



The Palestinian Centre for Human Rights

The Impact of the Israeli offensive (27 December 2008 – 18 January 2009) on the Water and Sewage Sectors in the Gaza Strip



Palestinian Centre for Human Rights

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Prelude

Israeli actions during the December/January 2009 offensive inflicted severe damage on the humanitarian, economic and social infrastructure of the Gaza Strip, including vital facilities upon which more than 1.5 million Palestinians depend. Over 1,400 Palestinians were killed in the offensive, the overwhelming majority of whom were civilians, including 281 children and 111 women. In addition, more than 5,300 Palestinians were wounded. Civilian objects, including homes, factories, farms, medical and educational institutions, and other humanitarian organizations, were also extensively destroyed.

During the offensive, Israeli Occupation Forces (IOF) deliberately targeted the water and sewage infrastructure; for example, water tanks and wells were damaged or destroyed, which in turn negatively affected the daily life of civilians in the Gaza Strip, violating their civil, political, economic, social and cultural rights. Over the course of the offensive, IOF violated numerous provisions of international humanitarian law, including articles 33 and 53 of the Fourth Geneva Convention related to the prohibition of collective punishment, and the protection of civilian property.

The Israeli offensive on the Gaza Strip coincided with Israel's ongoing illegal blockade which – at the time of the offensive – had been in place for more than two and a half years. Under the blockade regime, IOF deny, *inter alia*, the entry of equipment necessary to repair the water and sewage infrastructure in the Gaza Strip; these restrictions have continued following Israel's declaration of a ceasefire.

This report highlights the devastating impact of the Israeli offensive, focusing on the water and sewage sectors in the Gaza Strip, and detailing the consequences of the continuing illegal blockade. Finally, it addresses Israel's and international donors' legal obligations with respect to international law and international humanitarian law.

Report summary:

- The Israeli offensive on the Gaza Strip inflicted complete and partial destruction upon elements of the water and sewage infrastructure and other projects such as sewage pipes, water tanks, waste water treatment plants, switching boards, and administrative buildings and vehicles. Damage inflicted upon the sectors is estimated at US\$ 6 million.
- The civilian population suffered extensively as a result of the destruction, and Israel's decision to prevent the entry of reconstruction materials.
- Approximately 70% of the population of the Gaza Strip suffered from shortages in drinking water during the Israeli offensive. These shortages primarily affected families living in multi-storey buildings as water could not be pumped up to upper floors due to electricity cuts arising from fuel shortages in the Gaza Power Plant.
- In Gaza City, 4 plants for pumping waste water stopped due to fuel shortages. In Beit Hanoun, a pipeline, which is 16 inches in diameter, connecting the water pumping plant and treatment

plant, was destroyed. Due to the IOF's presence in the area of Netzarim, the el-Sheikh Ejleen water treatment plant, which serves Gaza City, was stopped.

- IOF denied technicians' access to the water treatment plant in Beit Lahia, preventing them from conducting necessary repairs. IOF also hindered the operation of the main water treatment plant located in the northern Gaza Strip.
- During the offensive, the Coastal Municipality Water Utility CMWU, in coordination with the International Committee of the Red Cross (ICRC), established five emergency areas to monitor the water and sewage services. Technical teams did not manage to reach the affected areas due to continuous bombardment.
- Following the end of the Israeli offensive, efforts to repair and rehabilitate the water and sewage infrastructure were frustrated as a result of Israel's ongoing illegal blockade of the Gaza Strip.
- The Gaza Strip population is still suffering from severe shortages in water supplies due to heavy damages inflicted upon facilities. Water production constitutes only 30-40% of the total normal quantity of daily production, which in turn, requires cutting off water for extended periods to certain areas. The most affected areas are the east of Rafah town and Khoza'a village, east of Khan Yunis where water is supplied for just three hours daily. Due to their elevation, water can not be supplied to the areas of eastern Jabalya refugee camp, Beit Hanoun town, al-Fukhari areas in Khan Yunis and al-Shouka area in Rafah, as the water pumping systems are inadequate.
- Untreated waste water is still pumped directly into the Gaza sea with negative health and environmental consequences.
- The international community, including international donors, continue to grant Israel impunity. No genuine measures have been taken to force Israel to lift the illegal blockade and to allow the entry of necessary reconstruction materials.

The Right to an Adequate Standard of Living

The right to an adequate standard of living is a core component of international human rights law. **Article 25(1)** of the Universal Declaration for Human Rights is considered as the basis in this regard as it reads that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services..."

The right to enjoy basic services, such as water and sewage, is connected to the human right to the highest standard of adequate living, and the right to housing. Human rights are a complimentary inter-connected whole; as noted by the Committee on Economic, Social and Cultural Rights there can be no adequate housing without adequate privacy, adequate space, adequate security, adequate lighting and ventilation, adequate basic infrastructure – including water and sewage services – and adequate location with regard to work and basic facilities.

The ratification of the adoption of International Covenant of Economic, Social and Cultural Rights (ICESCR) provided a legal basis for these rights, defining individual's right to enjoy basic services. **Article 11(1)** reads that "the States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions..."

The Committee on Economic, Social and Cultural Rights (CESCR), the body of independent experts that monitors implementation of the International Covenant on Economic, Social and Cultural Rights by its States parties, illustrated the content of this right in general comment # 4, "The Right to Adequate Housing." The Committee also specified seven main elements which expand upon the definition of 'adequate' housing under international law. An essential component of adequate housing is thus the availability of services, material, facilities and infrastructure; the Committee stated that "All beneficiaries of the right to adequate housing should have sustainable access to natural and common resources, safe drinking water, energy for cooking, heating and lighting, sanitation and washing facilities, means of food storage, refuse disposal, site drainage and emergency services".

Article 12 of ICESCR states that everybody has the right to enjoy the highest attainable standard of physical and mental health. In General Comment 14, the Committee stated that the right to health "embraces a wide range of socio-economic factors that promote conditions in which people can lead a healthy life, and extends to the underlying determinants of health, such as food and nutrition, housing, access to safe and potable water and adequate sanitation, safe and healthy working conditions, and a healthy environment."

Providing infrastructure services, clean drinking water, sufficient electricity, phone services and roads is significant and necessary. Countries and governments are under an obligation to provide and develop such services. Infrastructure services of human settlements, cities and countries constitute a strong stimulant for the economic growth and a basic requirement for improving both the local and national economy as infrastructure is vital to economic growth.

Background

Water in the Gaza Strip

The Gaza Strip has no permanent water sources such as rivers or lakes. The temporary flow of water – the main source of underground water, caused by rainfall – does not last for a long time.¹ Underground water is thus the main source of water in the Gaza Strip. According to the Palestinian Central Bureau for Statistics (PCBS), water quantities pumped from underground water for domestic usage in 2007 mounted to 172.5 million cubic meters, while water quantities devoted for agricultural usage mounted to 87 million cubic meters. PCBS revealed that individual Palestinian's daily share of the total available water amounts to 135.8 liters.

Israeli settlers in the West Bank consume approximately twice as much water as Palestinians per capita.² By the end of 2008, there were approximately half a million settlers in the West Bank, consuming 142.7 million liters daily, resulting in a water shortage in the West Bank.³

¹ Average of rainfall on Gaza Strip estimated at around 110 million cubic including a part that enriches the underground water. For more information, review report of the aquatic situation in the Gaza Strip 2007-2008, Water Utility of Coastal Municipalities, October 2008.

² Israeli authorities control more than 80% of Palestinian water supplies due to which the average of individual usage for drinking water decreased. The data available shows that 27% of the West Bank water is

The water situation in the Gaza Strip has deteriorated significantly in terms of both quality and quantity due to, *inter alia*, decreased rainfall, increased population density, and sea water intrusion. These factors negatively affect the underground water supply. The population of the Gaza Strip now suffers from escalating environmental problems as a result of increased demand on the underground water supply. Over-consumption of underground water results in a deterioration of water quality, including increased salinity.

Water aquifers in the Gaza Strip vary by area; maximum thickness is approximately 160 meters in the west-north areas of the Gaza Strip and it gradually decreases in the west reaching 70 meters maximum. In the southern areas, thickness is approximately 100 meters close to the coastal areas, while it is 10 meters maximum in the south-east areas.¹ The underground water storage capacity is 44.8 kilometers squared, thus, the amount of water stored varies from 100-450 cubic meters; taking into consideration that water permeation is 25% and the thickness of aquifer varies from 10-50 m.²

IOF practices, which include installing dams along Gaza Valley so as to transfer water outside the Gaza Strip and digging wells along the Gaza Strip's eastern borders for the same reason, have limited the productivity of the underground aquifers, isolating the Gaza Strip's underground water supply and rendering rainfall as the sole source for underground water. Total amounts of water extracted from the underground water's store for domestic purposes mounted to 163.483.091 m³ in 2007.³

IOF had, before its unilateral withdrawal from the Gaza Strip on 12 September 2005, imposed a series of measures intended to tighten their control over the water sources in the Gaza Strip such as digging wells, installing counters to measure amounts of water used in agriculture so as to decrease amounts of water provided for the Palestinians. Israeli authorities also imposed strict measures on any development activity that needs aquatic sources so as to decrease water consumption.

Sewage Services in the Gaza Strip

The sewage services problem is considered as the most serious one regarding the Gaza Strip infrastructure. IOF have historically neglected the sewage service networks, due to which, the Gaza Strip suffers from a deficit in waste water networks, and residents depend on absorbing wells to remove waste water which in turn badly affects residents' health. The Gaza Strip's sewage service networks cover most areas, except for Khan Yunis and its eastern villages where only 40% of the

dedicated just for Israeli settlers. Israeli consumption for water from the West Bank exceeded 88%. For more information, review *Murdering Palestinian Environment* by Dr. Mustafa Qa'oud, 2008.

³ For more details, review statement issued by PCBS on the occasion of universal environment day entitled as *Palestinian Environment between Settling Hammer and Anvil of Overspill* on 5 July 2009 www.pcbs.gov.ps.

¹ Dr. Adnan al-Jyouisy website of al-Najah National University, institute of environmental and aquatic studies www.najah.edu.

² Review the report of the aquatic situation in the Gaza Strip 2007-2008, Water Utility of Coastal Municipalities, October 2008

³ Ibid.

⁷ Statistics of PCBS indicates 97% of the Strip areas are connected with networks of swage service which contradicts with the situation in Khan Yunis.

governorate is covered. However, decreased capacity and quality mean that waste water is poured into the sea without treatment with significant environmental and health consequences.⁴

The Gaza Strip's sewage service's sector consists of 36 pumps for waste water and 3 plants for waste water treatment. In the Gaza Strip, waste water is comprised of a number of solid and molten elements where water constitutes 99.9% and the rest is pollutants.

Waste water treatment and purification networks are located in Gaza City, al-Shati' refugee camp, the northern Gaza Strip, Deir al-Balah town and Rafah town, while they are lacking in refugee camps located in the central Gaza Strip. In Khan Yunis, the waste water network covers 25% of the area, while the eastern area of Khan Yunis has no waste water treatment facilities due to which the residents depend on primitive channels to dump waste water into Gaza Valley. In areas of no waste water networks, the residents depend on ground sucking holes.

Wastewater Treatment Networks⁵

The Gaza Strip has three waste water treatment plants:

- 1) **Beit Lahia plant** is located in the northern Gaza Strip, 4 kilometers from the sea. It was established in the mid-1970s on Beit Lahia's sand hills. It is designed to absorb approximately 3000 m³ of water but, currently, it absorbs around 12000 m³, dramatically exceeding its capacity.
- 2) **Gaza Plant** is located in the south of Gaza City. Its services cover all Gaza City's residential buildings and public facilities. It was designed to absorb 42000 m³ daily, yet, the amounts of waste water received exceed the plant's capacity, due to which the waste water goes into the sea with no treatment.
- 3) **Rafah Plant** is located southwest of Rafah town. Its services cover 38% of residential buildings and public facilities located in the town. More than 62% of the town's residents depend on ground sucking holes to get rid of waste water. It is designed to absorb 1800 m³ daily, yet, the amounts of waste water absorbed mount to 4000 m³. The superfluous waste water goes directly into the sea.

Impact of the Israeli Offensive on the Water and Sewage Sectors

The water and sewage sectors were extensively destroyed or damaged during the latest Israeli offensive; sewage pipes and pumps, treatment plants, and operational and administrative facilities were directly targeted, resulting in significant degradation of the overall network. Employees in the

⁵ Dr. Kamel al-Shamy, Quality of Drain water in Gaza Strip and its Recycling, Faculty of Arts and Human Sciences in al-Aqsa University

water and sewage sectors were also targeted. Damage inflicted upon the two sectors is estimated at US\$ 5,971,690.⁶

Water Sector

The Israeli offensive on the Gaza Strip inflicted extensive damage to water facilities; thousands of meters of domestic networks and extensions, and a number of water wells, including their electricity transformers, were destroyed after being targeted. The technical teams faced extreme difficulties in trying to repair the damage, putting their lives at risk. A worker was attacked while he was carrying out his job.

Examples of Attacks:

IOF destroyed the line linking wells in al-Mughraqa area and al-Nussairat refugee camp both located the central Gaza Strip, due to which, around 30,000 residents were deprived of water. IOF targeted al-Edara well located in the east of Jabalya refugee camp killing the well's worker. The electricity transformer of the well of Sheikh Ejleen neighborhood in the southwest of Gaza City was destroyed. The line of Zimmo wells in Jabalya, one of the main water supply lines, supplying water for 40% of the Gaza Strip population was destroyed. Another line that transfers water to Gaza City from wells in the northern Gaza Strip was destroyed; these wells provide Gaza City with 40% of its required water. One of the northern area wells was completely destroyed while 20 wells stopped operating due to which the pumping process in the area was ceased. Another ten wells in Rafah town serving 175,000 residents were broken down as a result of electricity cut off. Consequently, the vast destruction inflicted upon the Gaza Strip's wells required running all other wells partially for 4-5 hours daily using spare electricity generators.⁷

During the offensive, engineer Munther Shoblaq, Head of Coastal Municipalities⁸ Water Utility (CMWU) was quoted by PCHR as saying that:

- Due to continued electricity cut-offs, the water production from water wells, including 150 water wells supervised by CMWU, has dropped from 220,000 m³ per day to 120,000 m³. As a result, all Gaza civilians have been suffering from severe shortages in water supplies.
- The CMWU has been forced to reduce water distribution hours to a single hour per day in areas that have electricity. The continued electricity cut-offs, for several days in some areas, have created several problems in the distribution of water to broad areas in the Gaza Strip. CMWU has not been able to deliver water to many areas for more than five days.

⁶ An exclusive report concerning Palestinian Water Authority estimation for damages inflicted upon sectors of water and sanitation.

⁷ A statement issued by Water Utility of Coastal Municipalities on 10 January, 2009 www.cmwu.ps.

⁸ For more information, review report entitled as Humanitarian Crisis Aggravated due to Continued Israeli Offensive- PCHR on 3 January 2009, website www.pchrgaza.org

- There were concerns that the problem of water would aggravate. These concerns increased as diesel was running out from the CMWU's stocks. Five water wells in the northern Gaza Strip had already run out of diesel. These wells provide approximately 40% of water needs of Gaza City (3 of them are in the northeast of Gaza City and the remaining two are in Beer al-Na'aja area). Four water wells in al-Mughraqa area, south to Gaza City, had also run out of diesel. These wells provide water to al-Mughraqa area, al-Nussairat refugee camp, al-Zahraa' town and al-Boreij Refugees Camp..

Due to vast destruction inflicted upon the water sector during the latest Israeli offensive, most of the Gaza Strip population suffers severe shortage in drinking water mostly those living in multi-storey buildings due to electricity cut-offs, which in turn, resulted from the shortage in fuel supplies needed for running the Gaza Strip power plant. Sources in the CMWU confirmed that lack of fuel necessary for running spare generators, lack of spare parts, and electricity cut-offs resulted in disruption of supplying water for the population.

The Gaza Strip needs 250,000 liters of fuel monthly so as to run water pumps. During the offensive, Israel allowed the entry of 75,000 liters of fuel, which was sufficient to run the wells for only 9 days. Only 30,000 liters were used and distributed to accessible areas and wells.

Many institutions working in the Gaza Strip considered the situation as alarming and warned of an imminent humanitarian disaster due to shortage in basic humanitarian needs, such as electricity. Water pumps and waste water networks were stopped; ultimately, spare electricity generators were run by fuel for only 8 hours.

The CMWU called on the Gaza Strip population to minimize water consumption as it was unable to supply vast areas in the Gaza Strip with water in light of the grave situation. 70% of the Gaza Strip population, mostly in Gaza City, had been deprived of pure drinking water since the first days of the offensive.

On 10 January 2009, institutions working in the sectors of water and sewage services declared a state of almost complete deficiency with respect to providing even basic water and sewage services. They also called on humanitarian organizations to immediately intervene to ensure the operation of water and sewage facilities in the Gaza Strip and to facilitate repairs resulting from damage inflicted by the Israeli offensive.

Sewage Services Sector

Networks and waste water treatment plants of the sewage sector were directly targeted during the offensive. Technicians faced extreme difficulties in carrying out their job due to Israeli bombings, as well as the acute shortage in spare parts and pipes that are necessary for the repairs process.

Waste Water Treatment Plants

Electricity cut-offs throughout the Gaza Strip, including supply to waste water treatment plants, resulted in decreasing the already reduced efficiency of treating waste water to less than 50%. As a result of fuel shortages, CMWU was forced to reduce fuel supplies to treatment plants.

The waste water treatment plant in al-Sheikh Ejleen area needed, during electricity cut-offs, around 3000 liters of diesel daily that could not be provided by the CMWU due to which they were stopped. Thus, its function was just to receive waste water and directly pump it into the Gaza Strip sea. Amounts of untreated waste water pouring into the Gaza Strip sea mounted to 40,000 liters daily, which resulted in environmental dangers such as sea pollution, and destruction of marine life and fishery. The CMWU was forced to choose this method of operation, in order to avoid the dangers associated with storing the sewage on land.

Despite electricity cuts, Beit Lahia's waste water treatment plant was run with all possible means so as to avoid a catastrophe similar to that in "Um al-Naser village" in 2007 when waste water overspread and poured into dozens of homes killing some civilians. The CMWU had to supply the plant with 700 liters of diesel daily so as to ensure the non-recurrence of such a catastrophe.

In light of the continued deterioration of the security conditions, the CMWU was forced to establish 5 emergency areas, each headed by the director of that area. The heads of the emergency areas, in cooperation with CMWU Director General and the ICRC in Gaza, followed up the status of water supplies and sewage services in the Gaza strip. The CMWU managed to obtain 48 tons of chloride, which was used to decontaminate drinking water. The delivered quantity of chloride was enough for 3 weeks only. The CMWU's technical crews continued their work amidst complications and critical security conditions, work focused on the decontamination of drinking water with chloride and supplying waste water treatment plants with diesel for operational purposes.

The operation of some waste water pumping plants was stopped following attacks, and four pumping plants in Gaza City were stopped due to fuel shortage. Other pumping plants were on the brink of halting operations due to fuel shortage. Waste water pipes were subjected to destruction. For example, in Beit Hanoun town, a line which is 16 inches in diameter, linking a pumping plant and a treatment plant, was destroyed due to which waste water poured into streets and residential areas as the CMWU's reserves of fuels and spare parts had run out.

The CMWU made it clear that due to IOF activity at al-Shuhada' intersection, south of Gaza City, the waste water treatment plant, located in the south of Sheikh Ejleen neighborhood, completely stopped operating. Waste water had to be pumped directly into the sea, untreated.

Engineer Majed Ghannam, head of CMWU department of quality and public awareness, pointed out that the waste water treatment plant in Sheikh Ejleen area was attacked on 10 January 2009; gathering pools were targeted with three shells, due to which 2-million liters of waste water poured into the nearby agricultural lands.

Sewage Networks

Wide-scale land incursions throughout the Gaza Strip inflicted heavy damage upon the sewage network, particularly in areas of al-Zaytoun, al-Shojaeya and al-Tuffah in Gaza City and other areas in the northern Gaza Strip where drinking water and waste water were mixed causing serious risks to residents' health and hygiene. Areas bombarded during the offensive need sewage services to be installed as available networks are unable to cover other damaged areas.

Sewage Reservoirs

Institutions working in the Gaza Strip, expressed concerns over the fact that sewage reservoirs would collapse which in turn would kill thousands of Palestinians. Sewage reservoirs in Beit Lahia are liable to collapse due to damaged sand barriers that protect reservoir walls. The reservoirs contain 4 million cubic meters of waste water. An overflow would result in an environmental and health catastrophe. Around 15,000 residents would be harmed and vast areas of arable lands would be damaged. Such an overflow occurred two years ago, killing 5 individuals and displacing a further 2,000.

Engineer Rebhy al-Sheikh, Deputy Director of the Palestinian Water Authority clarified that damages inflicted upon basins of filtering, caused a leakage of 20,000 cubic meters of waste water daily into underground storage during the Israeli offensive. Israeli tanks destroyed a fuel tank due to which 3,000 liters of diesel leaked down into ground, which in turn resulted in polluting the underground water.

On 3 January 2009, IOF targeted Gaza's waste water treatment plant, which pumps approximately 40,000 million liters of waste water into the sea daily. During the offensive the pumps were not run due to dangers. If such a situation continued, a new catastrophe was inevitable as the basins would be filled with waste water which in turn would pour into homes and lands.

The Palestinian Water Authority affirmed that IOF allowed entry of just 48 tons of Chloride funded by UNICEF, while fuel was given access by UNRWA which worked on facilitating the process of distributing it to water plants. The Palestinian Water Authority reiterated that it was necessary to provide pumps, generators and pipes of waste water. It pointed out that it sought to have Chloride spare pumps in case the existing pumps were damaged.

Case Study: Beit Lahia Waste Water Treatment Plant

The Beit Lahia waste water treatment plant, which is located near residential areas in the Northern Gaza Strip, poses a major problem to local residents. The increase in waste water amounts and environmental and health reflections aggravated the said problem.

Residents of al-Nasser village bear the heaviest burden of suffering among the population of the northern Gaza Strip as they were affected by the pollution inflicted upon sources of underground

water and by increasing numbers of insects. The environmental and health problems resulting from waste water reservoirs caused heavy damage in the residents' living conditions.

The Um al-Nasser catastrophe dates back to 27 March 2007 when sand barriers erected at a reserve basin of waste water – which is located 150 meters from a Bedouin village – collapsed due to which waste water poured out into houses in the village killing 5 residents and wounding 20 others. More than 250 houses¹³ were damaged.

PCHR has closely monitored the situation at Um al-Nasser, and repeatedly warned of the dangers to the local population as a result of the pollution caused by waste water seeping into the underground water supply.

PCHR's work in this regard continued after the catastrophe and the concerned parties were held accountable. PCHR called for immediately solving the problem so as to ensure the non-recurrence of such catastrophe. Another catastrophe would be destructive for the residents' lives and facilities, including arable lands.¹⁴ All efforts exerted in this regard have been fruitless to date, and the situation is getting worse, particularly after Israeli attacks during the offensive damaged the reservoir walls.

According to engineer Farid Aashour, Director of Waste Water Treatment Plants in the CMWU,¹⁵ the Israeli offensive against the Gaza Strip negatively impacted the performance of treatment plants in general and Beit Lahia plant in particular with regard to development, reconstruction, programs and plans laid by technicians for running the main plant located in the east of the northern Gaza Strip. Aashour was quoted as saying: "The delayed running of the new eastern plant aggravates the already worsened situation in the northern Gaza Strip".

He pointed out that the treatment plant was directly affected due to the closure imposed on the Gaza Strip and the resulting shortage in spare parts necessary for repairs, which in turn, forced the technicians to manufacture home-made parts so as to overcome the ongoing problem.

Concerning the impact of the Israeli offensive and closure against the Gaza Strip on the performance of the technicians working in Beit Lahia treatment plant, Aashour stated that "the CMWU personnel cannot resume their daily job as a result of Israeli measures such as denying the technicians' access to the affected areas if they had no prior permission, which in turn, needs a long time to be offered, and thus affecting the performance of the plant. Israeli warplanes dropped leaflets warning residents from reaching the borders with Israel with no distinction between a resident and a technician. Such a

¹³ For more information review report of Um al-Naser village, Continuous Environmental Catastrophe, issued by PCHR on August 2007 www.pchrgaza.org

¹⁴ During the report's writing, Palestinian Ministerial Council, in its session held in Ramallah on 1 June 2009, endorsed recommendations of Ministerial Infrastructure Committee related to following up state of sewage services' basin in north of Gaza Strip including forming a coalition of specialized contractors and assigning Water Authority with concerned authorities preparing a study concerning the Israeli side's accountability to polluting OPT with waste water and scheduling national strategy including solutions, technical, legal and political visions necessary for dealing with sewage service.

¹⁵ Aashour was interviewed by a PCHR field worker on 20 May 2009

measure undermined chances of technicians' access to the waste water treatment plant in the northern Gaza Strip".

PCHR followed up developments related to the collapse of a sand barrier of a basin located northwest of Um al-Nasser village:

At approximately 03:00 on Friday, 27 March 2009, 4 meter high sand barriers located in the southwest of a basin of waste water 22 dunoms in area and 4-meters deep collapsed. The collapse made the water leak into low areas located near Um al-Nasser village, 30 meters away from houses.

According to engineer Mohammed Abu Hussein, director of the waste water treatment plant in the northern Gaza Strip, the reason behind the collapse is that the basins' monitor was unable to reach the area due to the Israeli bombardment and gunfire against whoever moved in the area without permission.

A basins' monitor told one of the engineers that the said basin can absorb waste water up to 3 meters high. "The engineer gave me permission for pumping water, yet, I was unable to reach the area due to dangers. On Friday dawn, the sand barriers collapsed." Abu Hussein confirmed that pumping water into experimental basins located in east of Jabalya faces tremendous difficulties due to IOF's measures and electricity cut-offs which affected the performance of pumps located in basins of the Bedouin village.

Impact of the Illegal Israeli Blockade on Water and Sewage Services

Institutions working in both sectors reported an inability to conduct necessary maintenance to drinking water and sewage facilities in the Gaza Strip due to shortage in spare parts which resulted from the Israeli blockade of the Gaza Strip. The CMWU indicated that 3 waste water treatment plants and 35 waste water pumping plants stopped working, due to which, waste water poured throughout the Gaza Strip mostly into residential areas where lives of residents are at stake. The overflow of untreated waste water into the Gaza sea threatens marine life.

Engineer Majed Ghannam, director of Awareness and Quality Monitoring in the CMWU, pointed out that for four or five years, the Gaza Strip has been under a total closure that bans entry of all materials needed for repairing both drinking water and sewage services which in turn negatively affected the ability to provide water for the Gaza Strip's population.

Both sectors face complicated difficulties concerning repairing heavy damages inflicted due to the Israeli offensive throughout the Gaza Strip mostly in the northern governorate where water wells, networks and waste water treatment plants were destroyed. Blocking the Gaza Strip crossings has worsened the problem due to the shortage of necessary repair materials in both sectors.

Engineer Rebhy al-Sheikh, Deputy Head of Palestinian Water Authority, stated that the Authority managed to get funds to conduct repairs for the damages that can be fixed via the materials that are available in the Gaza Strip, adding that "the aids presented by a number of countries and

international organizations played a major role in enabling the authority to conduct many projects of repairing and fixing damages caused to the Israeli offensive¹⁶.

Al-Sheikh pointed out that the damages which have been fixed, compared to the unfixed damages, are limited. Stopping the mixture between drinking water and waste water and repairing water networks were the first goals. The left bigger portion of damages awaits the entry of equipment which is denied by IOF, despite the Israeli side's acknowledgment for such damages inflicted upon both sides.

Many bodies emphasized the urgent need for reopening the Gaza Strip crossings to allow the entry of raw materials necessary for reconstructing what was damaged during the Israeli offensive. The CMWU indicated that it submitted a list of needs necessary for implementing different projects in the Gaza Strip to the Israeli side.

Al-Sheikh warned of dangers of Israeli procrastination in reopening the Gaza Strip crossings saying that the Water Authority is bound by time sensitive grant agreements. The continuing blockade means that donors may cancel such agreements. The Italian Government signed a grant agreement with the CMWU to fund a number of projects such as establishing a desalination plant in Rafah town, repairing two desalination plants in Khan Yunis town. The agreement was terminated last December. The CMWU is concerned about losing other agreements.

1- Donors' Commitment

A number of donors¹⁷ pledged money to fund a plan of immediate intervention to conduct urgent repairs and rehabilitation in the Gaza Strip. The illegal blockade imposed on the Gaza Strip have impacted the donors' commitment to reconstruct the Gaza Strip.

¹⁶ For more information review a report on "Impact of Tight, Comprehensive Closure Imposed on the Gaza Strip between 25 December 2008-10 March 2009, www.pchrgaza.org

¹⁷ Egyptian city of Sharm al-Sheikh hosted a conference of international donors, attended by representatives of 87 countries and financial organizations. The donors pledged to pay US \$ 4.481 billion so as to support the Palestinian economy mostly after the Israeli offensive

The below table illustrates the donors' pledges:¹⁸

Donor	Project
World Bank	Rehabilitating sectors of water and sewage service and participating in a plan for rerunning facilities of the said sectors
UNICEF	-Contribution with US\$ 50,000 to fast rerunning -Contribution with US\$ 150,000 in rehabilitating networks of water distribution -Contribution with US\$ 50,000 to importing chloride for decontaminating underground water
Spanish Institution of Action against Hunger	-Participating in rehabilitating networks of water in damaged areas -Providing the CMWU with 5,000 liters of diesel so as to run facilities -Consolidating and cleaning a damaged basin of waste water treatment in Gaza City treating plant
Care International	-Providing the displaced people and affected areas with drinking water -Contribution with US \$ 80,000 to fix water networks in Beit Lahia
Oxfam	Contribution with US\$ 185,000 to provide the CMWU with spare parts and water tanks
ICRC	-Providing Khan Yunis municipality with three electricity generators to run water wells -Importing spare parts for water networks -Rehabilitating some networks of sewage service in Rafah
Islamic Bank for Development and Qatar Red Crescent Society	-Contribution with US\$ 650,000 to reconstruct damaged water wells -Rehabilitating damaged water wells and networks of sewage service
UNDP	-Readiness to install a water tank in Jabalya -Readiness to monitor water quality in

¹⁸ Review report issued by CMWU on "Urgent Repairing and Plan of Rerunning Facilities of Water and Sewage Service Sectors", 20 January- 5 February 2009

	tanks after running
Islamic Relief	-Installing a water line in Rafah -Participating in digging retrieval water wells
Swedish International Development Agency SIDA in cooperation with Water Authority	-Readiness to contribute with US\$ 400,000 to install two wells and import generators and spare parts
KFW	-US\$ 70,000 for prior rehabilitation -Contribution with US \$ 200,000 in a plan for rerunning Gaza waste water treatment plant
Save the Children	Readiness to purchase and rehabilitate water networks in different areas of the Gaza Strip
UNRWA	Distribution of 150,000 liters of diesel to facilities of water and sewage services

2- Chances of Rehabilitating Water and Sewage Services in the Gaza Strip

Institutions working in the Gaza Strip have faced significant difficulties when attempting to conduct necessary repair and rehabilitation works. The CMWU technicians had already initiated the process of reparation, such as rerunning some water wells despite the major risk of resuming their job during the Israeli offensive.¹⁹

Following the declaration of the cease-fire, a number of measures and acts were conducted to maintain basic water and sewage service throughout the Gaza Strip, of particular concern are the health and environmental risks associated with the mixing of drinking and waste water, and the overflow of waste water. These risks are particularly prevalent in Beit Hanoun, Beit Lahia, areas in west of Jabalya and parts of Gaza City where the water lines and pipes were destroyed. Necessary repairs include, rehabilitating water networks and pipes, rehabilitating water wells, digging new water wells, installing new water tanks, plants and networks, enhancing the quality and quantity of drinking water, installing dams over main valleys and upgrading waste water treatment plants to provide villages and residential areas with drinking water networks.

Engineer Munzer Shoblaq, Director General of the CMWU,⁹ confirmed that the CMWU has been working on running, rehabilitating and repairing 155 water wells, 36 sewage pumps, 3 waste water treatment plants and 4 water desalination plants. CMWU also worked on consolidating, running and administrating reservoirs attached to Beit Lahia plant, installing 50 new water wells throughout the Gaza Strip, installing a basin for collecting rainfall in Rafah town, decontaminating drinking water in

¹⁹ A workshop on "Damages Inflicted Upon Sectors of Water and Sewage Service in the Gaza Strip after Israeli Offensive- Reality and Solutions", in the Water and Environment Institute of al-Azhar University, in March 2009

⁹ Shoblaq's statement was given during inaugurating a CMWU branch in Rafah town on 12 March 2009

all wells of the Gaza Strip and repairing damages inflicted by repeated Israeli incursions throughout the Gaza Strip.

Shoblaq pointed out that in cooperation with Rafah Municipality, the most important system for collecting rainfall in Rafah town was being installed and a plant for sewage service, costing US\$ 4 million, was being installed. He added that efforts were being exerted to install a desalination plant for sea water between Rafah and Khan Yunis towns during the next two years in partnership with the Ministry of Local Government.

The CMWU noted in its report on the impact of the Israeli offensive on the Gaza Strip¹⁸ that an urgent work plan had been conducted, in cooperation with the ICRC, UNRWA, the UN Office for Coordination of Humanitarian Affairs, and the Palestinian Water Authority since the first week of the IOF military operations via repeated attempts to have Israeli permission for access to affected sites. A week before the ceasefire, the CMWU managed to provide the Beit Lahia plant with diesel and to repair the water pipeline in al-Nasser neighborhood in Rafah town.

According to the CMWU's plan, after observing losses inflicted upon both sectors, the CMWU dedicated US \$ 236,000 for the repair of urgent damages throughout the Gaza Strip. Around 50% of the allocated funds was dedicated for fixing water wells and networks.

The below table shows expenditure destinations according to the targeted group and area¹⁰:

Targeted group and area	Facilities of sewage service	Facilities of water wells	Water distribution networks	Rainfall collection networks	Waste water disposal networks	Facilities of water and sewage service	Total
Beit Hanoun		45,200		15,000	5,800	5,000	71,000
Beit Lahia	10,600	2,000	25,420		3,800		41,820
Jabalya		7,500	17,570		16,000		41,070
Gaza City	1,400	5,800	6,497	27,500	9,000	18,500	68,697
Al-Mughraqa village		600	1,752				2,352
Al-Zahra' town		100					100
Al-Nusseirat			8,903				8,903
Al-Mawasy	3,000						3,000
Khan Yunis	70,000						70,000

²¹ A report issued by CMWU on "Urgent Repair and Plan of Rerunning Facilities of Water and Sewage Service Sectors 20 January-5 February 2009

²² Ibid

Rafah	4,000	4,510					8,510
Abasan			1,845				1,845
Al-Fukhari			3,570				3,570
Al-Nasser-Rafah			1,650				1,650
CMWU Stores						14,000	14,000
Total	12,000	138,200	71,718	42,500	34,600	37,500	336,518

Recommendations

PCHR calls for:

- 1- Prompt and urgent intervention to ensure respect for the provisions of the international humanitarian law and human rights law, in order to put an end to the serious deterioration taking place in the daily life of the civilian population in the Gaza Strip and to lift the illegal blockade, a form of collective punishment.
- 2- The International community to assist the institutions working in the water and sewage sectors in the Gaza Strip by pressurizing IOF to reopen the Gaza Strip crossings to allow entry of materials necessary for the reconstruction/rehabilitation process.
- 3- The international community to exert pressure on Israel to halt its repeated attacks against the infrastructure of both sectors, particularly against Beit Lahia waste water treatment plant and to allow the access of technicians and workers into the treatment plant.
- 4- International donors and NGOs to abide by their previous pledges of funding projects of water and sewage services in the Gaza Strip.
- 5- The Palestinian National Authority to offer support for developing the infrastructure via setting plans and future visions to avoid health and environmental problems caused by waste water in the Gaza Strip.



The Palestinian Centre for Human Rights

The Palestinian Centre for Human Rights

The Palestinian Centre for Human Rights is an independent non-profit legal agency based in Gaza city. The Centre was established in April 1995 by a group of Palestinian lawyers and human rights activists in order to protect human rights and promote the rule of law in accordance with international standards, create and develop democratic institutions and an active civil society in Palestine in accordance with internationally accepted standards and practices and support all efforts aimed at enabling the Palestinian people to exercise their inalienable rights according to international law.

The Centre enjoys Consultative Status with the ECOSOC of the United Nations. It was granted three international prominent awards for its efforts in the field of human rights:

1. The 1996 French Republic Award on Human Rights; and
2. The 2002 Bruno Kreisky Award for Outstanding Achievements in the Area of Human Rights; and
3. The 2003 International Service Human Rights Award (UNAIS).

The Centre has wide relationships with human rights and civil society organizations throughout the world. It is an affiliate of five international and Arab human rights organizations, which are active in the international arena:

International Commission of Jurists

The International Commission of Jurists (ICJ), headquartered in Geneva, is a non-governmental organisation in consultative status with the United Nations Economic and Social Council, UNESCO, and the Council of Europe and the OAU. Founded in 1952, its task is to defend the rule of law throughout the world and to work towards the full observance of the provisions in the Universal Declaration of Human Rights. its membership is composed of sixty eminent jurists who are representatives of the different legal systems of the world.

Federation Internationale des Ligues des Droits de l'Homme

The Federation Internationale des Ligues des Droits de l'Homme (FIDH) is an international non-governmental organisation dedicated to the world-wide defence of human rights as defined by the Universal Declaration of Human Rights of 1948. Founded in 1922, FIDH has eighty-nine national affiliates in all regions.

Euro-Mediterranean Human Rights Network

The Euro-Mediterranean Human Rights Network (Euro-Med Network) is a network of human rights organisations and individuals from the Middle East, North Africa and the European Union, established in 1997. The overall objective of the Network is to contribute to the protection of the human rights principles embodied in the Barcelona Declaration of 1995.

International Legal Assistance Consortium (ILAC)

The International Legal Assistance Consortium (ILAC) is one of the most important international legal bodies. It is specialized in legal and judicial training. It includes more than 30 members of distinguished legal organizations throughout the world, including American Bar Association; Arab Lawyers Union; and Bar Council of England and Wales.

The Arab Organization for Human Rights

It is an NGO founded in 1983. It calls for respect and promotion of human and people rights and fundamental freedoms in the Arab World for all individuals on its land in accordance with international human rights instruments. The Organization signed an agreement with Egypt in May 2000, according to which its headquarter was moved from Limassol in Cyprus to Cairo.



The Palestinian Centre for Human Rights

The Palestinian Centre for Human Rights is an independent non-profit non-governmental organisation dedicated to the protection and promotion of human rights, the rule of law, and democratic principles in the Occupied Palestinian Territories.

Administrative Board

Raji Sourani
Jaber Wishah
Iyad Alami
Hamdi Shaqqura

Director

Raji Sourani

Palestinian Centre for Human Rights

Gaza City 29 :Omar El Mukhtar Street, Near Amal Hotel, PO Box 1328

Tel/Fax (972) 8 2824-776 / (972) 82825-893

Khan Yunis Branch :El Amal Street, Branch of Jamal Abdul-Nasser Street, near the College of Education

Tel/Fax: (972) 8 2061-025/ (972) 8 2061-035

Jabalya Branch :Jabalya Refugee Camp, Opposite to Timraz Fuel Station

Tel/Fax: (972) 8 2454-150/ (972) 8 2454-160

E-mail : pchr@pchrgaza.org

Webpage : www.pchrgaza.org