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Cambodia, Water Scarcity, Lack of Clean Water, and Sanitation Issues

Creating Healthy Environments: Ideas for Improving Water and Sanitation in Rural Cambodia

Introduction

Water is a big part of life. Without water there would be no life on this earth. According to Water.org, Cambodia's Water and Sanitation Crisis is impacting millions of people within the country. "It is estimated that more than 2 million people in Cambodia lack access to safe water and over 6 million people lack access to improved sanitation. With approximately 77% of Cambodians living in rural areas, poor access to safe water and sanitation disproportionately affects its rural communities." It is the goal of this paper to examine the challenges and impact of poor water and sanitation, and present solutions that will positively improve the health of all Cambodians but especially the health of their children and future generations.

Background Information

Geography and Natural Resources

Cambodia is located in Southeast Asia, with plains, mountains, and rivers throughout the country. The country is bordered by Thailand, Laos, and Vietnam (on the Southeast). Tourists often travel to locations such as Sihanoukville which is on the coast. Cambodia is sharply divided between the rural and urban areas, with many poor people living in its rural areas. Fish is sold in urban areas along with corn, tobacco, and tapioca (Country Reports.org, 2022). Cambodia has sugar palm trees, and wooded areas. Rice is grown in the lowlands on 90% of cultivated land; however, agriculture has been impacted by dangerous landmines and lack of equipment and irrigation. "Oil, gas, timber, gemstones, iron, ore, manganese, phosphates, are natural resources, and hydropower generates electricity" (Country Reports.org, 2022).

Climate

Cambodia has an average annual rainfall of between 50 to 75 inches, with the southwestern mountains receiving the most rainfall of over 200 inches per year (Country Reports.org, 2022). The climate has temperatures averaging around 60 degrees in the cooler months and over 100 degrees during the warmer months with 81% humidity. The two seasons are the dry season October through April, and the rainy season is from May to September. Flooding regularly occurs during the rainy season and this makes driving difficult (Country Reports.org, 2022).

Urban/Rural Distinctions

The main language spoken is primarily Khmer with a combination of French and English. The country's time zone is 12 hours ahead of the Eastern Standard Time Zone. Phnom Penh is the capital of Cambodia and is the largest city, which is divided into 4 urban and 3 suburban districts. Housing in Phnom Penh is consisted of large apartments, and French colonized looking houses. Infrastructure has improved in the

capital city, but many basic services are still lacking; for example, modern traffic and pedestrian lights are now on main roads while secondary city roads are unpaved with large potholes and piles of garbage on them. Outside of the capital city, no other cities are nearly as large or as modern to visit. In the northern cities mountains create difficult driving conditions (Country Reports.org, 2022).

Healthcare

Medical facilities and services in Cambodia do not meet international standards (Country Reports.org, 2022). Both Phnom Penh and Siem Reap (the second largest city) have a limited number of internationally run clinics and hospitals that can provide basic medical care and stabilization, but medical care outside these two cities is almost non-existent. In fact, statistics show that there are 0.23% of physicians available per 1,000 people (Country Reports.org, 2022). Street Crime in Cambodia is high and since counterfeit medications are common, officials recommend that tourists bring their own medication. Tourists should also note there are diseases that could be contracted such as Dengue Fever, Encephalitis, and Malaria, and common food and waterborne diseases such as Bacterial diarrhea, Hepatitis A, and typhoid fever (Country Reports.org, 2022). Also, Cambodians often have access to poor sanitation, and limited access to portable water in rural areas (Country Reports.org, 2022).

Family

The total population of Cambodia is almost 17 million. Families often live in combined households with elderly parents living with their children and grandchildren. The average number of children per household is 2.72 children per family. Sadly, it is estimated that 29% of children are underweight in the first five years of their lives which can cause lifelong problems such as stunting, malnutrition, poor brain development, etc. The average life expectancy of Cambodians is 63 with statistics stating that this life expectancy includes females living to age 65 and males living to age 61 (Country Reports.org, 2022). A low birth population growth of 1.67% and a -0.33% migration population indicate that the population of Cambodia has little growth overall (Country Reports.org, 2022). A typical diet consists of soup and rice, with eggs, vegetables, fish, or other seafood being the main ingredients. Cambodians often use chopsticks, spoons, and fingers to eat their food (Country Reports.org, 2022).

Technology

Technological growth is slow as Countryreports.org reports that there are about 70,000 internet users in Cambodia, with 54,000 telephones, and about 2.5 million cell phones within a total population of 17 million people.

Education/Labor Workforce

On average 73.6% of the population is literate, the typical school is 11 years long (from kindergarten to graduation) with females typically attending 10 years of school and males typically attending an average of 12 years (Country Reports.org, 2022) seemingly an indication of males attending 1 year of trade school or advanced education. The Cambodian Labor Force Data shows that the jobs among the workforce are estimated to be divided between 31.5% services, 19% industrial industry, and 48.7% of Cambodians are employed in an agricultural related field (Country Reports.org, 2022). There is a 0.3% unemployment rate. It is surprising to note that in the statistics from the Cambodia's labor department an estimated 39% of Cambodian children (ages 5-14 or about 1,345,269 children) are employed and make up an active part of Cambodia's labor market (Country Reports.org, 2022).

Challenge and Impact

Imagine for a moment that you are an eight-year-old child living in a village in rural Cambodia, a third world country, and each day as you awaken, your main job is to go and find water for your family as your village does not have a well, and the rainy season was late and did not bring as much rain as usual, so your village is facing drought conditions. As you begin walking barefoot down a dusty path trying to find water along with other kids from your village, the heavy jugs and pots are balanced on your head or strapped to your back. As you find water in a stream a few miles from home, you carefully get as much water as possible into the jugs and begin the trek back home walking as carefully as possible so that you do not spill a single precious drop. Your mission was accomplished, but you are unaware that the water you have spent hours carrying likely contains life threatening waterborne bacteria or diseases that could harm your family. Sadly, because there is no other water, your family drinks the dirty, disease filled water anyway. My research uncovered that Unicef.org and other organizations have been working for several years now to help more villages get community wells and alleviate similar stories like this one, but lack of funding, time, and volunteers make progress slow. In addition, UNICEF.org states that particularly in the rural areas of Cambodia, people have very limited understanding of the importance of proper sanitation and hygiene, and often suffer major health issues arise such as stunting, and malnutrition. The combination of drinking unclean water and poor hygiene cause issues such as diarrhea which leads to dehydration and even sometimes death. Children often do not have access to clean water, toilets and hand-washing facilities in their communities and schools (Unicef.Org, 2022).

“One in three Cambodians uses water from a non-improved drinking source, which means they do not hygienically separate human waste from human contact. Seven in ten pre-primary schools do not have access to WASH (Water And Sanitation Hygiene) facilities, and one in two rural healthcare facilities in Cambodia does not have sufficient water all year around” (Unicef.Org, 2022) . It is almost imaginable to think of healthcare facilities struggling to have access to being able to clean their hands before doing surgery, or not being able to wash properly between patients. Can you imagine the frustration of trying to cure patients with medications that are routinely taken by drinking unclean water, possibly resulting in patients re-infecting themselves repeatedly with new bacteria (Unicef.Org, 2022)?

Sanitation Issues

Poor sanitation in Cambodia has also been caused by open defecation in the region, with eight in ten of the poorest rural Cambodians defecating out in fields, in open bodies of water, or other open spaces, rather than using a toilet (Unicef.Org, 2022). This continues to be a dangerous challenge, as human waste near waterways and houses spreads diseases quickly and puts children and their families at risk of contracting many diseases. According to the EPA (USA’s Environmental Protection Agency), the bacteria in human waste, such as E. coli, can infect the water and cause disease. Also, other harmful solids and chemicals in sewage can damage bodies of water that support wildlife, which in turn if wildlife dies, then villagers can experience a reduction in food supplies as they hunt for food sources (Environmental Protection Agency, 2022). In addition, if you recall from earlier Cambodia has rainy seasons from May to September, so especially when it rains the runoff water is contaminated by the feces and creates unhealthy and dangerous living conditions (Country Reports.org, 2022).

Solutions

UNICEF is currently working to solve the problems of poor sanitation, lack of hand washing stations, and unclean water in Cambodia. Their organization has created a program called WASH (Water And Sanitation Hygiene) for underserved communities that struggle with issues such as poverty, or that live in areas that are geographically challenged as they have struggles with droughts or flooding both of which

can dramatically impact proper sanitation and hygiene (Unicef.Org, 2022). UNICEF's program which has a goal to help solve this problem by 2030. Their goal is to teach others that having clean water begins with teaching about proper hygiene. Many families have been living in this manner for generations, and do not understand that this way of life that is normalized for them is truly making them sick, and if they do understand the risks; they are often too poor to change their living situations (Unicef.Org, 2022).

As I have researched this water quality and sanitation crisis, it is my recommendation that community and government leaders, teachers, health care workers, and volunteers work together to find solutions to this crisis. Financial support is needed from banks such as the World Bank, Asian bank or other grants funding must be received and spent on new innovative solutions such as digging new latrines, digging wells, installing pumps at the wells with filters. Non-profit organizations or mission trip workers looking for service opportunities could also be of great use volunteering to dig wells and or help to raise funding at events at home for funds needed for workers to travel and teach children and adults about the importance of handwashing, clean water, and why proper sanitation is important. Advocating by the community leaders is also important to help government leaders understand why it is necessary to fund latrine access in rural communities as they have previously done in urban communities and funding is critical to help solve this crisis (Tribbe J, 2021; 13(10)).

Solving the sanitation crisis is not a simple solution but helping to create clean water in the meantime (to prevent diseases such as E. coli) is more attainable (Samaritans Purse.Org, 2022). One solution that I found was Ceramic filtration programs which utilizes a filter, ceramic pot, and a bucket. The filter is flowerpot shaped, holds about 8-10 liters of water, and sits inside a plastic or ceramic receptacle. To use the ceramic filters, families fill the top receptacle or the ceramic filter itself with water, which flows through the ceramic filter or filters into a storage receptacle (Ceramic Filtration, 2022). According to the CDC (Center for Disease Control), when the water is poured through the ceramic pot it is filtered at a rate of 1 to 3 liters per hour, and this can help provide enough clean water for a family of five for one day. If kept in good shape, the pots can last up to 5 years. There are drawbacks of course such as being able to replace filters and other parts, however; the advantage is that the filters can kill bacteria and prevent diseases, and this is a much more affordable but temporary solution for many families. The pot filters cost between \$7.50-to \$30.00, which is a small cost compared to the health of over 6 million Cambodians (Ceramic Filtration, 2022). Although the pot filters are not considered to be very expensive in dollars but given that the current exchange rate is 4,066 riels to \$1 US dollar (Country Reports.org, 2022), the pot filters are a luxury most families cannot afford. Again, this is an indicator of why funding resources are necessary for this project and others.

Conclusion

Here in America, it is difficult to image life without being able to take a warm shower, turning on my dishwasher, and being able to wash my clothes in a wash machine. I cannot imagine having to walk for miles to reach a water source, and then having to carry that water back home to my family each day. Without intervention by non-profit organizations such as UNICEF, Samaritans Purse, and other non-profit organizations or mission groups that do similar work, the water sources in rural Cambodia will continue to be contaminated, and poor hygiene will continue without clean water. Together with the combined efforts of outside agencies, health care workers, educators, volunteers, government officials, community leaders, and financial supporters progress will be made. It is critical to improve sanitation facilities at home, at school and in the communities, and to be able to provide methods such as the Ceramic Filtrations to rural families seeking safe water. The good news is that the water quality and poor sanitation issues are preventable, but the work of prevention and teaching must begin to eliminate its impacts on future generations.

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