



GAZA HUMANITARIAN SITUATION REPORT

IMPACT OF FUEL SHORTAGES ON GAZA SANITATION – POLLUTING THE SEA 29 APRIL 2008

KEY OBSERVATIONS

- Between 50 and 60 million litres of partially treated and untreated sewage from the Gaza Strip have been flowing daily into the Mediterranean Sea since 24 January.
- This sewage cannot be treated due to the lack of a steady electricity supply within the Gaza Strip, Israel's restrictions on fuel imports, and prohibitions on the import of materials and necessary spare parts.
- Full sewage treatment requires 14 continuous days of uninterrupted power supply which cannot occur due to daily power cuts and insufficient fuel to operate power-supplying and back-up generators.
- The sewage discharge is contaminating Gaza sea waters and posing health risks for bathers and consumers of seafood. The sewage flows northward to Israeli coasts, including near the Ashkelon desalination plant. Urgent studies are needed to examine the extent of the impact.
- The ongoing fuel shortages are triggering a further deterioration in the situation, in which untreated sewage is now being pumped into heavily populated residential areas: three million litres of raw sewage were recently pumped into the storm water lagoon Jabaliya camp; a sewage pumping station near Zeitoun is likely to flood when its generator fuel runs out in the next 24-48 hours.

PRIMARY PROBLEMS:

Gaza's water authority, the Coastal Municipalities Water Utility (CMWU), is responsible for providing water to the residents of the Gaza Strip as well as managing its sewage. It provides more than 130 million cubic metres of drinking water per year. Around 80 percent of this becomes sewage which consists of household and commercial effluent.

The closure on Gaza and the reduction in fuel and electric supply have forced the CMWU to dump 60 million litres of raw and partially treated sewage into the Mediterranean Sea to avoid flooding residential areas.

The main causes of the situation are:

I. Ongoing fuel and power shortages:

Since October 2007, Israel has restricted the amount of fuel it allows to supply Gaza's only power plant. As a result, the plant can only produce 55 megawatts out of a potential 80 megawatts causing power cuts of up to four hours per day. These cuts are expected to rise to eight hours in the summer months.

The proper operation of Gaza City's sewage treatment plant requires 14 days of uninterrupted power supply for the full duration of the treatment cycle. The daily power cuts disrupt sewage treatment, impeding the completion of the treatment cycle; the more power supply is interrupted, the less sewage is treated.



Sewage entering the sea west of the former settlement of Netzarim.
The white foam is household detergent. March 2008 OCHA



The bulk of the sewage being pumped out to the sea comes from Gaza City. Power is required to pump the Gaza City sewage up to the treatment plant which is located 36 metres higher than the city and its nine sewage pumping stations. Without power, sewage is likely to flood the streets if the station has no overflow capacity, which happened in the Zeitoun neighbourhood in Gaza City in January 2008.

In addition to electricity, the CMWU relies on power supplying back-up generators to ensure the uninterrupted 14-day treatment process, and to operate its systems. It needs 100-150,000 litres of fuel per month to do this. During times of electricity cuts, CMWU's fuel requirements increase to 250,000 litres per month.

Since the beginning of 2008, the CMWU has received approximately 1/3rd of the fuel it needs for its normal operations -37% in January (55,800 litres), 13% in February (19,500 litres), 35% in March (45,900 litres) and no fuel in April.

While most of the sewage is being pumped out to the sea, the continued fuel shortages mean that some pumping stations cannot even pump the sewage and are letting it flow into lagoons in residential areas. The pumping stations at Sheikh Radwan in northern Gaza City and Abu Rashed in Jabalia camp are allowing sewage to flow into overflow lagoons which were designed for storm waters. The amounts in Sheikh Radwan are currently minimal, but in Jabaliya, three million litres of raw sewage have gathered since 28 April. There is a risk that at least one other pumping station in Ascoolah area, near Zeitoun, could flood when its generator fuel runs out in the next 24-48 hours.

2. Absence of spare parts

Since July 2007, the Israeli authorities have restricted the entry of spare parts funded by the World Bank, UNICEF and other agencies for the regular maintenance of Gaza's sewage network. Some building materials for the Northeast Gaza sewage treatment plant and emergency equipment to prevent floods at the Beit Lahiya sewage lagoons, have been allowed to enter Gaza. However equipment and materials for regular maintenance such as pipes, valves, waste water pumps and electromechanical spare parts have not been permitted to enter the Gaza Strip since June 2007. Generators are in particular need of spare parts due to their overuse.

3. Outstanding need for upgrade and modernisation due to a growing population

The CMWU needs new equipment and materials to upgrade and modernise its pumping stations and sewage treatment plants in order to cope with the increased amounts of sewage produced by a growing population.

The CMWU plans to improve the existing sewage system if it can import the materials and equipment

BACKGROUND

In the last seven years, the population of the Gaza Strip has grown by an estimated 36 per cent from 1.1 million in 2000 to 1.5 million in 2008. Gaza's sewage output has risen by a similar percentage.

In June 2006, following the first incursion and arrests by the IDF into Gaza since its disengagement a year before, Palestinian militants took captive the Israeli soldier, Gilad Shalit. The Israeli air force then destroyed the transformers of Gaza's electric power plant. The plant has not resumed full operation since. After June 2007, when Hamas took control of the Gaza Strip, Israel restricted the movement of goods and material into Gaza. In October 2007, Israel declared the Gaza Strip a "hostile territory" governed by a "hostile entity" and reduced electricity and fuel supplies to Gaza. This affected the back-up power sources i.e. generators, that had been used regularly to compensate for the electricity power shortages and for operations.



required. There are long-term plans to construct three modern sewage treatment plants for the whole Gaza Strip in Northeast Gaza, the El-Bureij refugee camp and in Khan Yunis. However, the work on the Northeast Gaza plant, although commenced, has been held back as a result of the Israeli sanctions on imports of raw materials and fuel into Gaza. Likewise, the plans for the other two plants have been suspended in light of the political and security situations in Gaza.

KfW, the German government's development bank, has agreed to work with CMWU on a project to upgrade the Gaza sewage treatment plant. The project, which will cost between \$7-15 million, could begin by the end of April 2008 if the Israeli authorities allowed the passage of material and equipment. The project will allow the plant to treat 60 million litres of sewage per day and use the treated sewage for agricultural purposes or to directly replenish Gaza's depleted fresh water aquifer.



Fishermen bring in their nets by Wadi Gaza in central Gaza where raw sewage is discharged into the sea. Most of their catch is jellyfish which thrive in polluted water. March 2008 OCHA

EFFECTS OF THE DISCHARGE OF SEWAGE

There has been no study into the effects of the discharge of sewage into the sea in Gaza. However, the sea is darker than further north and has a noxious smell, especially near the sewage outflows. Fishermen at the Gaza harbour, where one sewage outlet is located, claim that the sewage has killed most sea life in the immediate vicinity.

The major health concern is that sewage introduces the e-coli bacteria into bathing water. Some strains of e-coli, which come from the intestines of humans and animals, can cause gastroenteritis and urinary tract infections.

The general director of the Ashkelon Desalination Plant, located in Israel just three miles north of Gaza, confirmed that the seawater taken in by his plant was polluted by sewage, which he believed emanated from Gaza. The Ashkelon Desalination Plant takes in more than 100 million cubic metres of sea water per year.

The latest development of sewage being pumped into storm water lagoons located in heavily populated areas remains a serious concern.

ACTION REQUIRED

1. Fuel restrictions on Gaza need to be lifted in order to restore regular electricity and fuel supplies and to enable proper operation of Gaza's sanitation and water utilities.
2. Materials, spare parts and other necessary components need to be allowed to enter Gaza so that routine maintenance and upgrades to the Gazan sewage network can be performed.
3. Plans to construct the three new sewage treatment plants and a modern sewage system in Gaza need to be advanced and implemented.
4. Urgent studies are needed to determine the environmental and health impact of the sewage flows into the sea, and into the storm water lagoons in residential areas.