Water and Energy Crisis in Gaza:
Seeking a multi-stakeholder partnership for solutions

54% energy deficit

1.8 million residents, half of them children

80% aid recipients

41.5% unemployment

39% poverty

57% food insecure

Movement of people and goods severely restricted by closure of official crossings and tunnels

Photo: Children evacuated from their flooded home following winter storms in Gaza, Dec. 2013 - UNICEF/ElBaba

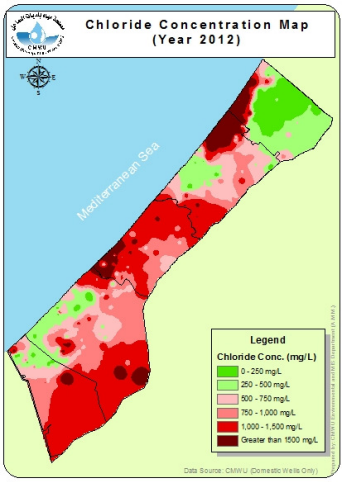
In partnership with the Palestinian Water Authority (PWA) and the Coastal Municipalities Water Utility (CMWU), UNICEF convened a one-day event consisting of a field tour and roundtable discussion on the critical, interrelated issues of water, sanitation, and energy in Gaza on 30 April 2014, as part of the marking of World Water Day. The round table was presided by James Rawley, the UN Resident Coordinator and Humanitarian Coordinator. Diplomats, Palestinian and international NGOs, UN agencies contributed ideas to the theme of this year's World Water Day: 'Water and Energy'. This outcome document lists the issues that were identified and the possible solutions put forward.

KEY ISSUES

1- There is a lack of adequate clean water resources for human use in Gaza

2 - Current **supply of energy is insufficient to operate 281 WASH facilities and unsustainable**

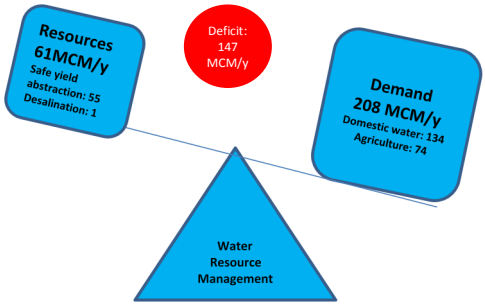
3 - Delayed entry of materials and restricted import of most construction raw materials and spare parts of materials impedes maintenance of existing water and sanitation facilities, and development of new infrastructure



4 - Allocated budgets tend to focus on meeting ad hoc and immediate humanitarian needs at the expense of developing sustainable mid-to-longer term solutions

5 - Restricted movement of persons impedes update of human technical knowledge and skills in Gaza, and entry of experts

Imbalance between ground water extraction & recharge



Facts & Figures

Gaza's sole aquifer will become **unusable** as early as 2016, with the damage **irreversible** by 2020.

~95 % of water from the aquifer is unfit for human consumption.

Gaza is currently supplied with only 208 Megawatts (MW) of electricity from three sources: purchases from Israel (120 MW) and Egypt (28 MW), and production by the Gaza Power Plant (currently 60 MW). This supply meets only 46% of the estimated demand (452 MW).

Since December 2013, the plant has been entirely dependent on industrial fuel donated by Qatar to produce 60 MW, which is almost half of its production capacity. This arrangement expires end of June 2014. **Rolling power outages currently reach up to 12 hours per day. With the upcoming summer, electricity is expected to be available only 6 hours per day**.

Up to **90 million liters of raw and partially treated sewage are discharged** into the Mediterranean Sea daily. Due to the energy crisis, wastewater plants have shortened treatment cycles, **increasing the pollution** level of the sewage discharged.

The critical shortage of electricity and fuel needed to operate municipal water pumps and public desalination plants results in insufficient supplies of water. There is also a **constant risk of back-flow and flooding of sewage** onto the streets, due to the critical lack of fuel to keep sewage systems running, creating a **health hazard** and increased risks for children.

An integrated approach: humanitarian response & sustainable development

The cost of inaction to address the inter-related issues of the water, sanitation and energy is extremely high in terms of human, financial, operational, and environmental consequences. There is a need to **take immediate action**. A dual approach is required, combining **humanitarian response** to meet immediate humanitarian needs, **and a focus on sustainable, mid-to-longer term development**. This can be achieved through the pursuit of both:

- **Small-scale solutions** (e.g. rainwater harvesting, use of non-conventional energy such as solar power); and
- **Large-scale projects** (e.g. regional desalination water plant; connection of line 161 to bring more electricity from Israel, converting the Gaza Power Plant to natural gas)

The solutions require **political support** to immediately solve critical bottlenecks and barriers such as restrictions on the import of construction materials and spare parts, and on the movement of experts into Gaza and staff out of Gaza to update their skills.

They also require strategic **financial investment from the international community**.

Economic development is key: Palestinians in Gaza need to be able to resume their livelihoods in order to pay for the sustainable operation and maintenance of water, sanitation and energy infrastructures providing services.

Dialogue is needed with both Israel and Egypt. Both countries would benefit from an improvement in the water, sanitation and energy situation in Gaza. The collapse of the coastal aquifer and the discharge of sewage in the sea is particularly detrimental for Israel, and for and other Mediterranean countries.

Partnerships are key as joint efforts among relevant authorities, the international community, technical experts and civil society are essential to address the unsustainable situation in Gaza.

KEY ACTIONS IDENTIFIED

Key actions	Resources and advocacy needed
WATER & SANITATION	
Short term low volume (STLV) desalination (13 MCM per year)	$28M committed out of the $52 million needed; gap of $24 million
Import of construction materials & spare parts	Advocacy required to ease entry restrictions
Movement of staff and experts	Advocacy required to ease entry restrictions
Import additional water from Israel (16 MCM/year)	Pipeline in place. Advocacy required to open valve
Regional desalination and associated work (55 MCM per year)	System configuration and upgrade (requires entry of materials) $466 million total cost; $245.5M pledged; $5.5M committed. Gap: $217M
Waste water treatment integrated into wastewater re-use	$226 million total cost; $174M committed. Gap: $52M Required to initiate waste water re-use pilot
Operational & maintenance costs	$30 million. Gap: $18M per year
ENERGY	
Build additional electrical infrastructure to import electricity from Israel (100MW)	Gap: $25million ($11M in Gaza; $14M in Israel)
Build additional electrical infrastructure to import electricity from Egypt (150MW, up to 300MW after three years)	Requires advocacy Gap: $160million ($60M in Gaza; $100M in Egypt)
Increase amount of electricity coming through existing regional grid from Egypt from 28MW to 48MW	Requires advocacy with Egypt
Upgrade Gaza Power Plant from diesel (1.7 NIS/KWh) to natural gas (0.35 NIS/KWh)	Existing plant can run on natural gas but a new pipeline is required Cost: $32million; can be built in eight months

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