

An educative field experience

By Rio Schondelmeyer

"I became more educated about water management techniques and how effective they can be," said Rio, a graduate student of MS Program at Indiana University, Bloomington.

Field trip report excerpts:

On our second day in Delhi, we learned about many water management techniques implemented by the Sehgal Foundation in rural communities. Our tour was led by Salahuddin, a hydrologist, who works with Sehgal Foundation.

Our first stop was a school where the water supply is saline. The Sehgal Foundation team helped install a rainwater harvesting system at the school. Rainwater is collected from the rooftops of the building and flows down through blue pipes feeding into the storage tank located centrally in the school campus. In the storage tank, suspended solids settle down. Before the water is used, it flows from the storage tank through a biosand filter, which removes bacteria, viruses, and protozoa. When we tested the salinity of the water from the biosand filter, the measurement was about 100 ppm. Groundwater had a measurement of a little under 6,000 ppm.

The second school we visited had a similar rainwater collection system. However, instead of storing the rainwater in a storage tank, the rainwater here was recharged into the ground through a pressurized recharge well. The pressurized recharge well has no bottom. Instead, the well reaches all the way down below the water table. The rainwater stored in the pressurized recharge well applies hydrostatic pressure on the groundwater below and forces the saline groundwater to move aside, creating a freshwater pocket below the recharge well (within the saline aquifer).

Our third stop was a village free from wastewater. Earlier, the wastewater flowed through the streets and caused several environmental health issues, such as creating a breeding ground for mosquitos carrying malaria and causing skin irritation. Now the wastewater flows through pipes or channels to a filter chamber. Then the wastewater is stored in a pit where it slowly diffuses into the soil. The wastewater no longer collects in the streets or creates environmental health issues. It is filtered and returned to the groundwater supply. The village uses the filtered wastewater to irrigate their fields. A diesel pump pulls it up from a well near a wastewater canal. Then the wastewater flows through irrigation pipes into the fields.

The last stop was a check dam that collects water runoff. The geography of the area causes large amounts of runoff to come from the mountains and through the nearby agricultural fields, eroding the topsoil. Local communities are left without a secure water supply and with damaged land. The check dam prevents the water from leaving the village. The dam enables collection of water at the foot of the mountains, which percolates into the ground and raises the water table. As a result, water levels in local wells are higher and agricultural yields increase.

I learned a lot on our tour through rural villages in India. I became more educated about water management techniques and how effective they can be. I learned that water management solutions are highly site-specific. For example, harvested rainwater was stored in different tanks at the schools based on the size of the school and the number of people using water.

While talking with individual villagers, it was easy to see that the students at the schools and the villages in the rural communities appreciate the solutions that Sehgal Foundation has implemented in their communities. Sehgal Foundation is making a huge difference in the lives of these people.

(This is the edited version of a blog entry by Rio Schondelmeyer, a graduate student (MS Program), School of Public and Environmental Affairs: Indiana University Bloomington, who visited Sehgal Foundation projects in Nuh, Haryana, during March 2017.)