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The Effort to Improve the Water in the Philippines

Think about the water you use in your area. Is it clean? Does it taste okay? Do people remain healthy after drinking this water? In the Philippines these questions would not be answered with a “yes”. There is myriad of problems that arise in the Philippines that relate to the water quality. Many people live with diseases or infections, and they think they are okay to have because the majority of the population has the same conditions. Most of these ailments come from the bacteria in the water. A portion of bacteria comes from the poor sanitation practices. Because of the pollution of water, not only can the people not escape diseases, many aren’t treated because they do not have the money to get medicine.

Another pervasive problem in the Philippines is the existence of poor water sanitation. They do not have clean water which subsequently means they do not have clean and sanitary food. This is not only poor for the health of the population but also hard on the economy. There are many tests that can be done to the water in order to see if it’s healthy and not contaminated with bacteria. The Philippines have taken some action by testing water, but that isn’t enough. The Philippines economy could thrive if they had some strict water standards and used water tests.

From the research I’ve found there are many subsistence rural farm families that are affected by the water situation that occurs in The Philippines. In the rural areas many families have wells that pump water, but it’s not clean water. (Seagren). The water they receive comes from around them. Since they are living right next to their fields, and they dispose of their waste around them, the water is unsafe to use. Pesticides and chemicals that run off from the fields and the bacteria found in human feces are contaminants found in their water. (Seagren). So if the Philippines can increase the access to safe potable water and reduce water-borne diseases, then people will be able to stimulate the economy by producing safe crops with uncontaminated irrigation; the general health of the country will be better by educating citizens on the proper way to treat and test their water, and making strict laws on water treatment and designating drainage systems.

In order to produce safe crops the Philippines must have a functional irrigation system. Many systems are either not up to code or they have been eroded away by the floods. The Asian Development Bank has funded a project in the Philippines to help develop the irrigation systems. They call this, “Republic of the Philippines: Preparing the Irrigation System Operation Efficiency Improvement Project” They look at the irrigation problems in the Philippines and estimate the amount to fix these problems. (Asian Development Bank)

Attention was brought to The Asian Development Bank that “the performance of the agriculture sector is a significant determinant of overall economic growth in the Philippines. In 2006, it accounted for 19.1% of gross domestic product and provided employment for about 36.7% of the labor force.”(Asian Development Bank) This statistic shows just how influential agriculture is to the Philippines. The Asian Development Bank was asked to help rehabilitate irrigation systems and make the Philippines “self-sufficient” in rice production.

A Filipino farmer will at most farm ten acres. Within these ten acres rice is usually grown, rice need lots of water to mature. The clarity and cleanliness of this water can affect the crops and how they are produced. Having unsafe crops makes a farmer in the Philippines struggle for money to support their family. The average rural Filipino family has many people who live in one household. On average there

are seven children in the family. Also included are the grandmother, grandfather, aunts and uncles. Many families do not have the money to build a nice large home so they live in a shack. These shacks or houses are called "Nipa Huts". They are composed of bamboo and grass.(Seagren).

Crops grown depend somewhat on clean water, and the production of crops cannot be done without one of the main elements. This influences an income in the Philippines. When the people use the water from the river it raises a risk for bacteria, because most waste will get washed or dumped into a river. This is a huge health risk for the public health. If the Philippines can find a way to improve water quality the families would not have to worry about their crops not being clean or their health not being good.

The typical rural Filipino family grows a variety of crops. Some popular crops that are produced by a family are sugarcane, rice, corn, coconuts, bananas, casava, pineapples, mangoes, and other fruits and vegetables. The income of the family depends on how well they can manage and grow crops. The poor farmers are unable to purchase fertilizers and herbicides making the crops not as rich or good in nutrition or even sanitary depending on the irrigation and where water comes from. (The Brown Reference Group Plc.)

The typical rural Filipino family will have a very simple diet composed of rice, salted/dried fish and vegetables. Most of their meals are small and are served six times a day. These foods are the most common which means that if the water sanitation is poor it affects people of the villages. They find some of their food at their local markets, but most they grow. (Seagren). The fish they buy could have been in a polluted lake or ocean and has bacteria in it making it unsafe to eat, and the rice and vegetables are also affected. Water affects every aspect of food that a rural Filipino family will eat.

The health of the Philippine's population would increase if the citizens were educated on the precautions they can take to assure safe water. The first step in educating the citizens would be to explain to them what diseases and infections are in the water. We must teach the people, by testing their water or filtering it, would make the water so much safer. Another very serious factor in making water safer is the disposing of waste in a good manner. If the people continue to dump it into the rivers and it soaks into the ground, the problem of water pollution will never stop. When waste sets into the ground it gets into the aquifer and will last in there for many years after. (Goudie) So, we must prevent the waste getting into their aquifers. Otherwise it will affect the villages in years to come even if poor waste management has been solved.

While educating the people, we must show them the characteristics of polluted water. There are certain descriptions that are to be followed when assuring that water is not polluted. Physically, the water should be transparent, the color clear, pH, temperature and the total suspended solids or TSS should be tested. When testing water they must make sure there are no total coliforms and fecal coliforms. Also to make sure there are no chlorophyll or biotic indices. These are all things that should be tested when looking for good water quality. (Goudie)

When the Philippines are looking at that affects of unsanitary water on people it is identified by seeing all the infections and diseases people have. Some of the diseases found in water are; Vibrio Cholera a bacteria, fecal coliforms, parasites called Entamoeba histolytica, bacillus a bacteria, giardiasis, cryptosporidiosis, and hepatitis A (1, 2, 3). All these bacteria's or parasites have a disease or infection they cause. (CIA World Book)

Vibrio Cholera causes Cholera which is bacterial infection in the intestines. Vibrio Cholera usually enters system through ingestion of food or drinking contaminated water. This is very common in those of the Philippines. Once the Vibrio Cholera enters the body it will start to produce an enterotoxin which causes diarrhea. If the people do not seek treatment quickly they will quickly suffer from dehydration. (World

Health Organization) This infection is hard to treat because, they drink water to get rid of one infection and then risk getting another infection. This poses a problem that occurs every day in the Philippines.

Cholera is an infection that takes 7-14 days just to get out of the body. When the infected excrete waste it will have the *Vibrio Cholerae* bacteria in it. (World Health Organization) This means the waste of those whom are sick should be disposed of properly. A good amount of the population in Philippines does not have a proper way to dispose of their waste, which makes it very difficult to improve water quality and stop the spread of diseases. It is evident that if a country, such as the Philippines suffers from Cholera, the country has poor waste management and sanitation laws. (World Health Organization)

Another infection that is widespread in the Philippines is Amebiasis. This is a parasite that attacks the large intestines. The parasite that causes this infection is *Entamoeba histolytica*. Amebiasis is usually caught by coming in contact with surface that has had Amebiasis contact too. Another way of being infected is by eating or drinking contaminated food or water. This infection is diagnosed by taking a stool sample or taking a blood test. According to the Directors of Health Promotion and Education, sometimes it doesn't show up in the first stool, so another is taken. When treating Amebiasis, there are a lot of different types of medicine people must take to cure it, which can be expensive.

As research shows there are many bacteria's and parasites found in water. These are serious infections and effect the way of life in the Philippines. The average life span in the Philippines is predicted to be 70.2 years old, but that's only a small portion of the entire population. It is estimated that only 4.1% of the population is over 65 years of age. (Marshall Cavendish Reference) The age of a person could increase if the Philippines act now, by supplying villages with clean water.

The widespread of these diseases makes you hope that there is a good health care system in the Philippines. In the Philippines, the health care system requires that the people pay for everything. If they're poor the government pays for the doctors, nurses, and midwives, but they must pay for medicine, and a room at a cheap rate, and any type of supplies they might need to have a procedure done. If the people are wealthy they pay for everything the doctor, medicine, supplies, and room fees. There are two variations of hospitals in the Philippines; public hospitals and private hospitals. In the public hospitals it is very cramped and there are usually a lot of people and no beds available. In a private hospital beds are open and the people pay a lot more per room. Also when the people are in a private hospital the amount they pay for their room is also the amount they pay for their doctor, if not more. The public hospitals have government paid doctors and private hospitals are paid by the patients. The real important task the public health system has is, going to villages and deworming people, especially children. (Seagren) As an American the thought of this sounds horrible. When I think of deworming things I think of dirty sick animals not small precious children. It's like the children are being treated like the animals of the United States would be treated. That shouldn't be how it is.

When educating the Filipino people not only do we need to educate them on the health of their country but also basic education needs. In the Philippines primary education is where many children start and will end their education. Statistics show that only 56% of the children are able to go onto high school. Although about 92% of the population is literate not many go onto college. (Marshall Cavendish Reference) It is said to be a value and important if you go to college and earn a degree. Usually only one child in a family of seven or eight will go to college to support the rest of the family. Once the child graduated from college and is done they must support one of their nieces or nephews college expenses and that continues. (Seagren)

Employment is something that not many rural farming families have in the Philippines. The unemployment rate in the Philippines is 8.7%, (Marshall Cavendish Reference) which is surprisingly lower than that of the United States which has a rate of 9.6%. (TradingEconomics.com) Even though the

rate is lower than that of the United States more than 40% of the population lives below the poverty line, which shows that just because they're employed doesn't mean they can support a family. (Marshall Cavendish Reference) It is said that one of the largest expenses in the Philippines is food. Although most rural families farm, there are still things they have to purchase. Since this is the case, it is hard to have an adequate amount of food for all, so some families do without much food.

The only way families will be able to improve their crop quality and make more money is by starting with the water. The cleaner the water, the easier it is to sell and grow products. The water improvements would affect the family in a positive way making it easier to supply the family with the things they need. I think right now in rural areas some things are being done to improve the quality of water, but it's not enough. I can see that if there is a percent increase in exports that things are being done to increase the exporting of rice, fruits, and vegetables.

The waste management system and water treatment systems in the Philippines are not as efficient as they should be. When you look at the United States and other developed countries they have developed and good infrastructure and water treatment plants for their population. The Philippines have some infrastructure it just needs to be updated and made sure that all access points are secure so there is nothing leaking into the pipes that provide water. (Goudie) The best way of getting a waste management system and water treatment centers is by posing the problem to the government to address and fix.

One the easiest ways to fix the matter of waste management is by requiring all buildings to have a simple latrine leading down into the ground with pipes that drains to a waste management center. By doing this it secures the safety of water and betters the population's health. The cost of a simple latrine costs only \$40-\$300. This would buy a condominal sewer system, which a neighborhood or village would all share. The system has the waste flowing away from the house and disposes of it properly. (Chafe) By disposing of waste this way it makes the ground safer around that is providing your water.

The sewage treatment systems are all about the same. There are three stages to treating sewage. There is a primary, secondary, and tertiary stage. The primary and secondary stages remove about 95% of the all particles and bacteria in water. The tertiary stage removes impurities in the water. (Stevenson) Some sewer treatment systems don't have the tertiary stage in their water treatment system. I think this is one of the most important parts in the treatment process. It takes out any type of chemicals that may be present in the water. By treating the water it will increase the health of the population and better food quality.

In my research I have found some laws or acts the Philippines have passed on water quality. The two acts I found were the Republic Act No. 8041 and Republic Act No. 3931. In these acts they address the water quality and also what to do in case of a water crisis. The Republic Act No. 3931 talks about the how the Philippines are going to control water pollution. In the act it defines how the sewage system will work and where the outlets are for waste. (Philippines)

I think if the Philippines want to improve their water quality they should look at other countries and see what they're doing to improve their water quality. All the Philippines need is the money and the background education to follow. The United States has an act called the Clean Water Act that talks about how water is treated and where sewage goes etc. (The United States) This could be an inspiration for the Philippines to follow along with other countries. Not only does the Clean Water Act help increase the sanitation of water in The United States it also is enforced well to make the health of The United States better. These enforcements could be something the Philippines take into account when starting to reconstruct their own water laws.

To improve the health of the people some key components need to be put in place. There needs to be an efficient sewer and water treatment system. All villages and cities must have these for the good health of

the population. These systems don't have to be fancy or very expensive they just have to be effective. By improving the water it makes the crop grown safer to eat and sell. This will stimulate the economy and improve the life of those in the Philippines.

There are many resources the Philippines can reach out to when looking for financial aid in developing their nation's water systems. The Asian Development Bank has already put money into making the water better in the Philippines. I think as long as the Philippines can work with The Asian Development Bank, they can get what they need to finance their improvements and have safer water and a better economy.

Not only can the Philippines get money from other countries, they can get the communities involved by educating the people on how to treat and test their water. By doing this, the government can see where the bad places are and focus on those. The National government will need to be strict on enforcing laws, because by being stricter they are making the Philippines a better place. The enforcement of laws will eventually show an increase in the exports and economy in the Philippines. So if the Philippines can increase the access to safe potable water and reduce water-borne diseases, then people will be able to stimulate the economy by producing safe crops with uncontaminated irrigation; the general health of the country will be better by educating citizens on the proper way to treat and test their water, and making strict laws on water treatment and designating drainage systems.

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