

Katie Bucklin
Ankeny High School
Ankeny, IA
Cambodia, Factor 9

Cambodia: Increasing access to safe drinking water and improving sanitation throughout the country.

It is 2013, the situation of poor sanitation and unsafe drinking water in Cambodia is in drastic need of recovery. Thousands of people have died from the poor living conditions and more are in danger. The country of Cambodia has one of the lowest levels of sanitation in rural areas in the world (Deegan). Many households in Cambodia lack even basic sanitation facilities which are a necessity of everyday life. Many Cambodians aren't aware of good hygiene practices which can lead to a very unsafe environment. The ratio of people that have clean drinking water to those that do not is not acceptable. Only thirty-six percent of the population has access to clean, safe drinking water ("Safe drinking water..."). Cambodians have had to deal with this struggle for a long time. Some have learned to adapt and have found ways to get by. However, a lot of Cambodians have not been that lucky. Only around sixteen percent of rural Cambodians have safe drinking water and sanitation in rural areas is even worse. It is somewhat better in the more urban areas but most Cambodians still live in the countryside. There is a lot that still needs to be done. The surface water safety and security in Cambodia has yet to even be scratched. According to UNICEF, the current restoration of clean water and sanitation in Cambodia is about eight percent. That leaves ninety-two percent that is unaffected (Deegan). Cambodia has not yet found a way to fix this problem on their own. It is terrible that some children do not even know how to wash their hands or clean themselves properly. Cambodia deserves our help to make sure lives are saved and the country can prosper. Cambodia cannot solve all of these health issues on their own. This world needs to step in and help.

Before anyone can help with the situation, it is good to know the history of the country. Cambodia has a very interesting culture. The traditional Cambodian family is called a Khmer. The desired number of children in a family is five. Legally, the father is the head of the house. The father has the most authority but the mother also has considerable authority (ITA). A family consists of the father, mother and their unmarried children. A traditional Khmer family is surrounded by a small inner circle of family and close friends called Kin. The gender of the child varies in a Cambodian family.

The diet of a Khmer family consists mainly of rice, which comes in several varieties, fish and vegetables especially trakuon (water convolvulus). Fermented fish, in the form of sauce or paste has important protein supplements. Hot peppers, lemon grass, mint and ginger add flavor to many dishes. Cambodians also eat several kinds of noodles ("CIA world fact book"). The basic diet is supplemented by vegetables and fruits: bananas, mangoes, papayas, rambutan, and palm fruit. Beef, pork, poultry, and eggs are added to meals on special occasions or if the family can afford it. The diet in cities has been affected by many western foods, French, Chinese, Vietnamese and Indian cuisines.

Healthcare in Cambodia has never been sufficient. However, they have gained some clinics and needed equipment. Many welfare programs have been opened to help the citizens of Cambodia. Dysentery, malaria, yaws, tuberculosis, trachoma, various skin diseases and parasitic diseases affect the citizens ("Cambodia health and..."). It is hard to constantly care for a population that gets so sick.

Cambodia's education system is improving. Education used to be entirely for young boys and was limited to memorizing Buddhist chants in Pali. Primary education is now divided into two cycles of three years. Secondary education is also in two cycles. One of the four years is taught at a college, followed by one of the three years at a lycee ("Cambodia private education..."). When completed, students could take a state examination for their first baccalaureate. Upon their final year, they can try to get their second

baccalaureate. However beginning in 1967 secondary education was split into three sections according to letters, math, and technology. In the 1970's the country emphasized the need for a more technical education. During the Khmer rouge regime, education was severely set back, but since then education has slowly crept back. Education is now based on the Vietnamese model ("Cambodia private education"). Not every child can get education. Civil servants pay a small amount per month while other citizens can pay a much larger amount.

Farming is the main occupation in Cambodia. Ten million Cambodians depend on farming. The average size of a farm is 1.5 ha (3.7 acres). Many farmers grow small rice, fruit or vegetable crops for a large part of their family's food. Among the farming population, over 65% are women. Women are actively involved in artisanal fisheries and manage small livestock. Rice is grown in over 90% of the current cropped area ("Asia's woman in..."). There are four main types of rice grown throughout the four seasons. Recession rice is grown from mid-December to the end of April. Irrigated rice is grown from mid-January to the end of May. Pre-monsoon rice is grown from May to mid-August. Monsoon rice is grown from August to mid-December. Maize, cassava, sweet potatoes, vegetables, groundnut, soybean, sesame, sugarcane, tobacco, jute and rubber are also commonly grown. Crops are adapted to the area. Rain-fed lowland areas are plowed using oxen when the soil is wet or flooded. Floating rice areas are plowed from February to May. Irrigated areas have soil that is easy to work with because of the high moisture content. When animals are used, the field is worked on as soon as possible after harvesting or if the soil is dry, the field may be flooded. Farmers use a variety of power sources to get their work done. Animal plowing, four wheel tractor plowing and hand held walking tractors are used. Weed and pest control, fertilization, irrigation, cutting, and threshing are common methods for farming (World Bank). Threshing happens in a few ways. Sheaths are laid on the roadway so that they can be run over by passing vehicles. Hand threshing is done using a board against a stool. Threshing is done on a hard floor using animals or machines to walk over them (Nesbitt). Those processes vary in use across Cambodia.

The current situation of water and sanitation in Cambodia is very grave. The poor drinking water quality and open defecation in rural areas is causing very high rates of child malnutrition throughout Cambodia. Children are constantly exposed to infection because of the lack of sanitation facilities in their schools and homes. A sick child cannot get the needed nutrients effectively. The lack of toilets and other sanitation areas in Cambodia have caused many infants and children to die of diarrhea. Among adults, diarrhea reduces productivity with macro-economic consequences. Exposure to diarrhea-causing agents is frequently related to the use of contaminated water, unhygienic practices in food preparation and disposal of feces ("Cambodia health and..."). Those diseases have caused catastrophic loss throughout Cambodia. This is a huge problem. About 10% of children in Cambodia die before they reach the age of one. That is 10% too many. The presence of malnutrition can cause children to not develop properly in the brain which hurts their ability to learn. Malnutrition is ruining thousands of lives in Cambodia. The citizens of Cambodia are not able to work as much or do as well when they are adults. The lack of water and sanitation in Cambodia is killing many people each day and thousands per month. The immune systems of young children cannot fight against the new diseases that are being born daily. It's hard to measure the enormity of this problem. (Crossin and Dragin).

The environment of Cambodia is being degraded because of the status of sanitation. Without proper places to clean themselves or get clean water they have to rely on the environment. The rural areas of Cambodia are definitely disadvantaged due to their distance from urban areas which have slightly better sanitation and a little bit better access to safe water (UNICEF). Developing countries struggle because they have to go through the process of building their economy and maintaining their country as it grows. Most Cambodians are subsistence farmers which mean they only grow enough food to feed their families. That makes it harder to make a good living to provide for their families. Many doctors have been trained in Cambodia but most of them end up leaving because the situation is so horrible.

The problem in Cambodia is getting a little bit better but it is going to take a lot more work. Many organizations have been chipping in to help supply clean water and help with the sanitation issue. Organizations like UNICEF have helped run pipes so houses can get clean water. They collect data to see what else needs to be done to help. The situation for rural citizens is pretty much unchanged. They have little access to clean water or sanitation. These organizations can only do so much on their own. That is why more people need to become aware. It is time to help.

Many Cambodians face barriers in their daily lives because of the troubles caused by the water and sanitation. Many rice farmers are vulnerable to market fluctuations and to drought caused by insect infestations. If the market crashes, it makes it very hard for the rice farmers to make enough money to provide for their families. That adds to the hard times they are already having. Thirty-five to forty percent of the Cambodian population is below the poverty line (“Clean water scarce...”). They do not have enough money to get by and have a huge struggle on their already full plate. The lack of clean water and poor sanitation causes many families to go to drastic measures just to get the necessities to live.

Throughout the years, Cambodians have had a defined struggle that most Americans and other countries would not understand. Improving or resolving the water and sanitation issue in Cambodia would change their quality of life for the better. Cleaning the environment would help economic development. Currently in Cambodia, a lot of the work force is young children who are not educated. The poor water and lack of sanitation makes lots of young children and infants ill (“Cambodia health and...”). They are malnourished and cannot focus on the school work which in turn hurts their future job or career. The water and sanitation issue is decreasing the size of the young work force which is hurting Cambodia economically. If this problem is solved it can help the economy and make everyone’s lives better. Both farmers and the urban community would be affected in a positive way. The climate greatly affects Cambodia. There are rainy and dry seasons. The enormous amounts of rain cause flooding which affects everyone. Since Cambodians are occasionally forced to defecate in public that is left lying around (“Cambodia climate in...”). The water can flood that area and send the waste all around which makes the environment even more unsafe. Water scarcity hurts Cambodia but it wouldn’t have to continue to affect them if help steps in now.

The real effects of the poor sanitation and lack of clean water has become very eminent. Most people aren’t aware of how hard Cambodians struggle. Cambodia is in desperate need of someone to grab their hand and lead them down the path to survival and safety. Cambodia only wants the best for its citizens and they need the world’s help. There is a lot of work that needs to be done to effectively solve these problems and many routes to get there. UNICEF is an organization that has invested a lot of time in Cambodia. UNICEF has spent lots of time teaching adults how to properly take care of themselves and their house or land to start the road to recovery.

My recommendation on how we should solve this is simple. A national campaign to raise money for Cambodia should be put in place. These days almost everyone (6 billion out of the estimated 7 billion people) have cellphones. According to the USAID, only 4.5 billion people have toilets. Cell phone users could donate money through a toll-free number or monthly through their plan. Cell phone carriers could advertise this on-line and in their stores. If everyone could pay an extra two dollars or more on their monthly plan it would be an easy way make a lot of people aware and get them involved without ever leaving home (Wang). The money raised could be used to provide clean drinking water and sanitation.

A solution using the resources in Cambodia would be very efficient. A ceramic filtration system is inexpensive and only costs \$10 (U.S.) to make. It is composed of a large water storage container and a ceramic porous pot. Contaminated water is poured into the ceramic pot. As the water seeps through the porous pot, nearly all of the impurities are removed. The water left in the bucket then sits in the sunlight until it boils to make sure that 100% of the impurities are removed. Pure drinkable water is then collected in the water container (“Research development international...”).

Another filtration system costs only \$20 (U.S.) and can be made out of materials that are found in a Cambodian market place. It is a Ultra-Violet Light Filtration System. This is a very effective method of purifying water in public dispensation areas or for an urban home. Anywhere AC or DC current is available (and a basic understanding of how dirty water must be treated) this system can be effectively employed (RDI Cambodia). To run this system, a filter must first remove solids from the water. It can be a sand and rock 'sifter' or a screen of some sort. The UV light is given power. Water is then sent into the input of the "zap chamber" whether through a gravity system or pump. The UV light instantly kills bacteria in the water. Pure drinking water is collected from there. Cambodia is in desperate need of filtrations system like these. Most developing countries throughout the world use filtration systems if they have the materials and money to get them. Filtration system save lives.

Another way to help would be to have our nation put trips together, so that many people can go to Cambodia and see what it's like. Then people could really connect with the situation and have more initiative to do something to help ("Clean water scarce..."). Many countries in the world could do the same and help provide fresh drinking water, sanitation facilities and education. As mentioned earlier, some Cambodians do not know how to properly clean themselves or the importance of washing their hands. Volunteer troops could help build facilities to provide places for people to cleanse and take care of themselves. That would help solve the problem of people having to defecate in the environment. Wells or springs could be dug in selected areas throughout Cambodia to provide more citizens clean, safe drinking water.

Educators and doctors are also needed in Cambodia ("Cambodia's health and"). Many are trained there but most end up leaving because the situation is so bad. The governments of interested countries could enlist people to help. Those individuals could choose to be paid or volunteer. Children and adults need to be educated on how to cleanse themselves. People who go to help could give the children visual aids to show them proper hygiene techniques. Visual aids can be understood, even if there is a language barrier. Proper hygiene would continue to help them after the sanitation is cleaned up. Everyone in Cambodia could join in and help. Rural farms could help select the best places for the wells and springs so that it would help them the most. Urban families would be able to help design the sanitation facilities and choose where they need to be placed to help the most people. The trips could be started as soon as the governments agree, hopefully as soon as 2014. The cell phone campaign could start even sooner. There are so many things that need to get done, but this is a good place to start.

The government of Cambodia needs to step in and help the country from within. Citizens that already have a better quality of life could help with farming, building new systems of preserving crops and demonstration plots. This would help the poor farmers of Cambodia. Demonstration plots would show the farmers effective ways to help their crops thrive. Implementing drip irrigation systems would help supply crops with the needed amount of water so that none of the plants drown.

The issue of water and sanitation affects food productivity even though it may not seem like it would. The environment is being overrun with waste which affects the crops. Many Cambodians rely on farming as their main food source and income ("Asia's woman in"). Cleaning up the sanitation would help keep the fertilizer and soil clean which will help the crops prosper. Better crops will let farmers make money and help provide for their families. If the crops are cleaner or healthier they might be able to raise the price a little to increase their income. Providing safe, clean drinking water will help everything in Cambodia. The crops rely on water. During the rainy season farmers do not have to worry as much about making sure that the crops are watered. In the dry season they have to irrigate the crops with whatever water and chemicals they have. With clean water, farmers would be able to ensure that their crops are disease and pest free ("Cultivating success in..."). That could help their business. Clean food would save lives and provide more people with the food they need. If it is healthy and plentiful it could be sold to more people and in

bulk. Over all solving the water and sanitation problem would definitely help the food security in Cambodia.

All Cambodian's have been affected by the poor sanitation and unsafe drinking water. Their daily lives have had to change just so they could survive. Market fluctuations have made farmers lose money and sink to drastic measures just to keep their farm. Jobs changed and lives took a turn for the worst. Suffering has become the number one factor in millions of people's lives. Small steps need to be taken now so that great strides can be completed in the future.

In conclusion, Cambodia needs drastic help and fast. There are many solutions that could help solve the issues that are going on in Cambodia. Awareness is the key. Helping promote proper hygiene could directly benefit more than 400,000 households and indirectly reach more than a million households. More than 5,600 villages are in provinces where the sanitation coverage is below 50% (World Bank). The sanitation in Cambodia is one of the lowest in the world and unfortunately, Cambodia is not the only country in the area of Southeast Asia that needs help. Action needs to be taken soon. The country of Cambodia cannot do this on its own. Every day that goes by more lives are lost. The amounts of safe drinking water in is slowly depleting. Cambodia needs a glimmer of hope. That is why the world needs to step up and help stop the water and sanitation issue in Cambodia. More lives are being lost the longer we wait. Funding the filtration systems and sanitation facilities will help save many lives and help increase the quality of life in Cambodia. Many organizations have already pitched in to start the transformation. The cell phone campaign can begin to raise the awareness of what is really going on in our world. Together we can start the renovation of Cambodia. The time to help is now.

Works Cited

- Australian AID. "Cultivating Success in Cambodian Agriculture." Cultivating Success in Cambodian Agriculture. Australian Government, 20 Nov. 2012. Web. 14 Mar. 2013.
- Cain, Geoffrey. "Floating Toilets to Clean up Cambodia's Act." Global Post. Global Post-International News, 2013. Web. 13 Mar. 2013.
- Canby Publications Co., Ltd. "Cambodia: Climate in Cambodia." Cambodia: Climate in Cambodia. Canby Publications Co., Ltd, 1997-2013. Web. 02 Apr. 2013.
- Crossin, Lesley, and Jan Dragin. "Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service." Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service. CWS, 17 Sept. 2010. Web. 13 Mar. 2013.
- Deegan, Guy. "Cambodia." UNICEF. UNICEF and the United Nations, 25 May 2012. Web. 13 Mar. 2013.
- Economic Institute of Cambodia. "Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service." Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service. Economics of Sanitation Initiative, 2008. Web. 13 Mar. 2013.
- Global Health and Education Foundation. "Safe Drinking Water Is Essential: Sanitation and Hygiene in Cambodia." Safe Drinking Water Is Essential. National Academy of Sciences, 2008. Web. 02 Apr. 2013
- ITA. "Cambodia - 2012, CIA World Fact book." Cambodia - 2012, CIA World Fact book. Cambodia - 2012, CIA World Fact book, 1995-2012. Web. 13 Mar. 2013.

- ITA. "Cambodia HEALTH AND WELFARE - Flags, Maps, Economy, History, Climate, Natural Resources, Current Issues, International Agreements, Population, Social Statistics, Political System." Cambodia HEALTH AND WELFARE - Flags, Maps, Economy, History, Climate, Natural Resources, Current Issues, International Agreements, Population, Social Statistics, Political System. Photius Coutsoukis, 2004. Web. 02 Apr. 2013.
- ITA. "Cambodia Private Education." Www.geographic.org. Photius Coutsoukis, 2004. Web. 2 Apr. 2013
- National Academics, The. "Safe Drinking Water Is Essential: Sanitation and Hygiene in Cambodia." Safe Drinking Water Is Essential. National Academy of Sciences, 2008. Web. 13 Mar. 2013.
- Nesbitt, Harry J. "Rice Farming in Cambodia: A Beginner's Guide." Microcredit Effectively for Micro-entrepreneurs. IRRI-Australia Project, 1997. Web. 23 Mar. 2013.
- Plan. "Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service." Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service. Plan International USA, Mar. 2011. Web. 13 Mar. 2013.
- SD Dimensions. "CAMBODIA." SD: People: Asia's Women in Agriculture, Environment and Rural Production: Food and Agriculture Organization of the United Nations, n.d. Web. 23 Mar. 2013.
- USAID. "Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service." Clean Water Scarce in Rural Cambodia, CWS Tells Geneva Consultation - Church World Service. USAID, 25 Feb. 2013. Web. 13 Mar. 2013.
- World Bank. "Agricultural Production." — Cambodia. World Bank, 2012. Web. 23 Mar. 2013.
- Yue Wang. "More People Have Cell Phones Than Toilets, U.N. Study Shows." Newsfeed More People Have Cell Phones Than Toilets UN Study Shows Comments. Time, 25 Mar. 2013. Web. 02 Apr. 2013.