

# THE IMPACT OF THE BLOCKADE ON WATER AND SANITATION IN GAZA

“States ... should refrain at all times from imposing embargoes or similar measures, that prevent the supply of water, as well as goods and services essential for securing the right to water. Water should never be used as an instrument of political and economic pressure.”

*UN Committee on Economic, Social and Cultural Rights, General Comment 15: The right to water (2002)*

## SUMMARY

Israel has imposed restrictions on the movement of people and goods at Gaza’s border crossings since June 2007 and further reduced supplies of fuel and electricity to the Gaza Strip in September 2007. This has had a severe impact on water and sanitation services in Gaza, the breakdown of which is placing public health and the wider environment at risk, both in Gaza and Israel.

Gaza’s border crossings should be opened, immediately, so that construction materials and aid necessary to respond to the water and sanitation crisis in the Gaza Strip, can enter.



Sewage outflow from Gaza WWTP

### THE BLOCKADE OF MATERIALS INTO THE GAZA STRIP IS LEADING TO:

- **Delays in essential humanitarian work**
  - *Inadequate repairs to water and sanitation pipelines which are gradually becoming decrepit.*
  - *The main service provider for Gaza: the Coastal Municipalities Water Utility (CMWU) needs at least 1250 tonnes of cement to repair damaged water tanks alone.*
- **Delays, postponement or cancellation of strategic sewage treatment projects, causing deterioration of the aquifer:**
  - *Only 5 - 10 % of the aquifer now meets drinking water quality source standards.*
  - *50 to 80 million litres of partially treated sewage is released into the Mediterranean Sea every day, drifting North into Israeli waters.*
- **Human impact:**
  - *People in Gaza use on average 91 Litres of water per day compared to 280 Litres in Israel for domestic consumption. However, due to an intermittent supply of water, domestic consumption in some areas has fallen to such low levels that people’s health is placed at risk and they are forced to compromise on hygiene.*
  - *Resultant pollution and public health issues.*

### **LACK OF MATERIALS FOR WATER AND SANITATION INFRASTRUCTURE IN GAZA**

Due to the closure of Gaza’s border crossings, equipment and supplies needed for the construction and maintenance of water and sanitation facilities have been denied entry, which has resulted in the freezing of a number of projects to repair, rehabilitate and upgrade existing infrastructure, including water and sewerage networks and waste-water treatment plants.

The shortage of materials and spare parts, conflict damage, and gradual deterioration of infrastructure caused a rise in the rate of water losses (unaccounted for water) from the water network from 30 per cent in 2004 to 47 per cent in 2009.<sup>1</sup> While 54 truckloads carrying water and sanitation supplies were allowed to enter in May 2009, and 12 in June, this is a small fraction of what the water and wastewater sector requires. The Coastal Municipality Water Utility (CMWU), the water service provider in Gaza, reports that it received no materials at all from Israel in July and August 2009.

“Karni”, the largest crossing for commercial goods entering Gaza, has been closed except for a single conveyor belt, used to transfer grain and animal feed into the Gaza Strip, since June 2007. Other crossings, such as “Karem Shalom” where water sector goods enter Gaza, have been operating on an intermittent basis. Overall, the number of truckloads of goods entering the Gaza Strip has significantly declined over the past two years: from 23-29 August 2009, a total of 514 truckloads of goods entered Gaza, less than 18% of the weekly average of truckloads entered during the first five months of 2007.<sup>2</sup>

## DELAYED HUMANITARIAN RECOVERY

Twenty-two days of Israeli military attack on Gaza (27 December 2008- 18 January 2009) brought the already deteriorated water and sanitation sector to the brink of collapse:

- CMWU estimates that damage caused to major water and sanitation infrastructure during Operation Cast Lead is around US\$ 6 million.<sup>3</sup>
- Over 30 kilometres of water networks were damaged or destroyed by the Israeli military in addition to 11 wells operated by the water authorities in Gaza.
- Over 6000 roof tanks and 840 household connections were damaged.<sup>4</sup>
- On 10 January Gaza City Waste Water Treatment Plant in Sheik Ijleen suffered a direct hit and waste water flooded up to a kilometre from the plant.

As a result of the continued closure of Gaza’s border crossings, local authorities and aid agencies have been unable to carry out the necessary repair and reconstruction work to damaged water and waste water facilities due to an inability to access materials. There is an urgent need for cement, pipes, pumps, transformers and electrical spare parts to implement numerous projects in the water and waste-water sector. Some 1250 tonnes of cement are currently needed for the repair of water storage tanks alone.



MOHAMMED KHADER lives with his wife and nine members of his family in Al Salam in Jabalya. Al Salam is a tented-camp, home to some of those displaced due to the Israeli offensive on Gaza in 2009. Residents of this area previously used water supplied from Namar Well, which was also destroyed by the Israeli military. It has not worked since.

CMWU started to dig a new well in the area and tried to reconnect residents to the network, which was also destroyed. However, due to a shortage of materials this project is currently on hold.

Mohammed explains that people are currently experiencing severe water shortages, “*Water tanks are now only filled once every two days, which isn’t enough*”, he said.

Mohammed also buys water from an agricultural well owned by a neighbour. He currently pays 40 NIS (about \$US 10) per 1,000 Litres, which puts a strain on the tight family budget. But he is worried about the quality of water at this well: his children recently got sick, suffering from diarrhoea.

<sup>1</sup>CMWU, *Effect of Material Delay report*, (Nov 2008).

<sup>2</sup>OCHA, *Gaza Weekly Crossings Summary: 23-29 Aug 2009*.

<sup>3</sup>CMWU, *Damage Assessment Report: Water and Waste Water Infrastructure and Facilities*, (January 2009).

<sup>4</sup>Palestinian Hydrology Group, *Rapid Community Based Water and Sanitation Needs Assessment from the Impact of the Israeli Offensive in Gaza between 27<sup>th</sup> Dec. 2008 and 17<sup>th</sup> Jan. 2009*, (February 2009).

## WATER SHORTAGES

Even for those connected to the water network, frequent power outages mean that water is unable to be pumped to buildings and taps run dry: access to adequate quantities of safe water for both drinking and personal and domestic uses has been severely restricted for many people:

- OCHA reports that access to water is limited to 6-8 hours from one to four days a week for the entire population.<sup>5</sup>
- Eight months after the Israeli offensive on Gaza some 10,000 people in the Gaza Strip remain without access to the water network: without cement water and sanitation networks, and whole neighbourhoods like Ezbet Abed Rabu, cannot be rebuilt.
- Restrictions on the amount of diesel that Israel allows to enter the Gaza Strip has led to the shutdown of wells that are not connected to the electrical grid, which depend on generators or diesel powered pumps.<sup>6</sup>
- Average per capita consumption of water for personal and domestic use in Gaza is 91 litres per day<sup>7</sup>, below the 100-150 litres per capita per day that the World Health Organization says is necessary to ensure all health concerns are met, and far below the 280 litres per day consumed on average by Israelis.<sup>8</sup> Children (who represent over 50 per cent of the population of Gaza), the elderly and the sick are left particularly vulnerable without access to adequate supplies of safe water.

## SANITATION AND ENVIRONMENTAL CRISIS

Sanitation services and facilities also remain in a state of disrepair- further placing public health at risk. Gaza's four wastewater treatment plants (WWTP) are operating at over capacity:

- Beit Lahiya WWTP: Designed for 8-10 Million Litres per Day (MLD) it now operates at 17-20 MLD due to delays in NGEST project.
- Gaza City WWTP: Designed for 32 MLD it now operates at 50 to 60 MLD. Lack of progress on projects to expand the plant means that sewage is partially treated and is discharged to the sea
- Rafah and Khanyounis: Emergency treatment plants were constructed. Due to lack of cement, ICRC and CMWU used concrete sections of the old Rafah security wall to line the lagoons.

Wastewater treatment plant lagoons could also overflow when winter rains fall. On 27 March 2009, the burst embankments at Beit Lahiya Waste Water Treatment Lagoon released some 50,000 cubic metres of sewage into adjacent areas.

Furthermore, due to postponed sewage treatment plant upgrade projects, conflict damage to sewage treatment facilities, and a lack of fuel and electricity necessary to operate them, some 80 million litres of untreated and partially treated sewage is being



AMINA NASER lives with her husband and family members in Al-Shouka, a new suburb of Rafah. The area is not connected to the sewage network as pipes and cement could not be imported.

Most families in Al-Shouka build their own septic tanks, costing around 1000 NIS, using second hand materials. These home-made cess pits have limited capacity, and often flood to the street. However some families can't even afford to build a cess pit and empty their sewage directly into the street.

Amina said, "Our neighbourhood is disgusting: sewage is flooding our roads and it even comes inside my house. I use strong acid cleaners because I'm afraid about my children's health. There are too many insects here, some as big as my finger, which live on the sewage".

<sup>5</sup> OCHA, *Protection of Civilians*, 19-25 August 2009.

<sup>6</sup> COHRE, *Hostage to Politics*, (2008)

<sup>7</sup> World Bank, *Assessment of Restrictions on Palestinian Water Sector Development*, (2009).

<sup>8</sup> B'Tselem, 'The gap in water consumption between Palestinians and Israelis', [www.btselem.org](http://www.btselem.org).

discharged into the sea daily, since January 2008. This has potentially grave consequences for public health and the environment both in Gaza and southern Israel, and could cause further contamination of Gaza's aquifer.

- In April 2008 the General Director of Ashkelon Desalination Plant, in Israel, only three miles (4.8 km) north of Gaza, confirmed that seawater processed by the plant was contaminated with sewage.<sup>9</sup>
- In July 2009, the World Health Organization reported that water samples taken from 7 separate beach areas in the Gaza Strip were contaminated with Faecal Coliforms and Faecal Streptococcus. Seawater contaminated with human and animal waste can contain a variety of bacterial, viral and protozoan pathogens: a danger human health, in particular to bathers and those who consume seafood.<sup>10</sup>

## WATER QUALITY

Water used in the Gaza Strip comes from the groundwater aquifer and is pumped from the Coastal Aquifer via wells owned by the Coastal Municipalities Water Utility (CMWU).

- The aquifer is being overabstracted by 100 million cubic metres per year (almost double what is safe to abstract), as seawater desalination plants have not been constructed: leading to a fall in the groundwater level and increasing salinisation.
- About 90 per cent of the water supplied to Gaza residents is not suitable for drinking according to WHO standards and is contaminated with salt and nitrates. In Khanyounis the average nitrate levels in wells in 2008 was 168 Mg/L, over three times the WHO guideline of 50 Mg/L.<sup>11</sup>
- The World Bank reports that only 5-10 per cent of the aquifer in the Gaza Strip yields drinkable water.<sup>12</sup>

Many residents in Gaza depend on desalinating water for drinking, but restrictions on electricity have impeded the operation of desalination plants. The blockade has at times prevented the entry of essential chemicals and chlorine necessary to operate desalination plants and disinfect drinking water, placing people's health at risk. As a result, water related health problems, including the potentially fatal blue baby syndrome are wide spread in the Gaza Strip. UNRWA reports that among the infectious diseases affecting the refugee population in the Gaza Strip, those that have the highest rates of occurrence are those directly related to inadequate supplies of safe water and poor sanitation: water diarrhoea, acute bloody diarrhoea and viral hepatitis.<sup>13</sup>

## RECOMMENDATION

The Israeli authorities should immediately open their border crossings to Gaza in line with the 2005 Agreement on Movement and Access and internationally recognised human rights and humanitarian law standards to facilitate entry of construction materials and aid necessary to respond to the water and sanitation crisis that exists in the Gaza Strip. Donor agencies must commit to fund reconstruction efforts and put pressure on their governments and Israel to allow the entry of needed materials. Without addressing both the immediate humanitarian needs of the population and ensuring the long term development of the deteriorated water and sanitation sector, public health and the environment will remain at significant risk.

**This fact sheet was produced by the WASH Advocacy Task Force: a sub-committee of the EWASH group, in collaboration with the WASH Cluster in oPt.**

**EWASH represents over 30 organisations working in water, sanitation and hygiene in the occupied Palestinian territory and its members include local and international NGOs and UN Agencies.**

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<sup>9</sup> OCHA, *Gaza Humanitarian Situation Report: Impact of fuel shortages on Gaza sanitation- Polluting the Sea*, (April 2008).

<sup>10</sup> WHO, *Sea Water biological situation in Gaza Strip*, (July 2009).

<sup>11</sup> CMWU, Presentation at Khanyounis Workshop (2009).

<sup>12</sup> World Bank, *Assessment of Restrictions on Palestinian Water Sector Development*, (2009).

<sup>13</sup> UNRWA, *Epidemiological Bulletin for Gaza Strip*, Volume 1, Issue 11, (August 2009).