



With support from Rick Steves, PCI is currently implementing the “Carbon Capture” initiative, which consists of distributing a firewood-saving stove and promoting reforestation activities with rural families in Guatemala.

In order to understand the initial status of participating families, PCI conducted a baseline study, which included the use of CommCare software to survey 308 households in the village of Pajuil País and the cantons of Pajuil País I and II in the municipality of Aguacatán, Huehuetenango¹. The survey collected data on the socio-economic status of targeted families, based on the following criteria: number of vulnerable members (children, minors, women and the elderly) in the household; presence of kitchens with open stoves; lack of safe water for human consumption; and homes lacking latrines.

Field data collection was conducted from February 12 through February 18, 2020, and included a survey of all 308 households in the target area, with 1,654 people overall.

Among the main survey findings were the following: 44% of households use stoves with insulated burners (conventional structures); ²38% use open stoves or 3-stone stoves; and 18% use firewood-saving stoves.



Photo 1. Use of open stove for cooking in Aldea Pajuil País, Aguacatán Municipality.

¹ CommCare is an open source mobile app that allows for data collection and sharing of multimedia content using smartphones and Java-compatible mobile devices. Data is transferred to a cloud database, allowing supervisors or researchers to monitor staff progress in near real-time.

² Insulated, conventional structure stoves are handcrafted by the household members themselves using local materials, and they consume more firewood.



Photo 2. Quantifying firewood loads consumed at home in Pajuil País village, Aguacatán Municipality.

When asked where in the house the fire is prepared, 87% indicated having a space in the house dedicated only for cooking, 12% cook in the same environment where they sleep and 1% cook in other places such as: dining room, backyard or corridor and in an area of the house used as a kitchen.

Firewood consumption in the household depends on the number of household members, the time the stove remains lit during the day, and the different uses of fire. On average, households consume 18 "tareas" (loads) of firewood per year whose dimensions are around 2.52 meters in length (3 varas) by 0.84 meters in height (1 vara) and an average 0.42 meters wide, which is equivalent to 16.02 cubic meters/year.

With the identified dimensions of firewood consumption, a family would need to use an average of 28 trees/year to supply their energy needs, which would mean that each home deforests around 252 m² of forest from areas adjacent to the community.

With regards to latrines, 65% (200) of households have a latrine, while 35% (108) do not. 100% of households that have a latrine said they are using it, with mainly younger children (88%) being those who use it the most. Through direct observation, surveyors identified that latrines in 42% (83) of households showed inadequate hygiene conditions, while 58% (117) showed adequate conditions.

Regarding the type of materials used for the structure of the latrine, in 84% of the homes surveyed the latrines were covered by a shed made of boards/wood and a tin roof, and the remaining 15% used less durable materials such as pieces of tin sheets, nylon, wattle and daub, sacks or not covered at all.

Most households (65%) obtain water by harvesting rain and use boiling as their preferred water disinfection method. Water is mostly stored in plastic containers or clay jars (52%).

With the start of the rainy season, PCI began implementing a reforestation process involving ten thousand trees including pine and cypress, achieving the reforestation of a combined area of 10 hectares of land. Juana Pastor, a program participant, said: *"I am grateful for this opportunity to plant trees. We have a habit of removing trees and not planting new ones; now we will make sure to be more protective of our resources."*



Photo 3. Existing latrines in the Pajuil País Village, Aguacatán Municipality.

Photos show the reforestation process in Pajuil País Village, Aguacatán Municipality.

