

Studying Water Reuse in Israel and the West Bank

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Law, science, and social work students from the University of Maryland Baltimore and College Park campuses had the opportunity to study water reuse in Israel and the West Bank over winter break. Working with Clive Lipchin, Director of Transboundary Water Management at the Arava Institute, Bill Piermattei, and CONSERVE scholar Sarah Allard, the group's tour took them from Tel Aviv to Jerusalem to the West Bank to Kibbutz Ketura and finally to a Bedouin town in the Negev desert. Along the way, the students encountered many challenges agricultural communities face as well as successful projects managing their most precious resource: water.

The trip began in Tel Aviv where students met with U.S. Embassy Chief Science Officer Christopher Green to discuss the U.S. Embassy's work in the region as well as the work of the U.S. Agency for International Development (US AID). The group visited Hebrew University's Robert H. Smith Faculty of Agriculture, Food and the Environment where Hebrew University graduate students led the group on a tour and presentations of ongoing agricultural research projects.

After travelling to Jerusalem and spending the day touring the Old City, Professor Lipchin led the group to the Palmachin desalination plant with Abraham Tanner, former head of Israel's desalination program. These centralized systems expand Israel's water supply and are the backbone of a nationwide, government-controlled water system that minimizes reliance on dwindling surface waters and aquifers.



By contrast, there is no comparable centralized water system in the West Bank nor are there resources to build one. The group visited the Dead Sea and witnessed the effects of dwindling surface water and the vast retreat of the Dead Sea with a lecture from Prof. Lipchin on the current status of stabilizing Dead Sea water levels. The group then travelled to the East Jerusalem YMCA vocational training center in Jericho and their sustainable agriculture farm on the premises that produces an amazing array of produce using ordinary materials and extraordinary design, such as a closed hydroponic system that derives all its nutrients from compost.

The group then toured the West Bank towns of Al Auja and Marj Al Ghazal with Prof. Lipchin and his Palestinian partner Monther Hand, Director of the Palestinian Wastewater Engineers Group. The group met with farmers who have worked with Director Hand and Prof. Lipchin installing on-site greywater treatment systems that take non-toilet greywater and treat it to for use in drip irrigation of tree crops. CONSERVE scientists are studying these systems in connection with a USDA grant to study water reuse. See, <http://conserwaterforfood.org/>. In addition, Prof. Lipchin and Director Hand showed us a solar array designed to power a groundwater pump that they installed through a US AID development grant. Unfortunately project funding is ending prematurely and the US AID office for the West Bank and Gaza is closing effective January 31, 2019.



The group ended its whirlwind tour of Israel and the West Bank visiting the Negev desert and staying at Kibbutz Ketura, home of the Arava Institute. While in the Negev, the group did a desert hike, visited a Bedouin community, and shared a meal with a Bedouin community leader and Prof. Lipchin who discussed the very different challenges Bedouin communities face in having their traditional land rights, wastewater challenges and freshwater needs recognized.

All of these experiences and interactions were designed to illustrate agricultural community water needs in arid regions where economic resources are fairly abundant (Israel) and where they are not (West Bank and Bedouin communities). The group will continue to work with the Environmental Law Program, CONSERVE, Prof. Lipchin and the Arava Institute and their Palestinian partners such as Monther Hand and the Palestinian Wastewater Engineers Group. Not only are students developing ideas to solve real world problems, such as providing economically viable and environmentally beneficial solutions to the water and resource scarce West Bank, but they also got to see first-hand how larger geo-political disputes between governments impact the disparate lives of Israelis, Palestinians and Bedouins.

The participants continue to work with Prof. Lipchin developing model regulatory and agricultural extension programs around the wastewater and solar systems Prof. Lipchin and Director Hand have installed. The next step, building off of work previous University of Maryland students have done, is studying how to expand these systems on a town-wide basis and the corresponding governance systems needed to do so. The graduate students who will soon be professionals are learning to work as an interdisciplinary team, hone their problem-solving skills, work on real world problems and provide a different perspective of American involvement in this region.

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Participants:



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