



*Fostering Water Resources Stewardship
through Leadership and Science*

*Proudly
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Washington, DC**

Middle East : Water Conflict

- Target area – Israel, Jordan, and Palestine
- Stressed political climate
- Population growth
- Surface water stressed and polluted
- Diminishing groundwater
- Worsening drought
- Desalination not a near-term solution

Lower Jordan River (2011)



Lower Jordan River (1918)



Lack of Water : The Impact

- Scarce drinking water
- Little excess water for toilet flushing and hand washing
- Reduced student attendance, especially girls
- School closures
- Dependency on municipality / tanker trucks
- Increased costs
- Growing stressors from all sides



Where Do We Go From Here : **The Impact**

- Early 2009, concerned environmental and legal professionals convene
- 501(c)(3), *volunteer*, non-profit formed late 2009: Water Resources Action Project
- Board, leadership, members: diverse political, ethnic, and religious backgrounds
- Operate with strict neutrality



Mission – *Improve quality of life for underserved communities in the Middle East through greater water stewardship.*

Vision – *By easing the growing water conflict and educating individuals and institutions at the grassroots level on the value and interconnectedness of water, a greater awareness and appreciation for human health and the environment will be cultivated.*

What Difference Can We Make : **Now**

- Harvest precious rainwater through collection systems
- Types: rain barrel model and cistern model
 - Five month rainy season
 - Can supply up to 70% of a school's water needs during its nine months of operation
 - Water used for toilet flushing (often 85% of school's total water usage)
- Environmental educational program
 - Increased awareness and appreciation for finite resource
 - System-wide understanding of ecosystems and connectedness



WRAP's Progress : Pilot Project

Sur Baher Girls School, East Jerusalem

- Underprivileged area in Israel, bordering Palestine
- Serving 800 Arab girls (grades 1-12)
- Dependence on costly, unreliable municipal water
- Engaged leadership and faculty
- Rain barrel collection system (completed February 2011)
 - 1 collection unit, 9 storage barrels, 2 pumps
- System services one of school's two restrooms
- Funded by annual WRAP's membership dues
 - Includes three years of routine maintenance
 - Includes three years of Project Educator (5 hours/week)
- Dedication (May 2011) ribbon cutting with Naomi Sur, Deputy Mayor of Jerusalem
- Monthly reporting (Jan-Jun 2011): average % of school's total water usage supplied by system = **30%**
- Reduced water bills and greater understanding of water's value, importance of conservation



WRAP's Progress : Pilot Expansion

Sur Baher Girls School, East Jerusalem (Expansion)

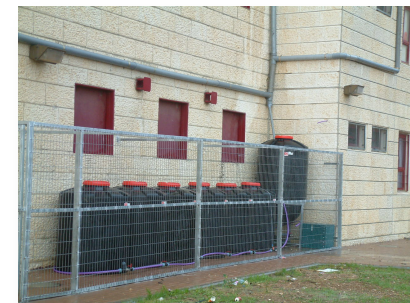
- Expansion funded through grant from The Jerusalem Fund (completed February 2012)
- Added 1 collection unit, 3 storage barrels, and 1 pump
- System now services both restrooms
- Awaiting monthly reporting data – estimated % of school's total water usage supplied by system = greater than **50%**



WRAP's Progress : Second Project

Afaq School for the Learning Disabled, East Jerusalem

- Serving 765 special needs boys
- Rain barrel collection system (completed late February 2012)
- Included three years of maintenance and education
- Funded by annual WRAP dues, \$4,000 match by Only Green, and in-kind support from Friends of the Earth Middle East
- Awaiting monthly reporting data – anticipate equivalent water savings as pilot effort





WRAP's Progress : Next Project

Walajeh Coed Basic School, Palestinian Territory

Overview

- Located in small rural town of Walajeh, outside Bethlehem
- 319 students (165 girls and 154 boys), majority are decedents of Palestinian refugees from Israel
- United Nations Relief and Works Agency works within the school, providing assistance, protection, and advocacy
- Water delivery is limited and costly

The Need

- When the school runs out of water, it can purchase drinking water from a tanker truck, but it is infrequent and unreliable
- Regardless, insufficient water remains for toilet flushing and drinking water is scarce
- Bathrooms are often closed and toilets cleaned only twice (beginning and end of school year), resulting in a hygiene problem
- WRAP has visited and vetted school with local partners
- Met with Principal, very supportive of project and implementation of parallel educational program

The Project

- Cistern collection system would be needed (\$25,000 budget)
- Immediate benefits of additional water and monetary savings include –
 - Continuity of operations during the regular school year
 - Desired summer camp
 - Community garden
- WRAP is fully committed to undertaking this project – the question is *how soon* can we make this happen?
- Additional schools identified in the region with similar needs –the list grows with each visit

Project Cost Breakdown : Line-by-Line

Rain Barrel System Standard Budget	
<i>Item</i>	Cost (\$)
8 Rain Storage Barrels (1,520L Easy Flush Tank) and Stand	3,520
3 Rain Collection Units (100L with Submersible Pump)	900
Pump with Pressure Valve and Parts (Piping, Faucets, Fittings)	1,990
Pumphouse (Protects from Vandalism and Electrification)	250
<i>Sub-total</i>	\$6,620
Labor & Maintenance	
Installation, Planning, and Design by Licensed Hydrologist and Engineer	3,650
Routine Maintenance (3 years)	860
<i>Sub-total</i>	\$4,510
Education & Community Outreach	
Project Educator, Includes Training and Ongoing Supervision (3 years)	6,900
<i>Sub-total</i>	\$6,900
Total Cost	\$18,030
Cistern System Standard Budget	
<i>Item</i>	Cost (\$)
Reinforced Concrete and Plaster for Base, Walls, and Roof	4,000
Epoxy Coating/Bituminous of Walls from Outside	560
Pump with Pressure Valve and Parts (Piping, Faucets, Fittings)	2,520
<i>Sub-total</i>	\$7,080
Labor & Maintenance	
Excavation/Removal, Planning, and Design	2,800
Construction of Base, Walls, and Roof, Plaster, and Parts Installation	7,800
Routine Maintenance (3 years)	860
<i>Sub-total</i>	\$11,460
Education & Community Outreach	
Project Educator, Includes Training and Ongoing Supervision (3 years)	6,900
<i>Sub-total</i>	\$6,900
Total Cost	\$25,440

Lessons Learned: Carrying It Forward

- Fully committed school and community leadership
- Strong educational component is a must (Project Educator)
- Detailed screening process and transparency
- Grassroots partners in Israel, Palestine, and Jordan
- Proven contactors and routine maintenance
- Continued follow-up and reporting
- Identify the end game and create a roadmap



Why WRAP : Why Not?



- *Every* penny of *every* dollar goes directly towards the projects, education, and maintenance
- NO overhead, NO pass through, NO bureaucracy, NO executive salaries, NO nonsense
- Each effort is fully vetted through an extensive, in-person screening process
- Grassroots partners – Friends of the Earth Middle East and Only Green Environmental Center
- Leveraged dollars from WRAP leadership, partners, grant submittal, and fundraising
- Parallel educational program, creating a network of awareness and ownership
- Metrics and reporting – data, data, data
- Ongoing maintenance by trained technician
- Semi-annual to annual visits to region – continued follow-up on every project



If You're Wondering : How Can You Help?



Contribute

Donate on WRAP's website, no amount is too small

Spread the Word

Tell others about the issues, solutions, and WRAP

Feedback

We welcome it!

Join Us

Volunteer and membership opportunities

Stay in Touch

Email – info@wrapdc.org

Website – www.wrapdc.org



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On behalf of all of us

THANK YOU!