

BIOSAND CLEAN WATER FILTER PROJECT - STERLING HEIGHTS ROTARY

Much of the Dominican Republic (DR) does not have potable water and the BioSand clean water filter project will provide clean water to a number of villages currently using drinking water contaminated with bacteria, viruses, helminthes (worms) and various parasites. It will allow people to remain healthier and will save them the costs of medicines, doctor visits and bottled water. This can be very significant since the daily wage can be as low as \$1.00 making the cost of bottled water prohibitive.

During 2005-2006, Sterling Heights Rotary (along with funding help from several other clubs) executed a pilot project to install BioSand clean water filters in small villages near Bona. As a result of the success of this project, Sterling Heights Rotary Club has applied for and received approval for a \$20,200 Matching Grant (#61471) from The Rotary Foundation. This grant will provide 300 BioSand filters to several communities at a cost of about \$50 per filter. The filters are manufactured in the Dominican Republic by specially trained and certified technicians who also install them. This creates some small local businesses and provides work to some entrepreneurs who have undergone the training. In addition there is a cost to transport the filters and costs associated with training Community Facilitators (CFs) who reside in the receiving villages. These CFs will train people in the proper use of the filters, check periodically to see that they are being used correctly and answer questions as they arise.

BioSand filters are basically concrete containers about 3 ½ feet high and about 1 foot square. Each is filled with specific depths of gravel, coarse sand and fine sand and topped by a diffuser plate to avoid disturbing the biological layer when water is poured into it. Water remains throughout the filter and slightly above the top of the sand at all times. A biological layer forms within a few days/weeks and consumes other pathogens. It also physically traps pathogens and competes for food with pathogens thereby killing them. This is an improvement on the standard slow sand filter because water can be put into it intermittently rather than constantly and thus it is useful for households where water will not flow through it constantly. It filters water at a rate of about 1 liter per minute.



Since there are no moving parts to break or wear out, the filter is expected to last many years (perhaps 50 years) with only minimal upkeep which consists of periodically stirring the top layer and possibly replacing a small amount of the sand at the top if it becomes clogged with debris and slows the filtration rate.

Training in use of a BioSand filter is essential since such activities as collecting the filtered water in the same bucket that was used to bring contaminated water to the filter will result in re-contaminated water. Users need to understand how to use the filters correctly and why they WANT to use them. We encourage using filtered water for all

ingestion as well as bathing, especially bathing babies and young children as some parasites burrow through skin.

Last year we did a pilot project (briefly referred to above) of \$10,000 that is in the process of installing about 160 BioSand filters in 8 rural villages. Some communities have chosen to have filters shared by 2 or more families so that more people can benefit from the clean water. Joyce & John Joyce traveled to Bonao, Dominican Republic to observe some of the filters in operation and to talk to two of the CFs. One of the filters they observed was in a school classroom and served the entire class during school days. They will be making another trip to the DR to check on the project. The trips are at their own expense.