



PWW Prototype for Wastewater Reclamation

Oscar Rene Ventura, PWW Health Promoter in Honduras, has built a prototype for water reclamation, converting wastewater (from bathing, washing dishes, cleaning) and standing, excess water into water that can be used for productive purposes, including garden irrigation and agriculture.

The intention is to create a resourceful solution for families in rural regions to address standing wastewater on their properties with materials they are able to easily access. Standing water is a health hazard, as it attracts and allows for the breeding of mosquitoes that carry harmful diseases (i.e. Dengue fever, Malaria). Standing water also creates an incubator for other harmful bacteria and pathogens.

The video demonstrates the prototype.

Please Note: This is a prototype, pilot tool from which PWW will learn and modify. The water is not considered potable and should not be used in that manner. Here are some additional Q&A's:

- **How does it filter out soap?**
 - The activated carbon (from coals used cooking) in the bottom does the trick, but, with use, it will remove less soap. The carbon adsorbs a wide-range of impurities and contaminants, including chlorine, odors, and pigments. Other substances, like sodium, fluoride, and nitrates, are not as attracted to the carbon and are not filtered out. Since adsorption works by chemically binding the impurities to the carbon, the active sites in the charcoal will eventually become filled. The charcoal will need to be replaced, which we will learn more about with this prototype so that we can identify what modifications and instructions will need to be considered.
- **Do families collect wastewater into one basin to pass through the PVC piping?**
 - The water is connected to the family's wash station, so when they are washing clothes, dishes or hands, the water flows directly from the drainage pipe to the filter that ultimately goes to the outer pipe, which has small holes to water plants.
- **Where do families get the layers of gravel and sand to fill the tires?**
 - The layers of sand can be collected in river banks and passed through a sieve. They can also smash bigger rocks into smaller sized gravel. More detail will be included when we develop a tutorial video.