Duel Sided Drip Irrigation System

The drip irrigation system our team has designed will utilize rubber and plastic found in Cameroon to successfully transport and distribute water from the holding container to crops throughout the field. The container will have a lid on it to keep the water out of direct sunlight, assisting in the regulation of water temperature. Within the holding container will be a filter made from thin metal wire. This will allow clean water to pass through the system while impurities will settle at the bottom of the container, to be cleaned out when necessary. By choosing to filter the water prior to the entrance into the main-line, less maintenance will be required for the drip irrigation system to function properly. The water will be stopped by the valve until it is manually opened. Connected to the valve will be the main line, made from PVC piping. This piping will immediately slant downward towards the ground allowing for a fast flow of water through the use of gravity. When the pipe hits the floor it will continue in a straight line flat line along the ground. The sub-main lines will extend outward at ninety degree angles from the main-line. The sub-main lines will be made of rubber tubing, and connected to the PVC pipe through four way connectors made of plastic. These lines will extend off of the main line every two feet. At the end of the main line a rubber stopper will be found, preventing water from leaving the system, forcing it to experience pressure that will aid in the transportation of water along the level sub-main lines. Holes are evenly spaced along the sub main line. Inserted into these holes are irrigation emitters made from rubber which function to keep the holes from filling with dirt. The irrigation emitters allow the clean water to leave the system and enter the soil to be utilized by the plants in the surrounding area.
Metal Wire Acts as Filter

Four way connector between main line and sub main line

Rubber tubing found in sub main line

Rubber stopper found at the ends of lines

Photograph of Prototype
Rainwater enters the container

Container with lid, holds water, regulates temperature

Filter allows clean water to pass through, sediment rests at bottom

Valve Opened: Clean water leaves the container

Main Line: transports water through gravity and pressure

Sediment rests at bottom

Water travels to sub-main lines

Rubber stopper prevents water from leaving sub-main lines

Irrigation emitters allow water to leave the system

Sediment is removed from the container

Main lines and sub-main lines easily disassemble to be cleaned

Water leaves the system and enters the soil
3D Model showing the connections between the main line and the sub-main line