



Humanitarian Situation Report #3 3 April 2007 – 5 pm Beit Lahia Waste Water Treatment Plant

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Overview

On 27 March effluent from an emergency filtration basin at the waste water treatment plant in Beit Lahia (Gaza Strip) flooded the nearby Bedouin village of Um Al Nasser killing five people and injuring 25 others (Source: Palestinian Ministry of Health (MoH)). Since this time, there has been concern of repeat flooding in the area and efforts are being undertaken by local authorities and humanitarian organisations to mitigate this risk. To avoid further flooding, the level of wastewater in the area has to be urgently reduced and the banks of existing basins simultaneously reinforced.

The more than 2,000 displaced residents have remained in a nearby temporary camp established by UNRWA for over one week as they wait to return to their village and to begin rebuilding their

lives. Local authorities and humanitarian agencies have responded to their immediate humanitarian needs including by providing food and non-food items as well as additional health facilities including psychological support to the victims. Amid concerns of an outbreak of communicable diseases, WHO and UNRWA are supporting the MoH's planned immunization programme and continuing surveillance system.

Following the flooding, local authorities shut down the northern Gaza Strip sewage system. This has resulted in an estimated 17,000 m³ of raw sewage either blocked inside the sewage network where it could cause further damage to the system or flushed into northern Gazan streets. On 30 March sewage overflowed onto the streets of Al Saftawi area southwest of Jabalia displacing 27 families (198 persons). UNRWA provided emergency shelter to the affected people.



Reinforcing embankment of sewage lake, 1 April 2007 (Source: CMWU)



Causes of the situation:

In 2004, OCHA along with other humanitarian agencies warned of growing concern at the waste water situation in north eastern Gaza and inevitable flooding if immediate action was not taken. At this time local authorities warned that the health of nearby communities was already being compromised¹ : (see map)

- The Beit Lahia waste water treatment plant was originally built in 1976 to serve up to 50,000 inhabitants in north eastern Gaza. The total population now served by the plant is approximately 190,000 and continues to rise. The plant was expanded in 1991 to increase its peak flow capacity to 5,000 m³ per day. The United Nations Environmental Programme (UNEP) estimates that by 2004 approximately 12,000 m³ of waste water was passing through the plant each day.
- The combination of an ever increasing volume of waste and insufficient capacity led to effluent overflowing the original filtration basins into the surrounding sand dunes gradually creating a large lake that by 2007 covers more than 44.5 hectares (in 1995 overflow had already affected 5.3 hectares).
- In September 2006, the Palestinian Water Authority (PWA) in response to growing concerns created an emergency filtration basin. The excavation of the additional basin was seen as temporary measure to prevent further overflow from the plant. It was effluent from this basin that caused the flooding of the nearby Um Al Nasser village on 27 March 2007.
- In the long term, a new treatment plant was called to be constructed in north eastern Gaza to increase capacity. In November 2003 an international donor withdrew support from an earlier agreement to fund the plant due to continuing uncertainties both political and clear indications that Israelis security restrictions would not delay project implementation. Discussions on the creation of a new plant were revived in 2006 including between Israeli and Palestinian authorities and a location

agreed upon although construction is still to substantially begin. These talks stalled following the capture of an IDF soldier in June 2006 by Palestinian militants.

Mitigation steps undertaken to date:

- 1- Re-enforcing the embankment of the main sewage lake:
 - Eight trucks, four loaders and one roller provided by Action Against Hunger – Spain (ACF-E) have been working since the morning of 1 April to re-enforce approximately 2.5km of the embankment around the main sewage lake. The work aims at widening the sand barriers to at least five metres and a height of one metre. ACF-E estimates that the reinforcement will be finished on 3 April.
 - UNICEF will carry out further enforcement for another 2.5Km around the sewage lake for a further three days.
 - The European Commission Humanitarian Aid Department (ECHO) has released EUR 600,000 (approximately USD 802,200) for emergency works to consolidate the embankments of the main sewage lake.
- 2- Construction of two new lagoons:
 - An agreement has also been reached between local communities and the Palestinian Authority (PA) to establish two new 'lagoons' northwest of the village. Once the lagoons are established approximately 250,000 m³ of treated water would be pumped from the large nearby lake, enabling northern Gaza sewage network to resume functions.
 - ACF-E commenced digging at the proposed site of a first new lagoon approximately 800 metres northwest of Bedouin village on 1 April. The two new lagoons, to be completed within three days, will have a capacity of 250,000 m³. Currently only one of the lagoons is partially functioning.
 - Two 900 metre-long pressure lines to carry the waste water from the lake to the new lagoons have been installed.



3- Installation of temporary mobile pump stations:

- A total of four mobile pumps, including two provided by Israel, are currently being installed to pump waste water from the sewage lake into newly created lagoons to reduce the level of wastewater. The PWA states that 800 m³ of waste water must be drained off each hour over a ten day period. Testing began overnight and as on noon 3 April one pump was installed (pumping at a rate of 200m³/hour). In total, the four mobile pumps will have a capacity of 750 m³/hour and should beginning functioning in the next few days.
- Two permanent steel pipes (800 metres long) will be installed by CMWU to replace the mobile temporary ones.

Humanitarian response

Following the flooding on 27 March international organisations responded quickly to emergency needs. A temporary camp was established by UNRWA within hours to provide shelter to displaced families and UNRWA continues to coordinate the relief operations in the camp (see below). Though the situation of the families affected has stabilised, people remain in shock due to the vast loss of property, forced displacement and fears that environmental hazards could keep them from returning to their homes and rebuilding their lives in the near future.

The Costal Water Municipalities Water Union (CMWU) has confirmed that they have received funding for all items in their emergency appeal to the disaster and have begun an assessment of all water and waste-water networks in/to Um Al Nasser village. Following the assessment CMWU teams will begin maintenance, conduct repairs and disinfection of the area.

A. Shelter

- According to UNRWA a total of 333 families (2,168 people) living in 376 tents, including 26 non-refugee families (151 people), are now registered in the camp. A total of 16 latrines and eight showers are operational and 300 UNRWA registered families have received NFI packages.
- UNRWA had also provided shelter to 71 people in Jabalia Youth Activity Centre who were displaced by sewage overflow southwest of Jabalia on 30 March. On 3 April this emergency shelter was closed and ten remaining families received relocation allowances.
- An UNRWA engineering team assessment of 158 houses in Um Al Nasser village found that some 95 houses are need for minor repairs, three in need of major repairs and six houses need to be completely rehabilitated.



UNRWA temporary camp, 28 March 2007 (Source: OCHA)



B. Food and non food items

- Food parcels as well as hot meals have been provided to the displaced families of Um Al Nasser in the temporary camp including by Care International, Save Children-US, ICRC, Islamic Relief, Welfare Association and Map UK. UNRWA is currently coordinating food distribution in the camp and at the time of writing sufficient quantities of food supplies had been received.
- A supply of non food items including hygiene kits, clothes, blankets, mattress, mats, gas containers and stoves, is available for two weeks and has been distributed (supplied by UNRWA, UNFPA, Rafeed Project, Islamic Relief, Care International, Save Children-US and ICRC).

C. Water

- Sufficient quantities of potable water and safe water for personal use have been made available to those temporary sheltered in the UNRWA camp. Twenty water tanks provided by UNRWA, MSF and Care International are now installed and UNRWA is filling up the tanks three times a day providing an average of 60,000 litres (six round trips for the UNRWA water tanker). Another 500 litre water tanker was donated to the Palestinian Medical Relief Society's (PMRS) clinic in the affected area.
- The MoH continue to test water samples in the affected area ever three days through the Public Health Laboratory for contamination. Results from 16 water samples collected from different sources in the affected area showed no contamination to date.

D. Health

- The MoH declared a state of emergency in Gaza Strip following the flooding and an Operation Room was activated. Four MoH Primary Healthcare Clinics (PHC) located in proximity of the affected area (Shaimma clinic in Beit Lahia, Jabalia clinic in Jabalia city, Beach

clinic in the Beach Camp and Sheikh Radwan clinic in Gaza City) are currently operating on a 24 hour schedule in response to the emergency. In addition, the local PMRS PHC in the affected area is also functioning around the clock and an UNRWA PHC clinic in Jabalia camp is providing services to refugees.

- Additional medical points providing basic services have been put in place in the area including areas provided the MoH, Union of Health Work Committee (UHWC) and the Palestine Red Crescent Society (PRCS) . In addition, PMRS has made available one mobile clinic with the support of MDM and MSF.
- MoH reported that there is no shortage in MMR vaccine and will provide the PMRS clinic with the required amount during the week. An anti tetanus immunization campaign will be carried out by the MoH after defining the targeted age group.
- Public health and environmental assessments are ongoing by different agencies. WHO is currently providing technical support to the MoH for the identification of epidemic prone and vector borne diseases that will be monitored and reported on a daily basis with an active case finding and specimen collection for lab confirmation when appropriate. Case definitions and line listing forms have been prepared and distributed by MoH/WHO to the health providers operating in the area.

E. Education

- Since 27 March, schooling in the area has been severely disrupted. The only school in the village reopened on 1 April and while the attendance rate was initially low (27%) it has increased to around 80%. School children did not return as they lacked the appropriate school materials including clothes and books coupled with their parents' concerns about health hazards.
- UNICEF has provided 550 school bags, 15 'schools in a box kits' (emergency school



supplies for both teachers and students) and uniforms to Um al Nasser school (a total of 550 students) through Ministry of Education and Higher Education (MoEHE).

- UNICEF has also supported MoH awareness raising campaign on nutrition, safe water practices and the overall health environment in the camp. Health education materials are now being distributed. Additionally, under PRCS supervision, a group of volunteers have also started an awareness raising campaign on risk of the Unexploded Ordinance (UXO).

F. Fuel

- Since 28 March, the Temporary International Mechanism (TIM) has provided emergency fuel to the 29 public bulldozers and trucks who are working around the clock to reinforce the embankment around the large sewage lack and ensure access routes to the village. The TIM has also provided fuel to the Al Gous pumping station to urgently lower the waste water level in the lake.

G. Psychosocial

- A workshop has been conducted by UNICEF to coordinate the different psychological support services being provided to the residents of Um Al Nasser. Thirteen UNRWA counsellors have begun to work in the camp (supported by UNICEF and MoH). An MoH psychiatrist has also been made available to follow up referral cases identified by the counsellors.
- The MoH, with support from MDM and MSF, will conduct a session for the physicians working in the different medical points on psychosomatic symptoms and on guidelines and the mechanism of patient referral to assigned counsellors.

H. Coordination

- UNRWA has appointed a Coordinator and Assistant Coordinator of the temporary camp who will coordinate all humanitarian activities. UNRWA has requested that all agencies contact the Camp Coordinator (Mr. Mohamed Abu Gamar – 0599 854 151) and an Assistant Camp Coordinator (Mr Zaki Mossad - 0599 259 040) to coordinate their activities.
- The next inter-agency coordination meeting will take place at 2 pm, 9 April 2007 at the UNSCO office in Gaza city, Gaza Strip.

Endnote

- 1- See OCHA, *Environmental emergency: Beit Lahia Waste Water Treatment Plant*, 28 January 2004. Available at www.ochaopt.org



The Gaza Strip Beit Lahia

3 April 2007

Waste water treatment plant flooding



Northern No-Go Zone

Movement in and out of this area is restricted to residents and international organisations since Dec 23/2005.

New Lagoons
(under construction)

Water Treatment Facility
(created 1976)

Affected Bedouin village

Large Sewage Lake
(overflow from treatment plant)

Temporary relocation site

Evacuated settlement Nisanit

Erez Crossing Point

Emergency Filtration Basin
(flooded 27 March 07, built in Sept 06)

Beit Lahia

Beit Hanoun

Jabalia



Aerial Photography: 2004

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.