

Health, Wealth and the Environment

Health

An occasional cookout is not going to have serious impact on our lungs, but people who cook every meal, every day on a fire, either fueled by firewood or by charcoal, suffer higher rates of lung disease, like a cigarette smoker would. And usually it is a mother who is cooking with her children nearby, so the children are also inhaling the smoke.

Another threat to health for people cooking over a fire is the danger of burns. Most will have some minor scars and their hands and forearms from embers that popped up. In the worst case, the fire can get out of control and burn the house down, causing devastation.



Imagine having to make the difficult choice between using limited funds to purchase more cooking fuel in order to be able to pasteurize the water that your family will drink or to purchase some more food, because everyone in the family is undernourished.



When the sun is shining, these terrible situations can be avoided by cooking with a solar oven! There are zero emissions (other than the delicious smells as the food cooks) from a solar oven. The only part of a solar oven that can cause a burn is the inside. The reflectors shining brilliantly in the sun look like they would be hot, but they are not absorbing heat, they are reflecting it into the oven! So, our cooks receive pot holders to use when opening the oven and reaching inside. Finally, sunlight is available at no charge, so using more of it to pasteurize the family's drinking water does not take funds away from the food budget.

Wealth

Cooking fuel-whether gas or charcoal-is a significant expense for many people in Third World countries and on the reservations of the US. Charcoal for a low-wage worker in the Dominican Republic can come to 20-30% of wages. For the Navajo, those who have a functioning stove face multiple barriers to obtain the propane to fuel it. The first challenge is having enough money to pay for the fuel. In the event they have the money to buy the fuel, the next barrier is transportation. Homes are spread out over a large area. Gas is not piped into homes. They must go to town to fill their tank. The cost of travel to town will add significantly

to the cost of the propane. Many do not have vehicles of their own and have to depend on a friend or relative for transportation. If a ride is not available when the fuel runs out, they'll have to get by without propane until they can get a ride. Solar cooking does not entirely replace other cooking fuel, but it can drastically reduce the need for it. The savings realized by being able to cook with the free energy of the sun is money that can be re-directed to other necessities such as more food, school fees, etc...

In addition to the savings realized by not having to purchase so much fuel, some have used the solar ovens to supplement their income. Some have taken to baking breads and cakes to sell. A caterer said he gets a lot of requests to cater to gatherings in the country, where he previously had to use charcoal. With the solar oven, he can increase his profit margin for those contracts!

Beans are usually sold dried and most neighborhoods have a lady who softens them and sells them by the ladle-full. When that lady doesn't have to pay for fuel to soften the beans, she, too, increases her profit margin.



The Environment

The smoke produced by cooking fires is only the beginning and the most visible harm to the environment caused by cooking fires. The more extensive damage is caused by deforestation in pursuit of cooking fuel.

Trees play an extensive role in the well-being of their eco-systems. They absorb carbon-dioxide and emit the oxygen that humans and animals require to live. They also provide homes for many animals.

But let us not forget about their role in the soil. The tree's roots hold the soil in place. Humans must cook much of their food. When large populations are forced to cut down trees to do so, the soil is compromised. As more and more trees are cut down, the soil is exposed to the erosive

forces of wind and rain. The soil, and all of the nutrients that is held, are blown or washed away, leaving depleted soil, in which humans will have trouble growing any food.

When heavy rains come, without a forest to hold the soil in place, the likelihood of devastating mudslide increases. Mudslides occur suddenly, burying homes with the people inside of them. They take lives and destroy assets and economic production.

If deforestation becomes very extensive, it can lead to desertification. Extensive area of extremely depleted soil harden into a "deadpan". Without plants absorbing water and transpiring it back into the atmosphere, rainfall can even decrease.

Socially, when lands are desertified, populations can no longer make a living farming them. People from the US can think of the dustbowl era and the migration caused by that experience of desertification. And, just as the “Oakies” did not have the resources to live anywhere other than the “Hooverville” squatter camps, many migrants forced from their homes by desertification wind up in urban slums, with all of the economic, social and health problems this implies.



Necessity pushed the residents to deforest part of this land on the Dominican-Haitian border where SOP distributed ovens in July, 2017

So, prevention of deforestation has far-reaching benefits. Rather than sending food donations to people who can no longer produce their own due to depleted soil, isn't it better to prevent the soil depletion? Rather than sending search and rescue teams, medical responders and construction teams to respond after the devastation of a mudslide, isn't it better to protect the integrity of the ecosystem and prevent the tragedy of the mudslide in the first place? Rather than send missionaries to address the educational, health and employment inequalities, the crime and hopelessness and the anger and frustration in the slums, isn't it better to prevent the desertification that forces people to migrate in the first place? Solar ovens make a contribution to preventing the tragic consequences of deforestation.

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Miguel's Story: A Charcoal Tragedy

By Marj Evans-de-Carpio, SOP Director

In 1996 my husband arrived at our home in the Dominican Republic and told me that he needed me to know about a decision he had made and trusted that I would support it in spite of the criticism it was generating around town. He gave a job in his to an ex-con named Miguel.

Miguel had come out of jail for stealing. He stole lots of things, but got caught stealing a motorcycle. Since his release about 2 years prior, nobody wanted him around—except

his former partners in crime and his sister, who was, herself, in desperate poverty. But he had decided to turn his life around and no longer commit crimes.

With time, we came to know and love him. When he was losing his housing, we decided to offer him an additional job as live-in household help. He accepted, but when the month was up and I approached him with his pay, he looked at me sadly and begged me NOT to pay him. He said that we were the family he had always longed to have, and what he wanted was to be part of the

family, not an employee . We agreed. He and I introduced each other as brother and sister with straight faces, and no explanation, to confused people who could not come up with any genetic combination that would explain someone who looked like me and someone who looked like Miguel being siblings. We left them with their confusion and moved on.

With time, we learned more and more of his background. He was the oldest of several children and when he was 5, instead of going to school, he was taken by his father into the

woods to make charcoal. They would stay in the woods for weeks at a time, cutting trees and burning the wood under a layer of sand in order to make it burn slowly, not be consumed and turn into charcoal. After weeks of production, they would go to town to visit his mom and siblings and sell what they had produced. This is where he got the name Miguel. His given name was Pablo. But he had no clothing. He was deeply ashamed to go to town naked, but a relatively well-off child named Miguel would let him wear his clothes. So, when Pablo walked around town dressed in Miguel's clothing, people started calling him Miguel, and it stuck with him into adulthood!



He would return to the woods with his dad after a few days in town. At age 5, he cooked the meals for himself and his dad on a charcoal fire. He tended to the buried, smoldering charcoal-making fire. And when he didn't, he would be beaten, and made to kneel in the hot sun on a vegetable grater with arms outstretched, a rock in each hand.

In mid-childhood, his mom died. His dad spiraled into alcoholism, which led to his death when Miguel was in his early teens. With no parents and no education (the only thing he knew how to write was his first name, "Pablo"), he eventually became dependent on crime for survival.

As I was learning Miguel's story, I told him he should write a book. He said he thought the same thing, but—and this is when he told me—he didn't know how to write. That's when he began intentionally and systematically telling me his story, because we agreed it should be shared, and I can write!

Tragically, before we finished the process, Miguel was killed by someone who was wrongly afraid of him. I am telling his story here because the tragic parts of his life trajectory were largely defined by the charcoal business in which his dad involved him. Charcoal-making produces poverty-level income and sometimes uses child labor. It is not worth it!