Instituto Privado de Investigación sobre Cambio Climático

Drinking water for rural communities and schools based on rainwater storage. A contribution from the technological park of Santa Lucia Cotzumalguapa, Escuintla.

ABSTRACT

Water is essential for life, it must be provided in quality and quantity to guarantee the health and the development of human beings. Providing drinking water is a big challenge for development, particularly in countries like Guatemala, where institutions are weak, political will is limited, and financial resources are scarce. Executing piped water/drinking water projects in the traditional way is costly; hence, there is a need to innovate in order to provide clean water to people.

When looking for alternatives and ways to take advantage of the natural resources, the project "Drinking water for rural communities and schools based upon rainwater storage systems. A contribution from the technological park of Santa Lucía Cotzumalguapa, Escuintla" was proposed. In theory, the *municipio* of Santa Lucía Cotzumalguapa has enough water availability to satisfy the demand of the population in town (Mena, 2014). The big challenges are at the community level, where the main water sources are limited, and do not satisfy population's demand neither in quality nor quantity.

This report is the result of the work carried out between March 2015 and April 2016, in Santa Lucía Cotzumalguapa, Escuintla; specifically in 10 prioritized communities. This project was supported by the Municipality of Santa Lucía Cotzumalguapa and the Del Valle University, through the ENACTUS Group in their southern campus.

At the local level, this project was coordinated with the COCODES' (local development committees) representatives, water committees, community leaders, women groups, among others. The largest number of participants in those communities was women, who expressed to be the most affected by water issues, since they are the ones who depend on it to perform daily activities in their homes guaranteeing the water resources of the family. Therefore, they have a better understanding of water issues and challenges at the community level, identifying the main weaknesses of the water pipe lines. Furthermore, they have empirical knowledge on rainwater usage. This posed an opportunity to transfer knowledge on how to improve rainwater harvesting and use, calculate family's water demand, and determine water supply in terms of rainfall. This way, they can put into practice the knowledge acquired through training sessions that were facilitated in their communities.

With the purpose of obtaining data about the quality of the water that they drink, samples were taken from their water resources. Results indicated that most of the water contamination is of biological origin, in particular through total coliforms and *Escherichia coli*. Results were shown at the community level. Training on basic water treatment was provided. The project finished with two workshops where results and experiences were presented, one at the departmental level and the second at the national level.

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Disclaimer: This abstract is a translation of its Spanish counterpart *"Agua potable para comunidades rurales y escuelas basada en el almacenamiento del agua de lluvia. Un aporte del parque tecnológico de Santa Lucía Cotzumalguapa, Escuintla."* published on the official website of the ICC. To view the original document, please visit http://icc.org.gt/wp-content/uploads/2017/04/MULTI-02_2015_ICC.pdf