

## House of Water and Environment

### House of Water and Environment Profile



2016

## 1. Aims

The House of Water and Environment (**HWE**) is a Palestinian not-for-profit NGO that was established in the year 2004. HWE aims to promote practical research into the current and future state of water resources and the environment in Palestine and across the region. There is a need to combine different notions of social, technical and economic sustainability in order to achieve development outcomes that both provide for national development and help to achieve poverty reduction. **HWE** aims to address this need through mobilizing local and international networks and partnerships to promote a broader analysis of sustainable water resource development and better 'governance' of the resource.

## 2. Main Goals

1. Act as a hub for technology knowledge and know-how for water and environmental information and best practices.
2. Hold seminars, workshops, lectures and technical training courses on knowledge-sharing and capacity building.
3. Develop simulation models to solve water and environmental problems both at the national and regional levels.
4. Strengthen partnership with Palestinian Authority institutions through long-term cooperation.
5. Offer advisory services to the Palestinian National Authority in designing projects and plans related to water resources and other environmental issues. HWE will also offer advice to local as well as international development organizations in preparing feasibility studies and evaluating existing and future projects and research.
6. Help the Palestinian community through conducting research and studies to support the development of water and environmental strategies, decision support tools and plans that consider all possible technical, administrative, social and economic aspects.
7. Conduct water and environmental research and development projects that improve water supply (including agriculture projects) and sanitation services (including solid waste) at the local Palestinian society with the aim to alleviate poverty in the Palestinian Society.
8. Develop a scientific data bank for water and environment of Palestine.

## 3. Areas of work and scope of activities

**HWE** is working in three areas (with regard to water and environment):

- (1) Development.
- (2) Research.
- (3) Capacity Building and Training.

**HWE** offers a wide variety of services in water, sanitation and environmental engineering and science from the needs identification stage to the elaboration of tender documents, supervision of works and technical assistance. Also, **HWE** offers services in capacity building through providing training and awareness programmes.

**HWE** concentrates in its work on the urban areas of Palestine and therefore it has implemented a number of projects with the main Palestinian municipalities such as Nablus, Tulkarem, Ramallah, Salfit, Jericho and many others. The Palestinian rural sector is also important and therefore **HWE** coordinates activities to serve all the rural areas to have water supply and safe sanitation services.

**HWE** works closely with Newcastle University (UK) in research projects and Newcastle University is considered as a research supporter for **HWE**. **HWE** works also closely with many other international institutions and funding agencies such as UNESCO, ESCWA, CEDARE, UNU, USAID, DFID, AFD, GTZ, GWP, EUWI, JICA, ACSAD, BGR, Green Cross, EU, ASTF, AGFUND, etc.

HWE employs a team of more than 15 highly qualified experts and project managers in complementary disciplines who practice the latest in the state of the art techniques.

The chief asset of **HWE** is its human capital, comprising a research team and engineers of high qualification. The organization is especially distinguished by its GIS software experts who have participated in a number of projects that have used the program for data analysis and result illustration and dissemination. The wide range of expertise greatly strengthens the organization foundations. This expertise is not only limited to theoretical research but also extends to more practical field applications.

**HWE** is particularly strong in the fields of:

## **Water Resources**

- Water resources development, planning and management.
- Water needs/demand studies.
- Socio-economic, tariff and financial studies.
- Access to water and poverty alleviation.
- Institutional and organizational studies.
- Integrated water resources management (IWRM).
- Watershed analysis and management.
- Rainfall variation and climate change.
- Groundwaters recharge including artificial recharge studies.
- Storm-water studies.
- Decision Support Systems (DSS).
- Hydrological monitoring including meteorological instrumentation.
- Groundwater assessment including exploration and geophysics.
- Vulnerability, risk and hazards mapping.
- Springs development, rehabilitation and protection.
- Groundwater wells siting, design, construction, rehabilitation, maintenance, development, testing, and putting into operation.
- Groundwater flow and pollution modeling and simulations.
- Saltwater intrusion and saline water upconing studies using numerical models.

## **Sewage and Sanitation**

- Socio-economic, tariff and financial studies.
- Institutional and organizational studies and audits for sewage sector.
- Environmental protection.
- Environmental Impact Assessment.
- Sewage planning and development.
- Wastewater treatment.
- Small scale and on-site wastewater treatment.
- Solid waste and landfills.
- Treated wastewater re-use for agriculture.

## **Conflict Resolution**

- Water conflicts and resolution.
- Management of shared water resources.

## **Food and Agriculture**

- Food security studies.
- Irrigations methods.
- Agricultural best practices.
- The use of fertilizers and pesticides.

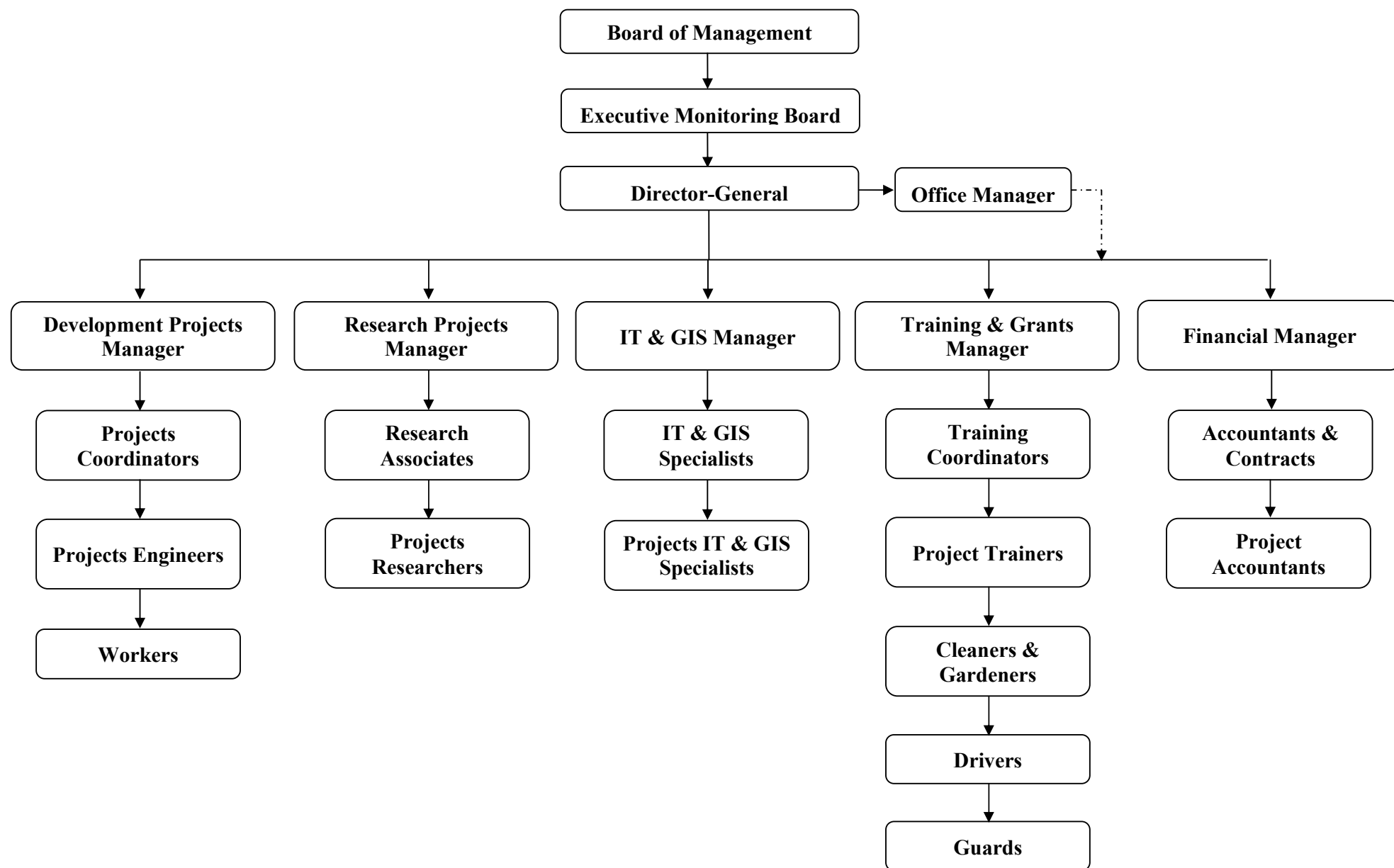
## Water supply

- The study of unaccounted for-water.
- Main pipelines.
- Water distribution systems.
- Balancing tanks and storage reservoirs.

## Engineering Aspects

- Technical assistance to operators of water and sewage utilities and hands-on training.
- Preliminary and detailed design of water supply systems, sewage systems, landfills, storm-water systems, irrigation systems, springs facilities and groundwater wells.
- Tender documents, tender evaluation and assistance during contract negotiation.
- Co-ordination, supervision and acceptance of works.
- Project management.
- Technical audits and expertise of water supply or sewerage systems, including computer modeling, block mapping, information system and GIS, customer management, instrumentation and equipment procurement.

#### 4. HWE Structure





Overseas Development Institute

PWA

British Geological Survey

## The SUSMAQ Project

This project started in 1999 and was completed on 31/12/2005. HWE took part in this project from November 2004 till December 2005.

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>1999-2005</b> As an organization, HWE joint the project from <b>Oct 2004</b>
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<b>PROJECT NAME</b>	<b>Sustainable Management of West Bank and Gaza Aquifers (SUSMAQ)</b>
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<b>Funding Agency</b>	UK DFID
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<b>Objectives</b>	See <a href="#">Summary Report</a>
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<b>Project Partners</b>	<ul style="list-style-type: none"><li>• Palestinian Water Authority</li><li>• Newcastle University</li><li>• British Geological Survey</li><li>• Overseas Development Institute</li><li>• Carl Bro</li></ul>
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<b>Project Outputs</b>	This project produced a large number of reports, numerical models, maps, DSS, etc. All are hosted at <a href="http://www.hwe.org.ps/Reports">http://www.hwe.org.ps/Reports</a>
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<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2004-2006</b>
<b>PROJECT NAME</b>	<b>Watershed Modeling and Biomonitoring to Determine Optimal Restoration Strategies for Intermittent Transboundary Streams between Palestine and Israel</b>	
<b>Funding Agency</b>	MERC – USAID	
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To select streams and sites for watershed modeling.</li> <li>2. To collect secondary data on the selected streams.</li> <li>3. To design a campaign for primary data collection for HSPF parameters and bio-monitoring data.</li> <li>4. To run training on HSPF</li> <li>5. To simulate river restoration using HSPF after model calibration and verification.</li> <li>6. To assess treatment facility.</li> <li>7. To run sensitivity analysis of different alternatives.</li> <li>8. Conclusions and recommendations</li> </ol>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• WEDO</li> </ul>	
<b>Project Outputs</b>	<p><b>Report</b>  <a href="#">Development of Numerical Models for the Zomar-Alexander Watershed</a></p> <p><b>Presentation</b>  <a href="#">Watershed Modeling and Biomonitoring to Determine Optimal Restoration Strategies</a></p>	
<b>PHOTOS</b>	<div>  <p>Tulkarem Dumping Site</p> </div> <div>  <p>The Effect of Stone Cutting</p> </div>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2005</b>
<b>PROJECT NAME</b>	<b>Assessment of the Supply/Demand Gap and Evaluation of the Sustainable Measures towards Sustainable Water Resources in Palestine</b>	
<b>Funding Agency</b>	The Flemish Community of Belgium through the UNESCO Cairo Office	
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To assess the supply/demand gap in the West Bank</li> <li>2. To evaluate the Sustainability of water resources in the West Bank</li> <li>3. To develop a DSS for Sustainable Management of water in the West Bank</li> </ol>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• PWA</li> </ul>	
<b>Project Outputs</b>	<p><b>Report</b>  <a href="#">Assessment of the Supply/Demand Gap and Evaluation of the Sustainable Measures towards Sustainable Water Resources in Palestine</a></p> <p><b>Workshops</b>  <a href="#">Images</a></p>	
<b>PHOTOS</b>	 	

<b>PROJECT TYPE</b>	<b>Training and Capacity Building</b>	<b>2005</b>
<b>PROJECT NAME</b>	<b>Groundwater wells in the Northern Governorates in the West Bank: siting, design, construction, testing &amp; operation and maintenance &amp; rehabilitation</b>	
<b>Funding Agency</b>	The Flemish Community of Belgium through the UNESCO Cairo Office	
<b>Objectives</b>	To conduct a training course about groundwater wells: maintenance and rehabilitation for the professionals involved in this field.	
<b>Project Partners</b>	PWA	
<b>Project Outputs</b>	<p><b>Training course</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Training Program</a></li> <li>• <b>Presentations</b> <ul style="list-style-type: none"> <li><a href="#">Basic principles of groundwater hydrology I (Session one)</a></li> <li><a href="#">Basic principles of groundwater hydrology II (Session Two)</a></li> <li><a href="#">Aquifer Management and Sustainability (SESSION 5)</a></li> <li><a href="#">Assessment of Sustainable Yields of aquifers (SESSION 6)</a></li> <li><a href="#">Assessment of Sustainable Yields of WAB (SESSION 6)</a></li> <li><a href="#">Decision Support System (SESSION 7)</a></li> <li><a href="#">Hydrochemistry(Session 12 &amp; 15)</a></li> <li><a href="#">Well Maintenance and Rehabilitation (Session 32-34)</a></li> <li><a href="#">Introduction to hydrogeochemistry</a></li> <li><a href="#">Ground water exploration I</a></li> <li><a href="#">Ground water exploration I, II and III</a></li> <li><a href="#">Introduction to hydrochemical data evaluation_01</a></li> <li><a href="#">Hydrogeological Assessment of Western Aquifer Basin</a></li> <li><a href="#">Well Construction and Completion</a></li> <li><a href="#">Economic Design of Wells</a></li> <li><a href="#">Borehole Geophysics</a></li> <li><a href="#">Well Design</a></li> <li><a href="#">Well Drilling</a></li> <li><a href="#">Pumping Test</a></li> </ul> </li> <li>• <a href="#">Images</a></li> </ul>	

## PHOTOS



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2005</b>
<b>PROJECT NAME</b>	<b>Improved Management of Water Resources in Palestine: a key for the future of Middle East</b>	
<b>Funding Agency</b>	The Landau Network-Centro Volta (LNCV) in Italy.	
<b>Objectives</b>	<p>The objective of this Research Study was to conduct an assessment about the water resources of the Yarkon( Ras El Ain) Basin, concerning the following issues:</p> <ul style="list-style-type: none"> <li>• The yearly hydrologic balance.</li> <li>• Climate change and projection.</li> <li>• Demographic distribution, water consumption for different uses</li> <li>• Hydrological characteristics (floods, floods areas, regimes etc).</li> <li>• Hydrology of groundwater aquifers.</li> <li>• Topography of the area using GIS tools such as ArcView.</li> <li>• Existing legislations about water resources in the area.</li> <li>• Discharges of treatment plants and their qualities.</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• PWA</li> <li>• The Landau Network-Centro Volta (LNCV) in Italy</li> <li>• HYDROAID, Water for Development Management Institute</li> </ul>	
<b>Project Outputs</b>	<p><b>Report</b></p> <p><a href="#"><u>Background Document for the Yarkon (Ras El Ain) Catchment</u></a></p>	

<b>PROJECT TYPE</b>	<b>Training and Capacity Building</b>	<b>2005</b>
<b>PROJECT NAME</b>	<b>Improved Management of Water Resources in Palestine: a key for the future of Middle East-Capacity building in Water resources</b>	
<b>Funding Agency</b>	The Landau Network-Centro Volta (LNCV) in Italy.	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>To train 13 Palestinian specialists in water resources management issues;</li> <li>To conduct a field tour to water projects in ITALY</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>PWA</li> <li>The Landau Network-Centro Volta (LNCV) in Italy</li> <li>HYDROAID, Water for Development Management Institute</li> </ul>	
<b>Project Outputs</b>	<b>Training course</b> <ul style="list-style-type: none"> <li><a href="#">Training Program</a></li> <li><a href="#">Images</a></li> </ul>	
<b>PHOTOS</b>	   	

PROJECT TYPE	RESEARCH & DEVELOPMENT	2006-2007
PROJECT NAME	Influence of Urban Development on the Quality of Groundwater-Guidelines Design for Groundwater Protection -Palestinian Case	
Funding Agency	Government of Netherlands and the Grant holder is UNESCO-IHE institute	
Objectives	<ol style="list-style-type: none"> <li>1. To develop guidelines for governments, water managers, spatial planners and environmental managers in order to understand the impacts of polluting activities on groundwater resources in urban catchments and use them to develop strategies for the groundwater protection</li> <li>2. Identify the impact of urbanization on the quality of storm water in urban drainage systems.</li> <li>3. Identify and prioritize the type of contaminants and their associated sources that present a threat to groundwater, the environment and health in each partner urban catchments.</li> <li>4. Establish a data information system on groundwater pollutants in each partner city.</li> <li>5. Identify the most vulnerable zones (in terms of intrinsic and specific vulnerability) where urban development should be strictly controlled or even prevented.</li> <li>6. Formulate strategies for better understanding the impacts of polluting activities on groundwater resources in urban catchments.</li> <li>7. To develop best practice guidelines for groundwater protection in urban areas.</li> <li>8. To develop a groundwater quality monitoring programme</li> </ol>	
Project Partners	<ul style="list-style-type: none"> <li>• Blas Pascal University –Argentina</li> <li>• IIT-Rorkee-India</li> <li>• UNESCO-IHE-Netherlands</li> <li>• BirZeit University (as the main partner in Palestine)</li> </ul>	
Project Outputs	<p><b>Reports</b></p> <p><a href="#">Background Document on the Water Environment of the Ramallah-Al Bireh District</a></p> <p><b>Workshops</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Argentina Workshop Presentation - Influence of Urban Development on Quality of Groundwater in Ramallah-Al Bireh District Palestine</a></li> <li>• <a href="#">Images</a></li> </ul>	

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<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2006-2008</b>
<b>PROJECT NAME</b>	<b>Proposing Four Sites for Drilling Water Supply Wells for Nablus Municipality</b>	
<b>Funding Agency</b>	Nablus Municipality	
<b>Objectives</b>	This Project aims to identify four sites for drilling new production wells in the Greater Nablus City Area.	
<b>Project Partners</b>	No Other Partners	
<b>Project Outputs</b>	<b>Report</b> <a href="#"><u>Proposing Four Sites for Drilling - Water Supply Wells for Nablus Municipality</u></a>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007</b>
<b>PROJECT NAME</b>	Using phytoremediation techniques in treating groundwater resources in Palestine	
<b>Funding Agency</b>	Arab Science and Technology Foundation (ASTF)-UAE	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>To explore and test the applicability of the phytoremediation technology in treating polluted groundwater in Palestine.</li> <li>Educate the scientific community and expand their knowledge on the subject.</li> <li>Expand and improve the local experience and knowledge of this method in the Palestinian area.</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>Bir Zeit University</li> </ul>	
<b>Project Outputs</b>	<b>Report</b> <a href="#">Using Reed Plants to Treat Polluted Groundwater Phytoremediation at Sinjel Village</a>	
<b>PHOTOS</b>	 	





<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007</b>
<b>PROJECT NAME</b>	<b>From Conflict to Collective action: Institutional Change and Management Options to govern trans-boundary water courses</b>	
<b>Funding Agency</b>	German Federal Ministry of Research and Education (BMBF).	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Analysis of the evolution of institutions for trans-boundary water management in Europe, using the Elbe River Basin as a case study; Research Area 1.</li> <li>• The identification of alternative management options and determination of the benefits of collective action over the present governance regime in the Israeli-Palestinian context, using the Wadi Nar as a case study; Research Area 2.</li> <li>• Analysis of alternative institutional arrangements for the Wadi Nar, taking the European experience into account; Research Area 3.</li> <li>• The analysis of the transferability of institutional design for IWRM among different climatic regions, and at different scales of river basin management; Research Area 4.</li> <li>• Waste water reuse options for the Wadi Nar basin. Research Area 5.</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• Friends of Environment and Water (FEW)</li> </ul>	
<b>Project Outputs</b>	<p><b>Reports</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Experiences with Use of Treated Wastewater for Irrigation in Palestine</a></li> <li>• <a href="#">Institutionalization of Treated Wastewater Reuse in Palestine</a></li> <li>• <a href="#">Overview on Current and Potential Land Use-Cover for the Wadi Nar Catchment</a></li> <li>• <a href="#">Modeling of waste water management options with a Water Evaluation and Planning Tool (WEAP)</a></li> <li>• <a href="#">Costs and benefits of wastewater treatment and reuse for irrigation in Wadi Al-Nar/Kidron area</a></li> </ul> <p><b>Workshop</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Costs and Benefits of Wastewater Treatment and Reuse for Irrigation in Wadi Al-Nar Area</a></li> <li>• <a href="#">Experiences with Use of Treated Wastewater</a></li> <li>• <a href="#">Modeling of Wastewater Management Options with a Water Evaluation and Planning Tool (WEAP)</a></li> <li>• <a href="#">Overview on Current and Potential Land UseCover for the Wadi Nar Catchment</a></li> </ul> <p><a href="#">Images</a></p>	

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<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007</b>
<b>PROJECT NAME</b>	<b>Inventory Survey for Rehabilitations of Wells for The Feasibility Study on Water Resources Development and Management for Jordan River Rift Valley</b>	
<b>Funding Agency</b>	JICA	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To obtain the current condition and situation for thirty (30) agricultural water wells and their rehabilitation needs.</li> <li>• To analyze the potential of water resources and facilities in order to make plans and designs for rehabilitation of wells</li> </ul>	
<b>Project Partners</b>	No Other Partners	
<b>Project Outputs</b>	<b>Report</b> <a href="#"><u>Inventory Survey for Rehabilitations of Wells</u></a>	
<b>PHOTOS</b>		

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007</b>
<b>PROJECT NAME</b>	<b>Inventory Survey for Improvement of Springs Water Conveyance System for The Feasibility Study on Water Resources Development and Management for Jordan River Rift Valley</b>	
<b>Funding Agency</b>	JICA	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To obtain the current condition and situation for 19 springs and their rehabilitation needs.</li> <li>• To analyze the potential of water resources and facilities in order to make plans and designs for rehabilitation of springs.</li> </ul>	
<b>Project Partners</b>	No Other Partners	
<b>Project Outputs</b>	<b>Report</b> <a href="#"><u>Inventory Survey for Improvement of Springs</u></a>	
<b>PHOTOS</b>	 	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007-2008</b>
<b>PROJECT NAME</b>	<b>GTZ Water Programme in the Palestinian Territories- background material on the water sector for website dissemination</b>	
<b>Funding Agency</b>	GTZ	
<b>Objectives</b>	The objective of this project is to provide the Website Developer with timely and reliable information and materials (maps, photos, figures, etc.) on Palestinian Water sector including most relevant links	
<b>Project Partners</b>	No Other Partners	
<b>Project Outputs</b>	<b>Reports</b> <ul style="list-style-type: none"> <li>• <a href="#">The Water Sector in Palestine</a></li> <li>• <a href="#">GTZ Water Programme</a></li> </ul>	
<b>PHOTOS</b>	   	



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2006-2007</b>
<b>PROJECT NAME</b>	<b>Water Saving Practices at Household Level in Jayyous, West Bank, Palestine</b>	
<b>Funding Agency</b>	The Flemish Community of Belgium through the UNESCO Cairo Office	
<b>Objectives</b>	<ul style="list-style-type: none"><li>• To introduce a number of water saving measures that is applicable at household level.</li><li>• To assess potential saved quantity of water as a result of water saving measures.</li><li>• To assess the willingness of the people towards applying water saving measures</li></ul>	
<b>Project Partners</b>	No other Partners	
<b>Project Outputs</b>	<b>Paper</b> <a href="#"><u>Water Saving Practices at Household Level in Palestine</u></a>	

<b>PROJECT TYPE</b>	<b>Training and Capacity Building</b>	<b>2007</b>
<b>PROJECT NAME</b>	<b>Spreading Water Awareness among Summer Students Camps</b>	
<b>Funding Agency</b>	United Nations Educational, Scientific and Cultural Organization (UNESCO) in Ramallah, Palestine	
<b>Objectives</b>	The aim of this project is to provide a selected number of summer camps students in the Ramallah area with an understanding of basic water conservation and water management concepts, focusing on major challenges that face the water supply in Palestine	
<b>Project Partners</b>	No other Partners	
<b>Project Outputs</b>	<b>Reports</b> <a href="#">Spreading Water Awareness among Summer Students Camps</a>  <b>Workshop</b> <a href="#">Images</a>	
<b>PHOTOS</b>	   	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007</b>
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<b>PROJECT NAME</b>	<b>Sustainable Management and Development of Water in Palestine</b>
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<b>Funding Agency</b>	UNESCO
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<b>Objectives</b>	<p>This is a conference about water in Palestine organized by House of Water and Environment.</p> <p>Full details about the conference <a href="#">are here</a></p>
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<b>Project Partners</b>	<a href="#">See website</a>
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<b>Project Outputs</b>	<a href="#">See website</a>
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PROJECT TYPE	RESEARCH & DEVELOPMENT	2006-2010
PROJECT NAME	Sustainable Water Management Improved Tomorrow's Cities' Health	
Funding Agency	European Commission with UNESCO-IHE Institute as a Grant holder	
Package Title	Work package 1.2: Modeling of urban water systems and the development of a decision support system	
Objectives For (Package 1.2)	<ul style="list-style-type: none"> <li>To develop and apply models of urban water systems and develop a decision support system.</li> <li>Examination of the sensitivity of so-called sustainable stormwater technologies which are appropriate for coping with increasing urbanisation on local, national and global scales in combination with impacts such as climate change scenarios, higher housing densities and changing socio-economic factors</li> </ul>	
Package Title	Work package 4.1: Modeling of urban water systems and the development of a decision support system	
Objectives For (Package 4.1)	<ul style="list-style-type: none"> <li>To assess the adoption, operational functioning and performance of urban ecosan systems in EU- and non-EU cities.</li> <li>To develop and optimise treatment processes to remove organic micro pollutants (pharmaceuticals, water dissolved hormones) from concentrated flows.</li> <li>To develop strategies and guidelines for agricultural use of nutrients recovered by ecosan systems.</li> <li>To develop technical standards for the technology components of urban ecosan systems.</li> <li>To develop a demonstration project in the city of Beijing and / or city of Qong Qing, PR China.</li> <li>To widely disseminate the results of the work package through the Learning Alliance, e-learning, various trainings and stakeholder seminars.</li> </ul>	
Project Partners	32 Countries, See <a href="http://www.unesco-ihe.org">http://www.unesco-ihe.org</a>	
Project Outputs	<b>Reports</b> <ul style="list-style-type: none"> <li><a href="#">Decision Support System for Water Management in Jericho City</a></li> <li><a href="#">Workshop and Training to use WM RTPAL DSS Software developed for Jericho Municipality</a></li> <li><a href="#">Background Document on the Case Study of Jericho City</a></li> <li><a href="#">Pharmaceutical compounds in environment</a></li> <li><a href="#">Survey of used pharmaceutical compounds</a></li> <li><a href="#">Evaluation of Environmental and Socio-Economic</a></li> </ul>	

<b>PROJECT TYPE</b>	<b>Research, Development, Training and Education</b>
<b>PROJECT NAME</b>	<b>Protecting trans-boundary groundwater sources from pollution: research, training, and guidelines for Israeli and Palestinian Municipalities</b>
<b>Funding Agency</b>	<ul style="list-style-type: none"> <li>• EU-life</li> <li>• Green Cross</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Research sources of groundwater pollution from anthropogenic activity in Israeli and Palestinian municipalities.</li> <li>• Establish guidelines for monitoring, management and alleviation of sources of groundwater pollution in Israeli and Palestinian municipalities.</li> <li>• Strengthening technical know-how and building a network of Israeli and Palestinian water practitioners at the municipal level.</li> <li>• Creating commitment within Israeli and Palestinian municipalities to improve environmental</li> </ul>
<b>Project Partners</b>	Friends of the Earth-Middle East
<b>Project Outputs</b>	<p><b>Reports</b></p> <p><a href="#">Scientific Paper</a></p> <p><a href="#">Training Report</a></p> <p><a href="#">Palestinian Guidelines (arabic)</a></p> <p><b>Course 1:</b></p> <p><a href="#">Training program</a></p> <p><b>Training Materials:</b></p> <p><a href="#">Advanced Technologies Industrial Treatment- Rana Habash</a></p> <p><a href="#">GIS Jumana Dec 09 07</a></p> <p><a href="#">Industrial Pre-treatment -Rana Habash.ppt</a></p> <p><a href="#">Introduction to Public Health - Asia Issa</a></p> <p><a href="#">Municipal Sewage Collection - Treatment and Reuse - Nael Tahseen</a></p> <p><a href="#">Preventive Measures Against Water-Born Disease</a></p> <p><a href="#">Suitability of Wastewater for Irrigation - M. Sbeih</a></p> <p><a href="#">Transboundary Water Resources</a></p> <p><a href="#">Wastewater Sampling and Treatment - Subhi Samhan</a></p> <p><a href="#">Water Related Diseases - Asia Issa</a></p> <p><a href="#">Images</a></p> <p><b>Course 2:</b></p> <p><a href="#">Training Program</a></p> <p><b>Training Materials:</b></p> <p><a href="#">Enforcement of Water Regulations</a></p> <p><a href="#">GIS Applications-Jamal Zetawi</a></p> <p><a href="#">Network Maintenance - Emad Al-Masri</a></p> <p><a href="#">Pre-Treatment for Domestic and Industrial - Nael Tahseen</a></p> <p><a href="#">Regional Water Resources - Deeb Abdel Ghafoor</a></p> <p><a href="#">Images</a></p>

Course 3:  
[Images](#)

Course 4:  
[Images](#)

## PHOTOS



PROJECT TYPE	RESEARCH & DEVELOPMENT	2007-2009
<b>PROJECT NAME</b>	<b>Assessment of the Impact of Pollution Sources on the Water Environment and the Lives of the Residents in Salfeet District, Palestine</b>	
<b>Funding Agency</b>	AGFUND	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To study the impact of pollution on the water resources and the environment in the study area.</li> <li>• To develop criteria and a framework for the protection of groundwater at various levels - guidelines and prevention measures.</li> <li>• To assess the possible public health risks of potential pollutants on population (especially children and women) in the study area.</li> <li>• To undertake training activities for the local communities on: <ul style="list-style-type: none"> <li>➢ Environmental and social impacts of pollution on water and natural environment.</li> <li>➢ Watershed management as a tool for groundwater protection.</li> <li>➢ Assessment of long-term impacts of pollutants and associated public health risks</li> <li>➢ Environmental protection guidelines and pollution abatement measures.</li> </ul> </li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• Salfeet Municipality</li> <li>• Birzeit University</li> <li>• United Nations University-(UNU-INWEH)</li> </ul>	
<b>Project Outputs</b>	<p><b>Reports</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Assessment of the Impact of Pollution in Salfeet Hydrogeological Assessment, Vulnerability Mapping, Hazard and Risk Assessment</a></li> <li>• <a href="#">Health Risk Assessment of Pollution and Guidelines for Groundwater Protection in Salfeet</a></li> <li>• <a href="#">Training Activity - Water and Health Awareness among School Students</a></li> <li>• <a href="#">Training Activity - Water and Health Awareness among Women</a></li> <li>• <a href="#">Training Activity - Introductory GIS Training</a></li> <li>• <a href="#">Final Report</a></li> </ul> <p><b>Workshop</b> <a href="#">Meetings</a></p>	

## PHOTOS



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007</b>
<b>PROJECT NAME</b>	<b>Deir Sharaf Well #3: Drilling, construction, test-pumping and putting in operation</b>	
<b>Funding Agency</b>	Arab Fund for Social and Economic Development	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To supervise the construction of Deir Sharaf #3 well.</li> <li>• To conduct a pump test for the well.</li> <li>• To supervise putting the well into operation</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• Palestinian Water Authority</li> <li>• Nablus Municipality</li> </ul>	
<b>Project Outputs</b>	<b>Reports</b> <ul style="list-style-type: none"> <li>• <a href="#">Deir Sharaf No.3 Well at Sabastyeh Village: Construction, Design and Test-Pumping</a></li> <li>• <a href="#">Appendix A</a></li> <li>• <a href="#">Appendix B</a></li> </ul>	
<b>PHOTOS</b>	 	

PROJECT TYPE	RESEARCH & DEVELOPMENT	2007
PROJECT NAME	Complementary Feasibility Study for the Production Well Facilities, Transmission Systems and Internal Networks in Maythalun and Tammoun Schemes (Jenin and Tubas Districts – West Bank)	
Funding Agency	AFD	
Objectives	To conduct a complementary feasibility study for Maythalun well facilities, transmission systems, internal networks, etc for Maythalun, Tammoun and Tubas areas	
Project Partners	SOGREAH & ACE	
Project Outputs	<b>Reports</b> <ul style="list-style-type: none"> <li>• <a href="#">Complementary Feasibility Study For The Maythalun And Tubas Water Supply &amp; Sanitation Scheme</a></li> <li>• <a href="#">Feasibility Study for the Maythalun and Tammoun Water Supply Schemes</a></li> </ul>	
PHOTOS	 	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2007</b>
<b>PROJECT NAME</b>	<b>Feasibility Study and Conceptual design for wastewater treatment plant in PIF Housing Project – Ramallah North</b>	
<b>Funding Agency</b>	Palestine Investment Fund (PIF)	
<b>Objectives</b>	To conduct a conceptual design and a feasibility study for Ramallah North Wastewater treatment plant to the level where it will be possible to utilize the treated effluent	
<b>Project Partners</b>	Consulting Engineering Center (CEC)	
<b>Project Outputs</b>	<b>Report</b> <a href="#"><u>Hydrogeological and Vulnerability Assessment of PIF Housing Project</u></a>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2008</b>
<b>PROJECT NAME</b>	<b>The Fara'a and Jerash Integrated Watershed Management</b>	
<b>Funding Agency</b>	United Nations University through EU	
<b>Objectives</b>	<p>This project is being implemented by the Jordanian Ministry of Environment (MoEN) and the Palestinian Environment Quality Authority (EQA) and a number of consultants including United Nations University (UNU). HWE is contracted by UNU to conduct the following:</p> <ul style="list-style-type: none"> <li>• Revise implementation work plans.</li> <li>• Provide overall supervision and monitoring of implementation.</li> <li>• Formulate watershed themes that need to be addressed in the IWMP with emphasis on water resources, social and economic horizons.</li> <li>• Assist in raising awareness towards the project and IWMP.</li> <li>• Assist in the dissemination of the project activities and results on the local level.</li> <li>• Conduct on-the-job-training for the involved staff.</li> </ul>	
<b>Project Partners</b>	<a href="#">See website</a>	
<b>Project Outputs</b>	<p><b>Reports</b></p> <p><a href="#">Task No. (1) "Solid Waste Management in Al-Fara'a Area (Al Bathan, Wadi Al-Fara'a and Ras Al-Fara'a)"</a></p> <p><a href="#">Task No. (2) "Detailed Design of Al Fara'a Camp Sewage Line"</a></p> <p><a href="#">Task No. (3) "Design of Water Harvesting Facility in Ras Al-Fara'a (Wadi Al-Kharroub)"</a></p> <p><a href="#">Task No. (4) "Desalination of Brackish Water in the Lower Area of Wadi Al-Fara'a By Using Solar Energy"</a></p> <p><a href="#">Task No. (5) "Protection Zones - The Study of the possibility to Draft Legislation and Possible Physical Measures to Protect &amp; Deal with the Stream &amp; Springs as Protected Areas (Al Fara'a Stream)"</a></p> <p><a href="#">Task No. (6) "Setting Up the Legal and Institutional Arrangements for Local Water User Association in Al-Fara'a Watershed"</a></p> <p><a href="#">Task No. (7) "Feasibility Study on the Reuse of Agricultural Waste in the Area of Animal Feed and Soil Compost (Wadi Al-Fara'a)"</a></p>	

## PHOTOS



PROJECT TYPE	Training and Capacity Building	2008
PROJECT NAME	Geographic Information System (GIS) Curriculum Development and Training in Palestine	
Funding Agency	<ul style="list-style-type: none"> <li>• EU-Tempus</li> <li>• Newcastle University</li> </ul>	
Objectives	<ul style="list-style-type: none"> <li>• Create GIS educational curriculum for undergraduates and postgraduates at Birzeit (BZU) and Al-Quds (AQU) Universities and for GIS professionals to be trained by House of Water and Environment (HWE).</li> <li>• Provide GIS training for staff members of BZU, AQU and HWE.</li> <li>• Establish Geographic Information System Laboratories (GIS) at BZU, AQU and HWE.</li> <li>• Establish GIS resource centers and websites at BZU, AQU and HWE.</li> <li>• Conduct GIS training courses for professionals.</li> </ul>	
Project Partners	<ul style="list-style-type: none"> <li>• Lund University</li> <li>• Al Quds University</li> <li>• Birzeit University</li> </ul>	
Project Outputs	<b>Reports:</b> <ul style="list-style-type: none"> <li>• <a href="#">GIS Needs Assessment in Palestine</a></li> <li>• <a href="#">Progress Report - First &amp; Fifth GIS Training Courses</a></li> <li>• <a href="#">Progress Report - Second GIS Training Course</a></li> <li>• <a href="#">Progress Report - Third &amp; Fourth GIS Training Courses</a></li> </ul>	
PHOTOS	 	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2009</b>
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<b>PROJECT NAME</b>	<b>Pumping Water By Using Solar Radiation</b>
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<b>Funding Agency</b>	UNDP-SPG The GEF Small Grants Programme
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<b>Objectives</b>	To Utilize Solar Energy to generate electricity to run water pumps
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<b>Project Partners</b>	Union Villages of Beitillou, Deir Ammar, Jammaleh
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<b>Project Outputs</b>	<ul style="list-style-type: none"> <li>• <a href="#">زيارة رئيس سلطة المياه للمشروع</a></li> <li>• <a href="#">Brochure</a></li> <li>• <a href="#">Pumping Water By Using Solar Radiation</a></li> </ul>
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## PHOTOS





<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2010</b>
<b>PROJECT NAME</b>	<b>Rehabilitation of Faroun Landfill -Tulkarem</b>	
<b>Funding Agency</b>	Arab Fund for Economic and Social Development	
<b>Objectives</b>	To rehabilitate Faroun Landfill and redesign it to be converted into green lands to be used for agricultural purposes as well as for entertainment (public park).	
<b>Project Partners</b>	Tulkarem Municipality	
<b>Project Outputs</b>	<b>Report</b> <ul style="list-style-type: none"> <li>• <a href="#"><u>Environmental Impact Assessment for the Construction of Solid Waste Transfer Station by the Rehabilitation of the Existing Solid Waste Dumping Site in Feroun -Tulkarem City: Outline and Preliminary analysis</u></a></li> <li>• <a href="#"><u>Final Progress and Evaluation Report of the executed works onsite.</u></a></li> </ul>	
<b>PHOTOS</b>	 	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2010</b>
<b>PROJECT NAME</b>	<b>An Integrated Approach to Sustainable Management Of Water Resources Under Global Change</b>	
<b>Funding Agency</b>	The Federal Ministry of Education and Research (BMBF)	
<b>Objectives</b>	To develop quantitative estimates for the potential contribution of “new” water sources in helping the region to cope with global change and water scarcity and possible trade-offs	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• University of Tübingen</li> <li>• An Najah University</li> <li>• Palestinian Hydrology Group</li> <li>• Palestinian Water Authority</li> <li>• Ministry of Agriculture</li> </ul>	
<b>Project Outputs</b>	<b>Presentation</b> <a href="#"><u>New Water Resources</u></a>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2008</b>
<b>PROJECT NAME</b>	<b>Rehabilitation and Testing of deep Groundwater Wells for Nablus Municipality</b>	
<b>Funding Agency</b>	Nablus Municipality	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To conduct a pump test and identification of rehabilitation needs for Faria well.</li> <li>• To conduct a pump test and identification of rehabilitation needs for Audala well.</li> <li>• To conduct a pump test and identification of rehabilitation needs for Deir Sharaf 2a well</li> </ul>	
<b>Project Partners</b>	Nablus Municipality	
<b>Project Outputs</b>	<b>Reports</b> <ul style="list-style-type: none"> <li>• <a href="#">Al Far'a Well Rehabilitation Report</a></li> <li>• <a href="#">Audala Well Rehabilitation Report</a></li> </ul>	
<b>PHOTOS</b>	 	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2008</b>
<b>PROJECT NAME</b>	<b>Well Siting Study for a deep groundwater well within the municipal boundaries of the city of Nablus</b>	
<b>Funding Agency</b>	Nablus Municipality	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To identify a suitable location for a deep well for Nablus city.</li> <li>• To carry out a hydrogeological assessment.</li> <li>• To provide design and construction details for the selected well.</li> </ul>	
<b>Project Partners</b>	Nablus Municipality	
<b>Project Outputs</b>	<b>Report</b> <a href="#"><u>Proposing a new site for production well within Nablus Municipality Boundaries</u></a>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2009</b>
<b>PROJECT NAME</b>	<b>Steady State Modelling of the Eocene Groundwater system in the Nablus Area</b>	
<b>Funding Agency</b>	Nablus Municipality	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To assess the water budget of the Eocene system in the Nablus Area.</li> <li>• To study the movement directions of groundwater system in the Nablus Area.</li> <li>• To study the impact of drilling a new well or wells in the Eocene aquifer of Nablus city.</li> </ul>	
<b>Project Partners</b>	Nablus Municipality	
<b>Project Outputs</b>	<b>Report</b> <a href="#">A Preliminary Steady-State Groundwater Flow Model for the Eocene Aquifer of the City of Nablus</a>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2010</b>
<b>PROJECT NAME</b>	<b>Improving Access to Water for farmers, women and children in West Ramallah by protecting and rehabilitating their spring's water</b>	
<b>Funding Agency</b>	Arab Gulf Programme for United Nations Development Organization	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To increase agricultural productivity by rehabilitation of neglected agricultural lands.</li> <li>• To augment the quantity of available water for drinking and irrigation.</li> <li>• To provide employment opportunities for the residents in the villages of Beitilu, Jamalalah, and Deir Ammar.</li> <li>• To develop and build capacity in the Beitilu, Jamalalah, and Deir Ammar unified village council, through initiating a Spring Users Association in the village council.</li> <li>• To reduce unemployment in the respective villages.</li> <li>• To increase the number of women beneficiaries, throughout the course of the proposed project.</li> <li>• To raise awareness, especially among women and children, in water issues concerning the environment, agriculture and importance of conservation.</li> </ul>	
<b>Project Partners</b>	Beittilou, Deir Ammar and Jammaleh villages	
<b>Project Outputs</b>	<b>Report:</b> <ul style="list-style-type: none"> <li>• First Progress Report</li> </ul>	
<b>PHOTOS</b>	 	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2010</b>
<b>PROJECT NAME</b>	<b>The Interaction between Coastal Aquifers and the Mediterranean under Changing Conditions</b>	
<b>Funding Agency</b>	MERC-USAID	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Determine the magnitude of Submarine Groundwater Discharge (SGD), its relation with coastal hydrogeology and sea level variability and its implications toward coastal water quality and related desalination plans;</li> <li>• Understand the factors that influence the location of the seawater-groundwater mixing zone (interface) and assessment of the rates of seawater intrusion;</li> <li>• examine new tools for estimating the velocity of both fresh and saline groundwater using new isotopic methods and insitu borehole devices;</li> <li>• study the quality of saline and brackish groundwater as a source for desalination;</li> <li>• Determine the possible implication of the expected sea level rise on all the above processes</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• Al Azhar University</li> <li>• GSI</li> </ul>	
<b>Project Outputs</b>	<b>Ongoing</b>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2009</b>
<b>PROJECT NAME</b>	<b>Setting-up Groundwater Protection Management Plan of the Coastal Aquifer/ Gaza Strip</b>	
<b>Funding Agency</b>	World Bank	
<b>Objectives</b>	To set up a comprehensive management plan aiming at protecting the groundwater aquifer and sensitive areas in the coastal aquifer of the Gaza Strip. For example, but not limited to, creating vulnerable maps which show the sensitive areas to any contaminants that may harm the groundwater resource as a base for water resources management.	
<b>Project Partners</b>	Palestinian Water Authority in Gaza	
<b>Project Outputs</b>	<b>Report</b> <a href="#"><u>Setting-up Groundwater Protection Plan of the Coastal Aquifer of Gaza Strip</u></a>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2008</b>
<b>PROJECT NAME</b>	<b>Protection of Nablus Springs' System</b>	
<b>Funding Agency</b>	GTZ-KFW	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Assess the current condition and situation of the target springs.</li> <li>• Carry out water sampling from the target springs.</li> <li>• Analyse the need and design for improvements of target springs</li> <li>• Formulate plans and designs for improvements of target spring facilities</li> <li>• Study the polluting activities negatively affecting the quality of water in the target spring catchment and vicinity.</li> <li>• Create a GIS database of polluting sources in the target springs' vicinity and catchment.</li> <li>• Produce regulations for spring protection.</li> </ul>	
<b>Project Partners</b>	Nablus Municipality	
<b>Project Outputs</b>	<b>Report</b> <a href="#">Protection of Nablus Springs</a>	
<b>PHOTOS</b>		



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2009</b>
<b>PROJECT NAME</b>	<b>Improving Living Conditions in the Arab Jahalin Community Through Improving Access to Water and Community Awareness Raising</b>	
<b>Funding Agency</b>	The German Development Service (DED)	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>To improve the water situation in the Jahaleen Bedouin Community, through conducting advocacy targeting Israeli officials and the international community to raise awareness of the situation in the community and encourage a durable solution.</li> <li>To establish a Water Users Committee in the community and provide training on issues that will improve safe water and hygiene practices and efficient use of scarce water resources.</li> <li>To examine possible technical solutions for the water problems within the community.</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>HWE</li> <li>The Arab Jahalin Community Council</li> </ul>	
<b>Project Outputs</b>	<ul style="list-style-type: none"> <li><b>Report:</b> <a href="#">Improving Living Conditions in the Arab Jahalin Community Through Improving Access to Water and Community Awareness Raising</a></li> <li><a href="#">Short briefing paper on the water and sanitation situation in the Jahalin Community.</a></li> <li>Workshops and Trainings.</li> <li>Feasibility study.</li> <li>Establishment of Water Users Committee.</li> <li><a href="#">Images</a></li> </ul>	
<b>PHOTOS</b>	 	



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2008</b>
<b>PROJECT NAME</b>	Wastewater Treatment Plant Ramallah, consulting services for the Preparation of a Feasibility	
<b>Funding Agency</b>	KfW Bankengruppe, Frankfurt, Germany	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To conduct a feasibility study for Ramallah-Betunia wastewater treatment plants.</li> <li>• To conduct design for the sewer system, pumping stations and wastewater treatments for Ramallah-Betunya.</li> <li>• To conduct EIA study for the wastewater treatment plants, sewerage systems and pumping stations.</li> </ul>	
<b>Project Partners</b>	<ul style="list-style-type: none"> <li>• Gauff</li> <li>• Universal Group</li> </ul>	
<b>Project Outputs</b>	<b>Report</b> <a href="#">Assessment of the Impacts of constructing wastewater treatment plants at Ein Jariout(EJ) and Ein Qinya (EQ)Locations on the Groundwater Environment: Detailed Investigation</a>	



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2008</b>
<b>PROJECT NAME</b>	<b>Rehabilitation of Springs in the West Bank</b>	
<b>Funding Agency</b>	Arab Fund for Social and Economic Development	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Rehabilitation of Zawata Spring</li> <li>• Construction of 200m<sup>3</sup> reservoir, main pipeline (500m long, 4" diameter), 10hp pump, and panel control Chlorination unit.</li> <li>• Establishment of water user association for Zwata Spring.</li> <li>• Rehabilitation of irrigation canals for agricultural leads of Zwata Springs.</li> <li>• Needs assessment and spring flow measurements for Beitillou Springs.</li> <li>• Needs assessment for Battir Springs.</li> </ul>	
<b>Project Partners</b>	No Other Partners	
<b>Project Outputs</b>	<b>Reports</b> <ul style="list-style-type: none"> <li>• <a href="#">Needs assessment for Battir Springs</a></li> <li>• <a href="#">Springs of Union Villages: Study about hydrology and rehabilitation needs</a></li> </ul>	
<b>PHOTOS</b>	   	



PROJECT TYPE	Training and Capacity Building	2005
PROJECT NAME	Sustainable Management of Groundwater Aquifers in Semi-arid Environment with Emphasis on Palestine”: Linking the Water Resources with the Water Supply	
Funding Agency	<ul style="list-style-type: none"> <li>The Flemish Community of Belgium</li> <li>UNESCO</li> </ul>	
Objectives	<ul style="list-style-type: none"> <li>To assess the supply/demand gap in the West Bank</li> <li>To evaluate the Sustainability of water resources in the West Bank</li> <li>To develop a DSS for Sustainable Management of water in the West Bank</li> </ul>	
Project Partners	<ul style="list-style-type: none"> <li>Palestinian Water Authority</li> <li>Birzeit University</li> <li>An-Najah University</li> </ul>	
Project Outputs	<p> <a href="#">Training Program</a>  <a href="#">List of attendees</a> </p> <p><b>Presentations</b></p> <p> <a href="#">Awareness 2</a>  <a href="#">Balancing Water Supply Demand</a>  <a href="#">Basic principles of groundwater hydrology</a>  <a href="#">Basic Principles of IWRM</a>  <a href="#">Climate Change - General Overview</a>  <a href="#">Climate Change and Variability - Impact on Water Resources</a>  <a href="#">presentations/Concepts in IWRM</a>  <a href="#">Conflict Resolution Between Water Users</a>  <a href="#">Drinking Water and Health</a>  <a href="#">Groundwater Flow</a>  <a href="#">Optimal Design of Water Distribution Networks Overview</a>  <a href="#">Risk Map</a>  <a href="#">Simulation of Water Distribution Networks The Use of EPANET</a>  <a href="#">Sustainable Yield of West Bank Aquifers</a>  <a href="#">Vulnerability Map</a>  <a href="#">Water Quality - Nablus Municipality</a>  <a href="#">presentations/Water Quality</a>  <a href="#">Water Rights in the Palestinian-Israeli context</a>  <a href="#">Water Saving Measures and Management</a>  <a href="#">Water Saving Measures</a>  <a href="#">Water Sector Status Legal and Institutional Aspects</a>  <a href="#">Waterborne Diseases</a>  <a href="#">WR in Palestine</a> </p> <p><a href="#">Images</a></p>	

## PHOTOS



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2010</b>
<b>PROJECT NAME</b>	<b>Initial Environmental Evaluation - Jericho</b>	
<b>Funding Agency</b>	Japan International Cooperation System	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To promote sustainable environmental development and the environmental protection in Jericho.</li> <li>• Providing effective means of integrating environmental factors into planning and decision making process in a manner that promotes sustainable development.</li> <li>• To conduct an EIA Study for development project funded by JICA to Jericho Municipality.</li> </ul>	
<b>Project Partners</b>	Jericho Municipality	
<b>Project Outputs</b>	<b>Report:</b> <a href="#"><u>Initial Environmental Evaluation for Improvement of Roads in Jericho City Project.</u></a>	
<b>PHOTOS</b>	   	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2010</b>
<b>PROJECT NAME</b>	<b>Study of Eastern Aquifer and Master Plan for Bulk Water Supply Systems in the Southern West Bank</b>	
<b>Funding Agency</b>	MWH AMERICAS, INC-USAID	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To develop a master plan for bulk water supply in the southern portion of the West Bank.</li> <li>• To achieve this purpose a database will be developed where all related data and relevant maps are to be incorporated.</li> <li>• To recommend optimal locations and corresponding pumping rates for prospective groundwater wells in the Eastern Aquifer. This will be mainly attained through the utilization of a groundwater flow model coupled with a groundwater management model and hydrogeological investigations in the study area.</li> </ul>	
<b>Project Partners</b>	No other Partners	
<b>Project Outputs</b>	<p><b>Report:</b></p> <p><a href="#">Baseline Report</a></p> <p>Annex A: <a href="#">Data Sources</a></p> <p>- Annex B: <a href="#">Database for Water Resources/Supply and Demand in EXCEL Sheets</a></p> <p>Annex C: <a href="#">ACCESS Database for Water Resources/Supply and Demand</a></p> <p>Annex D: <a href="#">Updated Maps for Existing Water Supply and Infrastructure Plus Illustration Maps</a></p> <p>Annex E: <a href="#">GIS Geo Database</a></p> <p><b>Model Report</b></p> <p>- Annex A: Database of the EAB Model</p> <p style="padding-left: 40px;">* <a href="#">Data Sheets (Wells and Springs of the Eastern Aquifer Basin)</a></p> <p style="padding-left: 40px;">* <a href="#">Time Series for Q &amp; H</a></p> <p style="padding-left: 40px;">* <a href="#">Cross Sections</a></p> <p>- Annex B: Additional Wells</p> <p style="padding-left: 40px;">* <a href="#">Lithology (Well Logs)</a></p> <p style="padding-left: 40px;">* <a href="#">GIS Database for the Well Location Maps</a></p>	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2010</b>
<b>PROJECT NAME</b>	<b>Understanding and Analyzing the current Israeli Wastewater Practices for Transboundary Wastewater Management from Palestinian Communities</b>	
<b>Funding Agency</b>	Austrian Development Agency	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To measure quantities of wastewater in 6 transboundary wadis/rivers.</li> <li>• To determine WQ of the wastewater of the 6 transboundary wadis/rivers.</li> <li>• To carry out cost/benefit analysis of wastewater treatment of the 6 wadis.</li> </ul>	
<b>Project Partners</b>	Palestinian Water Authority (PWA)	
<b>Project Outputs</b>	<b>Report:</b> <ul style="list-style-type: none"> <li>• Understanding and Analyzing the current Israeli Wastewater Practices for Transboundary Wastewater Management from Palestinian Communities</li> </ul>	
<b>PHOTOS</b>	   	


PROJECT TYPE	RESEARCH & DEVELOPMENT	2011
PROJECT NAME	A Participatory Approach to Improve Understanding Towards Solving Water Problems in the Negotiations Between Israel and the Palestinian Authority, Middle East	
Funding Agency	Center for International Conflict Resolution	
Objectives	<ul style="list-style-type: none"> <li>To conduct research on shared water resource between the West Bank and Israel that aims to identify the pollution sources in the study area and to assess the impact of these pollution sources on the shared water resources.</li> <li>To strengthen the capacity building of the local governmental and non-governmental organizations through a program of research, training and public awareness for the civil society in the study area about issues related to water in the final status negotiations so that an agreement at the end would have been fairly discussed and its terms evaluated.</li> </ul>	
Project Partners	Center for Applied Research in Education	
Project Outputs	<ul style="list-style-type: none"> <li><b>Paper</b> Groundwater in Palestine and its Vulnerability to Contamination</li> <li><b>Workshop</b> Images</li> <li><b>Proceedings: Seminar's Presentations</b> <ul style="list-style-type: none"> <li>Groundwater in Palestine and its Vulnerability to Contamination</li> <li>The Right to Water and Sanitation in the Occupied Palestinian Territory</li> <li>Water Management Separate vs Joint</li> <li>Water Sector Status and Development Options</li> </ul> </li> </ul>	
PHOTOS	 	


<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2011</b>
<b>PROJECT NAME</b>	<b>Training for municipality politicians and professionals</b>	
<b>Funding Agency</b>	UNDP/PAPP	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Introduce a variety of current environmental debates with regards to city management, and train municipal politicians, professionals, and community group to promote an environmental agenda in their towns and cities. These trainings aim to bring together Palestinian and Israeli local authorities in geographical proximity to the wastewater project, as well as other municipalities from the oPt and Israel which are willing to participate and contribute from their knowledge and experience.</li> <li>• With accordance to development of the infrastructure, plan and organize specific technical, financial, and managerial training for the participating Palestinian municipalities, relevant community groups and youth leadership.</li> </ul>	
<b>Project Partners</b>	No other Partners	
<b>Project Outputs</b>	<b>Reports:</b> <ul style="list-style-type: none"> <li>• Peace Building Project through Wastewater Treatment - First Training Evaluation Report</li> <li>• Peace Building Project through Wastewater Treatment - Second Training Evaluation Report</li> </ul>	



<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2011</b>
<b>PROJECT NAME</b>	<b>Preparation of Baseline Study for Northwest Jerusalem Villages</b>	
<b>Funding Agency</b>	Republic of Finland	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To gain in-depth understanding of consumers' perceptions, attitudes, knowledge and practices related to water use (collection, storage, treatment, storage and consumption), by the exploring a variety of factors that influence all population groups (with a focus on low – to middle-income households and in particular those who's ability or willingness-to-pay for water services is low and who have generally accumulated debts. To the service providers or local administrators due to unpaid water bills).</li> <li>• To assess the baseline situation regarding water and sanitation, WASH related health, socioeconomic status, in order to create a basis for monitoring the impact of the project (M&amp;E).</li> <li>• To build a basis for awareness raising of beneficiaries/consumers (what is the risk behavior in water use).</li> <li>• To build a basis for the development of the tariff system, ensure capacity to pay and detect possible needs for subventions.</li> </ul>	
<b>Project Partners</b>	No other Partners	
<b>Project Outputs</b>	<b>Report:</b> <ul style="list-style-type: none"> <li>• Inception Report: Baseline Study for North West Jerusalem Villages.</li> </ul>	





PWA

PROJECT TYPE	RESEARCH & DEVELOPMENT	2011
PROJECT NAME	West Bank and Gaza Infrastructure Needs Program II (INP II)	
Funding Agency	United States Agency for International Development (USAID) 	
Objectives	<p>The Activities that HWE is conducting on this project (so far) are as follows:</p> <ul style="list-style-type: none"> <li>Environmental studies (including Ecological Investigations) of the Wastewater Treatment Plant and Sewerage Collection System for Al Yamoun, Qabatya, Y'bad, Azzoun, Tarqumiya, Dura.</li> <li>Conducting Surveys for the Sewerage Collection System and for the site of the Wastewater Treatment Plant for Al Yamoun, Qabatya, Y'bad, Azzoun, Tarqumiya, Dura.</li> <li>Designing the Wastewater Treatment Plant for Al Yamoun, Qabatya, Y'bad, Azzoun, Tarqumiya, Dura.</li> <li>Developing Wastewater Re-use plans for Irrigation for Al Yamoun, Qabatya, Y'bad, Azzoun, Tarqumiya, Dura.</li> </ul> <p>To implement specific task orders as will be announced later.</p>	
Project Partners	<ul style="list-style-type: none"> <li>Black &amp; Veatch</li> <li>Trigon</li> <li>Mott MacDonald</li> <li>Deloitte</li> <li>CEC</li> <li>PWA</li> </ul>	
Project Outputs	On Going	

<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2011</b>
<b>PROJECT NAME</b>	<b>Feasibility Study for the Rawabi Tertiary Treatment Facility and Wastewater Reuse</b>	
<b>Funding Agency</b>	U.S. Trade and Development Agency (USTDA)	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To gain in-depth understanding of consumers' perceptions, attitudes, knowledge and practices related to water use (collection, storage, treatment, storage and consumption), by the exploring a variety of factors that influence all population groups (with a focus on low – to middle-income households and in particular those who's ability or willingness-to-pay for water services is low and who have generally accumulated debts. To the service providers or local administrators due to unpaid water bills).</li> <li>• To assess the baseline situation regarding water and sanitation, WASH related health, socioeconomic status, in order to create a basis for monitoring the impact of the project (M&amp;E).</li> <li>• To build a basis for awareness raising of beneficiaries/consumers (what is the risk behavior in water use).</li> <li>• To build a basis for the development of the tariff system, ensure capacity to pay and detect possible needs for subventions.</li> </ul>	
<b>Project Partners</b>	AECOM	
<b>Project Outputs</b>	<ul style="list-style-type: none"> <li>• Task 1. Detailed Background Review</li> <li>• Task 2. Project Management Plan</li> <li>• Task 3. Reclaimed Water Potential and Demand Assessment</li> <li>• Task 4. Review of Reclaimed Water Quality and Regulatory Requirements</li> <li>• Task 5. Establish Projected Reclaimed Water Flows</li> <li>• Task 6. WWTP Siting and Wastewater Conveyance Planning</li> <li>• Task 7. Wastewater Treatment Technologies Evaluation</li> <li>• Task 8. Feasibility Analysis of the Wastewater Treatment Plant</li> <li>• Task 9. Developmental Impact Assessment</li> <li>• Task 10. Analysis of U.S. Manufacturers of Wastewater Treatment and Reclamation Technology</li> <li>• Task 11. Project Implementation Plan</li> <li>• Task 12. Workshop</li> <li>• Task 13. Final Report</li> </ul>	

PROJECT TYPE	Training and Capacity Building	2011-2012
PROJECT NAME	<b>Emergency Water, Sanitation and Hygiene Aid for the Enclaved Bedouin community of Abu Fardah, Qalqiliya District</b>	
Funding Agency	By the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and implemented by Première Urgence - Aide Médicale Internationale (PU-AMI) during the 2011-2012	
Objectives	<ul style="list-style-type: none"> <li>• To gain the knowledge, attitudes and practices towards water and sanitation in the Bedouin community.</li> <li>• Based on the findings, to develop a hygiene education plan that has to be implemented in the targeted community</li> <li>• To protect the community from the environmental risks and raise the sense of awareness by providing the community necessary knowledge about the negative impacts of the waterborne diseases on their health.</li> <li>• To raise the importance of behaving in hygienic way and to raise the level of security and public safety in their daily life especially when dealing with water usage and storage to avoid waterborne and water related diseases which are commonly transmitted in contaminated fresh water. Infection commonly results during bathing, washing, drinking, in the preparation of food, or the consumption of food thus infected. Various forms of waterborne diarrheal diseases probably are the most prominent examples, and affect mainly children in developing countries. Main waterborne diseases are Amoebiasis, Cholera, Pneumonia, and Schistosomiasis.</li> <li>• To promote the importance of cleanness and the level of security and safety in their daily activities</li> </ul>	
PHOTOS	 	

<b>PROJECT TYPE</b>	<b>Training and Capacity Building</b>	<b>2012</b>
<b>PROJECT NAME</b>	<b>Emergency Livelihood Recovery for conflict Affected communities in the Occupied Palestinian Territory</b>	
<b>Funding Agency</b>	<ul style="list-style-type: none"> <li>• The European Commission-Humanitarian Aid and Civil Protection</li> <li>• Premier Urgence-Aide Medicale Internationale “PU-AMI”</li> </ul>	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Raise the environmental and health awareness to the target communities.</li> <li>• Protect the community from the environmental risks and raise the level of sense of awareness by providing the community with knowledge about the bad impacts of the diseases on their health.</li> <li>• Raise the sense of the responsibility and the level of security and public safety in all the ways of their daily life.</li> <li>• Raise the awareness of the importance of cleanness and the level of security and safety in their daily activities.</li> </ul>	
<b>Project Partners</b>	Premier Urgence-Aide Medicale Internationale “PU-AMI”	
<b>PHOTOS</b>	 	

PROJECT TYPE	RESEARCH & DEVELOPMENT	2013 - 2015
PROJECT NAME	Selective collection of the organic waste in tourist areas and valorization in farm composting plants	
Funding Agency	<ul style="list-style-type: none"> <li>• Cross-Border Cooperation in the Mediterranean</li> <li>• European Union</li> </ul>	
Objectives	To develop an integrated and environmentally sound waste management system, ensuring treatment and recycling, through the exploitation of innovative technologies and sustainable methods for waste treatment and recycling	
Project Partners	Urban Ecology Agency of Barcelona and Others	
Project Outputs	<u>WP2 - SCOW Communication Plan - Quantified outputs</u> <ul style="list-style-type: none"> <li>• SCOW Communication Plan</li> <li>• Communication materials for the SCOW project campaign</li> <li>• The SCOW campaign materials are available for you</li> <li>• Launching Conference</li> <li>• Newsletters</li> <li>• Local activities</li> <li>• Final project Local Events &amp; press conferences</li> <li>• Final Project Conference at Mediterranean level</li> <li>• Final Conference publication</li> <li>• Press releases</li> </ul>	
	<u>WP3 - Capitalisation of the results - Quantified outputs</u> <ul style="list-style-type: none"> <li>• Mainstreaming action plan</li> <li>• Policy recommendation on the future regulatory framework at EU and PC level Capitalization conferences</li> <li>• Mediterranean compost network for transferring knowledge involving managers of similar small scale composting plants</li> </ul>	
	<u>WP4 - Definition of the general management model - Quantified outputs</u> <ul style="list-style-type: none"> <li>• Technical Study of the successful models of waste management which involve the management of biowaste at mini-composting plants (1)</li> <li>• Database of Good Practices (1)</li> <li>• Guidelines defining the generic model and the evaluation parameters (1)</li> <li>• Protocol with 4 typologies of contents for the training materials for the target</li> </ul>	

groups (1)

- Protocol with 3 typologies of contents for the stakeholders communication packs (1)
- Handbook for the staff in charge of the plants (1)

#### WP5 - Adaptation and application of the model in each place - Quantified outputs

- Pilot projects implanted adopting innovative and low cost technologies (10)
- Public-Private partnership collaboration agreements (16)
- Farm composting plants (10)
- Part-time “Green” jobs (12)

#### WP6 - Monitoring, evaluation and conclusions - Quantified outputs

- Quantitative and Qualitative Records of the organic fraction collected and transported to the composting plants (10)
- Records of the structuring material added to the process (10)
- Records of the treatment processes parameters according to the different plant typologies (10)
- Quantitative and Qualitative Records (chemical composition and physical parameters) of the generated compost as well as its applications (10)
- Quantitative Records of compost directly applied, distributed and sold out (10)
- Data Reports on the areas where the generated compost is regularly applied (10)
- Tracking records of the adaptations of the management (and protocols) in each stage to ensure continuing improvements in the process (10)
- Database of the result indicators derived from WP4 (1)
- Network to monitor the management and results of the agriculture composting plants (1)

## PHOTOS





# DO

## biowaste selective collection

**We are collaborating within the SCOW Project**

**Buy less, Separate at source and Recycle**  
Conserve natural resources. We can make it happen!

The project SCOW is implemented under the ENPI CBC Mediterranean Sea Basin Programme (in English: MEDSEA). Its total budget is 4.07 million Euros and it is financed, for an amount of 4.42 million Euros (60%), by the European Union through the European Neighbourhood and Partnership Instrument. The ENPI CBC Med Programme aims at reinforcing cooperation between the European Union partner countries regions placed along the shores of the Mediterranean Sea.

[www.biowaste-scow.eu](http://www.biowaste-scow.eu)

# Community composting plant

Low tech, low cost, high quality biowaste management

Name of the plant
Project duration
Funding information
Technology
Year of construction

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<b>PROJECT TYPE</b>	<b>RESEARCH &amp; DEVELOPMENT</b>	<b>2013 - 2015</b>
<b>PROJECT NAME</b>	<b>Mitigating Transboundary Wastewater Conflicts</b>	
<b>Funding Agency</b>	USAID	
<b>Objectives</b>	The objective of the MTWC program is to develop Palestinian decision makers and technicians skills in the topics of wastewater especially and to maximize the opportunity of using the treated wastewater in irrigation. Besides, four small-scale greywater systems will be constructed.	
<b>Project Partners</b>		
<b>Project Outputs</b>	<u>Report:</u> <ul style="list-style-type: none"> <li>Construct three small-scale greywater systems in the Southern of the West Bank and two in the North.</li> <li>Develop Maintenance Manual for the beneficiaries</li> <li>Conduct training meeting targeting House hold owner on the maintenance of the systems</li> </ul>	
<b>PHOTOS</b>	   	