

# Household Water Treatment and Safe Storage Implementation Case Study: Biosand Filters

## HECHOS 2:8, IXCAN, GUATEMALA

### Introduction

Hechos 2:8 is a non-profit missionary organization which works in the Ixcan area of Guatemala.

Their model relies on building relationships with the communities where they work to enable them to develop projects together. As part of their work, Hechos 2:8 has developed a biosand filter project which enables them to work with local communities to deliver sustainable water services.

Hechos 2:8 began their biosand filter project in 2008 with a small pilot project. Since then they have quickly expanded. As of June 2012, they have installed biosand filters in more than 2000 homes across 40 communities.

Hechos 2:8 has an ambitious goal of reaching all 183 communities in the region – a total of 10,000 family homes.

### Creating Demand

Demand creation for Hechos 2:8's projects has been very organic - they have had to do very little to ensure constant demand for their projects. Their projects have become widely known and respected throughout the local area just from people talking to each other. Because Hechos 2:8 implements high quality projects and focuses on building relationships with the communities, word spreads quickly from community to community.

In addition, to begin a project in a community, Hechos 2:8 requires a minimum number of committed participants from within that community. They also require a formal invitation from the community. This further helps create demand within communities, as community members discuss and promote the project internally.

Demand is also created through connection to the local health authorities in the region. Hechos 2:8 has trained local health promoters to be the

key support to users once filters are installed. They provide monitoring on behalf of the project. The health promoters' knowledge of Hechos 2:8 and of biosand filters allows them to share project successes with other communities, building further demand in the area.

Their approach has been so successful that Hechos 2:8 had to close their waiting list due to too much demand.



A formal invitation letter from a village (2010)

### Supplying Products and Services

The work of Hechos 2:8 is focused on development and relationships. Hechos 2:8 do not see themselves as provider of products and services but as a partner to the community.

The contribution or role of Hechos 2:8 is mainly to provide services to the community, including:

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- Assistance in planning the project
- Education for filter users
- Supervision of the construction and installation of filters
- Loaning molds for construction of filters
- Training for the local health authority workers responsible for providing follow up and monitoring

The contribution or role of the community is mainly to supply materials, labour and transport.

Once a project is started with a community, the project usually follows these steps:

- A technician is allocated to the community
- The technician meets with the local health promoter and local leaders
- The community holds an initial community meeting to discuss the key steps in the project and different responsibilities
- The community plans the project with the support of the technician. This includes:
  - Transport the molds from the previous community
  - Collect the construction materials
  - Prepare the construction site
  - Organize the construction schedule
- The technician gives an initial training workshop about filter use and maintenance
- Filters are constructed by the community with supervision by the technician
- Filters are transported to homes by community members
- Filters are installed by the technicians and educational materials are given to users

The concrete filters are fabricated by the community using cement, sand and gravel that they have gotten locally. Each family dedicates 1.5 days of labor to build filters and prepare the

filtration sand and gravel. The whole process is overseen by the Hechos 2:8 technician, who ensures that the filters are constructed with good quality. The technician also repeats messages from the workshop related to filter use and maintenance while the community is working together to make the filters.

The community transports all filters to users' homes. Then the technicians complete all the filter installations themselves (placing the filtration sand and gravel). Having trained technicians install all the filters ensures that filters are installed correctly, which is critical for the best possible water treatment. This also allows the technicians to record key parameters at installation, such as the filter flow rate, which is important for monitoring and quality control.



A community education session in a village (2010)

User education for the project is kept very simple and focuses only on the need for the filter, correct use and correct maintenance. By keeping the education simple they are able to ensure that key knowledge and skills are heard, understood and then put into practice.

## Monitoring and Improvement

Hechos 2:8 makes use of existing local health staff already working on behalf of the local health authority for the majority of their follow up and monitoring. Since they are present in the communities and maintain regular contact they are available to pass use feedback and concerns to the project.

Hechos 2:8 train the promoters prior to the start of the project so that they are aware of the biosand filters and how the projects work. The health promoters are then encouraged to participate during all steps of project

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implementation so they are fully capable of providing follow up to their local communities. While initially successful due to support from the local health authority, with time it has become difficult for the health promoters to maintain this role while also carrying out their many other roles.

In addition to the monitoring carried out by the promoters, Hechos 2:8 staff make a monitoring visit to each community 6 months after the filters are installed to ensure everything is running smoothly and that filter users are happy with the filters. The technicians also make many informal visits as they travel through the region and respond to the needs of individual users.

Hechos 2:8 has also worked together with a research initiative from the University of Cincinnati to evaluate the project more deeply, and allow Hechos 2:8 to better understand their strengths and weaknesses. Through this analysis, they can make improvements to their program.

## Building Human Capacity

The Hechos 2:8 project builds capacity at four levels:

- The capacity of individual users
- The capacity of communities
- The capacity of project staff
- The capacity of local government and other local organizations

The capacity building of the individual is focused on their ability to understand the need for the filter and their ability to use and maintain it. By maintaining a clear and concise focus and by building strong personal relationships with users, Hechos 2:8 have been very successful in building these capacities.

At the community level, Hechos 2:8's insistence that the project is a community one and that the community has to organize and contribute has had a significant effect on the communities' capacity. Through the project they realise that they are very capable of carrying out such projects. Communities come away feeling that Hechos 2:8 helped them realise their community improvements, rather than came and did their own project.

Hechos 2:8 have also heavily invested in the capacity of their two main technicians. They received intense one-on-one training at the beginning of the project, and have attended 3 different CAWST workshops. They were also key participants in the research carried out by the University of Cincinnati. Both technicians also have a very close relationship with the Director of Hechos 2:8 and have a constant support available to them. This investment has both allowed them to carry out their role in a highly effective manner but also to replicate the coaching and mentoring they have received in the community. It has also given Hechos 2:8 the confidence to give them a large level of autonomy, a key aspect of their success in the communities where they work.

At the local government and local organizations level, Hechos 2:8 builds the knowledge and skills of the community health promoters to advise and monitor on WASH issues. Hechos 2:8 shares their learning and experience with other organizations.

## Program Financing

The vast majority of the costs involved in completing Hechos 2:8's biosand filter project are covered by what they call "exchange" – contributions from the community in return for the expertise on the project.

Hechos 2:8 believes their work is about relationships and development, and that money changes the dynamic. Although Hechos 2:8 provides the molds and some specialty items such as plastic tubing, they do not ask for any financial compensation for these items. They also do not ask users to pay any money to receive a filter. However, users must contribute materials and labour to receive a filter.

Since the communities they work with provide the majority of the materials and labour required to carry out the biosand filter program, Hechos 2:8 has to raise very little money in order to keep it running. The funding that they need to find to cover the salaries of their technicians and repair/replacement of tools and molds comes through their parent organization, Mission Impact. Mission Impact raises money for the project through various connections with churches, civic clubs and individuals based in North America.

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## References

Personal communications with Gerber Perez  
and Dan Divelbiss, June 2010 to June 2012

## Further Information

[www.missionimpact.com/Site\\_Hechos.html](http://www.missionimpact.com/Site_Hechos.html)

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CAWST, Centre for Affordable Water and Sanitation Technology  
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