³⁸² Ibid.

³⁸³ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

³⁸⁴ Ibid.

³⁸⁵ Human Rights Watch interview with Dr. Nick Maynard, via Microsoft Teams, August 27, 2024.

³⁸⁶ Ibid.

³⁸⁷ Integrated Food Security Phase Classification (IPC), “The Gaza Strip Risk Of Famine as 495,000 People Face Catastrophic Acute Food Insecurity (IPC Phase 5),” July 10, 2024, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Gaza_Strip_Acute_Food_Insecurity_Jun_Sept2024_Special_Brief.pdf (accessed September 4, 2024).

the catastrophic phase (Phase 5) is greater.³⁸⁸

Nurse Muhammed also stated that she saw many women come into the hospital “dying of kidney failure that started with dehydration.”³⁸⁹ She said a combination of dehydration and lack of access to bathrooms had meant that many women were contracting urinary tract infections that they then did not have antibiotics for, and that subsequently they would contract a kidney infection. “We didn't have dialysis, and they died of kidney failure,” she said.³⁹⁰

Dr. Omar al-Najjar, who had been working in the emergency room of the Kuwaiti hospital in Gaza, said that about 15-25 percent of the patients who came into the emergency room during his night shifts had renal colic, abdominal pain often caused by kidney stones, which can form because of severe dehydration.³⁹¹ He said that when he asked people how much water they had been drinking, “[some] would say they didn't remember the last time they drank water.”³⁹²

He said that prior to the hostilities, in his three years of training to be a doctor, he had never seen a severe case of dehydration or malnutrition.³⁹³

Dehydration and malnutrition undermine the immune system, negatively affecting a person’s abilities to heal from acute or chronic wounds and defend against infection, including from disease-causing pathogens.³⁹⁴ These widespread conditions have likely contributed to many deaths. Dr. Jeelani, the child orthopedic surgeon who volunteered at al-Aqsa hospital, told Human Rights Watch that she noticed high infection rates among

³⁸⁸ Integrated Food Security Phase Classification (IPC), Technical Manual Version 3.1, 2021, p. 32, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/manual/IPC_Technical_Manual_3_Final.pdf (accessed November 29, 2024).

³⁸⁹ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

³⁹⁰ Ibid.

³⁹¹ Human Rights Watch interview with Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024.

³⁹² Ibid.

³⁹³ Ibid.

³⁹⁴ WHO, “Malnutrition: Emergencies and disasters,” January 20, 2020, <https://www.who.int/news-room/questions-and-answers/item/malnutrition-emergencies-and-disasters> (accessed November 27, 2024); Fátima Morales et al., “Effects of Malnutrition on the Immune System and Infection and the Role of Nutritional Strategies Regarding Improvements in Children's Health Status: A Literature Review,” *Nutrients*, vol.16, December 19, 2023, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10780435/#:~:text=Malnutrition%20influences%20the%20immune%20system,body's%20ability%20to%20combat%20pathogens> (accessed November 27, 2024).

both children and adults who had been injured, including due to lack of access to clean water and proper nutrition.³⁹⁵

“Every surgical incision I made got infected,” said Dr. Feroze Sidhwa, a trauma and general surgeon who volunteered at the European hospital in March and April 2024, describing how the poor sanitation and the absence of clean water in hospitals, combined with malnutrition, the absence of clean water, and overcrowded conditions in shelters where people were living, presented significant debilitations to healing wounds.³⁹⁶

Dr. Ghassan Abu-Sittah, a plastic surgeon who volunteered in Gaza in October and November 2023, explained to Human Rights Watch that when a patient is wounded and also dehydrated or malnourished, or wounded and simultaneously has a water-borne infectious disease, it is far more challenging for their bodies to heal wounds caused by traumatic injury, surgical procedures, or chronic conditions. “Wounds are a major source of liquid loss—more than diarrhea. Malnutrition decreases proteins in your blood, which is what retains fluid inside the blood system.”³⁹⁷

Dr. Maynard said that “the level of infections were sky-high because of the levels of malnourishment.”³⁹⁸ He told Human Rights Watch that he had patients die from their wounds because of malnutrition and dehydration, including two girls, Tala and Lama, who both died from blast injuries that wounded their bowels because their bodies were so malnourished and dehydrated that the surgical repairs he had made broke down.³⁹⁹ “They both died under my eyes... they had 4-5 liters [of fluids] a day coming out of them, and we didn't have the fluids to replace the fluid loss, we didn't have the nutrition to feed them, we did our absolute best,” he said.⁴⁰⁰

Nurse Muhammed said that she could not successfully resuscitate some children with burn wounds because they were “so severely malnourished and dehydrated.”⁴⁰¹ She explained

³⁹⁵ Human Rights Watch interview with Dr. Ana Jeelani, via phone, May 5, 2024.

³⁹⁶ Human Rights Watch interview with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024.

³⁹⁷ Human Rights Watch interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024.

³⁹⁸ Cianan Brennan, “Surgeon tells Cork solidarity rally of malnourished patients dying without pain relief in Gaza,” *Irish Examiner*, July 21, 2024, <https://www.irishexaminer.com/news/arid-41441005.html> (accessed August 29, 2024).

³⁹⁹ Human Rights Watch with Dr. Nick Maynard, via Microsoft Teams, August 27, 2024.

⁴⁰⁰ Ibid.

⁴⁰¹ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

that when people were very dehydrated, they would “die very quickly” from burn wounds.⁴⁰² “We had one child who was so severely dehydrated... you could tell because her lips were so dry and her skin was sunken in and dark,” she said.⁴⁰³ “She came in with third degree burns from an explosion and she ultimately died and we couldn't even resuscitate her because she was in such bad condition that it was just a matter of time.”⁴⁰⁴

Infants

In an October 2024 letter to the Biden administration, 99 American healthcare workers who had volunteered in Gaza stated that they “watched malnourished new mothers feed their underweight newborns infant formula made with poisonous water.”⁴⁰⁵

Taha was one of these healthcare workers. She described in the letter seeing babies die “every day.”⁴⁰⁶ “They had been born healthy. Their mothers were so malnourished that they could not breastfeed, and we lacked formula or clean water to feed them, so they starved.”⁴⁰⁷

In a report published in April 2024, Médecins Sans Frontières (MSF, Doctors Without Borders) discussed the challenges that the lack of clean water presented to women who were feeding their children formula due to difficulties breastfeeding, stating “formula milk is not easily available, nor is drinking water to mix it with or to properly clean the bottles.”⁴⁰⁸

The report also stated that the lack of clean water in Gaza as well as the low availability of formula meant that feeding babies formula was “extremely precarious.”⁴⁰⁹ One interviewee described this problem, saying that his sister had to feed her 1.5-year-old daughter with

⁴⁰² Ibid.

⁴⁰³ Ibid.

⁴⁰⁴ Ibid.

⁴⁰⁵ Gaza Healthcare Letters, “Letter to President Biden and Vice President Harris,” October 2, 2024, <https://www.gazahealthcareletters.org/usa-letter-oct-2-2024> (accessed November 29, 2024).

⁴⁰⁶ Ibid.

⁴⁰⁷ Ibid.

⁴⁰⁸ MSF, “Gaza’s Silent Killings: The destruction of the healthcare system and the struggle for survival in Rafah,” April 2024, https://msf.org.pt/wp-content/uploads/sites/4/2024/04/MSF-GazaSilentKillings-Full-Report_ENG_April-2023-1.pdf (accessed August 29, 2024).

⁴⁰⁹ Ibid.

formula mixed with water that was dirty and making the rest of the family sick. He said that the formula “wouldn’t mix” with the water.⁴¹⁰

Pregnant and Postpartum Women

Pregnant women and women who have recently given birth, including those who are breastfeeding, are particularly impacted by the unavailability and inaccessibility of clean water. At the start of January 2024, UNICEF estimated that there were about 155,000 pregnant and breastfeeding women in Gaza.⁴¹¹ According to UN Women, pregnant and breastfeeding women require more food and water than the average person.⁴¹² Pregnant and breastfeeding women are recommended to have access to an additional 7.5 liters of water per day for drinking and sanitation compared with non-pregnant and non-breastfeeding people.⁴¹³

Nurse Muhammed stated that she had many patients she treated who had “toxic shock or septic shock because they had a disease and malnutrition and dehydration.”⁴¹⁴ She said that to treat toxic shock, the first course of action is usually to “give [the patient] a massive amount of fluids to flush out the toxins,” but that this “just wasn’t possible with the resources we had.”⁴¹⁵ She also added that when they monitored the baby’s heartbeat in these cases, it would often be very slow, and that the mothers often also had low blood pressure, which she said were both indicators of dehydration.⁴¹⁶

⁴¹⁰ Human Rights Watch interview with Abdulhafith Faisal al-Khalidi, Doha, Qatar, June 25, 2024.

⁴¹¹ “Intensifying conflict, malnutrition and disease in the Gaza Strip creates a deadly cycle that threatens over 1.1 million children,” UNICEF, press release, January 5, 2024, <https://www.unicef.org/press-releases/intensifying-conflict-malnutrition-and-disease-gaza-strip-creates-deadly-cycle> (accessed August 29, 2024).

⁴¹² UN Women, “Scarcity and Fear: A Gender Analysis of the Impact of the War in Gaza on Vital Services Essential to Women’s and Girls’ Health, Safety, and Dignity - Water, Sanitation and Hygiene (WASH),” April 2024, <https://www.unwomen.org/sites/default/files/2024-04/gender-alert-gender-analysis-of-the-impact-of-the-war-in-gaza-on-vital-services-essential-to-womens-and-girls-health-safety-en.pdf> (accessed August 30, 2024) citing UNFPA, “Crisis in Palestine: Situation Report # 4”, December 11, 2023, <https://palestine.unfpa.org/en/publications/crisis-palestine-situation-report-4> (accessed August 30, 2024).

⁴¹³ Action Aid, “Pregnant women in Gaza deprived of food and water as mothers unable to feed their newborn babies,” December 21, 2023, <https://actionaid.org/news/2023/pregnant-women-gaza-deprived-food-and-water-mothers-unable-feed-their-newborn-babies#:~:text=Yet%2C%20in%20addition%20to%20the,themselves%20and%20their%20babies%20healthy> (accessed August 29, 2024); UN Women, “Scarcity and Fear: A Gender Analysis of the Impact of the War in Gaza on Vital Services Essential to Women’s and Girls’ Health, Safety, and Dignity - Water, Sanitation and Hygiene (WASH),” April 2024, <https://www.unwomen.org/sites/default/files/2024-04/gender-alert-gender-analysis-of-the-impact-of-the-war-in-gaza-on-vital-services-essential-to-womens-and-girls-health-safety-en.pdf> (accessed August 30, 2024).

⁴¹⁴ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

⁴¹⁵ Ibid.

⁴¹⁶ Ibid.

One man described how challenging it was for him to get water for his pregnant wife and four surviving children while his wife was in the hospital due to wounds from a missile attack that destroyed their home and killed one of their children.⁴¹⁷ “There was no water — we were buying water for example US\$10 for a cup,” he said.⁴¹⁸ “It was not drinkable sometimes. Sometimes it was from the bathroom and sometimes from the sea.”⁴¹⁹

Another woman described her own journeys to get water while she was in her third trimester of pregnancy. “I would have to go daily, 2-2.5 hours walking just to get water... Sometimes I walked for 1 or even 3 hours and didn’t even find any water.”⁴²⁰

Impacts on People with Chronic Health Conditions and Disabilities

The impacts of dehydration and malnutrition have been exacerbated for many people with disabilities or chronic health conditions. As an example, children with cerebral palsy are at increased risk of all infections. Dr. Jeelani said that children with cerebral palsy are at a particular risk of infections in case they do not have access to adequate sanitation and clean water to clean themselves.⁴²¹

The risk is heightened for children with cerebral palsy who also do not have access to mobility aids to facilitate their movements to areas with water for washing or toilets, as is the case with Ghazal, a 14-year-old from Gaza City who was displaced to Rafah.⁴²²

As of September 2024, Ghazal had fled Rafah and was sheltering with her family in a tent in al-Qarara, in Khan Younis. Accessing water remained a problem for her and her family. “We all now drink toxic, contaminated, and undrinkable water. [Ghazal’s] stomach pains haven’t stopped... We don’t have enough money to buy bottled water. We can’t afford it.”⁴²³

⁴¹⁷ Human Rights Watch interview with Omar (a pseudonym), via phone, November 21, 2023.

⁴¹⁸ Ibid.

⁴¹⁹ Ibid.

⁴²⁰ Human Rights Watch interview with Ridana Zukhra, Qatar, June 28, 2024.

⁴²¹ Human Rights Watch interview with Dr. Ana Jeelani, via phone, May 5, 2024.

⁴²² Ibid; Human Rights Watch text correspondence with Hala (full name withheld), via phone, January 15, 2024.

⁴²³ Human Rights Watch video interview with Hala (full name withheld), September 6, 2024.

Children with cerebral palsy also have a higher risk of contracting urinary tract infections, which is exacerbated by a lack of access to clean water and sanitation facilities.⁴²⁴

People with kidney failure, who regularly need kidney dialysis which requires a significant amount of fluid and frequent access to health facilities with functioning dialysis machines, have also faced devastating impacts from Israeli authorities' actions to deprive the population of water and Israeli forces' destruction of healthcare. According to Gaza's Health Ministry, there were about 1,100 kidney failure patients prior to the start of hostilities.⁴²⁵ Many of the hospitals that previously conducted kidney dialysis have been attacked and/or occupied by Israeli forces, or do not have adequate fuel and clean water to perform kidney dialysis to serve the many patients who require it as regularly as they require dialysis.⁴²⁶

One kidney failure patient, 20-year-old Mohammed, who was evacuated to Egypt, said that his health rapidly deteriorated during the hostilities because he was unable to get adequate dialysis and nutrition. He said that prior to the hostilities, he required three four-hour sessions of dialysis per week, but after the hostilities began, his sessions were each only two hours long in Nasser hospital. When Israeli forces occupied Nasser hospital, they forced him and 17 other patients to evacuate on foot, even though many, including Mohammed, were either unable to walk or could only walk at severe risk to their health. By the time he reached safety and found another hospital with kidney dialysis, his heart rate and oxygen levels had dropped to dangerously low levels. He added that from the start of

⁴²⁴ John Allen et al., "Multi-Organ Dysfunction in Cerebral Palsy," *Frontiers in pediatrics*, vol. 9, August 9, 2021, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8382237/> (accessed November 27, 2024); Amon Ryakitimbo, Rune Philemon, Festo Mazuguni, and Levina Msuya, "Prevalence and antimicrobial sensitivity pattern of urinary tract infection among children with cerebral palsy, Moshi, Tanzania," *Pediatric Health Med Ther*, vol. 9 (2018): 59, <https://doi.org/10.2147/PHMT.S159766> (accessed September 13, 2024); Samuel Nkachukwu Uwaezuoke and Ann Ebele Aronu, "Routine Screening and Treatment of Urinary Tract Infection May Be Justified in Children and Adolescents with Cerebral Palsy: A Systematic Review," *Iran J Pediatr*, vol. 30 (2020): e104036, <https://doi.org/10.5812/ijp.104036> (accessed September 13, 2024).

⁴²⁵ Linah Alsaafin and Ashraf Amra, "Gaza's kidney patients face dialysis crisis at jam-packed hospitals," *Al Jazeera*, October 25, 2023, <https://www.aljazeera.com/features/2023/10/25/terrifying-hope-shrinks-for-gazas-dialysis-patients-at-packed-hospitals> (accessed August 29, 2024).

⁴²⁶ "Kidney failure patients face slow death amid Israel's genocide in Gaza," *Euro-Med Human Rights Monitor*, March 14, 2024, <https://euromedmonitor.org/en/article/6222/Kidney-failure-patients-face-slow-death-amid-Israel's-genocide-in-Gaza> (accessed August 29, 2024); Human Rights Watch interview with Dr. James Smith, via Microsoft Teams, August 27, 2024; MSF, "Gaza's Silent Killings: The destruction of the healthcare system and the struggle for survival in Rafah," April 2024, https://msf.org.pt/wp-content/uploads/sites/4/2024/04/MSF-GazaSilentKillings-Full-Report_ENG_April-2023-1.pdf (accessed August 29, 2024).

hostilities, his weight had dropped 16 kilograms, so that he only weighed 31 kilograms by March 2024.⁴²⁷

In December 2023, Raisat, a 47-year-old woman with a disability and a breast cancer patient whose mother has kidney failure, said: “My mother, who uses a wheelchair, is diabetic, and has kidney failure, needs to be bathed every day. Because of the kidney disease, she suffers from extreme itching of the skin and only taking a shower brings her some relief. But, I can only give her a shower twice a week.”⁴²⁸ Itching of the skin is a common condition for many people with chronic or end-stage kidney diseases.⁴²⁹

At that time, Raisat lived in a tent with ten other displaced family members, including her 85-year-old father, 75-year-old mother, and four children, including Fadi, a 12-year-old boy with cystic fibrosis. She also described family members struggling with vomiting and diarrhea due to their lack of access to clean drinking water and healthy food.⁴³⁰

In August 2024, Raisat and her family were displaced for the fifth time and were living in a tent in Deir al-Balah, where they continued to struggle to access water:

It's very difficult for me to reach water. We have to go to a far away place to be able to bring some water in a bottle. But, it is not enough for all our needs—it's not enough for drinking, washing, and showering. Water is scarce in this area.⁴³¹

Raisat also described the difficulties she, her mother, and Fadi faced to access much-needed treatment:

My mother has not had a dialysis for three months now due to how overwhelmed the hospitals are. There are 80 thousand patients in need of kidney dialysis in Gaza, many of whom received dialysis either in Nasser or

⁴²⁷ Human Rights Watch interviews with Mohammed and Dua (last names withheld), Bir Abd hospital, Egypt, April 3, 2024.

⁴²⁸ Human Rights Watch text message correspondence with Raisat al-Diri, August 20, 2024.

⁴²⁹ “Uremic Pruritus,” Cleveland Clinic, last modified May 31, 2023, <https://my.clevelandclinic.org/health/symptoms/25049-uremic-pruritus> (accessed November 29, 2024).

⁴³⁰ Human Rights Watch interview with Raisat al-Diri, via phone, December 21 and 22, 2023.

⁴³¹ Human Rights Watch text message correspondence with Raisat al-Diri, August 20, 2024.

al-Aqsa Martyrs' hospital. However, al-Aqsa went out of service due to Israeli military's threats and evacuation orders.

From October 7 until this hour, I've not had access to my medication for breast cancer at all. Fadi, who needs treatment for cystic fibrosis, the same. And he is not doing well. Day after day, his health and psychological condition are getting worse, especially in the summer heat, living in a tent and because of lack of access to treatment and proper food.⁴³²

Both Raisat's mother and Fadi have a referral for treatment abroad due to the unavailability of treatment in Gaza.⁴³³ On September 22, while still awaiting permission to travel for medical treatment, Raisat's mother died as a result of her kidney failure.⁴³⁴

Water-borne Diseases

Cases of diarrheal and infectious diseases, often transmitted through contaminated food and water, including hepatitis A, have soared since the start of hostilities. The scale of these illnesses and infections is unknown, given the decimation of Gaza's healthcare and health surveillance systems.

According to several doctors and nurses, the health risks posed by these water-borne diseases are compounded by the widespread dehydration and malnutrition that many people across Gaza are experiencing from the lack of access to adequate food and clean water, and has in some cases contributed to deaths from these water-borne diseases.⁴³⁵

In November 2023, a doctor at al-Aqsa Martyrs' hospital told Human Rights Watch, "The number of gastroenteritis cases are uncountable."⁴³⁶ Earlier that month, the WHO had

⁴³² Human Rights Watch text message correspondence with Raisat al-Diri, August 20, 2024.

⁴³³ Palestinian National Authority, Ministry of Health, Transfer Number 534, Fadi, (Human Rights Watch withheld the full name of the patient), April 3, 2024; Palestinian National Authority, Ministry of Health, Transfer Number 534, Sarah Ahmed Salama al-Deiry, April 19, 2024. Both documents are on file with Human Rights Watch.

⁴³⁴ Human Rights Watch text message correspondence with Raisat al-Diri, September 25, 2024.

⁴³⁵ Human Rights Watch interviews with Asma Taha, via Microsoft Teams, August 9, 2024; Abeerah Muhammed, via Microsoft Teams, August 14, 2024; Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024; Dr. Tanya Haj-Hassan, via Microsoft Teams, August 28, 2024; Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024.

⁴³⁶ Human Rights Watch, "Israeli Authorities' Cutting of Water Leading to Public Health Crisis in Gaza," November 16, 2023, <https://www.hrw.org/news/2023/11/16/israeli-authorities-cutting-water-leading-public-health-crisis-gaza>.

reported that consumption of contaminated water has significantly increased the risk of bacterial infections like diarrhea, with over half of reported cases in children under five.⁴³⁷

“The water is polluted and people are getting sick,” a journalist in southern Gaza told Human Rights Watch in December 2023. “My daughter is sick from the polluted water. I was running holding her to the hospital... she had diarrhea and fever.”⁴³⁸

UNICEF reported in January 2024 that there were 71,000 cases of diarrhea in children under five years of age per week, compared with an average of 2,000 cases per week prior to the hostilities.⁴³⁹ By October 2024, the Health Cluster, the health equivalent of the WASH Cluster, reported that they had recorded 669,000 cases of acute watery diarrhea since the start of the hostilities.⁴⁴⁰ According to the WHO, globally, diarrhea is the “third leading cause of death in children under 5 years old.”⁴⁴¹

In their letter to the Biden administration, the 99 American doctors and nurses who volunteered in Gaza after October 7, 2023, stated that “[v]irtually every child under the age of five whom we encountered, both inside and outside of the hospital, had both a cough and watery diarrhea.”⁴⁴² They also said that they “found cases of jaundice (indicating hepatitis A infection under such conditions) in virtually every room of the hospitals in which we served, and in many of our healthcare colleagues in Gaza.”⁴⁴³

⁴³⁷ WHO “Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted,” November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 29, 2024).

⁴³⁸ Human Rights Watch interview with Mohammad (full name withheld), via phone, December 1, 2024.

⁴³⁹ “Intensifying conflict, malnutrition and disease in the Gaza Strip creates a deadly cycle that threatens over 1.1 million children,” UNICEF, press release, January 5, 2024, <https://www.unicef.org/press-releases/intensifying-conflict-malnutrition-and-disease-gaza-strip-creates-deadly-cycle> (accessed August 29, 2024).

⁴⁴⁰ WHO, Health Cluster, “Occupied Palestinian Territory: A Year of Crisis - Health Cluster Overview,” October 17, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/occupied-palestinian-territory-year-crisis-health-cluster-overview> (accessed November 27, 2024).

⁴⁴¹ WHO, “Diarrhoeal disease,” March 7, 2024 <https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease#:~:text=Diarrhoeal%20disease%20is%20the%20second,and%20adequate%20sanitation%20and%20hygiene.> (accessed August 29, 2024).

⁴⁴² Gaza Healthcare Letters, “Letter to President Biden and Vice President Harris,” October 2, 2024, <https://www.gazahealthcareletters.org/usa-letter-oct-2-2024> (accessed November 29, 2024).

⁴⁴³ Ibid.

One woman, Shayma, described being displaced to a school for 120 days, where there was no clean water.⁴⁴⁴ “We would buy water if we found it, otherwise we would drink the tank water, but it wasn’t clean. So all of us in the school were having diarrhea and stomach issues,” she said.⁴⁴⁵ She added that many people staying in the school contracted hepatitis A, including her niece.⁴⁴⁶

Other diseases have also spread due to the lack of clean water and adequate sanitation, including in overcrowded shelters for people displaced by the conflict, including acute respiratory infections, the spread of which is exacerbated by the lack of access to adequate hygiene and shelter in Gaza.⁴⁴⁷ As of October 17, 2024, the WHO had recorded over 1 million cases of acute respiratory infections.⁴⁴⁸

On January 19, 2024, the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) reported that Gaza’s Health Ministry had announced the spread of hepatitis A across camps hosting displaced people “due to overcrowding and lack of clean water and proper sanitation.” Dr. Al-Abadleh told Human Rights Watch in late January 2024 that there were a total of 8,000 recorded cases of hepatitis A, but that these numbers did not include people living in northern Gaza.⁴⁴⁹ “People in the north, we know nothing about them,” he said.⁴⁵⁰ In March 2023, the WHO reported there had been 15,601 recorded cases of jaundice, which is a sign of hepatitis A, since mid-October, and which were “presumed hepatitis A after samples tested positive.”⁴⁵¹ By October 17, 2024, the WHO had recorded over 132,000 cases of acute jaundice.⁴⁵²

⁴⁴⁴ Human Rights Watch interview with Shaima Suhail Abu Jazar, Qatar, June 28, 2024.

⁴⁴⁵ Ibid.

⁴⁴⁶ Ibid.

⁴⁴⁷ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁴⁸ WHO, “Occupied Palestinian Territory: A Year of Crisis - Health Cluster Overview,” October 17, 2024, https://reliefweb.int/report/occupied-palestinian-territory/occupied-palestinian-territory-year-crisis-health-cluster-overview?_gl=1*vmkl5g*_ga*MTU4OTY3MTEyMC4xNzI5MTkoNzEy*_ga_E6oZNX2F68*MTczMjY0OTE2Mi4yMC4xLjE3MzI2NDkxOTluMzAuMC4w (accessed November 29, 2024).

⁴⁴⁹ Human Rights Watch interview with Dr. Rami Heidar al-Abadleh, Deputy General Director of Public Health, Gaza Ministry of Health, via phone, January 25, 2024.

⁴⁵⁰ Ibid.

⁴⁵¹ WHO, “oPt Emergency Situation Update, Issue 25,” March 21, https://www.emro.who.int/images/stories/Sitrep_-_issue_25.pdf?ua=1 (accessed December 3, 2024).

⁴⁵² WHO, “Occupied Palestinian Territory: A Year of Crisis - Health Cluster Overview,” October 17, 2024, https://reliefweb.int/report/occupied-palestinian-territory/occupied-palestinian-territory-year-crisis-health-cluster-overview?_gl=1*vmkl5g*_ga*MTU4OTY3MTEyMC4xNzI5MTkoNzEy*_ga_E6oZNX2F68*MTczMjY0OTE2Mi4yMC4xLjE3MzI2NDkxOTluMzAuMC4w (accessed November 29, 2024).

The real number of cases of hepatitis A is likely much higher than what has been reported, according to a public health physician at an international organization. He told Human Rights Watch that hepatitis A is usually spread through sexual activity or through consuming contaminated shellfish, and that it was unusual for it to spread as a result of poor hygiene.⁴⁵³ “It really shows you how dire the sanitation is that something so simple [people not being able to wash their hands] is what is causing this,” he wrote in a text message, adding, “You don’t get these outbreaks in places with good water and sanitation.”⁴⁵⁴

Dr. Hussam Abu Safiyeh, the director of Kamal Adwan hospital, told Human Rights Watch that he had seen many children die from hepatitis A. He told Human Rights Watch that under “normal circumstances,” about 1 percent of children who contract hepatitis A die from it, but that due to the “lack of capabilities to diagnose, treat, and monitor these children,” about 5-10 percent of hepatitis A cases he received died.⁴⁵⁵

Nurse Muhammed also said that she had seen many young people die from hepatitis A. “It’s a very treatable disease... [that] just requires IV fluids and nutrition. We saw people come into the emergency room and die a few days later from fecal matter contaminating their water source.”⁴⁵⁶

Dehydration and malnutrition weaken people’s immune systems, and therefore make them susceptible to disease, which has contributed to deaths. Dr. Abu-Sittah told Human Rights Watch, “People are dying of diseases they shouldn’t be dying of because they’re malnourished and dehydrated.”⁴⁵⁷

A public health physician at an international organization stated it was very likely that the outbreaks of diseases that they are detecting are “pointing to high risks of catastrophic outbreaks of diseases like cholera,” but that these diseases needed specific tests that are

⁴⁵³ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁵⁴ Ibid.

⁴⁵⁵ Human Rights Watch interview with Dr. Hussam Abu Safiyeh, via phone, August 13, 2024.

⁴⁵⁶ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

⁴⁵⁷ Human Rights Watch interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024.

not available in Gaza.⁴⁵⁸ “What we can say is what's happening on the ground isn't reflected in the numbers. There's a hidden crisis there.”⁴⁵⁹

Dr. Abu Safiyeh also told Human Rights Watch, “We have many cases suspected to be cholera, but unfortunately, we don’t have enough tests to confirm this disease to be honest.”⁴⁶⁰

Skin Diseases, Infections from Lack of Water for Hygiene

The lack of access to water for sanitation purposes, as well as the breakdown of sanitation infrastructure and the resulting contamination of the environment, has been a major cause of disease outbreaks.⁴⁶¹ While inadequate sanitation contributes to many of the diseases discussed above, including diarrheal disease and hepatitis A, inadequate access to water for hygiene purposes, the destruction of sanitation infrastructure, and the proliferation of sewage in communal areas have led to the outbreaks of skin diseases and parasitic skin infections, including rashes, scabies, and lice. The destruction of homes and displacement has led to people living in extremely overcrowded and unsanitary conditions, further exacerbating the spread of these and other diseases.⁴⁶²

In October 2024, the WHO reported that over 225,000 skin diseases had been recorded since October 15, 2023 in Gaza.⁴⁶³ The spread of these diseases have been caused by the

⁴⁵⁸ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁵⁹ Ibid.

⁴⁶⁰ Human Rights Watch interview with Dr. Hussam Abu Safiyeh, via phone, August 13, 2024.

⁴⁶¹ Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted,” WHO news release, November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 29, 2024).

⁴⁶² Tedros Adhanom Ghebreyesus (@DrTedros) post to X (formerly known as Twitter), November 29, 2024, <https://twitter.com/DrTedros/status/1729748696890245146> (accessed August 29, 2024); “Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted,” WHO news release, November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 29, 2024).

⁴⁶³ WHO, “Occupied Palestinian Territory: A Year of Crisis - Health Cluster Overview,” October 17, 2024, https://reliefweb.int/report/occupied-palestinian-territory/occupied-palestinian-territory-year-crisis-health-cluster-overview?_gl=1*vmkl5g*_ga*MTU4OTY3MTEyMC4xNzI5MTkoNzEy*_ga_E6oZNX2F68*MTczMjY0OTE2Mi4yMC4xLjE3MzI2NDkxOTluMzAuMC4w (accessed November 29, 2024).

breakdown of water and sanitation systems and the overcrowded conditions in which people have been forced to live.⁴⁶⁴

The doctor working with the Gaza Health Ministry told Human Rights Watch in January 2024 that skin diseases were spreading across the strip due to the lack of water and sanitation.⁴⁶⁵ “People I met in the clinic have said water hasn’t touched their bodies for two weeks, they haven’t showered... People in shelters, tents, schools, there’s no possibility of even finding water to shower.”⁴⁶⁶

Dr. al-Najjar said that when people would come with scabies to the hospital, they would recommend that the patients “do many things that require water,” including showering and washing their clothes. He said the patients would ask him, “where can we get this water, and how can we even ensure that it’s clean?” He said he didn’t have an answer to this, as “all the water in Gaza right now is coming from tanks which are in areas of sewage, so they’re not clean to begin with.”⁴⁶⁷

In December 2023, a 53-year-old man who was displaced to a school in Rafah told Human Rights Watch, “I’ve been here since more than a month and maybe I showered three times only!... It’s not even a shower, you put water on yourself for few seconds and you go out!”⁴⁶⁸

The situation since December has drastically deteriorated as most people across Gaza have been displaced several more times, and many people have been forced into al-Mawasi area, where there is no infrastructure for water and sanitation.

⁴⁶⁴ WHO, “Statement by WHO Regional Director Dr Hanan Balkhy on visit to the occupied Palestinian territory,” July 11, 2024, <https://www.emro.who.int/opt/news/statement-by-who-regional-director-dr-hanan-balkhy-on-visit-to-the-occupied-palestinian-territory.html> (accessed August 29, 2024).

⁴⁶⁵ Human Rights Watch interview with Dr. Rami Heidar al-Abadleh, Deputy General Director of Public Health, Gaza Ministry of Health, via phone, January 25, 2024; see also, MSF, “Lack of clean water brings disease and suffering in Gaza,” February 8, 2024, <https://www.msf.org/gaza-lack-clean-water-brings-disease-and-suffering> (accessed August 29, 2024).

⁴⁶⁶ Human Rights Watch interview with Dr. Rami Heidar al-Abadleh, Deputy General Director of Public Health, Gaza Ministry of Health, via phone, January 25, 2024.

⁴⁶⁷ Human Rights Watch interview with Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024. Several other doctors also spoke about seeing water tanks in areas surrounded by sewage.

⁴⁶⁸ Human Rights Watch interview with Tarek (a pseudonym), via phone, December 20, 2023.

In January 2024, according to Abdul Samad, a WASH technical advisor at Oxfam, there were on average over 500 people per toilet and 3,000 people per shower in southern and middle Gaza.⁴⁶⁹

On February 8, 2024, OCHA reported that a Norwegian Refugee Council assessment of nine shelters for displaced people in Rafah found that “people had no drinking water, showers, or personal hygiene items,” and that every shelter had reported cases of “hepatitis A, gastroenteritis, diarrhea, smallpox, lice, [and] influenza.”⁴⁷⁰

In August 2024, another doctor working in Gaza, Dr. Abed al-Rahman Basem, said that he had asked many people living in camps when the last time was that they had taken a shower, and they often could barely remember the last time.⁴⁷¹

Dr. al-Najjar said that starting in May, he began to see many cases of skin diseases, including scabies and lice due to the lack of clean water, soap, and shampoo.⁴⁷² He said that a 10-year-old girl had come to the hospital with ticks and lice in her head and hair, and that he provided the mother with an anti-lice shampoo—something he noted no longer can be found in Gaza—to treat it.⁴⁷³ “I made sure to tell the mother to leave it in for 10 minutes and then wash it out... [but] she left [the shampoo in her hair] overnight because she couldn't find water to wash it out with. She ended up with chemical burns on her head,” he said.⁴⁷⁴

“You don't have clean water. You don't have sanitation facilities. The environment you live in is highly unsanitary. You're going to have WASH-related diseases,” said Abdul Samad.⁴⁷⁵

⁴⁶⁹ Human Rights Watch interview with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024.

⁴⁷⁰ OCHA, “Hostilities in the Gaza Strip and Israel | Flash Update #114,” February 8, 2024, <https://www.unocha.org/publications/report/occupied-palestinian-territory/hostilities-gaza-strip-and-israel-flash-update-114-enarhe>, (accessed August 29, 2024).

⁴⁷¹ Human Rights Watch interview with Dr. Abed al-Rahman Basem, via Microsoft Teams, August 22, 2024.

⁴⁷² Human Rights Watch interview with Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024.

⁴⁷³ Ibid.

⁴⁷⁴ Ibid.

⁴⁷⁵ Human Rights Watch interview with Lama Abdul Samad, Oxfam International, via Microsoft Teams, January 11, 2024.

Access to water and to safe sanitation facilities is essential for women and girls managing their menstrual hygiene. When those needs are unmet it can lead to serious infections, including hepatitis B and thrush.⁴⁷⁶

According to the United Nations Population Fund (UNFPA) and UN Women, there are 690,000 menstruating women and girls in Gaza, “all of whom are facing limited access to menstrual hygiene products in addition to inadequate WASH facilities.”⁴⁷⁷ UN Women reported that overcrowded shelters with inadequate WASH facilities “exposes [menstruating women and girls] to reproductive and urinary tract infections as a result of being unable to adequately wash or keep hygiene products clean.” They added that “Daily trips in search of a bathroom and toilet poses protection risks, as women look for a minimum of water, privacy and dignity.”⁴⁷⁸

MSF also described some of the challenges that pregnant and breastfeeding women in Gaza are facing in maintaining personal hygiene without access to adequate water or sanitation.⁴⁷⁹ “Dealing with post-partum bleeding, which can last for many weeks after birth, is a further difficulty for women living in displacement sites, where water is scarce and maintaining personal hygiene is a challenge,” the organization said in a report in April 2024.⁴⁸⁰

Access to sanitation is also particularly hard for children and adults with disabilities, including due to lack of accessible sanitation facilities and lack of access to assistive devices. Ghazal, who has cerebral palsy and who lost all her assistive devices in an attack

⁴⁷⁶ World Bank Group, “Menstrual Health and Hygiene,” May 12, 2022, <https://www.worldbank.org/en/topic/water/brief/menstrual-health-and-hygiene> (accessed September 12, 2024).

⁴⁷⁷ UNFPA, “UNFPA Palestine Situation Report #5 - 24 January 2024,” February 2024, <https://www.unfpa.org/resources/unfpa-palestine-situation-report-5-24-january-2024> (accessed September 13, 2024); UN Women, “Scarcity and Fear: A Gender Analysis of the Impact of the War in Gaza on Vital Services Essential to Women’s and Girls’ Health, Safety, and Dignity - Water, Sanitation and Hygiene (WASH),” April 2024, <https://www.unwomen.org/sites/default/files/2024-04/gender-alert-gender-analysis-of-the-impact-of-the-war-in-gaza-on-vital-services-essential-to-womens-and-girls-health-safety-en.pdf> (accessed September 13, 2024).

⁴⁷⁸ UN Women, “Scarcity and Fear: A Gender Analysis of the Impact of the War in Gaza on Vital Services Essential to Women’s and Girls’ Health, Safety, and Dignity - Water, Sanitation and Hygiene (WASH),” April 2024, <https://www.unwomen.org/sites/default/files/2024-04/gender-alert-gender-analysis-of-the-impact-of-the-war-in-gaza-on-vital-services-essential-to-womens-and-girls-health-safety-en.pdf> (accessed September 13, 2024).

⁴⁷⁹ MSF, “Gaza’s Silent Killings: The destruction of the healthcare system and the struggle for survival in Rafah,” April 2024, https://msf.org.pt/wp-content/uploads/sites/4/2024/04/MSF-GazaSilentKillings-Full-Report_ENG_April-2023-1.pdf (accessed August 29, 2024).

⁴⁸⁰ Ibid.

on her home, can only use the toilet or shower in the makeshift camp where they are sheltering if her mother or sister are present to help her.⁴⁸¹

“You can just forget about taking a shower. You don’t have enough water to wash your face or drink and then add to it water for toilet use. And at the same time, it’s not like one can escape from the need of going to the toilet,” Jamal al-Rozzi, father of a 27-year-old man with cerebral palsy, said. “This is compounded for people with disabilities who are least able to access the toilet.”⁴⁸²

Water and Sanitation in Healthcare Settings

The few remaining healthcare facilities operating in Gaza have struggled to access clean water and maintain basic sanitation measures due to the Israeli authorities’ cutting off of and restrictions on necessary health resources, including water, soap, chlorine tablets, and water filtration systems. Healthcare facilities cannot effectively operate without clean water, presenting significant challenges to conducting surgeries, providing treatment for disease and infections, and treating wounds for the thousands of wounded individuals in the strip.⁴⁸³

A public health physician at an international organization told Human Rights Watch that the lack of clean water and sanitation in healthcare settings presented significant risk of death from infections to wounds and an inability to perform surgeries with adequate sanitation.⁴⁸⁴ “The fact that water and sanitation are so badly affected in health facilities means that you also have a large amount of indirect mortality from trauma because of infections of wounds, which again is not being measured,” he said.⁴⁸⁵

⁴⁸¹ Human Rights Watch correspondence with Ghazal (full name withheld), via phone, January 15, 2024.

⁴⁸² Human Rights Watch interview with Jamal al-Rozzi, via phone, October 18, 2023.

⁴⁸³ Kayum Ahmed, “Israeli Authorities’ Cutting of Water Leading to Public Health Crisis in Gaza,” Human Rights Watch dispatch, November 16, 2023, <https://www.hrw.org/news/2023/11/16/israeli-authorities-cutting-water-leading-public-health-crisis-gaza>; Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁸⁴ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁸⁵ Ibid.

He and other healthcare professionals spoke of patients with maggots in their wounds due to the lack of sanitation and inadequate access to hygiene.⁴⁸⁶ “This would never happen with proper sanitation and sterilization,” said the public health physician.⁴⁸⁷

“They don't have clean water in the hospitals,” said Dr. Abu-Sittah. “A pediatric surgeon in al-Ahli hospital said they only operate when they have fuel or water. The water comes whenever [the] WHO can get a truck.”⁴⁸⁸

“There wasn't even clean drinking water available to the patients in the hospital,” said Dr. Sidhwa.⁴⁸⁹ Nurse Abeerah Muhammed said that at the European hospital in Rafah, “the filtered water coming into the hospital was all contaminated.” She said that she and the other healthcare workers were using tablets and other means to clean water, but they all still regularly became sick from the water.⁴⁹⁰

The public health physician also told Human Rights Watch, “[h]ealthcare facilities themselves are incubators for disease because people with disease go there, so, unless you have a good system for sanitation, you are putting people at great risk of contracting diseases.”⁴⁹¹ The WHO has reported that “damaged water and sanitation systems, and dwindling cleaning supplies have made it almost impossible to maintain basic infection prevention and control measures” in health facilities.⁴⁹²

A humanitarian aid worker told Human Rights Watch that due to the lack of water and cleaning supplies in medical clinics, “everything is dirty.”⁴⁹³ “We don't have water to wash the sheets, we don't have water to clean the hospitals, we don't have cleaning materials,”

⁴⁸⁶ Human Rights Watch interviews with Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024, Abeerah Muhammed, via Microsoft Teams, August 14, 2024, and text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁸⁷ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁸⁸ Human Rights Watch interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024.

⁴⁸⁹ Human Rights Watch interview with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024.

⁴⁹⁰ Human Rights Watch interview with Abeerah Muhammed, via Microsoft Teams, August 14, 2024.

⁴⁹¹ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

⁴⁹² WHO, “Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted,” November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed August 29, 2024).

⁴⁹³ Human Rights Watch interview with a humanitarian aid worker (name withheld), via Microsoft Teams, August 16, 2024.

she said.⁴⁹⁴ “[There are] three kids in a bed, already very dirty, [and the kids are] already immunocompromised because they have an infection or something else.”⁴⁹⁵

Dr. Tanya Haj-Hassan, a pediatric intensive care doctor who volunteered in Gaza, said:

They couldn't keep up with laundry in the hospital, people were sleeping on anything... If patients were lucky they were on a bed, most of them wouldn't have had sheets, those who weren't were on those were just on blankets, they were oozing from their wounds, onto the beds.⁴⁹⁶

As of August 2024, many people and hospitals had not had access to soap for several months.⁴⁹⁷ Mark Perlmutter, a doctor who volunteered in Gaza in March 2024, stated that “We had no soap at [the] European hospital and [the] European hospital when we were there was the best resourced hospital in the entire strip... other hospitals were far worse off.”⁴⁹⁸

Unreported Deaths and Cases of Disease

While Gaza’s Ministry of Health has continued to collect information about those who have been directly killed in the hostilities, the decimation of the healthcare system has made it impossible to capture the full number of people who have died, either directly or indirectly, as a result of the hostilities.⁴⁹⁹ Based on Human Rights Watch’s research, it is evident that the number of deaths is likely significantly higher than what has been reported by Gaza’s Ministry of Health, and that deaths that have resulted from disease, malnutrition, dehydration, and other complications resulting from a lack of clean water and sanitation have largely gone unreported as they are not included in the Health Ministry’s official

⁴⁹⁴ Ibid.

⁴⁹⁵ Ibid.

⁴⁹⁶ Human Rights Watch Interview with Dr. Tanya Haj-Hassan, via Microsoft Teams, August 28, 2024.

⁴⁹⁷ “Gaza / Hygiene Supplies Shortage,” video report, *UN News*, July 6, 2024, <https://media.un.org/unifeed/en/asset/d323/d3232461> (accessed August 29, 2024); Human Rights Watch interview with a humanitarian aid worker, via Microsoft Teams, August 16, 2024; Human Rights Watch interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024. Dr. Abu-Sittah also told Human Rights Watch that there is “no soap,” in hospitals, and that a bar of soap in August costs US\$10,

⁴⁹⁸ Bianna Golodryga, “‘Just horrific’: Two doctors recount what they witnessed in Gaza,” video report, *CNN*, July 31, 2024, <https://edition.cnn.com/2024/07/31/tv/video/amanpour-gaza-doctors-israel-feroze-sidhwa-mark-perlmutter> (accessed August 29, 2024).

⁴⁹⁹ Rasha Khatib, Martin McKee, Salim Yusuf, “Counting the dead in Gaza: difficult but essential,” *The Lancet*, July 5, 2024, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01169-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01169-3/fulltext) (accessed November 27, 2024).

death toll.⁵⁰⁰ In recent conflicts, such indirect deaths have ranged from three to 15 times the number of direct deaths.⁵⁰¹

Additionally, neither the thousands of people who remain under the rubble, currently estimated to be over 10,000 people, nor those whose bodies are not brought to hospitals, are included in Gaza's Ministry of Health official death toll.⁵⁰²

According to the Emergency Health Sector reports, regularly published by Gaza's Ministry of Health on their official Telegram channel, the total number of deaths recorded by the ministry include those "directly killed by the [Israeli] occupation's attacks, and do not include natural deaths or those banned from travelling," meaning the deaths resulting from Israeli authorities' restrictions, and sometimes bars, on Palestinians exiting Gaza. Dr. Midhat Abbas, an official spokesperson for Gaza's Ministry of Health, explained to Human Rights Watch that the deaths recorded by the ministry are only of those whose bodies arrive at governmental, private, society, or field hospitals, as a result of direct Israeli attacks.⁵⁰³ Dr. Midhat added that indirect deaths, "such as those who died due to lack of services," are not registered, stating that "we expect the real number of victims from the aggression against Gaza will significantly exceed what is in the Ministry [of Health] reports."⁵⁰⁴

Mr. Zaher al-Wehaidy, the Gaza Ministry of Health Information System director, provided Human Rights Watch with a document from the ministry explaining that:

⁵⁰⁰ Human Rights Watch interviews with Midhat Abbas, Gaza Ministry of Health spokesperson, via phone, August 21, 2024, Zaher al-Wehaidy (Gaza Ministry of Health Information System Director), August 27, Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024 and Asma Taha, via Microsoft Teams, August 9, 2024; Dr. Omar al-Najjar, via Microsoft Teams; August 22, 2024; Dr. James Smith, via Microsoft Teams, August 27, 2024; Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024; Dr. Tanya Haj-Hassan, via Microsoft Teams, August 28, 2024.

⁵⁰¹ Rasha Khatib, Martin McKee, Salim Yusuf, "Counting the dead in Gaza: difficult but essential," *The Lancet*, July 5, 2024, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01169-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01169-3/fulltext) (accessed November 27, 2024).

⁵⁰² "10,000 people feared buried under the rubble in Gaza," *UN News*, May 2, 2024, <https://news.un.org/en/story/2024/05/1149256> (accessed November 30, 2024). The estimate of 10,000 missing in rubble is from the Palestinian Civil Defense (PCD) and Government Media Office (GMO) via OCHA, "Reported impact snapshot | Gaza Strip," November 12, 2024, <https://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-12-november-2024> (accessed November 13, 2024); Human Rights Watch interviews with Midhat Abbas, Gaza Ministry of Health spokesperson, via phone, August 21, 2024 and Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024.

⁵⁰³ Human Rights Watch interview with Midhat Abbas, Gaza Ministry of Health spokesperson, via phone, August 21, 2024.

⁵⁰⁴ Ibid.

Due to the Israeli occupation army's attack on al-Shifa Medical Complex on November 10, including the destruction of the main data center, which is the central system for all hospitals and relied upon to monitor all deaths arriving to emergency departments, as well as the attack on al-Rantisi Complex, including the destruction of the alternative data center, the health systems completely collapsed, and connection to the database and civil registry was cut off.⁵⁰⁵

The document explained that hospitals started relying on “paper registration.”⁵⁰⁶ As more and more hospitals have been besieged by Israeli forces or destroyed, tracking deaths has grown more challenging because the Health Ministry relies on hospitals and other medical centers to provide data about those who have died.⁵⁰⁷

Even in Gaza's remaining medical facilities, many deaths have not been recorded due to the strain on resources. Asma Taha, the pediatric nurse practitioner who volunteered in Gaza in May 2024, described how many of the deaths at the clinic she was working in went unrecorded due to how overstretched doctors were treating patients.⁵⁰⁸ She added that in many cases in her two weeks of volunteering, paper needed to record deaths on was unavailable.⁵⁰⁹

Dr. Abu-Sittah also said that he believed the vast majority of people who did not die in hospitals were not being registered or reported. He said that he knew of many people, including his wife's family, who had buried their deceased family members without first bringing their bodies to be registered due to the risks of Israeli attacks if they had tried to make a journey to a hospital.⁵¹⁰

⁵⁰⁵ Document received from Zaher al-Wehaidy (Gaza Ministry of Health Information System Director), August 27, 2024, on file with Human Rights Watch

⁵⁰⁶ Ibid.

⁵⁰⁷ Document received from Zaher al-Wehaidy (Gaza Ministry of Health Information System Director), August 27, 2024, on file with Human Rights Watch; WHO, “Six months of war leave al-Shifa hospital in ruins, WHO mission reports,” April 6, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/six-months-war-leave-al-shifa-hospital-ruins-who-mission-reports-enar> (accessed September 13, 2024).

⁵⁰⁸ Human Rights Watch interview with Asma Taha, via Microsoft Teams, August 9, 2024.

⁵⁰⁹ Ibid.

⁵¹⁰ Human Rights Watch interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024.

National Public Radio (NPR), citing discussions with doctors and Palestinian health ministry officials, stated that “the death count published by the health ministry also largely excludes people who have died from a lack of adequate treatment, disease and other impacts from the war, like hunger.”⁵¹¹ This matches information Human Rights Watch has gathered from doctors and nurses who said that they did not believe that patients they had seen die of diseases, malnutrition, and dehydration were being included in the overall death toll from the hostilities.

Based on Human Rights Watch's interviews with multiple humanitarian workers, doctors, nurses, epidemiologists, and health ministry officials, it is likely that the number of cases of disease and indirect deaths caused by the hostilities that are being reported represent a significant undercount. Several healthcare professionals and epidemiologists have discussed an inability to adequately track known or suspected cases of diseases, including due to restrictions on bringing in testing equipment, the breakdown of the healthcare system, and widespread displacement.⁵¹²

A public health physician at an international organization told Human Rights Watch in January 2024, “The laboratories are gone. The supplies for the laboratory and for testing aren’t there. And the whole [health] system has collapsed.”⁵¹³

Epidemiologists at Johns Hopkins University and the London School of Hygiene and Tropical Medicine conducted research which projected deaths over a six-month period under three possible scenarios. They concluded that:

The breakdown of water and sanitation measures combined with overcrowding in inadequate shelters and insufficient food intake causing

⁵¹¹ Aya Batrawy, “Gaza's death toll now exceeds 30,000. Here's why it's an incomplete count,” *National Public Radio (NPR)*, February 29, 2024, <https://www.npr.org/2024/02/29/1234159514/gaza-death-toll-30000-palestinians-israel-hamas-war> (accessed August 30, 2024).

⁵¹² Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024; Human Rights Watch interviews with Rasha Khatib, via Microsoft Teams, August 1, 2024; Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024; Bram Wispelwey, via Microsoft Teams, August 22, 2024; and Zeina Jamaluddine, via Microsoft Teams, September 2, 2024.

⁵¹³ Human Rights Watch text message correspondence with a public health physician at an international organization (name withheld), July 23, 2024.

acute malnutrition combines into a projected high risk of excess deaths from a variety of infectious diseases.⁵¹⁴

The epidemiologists found that if hostilities continued as they were from February 2024, there would be over 58,000 “excess” deaths caused by the conflict over a six-month period.⁵¹⁵ As of August 6, 2024, the end of the projection period, it is unclear whether these 58,000 excess deaths had occurred. However, statements from healthcare workers indicate that there have been many excess deaths attributable to malnutrition, dehydration, and diseases stemming from obstruction of water to the population of Gaza that are not being tracked.

In a separate study, two epidemiologists and a professor of public health, using a “conservative estimate” of four indirect deaths per direct death, based on a study of indirect deaths caused by conflicts by the Geneva Declaration Secretariat, estimated that “186,000 or even more deaths” could stem from the current hostilities in Gaza as of June 19, 2024, including due to causes such as reproductive, communicable, and non-communicable diseases.⁵¹⁶ The epidemiologists stated that:

The total death toll is expected to be large given the intensity of this conflict; destroyed health-care infrastructure; severe shortages of food, water, and shelter; the population's inability to flee to safe places; and the loss of funding to UNRWA, one of the very few humanitarian organisations still active in the Gaza Strip.⁵¹⁷

In an appendix to an October 2, 2024, letter to the Biden Administration signed by 99 American healthcare professionals, the authors estimated that as of September 30, “it is

⁵¹⁴ Zeina Jamaluddine et al., “Crisis in Gaza: Scenario-based health impact projections. Report One: 7 February to 6 August 2024,” London School of Hygiene and Tropical Medicine and Johns Hopkins University, February 19, 2024, https://gaza-projections.org/gaza_projections_report.pdf (accessed August 30, 2024).

⁵¹⁵ Ibid.

⁵¹⁶ Rasha Khatib, Martin McKee, Salim Yusuf, “Counting the dead in Gaza: difficult but essential,” *The Lancet*, July 5, 2024, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01169-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01169-3/fulltext) (accessed August 30, 2024).

⁵¹⁷ Ibid.

likely that 62,413 people have died of starvation and its complications in Gaza from October 7, 2023.”⁵¹⁸

The appendix is based on data from the Integrated Food Security Phase Classification (IPC), which in its technical manual states that in the catastrophe phase of food insecurity, people are expected to die from starvation-related causes at a rate of at least two people per day for every 10,000 people, while in the emergency phase of food insecurity, people are expected to die from starvation-related causes at a rate of 1-2 per day for every 10,000 people.⁵¹⁹

Though the IPC’s Famine Review Committee wrote in June that, in contrast to the IPC’s prior predictions, famine had not yet occurred in Gaza, they found the IPC’s prior classifications of people in the emergency and catastrophe phases of food insecurity in Gaza to be “plausible.”⁵²⁰

The healthcare professionals also stated in the aforementioned letter’s appendix that infectious diseases could result in “tens of thousands” of excess deaths in addition to the deaths from malnutrition, in part due to “the destruction wrought on Gaza’s water, sanitation, and hygiene (WASH) infrastructure and the incredible overcrowding caused by the forced displacement of the overwhelming majority of the population.”⁵²¹

The estimates do not indicate how many deaths would be caused specifically by the destruction and damage to WASH facilities and by water deprivation. Healthcare professionals, epidemiologists, and other health experts explained that it is challenging to

⁵¹⁸ “Appendix to letter of October 2, 2024 re: American physicians observations from the Gaza Strip since October 7, 2023,” October 2, 2024, <https://static1.squarespace.com/static/66e083452b3cbf4bbd719aa2/t/66f5f8afa82cdd4e0focd607/1727396015767/Appendix+%281%29.pdf> (accessed November 27, 2024).

⁵¹⁹ Ibid; Integrated Food Security Phase Classification (IPC), Technical Manual Version 3.1, 2021, p. 32, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/manual/IPC_Technical_Manual_3_Final.pdf (accessed November 29, 2024).

⁵²⁰ Integrated Food Security Phase Classification (IPC), “Famine Review Committee : Gaza Strip, June 2024, Conclusions and Recommendations,” June 25, 2024, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Famine_Review_Committee_Report_Gaza_June2024.pdf (accessed November 27, 2024).

⁵²¹ “Appendix to letter of October 2, 2024 re: American physicians observations from the Gaza Strip since October 7, 2023,” October 2, 2024, <https://static1.squarespace.com/static/66e083452b3cbf4bbd719aa2/t/66f5f8afa82cdd4e0focd607/1727396015767/Appendix+%281%29.pdf> (accessed November 27, 2024).

attribute deaths to water-related causes, as often several factors, including ones linked with lack of water and sanitation, ultimately intersect to cause death.⁵²²

⁵²² Human Rights Watch interview with a humanitarian aid worker (name withheld), via Microsoft Teams, August 16, 2024; a public health physician (name withheld), via Microsoft Teams, February 12, 2024, Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024; Rasha Khatib, via Microsoft Teams, August 1, 2024; Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024; Dr. Usman Shah, via Microsoft Teams, August 21, 2024; Bram Wispelwey, via Microsoft Teams, August 22, 2024; Fiona Majorin and Zeina Jamaluddine, via Microsoft Teams, September 2, 2024.

VII. Destruction of Health Care, Housing, Agriculture; Forced Displacement

Whoever returns here, if they return here after, will find scorched earth. No houses, no agriculture, no nothing. They have no future.

—Col. Yogev Bar-Shesht, deputy head of the Civil Administration, in a video posted online from Gaza, November 4, 2024⁵²³.

Since October 2023, the destruction of and damage to healthcare facilities and other critical infrastructure has compounded the effects of the Israeli government’s deprivation of water to the civilian population. The hostilities have also resulted in the destruction of much of Gaza’s housing and agricultural areas necessary for food production.

Some of the vast destruction, such as the razing of the vast majority of structures in a designated buffer zone and corridor, have clearly been perpetrated by Israeli forces for reasons explained in Section “III. Destruction of Water and Sanitation Infrastructure,” and are prima facie unlawful.⁵²⁴ In many cases, it is not possible to determine conclusively the cause of destruction or damage to infrastructure, or assess the lawfulness of attacks that destroyed infrastructure.

This section sets out the scale of destruction of Gaza’s healthcare infrastructure, as well as of housing and agriculture, and its impact on civilian life, to the extent that it intersects with the impacts on civilians caused by Israeli authorities’ deprivation of water to the population of Gaza. It also describes the ways in which the repeated displacement of much of Gaza’s population has worsened the impacts of water deprivation.

The United Nations Environment Programme (UNEP) reported in June 2024 that the hostilities had generated about 39 million tons of debris, posing “risks to human health and the environment, from dust and contamination with unexploded ordnance, asbestos,

⁵²³ “האויב שטח בעומק נלחמים כוחותינו כך: עזה מלב מיוחד תיעוד”, November 4, 2024, video clip, YouTube, <https://www.youtube.com/watch?v=fqEj3DzadiM> (accessed August 30, 2024).

⁵²⁴ See also, Human Rights Watch, “*Hopeless, Starving, and Besieged*”: Israel’s Forced Displacement of Palestinians in Gaza, November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza> “[W]here Israel has demolished residential properties and civilian infrastructure and razed agricultural land to create a buffer zone, particularly in areas where fighting is not or no longer taking place, this could constitute wanton destruction and should be investigated.”

industrial and medical waste, and other hazardous substances.”⁵²⁵ The World Bank has said that the removal of rubble alone would take years.⁵²⁶ The United Nations Conference on Trade and Development estimated in February that if the war were to stop then, it would cost US\$20 billion to reconstruct the infrastructure in Gaza based on analysis of satellite imagery.⁵²⁷

Until significant reconstruction can take place, the widespread destruction to critical infrastructure, housing, and agricultural land will have severe consequences on people’s abilities to access water and to maintain basic sanitation.

Health Care

The destruction of Gaza’s healthcare infrastructure has left hundreds of thousands of people with water-borne illnesses, dehydration, and other water- and sanitation-related health problems without adequate access to health care.

Israeli attacks on Gaza’s healthcare system began early on in the hostilities. Human Rights Watch investigated attacks on or near the Indonesian hospital, al-Shifa hospital, the International Eye Care Center, the Turkish-Palestinian Friendship hospital, and the al-Quds hospital between October 7 and November 7, 2023, and found that the Israeli military was carrying out repeated, apparently unlawful attacks on medical facilities, personnel, and transport that were destroying the Gaza Strip’s healthcare system and that should be investigated as war crimes.⁵²⁸ On November 28, 2023, the World Health Organization (WHO) spokesperson, Margaret Harris, stated, “We will see more people dying from disease than from bombardment if we are not able to put back together this health system.”⁵²⁹

⁵²⁵ United Nations Environment Programme (UNEP), “Damage to Gaza causing new risks to human health and long-term recovery - new UNEP assessment,” June 18, 2024, <https://www.unep.org/news-and-stories/press-release/damage-gaza-causing-new-risks-human-health-and-long-term-recovery> (accessed September 13, 2024).

⁵²⁶ UN, EU and World Bank, “Gaza Strip Interim Damage Assessment,” March 29, 2024, <https://thedocs.worldbank.org/en/doc/14e309cd34e04e40b90eb19afa7b5d15-0280012024/original/Gaza-Interim-Damage-Assessment-032924-Final.pdf> (accessed November 26, 2024).

⁵²⁷ “Gaza post-war reconstruction estimated at \$20 billion: UN trade body,” *Reuters*, February 15, 2024, <https://www.reuters.com/world/middle-east/gaza-post-war-reconstruction-estimated-20-billion-un-trade-body-2024-02-15/> (accessed August 30, 2024).

⁵²⁸ “Gaza: Unlawful Israeli Hospital Strikes Worsen Health Crisis,” Human Rights Watch news release, November 14, 2023, <https://www.hrw.org/news/2023/11/14/gaza-unlawful-israeli-hospital-strikes-worsen-health-crisis>.

⁵²⁹ Jacqueline Howard, “In Gaza, disease could be even deadlier than airstrikes, WHO says,” *CNN*, December 4, 2023, <https://edition.cnn.com/2023/12/04/health/gaza-illness-disease/index.html> (accessed August 30, 2024).

Israeli authorities' attacks on health care led, by December 2023, to the "complete collapse... of the healthcare system in Gaza, according to Médecins Sans Frontières (Doctors Without Borders, MSF).⁵³⁰ The Israeli military has repeatedly perpetrated apparently unlawful attacks on medical facilities, personnel, and transport, affecting the population's ability to access life-saving treatment, including to prevent and treat diseases linked with the consumption of unpotable water.⁵³¹

In a briefing to the UN Security Council on February 22, 2024, Christopher Lockyear, the Secretary General of MSF, stated that "there is no health system to speak of left in Gaza. Israel's military has dismantled hospital after hospital."⁵³²

According to the World Bank, by March 4, 83.3 percent of health facilities had been damaged or destroyed.⁵³³

As of August 20, 2024, 32 out of 36 hospitals in Gaza had been damaged, and only 16 remained partially functioning.⁵³⁴ The WHO reported that of the 16, "12 are [only] partially accessible due to insecurity or physical barriers, such as damage to both patient and ambulance entrances, and surrounding roads."⁵³⁵ Even where "partially functioning," hospitals lacked many basic supplies, including soap and clean water.⁵³⁶

⁵³⁰ MSF, "Hospitals at breaking point in southern Gaza as bombing intensifies," December 4, 2023, <https://www.doctorswithoutborders.org/latest/hospitals-are-breaking-point-southern-gaza-bombing-intensifies> (accessed August 30, 2024); see also International Rescue Committee (IRC), "With a near collapse of the healthcare system in Gaza and almost no access to safe water, the IRC warns of imminent spread of communicable and waterborne diseases," November 9, 2023, <https://www.rescue.org/press-release/near-collapse-healthcare-system-gaza-and-almost-no-access-safe-water-irc-warns> (accessed December 1, 2024).

⁵³¹ "Gaza: Unlawful Israeli Hospital Strikes Worsen Health Crisis," Human Rights Watch news release, November 14, 2023, <https://www.hrw.org/news/2023/11/14/gaza-unlawful-israeli-hospital-strikes-worsen-health-crisis>.

⁵³² MSF, "MSF briefing on Gaza to UN Security Council," February 22, 2024, <https://www.msf.org/msf-briefing-gaza-un-security-council> (accessed August 30, 2024).

⁵³³ World Bank Group, "Impacts of the Conflict in the Middle East on the Palestinian Economy," May, 2024, <https://thedocs.worldbank.org/en/doc/cegfedod3bb295fo363d690224d1cd39-0280012024/original/Palestinian-Econ-Upd-May2024-FINAL-ENGLISH-Only.pdf> (accessed September 13, 2024).

⁵³⁴ WHO, "oPt Emergency Situation Update Issue 41," August 20, 2024, https://www.emro.who.int/images/stories/Sitrep_-_issue_41b.pdf (accessed November 26, 2024).

⁵³⁵ Ibid.

⁵³⁶ Bianna Golodryga, "'Just horrific': Two doctors recount what they witnessed in Gaza," video report, *CNN*, July 31, 2024, <https://edition.cnn.com/2024/07/31/tv/video/amanpour-gaza-doctors-israel-feroze-sidhwa-mark-perlmutter> (accessed November 12, 2024); "Gaza / Hygiene Supplies Shortage," video report, *UN News*, July 6, 2024, <https://media.un.org/unifeed/en/asset/d323/d3232461> (accessed November 12, 2024); Kayum Ahmed, "Israeli Authorities' Cutting of Water Leading to Public Health Crisis in Gaza," Human Rights Watch dispatch, November 16, 2023, <https://www.hrw.org/news/2023/11/16/israeli-authorities-cutting-water-leading-public-health-crisis-gaza>; Human Rights

The WHO also reported that between October 7, 2023, and August 20, 2024, 752 people had been killed in attacks on healthcare facilities, and 128 health workers remained detained or arrested.⁵³⁷

Lockyear said that, “Israeli forces have attacked our convoys, detained our staff, and bulldozed our vehicles, and hospitals have been bombed and raided.”⁵³⁸ Human Rights Watch has documented repeated, apparently unlawful attacks on hospitals, as well as torture and ill-treatment of healthcare workers.⁵³⁹

In their September 2024 report, the UN Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem and Israel, stated that they had investigated attacks on four hospitals, including “two major medical facilities and also hospitals that offer such specialized medical care as obstetrics, paediatrics and oncology,” and “found that Israeli security forces attacked these facilities in a similar manner, suggesting the existence of operational plans and procedures for attacking health-care facilities.”⁵⁴⁰

Housing

As early as December 30, 2023, The Wall Street Journal reported that as many as 80 percent of the buildings in northern Gaza had been damaged or destroyed, as well as half of the buildings across all of Gaza, based on analysis of satellite data.⁵⁴¹ On January 5, 2024, Martin Griffiths, the Under-Secretary-General for Humanitarian Affairs and

Watch interview with a humanitarian aid worker, via Microsoft Teams, August 16, 2024; Human Rights Watch interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024; Human Rights Watch interview with Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024.

⁵³⁷ WHO, “oPt Emergency Situation Update Issue 41,” August 20, 2024, https://www.emro.who.int/images/stories/Sitrept_issue_41b.pdf (accessed November 26, 2024).

⁵³⁸ MSF, “MSF briefing on Gaza to UN Security Council,” February 22, 2024, <https://www.msf.org/msf-briefing-gaza-un-security-council> (accessed August 30, 2024).

⁵³⁹ “Israel: Palestinian Healthcare Workers Tortured”, Human Rights Watch news release, August 26, 2024, <https://www.hrw.org/news/2024/08/26/israel-palestinian-healthcare-workers-tortured>; “Gaza: Unlawful Israeli Hospital Strikes Worsen Health Crisis”, Human Rights Watch news release, November 14, 2023, <https://www.hrw.org/news/2023/11/14/gaza-unlawful-israeli-hospital-strikes-worsen-health-crisis>.

⁵⁴⁰ UNGA, “Report of the Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel,” A/79/232, September 11, 2024, <https://documents.un.org/doc/undoc/gen/n24/262/79/pdf/n2426279.pdf> (accessed November 29, 2024).

⁵⁴¹ Jared Malsin and Saeed Shah, “The Ruined Landscape of Gaza After Nearly Three Months of Bombing,” *The Wall Street Journal*, December 30, 2023, https://www.wsj.com/world/middle-east/gaza-destruction-bombing-israel-aa528542?mod=hp_lead_pos7 (accessed August 30, 2024).

Emergency Relief Coordinator, stated “Gaza has simply become uninhabitable.”⁵⁴² A coalition of aid groups led by the Norwegian Refugee Council had found that rebuilding housing in the strip will take 7 to 10 years based on damage assessments as of December 2023.⁵⁴³

The United Nations Satellite Centre (UNOSAT) reported on September 27, 2024—based on images from September 3 and 6—that approximately 130,000 buildings had been damaged or destroyed.⁵⁴⁴ This amounts to around 52 percent of the total structures in Gaza and 178,132 estimated damaged housing units. The most affected governorates are Gaza City and Khan Younis, with approximately 35,000 damaged or destroyed buildings in each.⁵⁴⁵

Agriculture

Israeli forces have also apparently destroyed agricultural products and land, including razing orchards, fields, and greenhouses. Since mid-November 2023, satellite imagery that Human Rights Watch reviewed indicates that orchards, fields, and greenhouses have been systematically razed. High-resolution satellite imagery shows bulldozers were used to destroy fields and orchards, leaving sand and dirt, indicating that the Israeli military caused the destruction. On December 8, 2023, Human Rights Watch contacted the Israeli army for comment on the alleged razing of agricultural land in northern Gaza, but did not receive a response.

UNOSAT found that as of July 28, 2024, about 65 percent of all cropland in Gaza had been damaged.⁵⁴⁶ The destruction of agricultural lands not only exacerbates current food

⁵⁴² OCHA, “The war in Gaza must end - Statement by Martin Griffiths, Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator, 5 January 2024,” January 5, 2024, <https://reliefweb.int/report/occupied-palestinian-territory/war-gaza-must-end-statement-martin-griffiths-under-secretary-general-humanitarian-affairs-and-emergency-relief-coordinator-5-january-2024-enhear> (accessed August 30, 2024).

⁵⁴³ Jared Malsin and Saeed Shah, “The Ruined Landscape of Gaza After Nearly Three Months of Bombing,” *The Wall Street Journal*, December 30, 2023, https://www.wsj.com/world/middle-east/gaza-destruction-bombing-israel-aa528542?mod=hp_lead_pos7 (accessed August 30, 2024).

⁵⁴⁴ UNOSAT, “Gaza Strip Comprehensive Damage Assessment – September 2024,” September 29, 2024, <https://unosat.org/products/3984> (accessed October 1, 2024). Human Rights Watch excluded from damaged buildings the ones categorized as “possibly damaged” from the UNOSAT assessment, hence the lower figures than the ones shown on the UNOSAT document.

⁵⁴⁵ UNOSAT, “Gaza Strip Comprehensive Damage Assessment – September 2024,” September 29, 2024, <https://unosat.org/products/3984> (accessed October 1, 2024).

⁵⁴⁶ UNOSAT, “UNOSAT - FAO Gaza Strip Cropland Damage Assessment - July 2024,” July 31, 2024, <https://unosat.org/products/3905> (accessed August 30, 2024).

shortages, but will also have devastating long-term consequences for food production in Gaza.

Forced Displacement

According to the UN, 1.9 million people were displaced in Gaza as of November 2024 out of a remaining population of 2.1 million people.⁵⁴⁷ During the nearly 15 months of hostilities, the Israeli military has repeatedly ordered Palestinians to move to areas where civilian infrastructure was either non-existent, such as the al-Mawasi “safe zone” in previously uninhabited areas near the seashore, or where previous bombardment and fighting had extensively damaged and destroyed civilian buildings and infrastructure, leaving the displaced with utterly inadequate access to water, food, medical care, and shelter.

In May 2024, Israeli authorities ordered Palestinians in Rafah to evacuate to al-Mawasi, a Palestinian Bedouin town on the southern coast of the Gaza Strip. The area, approximately one kilometer wide and 14 kilometers long, is mostly barren and sandy, with no running water.

The UN, Save the Children, and other organizations warned that the area could not sustain life for the hundreds of thousands of people who were ordered to go there.⁵⁴⁸ UNRWA spokesperson in Gaza, Louise Wateridge, stated that “there is a severe lack of sufficient infrastructure including water available [in al-Mawasi] and it is not feasible to support tens of thousands of displaced people there.”⁵⁴⁹

In an appendix to their letter to the Biden administration in October 2024, 99 American doctors and nurses stated:

⁵⁴⁷ UNRWA, “UNRWA Situation Report #148 on the Humanitarian Crisis in the Gaza Strip and the West Bank, including East Jerusalem,” November 20, 2024, <https://www.unrwa.org/resources/reports/unrwa-situation-report-148-situation-gaza-strip-and-west-bank-including-east-jerusalem> (accessed December 3, 2024).

⁵⁴⁸ “Gaza: As exodus from Rafah continues, UN urges reopening of aid lines,” *UN News*, May 10, 2024, <https://news.un.org/en/story/2024/05/1149591> (accessed September 13, 2024); Save the Children, ““It’s not safe and it’s not clean, but people believe they are leaving something worse behind” - Families flee Rafah for areas with no services”, May 9, 2024, <https://www.savethechildren.net/news/it-s-not-safe-and-it-s-not-clean-people-believe-they-are-leaving-something-worse-behind> (accessed September 13, 2024); MSF, “Thousands forced to flee as Israeli military offensive intensifies and aid is blocked in Rafah,” May 8, 2024, <https://www.msf.org/gaza-thousands-forced-flee-israeli-military-offensive-intensifies-and-aid-blocked-rafah> (accessed September 13, 2024).

⁵⁴⁹ “UN pledges to stand with Gazans in Rafah; Guterres says ceasefire opportunity ‘cannot be missed’,” *UN News*, May 6, 2024, <https://news.un.org/en/story/2024/05/1149366> (accessed November 29, 2024).

Israel is concentrating a sick and malnourished population, constituted mainly of children, onto little more than a beach with no running water or even toilets available to it. In these conditions epidemics are virtually guaranteed and will be absolutely devastating, resulting in tens of thousands more dead, most of them young children.⁵⁵⁰

The ICJ stated in their May 2024 orders that “Israel has not provided sufficient information concerning ... the availability in the al-Mawasi area [where civilians from Rafah are being ordered to evacuate] of water, sanitation, food, medicine and shelter.”⁵⁵¹ On June 3, Oxfam reported there were only 121 toilets for the over 500,000 people in al-Mawasi, or one toilet per every 4,130 people.⁵⁵² The Norwegian Refugee Council in September 2024 estimated the population density of al-Mawasi at 30,000 people per square kilometer.⁵⁵³

OCHA reported in July that in al-Bureij and al-Maghazi refugee camps in Deir al-Balah in central Gaza, “3,800 people were sharing 388 tents with no health services nor basic items including water and hygiene products... and more than 1,000 people including seven cancer patients were crammed into a damaged UNRWA school with no medical care, water or food,” respectively.⁵⁵⁴

In new evacuation orders in August 2024, Israeli authorities ordered Palestinians to leave areas of Deir al-Balah. According to the WASH cluster, the orders compromised 15 out of 18 water wells, “reducing the total water production capacity in the area by 80 per cent.”⁵⁵⁵

⁵⁵⁰ “Appendix to letter of October 2, 2024 re: American physicians observations from the Gaza Strip since October 7, 2023,” October 2, 2024,

<https://static1.squarespace.com/static/66e083452b3cbf4bbd719aa2/t/66fcd754b472610b6335d66f/1727846228615/Appendix+20241002.pdf> (accessed December 1, 2024).

⁵⁵¹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024.

⁵⁵² “Famine risk increases as Israel makes Gaza aid response virtually impossible – Oxfam,” Oxfam, press release, June 3, 2024, <https://www.oxfam.org/en/press-releases/famine-risk-increases-israel-makes-gaza-aid-response-virtually-impossible-oxfam> (accessed September 13, 2024).

⁵⁵³ In a letter to the Israeli Foreign Ministry that the NRC director posted on X: Jan Egeland (@NRC_Egeland) post to X (formerly known as Twitter), September 10, 2024, https://x.com/NRC_Egeland/status/1833466321100562672/photo/1 (accessed September 11, 2024).

⁵⁵⁴ UN Palestine, “UN aid official: I witnessed “some of the most horrific” scenes I had experienced in nine months in Gaza,” July 16, 2024, <https://palestine.un.org/en/274153-un-aid-official-i-witnessed-%E2%80%9Csome-most-horrific-scenes-i-had-experienced-nine-months-gaza> (accessed September 13, 2024).

⁵⁵⁵ OCHA, “Humanitarian Situation Update #209 | Gaza Strip,” August 26, 2024, <https://www.ochaopt.org/content/humanitarian-situation-update-209-gaza-strip> (accessed September 13, 2024).

Under article 49 of the Fourth Geneva Convention, a lawful evacuation of a protected population in an occupied territory should adhere to humanitarian standards, including:

The Occupying Power undertaking such transfers or evacuations shall ensure, to the greatest practicable extent, that proper accommodation is provided to receive the protected persons, that the removals are effected in satisfactory conditions of hygiene, health, safety and nutrition, and that members of the same family are not separated.⁵⁵⁶

Israel is responsible for ensuring that the humanitarian needs of displaced people are met. The ICRC commentary on the Geneva Conventions expands on this section of article 49:

If...it is not possible to return the evacuated persons to their homes within a comparatively short period, it will be the duty of the Occupying Power to provide them with suitable accommodation and make proper feeding and sanitary arrangements.⁵⁵⁷

The Israeli government has made no meaningful efforts to comply with these obligations to provide the evacuated population with humanitarian protections and has in fact taken steps to ensure that displaced civilians cannot avail themselves of such protections through its targeting of civilian infrastructure and imposing restrictions on aid, and has publicly stated its intent to do so. Israeli forces have forcibly displaced people to unsafe, extremely overcrowded, informal settings without proper sanitation and water infrastructure, which has also contributed to the spread of disease.⁵⁵⁸ In a report released in November, Human Rights Watch found that Israel's displacement of the population together with its failure to provide humanitarian safeguards in evacuation areas, combined with other breaches of article 49 of

⁵⁵⁶ Geneva Convention relative to the Protection of Civilian Persons in Time of War (Geneva Convention IV), adopted August 12, 1949, 75 U.N.T.S. 287, entered into force October 21, 1950, art. 49.

⁵⁵⁷ ICRC, "Commentary on Article 49 of the Fourth Geneva Convention, 1949," 1958, <https://ihl-databases.icrc.org/en/ihl-treaties/gciv-1949/article-49/commentary/1958> (accessed May 30, 2024).

⁵⁵⁸ WHO, "Risk of disease spread soars in Gaza as health facilities, water and sanitation systems disrupted," November 8, 2023, <https://www.emro.who.int/media/news/risk-of-disease-spread-soars-in-gaza-as-health-facilities-water-and-sanitation-systems-disrupted.html> (accessed September 13, 2024); MSF, "Lack of clean water brings disease and suffering in Gaza," February, 8, 2024, <https://www.msf.org/gaza-lack-clean-water-brings-disease-and-suffering> (accessed September 13, 2024).

the Fourth Geneva Convention amount to multiple war crimes and crimes against humanity of forced displacement.⁵⁵⁹

⁵⁵⁹ Human Rights Watch, *“Hopeless, Starving, and Besieged”: Israel’s Forced Displacement of Palestinians in Gaza*, November 2024, <https://www.hrw.org/report/2024/11/14/hopeless-starving-and-besieged/israels-forced-displacement-palestinians-gaza>.

International Law

International humanitarian law, international human rights law, international criminal law, and customary international law are all applicable to the hostilities taking place in Gaza, as well as to Israel's 17-year closure of Gaza.

International Humanitarian Law and War Crimes

International humanitarian law (IHL) recognizes the Israeli occupation of the West Bank and Gaza as an ongoing armed conflict. The hostilities between Israel and Hamas and other Palestinian armed groups are governed by international humanitarian law for non-international armed conflicts, which are rooted in international treaty law, most notably Common Article 3 to the Geneva Conventions of 1949, and customary international humanitarian law. These rules concern the methods and means of combat and fundamental protections for civilians and apply to both states and non-state armed groups.

Serious violations of the laws of war that are committed by individuals with criminal intent—deliberately or recklessly—are war crimes.⁵⁶⁰ War crimes, listed in the “grave breaches” provisions of the Geneva Conventions and as customary law, include a wide array of offenses, including deliberate, indiscriminate, and disproportionate attacks harming civilians and civilian objects, torture and other ill-treatment, hostage-taking, and using human shields, among others. Individuals also may be held criminally liable for attempting to commit a war crime, as well as assisting in, facilitating, aiding, or abetting a war crime. Assessing criminal intent does not require the attacker's admission but can also be inferred from the totality of the circumstances.

Criminal responsibility also may fall on persons planning or instigating the commission of a war crime. In addition, commanders and civilian leaders may be prosecuted for war crimes as a matter of command responsibility when they knew or should have known about the commission of war crimes and took insufficient measures to prevent them or punish those responsible.

⁵⁶⁰ ICRC, Customary International Humanitarian Law, Rule 156, “Definition of War Crimes.”

States have an obligation to investigate and appropriately prosecute individuals within their territory implicated in war crimes.⁵⁶¹

International Human Rights Law

International human rights law, including the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the International Covenant on Civil and Political Rights (ICCPR), applies to Israel's conduct towards Palestinians in the West Bank and the Gaza Strip, alongside international humanitarian law governing occupation and armed conflict.

The UN Committee on Economic, Social and Cultural Rights, the body charged with interpreting the ICESCR, as well as other human rights bodies, have repeatedly found that states, including Israel, are bound to respect the human rights treaties they have ratified in their actions outside their state borders, and that the provisions in the ICESCR, as well as other human rights treaties, “apply to all territories and populations under its effective control.”⁵⁶² The International Court of Justice (ICJ) endorsed this view in its Advisory Opinion regarding Israel's separation barrier stating that Israel is “bound by the provisions of the International Covenant on Economic, Social and Cultural Rights,” in the territories that it occupies, including Gaza.⁵⁶³ Israel maintains that its human rights obligations do not extend to the occupied territories.

⁵⁶¹ ICRC, Customary International Humanitarian Law, Rule 158, “Prosecution of War Crimes”; Fourth Geneva Convention, art. 146.

⁵⁶² CESCR, “Consideration of reports submitted by States parties under articles 16 and 17 of the Covenant Rights,” E/C.12/1/Add.90, June 26, 2003, <https://documents.un.org/doc/undoc/gen/go3/426/00/pdf/go342600.pdf> (accessed December 2, 2024) paras 15, 31; See also, CESCR, “Concluding observations on the fourth periodic report of Israel,” E/C.12/ISR/CO/4, November 12, 2019, <https://documents.un.org/doc/undoc/gen/g19/322/94/pdf/g1932294.pdf> (accessed December 2, 2024), paras 8-9; HRC, “Concluding Observations on the Fourth Periodic Report of Israel,” CCPR/C/ISR/CO/4, November 21, 2014, <https://bit.ly/2koggJV> (accessed October 24, 2019), para. 5; See also the numerous prior HRC concluding observations on Israel, for example, HRC, “Consideration of reports submitted by States parties under article 40 of the Covenant,” CCPR/CO/ISR/3, September 3, 2010, <https://documents.un.org/doc/undoc/gen/g10/448/06/pdf/g1044806.pdf> (accessed December 2, 2024), para. 5; HRC, “Consideration of reports submitted by States parties under article 40 of the Covenant,” CCPR/CO/78/ISR, August 21, 2003, <https://documents.un.org/doc/undoc/gen/go3/437/98/pdf/go343798.pdf> (accessed December 2, 2024), para. 11; HRC, “Consideration of reports submitted by States parties under article 40 of the Covenant,” CCPR/C/79/Add.93, August 18, 1998, <https://documents.un.org/doc/undoc/gen/g98/176/39/pdf/g9817639.pdf> (accessed December 2, 2024), para. 10; Article 2 of the ICCPR itself notes that the Covenant should apply to “all individuals within its territory and subject to its jurisdiction.”

⁵⁶³ *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory*, ICJ, Advisory Opinion of 9 July 2004, July 9, 2004, para. 112.

Israel continues to bear the obligations to respect, protect, and fulfill all economic, social, and cultural rights towards Palestinians in Gaza, including the rights to food, water, housing, and health.

International Criminal Law and the Genocide Convention

The 1998 Rome Statute of the International Criminal Court (ICC), which came into force in 2002, empowers the court to investigate and prosecute war crimes, genocide, crimes against humanity, and the crime of aggression.

Palestine became an ICC member in 2015 and through a declaration gave the court a mandate back to June 13, 2014, to address serious crimes committed on its territory or by its nationals since that date.⁵⁶⁴

The ICC treaty sets out crimes that can amount to a crime against humanity when “committed as part of a widespread or systematic attack directed against any civilian population, with knowledge of the attack.”⁵⁶⁵ The statute defines “attack” as a “course of action involving the multiple commission of acts... pursuant to or in furtherance of a State or organizational policy.”⁵⁶⁶ “Widespread” refers to the scale of the acts or number of victims,⁵⁶⁷ whereas “systematic” indicates a “pattern or methodological plan.”⁵⁶⁸ Crimes against humanity can be committed during peace or in armed conflict.

⁵⁶⁴ “ICC Welcomes Palestine as a New State Party,” International Criminal Court, press release, April 1, 2015, <https://www.icc-cpi.int/Pages/item.aspx?name=pr1103&ln=en> (accessed September 15, 2024); “Palestine Declares Acceptance of ICC jurisdiction Since 13 June 2014,” International Criminal Court, press release, January 5, 2015, <https://www.icc-cpi.int/Pages/item.aspx?name=pr1080&ln=en> (accessed September 15, 2024). In 2021, a ruling by ICC judges confirmed jurisdiction, *Situation in the State of Palestine*, ICC, ICC-01/18, Decision on the ‘Prosecution request pursuant to article 19(3) for a ruling on the Court’s territorial jurisdiction in Palestine’, February 5, 2021.

⁵⁶⁵ Rome Statute of the International Criminal Court (Rome Statute), A/CONF.183/9, July 17, 1998, entered into force July 1, 2002, art. 7(1).

⁵⁶⁶ Rome Statute, art. 7(2)(a).

⁵⁶⁷ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1113; *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial Chamber IX), February 4, 2021, para. 2681; *The Prosecutor v. Bosco Ntaganda*, ICC, ICC-01/04-02/06, Judgment (Trial Chamber VI), July 8, 2019, para. 691.

⁵⁶⁸ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1114; *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial Chamber IX), February 4, 2021, para. 2682; *The Prosecutor v. Bosco Ntaganda*, ICC, ICC-01/04-02/06, Judgment (Trial Chamber VI), July 8, 2019, para. 692; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, para. 1123.

Among the distinct crimes against humanity is extermination. There is no hierarchy among crimes against humanity; they are of the same gravity and lead to the same consequences under the Rome Statute.

Genocide is defined as a crime under international law both by the 1948 Convention on the Prevention and Punishment of the Crime of Genocide (“the Genocide Convention”) and by the Rome Statute.⁵⁶⁹

The Genocide Convention commits states parties to prevent and punish genocide as well as conspiracy, incitement, and attempt to commit genocide as well as complicity in genocide.⁵⁷⁰ Israel has been a party to the Genocide Convention since 1951.⁵⁷¹ Palestine became a party to the Genocide Convention in 2014.⁵⁷² The convention provides that the crimes should be tried before a competent tribunal in the state where the act took place, or before a competent international tribunal with the requisite jurisdiction.

Recent Court Rulings

The ICC prosecutor, Karim Khan, confirmed in November 2023 that his office has, since March 2021, been conducting an investigation into alleged atrocity crimes committed in Gaza and the West Bank since 2014, and that his office has jurisdiction over crimes in the current hostilities between Israel and Palestinian armed groups that covers unlawful conduct by all parties.⁵⁷³

On November 21, 2024, ICC judges issued arrest warrants against Prime Minister Benjamin Netanyahu and former Defense Minister Yoav Gallant of Israel, as well as Mohammed Diab Ibrahim al-Masri (“Mohammed Deif”), commander-in-chief of Hamas’ military wing, the

⁵⁶⁹ Convention on the Prevention and Punishment of the Crime of Genocide (Genocide Convention), adopted December 9, 1948, G.A. Res. 260 A (III), entered into force January 12, 1951, art. 2; Rome Statute, art. 6.

⁵⁷⁰ Genocide Convention, arts. 1, 3.

⁵⁷¹ UNTC, “1. Convention on the Prevention and Punishment of the Crime of Genocide,” https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-1&chapter=4&clang=_en (accessed December 2, 2024).

⁵⁷² Ibid.

⁵⁷³ “Statement of the Prosecutor of the International Criminal Court, Karim A.A. Khan KC, on the Situation in the State of Palestine: receipt of a referral from five States Parties,” International Criminal Court, press release, November 17, 2023, <https://www.icc-cpi.int/news/statement-prosecutor-international-criminal-court-karim-aa-khan-kc-situation-state-palestine> (accessed December 2, 2024).

Qassam Brigades.⁵⁷⁴ The court's judges concluded that there were reasonable grounds to believe that Netanyahu and Gallant are responsible for war crimes and crimes against humanity in the Gaza Strip from at least October 8, 2023, including the starvation of civilians, intentionally directing attacks against a civilian population, murder, and persecution. They also determined that there were reasonable grounds to believe that Deif is responsible for war crimes and crimes against humanity in Israel and Gaza since at least October 7, 2023, including extermination, murder, and hostage-taking.

The ICC prosecutor had announced on May 20 that he asked the court's judges to issue arrest warrants against Netanyahu, Gallant, Deif, the then-head of Hamas in Gaza Yahya Sinwar, and the former Hamas political bureau head, Ismail Haniyeh.⁵⁷⁵ Khan's office withdrew the application against Haniyeh after he was killed on July 31 while visiting Tehran to attend Iran's presidential inauguration.⁵⁷⁶ The judges also confirmed the prosecutor's withdrawal of the application against Sinwar following the confirmation of his death.⁵⁷⁷

Article 9 of the Genocide Convention allows for disputes between parties "relating to the responsibility of a State for genocide" and related acts to be submitted to the ICJ.⁵⁷⁸ On January 26, March 28, and May 24, the ICJ ordered provisional measures, or binding orders, in South Africa's case alleging that Israel is violating the Genocide Convention, that included requiring Israel to prevent genocide against Palestinians in Gaza, enable the provision of basic services and humanitarian assistance, and prevent and punish incitement to commit

⁵⁷⁴ "Situation in the State of Palestine: ICC Pre-Trial Chamber I rejects the State of Israel's challenges to jurisdiction and issues warrants of arrest for Benjamin Netanyahu and Yoav Gallant," International Criminal Court, press release, November 21, 2024, <https://www.icc-cpi.int/news/situation-state-palestine-icc-pre-trial-chamber-i-rejects-state-israels-challenges> (accessed November 28, 2024); "Situation in the State of Palestine: ICC Pre-Trial Chamber I issues warrant of arrest for Mohammed Diab Ibrahim Al-Masri (Deif)," International Criminal Court, press release, November 21, 2024, <https://www.icc-cpi.int/news/situation-state-palestine-icc-pre-trial-chamber-i-issues-warrant-arrest-mohammed-diab-ibrahim> (accessed November 28, 2024).

⁵⁷⁵ "Statement of ICC Prosecutor Karim A.A. Khan KC: Applications for arrest warrants in the situation in the State of Palestine," International Criminal Court, press release, May 20, 2024, <https://www.icc-cpi.int/news/statement-icc-prosecutor-karim-aa-khan-kc-applications-arrest-warrants-situation-state> (accessed December 2, 2024).

⁵⁷⁶ *Situation in the State of Palestine*, ICC, Public redacted version of : "Prosecution's withdrawal of the "Prosecution's application under article 58 for a warrant of arrest against Ismail HANIYEH" [REDACTED]", 2 August 2024, ICC-01/18-263-SECRET-Exp, ICC-01/18-263-Red, September 9, 2024, para. 19.

⁵⁷⁷ "Situation in the State of Palestine: ICC Pre-Trial Chamber I issues warrant of arrest for Mohammed Diab Ibrahim Al-Masri (Deif)," ICC press release, November 21, 2024, <https://www.icc-cpi.int/news/situation-state-palestine-icc-pre-trial-chamber-i-issues-warrant-arrest-mohammed-diab-ibrahim> (accessed December 2, 2024).

⁵⁷⁸ Genocide Convention, art. 9.

genocide.⁵⁷⁹ The ICJ issued these measures “to protect the rights claimed by South Africa that the Court has found to be plausible,” including “the right of the Palestinians in Gaza to be protected from acts of genocide.”⁵⁸⁰

International Humanitarian Law

Under IHL, warring parties, as well as occupying powers, have an obligation to facilitate access to humanitarian aid and assistance.

States are also prohibited from attacking, destroying, removing, or rendering useless objects indispensable to the survival of the civilian population (OIS). When done deliberately, attacks on OIS may amount to war crimes.

IHL also prohibits the use of starvation as a method of warfare by attacking, destroying, removing, or rendering useless OIS, which includes water infrastructure, drinking water installations, and sources, such as wells and irrigation works.⁵⁸¹

Facilitating Access to Humanitarian Aid and Assistance

IHL obligates states to facilitate rapid and unimpeded humanitarian assistance to all civilians in need and to not deliberately block humanitarian aid or restrict the freedom of movement of humanitarian relief personnel.⁵⁸²

⁵⁷⁹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, para. 86; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024, para. 51; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024, para. 57.

⁵⁸⁰ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, para. 54.

⁵⁸¹ ICRC, Customary International Humanitarian Law, Rule 53, “Starvation as a Method of Warfare”; ICRC, Customary International Humanitarian Law, Rule 54, “Attacks against Objects Indispensable to the Survival of the Civilian Population”; Additional Protocol II, art. 14.

⁵⁸² ICRC, Customary International Humanitarian Law, Rules 55, “Access for Humanitarian Relief to Civilians in Need” and Rule 56, “Freedom of Movement of Humanitarian Relief Personnel.”

In situations of occupation, occupying states must provide for the welfare of the occupied population and ensure that their humanitarian needs are met.⁵⁸³ This obligation is not limited to food and “include[s] medical supplies and any article necessary to support life.”⁵⁸⁴

IHL also prohibits collective punishment, which is the punishment of any person for an offense other than one that they have personally committed.⁵⁸⁵ The imposition of collective punishment is a war crime. War crimes are serious violations of international humanitarian law committed by individuals with criminal intent.

Israeli authorities have blocked and restricted humanitarian aid, including fuel and critical water supplies, from entering Gaza since October 7, 2023, as well as throughout Israel’s 17-year closure of Gaza.⁵⁸⁶

Though Israeli authorities have asserted that they are blocking “dual use” items, which have both civilian and military use, from entering Gaza so as not to be used by Hamas or other armed groups, many of the items they have blocked, such as water bladders, tap-stand kits, microbiological water testing kits, and chemical water quality testing kits are not listed as “dual use” under the Wassenaar Arrangement or any other international “dual use” standard.⁵⁸⁷ The Israeli authorities have permitted entry for certain items on some days, and then denied entry on other days, demonstrating the arbitrariness of the blockade policy.

In announcing their decision to issue arrest warrants for Netanyahu and Gallant on November 21, 2024, ICC judges referred to their role “in impeding humanitarian aid in

⁵⁸³ Fourth Geneva Convention, arts. 23, 50, 55, 56.

⁵⁸⁴ ICRC Commentary of 1958, “Article 55 of the Fourth Geneva Convention,” <https://ihl-databases.icrc.org/en/ihl-treaties/gciv-1949/article-55/commentary/1958?activeTab=> (accessed November 29, 2024).

⁵⁸⁵ Third Geneva Convention, art. 87; Additional Protocol I, art. 75.2.d; Additional Protocol II, art. 4.2.b.

⁵⁸⁶ Sari Bashi, “Israel Still Blocking Aid to Civilians in Gaza,” Human Rights Watch dispatch, October 23, 2023, <https://www.hrw.org/news/2023/10/23/israel-still-blocking-aid-civilians-gaza>; Human Rights Watch, *Israel-Palestine—A Threshold Crossed: Israeli Authorities and the Crimes of Apartheid and Persecution*, April 17, 2021, <https://www.hrw.org/report/2021/04/27/threshold-crossed/israeli-authorities-and-crimes-apartheid-and-persecution>; “Israel: Investigate Unlawful Destruction in Gaza War,” Human Rights Watch news release, May 13, 2010, <https://www.hrw.org/news/2010/05/13/israel-investigate-unlawful-destruction-gaza-war>; “Israel/Gaza: Weak Mandate Undermines Flotilla Inquiry,” Human Rights Watch news release, June 16, 2010, <https://www.hrw.org/news/2010/06/16/israel/gaza-weak-mandate-undermines-flotilla-inquiry>.

⁵⁸⁷ Wassenaar Arrangement, “Criteria for the Selection of Dual-Use Goods, including Sensitive and Very Sensitive Items,” <https://www.wassenaar.org/app/uploads/2019/12/Selection-criteria.pdf> (accessed September 13, 2024); Niha Masih, “Crutches and chocolate croissants: Gaza aid items Israel has rejected,” *The Washington Post*, April 11, 2024, <https://www.washingtonpost.com/world/2024/04/11/israel-aid-gaza-banned-blocked/> (accessed December 2, 2024).

violation of international humanitarian law and their failure to facilitate relief by all means at its disposal.”⁵⁸⁸

Israeli authorities’ actions are a violation of the obligation to facilitate rapid and unimpeded humanitarian assistance to all civilians in need, and to not deliberately block humanitarian aid.

Israel’s continuing blockade of Gaza, as well as its more than 17-year closure, also amounts to collective punishment of the civilian population, a war crime.⁵⁸⁹

Attacking, Rendering Useless Objects Indispensable to Survival

IHL prohibits warring parties from attacking, destroying, removing, or rendering useless objects indispensable to the survival of the civilian population (OIS).⁵⁹⁰ According to the International Committee of the Red Cross (ICRC), “objects indispensable to the survival of the civilian population are civilian objects and may not be attacked as such.”⁵⁹¹

Israeli forces attacked and destroyed water and sanitation infrastructure throughout Gaza, including at least four wastewater treatment plants, a water reservoir, and the Gaza City desalination facility outlined in Section “VII. Destruction of Water and Sanitation Infrastructure.” Israeli authorities’ cutting off of electricity supplies to Gaza and their restrictions on the entry of fuel supplies into the strip have also rendered most water and sanitation infrastructure useless.

⁵⁸⁸ “Situation in the State of Palestine: ICC Pre-Trial Chamber I rejects the State of Israel’s challenges to jurisdiction and issues warrants of arrest for Benjamin Netanyahu and Yoav Gallant,” ICC press release, November 21, 2024, <https://www.icc-cpi.int/news/situation-state-palestine-icc-pre-trial-chamber-i-rejects-state-israels-challenges> (accessed December 2, 2024).

⁵⁸⁹ Sari Bashi, “Israel Still Blocking Aid to Civilians in Gaza,” Human Rights Watch dispatch, October 23, 2023, <https://www.hrw.org/news/2023/10/23/israel-still-blocking-aid-civilians-gaza>; “Israel: Investigate Unlawful Destruction in Gaza War,” Human Rights Watch news release, May 13, 2010, <https://www.hrw.org/news/2010/05/13/israel-investigate-unlawful-destruction-gaza-war>; “Israel/Gaza: Weak Mandate Undermines Flotilla Inquiry,” Human Rights Watch news release, June 16, 2010, <https://www.hrw.org/news/2010/06/16/israel/gaza-weak-mandate-undermines-flotilla-inquiry>

⁵⁹⁰ ICRC, Customary International Humanitarian Law, Rule 54, “Attacks against Objects Indispensable to the Survival of the Civilian Population”; ICRC, Customary International Humanitarian Law, Rule 7, “The Principle of Distinction between Civilian Objects and Military Objectives.”

⁵⁹¹ ICRC, “Commentary on Customary IHL Rule 54,” <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule54> (accessed December 2, 2024).

The water and sanitation facilities that Israeli forces attacked, destroyed, and rendered useless served the civilian population of Gaza, and were essential to the survival of the population.

Human Rights Watch has found no evidence that the WASH facilities that Israeli forces and authorities destroyed and rendered useless were used solely for combatants, or in direct support of military action. The Israeli government did not respond to Human Rights Watch's letters requesting more information regarding their attacks on WASH facilities.

The impacts on the survival of the civilian population from the destruction of water and sanitation facilities have already been significant. Based on determinations described in previous sections by doctors and epidemiologists, it is likely that thousands of people have already died from malnutrition and disease.⁵⁹² As of June 30, there were over 1.8 million documented cases of water-borne illnesses and diseases that have spread in part due to the lack of sanitation.⁵⁹³

As an occupying power, Israeli authorities have had clear knowledge of, and in large part control, Gaza's limited water and electricity infrastructure, and have restricted the amount of fuel entering Gaza since 2007.⁵⁹⁴ Their level of control, and the degree of restrictions they imposed, increased after October 2023. Israeli forces intentionally destroyed at least four wastewater plants, including razing the solar panels of infrastructure that provide the facilities with electricity where they were already in control of the areas containing the infrastructure. Israeli authorities also knowingly rendered useless the majority of Gaza's WASH infrastructure by cutting off the electricity supply on October 7 and subsequently limiting the amount of fuel that could enter Gaza.

Israeli forces and authorities therefore violated the prohibition on attacking and rendering useless objects indispensable to survival. Their actions were deliberate, and thus also amount to war crimes.

⁵⁹² See Section "VI. Deaths and Illnesses Caused by Israeli Obstruction of Water."

⁵⁹³ WHO, "oPt Emergency Situation Update, Issue 39", August 5, 2024, https://www.emro.who.int/images/stories/Sitrep_-_issue_39b.pdf?ua=1 (accessed September 4, 2024); "Appendix to letter of July 25, 2024 re: American physicians observations from the Gaza Strip since October 7, 2023", July 25, 2024, <https://static1.squarespace.com/static/66e083452b3cbf4bbd719aa2/t/66f5f8afa82cdd4e0focd607/1727396015767/Appendix+%281%29.pdf> (accessed September 4, 2024).

⁵⁹⁴ Gisha, "The Gaza electricity crisis – FAQs," June 19, 2017, <https://gisha.org/en/blogs-the-gaza-electricity-crisis-faqs/> (accessed December 2, 2024).

Starvation as a Method of Warfare

Using starvation as a method of warfare by destroying and rendering useless OIS is a war crime.⁵⁹⁵ The ICRC has provided guidance that “attacking objects indispensable to the survival of the civilian population...and denying access of humanitarian aid intended for civilians in need, including deliberately impeding humanitarian aid...may constitute violations of the prohibition of starvation.”⁵⁹⁶ Starvation includes water deprivation.⁵⁹⁷

According to Global Rights Compliance, a non-profit organization specialized in international humanitarian, criminal, and human rights law to address and alleviate acute humanitarian need, “[s]tarvation’ refers to the process of deprivation that occurs when parties to a conflict impede the capacity of civilians to access the means of sustaining life,” which can include destruction of water infrastructure and the diversion of humanitarian aid.⁵⁹⁸

According to the ICRC, even in situations where the OIS are being used in direct support of military action, unless the objects are being “used as sustenance solely for combatants,” warring parties are prohibited from attacking OIS if starvation (including water deprivation) amongst the civilian population would be expected to occur as a result of the attacks.⁵⁹⁹

Warring parties should have “virtual certainty that starvation will result in the ordinary course of events” – a standard set out in previous discussions concerning mass starvation – based on their actions.⁶⁰⁰

⁵⁹⁵ Rome Statute, art. 8(2)(b)(xxv).

⁵⁹⁶ ICRC, “Commentary on Customary IHL Rule 53,” <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule53> (accessed December 2, 2024).

⁵⁹⁷ ICRC, “Commentary on Customary IHL,” Rule 54, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule54> (accessed December 2, 2024).

⁵⁹⁸ Global Rights Compliance, “Factsheet #1: The Prohibition of Starvation as a Method of Warfare”, n.d., https://starvationaccountability.org/wp-content/uploads/2022/11/Factsheet_1_Prohibition_of_Starvation_EN.pdf (accessed August 30, 2024).

⁵⁹⁹ ICRC, “Commentary on Customary IHL,” Rule 54, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule54> (accessed December 2, 2024) (noting that “[i]t is doubtful, however, whether this exception also applies to non-international armed conflicts, because Article 14 of Additional Protocol II does not provide for it and there is no practice supporting it.”); see also ICRC, “Water and Armed Conflicts,” casebook, n.d., <https://casebook.icrc.org/case-study/water-and-armed-conflicts> (accessed December 2, 2024).

⁶⁰⁰ Wayne Jordash, Catriona Murdoch and Joe Holmes, “Strategies for Prosecuting Mass Starvation,” *Journal of International Criminal Justice*, vol. 17 (2019), <https://doi.org/10.1093/jicj/mqz044> (accessed August 30, 2024), p. 854.

Israeli authorities should have known that starvation—in this case water deprivation—would occur based on their actions. As an occupying power, Israeli authorities have for years had clear knowledge of Gaza’s limited water sources, as well as the sanitation and water infrastructure present in Gaza and the critical role they serve in the survival of the Palestinian population in Gaza. In 2008, the Israeli military assessed the daily caloric needs of each resident of Gaza, and the required number of truckloads of different types of foods and products to meet the residents’ “minimal subsistence basket.”⁶⁰¹

In previous hostilities, Israeli military attacks on WASH infrastructure in Gaza have been described as unlawful. The UN Fact-Finding Mission on the Gaza Conflict in 2008-09 found that Israel’s attacks on water and sanitation infrastructure, including on the Sheikh Ejleen wastewater treatment facility (also covered in this report), were “the result of a deliberate and systematic policy ... not carried out because those objects presented a military threat or opportunity, but to make the daily process of living, and dignified living, more difficult for the civilian population.”⁶⁰² The UN Fact-Finding Mission found “that the series of acts that deprive Palestinians in the Gaza Strip of ... water ... could lead a competent court to find that the crime of persecution, a crime against humanity, has been committed.”⁶⁰³ The UN Independent Commission of Inquiry on the 2014 Gaza Conflict reported Israeli forces’ unjustified destruction of water tanks in Khuza’a, the overall heavy damage to water and sanitation infrastructure, and noted Israel’s “lamentable track record in holding wrongdoers accountable.”⁶⁰⁴

In the hostilities in Gaza since October 2023, the Israeli authorities had all the coordinates of public water and sanitation infrastructure and were aware that the Mekorot pipelines that run from Israel to Gaza provide the majority of drinking water available in Gaza.⁶⁰⁵ Thus, they

⁶⁰¹ Israeli Ministry of Defense, Coordination of Government Activities in the Territories (COGAT), “Food Consumption in the Gaza Strip - Red Lines,” January 1, 2008, slide presentation available from Gisha, <https://www.gisha.org/UserFiles/File/publications/redlines/red-lines-presentation-eng.pdf> (accessed September 11, 2024).

⁶⁰² United Nations Fact-Finding Mission on the Gaza Conflict, “Report of the United Nations Fact-Finding Mission on the Gaza Conflict,” A/HRC/12/48, September 25, 2009, <https://documents.un.org/doc/undoc/gen/go9/158/66/pdf/go915866.pdf> (accessed September 13, 2024), para. 1891.

⁶⁰³ *Ibid.*, para. 1936.

⁶⁰⁴ HRC, “Report of the detailed findings of the independent commission of inquiry established pursuant to Human Rights Council resolution S-21/1,” A/HRC/29/CRP.4, June 24, 2015, <https://www.ohchr.org/en/hr-bodies/hrc/co-i-gaza-conflict/report-co-i-gaza> (accessed September 13, 2024), paras. 337, 670.

⁶⁰⁵ See “Background” Section above.

should have had clear knowledge that the actions they have taken since October 7 would lead to starvation from lack of water.

During the current hostilities, Israeli officials have also made their intent clear to deprive the population of objects essential for survival, through a series of statements outlined in the “I. Water Deprivation as a Deliberate Act” section above. These statements indicate “an intention to instrumentalize and weaponize the provision of necessities,” including “water, food, electricity, fuel, and other essential supplies,” the Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel has found.⁶⁰⁶

The water and sanitation infrastructure that Israeli forces have attacked and rendered useless are critical to providing the civilian population of Gaza with access to clean water and sanitation. Israeli authorities knew or should have known—including from repeated statements by the United Nations and humanitarian agencies, as well as reports by news media and rights groups—since the hostilities started in October that their actions, including the destruction of water and sanitation facilities, would have severe and widespread impacts on the population of Gaza’s survival, both now and potentially well into the future, as the UN Environment Program has found.⁶⁰⁷

Israeli authorities have known or should have known for months, including from three ICJ provisional measures orders, that the population of Gaza does not have access to adequate water and sanitation.⁶⁰⁸

⁶⁰⁶ United Nations Independent International Commission on the oPt, including E. Jerusalem, and Israel, “Report of the Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel”, A/HRC/56/26, May 27, 2024, <https://www.un.org/unispal/document/coi-report-a-hrc-56-26-27may24> (accessed August 30, 2024).

⁶⁰⁷ UNEP, “Environmental impact of the conflict in Gaza: Preliminary assessment of environmental impacts”, June 2024, <https://wedocs.unep.org/20.500.11822/45739> (accessed August 30, 2024).

⁶⁰⁸ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, paras. 70, 74, 86(4); *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024, para. 45; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024, paras. 46, 52.

Despite this knowledge, Israeli forces have continued to attack and destroy water and sanitation infrastructure and to render it useless through their cutting off of electricity and their limitations on the entry of fuel into the Gaza Strip.

In Khan's May 20 request for arrest warrants, he said that based on evidence his office collected, "Israel has intentionally and systematically deprived the civilian population in all parts of Gaza of objects indispensable to human survival" through the "imposition of a total siege over Gaza," which "included cutting off cross-border water pipelines from Israel to Gaza – Gazans' principal source of clean water ... and cutting off and hindering electricity supplies."⁶⁰⁹ He added that the siege "took place alongside other attacks on civilians, including those queuing for food; obstruction of aid delivery by humanitarian agencies; and attacks on and killing of aid workers, which forced many agencies to cease or limit their operations in Gaza."⁶¹⁰

In announcing their decision to issue arrest warrants against Netanyahu and Gallant, ICC judges concluded that that "there are reasonable grounds to believe that both individuals intentionally and knowingly deprived the civilian population in Gaza of objects indispensable to their survival, including food, water, and medicine and medical supplies, as well as fuel and electricity, from at least 8 October 2023 to 20 May 2024."⁶¹¹ They concluded that there were "reasonable grounds to believe that Mr Netanyahu and Mr Gallant bear criminal responsibility for the war crime of starvation as a method of warfare."⁶¹²

The UN Commission of Inquiry also concluded in their May report that:

Israel has used starvation as a method of war, affecting the entire population of the Gaza Strip for decades to come, with particularly negative consequences for children ... Through the siege it imposed, Israel has weaponized the withholding of life-sustaining necessities, cutting off

⁶⁰⁹ ICC, "Statement of ICC Prosecutor Karim A.A. Khan KC: Applications for arrest warrants in the situation in the State of Palestine", May 20, 2024, <https://www.icc-cpi.int/news/statement-icc-prosecutor-karim-aa-khan-kc-applications-arrest-warrants-situation-state> (accessed August 26, 2024).

⁶¹⁰ Ibid.

⁶¹¹ "Situation in the State of Palestine: ICC Pre-Trial Chamber I rejects the State of Israel's challenges to jurisdiction and issues warrants of arrest for Benjamin Netanyahu and Yoav Gallant," ICC press release, November 21, 2024, <https://www.icc-cpi.int/news/situation-state-palestine-icc-pre-trial-chamber-i-rejects-state-israels-challenges> (accessed December 2, 2024).

⁶¹² Ibid.

supplies of water, food, electricity, fuel and other essential supplies, including humanitarian assistance.⁶¹³

In light of the above, Israel's actions of intentionally destroying and rendering useless water infrastructure essential to the survival of the civilian population in Gaza constitute a serious violation of the prohibition of the use of starvation as a method of warfare by deliberately destroying and rendering useless OIS, amounting to a war crime.

International Human Rights Law

In its general comments interpreting the obligations of states parties with respect to the rights enshrined in the ICESCR, the Committee on Economic, Social and Cultural Rights (CESCR) has repeatedly reiterated that states must comply with certain core obligations that represent the minimum essential levels of these rights, non-compliance with which cannot be justified even in times of conflict, as they are non-derogable.⁶¹⁴

The governing authority over a population, which includes the occupying power, has, under international human rights law, a positive, “immediate” obligation to protect the population’s right to water and to the highest attainable standard of physical and mental health and to take “deliberate, concrete, and targeted” measures to ensure the full realization of the right under international human rights law.⁶¹⁵

The Right to Water

The right to water, which includes the right to safe and clean drinking water and sanitation, is a human right, derived from the right to life and the right to an adequate standard of living.⁶¹⁶ In General Comment No. 15, the CESCR stated that the right to water is

⁶¹³ United Nations Independent International Commission on the oPt, including E. Jerusalem, and Israel, “Report of the Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel”, A/HRC/56/26, May 27, 2024, <https://www.un.org/unispal/document/coi-report-a-hrc-56-26-27may24/> (accessed August 30, 2024), para. 102.

⁶¹⁴ OHCHR, “Protection of economic, social and cultural rights in conflict,” June 22, 2016, <https://www.ohchr.org/sites/default/files/Documents/Issues/ESCR/E-2015-59.pdf> (accessed December 2, 2024).

⁶¹⁵ OHCHR, “Frequently Asked Questions on Economic, Social and Cultural Rights,” n.d., <https://www.ohchr.org/sites/default/files/documents/publications/factsheet33en.pdf> (accessed March 15, 2024), p. 16; CESCR, Concluding observations on the fourth periodic report of Israel, E/C.12/ISR/CO/4 (2019), para. 46.

⁶¹⁶ UDHR, art. 3; ICCPR, art. 6; UDHR, art. 25.1.

“indispensable for leading a life in human dignity” and “a prerequisite for the realization of other human rights.”⁶¹⁷

The right to water entitles everyone, without discrimination, “to have access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use.”⁶¹⁸ As interpreted by the CESCR, the right to water imposes certain immediate, core obligations on governments, non-compliance with which cannot be justified under any circumstances.⁶¹⁹ This includes several obligations inconsistent with the practices of Israeli authorities documented in this report, including the obligations to:

- Ensure access to the minimum essential amount of water, that is sufficient and safe for personal and domestic uses to prevent disease;
- Ensure the right of access to water and water facilities and services on a non-discriminatory basis, especially for disadvantaged or marginalized groups;
- Ensure physical access to water facilities or services that provide sufficient, safe and regular water; that have a sufficient number of water outlets to avoid prohibitive waiting times; and that are at a reasonable distance from the household;
- Ensure personal security is not threatened when having to physically access water;
- Ensure the equitable distribution of all available water facilities and services;
- Monitor the extent of the realization, or the non-realization, of the right to water;
- Adopt relatively low-cost targeted water programs to protect vulnerable and marginalized groups; and
- Take measures to prevent, treat and control diseases linked to water, in particular ensuring access to adequate sanitation.⁶²⁰

The practices of Israeli authorities documented in this report have violated many of these obligations. Israeli authorities’ actions, including the destruction of water infrastructure, the blocking of humanitarian aid, the cutting off and restricting of water, fuel, and electricity supplies, and the failure to take sufficient measures to immediately restore adequate water

⁶¹⁷ CESCR, “General Comment No. 15: The Right to Water (Arts. 11 and 12 of the Covenant)”, January 20, 2003, <https://www.refworld.org/docid/4538838d11.html> (accessed August 30, 2024).

⁶¹⁸ UN Water, “Human Rights to Water and Sanitation”, <https://www.unwater.org/water-facts/human-rights-water-and-sanitation> (accessed August 30, 2024).

⁶¹⁹ CESCR, “General Comment No. 15: The Right to Water (Arts. 11 and 12 of the Covenant)”, January 20, 2003, <https://www.refworld.org/docid/4538838d11.html> (accessed August 30, 2024), paras. 37, 40.

⁶²⁰ *Ibid*, para. 37.

and sanitation have resulted in the widespread deprivation of water to the population of Gaza, thus violating the population's human right to water.

The Right to Health

The right of everyone to the enjoyment of the highest attainable standard of physical and mental health is also recognized in article 12 of the ICESCR. In its General Comment No. 14, the CESCR provided an authoritative interpretation of states' right-to-health obligations under the ICESCR, stressing that governments bear certain immediate, core obligations to the right to health, non-compliance with which cannot be justified under any circumstances. This includes several obligations inconsistent with the practices of Israeli authorities documented in this report, including the obligations to:

- Ensure the right of access to health facilities, goods and services on a non-discriminatory basis, especially for vulnerable or marginalized groups;
- Ensure access to the minimum essential food which is nutritionally adequate and safe, to ensure freedom from hunger to everyone;
- Ensure access to basic shelter, housing and sanitation, and an adequate supply of safe and potable water;
- Provide essential drugs, as from time to time defined under the WHO Action Programme on Essential Drugs; and
- Ensure equitable distribution of all health facilities, goods and services.⁶²¹

While distinct from these minimum core obligations to the right to health, the CESCR also noted certain "obligations of comparable priority" in its General Comment No. 14 on the right to health.⁶²²

Israeli authorities' actions, particularly the blocking of humanitarian aid, attacks on humanitarian aid personnel, attacks on medical infrastructure, forced displacement of the population, and destruction and rendering useless of water and sanitation infrastructure, have also violated the rights of Palestinians in Gaza to the enjoyment of the highest attainable standard of physical and mental health.

⁶²¹ CESCR, "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)," August 11, 2000, E/C.12/2000/4, <https://www.ohchr.org/sites/default/files/Documents/Issues/Women/WRGS/Health/GC14.pdf> (accessed December 3, 2024), para. 43.

⁶²² CESCR, "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)," August 11, 2000, E/C.12/2000/4, <https://www.ohchr.org/sites/default/files/Documents/Issues/Women/WRGS/Health/GC14.pdf> (accessed December 3, 2024), para. 44.

International Criminal Law and the Genocide Convention

Crimes Against Humanity

The prohibition of crimes against humanity is among the most fundamental in international criminal law. Crimes against humanity are part of customary international law and were first codified in the charter of the Nuremberg International Military Tribunal of 1945. The purpose was to prohibit crimes that “either by their magnitude and savagery, by their large number, or by the fact that a similar pattern was applied ... endangered the international community or shocked the conscience of mankind.” Since then, the concept has been incorporated into a number of international treaties and the statutes of international criminal tribunals, including the Rome Statute of the International Criminal Court.

The definition of crimes against humanity varies slightly by treaty, but the definition found in the Rome Statute, which largely reflects customary international law and is therefore binding on all states, includes a range of serious human rights abuses committed as part of a widespread or systematic attack directed against any civilian population, with knowledge of the attack.⁶²³

The Rome Statute sets out crimes that can amount to a crime against humanity when “committed as part of a widespread or systematic attack directed against any civilian population, with knowledge of the attack.”⁶²⁴ Crimes against humanity can be committed during peace or in armed conflict. There is no hierarchy among crimes against humanity; they are of the same gravity and lead to the same consequences under the Rome Statute.

Among the distinct crimes against humanity is the crime of extermination.

Widespread or Systematic Attack Directed Against a Civilian Population

The attack directed against a civilian population underlying the commission of crimes against humanity must also be widespread or systematic, though it need not be both.⁶²⁵

⁶²³ Rome Statute, art. 7(1).

⁶²⁴ Ibid.

⁶²⁵ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1112; *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial

The statute defines “attack” as a “course of action involving the multiple commission of [acts listed as crimes against humanity] pursuant to or in furtherance of a State or organizational policy.”⁶²⁶ “Attack” in this definition does not need to be a military attack.⁶²⁷

“Widespread” refers to the scale of the acts or number of victims,⁶²⁸ whereas “systematic” refers to the organized nature of the violent acts and the improbability of their random occurrence, often reflecting a “pattern or methodological plan.”⁶²⁹

The requirement that the crime be committed against a civilian population, means that the targeted population should be predominantly civilian in nature, but the presence of some combatants does not alter its classification as a “civilian population” as a matter of law.⁶³⁰ It

Chamber IX), February 4, 2021, para. 2680; *Prosecutor v. Jean-Paul Akayesu*, International Criminal Tribunal for Rwanda (Appeals Chamber), Case ICTR-96-4-A, September 2, 1998, para. 579; Kordić & Čerkez, International Criminal Tribunal for the Former Yugoslavia (ICTY), Case IT-95-14/2, ICTY Trial Chamber, February 26, 2001, para. 179; *Prosecutor v. Clément Kayishema and Obed Ruzindana*, International Criminal Tribunal for Rwanda, Case ICTR-95-1-A, ICTR Trial Chamber, May 21, 1999, para. 123.

⁶²⁶ Rome Statute, art. 7(2)(a).

⁶²⁷ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1105.

⁶²⁸ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1113; *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial Chamber IX), February 4, 2021, para. 2681; *The Prosecutor v. Bosco Ntaganda*, ICC, ICC-01/04-02/06, Judgment (Trial Chamber VI), July 8, 2019, para. 691; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, para. 1123. *Prosecutor v. Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgement (Trial Chamber I), September 2, 1998, <https://unictr.irmct.org/sites/unictr.org/files/case-documents/ict96-4/trial-judgements/en/980902.pdf>, para. 579; Also see *Prosecutor v. Kordic and Cerkez*, International Criminal Tribunal for the former Yugoslavia (ICTY), Case No. IT-92-14/2, Judgement (Trial Chamber III), February 26, 2001, para. 179; *Prosecutor v. Kayishema and Ruzindana*, ICTR, Case No. ICTR-95-1-T, Judgement (Trial Chamber II), May 21, 1999, para. 123.

⁶²⁹ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1114; *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial Chamber IX), February 4, 2021, para. 2682; *The Prosecutor v. Bosco Ntaganda*, ICC, ICC-01/04-02/06, Judgment (Trial Chamber VI), July 8, 2019, para. 692; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, para. 1123. See also *Prosecutor v. Dusko Tadic*, ICTY, Case No. IT-94-1-T, Opinion and Judgement (Trial Chamber), May 7, 1997, para. 648. *Prosecutor v. Kunarac, Kovac and Vukovic*, ICTY, Case No. IT-96-23 and IT-96-23-1A, Judgement (Appeals Chamber), June 12, 2002, para. 94.

⁶³⁰ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1106; *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial Chamber IX), February 4, 2021, para. 2675; *The Prosecutor v. Bosco Ntaganda*, ICC, ICC-01/04-02/06, Judgment (Trial Chamber VI), July 8, 2019, para. 668; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, para. 1105; *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 582.

is necessary only that the civilian population be the primary object of the attack by the state or non-state forces.⁶³¹

Pursuant to or in Furtherance of a State Policy

The widespread or systematic attack against a civilian population must be committed “pursuant to or in furtherance of a State or organizational policy.”⁶³²

Such policy is established when it is demonstrated that the State or organization meant to commit an attack against a civilian population, meaning the commission of multiple crimes against humanity, such as extermination.⁶³³ For instance, such a plan need not be adopted formally as a policy of the state nor explicitly defined.⁶³⁴ The recurrent pattern of violence, the existence of preparations or collective mobilization, the use of public or private resources, the involvement of organizational forces in the commission of crimes, statements, instructions or documentation and an underlying motivation are relevant factors in inferring the existence of a policy.⁶³⁵ Generally, when the attack is systematic, it will also satisfy the policy element.⁶³⁶

The Crime Against Humanity of Extermination

Extermination is listed as a distinct crime against humanity, defined as including “the intentional infliction of conditions of life, *inter alia*, the deprivation of access to food and medicine, calculated to bring about the destruction of part of a population.”⁶³⁷

⁶³¹ *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial Chamber IX), February 4, 2021, para. 2675; *The Prosecutor v. Bosco Ntaganda*, ICC, ICC-01/04-02/06, Judgment (Trial Chamber VI), July 8, 2019, para. 668; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, para. 1104.

⁶³² Rome Statute, art. 7(2)(a).

⁶³³ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1108; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, para. 1113.

⁶³⁴ *The Prosecutor v. Laurent Gbagbo*, ICC, ICC-02/11-01/11, Decision on the confirmation of charges against Laurent Gbagbo (Pre-Trial Chamber I), June 12, 2014, para. 215; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Decision on the confirmation of charges (Pre-Trial Chamber I), September 30, 2008, para. 396.

⁶³⁵ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1110; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, paras 1108-1110.

⁶³⁶ *The Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud*, ICC, ICC-01/12-01/18, Trial Judgment (Trial Chamber X), June 26, 2024, para. 1110; *The Prosecutor v. Dominic Ongwen*, ICC, ICC-02/04-01/15, Trial Judgment (Trial Chamber IX), February 4, 2021, para. 2679; *The Prosecutor v. Germain Katanga*, ICC, ICC-01/04-01/07, Judgment pursuant to article 74 of the Statute (Trial Chamber II), March 7, 2014, paras 1111-1113.

⁶³⁷ Rome Statute, art. 7(2)(b).

According to the ICC Elements of Crimes, the crime against humanity of extermination includes the following elements: “[t]he perpetrator killed one or more persons, including by inflicting conditions of life calculated to bring about the destruction of part of a population; [t]he conduct constituted, or took place as part of, a mass killing of members of a civilian population; [t]he conduct was committed as part of a widespread or systematic attack directed against a civilian population; and [t]he perpetrator knew that the conduct was part of or intended the conduct to be part of a widespread or systematic attack directed against a civilian population.”⁶³⁸

The International Criminal Tribunal for the former Yugoslavia (ICTY) has found that the elements of extermination as a crime against humanity are “a) act or omission that results in the death of persons on a massive scale (*actus reus*), and b) the intent to kill persons on a massive scale, or to inflict serious bodily injury or create conditions of life that lead to death in the reasonable knowledge that such act or omission is likely to cause the death of a large number of persons (*mens rea*).”⁶³⁹

Mass Killing

According to the ICC Elements of Crimes, the killing of one or more persons underlying the crime against humanity of extermination must constitute or take place as part of a “mass killing of members of a civilian population.”⁶⁴⁰ Regarding this element, the ICTY found that the crime of extermination requires a finding that “a particular population was targeted and that its members were killed or otherwise subjected to conditions of life calculated to bring about the destruction of a numerically significant part of the population.”⁶⁴¹ The Tribunal has provided that the “mass” nature of killing can be assessed based on “the time and place of the killings, the selection of the victims and the manner in which they were targeted, and whether the killings were aimed at the collective group rather than victims in their individual capacity.”⁶⁴² Further, the Tribunal has found that killings should be directed against a

⁶³⁸ ICC Elements of Crimes, art. 7(1)(b).

⁶³⁹ *Prosecutor v. Blagojević & Jokić*, ICTY, Case No. IT-02-60-T, Judgment (Trial Chamber), January 17, 2005, para. 572.

⁶⁴⁰ ICC Elements of Crimes, art. 7(1)(b).

⁶⁴¹ *Prosecutor v. Radislav Krstić*, ICTY, Case No. ICTY-IT-98-33-T, Judgment, August 2, 2001, para. 503.

⁶⁴² *Prosecutor v. Radovan Karadžić*, ICTY, Case No. IT-95-5/18-T, Public Redacted Version of Judgement Issued on 24 March 2016 (Volume I of IV), March 24, 2016, para. 483. See also *Prosecutor v. Milan Lukić and Sredoje Lukić*, ICTY, Case No. ICTY-IT-98-32/1, Appeal Judgement, December 4, 2012, para. 538.

“collective group rather than victims in their individual capacity,”⁶⁴³ but that “the offender need not have intended to destroy the group or part of the group to which the victims belong.”⁶⁴⁴

Both the ICTY and the International Criminal Tribunal for Rwanda (ICTR) have found that mass killing “does not suggest that a numerical minimum must be reached.”⁶⁴⁵

Intent

With respect to the mental element of extermination, acts must have been intended to kill persons including by *inflicting* “conditions of life calculated to bring about the destruction of part of a population.”⁶⁴⁶ The words “inflict” and “calculated” indicate a deliberate intent, in inflicting the conditions of life, to perpetrate mass killing. The Rome Statute provides that crimes within the jurisdiction of ICC, which include extermination, should be committed “with intent and knowledge.”⁶⁴⁷ They define “knowledge” to mean “awareness that a circumstance exists or a consequence will occur in the ordinary course of events.”⁶⁴⁸

The ICTR has found that there does not need to be “specific intent” to destroy the group, instead finding that there must be intent to perpetrate mass killing.⁶⁴⁹

The ICTY has found that “[t]he offender must intend to kill, to inflict grievous bodily harm, or to inflict serious injury, in the reasonable knowledge that such act or omission is likely to cause death, or otherwise intends to participate in the elimination of a number of individuals, in the knowledge that his action is part of a vast murderous enterprise in which a large number of individuals are systematically marked for killing or killed (*mens rea*).”⁶⁵⁰

⁶⁴³ *Prosecutor v. Radovan Karadžić*, ICTY, Case No. IT-95-5/18-T, Public Redacted Version of Judgement Issued on 24 March 2016 (Volume I of IV), March 24, 2016, para. 483.

⁶⁴⁴ *Prosecutor v. Mitar Vasiljević*, ICTY, Case No. IT-98-32-T, Judgment (Trial Chamber), November 29, 2002, para. 227.

⁶⁴⁵ *Prosecutor v. Radovan Karadžić*, ICTY, Case No. IT-95-5/18-T, Public Redacted Version of Judgement Issued on 24 March 2016 (Volume I of IV), March 24, 2016, para. 483; *The Prosecutor v. Jean-Baptiste Gatete*, ICTR, Case No. ICTR-2000-61-T, Trial Judgment, March 31, 2011, para. 636; *The Prosecutor v. Elizaphan Ntakirutimana and Gérard Ntakirutimana*, ICTR, Case No. ICTR-96-10-A & ICTR-96-17-A, Judgement (Appeals Chamber), December 13, 2004, para. 516.

⁶⁴⁶ ICC Elements of Crimes, art. 7(1)(b).

⁶⁴⁷ Rome Statute, art. 30.

⁶⁴⁸ *Ibid.*, art. 30(3); see also *The Prosecutor v. Jean-Pierre Bemba*, ICC-01/05-01/08, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor Against Jean-Pierre Bemba Gombo, June 15, 2009, para. 362.

⁶⁴⁹ *The Prosecutor v. Jean-Baptiste Gatete*, ICTR, Trial Judgment, Case No. ICTR-2000-61-T, March 31, 2011, para. 636; see also *The Prosecutor v. Elizaphan Ntakirutimana and Gérard Ntakirutimana*, ICTR, Case No. ICTR-96-10-A & ICTR-96-17-A, Judgement (Appeals Chamber), December 13, 2004, para. 522.

⁶⁵⁰ *Prosecutor v. Mitar Vasiljević*, ICTY, Case No. IT-98-32-T, Judgment (Trial Chamber), November 29, 2002, para. 229.

Actions by Israeli Authorities that Amount to Extermination

Israeli authorities and forces have taken actions, including cutting off and later restricting water and electricity, restricting fuel, destroying and damaging water and sanitation infrastructure, and blocking the entry of critical water materials, that have left the population of Gaza without adequate access to the amount of water needed for survival for nearly a year.

As of June 25, the Gaza Ministry of Health has recorded that at least 34 people in Gaza have died of starvation and dehydration, but it is clear from statements from healthcare professionals in Gaza, public health experts' conservative estimates, Integrated Food Security Phase Classification (IPC) projections, and other sources cited in this report, that there have likely already been thousands of deaths caused in part by the lack of access to potable water across Gaza.⁶⁵¹

Gaza is composed primarily of civilians. The presence of fighters from Palestinian armed groups in Gaza, along with the civilian population there, does not prevent Israeli authorities' actions to deprive the entire population in Gaza of water from being an attack directed against a civilian population and therefore a possible crime against humanity.⁶⁵² Israeli authorities have repeatedly stated that they are targeting the entire Palestinian population of Gaza in their decisions to cut off water, fuel, and other necessities to the strip. Though some authorities have also made statements stating that they are specifically targeting Hamas,

⁶⁵¹ "Appendix to letter of July 25, 2024 re: American physicians observations from the Gaza Strip since October 7, 2023", July 25, 2024, <https://static1.squarespace.com/static/66e083452b3cbf4bbd719aa2/t/66f5f8afa82cdd4e0focd607/1727396015767/Appendix+%281%29.pdf> (accessed September 13, 2024); وزارة الصحة الفلسطينية / غزة Palestinian Ministry of Health Facebook page post, March 9, 2024, <https://www.facebook.com/MOHGaza1994/posts/732414325730179> (accessed September 13, 2024); Human Rights Watch interviews with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024, and Asma Taha, via Microsoft Teams, August 9, 2024; see also Rasha Khatib, Martin McKee, Salim Yusuf, "Counting the dead in Gaza: difficult but essential," *The Lancet*, July 5, 2024, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01169-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01169-3/fulltext) (accessed September 13, 2024); Aya Batrawy, "Gaza's sick and malnourished children die as hospitals collapse from Israel's war," *NPR*, June 5, 2024, <https://www.npr.org/2024/06/05/nx-s1-4990196/gazas-sick-and-malnourished-children-die-as-hospitals-collapse-from-israels-war> (accessed September 13, 2024); "Devastating new figures reveal Gaza's child hunger catastrophe," *Save the Children* press release, June 25, 2024, <https://www.savethechildren.net/news/devastating-new-figures-reveal-gaza-s-child-hunger-catastrophe> (accessed September 13, 2024); Nidal Al-Mughrabi, "Israel storms Gaza City neighbourhood, orders Palestinians to go south," *Reuters*, June 27, 2024, <https://www.reuters.com/world/middle-east/girl-dies-malnutrition-gaza-israel-bombs-north-south-2024-06-27/> (accessed September 13, 2024).

⁶⁵² At least five Palestinian armed groups from Gaza participated in attacks in Israel on October 7, led by Hamas's armed wing, the Qassam Brigades, and including the Palestinian Islamic Jihad's armed wing, the Quds Brigades, among others. Human Rights Watch, "I Can't Erase All the Blood from My Mind": *Palestinian Armed Groups' October 7 Assault on Israel*, July 17, 2024, <https://www.hrw.org/report/2024/07/17/i-cant-erase-all-blood-my-mind/palestinian-armed-groups-october-7-assault-israel>.

rather than the population as a whole, authorities have taken actions that have deprived the entire population of Gaza of access to adequate amounts of water for survival, including cutting off electricity, restricting the entry of fuel, damaging and destroying water and sanitation infrastructure and repair materials, and blocking critical water materials from entering Gaza.

Israeli authorities' and forces' actions to deprive the civilian population of Gaza of water is both widespread and systematic in nature. Israeli authorities have directed the cutting off and later restriction of water, as well as the cutting off of electricity and blocking of fuel, against the whole of the population of Gaza, which constitutes a widespread attack. Israeli authorities have continued to block electricity and fuel from entering Gaza, along with supplies needed for the creation of potable water, continuously for months, while Israeli forces have deliberately destroyed several of Gaza's most critical water and sanitation infrastructure over several months, demonstrating the systematic nature of the attack. These factors also demonstrate that Israel's widespread and systematic attacks against the civilian population of Gaza, in the intentional infliction of such conditions of life, took place pursuant to a state policy.

Since October 7, 2023, Israeli authorities have repeatedly stated their intention to cut the population of Gaza from water, food, fuel, electricity, humanitarian aid, and other basic necessities required to sustain life and have implemented this as a policy.⁶⁵³

People cannot survive over an extended period of time without adequate access to water. The population of Gaza has had access to some water, allowing people to survive after months of water deprivation. At the same time, their limited access for many months to an average of about 2 to 9 liters of water per person (in many cases not of adequate quality for drinking), far below the minimum threshold required for survival according to the WHO, has likely led to thousands of deaths and will, according to experts, if unabated, lead to further mass death.

The Israeli authorities' effective control over the population of Gaza's access to water, electricity, and other critical needs, over Gaza's land and sea borders and what items can and cannot enter Gaza combined with their detailed knowledge of the humanitarian needs of

⁶⁵³ See Section "I. Water Deprivation as a Deliberate Act."

Gaza's population,⁶⁵⁴ where people live, and mass and individual population movements during the conflict including evacuations,⁶⁵⁵ is evidence that they intended for their policy of denying adequate water and sanitation to the population to cause fatal harms to large numbers of civilians, or were aware of the consequences of their actions and recklessly disregarded them.

UN officials have been warning since October 2023 that Israel's actions to deprive the civilian population of Gaza of resources necessary to sustain life would lead to mass death.

In November 2023, the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) Commissioner-General Philippe Lazzarini stated that the blocking of fuel had become a "matter of life and death."⁶⁵⁶ "Fuel is the only way for people to have safe drinking water. If not, people will start dying of severe dehydration, among them young children, the elderly, and women. Water is now the last remaining lifeline," he said.⁶⁵⁷ Though Israeli authorities later began allowing in some fuel, restrictions on fuel have continued throughout the hostilities, and the lack of adequate fuel has continued to be one of the largest factors in the lack of adequate water.

In February, Martin Griffiths, the then-head of the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), stated that Palestinians in Rafah "lack the basic necessities to survive," and are "stalked by hunger, disease and death."⁶⁵⁸

⁶⁵⁴ Israeli Ministry of Defense, Coordination of Government Activities in the Territories (COGAT), "Food Consumption in the Gaza Strip - Red Lines," January 1, 2008, slide presentation available from Gisha, <https://www.gisha.org/UserFiles/File/publications/redlines/red-lines-presentation-eng.pdf> (accessed September 11, 2024).

⁶⁵⁵ Human Rights Watch, "Questions and Answers: Israeli Military's Use of Digital Tools in Gaza," September 10, 2024, <https://www.hrw.org/news/2024/09/10/questions-and-answers-israeli-militarys-use-digital-tools-gaza>.

⁶⁵⁶ UNRWA, "A matter of life and death: water runs out for 2 million people in Gaza," October 13, 2023, <https://www.unrwa.org/newsroom/official-statements/matter-life-and-death-water-runs-out-2-million-people-gaza> (accessed September 13, 2024).

⁶⁵⁷ Ibid.

⁶⁵⁸ "Gazans 'stalked by hunger, disease and death', warns UN's top aid official," *UN News*, February 8, 2024, <https://news.un.org/en/story/2024/02/1146347> (accessed September 13, 2024). Also see Section "VI. Deaths and Illnesses Caused by Israeli Obstruction of Water."

Michael Fakhri, the UN special rapporteur on the right to food, stated in March that “Israel has mounted a starvation campaign against the Palestinian people in Gaza.”⁶⁵⁹ In September, Fakhri stated in a report that:

Israel has used starvation with the intent to destroy, in whole or in part, the Palestinian people by “(b) Causing serious bodily or mental harm to Palestinian people; (c) Deliberately inflicting on the Palestinian people conditions of life calculated to bring about their physical destruction in whole or in part.”⁶⁶⁰

In January 2024, the ICJ found that many Palestinians in Gaza “had no access to... potable water,” determined that “the catastrophic humanitarian situation in the Gaza Strip is at serious risk of deteriorating further,” and ordered Israel to “take immediate and effective measures to enable the provision of urgently needed basic services and humanitarian assistance to address the adverse conditions of life faced by Palestinians in the Gaza Strip.”⁶⁶¹

Yet, Israeli authorities and forces continued to destroy water and sanitation infrastructure, maintain the cutoff of electricity, restrict the supply of water, and limit the entry to Gaza of fuel and other items necessary for the production of water.

The Court issued new provisional measures in March, “in view of the worsening conditions of life faced by Palestinians in Gaza, in particular the spread of famine and starvation,” and specifically ordered Israel “to ensure, without delay ... the unhindered provision at scale ... [of] water, electricity, fuel [etc.],” and to “ensure with immediate effect” that its military not prevent “the delivery of urgently needed humanitarian assistance”⁶⁶²

⁶⁵⁹ “Gaza: Starvation claims more young lives as UN advocates for new aid routes,” *UN News*, March 7, 2024, [https://news.un.org/en/story/2024/03/1147342#:~:text=%E2%80%9CIsrael%20has%20mounted%20a%20starvation%20campaign%20against,access%20to%20the%20sea%2C%20impooverishing%20previously%20comfortable%20fishers.\(accessed September 13, 2024\).](https://news.un.org/en/story/2024/03/1147342#:~:text=%E2%80%9CIsrael%20has%20mounted%20a%20starvation%20campaign%20against,access%20to%20the%20sea%2C%20impooverishing%20previously%20comfortable%20fishers.(accessed%20September%2013,%202024).)

⁶⁶⁰ UNGA, “Report of the Special Rapporteur on the right to food, Michael Fakhri - Starvation and the right to food, with an emphasis on the Palestinian people’s food sovereignty,” A/79/171, July 17, 2024, <https://documents.un.org/doc/undoc/gen/n24/212/30/pdf/n2421230.pdf> (accessed December 3, 2024).

⁶⁶¹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, paras. 70, 74, 86(4).

⁶⁶² *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024, paras. 45, 51(2).

In May, the ICJ reaffirmed and renewed its previous orders, again calling for Israeli authorities to provide “urgently needed” basic services and humanitarian assistance, and cited the UNRWA director’s statement on May 18 that “people who are fleeing now do not have access to safe water supplies or sanitation facilities.”⁶⁶³ Yet, as of September, Israeli authorities maintained the cutoff of electricity and the blockade of critically needed fuel and other water-related supplies from entering Gaza. They have also forcibly displaced the population to areas which lack the most basic water and sanitation infrastructure, leaving many people with even less access to clean water and sanitation than in areas where they were displaced from, which already lacked adequate access to water.⁶⁶⁴

On November 21, 2024, ICC judges found that there are “reasonable grounds to believe that the lack of food, water, electricity and fuel, and specific medical supplies, created conditions of life calculated to bring about the destruction of part of the civilian population in Gaza, which resulted in the death of civilians, including children due to malnutrition and dehydration.”⁶⁶⁵ The panel of judges said it could not determine that “all elements of the crime against humanity of extermination were met” based on material presented by the Prosecution covering the period until May 20, 2024.⁶⁶⁶

Conclusion on the Crime of Extermination

The situation documented in this report shows that Israeli authorities, at the most senior level, were responsible for the destruction, including the deliberate destruction, of water and sanitation infrastructure, the prevention of repairs to damaged water and sanitation infrastructure, and cutting off or severely restricting water, electricity and fuel. These acts

⁶⁶³ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024, paras. 52, 46.

⁶⁶⁴ OCHA, “Humanitarian Situation Update #209 | Gaza Strip”, August 26, 2024, <https://www.ochaopt.org/content/humanitarian-situation-update-209-gaza-strip> (accessed September 4, 2024); UN, “UNRWA The consequences of an offensive in Rafah would be devastating for 1.4 million people, UN aid agency warns”, May 6, 2024, <https://un.dk/we-wont-abandon-gazans-sheltering-in-rafah-says-unrwa/> (accessed September 4, 2024).

⁶⁶⁵ “Situation in the State of Palestine: ICC Pre-Trial Chamber I rejects the State of Israel’s challenges to jurisdiction and issues warrants of arrest for Benjamin Netanyahu and Yoav Gallant,” ICC press release, November 21, 2024, <https://www.icc-cpi.int/news/situation-state-palestine-icc-pre-trial-chamber-i-rejects-state-israels-challenges> (accessed December 3, 2024).

⁶⁶⁶ Given the Chamber said it has found all other elements of the crime of extermination, it presumably means it could not determine, based on the evidence before it, that the conditions of life it considered that Netanyahu and Gallant had caused a ‘mass killing.’ However, it is important to note, first, that the Chamber was only provided with evidence up to May 20; and second, as described in this report, that there has been no consistent tracking of deaths caused indirectly during the hostilities. See also Tom Dannenbaum, “Nuts & Bolts of the International Criminal Court Arrest Warrants in the ‘Situation in Palestine’,” *Just Security*, November 22, 2024, <https://www.justsecurity.org/105048/icc-arrest-warrants/> (accessed December 1, 2024).

have likely caused thousands of deaths, and will likely continue to cause deaths into the future, including after the cessation of hostilities. The policies remain in place and are ongoing, despite numerous warnings to Israeli officials on their impact, including from the ICJ.

Therefore, Human Rights Watch finds that Israeli policies have amounted to the intentional creation of conditions of life calculated to bring about the destruction of part of the civilian population of Gaza. This was part of a mass killing of members of the civilian population, and, as a state policy, amounts to a widespread and systematic attack directed against a civilian population. Therefore, all elements of the crime against humanity of extermination are met. Israeli officials are responsible for the crime against humanity of extermination, which is an ongoing crime.

Genocide

The crime of genocide in international law involves the specific intent to destroy, in whole or in part, a national, ethnical, racial, or religious group, as such, by killing its members or by causing serious bodily or mental harm to members of the group; or deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part; or imposing measures intended to prevent births within the group; or forcibly transferring children of the group to another group.⁶⁶⁷

Genocide is distinct from other crimes because of this special, specific intention, as a constitutive element of the crime.⁶⁶⁸ Genocide can be committed against a part, but a substantial or significant part, of an identified group,⁶⁶⁹ and in a limited geographic zone, such as a region or municipality.⁶⁷⁰ The ICJ has found that a “group” is defined by “particular positive characteristics—national, ethnical, racial, or religious—and not the lack of them.”⁶⁷¹

⁶⁶⁷ Convention on the Prevention and Punishment of the Crime of Genocide, adopted December 9, 1948, G.A. Res. 260 A (III), entered into force January 12, 1951, Article II; Rome Statute of the International Criminal Court (Rome Statute), A/CONF.183/9, July 17, 1998, entered into force July 1, 2002, art. 6.

⁶⁶⁸ See for example, *The Prosecutor v. Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 498; *Prosecutor v. Goran Jelisić*, ICTY, IT-95-10-A, Appeal Judgment, July 5, 2001, para. 45.

⁶⁶⁹ *Prosecutor v. Radislav Krstić*, ICTY, Case No. ICTY-IT-98-33-T, Judgment, August 2, 2001, para. 634; *Prosecutor v. Jelisić*, ICTY, Case No. IT-95-10, Judgment (Trial Chamber), December 14, 1999, para. 82.

⁶⁷⁰ *Prosecutor v. Jelisić*, ICTY, Case No. IT-95-10, Judgment (Trial Chamber), December 14, 1999, para. 83.

⁶⁷¹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro)*, International Court of Justice, Judgment of 26 February 2007, February 26, 2007, para. 193; See also

The International Criminal Tribunal for the former Yugoslavia (ICTY) has held that a national, ethnical, racial, or religious group is defined “by using as a criterion the stigmatisation of the group, notably by the perpetrators of the crime, on the basis of its perceived national, ethnical, racial or religious characteristics.”⁶⁷²

Conditions of Life Calculated to Bring About Physical Destruction

The following elements are needed in order to demonstrate the commission of genocide by deliberately inflicting conditions of life calculated to bring about physical destruction: the perpetrator inflicted certain conditions of life upon one or more persons; such person or persons belonged to a particular national, ethnical, racial or religious group; the perpetrator intended to destroy, in whole or in part, that national, ethnical, racial or religious group, as such; the conditions of life that were deliberately inflicted were calculated to bring about the physical destruction of that group, in whole or in part; and the conduct took place in the context of a manifest pattern of similar conduct directed against that group or was conduct that could itself effect such destruction.⁶⁷³ The factual element of this act of genocide is very similar to the definition of the crime against humanity of extermination.

The ICTY and the International Criminal Tribunal for Rwanda (ICTR) have both stated that conditions of life calculated to bring about physical destruction of a group include “circumstances that would lead to a slow death.”⁶⁷⁴ Deliberately inflicting conditions such as “the lack of proper food, water, shelter, clothing, [or] sanitation” are examples of acts that would be punishable under the Genocide Convention if committed with genocidal intent.⁶⁷⁵

The Prosecutor v. Omar Hassan Ahmad Al Bashir, ICC, ICC-02/05-01/09, Decision on the Prosecution's Application for a Warrant of Arrest against Omar Hassan Ahmad Al Bashir (Pre-Trial Chamber I), March 4, 2009, para. 135; *Prosecutor v. Zdravko Tolimir*, ICTY, Case No. IT-05-88/2-A, Judgment (Trial Chamber), December 12, 2012, para. 735.

⁶⁷² *Prosecutor v. Radislav Krstić*, ICTY, Case No. ICTY-IT-98-33-T, Judgment, August 2, 2001, para. 557; *Prosecutor v. Jelisić*, ICTY, Case No. IT-95-10, Judgment (Trial Chamber), December 14, 1999, para. 70.

⁶⁷³ ICC Elements of Crimes, art. 6(c).

⁶⁷⁴ *Prosecutor v. Zdravko Tolimir*, ICTY, Case No. IT-05-88/2-A, Judgment (Trial Chamber), December 12, 2012, para. 740; *Prosecutor v. Zdravko Tolimir*, ICTY, Case No. IT-05-88/2-A, Judgment (Appeals Chamber), April 8, 2015, para. 225; *Prosecutor v. Clément Kayishema and Obed Ruzindana*, ICTR, Case No. ICTR-95-1-T, Judgment (Trial Chamber), May 21, 1999, paras 115-116.

⁶⁷⁵ *Prosecutor v. Zdravko Tolimir*, ICTY, Case No. IT-05-88/2-A, Judgment (Appeals Chamber), April 8, 2015, para. 225, citing *Prosecutor v. Zdravko Tolimir*, ICTY, Case No. IT-05-88/2-A, Judgment (Trial Chamber), December 12, 2012, para. 740; *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, paras 505-506; *Prosecutor v. Radoslav Brđanin*, ICTY, Case No. IT-99-36-T, Judgment (Trial Chamber), September 1, 2004, para. 691; *Prosecutor v. Milomir Stakić*, ICTY, Case No. IT-97-24-T, Judgment (Trial Chamber), July 31, 2003, paras 517-518; *Prosecutor v. Alfred Musema*, ICTR, Case No. ICTR-96-13-T, Judgment and Sentence (Trial Chamber), January 27, 2000, para. 157; *Prosecutor v. Georges Anderson Nderubumwe Rutaganda*, ICTR, Case No. ICTR-96-3-T, Judgment (Trial Chamber), December 6, 1999,

The ICC, in issuing an arrest warrant against former Sudanese President Omar Bashir for his responsibility for crimes of genocide, crimes against humanity, and war crimes in Sudan, found reasonable grounds to believe that Sudanese government forces' acts of contaminating water pumps and wells in towns and villages inhabited by members of tribes that were being attacked by those forces were committed as a part of a genocidal policy.⁶⁷⁶

Intent to Destroy a Group as Such

The crime of genocide requires that there be “specific” or “special” intent to destroy a group in whole or in part as such.⁶⁷⁷ The ICTY has held that “specific intent requires that the perpetrator, by one of the prohibited acts enumerated in Article 4 of the Statute, seeks to achieve the destruction, in whole or in part, of a national, ethnical, racial or religious group, as such.”⁶⁷⁸

While intent to commit genocide may be “difficult, even impossible, to determine” outside of a confession, the ICTR, in considering individual responsibility for genocide, has provided that intent can be inferred from actions, including “evidence which demonstrates a consistent pattern of conduct by the Accused.”⁶⁷⁹

The ICJ, in considering state responsibility for genocide, has also established that genocidal intent may be inferred from a pattern of conduct, with the high threshold of when “this is the

para. 52; *Prosecutor v. Clément Kayishema and Obed Ruzindana*, ICTR, Case No. ICTR-95-1-T, Judgment (Trial Chamber), May 21, 1999, paras 115-116; *Prosecutor v. Vujadin Popović et al.*, ICTY, Case No. IT-05-882-T, Judgment (Trial Chamber), June 10, 2010, para. 814.

⁶⁷⁶ *The Prosecutor v. Omar Hassan Ahmad Al Bashir*, ICC, Second Decision on the Prosecution's Application for a Warrant of Arrest, July 12, 2010, para 38.

⁶⁷⁷ *The Prosecutor v. Omar Hassan Ahmad Al Bashir*, ICC, ICC-02/05-01/09, Decision on the Prosecution's Application for a Warrant of Arrest against Omar Hassan Ahmad Al Bashir (Pre-Trial Chamber I), March 4, 2009, para. 138; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro)*, International Court of Justice, Judgment of 26 February 2007, February 26, 2007, para 187; *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, paras 498, 517-522.

⁶⁷⁸ *Prosecutor v. Goran Jelisić*, ICTY, IT-95-10-A, Appeal Judgment, July 5, 2001, para. 46.

⁶⁷⁹ *The Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 523-524; *The Prosecutor v. Georges Anderson Nderubumwe Rutaganda*, ICTR, Case No. ICTR-96-3-T, Judgment (Trial Chamber), December 6, 1999, para. 61-63; see also *The Prosecutor v. Alfred Musema*, ICTR, Case No. ICTR-96-13-T, Judgment and Sentence (Trial Chamber), January 27, 2000, para. 167; *The Prosecutor v. Semanza*, ICTR, Case No. ICTR-97-20, Judgment and Sentence (Trial Chamber), May 15, 2003, para. 313; *The Prosecutor v. Ignace Bagilishema*, ICTR, Case No. ICTR-95-1A, Judgment (Trial Chamber), June 7, 2001, para. 63.

only inference that could reasonably be drawn from the acts in question.”⁶⁸⁰ In a 2015 application of this test, the ICJ considered it particularly important to assess factors such as (i) the scale and systematic nature of attacks; (ii) the number of excessive casualties and damage not justified by military necessity; (iii) the specific targeting of the protected group; and (iv) the nature, extent, and degree of the injuries caused to the protected group.⁶⁸¹

The ICTY has found that proof of specific intent for individuals, “may, in the absence of direct explicit evidence, be inferred from a number of facts and circumstances, such as the general context, the perpetration of other culpable acts systematically directed against the same group, the scale of atrocities committed, the systematic targeting of victims on account of their membership of a particular group, or the repetition of destructive and discriminatory acts.”⁶⁸²

The perpetrator must also intend to destroy the group “in whole or in part, as such.” The ICTY has held that “[a]lthough the perpetrators of genocide need not seek to destroy the entire group protected by the Convention, they must view the part of the group they wish to destroy as a distinct entity which must be eliminated as such.”⁶⁸³ The ICTR has held that “‘in part’ requires the intention to destroy a considerable number of individuals who are part of the group.”⁶⁸⁴ The ICJ has said the part of the group targeted must be significant enough to have an impact on the group as a whole.⁶⁸⁵

⁶⁸⁰ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Croatia v. Serbia)*, International Court of Justice, Judgment of 3 February 2015, February, 3, 2015, para. 148. In another case, certain countries have urged the ICJ to adopt a “balanced approach” to the “only reasonable inference” test, where it “applies only between alternative explanations that have been found to be reasonably supported by the evidence”, see *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (The Gambia v. Myanmar)*, International Court of Justice, Joint declaration of intervention of Canada, Denmark, France, Germany, the Netherlands and the United Kingdom, November 15, 2023, paras 51-52.

⁶⁸¹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Croatia v. Serbia)*, International Court of Justice, Judgment of 3 February 2015, February, 3, 2015, para. 413.

⁶⁸² *Prosecutor v. Goran Jelisić*, ICTY, IT-95-10-A, Appeal Judgment, July 5, 2001, para. 47.

⁶⁸³ *Prosecutor v. Radislav Krstić*, ICTY, Case No. ICTY-IT-98-33-T, Judgment, August 2, 2001, para. 590; see also *The Prosecutor v. Ignace Bagilishema*, ICTR, Case No. . ICTR-95-1A-T, Judgment (Trial Chamber), June 7, 2001, para. 64. The Chamber agreed “with the statement of the International Law Commission, that ‘the intention must be to destroy the group as such, meaning as a separate and distinct entity, and not merely some individuals because of their membership in particular group.’”

⁶⁸⁴ *Prosecutor v. Clément Kayishema and Obed Ruzindana*, ICTR, Case No. ICTR-95-1-T, Judgment (Trial Chamber), May 21, 1999, para. 97.

⁶⁸⁵ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro)*, International Court of Justice, Judgment of 26 February 2007, February 26, 2007, para 198; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, para. 44.

The ICTY has also stated that the requirement that there be specific intent to destroy the group “‘as such’ ... makes genocide an exceptionally grave crime ... as it shows that the crime of genocide requires intent to destroy a collection of people because of their particular group identity based on nationality, race, ethnicity, or religion.”⁶⁸⁶

The ICTY has held that the perpetrator must intend “to destroy the group ‘as such,’ meaning as a separate and distinct entity, and not merely some individuals because of their membership in a particular group.”⁶⁸⁷ Furthermore, the Tribunal has found that “The evidence must establish that it is the group that has been targeted, and not merely specific individuals within that group.”⁶⁸⁸

The ICTR has interpreted “‘as such’ to mean that the act must be committed against an individual because the individual was a member of a specific group and specifically because he belonged to this group, so that the victim is the group itself, not merely the individual.”⁶⁸⁹

Actions by Israeli Authorities that Amount to Acts of Genocide

The International Court of Justice (ICJ) has found that “the Palestinians appear to constitute a distinct “national, ethnical, racial or religious group,” and hence a protected group within the meaning of article II of the Genocide Convention.”⁶⁹⁰ It found that “Palestinians in the Gaza Strip form a substantial part of the protected group [the Palestinians].”⁶⁹¹

Through the cutting off of electricity, the cutting off and subsequent restrictions of water, and restrictions on the entry of fuel; the destruction, sometimes clearly deliberate destruction, of water and sanitation infrastructure as well as repair materials; the targeting of water workers and other humanitarian aid workers; and the blocking of aid required for the production of

⁶⁸⁶ *Prosecutor v. Radovan Karadžić*, ICTY, Case No. IT-95-5/18-T, Public Redacted Version of Judgement Issued on 24 March 2016 (Volume I of IV), March 24, 2016, para. 551.

⁶⁸⁷ *Prosecutor v. Goran Jelisić*, ICTY, Case No. IT-95-10, Judgment (Trial Chamber), December 14, 1999, para. 79. See also *Prosecutor v. Radislav Krstić*, ICTY, Case No. ICTY-IT-98-33-T, Judgment, August 2, 2001, para. 561.

⁶⁸⁸ *Prosecutor v. Duško Sikirica et al.*, ICTY, Case No. IT-95-8-T, Judgement on Defence Motions to Acquit, September 3, 2001, para. 89.

⁶⁸⁹ *The Prosecutor v. Niyitegeka*, ICTR, Case No. ICTR-96-14-T, Judgment and Sentence (Trial Chamber), May 16, 2003, para. 410; *The Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 521.

⁶⁹⁰ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, para. 45.

⁶⁹¹ *Ibid.*

safe drinking water, Israeli authorities have intentionally inflicted on Palestinians in Gaza “conditions of life calculated to bring about its physical destruction in whole or in part.” This definition is nearly identical to that of the crime against humanity of extermination.

The ICC Pre-Trial Chamber I, as set out above, has found reasonable grounds to believe that the lack of food, water, electricity and fuel, and specific medical supplies in Gaza created conditions of life calculated to bring about the destruction of part of the civilian population in Gaza, which resulted in the death of civilians, including children due to malnutrition and dehydration.

The conditions that Israeli authorities have created in Gaza since October 2023 are such that they would, and are, leading to slow deaths. Palestinians in Gaza have, on average, consistently not had access to an adequate supply of water needed for survival since October 2023, based on the UN minimum standard of 15 liters of water per day per person in emergency situations.⁶⁹²

As of June 25, the Ministry of Health in Gaza has reported that 34 people have died due to starvation and dehydration, but statements from doctors and nurses have made clear that there have likely been many uncounted that have been caused in part by the lack of access to water and sanitation.⁶⁹³ Doctors and nurses described watching patients die from wounds and disease in part because of how malnourished and dehydrated they were, and in some cases, watching infants die because their mothers could not breastfeed them and their formula was being mixed with dirty water.⁶⁹⁴

⁶⁹² “‘Barely a drop to drink’: children in the Gaza Strip do not access 90 per cent of their normal water use”, UNICEF, press release, December 19, 2023, <https://www.unicef.org/lac/en/press-releases/barely-drop-drink-children-gaza-strip-do-not-access-90-cent-their-normal-water-use#:~:text=According%20to%20humanitarian%20standards%2C%20the,is%203%20litres%20per%20day> (accessed September 4, 2024).

⁶⁹³ Human Rights Watch interviews with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024; Abeerah Muhammed, via Microsoft Teams, August 14, 2024; Dr. Usman Shah, via Microsoft Teams, August 21, 2024; Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024; Dr. Abed al-Rahman Bassem, via Microsoft Teams, August 22, 2024; Dr. Hussam Abu Safiyeh, Kamal Adwan hospital, via phone, August 13, 2024; HRW interview with Dr. Ghassan-Abu Sittah, Beirut, August 9, 2024.

⁶⁹⁴ Human Rights Watch interviews with Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024; Abeerah Muhammed, via Microsoft Teams, August 14, 2024; Dr. Usman Shah, via Microsoft Teams, August 21, 2024; Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024; Dr. Abed al-Rahman Bassem, via Microsoft Teams, August 22, 2024; Dr. Hussam Abu Safiyeh, via phone, August 13, 2024; Asma Taha, via Microsoft Teams, August 9, 2024; Dr. Nick Maynard, via Microsoft Teams, August 27, 2024; and Dr. James Smith, via Microsoft Teams, August 27, 2024.

Doctors have estimated that tens of thousands of people have likely already died as a result of malnutrition and lack of adequate access to water.⁶⁹⁵

It is also very likely that “slow deaths” will continue in Gaza even after hostilities end due to the damage and destruction to water and sanitation infrastructure as well as to housing, the forced displacement of the population, and the destruction of the healthcare system.

At the end of January 2024, the World Bank estimated it would cost over US\$18 billion to rebuild infrastructure across Gaza, including over \$500 million for WASH infrastructure alone.⁶⁹⁶ Since then, Israeli forces have continued to damage and destroy WASH infrastructure, including infrastructure that is critical to sustaining life in Gaza. Reconstruction will take years. In May, the United Nations Development Program (UNDP) and the United Nations Economic and Social Commission for Western Asia (ESCWA) stated that, “Even with an optimistic scenario, in which a five-fold increase of construction materials is allowed into Gaza, it would take until 2040 to reconstruct the completely destroyed housing units.”⁶⁹⁷ Even if recovery of WASH infrastructure began tomorrow “slow deaths” caused by the living conditions created by Israeli authorities’ actions in the last year will continue for some time.⁶⁹⁸

The United Nations Environment Programme (UNEP), in a study of the future environmental impacts that the hostilities will have on Gaza’s environment, found that damage and destruction of Gaza’s desalination facilities “will impact people’s [long-term] access to

⁶⁹⁵ “Appendix to letter of July 25, 2024 re: American physicians observations from the Gaza Strip since October 7, 2023”, July 25, 2024, <https://static1.squarespace.com/static/66e083452b3cbf4bbd719aa2/t/66f5f8afa82cdd4e0focd607/1727396015767/Appendix+%281%29.pdf> (accessed September 13, 2024).

⁶⁹⁶ UN, EU and World Bank, “Gaza Strip Interim Damage Assessment”, March 29, 2024, <https://palestine.un.org/sites/default/files/2024-04/Gaza-Interim-Damage-Assessment-Final.pdf> (accessed September 4, 2024).

⁶⁹⁷ UNDP, “Gaza war: expected socioeconomic impacts on the State of Palestine Update | May 2024”, May 2024, <https://www.undp.org/arab-states/publications/gaza-war-expected-socio-economic-impacts-state-palestine-o> (accessed September 4, 2024).

⁶⁹⁸ “Counting the dead in Gaza: difficult but essential,” *The Lancet*, July 5, 2024, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01169-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01169-3/fulltext) (accessed September 4, 2024); Zeina Jamaluddine et al., “Crisis in Gaza: Scenario-based health impact projections. Report One: 7 February to 6 August 2024,” London School of Hygiene and Tropical Medicine and Johns Hopkins University, February 19, 2024, https://gaza-projections.org/gaza_projections_report.pdf (accessed September 4, 2024); Geneva Declaration Secretariat, “Global Burden of Armed Violence”, September 2008, <https://www.refworld.org/reference/research/gds/2008/en/64390> (accessed September 4, 2024).

freshwater, even when power to run such facilities is restored.”⁶⁹⁹ In the interim of rebuilding these facilities, unsustainable amounts of water will be pulled from the aquifer, causing likely further damage to the largely contaminated groundwater supply.⁷⁰⁰ The study also described the harm that sewage overflow from the destroyed and inoperable wastewater treatment plants may have on Gaza’s environment, including the groundwater supply:

Porous soil increases the risk of sewage contamination of the groundwater. ... The possible seepage of sewage containing pathogens and chemical pollutants into the aquifer poses a health risk to anyone extracting and using untreated water directly from wells. Further deterioration of the aquifer from sewage infiltration will compound risks to health from poor water quality, depending on how quickly it will be possible to rebuild a reliable supply of safe water.⁷⁰¹

Evidence of Genocidal Intent

As stated above, genocide requires the commission of an act or acts of genocide with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such. This is a difficult standard to show; the ICJ has said, in terms of state responsibility, that it requires either evidence of a state plan expressing the intent to commit genocide, or that such intent can be inferred from a pattern of conduct by the state.⁷⁰² But the ICJ has said that to draw such an inference of genocidal intent from a pattern of conduct, it would need to be the only inference that could reasonably be drawn from the acts in question.⁷⁰³

Israel, in hearings at the ICJ, has denied having the specific genocidal intent to destroy, in whole or in part, the Palestinian people as such. In its submissions, Israel argued that in the aftermath of the Hamas-led attacks on October 7, 2023, “it acted with the intention to

⁶⁹⁹ UNEP, “Environmental impact of the conflict in Gaza: Preliminary assessment of environmental impacts,” June 2024, <https://wedocs.unep.org/20.500.11822/45739> (accessed September 4, 2024),

citing Musallam, A., Zhou, Y. and Jewitt, G, “Simulation of groundwater flow and seawater intrusion in response,” *Hydrogeology Journal*, vol. 31 (2023), accessed September 4, 2024, doi: <https://doi.org/10.1007/s10040-023-02694-7>.

⁷⁰⁰ Ibid.

⁷⁰¹ UNEP, “Environmental impact of the conflict in Gaza: Preliminary assessment of environmental impacts,” June 2024, <https://wedocs.unep.org/20.500.11822/45739> (accessed September 4, 2024).

⁷⁰² *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Croatia v. Serbia)*, International Court of Justice, Judgment of 3 February 2015, February, 3, 2015, para. 145.

⁷⁰³ Ibid, para. 148.

defend itself, to terminate the threats against it and to rescue the hostages.”⁷⁰⁴ In addition, Israel argued that measures to mitigate civilian harm and facilitate humanitarian assistance demonstrate the absence of genocidal intent.⁷⁰⁵

Israeli authorities’ actions to deprive Palestinians in Gaza of water have been of a systematic nature, have been widespread across Gaza, and have now continued for months. Since October 7, 2023, through the writing of this report, Israeli authorities, despite clear and consistent data from the United Nations showing that people in Gaza do not have adequate water, have continued to damage and destroy critical water and sanitation infrastructure; cut electricity and restrict the entry of fuel, which is required for most water and sanitation infrastructure to function; block materials for water and sanitation from entering the strip; attack water workers, and destroy materials needed for repairs to water and sanitation infrastructure. People in Gaza have nowhere else to go—Israel continues to maintain a blockade and a more than 17-year unlawful closure of the strip.

Israeli authorities have continued to take these actions despite clear knowledge, at least as of January 26, 2024, when the ICJ first ordered provisional measures, that at least a large portion of the population of Gaza was suffering from a lack of access to adequate water.

In its January 26 order, the ICJ stated that Israel’s military actions since October 7 have resulted “in tens of thousands of deaths and injuries and the destruction of homes, schools, medical facilities and other vital infrastructure, as well as displacement on a massive scale.”⁷⁰⁶ The court also noted that “At present, many Palestinians in the Gaza Strip have no access to the most basic foodstuffs, potable water, electricity, essential medicines or heating.”⁷⁰⁷

This ICJ order put Israeli authorities on notice that their actions, including those to deprive the population of water, could constitute violations of the Genocide Convention.

⁷⁰⁴ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, para. 24.

⁷⁰⁵ *Ibid.*

⁷⁰⁶ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, para. 70.

⁷⁰⁷ *Ibid.*

Yet, in the three months after the court’s January order, Israeli authorities and forces continued to destroy water and sanitation infrastructure, continued cutting the electricity supply and restricting the water supply, and continued to restrict fuel and other items necessary for the production of water from entering Gaza. Conditions in Gaza worsened, leading the court to order a new set of provisional measures in March calling on Israel to immediately take measures to ensure that food, water, electricity, fuel, and other necessities for survival were provided to civilians in Gaza.⁷⁰⁸

In its March order, the ICJ directed Israel to take further provisional measures “in view of the worsening conditions of life faced by Palestinians in Gaza, in particular the spread of famine and starvation.”⁷⁰⁹ Specifically, the court ordered Israel to:

(a) [...] Take all necessary and effective measures to ensure, without delay, in full co-operation with the United Nations, the unhindered provision at scale by all concerned of urgently needed basic services and humanitarian assistance, including food, water, electricity, fuel, shelter, clothing, hygiene and sanitation requirements, as well as medical supplies and medical care to Palestinians throughout Gaza, including by increasing the capacity and number of land crossing points and maintaining them open for as long as necessary; and (b) [...] ensure with immediate effect that its military does not commit acts which constitute a violation of any of the rights of the Palestinians in Gaza as a protected group under the Convention on the Prevention and Punishment of the Crime of Genocide, including by preventing, through any action, the delivery of urgently needed humanitarian assistance.⁷¹⁰

In the two months following the March order, Israeli authorities continued to cut electricity, block adequate fuel and other supplies needed for water production from entering Gaza, and destroy water and sanitation infrastructure. Though authorities began to pipe in more water from Israel to Gaza through the Mekorot pipelines at the end of April after Gaza’s Coastal Municipalities Water Utility engineers were able to make repairs, this improvement was

⁷⁰⁸ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 28 March 2024, March 28, 2024, para. 45.

⁷⁰⁹ Ibid.

⁷¹⁰ Ibid.

nowhere near enough to meet the immense needs of the population, and was also offset by evacuation orders that forcibly displaced the population to areas where the water network did not reach. On May 5, Israeli forces shut down Gaza's two main border crossings, and on May 6, began ordering Palestinians to evacuate Rafah, which at that point housed over 1 million people, to al-Mawasi, an area that the United Nations warned lacks basic water and sanitation infrastructure.

On May 24, the ICJ ordered Israeli authorities to “[m]aintain open the Rafah crossing for unhindered provision at scale of urgently needed basic services and humanitarian assistance,” noting the “catastrophic humanitarian situation in the Gaza Strip” and the further deterioration of conditions in Gaza since the court’s March order.⁷¹¹

Israeli authorities and forces have continued to destroy and damage water and sanitation infrastructure, and have continued to block electricity and critical water supplies from entering Gaza and restrict the entry of fuel. As of September 2024, most residents of Gaza still do not have access to an adequate amount of water needed for survival, and doctors and nurses have reported that many of their patients have died from preventable diseases and infections, and healable wounds, due to dehydration and the unavailability of water.⁷¹²

Such actions by Israeli authorities have not targeted specific individuals, but rather the population as a whole. Their knowledge of Gaza’s water infrastructure, as well as of the impacts that their actions to cut electricity, restrict fuel and water, and destroy and damage water and sanitation infrastructure were having on the population, and their continued pattern of actions to deprive the population of water, demonstrate an intent to cut off the population of adequate access to water and sanitation required for survival, which would inevitably lead to death.

⁷¹¹ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 24 May 2024, May 24, 2024, paras 28, 52, 57.

⁷¹² State of Palestine WASH Cluster, “Gaza Rapid Wash Assessment Household Survey for Access to Wash Services,” September 2024, <https://drive.google.com/file/d/1oXGCEOZ--GLxAkdz3gpl3Nv86KKSNeq/view> (accessed December 2, 2024); Human Rights Watch interviews with Asma Taha, via Microsoft Teams, August 9, 2024; Dr. Feroze Sidhwa, via Microsoft Teams, August 6, 2024; Abeerah Muhammed, via Microsoft Teams, August 14, 2024; Dr. Abed al-Rahman Basem, via Microsoft Teams, August 22, 2024; Dr. Omar al-Najjar, via Microsoft Teams, August 22, 2024; Dr. Nick Maynard, via Microsoft Teams, August 27, 2024; Dr. James Smith, via Microsoft Teams, August 27, 2024; Dr. Usman Shah, via Microsoft Teams, August 21, 2024; and interview with Dr. Ghassan Abu-Sittah, Beirut, August 9, 2024.

In addition to the Israeli authorities' cumulative actions, evidence suggesting intent by at least some senior Israeli authorities to "destroy" at least part of the Palestinian population of Gaza, as such, may be taken from the statements by high-ranking Israeli officials with the power to set policy over Gaza and army commanders, outlined in Section "I. Water Deprivation as Weapon of War," which have been followed by actions reflecting their stated intent. Since October 7, 2023, Israeli officials have called for Palestinians in Gaza to be deprived of life-sustaining necessities, including food, electricity, and water, and have continued to execute a policy that has deprived the population of these supplies.⁷¹³

In addition to Israeli authorities' calls for water, fuel, electricity, and humanitarian aid to be cut to the population of Gaza, some Israeli senior officials have made statements calling for the destruction of Gaza or calling for the destruction of all Palestinians in Gaza. During a televised speech on October 8, 2023, Netanyahu said, "[w]e will turn Gaza into an Island of ruins."⁷¹⁴ Gallant, when calling for a "complete siege" of Gaza on October 9, 2023, said: "[w]e are fighting against human animals... Gaza won't return to what it was before. We will eliminate everything [even] if it doesn't take one day, it will take...weeks, or even months, we will reach all places."⁷¹⁵ Though Hagari and Gallant later said that Israel's war was against Hamas, and not "the people of Gaza," their actions to deprive people of water, electricity, and fuel continued.⁷¹⁶

Senior leaders also made references to a biblical commandment to wipe out the descendants of Amalek, an historical tribe hostile to the Israelites, several times in the context of Gaza since the start of hostilities.⁷¹⁷ On October 28, 2023, Netanyahu invoked the

⁷¹³ See statements in Section I "Water Deprivation as a Deliberate Act".

⁷¹⁴ "שידור חי: ראש הממשלה בנימין נתניהו בהצהרה מהקריה בתל אביב", October 7, 2023, video clip, YouTube, <https://www.youtube.com/watch?v=Dsv7RNKX-BA> (accessed December 3, 2024).

⁷¹⁵ "We will eliminate everything": Israel, October 11, 2023, video clip, YouTube, <https://www.youtube.com/watch?v=LkCo1UXbvOc> (accessed December 4, 2024).

⁷¹⁶ "Our war is against Hamas - not against the people of Gaza" - IDF Spokesperson's English statement, December 4, 2023, video clip, YouTube, <https://www.youtube.com/watch?v=63vRt1eNPS8> (accessed December 3, 2024); "Our war against Hamas is not a war against the people of Gaza": Yoav Gallant, December 18, 2023, video clip, YouTube, <https://www.youtube.com/watch?v=jlmv61LJZOw> (accessed December 3, 2024).

⁷¹⁷ Samuel 15:3. The Lord orders King Saul, "Now go and smite Amalek, and utterly destroy all that they have, and spare them not; but slay both man and woman, infant and suckling, ox and sheep, camel and ass." Saul kills all the Amalekites, but because he spares their king and some livestock, the Lord deprives him of kingship. See "Israel-Hamas war: 'We will fight and we will win,' says Benjamin Netanyahu," October 28, 2023, video clip, YouTube, <https://www.youtube.com/watch?v=P5LmB6uup3o> (accessed December 4, 2024); Benjamin Netanyahu (@netanyahu) post to X (formerly known as Twitter), November 3, 2023, <https://twitter.com/netanyahu/status/1720400053347438719>

biblical commandment for the first time, stating in a news conference, “You must remember what Amalek has done to you.”⁷¹⁸ He reiterated the statement on November 3, 2023, adding that this is “a war between the sons of light and the sons of darkness.”⁷¹⁹

Even after the ICJ’s January order in which the court directed Israel to “take immediate and effective measures to enable the provision of urgently needed basic services and humanitarian assistance,” individuals in senior positions of authority in Israel continued to call for water, fuel, electricity, and aid to be cut. In several cases, senior individuals called for depriving all Palestinians in Gaza of essentials necessary for life in order to pressure armed groups to release hostages and Hamas to surrender.⁷²⁰

These statements, in and of themselves, are calls for collective punishment—a war crime—and may also amount to incitement to genocide. But they also indicate an intent to deprive the entire population of Gaza of essentials of life, including water. The predictable result of Israel’s pursuit of a long-term policy of depriving civilians in Gaza from access to adequate water and sanitation has been to “inflict conditions of life calculated to bring about physical destruction” of Palestinians in the Gaza Strip. Israeli officials have deliberately inflicted, and continued to inflict, conditions of life on Palestinians in Gaza, calculated to bring about mass deaths, and which have, and continue to, cause mass deaths.

(accessed December 4, 2024); “ח"כ בועז ביסמוט: אין מקום לשום מחווה הומניטרית - יש למחות את זכר עמלק”, *Arutz Sheva*, October 16, 2023, <https://www.inn.co.il/flash/954554> (accessed December 4, 2024); ill_eagle (@ill..eagle) post to TikTok, October 23, 2023, <https://perma.cc/VN8F-2X4Q> (accessed December 4, 2024); “ISRAEL AT WAR: WHO IS AMALEK?”, podcast by Rabbi Yaron Reuven, December 24, 2023, Spotify, <https://podcasters.spotify.com/pod/show/rabbiaronreuven/episodes/ISRAEL-AT-WAR-WHO-IS-AMALEK-e2dk9ff> (accessed December 4, 2024); “Smotrich Must Pay the Price for His Repeated Calls for Genocide of Palestinians,” *Haaretz*, April 30, 2024, <https://www.haaretz.com/opinion/editorial/2024-04-30/ty-article-opinion/smotrich-must-pay-the-price-for-his-repeated-calls-for-genocide-of-palestinians/0000018f-3084-d0b5-a59f-31c5ca320000> (accessed December 4, 2024); Younis Tirawi and Sami Vanderlip, ““Our Job Is to Flatten Gaza. No One Will Stop Us.””, *Drop Site News*, October 22, 2024, https://www.dropsitenews.com/p/israel-749-battalion-demolition-gaza?publication_id=2510348 (accessed December 4, 2024); Adi Bekore (Israel’s 749 Combat Engineering Battalion, Lieutenant Colonel) Facebook page post, October 9, 2023, https://www.facebook.com/story.php?story_fbid=6626094370760943&id=100000813384772&rdid=cZywcX4Kt6H7fEPR (accessed December 4, 2024); Younis Tirawi (@ytirawi) post to X (formerly known as Twitter), January 30, 2024, <https://twitter.com/ytirawi/status/1752452789077147808?s=61&t=1PCGEMbsFctRwkzbYX1mcw> (accessed December 4, 2024).

⁷¹⁸ “Israel-Hamas war: ‘We will fight and we will win,’ says Benjamin Netanyahu,” October 28, 2023, video clip, YouTube, <https://www.youtube.com/watch?v=P5LmB6uup3o> (accessed December 3, 2024).

⁷¹⁹ Benjamin Netanyahu (@netanyahu) post to X (formerly known as Twitter), November 3, 2023, <https://twitter.com/netanyahu/status/1720400053347438719?s=61&t=KYaogpMow3dFlxAT--tTUQ> (accessed December 3, 2024).

⁷²⁰ See Section “I. Water Deprivation as Deliberate Act.”

The evidence set out in this report shows that Israeli forces deliberately and systematically destroyed at least some of Gaza's water and sanitation infrastructure when Israeli forces were in control of the area; that Israeli authorities' restrictions on water and fuel and cutting of electricity have continued for a year, despite knowledge of the impact that these actions have had on health and life; that Israeli authorities flouted multiple ICJ orders, including with respect to the provision of water, fuel, electricity, and aid; and that after a year, most of the Palestinian population remains in Gaza, demonstrating that Israeli authorities know that their policies will directly harm them. Genocidal intent may be inferred from this pattern of conduct, together with the statements suggesting some officials wished to destroy the Palestinians in Gaza, and therefore these acts may amount to the crime of genocide.

Direct and Public Incitement to Genocide

Direct and public incitement to genocide is prohibited under article 3(c) of the Genocide Convention.⁷²¹

The ICTR has defined direct and public incitement to genocide as:

[D]irectly provoking the perpetrator(s) to commit genocide, whether through speeches, shouting or threats uttered in public places or at public gatherings, or through the sale or dissemination, offer for sale or display of written material or printed matter in public places or at public gatherings, or through the public display of placards or posters, or through any other means of audiovisual communication.⁷²²

The ICTR has found the requirement that incitement be “direct” to mean that the incitement must “specifically provoke another to engage in a criminal act” and is “more than mere vague or indirect suggestion goes to constitute direct incitement.”⁷²³ When assessing the “direct” requirement, the cultural and linguistic context are relevant factors to consider, since “a particular speech may be perceived as ‘direct’ in one country, and not so in another,

⁷²¹ Rome Statute, art. 25(3)(e); *See also* ICTY Statute, art. 4(3)(c); ICTR Statute, art. 2(3)(c).

⁷²² *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 559.

⁷²³ *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 557; *Prosecutor v. Callixte Kalimanzira*, ICTR, Case No. ICTR-05-88-T, Judgement (Trial Chamber), June 22, 2009, para. 514.

depending on the audience.”⁷²⁴ For example, the ICTR has noted that a “statement of ethnic generalization provoking resentment against members of that ethnicity would have a heightened impact in the context of a genocidal environment” and “would be more likely to lead to violence.”⁷²⁵ An incitement may be considered direct, and nonetheless implicit.⁷²⁶

The International Criminal Tribunal for Rwanda (ICTR) has found that whether incitement is “public” should be evaluated on the basis of two factors: “the place where the incitement occurred and whether or not attendance was selective or limited.”⁷²⁷ Only unequivocally public forms of incitement may constitute the crime of incitement to genocide.⁷²⁸

The crime of direct and public incitement to genocide requires both the “intent to directly prompt or provoke another to commit genocide” and the “specific intent to commit genocide, namely, to destroy, in whole or in part, a national, ethnical, racial or religious group, as such.”⁷²⁹ Inciting genocide implies “a desire ... to create ... a particular state of mind necessary to commit such a crime in the minds of the person(s).”⁷³⁰

⁷²⁴ *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, paras 557, 558; *Prosecutor v. Eliézer Niyitegeka*, ICTR, Case No. ICTR-96-14-T, Judgment and Sentence, May 16, 2003, para. 431; *Prosecutor v. Ferdinand Nahimana et al.*, ICTR, Case No. ICTR-99-52-T, Judgment and Sentence, December 3, 2003, para. 1022; *Prosecutor v. Ferdinand Nahimana et al.*, ICTR, Case No. ICTR-99-52-A, Appeal Judgment, November 28, 2007, para. 698; *Prosecutor v. Tharcisse Muvunyi*, ICTR, Case No. ICTR-00-55A-T, Judgment and Sentence, September 12, 2006, para. 502; *Prosecutor v. Callixte Kalimanzira*, ICTR, Case No. ICTR-05-88-T, Judgment (Trial Chamber), June 22, 2009, para. 514.

⁷²⁵ *Prosecutor v. Ferdinand Nahimana et al.*, ICTR, Case No. ICTR-99-52-T, Judgment and Sentence, December 3, 2003, para. 1022.

⁷²⁶ *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 557; See also *Prosecutor v. Eliézer Niyitegeka*, ICTR, Case No. ICTR-96-14-T, Judgment and Sentence, May 16, 2003, para. 431.

⁷²⁷ *Prosecutor v. Callixte Kalimanzira*, ICTR, Case No. ICTR-05-88-T, Judgment (Trial Chamber), June 22, 2009, para. 515; *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 556; *Ngirabatware v. The Prosecutor*, IRMCT, Case No. MICT-12-29-A, Judgment (Appeals Chamber), December 18, 2014, para. 52.

⁷²⁸ *Prosecutor v. Callixte Kalimanzira*, ICTR, Case No. ICTR-05-88-T, Judgment (Trial Chamber), June 22, 2009, para. 515; *Prosecutor v. Idelphonse Nizeyimana*, ICTR, Case No. ICTR-2001-55-PT, Decision on Prosecutor’s Request for Leave to File an Amended Indictment, February 25, 2010, para. 22.

⁷²⁹ *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 560. See also *Prosecutor v. Niyiramasuhuko et al.*, ICTR, Joint Case No. ICTR-98-42-T, Decision on Defence Motions for Acquittal Under Rule 98 bis, December 16, 2004, para. 110; *Prosecutor v. Eliézer Niyitegeka*, ICTR, Case No. ICTR-96-14-T, Judgment and Sentence, May 16, 2003, para. 431; *Prosecutor v. Ferdinand Nahimana et al.*, ICTR, Case No. ICTR-99-52-T, Judgment and Sentence, December 3, 2003, para. 1012; *Prosecutor v. Callixte Kalimanzira*, ICTR, Case No. ICTR-05-88-T, Judgment (Trial Chamber), June 22, 2009, para. 510.

⁷³⁰ *Prosecutor v. Jean-Paul Akayesu*, ICTR, Case No. ICTR-96-4-T, Judgment (Trial Chamber), September 2, 1998, para. 560.

Where a speech ultimately leads to the commission of acts of genocide, this “could be an indication that in that particular context the speech was understood to be an incitement to commit genocide and that this was indeed the intent of the author of the speech.”⁷³¹

Persons in positions of authority in Israel have repeatedly made direct and public calls to cut off water, fuel, and electricity to the whole of the population of Gaza, as outlined in Section “I. Water Deprivation as a Deliberate Act,” of this report, among statements dehumanizing and calling for the destruction of the whole of the population of Palestinians in Gaza. These calls continued,⁷³² even though the ICJ, finding that Israeli authorities may be violating the prohibition on incitement, ordered in January that Israel “take all measures within its power to prevent and punish the direct and public incitement to commit genocide in relation to members of the Palestinian group in the Gaza Strip.”⁷³³

Such calls, especially given the context, were calling on Israeli officials to create conditions of life calculated to bring about the destruction of part of the Palestinian population in Gaza, which is an act of genocide.

These calls have been direct, and some have immediately provoked acts. Former Defense Minister Yoav Gallant’s orders for a “complete siege” on Gaza on October 9 (“There will be no electricity, no food, no water, no fuel, everything is closed.”) were immediately followed by actions.⁷³⁴ That same day, and for weeks thereafter, Israeli authorities cut off water and

⁷³¹ However, this cannot be the only evidence adduced to conclude that the purpose of a said speech was to incite genocide. See *Prosecutor v. Callixte Kalimanzira*, ICTR, Case No. ICTR-05-88-T, Judgement (Trial Chamber), June 22, 2009, para. 514; *Prosecutor v. Tharcisse Muvunyi*, ICTR, Case No. ICTR-00-55A-T, Judgment and Sentence, September 12, 2006, para. 26.

⁷³² See מלך הר סון לימור (@limor_sonhrmelh) post to X (formerly known as Twitter), January 28, 2024, https://twitter.com/limor_sonhrmelh/status/1751597625407569991 (accessed August 28, 2024). On January 28, Limor Son Har-Melech, a Member of the Knesset, went to Kerem Shalom crossing, where protesters have been blocking aid from entering the strip, to participate in the protests, stating, “We, Otzma Yehudit [the political party Har-Melech represents, which is part of the ruling coalition], will continue to fight for the closing of the crossings and the return of the abductees as soon as possible.”; Middle East Monitor (@middleeastmonitor) post to Instagram, January 30, 2024, <https://www.instagram.com/reel/C2vYvF4NDHC/> (accessed August 28, 2024); Gilad Erdan, Israel’s Permanent Representative to the UN, said in an interview on January 31, that humanitarian aid to Gaza must be stopped and called for an immediate end of humanitarian aid to Gaza and the dismantling of UNRWA; Itamar Ben Gvir (@itamarbengvir) post to X (formerly known as Twitter), February 6, 2024, <https://twitter.com/itamarbengvir/status/1754923436881674506> (accessed August 28, 2024); National Security Minister Ben-Gvir on February 2 stated on his X account, “123 days I oppose the introduction of any humanitarian aid to the killers from Gaza.”

⁷³³ *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel)*, International Court of Justice, Order of 26 January 2024, January 26, 2024, para. 79.

⁷³⁴ Yoav Gallant (@yoavgallant) post to X (formerly known as Twitter), October 9, 2023, <https://twitter.com/yoavgallant/status/1711335592942875097> (accessed August 30, 2024); WATCH: Israeli Minister

Israeli authorities and forces blocked fuel, food, and humanitarian aid from entering Gaza. As of November 2024, Israeli authorities continue to restrict the entry of water, fuel, food and aid into and within Gaza, and continue to cut Gaza's electricity, which is required to operate life-sustaining infrastructure across Gaza.

The Israeli statements outlined above, have all been made to the general public via television, social media, and other forms of public announcements.

While determining the “state of mind” of a perpetrator is challenging, here, Israeli authorities’ statements calling for the creation of conditions of life that would bring about the destruction of at least part of the Palestinian population of Gaza, as such, have been realized. This, in turn, could “be an indication that in that particular context the speech was understood to be an incitement to commit genocide and that this was indeed the intent of the author of the speech.”⁷³⁵

The combination of the public statements, including from persons in authority in Israel at the time, the actions that followed by Israeli authorities in creating the conditions of life that have likely killed thousands of Palestinians, and the ICJ ruling on incitement, strongly indicate that some of the statements have amounted to direct and public incitement to genocide. Israeli authorities are under a duty, as the ICJ ruled, to take all measures to prevent and punish such incitement.

Conclusion

Israeli authorities’ and forces’ actions to deprive the population of Gaza of access to water amount to acts of genocide under the Genocide Convention and the Rome Statute of the International Criminal Court. Specifically, their actions amount to deliberately inflicting conditions of life calculated to bring about the physical destruction of the Palestinian population in Gaza. Genocidal intent may also be inferred from Israeli authorities’ and forces’ continued actions to deprive Palestinians in Gaza of water, despite clear data and warnings from the United Nations since October and orders from the International Court of

Advocates For Starving 2 Million Palestinians”, August 7, 2024, video clip, YouTube, <https://www.youtube.com/watch?v=kzOITkwZ4ok> (accessed August 30, 2024); Section “I. Water Deprivation as a Deliberate Act.”

⁷³⁵ *Prosecutor v. Callixte Kalimanzira*, ICTR, Case No. ICTR-05-88-T, Judgement (Trial Chamber), June 22, 2009, para. 514; *Prosecutor v. Tharcisse Muvunyi*, ICTR, Case No. ICTR-00-55A-T, Judgment and Sentence, September 12, 2006, para. 26.

Justice calling for the provision of water since January, alongside Israeli authorities' statements, and therefore these acts may amount to the crime of genocide.

The conditions that Israeli authorities have created in Gaza since October 2023—that of long-term and severe water deprivation—are such that they are leading to the slow deaths of Palestinians there, including newborn babies whose mothers cannot feed them due to being malnourished and dehydrated, and who are drinking formula mixed with dirty water due to the lack of access to clean water in Gaza; people with disabilities, who often have increased needs for clean water and additional challenges in accessing it; and people who simply have contracted water-borne illnesses but did not have adequate access to nutrition, clean water, and medical care because of Israeli government actions.

Without immediate action to ensure Palestinians are provided access to sufficient, clean water, it is virtually inevitable that large numbers of Palestinians in the Gaza Strip will continue to die from dehydration, water borne illnesses, and other diseases and infections caused by or exacerbated by the deprivation of adequate access to clean water.

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We are grateful to the Palestinians in Gaza who were willing to share their experiences, including tragic personal accounts.

Annex I. Letter to Israeli Authorities (June 10, 2024)

HUMAN RIGHTS WATCH

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June 10, 2024

Public Diplomacy Office
Israel Defense Forces

CC:

Mr. Yoav Gallant, Minister of Defense

Public Enquiries Unit, Ministry of Defense

Office of Public Inquiries, Israel Defense Forces (IDF)

Dear Minister Gallant,

To Whom it May Concern at the IDF Public Diplomacy Office and Office of
Public Inquiries,

I am writing on behalf of Human Rights Watch, a nongovernmental
organization that investigates violations of international human rights and
humanitarian law by states and non-state armed groups in about 100
countries around the world, including Israel and Palestine, where we have
worked for more than three decades.

Human Rights Watch is currently investigating the impact of hostilities in
the Gaza Strip on access to clean water and sanitation. We have carried out
research into the Israeli government's apparent destruction of or damage to
several water and sewage facilities throughout Gaza, including the Mekorot
lines, ground wells, desalination facilities, portions of the water pipeline
network, sewage and wastewater treatment facilities, as well as the
government's apparent obstruction of repairs to water infrastructure,
including the killing of individuals responsible for repair by airstrikes and
shelling, and airstrikes on and shelling of the Coastal Municipalities Water
Utility warehouse in Khan Younis and headquarters in al-Zahra.

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We would appreciate your responses to the following questions by **June 24, 2024**, to reflect your views and information in our forthcoming report.

We are investigating the following incidents of destruction or damage to water infrastructure since October 7, 2023:

1. Complete destruction of the solar panels at the three wastewater treatment plants less than 500 meters from the eastern Gaza strip border located at the following coordinates:
 - a. 31°30'12.9"N 34°30'39.2"E
 - b. 31°25'35.7"N 34°25'02.0"E
 - c. 31°16'18.7"N 34°19'56.3"E
2. Destruction of facility buildings in the Central Gaza Wastewater Treatment plant (31°25'35.7"N 34°25'02.0"E) before January 20, 2024, the destruction of some solar panels at the Central Gaza Wastewater Treatment on October 10 or 11, and the destruction of all remaining solar panels between November 3 and 5. Imagery show traces of razing by Israeli forces bulldozers.
3. Damage to facility buildings in the North Gaza Wastewater Treatment plant (31°30'12.9"N 34°30'39.2"E) between December 20, 2023, and January 10, 2024.
4. Destruction of facility buildings in the Skiekh Ejleen Wastewater Treatment plant (31°29'13.7"N 34°25'27.6"E) in northern Gaza on March 20 or March 21, 2024, where satellite imagery shows traces of razing by Israeli forces bulldozers.
5. Damage to the sewage pumping station (31°29'59.9"N 34°26'56.9"E) in al-Zeitoun neighborhood of Gaza city on or before January 21, 2024.
6. Damage to Sheikh Zayed Reservoir (31°32'00.8"N 34°30'36.0"E) in northern Gaza on or before January 22, 2024.
7. Damage to the Coastal Municipalities Water Utility warehouse (31°21'17.7"N 34°16'44.5"E) in Khan Younis on January 21 and 22, 2024 during attacks by Israeli forces that killed four displaced people and injured ten others.
8. Destruction of the Coastal Municipalities Water Utility headquarters (31°28'22.4"N 34°23'59.0"E) in al-Zahra neighborhood in northern Gaza on or before March 24, 2024.

In relation to each finding of damage or destruction of water, sanitation and hygiene facilities listed above, we would appreciate detailed answers to the following questions, as well as any relevant information and investigations you may have undertaken:

1. Is the IDF aware of the multiple attacks that occurred in the given location? Did the IDF conduct the attacks described? If so, please confirm the attack date(s) and specify the weapons used. Please also provide the legal basis for the attacks.
2. What was the intended target and outcome of the attacks? Please provide as much detail as possible.
3. Were the attacks on a pre-planned target or were they carried out in response to developing events on the ground?
4. Before conducting the attack, what steps did the IDF take to ascertain whether there were civilians or civilian objects in the vicinity of the attack sites? On what information was this assessment based?
5. What precautions, if any, did the IDF take to minimize civilian harm including the choice of means and methods of attack?
6. Did the IDF issue a warning to civilians before the attack? If yes, please share the details of what the warning included, how it was shared, to whom, in what language, and how long before the attack. If not, why not?
7. How did the IDF assess the expected damage to or destruction of civilian structures due to the attacks, and its proportionality to the direct military advantage resulting from them?
 - a. Did this assessment include the impact of the attacks on civilians' ability to access objects indispensable to their survival in Gaza, including drinking water, both in terms of the individual strikes and the cumulative impact of the strikes?
 - b. Did this assessment include the short- and long-term impact of the damage to civilian infrastructure?
8. Has the Israeli military investigated the impact of the attacks on civilians and civilian objects individually and cumulatively? If yes, what were the findings? On what information were these findings based?

In addition to the above questions related to damage and destruction of water infrastructure, Human Rights Watch would also appreciate information regarding what Israeli authorities are doing to mitigate the impacts of the hostilities on water and sanitation infrastructure,

including facilitating allowing in water- and sanitation-related materials as aid into the Gaza Strip.

Several UN and humanitarian agencies have reported Israeli authorities blocking water filtration systems, except where they were part of a set-up temporary healthcare facility, from entering Gaza and barring tap-stand kits, microbiological water testing kits, and chemical water testing kits. What is the reasoning for rejecting these items? Could you provide a full list of rejected items and clarify the standards that you use for rejecting items?

Thank you for considering our questions. We would be pleased to reflect your written responses in our published report if we receive them by June 24, 2024.

Should you have any questions or comments, please contact me at [REDACTED]. We remain available to discuss these issues with you or appropriate colleagues.

Sincerely,

[REDACTED]

Adam Coogle
Deputy Director
Middle East and North Africa Division
Human Rights Watch

Annex II. Letter to Israeli Authorities (November 29, 2024)

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November 29, 2024

Public Diplomacy Office
Israel Defense Forces

CC:

Mr. Israel Katz, Minister of Defense,
Public Enquiries Unit, Ministry of Defense,
Office of Public Inquiries, Israel Defense Forces,

Dear Minister Katz,

To whom it may concern at the IDF Public Diplomacy Office and Office of
Public Inquiries,

I am writing on behalf of Human Rights Watch, a nongovernmental
organization that investigates violations of international human rights and
humanitarian law by states and non-state armed groups in about 100
countries around the world, including Israel and Palestine, where we have
worked for more than three decades.

As previously mentioned in a letter requesting information sent to your
offices on June 6, Human Rights Watch is investigating the impact of
hostilities in the Gaza Strip on access to clean water and sanitation.

We are currently investigating the Israeli military's destruction of a water
reservoir in Tal-Sultan neighborhood of Rafah in southern Gaza. A video that
surfaced on social media in late July shows combat engineers in the Israeli
military preparing and setting explosive charges at the reservoir. The video
ends with a wide shot of the reservoir being destroyed in an explosion.
Based on Human Rights Watch analysis of the video, the forces destroyed
the reservoir through a controlled demolition. Satellite imagery analyzed by
Human Rights Watch of the location of the reservoir (MGRS:
36RXV1871664789) shows that the destruction happened sometime
between July 24 and 27. According to [Haaretz](#), a commander from 401st
Brigade of the Armored Corps had approved the demolition but there was
no approval from senior commanders in the IDF Southern Command,
prompting the Israeli military to open an initial probe into the incident.

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We would appreciate your detailed responses to the following questions in relation to the above incident by December 6, 2024, to reflect your views and information in our forthcoming report.

1. Is the Israeli military aware of the incident in the given location? If so, please confirm the date of the incident, whether 401st Brigade of the Armored Corps carried out the detonation, and please specify the weapons used. Please also provide whether there was an intended target or military advantage, including the legal basis.
2. How did the Israeli military assess the expected destruction of the civilian structure and its proportionality to the direct military advantage resulting from the incident?
 - a. Did this assessment include the impact of the incident on civilians' ability to access water, both in terms of the individual incident and its cumulative impact?
 - b. Did this assessment include the short- and long-term impact of the damage to civilian infrastructure?
3. What precautions did the Israeli military take to minimize civilian harm including the choice of means and methods of incident?
4. What is the status of the initial probe reportedly opened by the Israeli military? Please provide detailed information.
5. Has the Israeli military investigated the destruction of the water reservoir in question? If yes, what were the findings? Please provide details of the investigation and conclusions.

Thank you for considering our questions. We would be pleased to reflect your written responses in our published report if we receive them by December 6, 2024. Should you have any questions or comments, please contact me at [REDACTED]. We remain available to discuss these issues with you or appropriate colleagues.

Regards,

Adam Google

[REDACTED]
Deputy Director
Middle East and North Africa
Human Rights Watch



Extermination and Acts of Genocide

Israel Deliberately Depriving Palestinians in Gaza of Water

Since October 2023, Israeli authorities have deprived Palestinians in the Gaza Strip of access to the amount of water needed for survival. Immediately following the Hamas-led armed groups' October 7, 2023 assault on Israel, Israeli authorities proceeded to cut off and later restrict piped water to Gaza. Israeli authorities also cut off all electricity to Gaza and have restricted fuel imports, rendering useless most of Gaza's water and sanitation infrastructure. Israeli forces have deliberately destroyed water and sanitation infrastructure as well as water repair materials, and blocked the entry of critical water supplies from entering Gaza.

Extermination and Acts of Genocide: Israel Deliberately Depriving Palestinians in Gaza of Water documents how these Israeli policies and practices have choked off access to adequate water for the entire civilian population of the Gaza Strip, month after month, despite urgent warnings from humanitarian actors and orders from the International Court of Justice to let in urgently-needed aid and services, and other evidence of the human toll.

In northern Gaza, people did not have access to potable water from November 2023 through April 2024, while in other areas, people only had access to a few liters of water per day, on average, for drinking, cooking, and sanitation—far below the 15-liter threshold needed for survival. The Israeli authorities' actions and policies have likely caused thousands of deaths as well as widespread disease outbreaks.

This report concludes that Israeli authorities have inflicted on Palestinians in Gaza, as a group, conditions of life calculated to bring about the group's physical destruction in whole or in part, and are committing the ongoing crime against humanity of extermination, and acts of genocide. Genocidal intent may also be inferred from this pattern of conduct, coupled with statements suggesting some Israeli officials wished to destroy Palestinians in Gaza, and therefore these acts may amount to the crime of genocide.

(above) Girls carrying water containers walk by destroyed buildings and a puddle of sewage water erupting from collapsed underground pipes in Khan Younis in the southern Gaza Strip on July 8, 2024.

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(front cover) Palestinians returning to Khan Younis after the withdrawal of Israeli forces, pull water containers to meet their vital needs under catastrophic conditions on May 6, 2024.

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