Technical Capacity Building of Existing Gravity-Fed Rural Drinking Water Systems in Honduras

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Honduras is a developing country with scarce amounts of water available for human consumption. My Peace Corps service from July 2001 through October 2003 focused on improving the health of rural Hondurans through building new water systems and improving existing potable water resources.

Rural water systems, even when properly designed and built, commonly experience some type of problem that does not allow some or all of the users to obtain a quantity of water that they feel is sufficient for their daily activities. This may be due to lack of supply, a poorly operating tubing system, or increased use/misuse of water.

Technical capacity building refers to the altering of the physical and operational characteristics of a water system in order to increase a system's ability to provide safe and reliable drinking water. The lack of resources in rural Honduras makes diagnosis of problems in a water system critical, as an improper solution of the problem may only waste money or even worse, magnify the shortage of water. Many times, outside organizations or communities with little technical knowledge, will try to improve systems with techniques such as smaller tubing larger intake structures, or water rationing. These techniques are usually ineffective. The steps involved in troubleshooting a system are easy, and with education, communities should be able to improve their own systems without outside support.

This report is based on my two years experience in Honduras on how technical solutions can be found to supply more water to an existing system and show how limited water may be more equitably distributed throughout the community. Water shortage is a very complicated issue that has many social aspects as well. Many times a social solution such as pressuring neighbors to use less water can be the best solution. There are however examples where a conveyance line, distribution line, or a tank may be undersized and a more technical solution is warranted. This report will help the reader to quickly and accurately determine why members of a community are not satisfied with the quantity of water supplied as well determine an appropriate course of action.