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Philippines, Water

The Philippines: A Modern Approach To Clean Water

Welcome to the Philippines, population 200,000,000, majority rural (CIA Factbook). If someone stays there around 10 years, long enough to be considered a citizen, which gives them the right to vote, they'll find that the government system is just like that of the United States': A democracy, where the people elect their leaders based on what they want, not having their leader picked for them with no chance of them being able to change it. It's called a presidential democracy, which means that they pick a president for the electoral branch, and there's a judicial branch that houses the Supreme Court and a legislative branch, which houses both the House of Representatives and the Senate. The citizen in question will most likely end up on a farm, most likely on part of the 41% of the land that's currently cultivated, most likely growing rice, corn, coconut, sugarcane, bananas, pineapples, coffee, mangoes, tobacco, abaca, or a combination of these major crops (Index Mundi; Nation's Encyclopedia). Their farm will most likely be around 533,410 hectares, which is quite a bit smaller than the average Filipino farm used to be. However, with a climate like the Philippines', it's no wonder that they're able to grow all of the crops they do. It's a tropical marine climate, with monsoon season varying, depending on the year, the northeast getting it November through April and the southwest getting it May through October. Its absolute location is at 13 degrees North and 122 degrees East, and it's considered part of Southeast Asia, and at 300,000 square kilometers, it's slightly less than twice the size of Georgia and slightly larger than Arizona. The Philippines is mostly mountains with narrow to extensive coastal lowlands, 442 meters above sea level being the mean elevation and sea level the lowest point, right at the Philippine Sea, which means that the lowest point is probably a beach. Its highest point is atop Mt. Apo, at 2,954 meters above sea level, which is only about 1% of the height of Mount Everest, meaning that about 100 Mount Apo's could fit into Mount Everest. The land is chocked full of natural riches, like timber, petroleum, nickel, cobalt, silver, gold, salt, and copper, which the United States uses a lot of. These riches can help develop economic interdependency between the two countries, which would only strengthen both and make it harder to go to war, which no one wants. The Philippine Islands, which there may be 7,641 of, are located favorably by Southeast Asian water bodies, meaning that there's a shortage of water in general, but clean water is not quite as easily accessible.

Typically, a family has around five persons, and they tend to live in bungalows, which are single story homes, which means that every room is on the main, and only, floor (Philippine Statistics Authority, Real Living). Usually, they eat vegetables, pork, seafood, rice, and noodles, which they typically grow themselves or buy from the local market (Facts and Details; CNN). The most sought after jobs, interestingly enough, are not actually rural jobs. They exist within the cities. That means that a lot of Filipinos would rather leave home and work all day in an office or perform a job that could potentially end up hurting the environment that they live in in the end in some urban area than live the exciting and beautiful life of being rural. The most sought after jobs are general accountants, call center agents, accounting clerks, domestic helpers, sales clerks, human resource development assistants, mechanical draftsmen, car drivers, which are otherwise known as chauffeurs, cashiers, mechanical cadet engineers, civil cadet engineers, electrical machine operators, promo girls, and office clerks (Buisness Tips). However, the typical family wage is around 22,000 Philippine Pesos monthly, known as PhP, which equates to about 424 dollars and 82 cents in US money, which probably wouldn't get people very far, if they lived in the United States. Less than half of the population has access to education due to the basic education being free but school being unaffordable because of all of the other expenses, like lunch and uniforms, which can be very expensive, seeing as the costs add up quickly (Free Zone). Health care, however, has a much worse accessibility rate, due to there just not being enough, even though it is very affordable, which just makes the situation depressing and deplorable (Third World Health Aid; Allianz

Worldwide Care). Only around 10% of the population has access to “clean” water, which highlights how severe the lack of clean water is.

Now, the problem: Clean water. Nine million out of 101 million people do not have access to clean water (Water). The trends, however are improving. Government expenditure is contributing to the slow incline of access to clean water, which will help with the infrastructure and keeping people alive (Press Reader). Six point three percent of the urban population does not have access to clean water, while nine point seven percent of the rural population does not have access to clean water; a lot more people are rural without access to clean water, though it’s not just a rural man’s problem (CIA Factbook). Women, men, elderly, and children are equally affected by this lack of one of the most basic needs to survival, and that fact is proven by the equal time that every body can go without water. Clean water, or rather, the lack of it, does not just hurt the survival rate of a population; it also harms the environment. If the water is unclean, it cannot nourish any life at all, whether that be plant or animal. Losing plant mass in the water could have drastic effects on the amount of oxygen left in the air for humans and animals to breathe, and it will deplete the amount of oxygen in the water, killing fish and other marine life, disrupting the entire food chain with its simple little change. That means that everything will collapse without the oxygen provided by plants that are nourished by the water.

However, there is still yet hope. There are three popular solutions, and they could possibly save everyone. The first option is desalination. Desalination is proven and effective, and its method is highly understood, making it easier to use (Green Garage). It preserves the current freshwater supplies and has the unlimited resource of the oceans as its base of use. It does not depend on changing factors, and the desalination plants are safely located inland. However, the plants are expensive and the process is costly and requires a lot of energy. Desalination contributes to the greenhouse gas problem today, and the resulting brine from the desalination could potentially be deadly, no matter what environment it’s placed in. Desalination could contaminate the water with other things anyway, and, as per the name, desalination only removes salt from the water. Just because it’s not salt water doesn’t mean it’s safe to drink. Another solution would be bottled water. It’s a good source of hydration on the go, and it spells convenience, being easily stored and having a great taste. Bottled water guarantees cleanliness, is usually safer than tap water, and is readily available at a moment’s notice (Green Garage). However, it has its drawbacks as well. Bottled water is more expensive than tap water, therefore not saving money at all. There could be dangerous chemicals in the plastic, and, in many cases, the water is no different than tap water run out of someone’s kitchen sink. The water can have similar or even worse quality than the tap water, and, unlike tap water, it doesn’t have fluoride, which is suspected to be put in tap water by the government to help with dentals. Bottled water promotes the use of fossil fuels, and it’s even an environmental hazard, considering that most of the water bottles never make it to the recycling bin. It also depletes the freshwater supply. That just makes it an option to kill the world, if it’s not used responsibly. A third option could be water filtration. Water filtration is the most effective form of water cleansing, and it’s more effective than both reverse osmosis and distillation combined (History of Water Filters). Water filters get rid of particles both small, like pesticides, and large, like salt, which means it automatically desalinates the water for nowhere near the cost of regular desalination. It retains trace minerals in the water that are healthy for the body, and it does not require costly energy sources because it’s simply a filter. It is cost-effective, it wastes little water in the process of filtering out the bad particles, and it is better than other techniques. However, even this has its drawbacks. The filtration process is slow, and, if a bad filter is used, like a rapid filter or a granular filter, the water may not be filtered as much as it should be. Rapid filters minimize the contact time with the filter, making the process faster, but leaves much of the particles in due to the reduced filtration time, thus taking longer in the long run if the person using it really wants clean water. Granulated filters have multitudes of pores, letting a lot of the contaminants through, thus, again, taking much longer than the original filtration if the operator of the filter really wants clean water. However, there are filters that are still good. Solid block carbon filters and multimedia filters work the best when filtering out contaminants, mainly because they know what to filter

out and what to leave in. This makes them perfect for cleansing water. Unfortunately, not even these filters are immune to the requirement of being replaced. If a filter is not replaced when it's supposed to be, it can accidentally contaminate the water with more harmful particles, or, in rare cases, it could block the water flow altogether, and that's just bad. If it's replaced too early, before it's supposed to be replaced, it's wasting money and could lead to not being able to afford them in the first place.

Out of the three solutions found, water filtration seems like the best shot at greatly reducing the amount of Filipinos without water in a short amount of time. The first step would be to make around a few thousand solid block carbon or multimedia filters in the US that are specifically earmarked to be shipped out with this project as well as easy-to-understand pamphlets that instruct users on how to replace the filter, when to replace the filter, and things like that. The second step would be to have the government or a non-profit organization such as Habitat for Humanity carefully deliver the boxes of filters and instructive pamphlets to the Philippines by way of ships or planes. The third and final step would be to install the filters either on the taps or in the pipes in Philippine homes and give the homeowners the informative pamphlets, and voila! Clean water is now possible for those who live in the Philippines. Almost any non-profit organization, like the Red Cross, United Way, Habitat for Humanity, the Society for Human Resource Management, and many more or even the United Nations could oversee this project. The funds could come from donations or \$5,000-\$10,000 of government funding, about the size of a micro-loan. Community members could help raise the money, the government could help a little with funding, shipping, or both, and other organizations could help ship the filters to the Philippines. No new policies need to be added, and no old policies need to be removed. The Philippine's infrastructure could easily support this, since most houses are connected to the water mains. There's no cultural norms or behaviors that would need to be taken into consideration for this project. This could even help the US; we use things that the Philippines has, and, if the Philippines uses water filters that we make, then it would make an alliance through economic interdependence, since both countries use and need things that the other country has! It could help prevent there ever being a World War III, and that would help everyone, not just the U.S. and the Philippines. This is just the pure foundation of help. The solid block carbon and multimedia filters do not contaminate the water, just clean it. This project would be highly sustainable. This solution is simple and affordable, and it could save lives! Even though the filters need to be replaced, that is easily manageable. Since the US can make them, once it comes time for a Filipino family to replace their water filter, they simply need to order one from the US, and then it can be shipped out to them for a low price, which helps everyone.

The Philippines is a collection of small islands off the coast of Southeast Asia in a tropical marine climate. It's aspiring for sophistication, and with their government's plan on spending, they'll reach it. Family life is not that great, but where the family bond is good, it'll stay that way forever. Their water isn't great, but that could improve. Water filtration could be the way to go for helping their clean water crisis. It's not even that costly, and it could help not only the Philippines, but the entire world as well! This could change life as they know it for the better, but it won't unless someone tries.

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