

## Efficient Burner for Temazcal, Guatemala



**BACKGROUND** The word temazcal means house of heat. It is a sweat lodge used for bathing, located within a small building approximately 0.8 meters wide by 1.3 meter high. It uses an open fire to heat water and create steam. Currently the temazcales have no escape for the smoke that the fire generates, making the preparation and bathing difficult, delayed and really harmful to health. This means a lot of money invested in one single bath, 10 to 15 logs are used (\$2 per bath per person) and 45 minutes to 1 hour just preparing everything. In Santa Catarina Palopó (SCP), Sololá, Guatemala; fuelwood demand is greater than supply so the surrounding forest is disappearing. The geography of the village makes everything even more complicated because it is located in a mountain and the irregular ground does not allow adequate roads for cars and motorcycles to drive and deliver firewood. The team responsible for energy during IDDS Sustainable Homes created an efficient temazcal which can be installed in existing buildings, it reduces by 70% the amount of firewood used and it is made with local materials. It can be attached to any regular pipe to make smoke a way out of the little building without sacrificing its functionality.

**CHALLENGE** Many people from Santa Catarina Palopó believe that with more fire and smoke, greater the purification and better the bath. The introduction of a new device that increases the quality of their lives, is environmentally friendly, low cost and reduces preparation time, has to be done very carefully so people do not think that they are trying to change their traditions, because they are faithful to them. The system should be as small as possible, adaptable to several types of buildings, because these do not follow a standard in the village.

**REQUEST** LINK 4 and UVG want to scale this project to the entire village because temazcales are typically used 2-3 times a week, sometimes more. In average, five persons live in at a house, this means approximately \$30 a week just in firewood. This can be reduced to \$7 with the right technology. The system needs different modifications that involve several areas of study, such as design, thermodynamics, materials science and environmental studies. The goal is to reduce as much as possible firewood use, adjust temperature inside the temazcal, reduce smoke generation and use as little space as possible. It is necessary to validate the system to be able to replicate it in the majority of houses that still use temazcal.

**Partner Organization/Contacts:** Universidad Del Valle De Guatemala

**Country/Community/Location:** Santa Catarina Palopó (SCP), Sololá, Guatemala