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Guatemala, Factor 9-Water and Sanitation

Water and Sanitation in Guatemala

Worldwide, 783 Million people do not have access to clean water, their water sources are far away, unclean and unaffordable. (Bruce, Web) When people don't have access to clean water, their nutrition also suffers greatly. In Guatemala, clean water resources are scarce in rural and mountainous areas. This lack of clean water results in constant disease due to parasites and diarrhea and poverty. Guatemala's urban and rural populations differ dramatically. Although there is some poverty and disease in the cities, rural populations, which also happen to be mostly native Mayan, are plagued by lack of employment, food, and clean water. There are no government sponsored social programs to assist the Guatemalan people. If you don't have employment, you are poor and uneducated, if you don't have access to food you go hungry, if you don't have access to clean water, you get illnesses, and there are no safety nets in place. The government is weak in the areas of helping the people in economic ways.

1. Living in Guatemala

Guatemala is a Central American country that is slightly smaller than the state of Tennessee, yet it is home to 14.3 million people (CIA, Web). By comparison, Tennessee is home to 6.4 million residents. (Iowa, Web) residents and Iowa, which is one third larger in size than Guatemala, is only home to just over 3 million residents. Guatemalans struggle with infant, child and maternal mortality, and malnutrition as well as access to education, health care and contraception (CIA, Web). Guatemala has the largest population in Central America, and also has the largest population growth rate. Nearly half of the population of Guatemala is under the age of 19 (CIA, Web). Rural and Urban living are starkly different. Urban Guatemalans have access to jobs, food, clean water, sanitation, and housing. In contrast, Guatemalans living in rural/mountainous areas must travel long distances for work, have little access to quality food and very few have access to clean water. Distribution of wealth is highly unequal, with the richest 20% of Guatemalans consuming 51% of resources (CIA, Web). Overall, more than half of the population is below the national poverty line and 13% live in extreme poverty (CIA, Web). Indigenous (Mayan) people, who make up about 40% of the population, fare far worse. Poverty rates jump to 73% and extreme poverty rises to 28% (CIA, Web).

Their main source of income in Guatemala is their agricultural sector. It accounts for 26% of the GDP. It provides jobs for over 50% of the population. There are an estimated 550,000 micro farms that exist in the country today. Most small farms are concentrated in the highlands where the population is Mayan, and in the Eastern part of the country. Most of the crops produced are food crops, mostly kept and consumed by the family or selling and trading for goods that are needed. When they are not trading and growing the food that they eat, they go without. Guatemala is now the third largest sugar producer in Latin America, and three quarters of production is exported. Mills are controlled by elite landowning families, who together account for 77% of the country's sugar milling. In contrast, coffee is mostly grown by Mayan small farm landholders. However, in recent years the market price has been less than the cost of production. As a result they have switched to the non-traditional crops including snow peas, broccoli, cauliflower and melons. The other major agricultural products that Guatemala produces are chicken, beef, pork, coffee, wheat, corn, sugar, cotton, cacao, vegetables, and fruits.

2. Guatemalan Families

Families in Guatemala tend to be large. Guatemala has the highest fertility rate in Latin America. Almost half of the population is under the age of 19, also making it the youngest population in Latin America. It is not uncommon for a family to have 10 or more children, especially among the native (Mayan) population (CIA, Web). Rural families live in small homes that are typically made of concrete, stucco, or metal. The dependency ratio in Guatemala stands at 81.8% (CIA, Web) because of the very large population of children being under 19 they are very dependent on the adults to work. Many times, teens are forced to quit school in order to seek employment and help support their families.

3. Current water Supply

In urban areas of Guatemala there are municipal water supplies and most homes have indoor-plumbing and running water. In rural areas the water situation is much different. In the best cases, there are a few traditional water wells. Some homes have elevated cisterns or water tanks that fill during the rainy season and can be used year round. But in most cases Rural Guatemalans go to extreme measures, like just digging an open pit well in the ground and getting rainwater/runoff to drink. These hand-dug wells are generally only 8-10 feet deep and are open making them accessible for anything to fall into them, including small children and animals. Besides the lack of a clean water source, most rural Guatemalans face problems with sanitation, with no indoor plumbing they will just go outside to relieve themselves. Then when it rains again their waste is washed into their makeshift wells, which is very unhealthy. Even if there is a stream and or body of water near by that is not much better than the makeshift wells because the Guatemalans bathe and wash their clothes in the water, and streams are also used to water domesticated animals. The other factor to unhealthy water is that the water that they drink is filled with various parasites. 91% of all the people in Guatemala have some sort of intestinal parasite (Watkins). Parasites steal what little nutrition is available, further compounding their food insecurity.

4. Clean water needed in Guatemala

When introducing clean water to a country that desperately needs it you would be fixing a lot of factors that would overall contribute to saving the country. It would increase the quality of life by a significant percentage. By providing clean water there would be a dramatic decrease in the number of illnesses due to parasites and other bacterial diseases. It would diminish the underlying issue of malnutrition because if there were no parasite living in the intestines to take all the nutrition then everyone would start to get the nutrition that they are putting into their bodies. With the introduction of clean water you would also cancel out a tough choice that families would have to make. They would have to choose between paying for clean water in town or paying for the parasite medicine.

5. Sanitation

Sanitation is arguably a bigger problem than clean water. Sanitation are the facilities that are needed to dispose of human waste. Most developed countries have the luxury of a flushing toilet. When talking about under developed countries however there need of the simple aspect of a toilet not just a deep hole in the ground. When there are 2.5 billion people worldwide without some source of toilet or latrine, over one third of the worlds population, lacks access to a sanitary facility. Sanitation is also one of the worlds leading causes of disease and child death. (Bruce, Web) When there is the inevitable need for clean water, the disease ridden water made dirty because off the lack of proper facilities. The most common disease caused by poor sanitation is diarrhea. In developed countries, diarrhea is a little more that a nuisance, but for millions of children in the developing countries, it is a death sentence. (Bruce, Web)

6. Benefits of Sanitation

Improved sanitation in developing countries typically yields about USD \$9 worth of economic benefit for every USD \$1 spent, an impressive ratio. The benefits include saving time, reducing direct and indirect health costs, increasing the return on investments in education, and safeguarding water resources. The first element, saving time, should not be underestimated in its contribution to economic benefits in the developing world. People without toilets at home spend a great deal of time each day queuing for public toilets or looking for secluded places to defecate. The World Health Organization estimates this time has an economic value of well over USD 100 billion each year. Moreover, girl's attendance in schools accelerates when it improves sanitation system. So addressing sanitation does not only bring about valuable health benefits, it frees up individuals' time so they can do more productive things, like earning income, than searching for a quiet spot to relieve themselves. (Bruce, Web)

7. Solutions

There are a lot of solutions that are very plausible, but frankly out of reach. By law, sanitation now falls under the jurisdiction of the local government but most rural governments don't have anyone appointed and educated in this particular field. Let alone the lack of funds to construct the basic sanitary toilets. The mind set is that these items are not essential and not made high enough priority for people to spend the time and money on. (Fasco, Web) When getting the people that are living in these bad conditions involved they get experience and sustainability. To get organizations that would help address the issues like The Hunger Project (THP) this type of organization works to empower rural communities to ensure increased access to clean water and improved sanitation, the development of new water resources, and the implementation of water conservation techniques. Placement of community wells could be one solution. Although families would have to haul water for short distances to their homes from a community pump, it would be clean water that would be disease free and uncontaminated by waste. One of their main points of help would be the sustainability of the water implements They would essentially providing equipment and training for testing and pumping water; empowering communities to build and repair latrines in homes, schools and public spaces; and lobbying local governments to devote public resources to water infrastructure projects. They would essentially come in and help with construction of project in the mobilizing communities to initiate drip irrigation projects, which minimize the use of water and fertilizer by allowing water to drip slowly to the roots of plants, and to develop water catchment systems, which collect rainwater from a roof or other surface before it reaches the ground and store it for future use. (Ki-Moon, Web) There are also national NP organizations that would come in and educate the communities on the importance of clean water and functioning sanitation units. Education and prevention is one of the most important factors in prevention a relapse in the same thing that you were trying to help with in the first place.

8.Solutions: Rainwater Harvesting

A rainwater harvesting system consists of three basic elements: a collection area, a conveyance system, and storage facilities. The collection in most cases would be a rooftop. Rainwater harvesting would be a good solution in this area because it is relatively easy and inexpensive. It would essentially be used as the supplement for a main water supply. It would be an excellent way to reduce the run-off of waste in there makeshift wells because it would raise the water out of the ground into a barrel that would be easily built. The quality of collected water is better than that of the previously used surface water. Contamination is always possible by airborne dust and mites, bird feces and other debris, so some treatment may be necessary, depending on how the water will be used. They system setup would require minimal skill. The system should be looked at as to size in accordance to the size of the family and or community that would be using it. It would obviously have to be big enough to hold enough water to sustain a daily-required amount. The water storage barrel should be big enough to contain all of the water collected.

It would be relatively easy to construct one of these collectors in the mountains because of the amount of rain that falls in the area. They could use clay to hand build a large barrel to catch rainwater and use it

sustainably and collectively. They could early connect some sort of makeshift pipe to the roof and get all of the water that would be available. Some disadvantages of this plan would be that it does require a lot of rainfall and if say there was a drought there wouldn't be enough sustainable water to support the family. Low storage composite in the buckets or barrels would limit the intake of water. Leakage from the barrels can cause depreciation of load bearing slopes.

Water and sanitation are just as important as the food and nutrition aspect of health. Without clean water and sanitation there is great risk of malnutrition and bacterial diseases. In getting outside help from organizations and other countries there is hope for small countries with no other source of water and other means to live by. By making safe drinking water you would benefit the people in many ways, their health would greatly improve, they would have substantial economic gains and the women in their country would gain in educational ways as well as occupational ways. There would also be improvement in the quality of life and the overall age expectancy of all Guatemalan people. With clean water communities can prosper. With access to clean water a population improves, farmers can better cultivate their land, children can attend school, and the cultural sensitivity of hygiene and sensitivity would help in disease prevention and enhances the benefit of having portable water supplies.

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