

Water storing methods

Abstract:

Although Guatemala can be considered a country rich in water resources, it has been under the limitation that it is not distributed in space and time uniformly. A dry season without rains can be identified in most of the country, while a rainy season normally satisfies the consumption requirements, but also generates excessive water that gets lost as it runs off, and sometimes generates floods. Also, the rainy season has a dry period known as the heat wave that, sometimes, gets extended affecting agriculture causing loss of crops due to the temporary water deficit. Rain's distribution is very different all across the country since there are regions that register 800 mm of rain distributed in 75 days while other regions report up to 4,000 mm distributed in 275 days.

Besides the problems of distribution, other factors such as superficial and groundwater pollution, fast paced population growth, and high urbanization rates, push over water resources, mainly in Guatemala City (IARNA, 2004).

Growth in risk areas is a key factor in the increase of water demands, and to make it a sustainable activity it is necessary to consider water resources management.

We are currently facing the effects of climate change, which means an increase in water demands, and extreme variations in water availability, key factor that directly affects life and productive activities, thus it is considered a serious challenge for the development of the country.

According to Adler (2006), the mismatch between availability and water abundance is fixed by storing it while in abundance seasons, for to be used in major seasons. Gale (2005) says that the proper management of aquifers has the potential to supply small communities in dry and half dry areas, as well as to reduce the vulnerability to extreme weather events.

In this context, the Private Institute for Climate Change Research (ICC) has proposed to focus resources on researching water harvesting and storing systems to study and implement options that contribute to Guatemalan people to adapt to climate change. This document is presented as the starting point of this initiative, where the water storing methods that have been applied in the world are reviewed to become familiar with its characteristics and to work as the baseline for proposing applications in the geographical area of the ICC.

Disclaimer: This abstract is a translation of its Spanish counterpart "*Métodos de Almacenamiento del Agua*" published on the official website of the ICC. To view the original document, please visit <http://icc.org.gt/wp-content/uploads/2016/10/Chan-M-M%C3%A9todos-de-almacenamiento-de-agua-versi%C3%B3n-final.pdf>
