United Nations Relief and Works Agency for Palestine Refugees in the Near East

UNRWA West Bank

WASH Programme

2011 Emergency Appeal

In order to minimize the risk of public health threats in West Bank refugee camps, UNRWA Water, Sanitation and Hygiene (WASH) programme will (i) rehabilitate public water infrastructure in 17 camps (including each of the 9 camps affected by incidents of damages by IDF troops); (ii) improve solid waste removal and disposal in 10 camps through the procurement of sanitation equipment and support to municipalities; (iii) improve water-quality monitoring for camps in Jericho area and (iv) raise awareness on hygiene and water-related issues in each of the 19 camps of the West Bank.

Background

Environmental health conditions in West Bank refugee camps - challenged by inadequate quantity and inappropriate quality of water and sanitation services, place a great threat on the health status of camp dwellers, leading to improper personal and community hygiene practices and placing the population under severe risk of waterborne diseases or epidemics outbreaks. Watery diarrhea as well as acute bloody diarrhea and viral hepatitis remain the major causes of morbidity among reportable infectious diseases in the refugee population of the West Bank.

Out of a total of 19 refugee camps in the West Bank, conditions are particularly problematic in the 9 camps affected by frequent military operations damaging or ruining water infrastructures. Other camps are also affected by the influx of poor families resettling in the camps, the shortages in water supply and the closure imposed by the Barrier and affecting camps from Jerusalem and Ramallah area.

2011 WASH activities

1. Infrastructure rehabilitation works
   - 17 camps (188,848 residents), 9 affected by military incursions*
   - Water, wastewater and storm water systems

2. Solid waste services
   - 19 camps (collection, transport and disposal of 71,740 tons/year)
   - 300 containers, 5 compactors and municipality fees (landfill sites)

3. Awareness raising on hygiene and water
   - 19 camps – targeting women, community groups and local authorities
   - Workshops, lectures and recreational activities

4. Water quality monitoring
   - 2 Jericho area camps affected by built-in rubbish from settlers or sediments
   - Epidemiological bulletins shared with UNRWA, local authorities and communities

The Palestinian Water Authority estimates the average water deficit to amount to 34,641 million cubic meters (CAP 2011).

* Al `Arrub, Deheisheh, Al Fawwar, Shu’fat, Qalandiya, Al Jalazun, Al `Am’ari, Tulkarm and El Far’a
Grey water recycling in Fawwar camp

To address water shortage in the West Bank, the Austrian Development Agency is generously funding UNRWA 2010 WASH Programme including a Grey water recycling system in Al Fawwar camp Basic Boys School. The project objective is to filter the used water - from the sinks used by the students to wash their hands or drink water - and utilize the recycled water for the school garden irrigation.

In close cooperation between UNRWA Education and Environmental Health divisions, Fawwar local committee and Fawwar Basic Boys School, the building of a small grey water treatment plant followed a series of steps:

1. Excavation in the school garden and preparation for a 1.5m³ water collection tank
2. Installation of a 5m³ water collection tank connected to a filter on the school roof
3. Preparation and installation of a 1.5m³ filter tank
4. Setting of pipes between the two tanks and from the roof to the ground
5. Fixing of the electrical installations

Shortly after the treatment plant was operational, results can already be seen from the school garden turning green. Second phase of implementation is about to start.

Grey water recycling for irrigation reduces the use of fresh water and acts as a groundwater recharge - helping the natural hydrologic cycle to function, plant growth and soil fertility (the nutrients in the grey water are broken down by bacteria in the soil and made available to plants, this helps maintaining soil fertility and enhances water quality through natural purification processes at the top layers of the soil).

The grey water pilot project also contributed to raise awareness and sense of satisfaction amongst the students who directly participated in the responsible management of their immediate environment.

In addition to Ein Sultan, Fara’a and Jenin Camps, UNRWA hopes to spread the benefits of recycling grey water to numerous other schools and services centers.

Water contamination in Dheisheh camp

Camp profile
Location: 3km south of Bethlehem
Size: 430 donums
Population: 2892 families (13,000 people), 2150 shelters

In May 2009, camp-dwellers start complaining about changes in the domestic water color and odor. UNRWA Environmental Health team immediately tests the water, as every day, and diagnoses a contamination from waste water. Bethlehem Water Authority (BWSSA) is then requested to isolate the polluted area from the entire network. UNRWA signs a service contract with Hebron Hydrology Group Lab to test water samples while all the manholes in the contaminated area are opened by sanitation laborers from the camp to seek for the source of leakage. As water contamination is officially declared in the camp, Dheisheh Camp Clinic is prepared for receiving potential emergency cases that might occur as a result of contamination. A daily report informs all responsible parties on the evolution of the situation and, following UNRWA call for an emergency meeting, it is agreed that the water network is obsolete and not providing safe drinking water due to corroded and deteriorated pipes. As approved, UNRWA finances new water tankers and ensure their transportation in cooperation with Dheisheh Popular Committee while BWSSA supplies the water. A Memorandum of Understanding follows between UNRWA and BWSSA for designing a new water network (August 2010- May 2011) and conducting a feasibility study. After BWSSA and UNRWA discover eight manholes crossed by water pipes due to illegal connections from camp residents, the Palestinian National Authority (PNA) donates USD 400,000 for the first phase of the water network project (1/3 of total cost). Under the Palestinian Water Authority (PWA) implementation and UNRWA monitoring, 400 meter long of water pipes are changed in various parts of the camp. Some water samples are then taken to be tested by two different labs. No later than July 2009, the last tests on water samples from previous contaminated areas conclude on negative results and safe drinking water.

2011 Budget – WASH

<table>
<thead>
<tr>
<th>Budget Item</th>
<th>Amount in USD</th>
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<tbody>
<tr>
<td>Staff 30 environmental technical staff</td>
<td>307,863</td>
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<tr>
<td>Infrastructure rehabilitation works</td>
<td>515,000</td>
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<tr>
<td>Solid Waste services</td>
<td>300,000</td>
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<tr>
<td>Awareness-raising on hygiene and water related issues</td>
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<td>Water-quality monitoring</td>
<td>35,000</td>
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<tr>
<td>Overheads</td>
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<tr>
<td>Administrative costs (11% of direct costs)</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1,354,048</strong></td>
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More information on UNRWA 2011 Emergency Appeal