

## Ecuador

Malingua Pamba & watershed area

Background: **Engineers Without Borders** (EWB) – Denver Chapter began their commitment to help with water projects in June, 2006.

In 3 years & 6 trips later, the expertise of EWB along with the mingas (volunteer labor) for which the Quechua are famous, **Potable** water was brought to ~90%.

July, 2009: First EWB Team to start work on **Irrigation**. As these people are agrarian, this should significantly impact their standard of living.



### Summary from EWB First Irrigation Team, July 2009

Kevin Greer, lead; Laura Backus, Teby & Diana Herrero, Tracy Owen, and Brett Pirie

In July 2009, the Denver Chapter of Engineers without Borders (EWB) sent a group of members to Malingua Pamba, Ecuador to assist the local people in constructing a functional irrigation system. Over the previous year, EWB developed a design for the irrigation system improvements that could be implemented with the available money from the International Rotary Grant. This design included construction of three 5,000 gallon water storage tanks, installation of 12 smaller 500 gallon water storage tanks, and installation of thousands of feet of pipeline. In addition, the existing portions of the irrigation system required repairs and upgrades to make them functional.



During the trip in July 2009, EWB was able to begin work on the irrigation system. All work was performed by the local people with help from EWB. While EWB was on site, two of the 5,000 gallon water storage tanks were constructed, about 1,000 feet of pipe was installed, and various repairs were made to the existing system. Repairs included installation of valves, fixing breaks in the pipe, and rehabilitation of existing tanks. Through the work performed on this trip, we feel confident that with the right tools and supplies, and with help from EWB, the local people are capable of completing

the remaining work within the scope of the first trip without direct observation by EWB.

In addition to construction activities, there was also numerous discussions during the trip regarding water quality, equitable water distribution, and future system improvements. The local people understand that water is a limited resource and a system to distribute it fairly is necessary. They have developed a "Water Board" to oversee the irrigation system, charge fees, assess fines, and distribute the water. They plan to develop a watering schedule for each user of the system. Use will likely be

approximately four hours of irrigation per field three times per week. In addition, the irrigation water is not as clean as the potable water in the area and the people are aware that it should not be consumed. We saw a tremendous amount of work from the local people to develop this irrigation system. Each Minga was composed of people from all different areas including some that will not receive irrigation water as part of this phase. The people of Malingua Pamba and EWB continue to learn from each other to develop more productive methods or completing work. Future improvements will expand the system to more people within the local communities.



Moving tank forms from #1 to #2



← Eden Recor & Santiago Sansur →  
USA & EC  
coordinating  
Rotarians



Tracy	Paulino	Laura	Kevin	Levi	Teby	Alex	Brett	Libby	Elvia	Cheyenne	Diana	Daniel
EWB	Pres of M.P.	EWB	EWB	Rotary	EWB	Vol.	EWB	Vol.	Paulino's wife	Vol.	EWB	Translator