

REPORT HYDRAULIC RAM PUMP SYSTEM HERMINAL, BRGY. GUIMBALAON, SILAY CITY

Background: Already in 2006 AID Foundation was requested by the community of Herminal through the Barangay for a survey for a water system. The Barangay had heard of the possibility of AID Foundation to pump up water to higher elevations without the use of electricity or fuel. A survey was carried out and it was found feasible. This project was absorbed in a program with Green Empowerment but the budget was not enough for the whole implementation. The director of AIDFI tried to get some counterpart from the Municipality of Silay, but in one way or another the talks between the director and the City Administration of Silay didn't result in anything. Other projects in the Green Empowerment program were therefore prioritized and when the director of AIDFI went on to another organization, the negotiations were picked up again by another staff of AIDFI.

Community: Herminal is one of the many sugarcane plantation communities. At the time of the first survey, the place was still a plantation. In 2008 the area was placed under the land reform program and the sugar workers were able to avail of the land. The title is still common and needs to be subdivided. There are 78 households and one of the big problems is supply of water. Previously before the ram pump system the people had to fetch water from an unprotected source some 300 meters away and lower situated by 20 meters. In dry season this source would dry up and the community members had to fetch water from a source farther away. There consumption was limited to an average of two containers per day because of the distance. For bathing and laundry, the households would go to the river some 1 kilometer away.

Survey: Herminal was re-surveyed on February 25, 2009 to be sure on the expected output of the source. AIDFI has experienced many sources which diminished overtime in output. From the survey a new design was made and the expected output (to be delivered by the ram pumps to the community) was calculated at 16.500 liters/day.

Design: The amount reserved for Herminal from the Green Empowerment budget was not enough but could cover the cost for the impounding, catchment, two ram pumps with drive pipe systems, delivery line and a 10.000 liters tank and 5 tapstands. At least water could be pumped to the reservoir, making water more easily available to the community.

Social Preparation: The organizer of AIDFI was assigned to have meetings with the community on forming a water association, discuss counterparting and participation in terms of labor and local technicians. The organizer spent a lot of time in trying also to deal with the Municipality. It was suggested that AIDFI in order to avail of a financial counterpart of the Municipality should get itself accredited by the Municipality of Silay. Normally, in other Municipalities, this is not so hard, but in Silay they came up with all kind of additional requests for papers. We sensed that the time for finally getting a financial contribution might take still a long time, we decided to explain the financial limitation of AIDFI to the community and do our part, meaning pumping up water to the reservoir. This would also give us the chance in the meantime to work on the Municipality.

Implementation: a technical installation team of AIDFI worked for 28 days on the installation. The hardest part to work on was the impounding since the soil structure was of limestone and hard clay. Besides the main source, three other small sources were tapped (protected by cement boxes and connected with HDPE pipes). As per plan the system built by AIDFI was up to the reservoir, leaving the distribution to the tapstands to an eventual financial contribution of the City Government. On rotation basis the people from the community helped in the construction works. The water association arranged the schedule for this. The people were paid daily and a small portion of the budget for the local labor went to the association's fund. This was 20 pesos (40 dollar cent) per day/worker. The system consists of three different springboxes, one big impounding structure and a catchment which is directly connected to the first ram pump of 1 ½" ram pump, followed by a second ram pump of the same size (which utilizes the waste water of the first), delivery pipes from different sizes HDPE (each ram its own delivery pipe) leading to the reservoir over a distance of 230 meters. Then there are five tapstands still to be connected.

Technical data: The flow of the combined sources is 105 liters/min. The first ram pump is 5.5 meters lower than the catchment and delivers around 6.6 liters/min to the 56 meters higher elevated reservoir. The second ram pump is 6 meters lower than the first and also pumps around 6.6 liters/min over a height of 62 meters. The total output is more or less 19.000liters/day and therefore more than expected. This provides around 240 liters/household/day. This is 200 liters more than before.

The ram pumps have still to be fine tuned and might even deliver more water. The fine tuning can be done when the installation has gone through the whole curing period.

Impact: Despite the long wait between first survey and the final installation, the community members expressed their happiness about the project. Many plans were heard now the members have more water available. From the experience of AIDFI with other communities, we can expect healthier children with less diarrhea and skin diseases, more livestock (mostly pigs), vegetable production and even some aqua culture. Also more time of the people, saved from fetching water, is available for more productive activities.



The two ram pumps and the pre fabricated materials



Loading of materials



Unloading of materials near site



Planning of rotation of labor



The source being studied



Clearing works



More clearing



Start of construction on impounding and catchment



Supply of sand



Hauling of materials to site



Impounding and catchment under construction



Impounding nearly finished



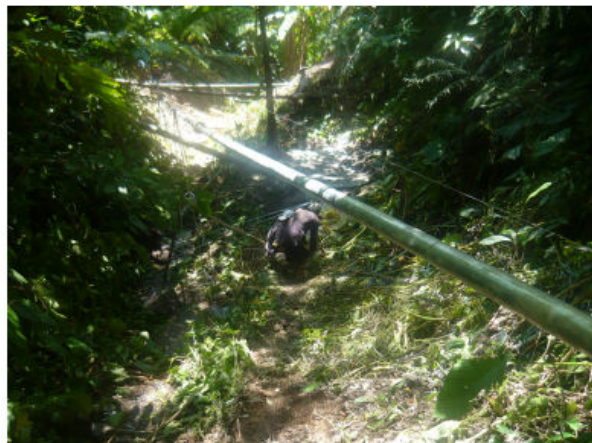
Installation of ram pump



Ram pump with catchment



Local Technician with ram pump



Drive pipe of second ram pump



Transport of hose for delivery to reservoir



Pipe laying



Water pumped up by the first ram pump used for construction of 10.000 liter reservoir.

Unfortunately, the camera battery died after this last picture!