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## **The Philippines: Attacking the Growing Waste in Rural Populations**

Consisting of over 7,641 islands, the Philippines is home to the largest populations of nurses and coconuts. Despite its diverse agriculture and population, it still faces all the problems of a developing country. One of the most pressing issues that these countries are facing today revolves around the growing waste and lack of proper disposal of plastic, toxic materials, etc. Due to this contaminated waste, the environment and populations are suffering the consequences of poor sanitation and excessive refuse. Initially, my research of waste and care for the environment drew me to several developing countries around the world. However, the Philippines stood out due to its immense population growth over the past 50 years. According to the most recent data from the United Nations, the Philippines is experiencing just over 1% population growth each year. Since the end of 2020, the country has already undergone a 1.34% increase in their population (Philippines Population Growth Rate 1950-2021). The more human beings there are means more waste, therefore the issue grows endlessly of how the waste will be disposed of, ultimately affecting the global environment.

After reporting that 14.66 million tons of trash were produced yearly in the Philippines--becoming the fourth largest generation of solid waste in Southeast Asia--it became clear that the problem must be addressed immediately. The MSW (Municipal Solid Waste) in the Philippines convey the rate of recycling, which vary greatly, showing that 20%-33% of paper is recycled, following: 30%-70% (Aluminum) 20% - 58% (Other Metals) 23% - 42% (Plastic) 28% - 60% (Glass) (United Nations: Waste Management in Asean Countries). Considering the average family size, normally a family of 4-5 in Manila, Philippines will produce around 2.3 kg of solid waste each day (Solid-Waste Management Practices of Households in Manila, Philippines). About 15% of that waste generated each day in Manila is left in the streets, unable to be disposed of with the current systems in place. Since Filipino families can often be large, they buy and create waste with their food consumption. Whether or not the family lives within the city or in rural areas, they still consume as much as the other. Despite the amount produced, families in Manila will still practice the segregation of plastics, glasses, food waste, and mixed waste. Though a family in Manila will practice safer and cleaner disposal of waste, rural families have been reported to be "skeptical" of the effects of waste on the environment. Many still believe that destruction and proper disposal of waste is solely the government's responsibility, so public participation is low. In contrast to Manila, a family in Diwakden would burn their waste as their primary source of disposal. This has ultimately hindered the efforts made in urban areas, due to the non-separation of waste and lack of empathy towards the environment. There have been efforts made by the government, such as the Ecological Solid Waste Management Act of 2000, but a past study found that the act is rarely actively implemented. (Implications of Waste Management and Sanitation Practices on Villagers' Health in San Mariano, Philippines). Even with this act being in place, the country still finds it costly to physically implement and maintain a waste disposal method. Living conditions for families in rural areas are very basic, with the average annual income for a Filipino family being 313,000 PHP (\$6,231.27 USD). As a comparison, in the National Capital Region, a Filipino family will annually make around 460,000 PHP (\$9,157.78 USD). The wealth gap is also evidence that supports the claim that waste management is costly for the people as well as the country.

With the unhealthy habits of waste disposal occurring throughout the Philippines, the general population's health has become quite a large concern. Experiencing an illness after drinking water is still a prominent issue in the country, as well as living near garbage filled cities or villages. The switch from looking into urban families to rural families occurs when investigating sanitation and sustainability. Many projects

have been implemented in larger cities, such as the Manila Third Sewerage Project (MTSP). This helped deal with water, sanitation, and even urbanization/population growth challenges head on in Manila. Not only did it identify those problems, but it physically reduced pollution of rivers caused by domestic/industrial waste (Philippines: Providing Sewerage and Sanitation Services to Over 3 Million People). The work done in the late 2000s and early 2010s was amazing for the urban population's growth in sustainable practices, but the challenge of completing the same work in the rural areas still remains. Not only is waste management difficult in these areas, but the aftermath and consequences for the people can not be simply fixed. The healthcare system is expensive for many families, and some families have even reported that simple headache medicine is unaffordable. Air pollution caused from the garbage sitting in massive landfills and streets affects the human body very negatively. Particulate matter and CO<sub>2</sub> caused from burning trash can enter the human body and cause several lung problems ranging from stress and damaged cells in the lungs, to the development of diseases like asthma, bronchitis, emphysema, and possibly even cancer. Imagine that you are a child living in rural Philippines with three generations of family members living with you in your bungalow home. Whether you have or have not left that area, you often experience the burning of refuse and have normalized littering (to a certain extent). Due to that burning of the trash, you may have to witness your grandparents (who already have aged lungs) undergo the consequences of particulate matter and other harmful toxins entering their lungs. You may also have already developed asthma or a cough from the simple, but small, matter in the air. Without an easy way to access healthcare, there unfortunately isn't anything that you can do. Population growth and air pollution are intertwined. The devastating effects on the growing population are affecting the elderly and the young children, all due to the unsustainable practices of waste removal.

As previously mentioned, another main reason why waste is such a massive problem revolves around the environment and the overwhelming presence of climate change. Some landfill sites will be simple holes in the ground, where the waste will simply sit or will be burned. That refuse will eventually rot, but not completely, and will smell or generate methane gas (Green Choices). Additionally, some landfill sites will attract animals and contribute to increasing litter. Since burning trash in the rural parts of the Philippines has become normal, some of the materials will produce toxic substances (such as e-waste). Those gases that are released also cause air pollution as well as acid rain. Not only does burning and throwing away waste reduce resources, it also wastes money when these areas do not recycle. Landfills and open dumps account for 34% of methane emissions produced by humans, which happen to be illegal under RA 9003 in the Philippines. The main challenges the rural Philippines faces revolve around geographical disadvantages with their many islands. The Filipino government struggles to unite, communicate, and fully support all the communities across the region. They are also susceptible to natural disasters due to their islands, surrounded by the sea. Difficulties to create an effective infrastructure system also relate directly back to Manila's advantages in sustainability and environmental programs. Previously stated, Manila has worked hard in the last few decades to improve their waste and sanitation within the city. However, outside of the main cities, water is contaminated and organizing programs becomes more difficult with the geography of the region.

In order to effectively attack these waste problems, the country needs to unite and form an organized effort to involve the entire population and government. Therefore, there are three sustainable solutions to combat waste and sanitation:

#### 1) Government Issued Incentives to Increase Community Contributions.

In order to directly address the common mindset of believing waste is the government's responsibility, incentives are the way to go. Whether it's an incentive charging fees for lack of implementation of environmental laws, or an incentive giving benefits, money, or something else tangible or intangible, it would increase community involvement in regards to the environment. The incentive would come with an original purpose or service to the environment, with several possibilities such as: increasing reusable plastics, encouraging recycling and separation of trash materials, encouraging communities to not burn

their trash, or requiring public services to rid the streets of litter. Since the Filipino economy is still growing and in the process of becoming stable, a money incentive would be difficult to offer unless they experienced an economically flush year or only offered money to communities that are particularly struggling. Most of the data last collected from rural communities was last reported in the early 2010s, so it would be extremely beneficial for the government to send environmental specialists to examine areas and determine severity of poor sanitation and waste. In contrast, companies and communities could be fined if they are not fully implementing waste standards. For example, charging a small fee for burning trash or not recycling in a community whatsoever. Companies should also follow all environmental regulations in the Philippines, however, when they do not follow the rules they could be fined a slightly larger fee than communities and families (Money goes straight to environmental departments in the government). As an intangible incentive, the government could offer communities education on global warming and how waste contributes to the growing air pollution and contaminated water. Though it's not a traditional incentive, I believe it could make massive, positive changes in rural communities. Addressing education across the diverse geological region is a completely other challenge, but helping the people get clean water and air by educating and teaching them the skills to help their country would be an amazing first step in increasing education throughout the rural regions. The disadvantages from this solution come from the fact that the country is still developing, including their economy and population growth spurts. Due to their many islands, it is very challenging to unite the communities and regulate waste in those areas. However, all positive changes must come with a first step, even if it is difficult.

## 2) Introduction of Composting and Incentive to Recycle in Rural Communities.

In San Francisco, California, programs involving composting regularly have taken off. Composting is taking the waste and turning it into something usable again, like fertilizer for agriculture. In the United States, they spend over \$85 million USD (4,128,195,000 PHP) simply sending food waste to landfills (EcoWatch). No matter the country or geography of the land, food can be used to compost and return its initial service of helping humans produce food to feed themselves and others. A way to implement pro-compost in small communities could consist of a small program/organization willing to travel and provide education and simple instructions on how to create their own compost, and luckily, it isn't difficult to create. Unfortunately, it would not be easy or cheap to enforce the making of compost (considering the communication challenges), but would be worth it and additionally help reduce vermin in landfills and on the streets. Holding annual recycling collection "events" may improve families' decisions to keep their plastics and glasses until they can be properly disposed of. In the United States, there are programs dedicated to setting up a day within every state for the disposal of recyclables. This in turn creates more jobs for people, as well as reduce refuse in the landfills. Considering the fact that much of the Philippines is made up of islands, a way to introduce the regularity of recycling would involve some government participation. At least once every few months, a group of people would come by and pick up a community's recyclables and bring it back to somewhere on the mainland that has proper disposal facilities. Other bigger cities could physically have an event, where people can drive, walk or bike to a park to simply drop off their recycling for that week/month/year. As for villages or smaller cities, they could begin to simply bag their recyclable items and wait until a specified pick up day. Until technology and communication advances, this solution is the most effective for these small communities.

## 3) Implementation of Extended Producer Responsibility (EPR).

Extended Producer Responsibility is a waste reduction and management tool that involves brands and manufacturers of products. This tool ensures that these organizations take responsibility for all the products they manufacture and sell to consumers. Instead of simply producing and selling goods that will eventually become waste, organizations are given extra responsibilities to dispose and recycle their products after they have already been bought and consumed. In order for these brands and manufacturers to lessen their responsibility in the long run, EPR can encourage eco-friendly designs to their packaging to ultimately reduce the amount of materials being disposed of and recycled. Under the EPR, companies are also required to communicate and plan with other companies and the government for proper disposal of

their products after consumption. Not only does it include work after the product has been sold, it also gives companies the obligation to pay for sorting, recycling, and the final disposal of the goods. Grip Bueta is an environmental lawyer who has been working on EPR and the plastic pollution problems in the Philippines for almost a decade, and recommends that the person creating the product should also be the one to deal with it after it has been consumed (Bueta also works as a consultant for non-governmental organizations in the Philippines; Bueta additionally works on judicial capacity for implementing an environmental and climate law in the Philippines). In the long run, this plan will help reduce the amount of plastic packaging being produced by forcing companies to be active in their plans to be environmentally conscious.

Waste disposal is directly related to the amount of income in an area, being affected by heavily populated areas and areas with low accessibility. Not only is it the wealth of the people, the wealth of the government directly impacts how well they will be able to implement plans such as EPR, compostability and recycling programs, and incentives. However, change starts with the cooperation of the people, the government, and the producers. Education and information is the most important first step to help decrease the waste management and sanitation problems in the Philippines. System operators within brands/organizations and within the government will gain the ability to reach out to several communities to inform them of progressive changes within the country. For EPR, initially starting out in areas that are highly populated would be beneficial to the introduction of how waste management can not be expensive for the consumer. Composting is best introduced to farming communities (if they aren't already utilizing this way of waste management). Recycling programs will have to start slowly in populated areas, before beginning to branch out to several other communities when they have the funds and numbers to do that effectively. Incentives can be put in place anytime, and will actually benefit the government in regards to the EPR. Giving fees to companies who aren't following disposal regulations will force them to either change their packaging to something more friendly to the environment, or improve their waste management within the brand. But most importantly, education and connection will help improve the quality of life in the Philippines. The atmosphere, the citizens, the animals, the plants, and the ground they live on, will all become healthy and happy once again with these three structural changes.

## Works Cited

PayMaya. "Top 10 Most In-Demand Jobs in the Philippines' New Normal." *Secure Online Payment Account - PayMaya Philippines*, 2020, [www.paymaya.com/stories/top-10-most-in-demand-jobs-in-the-philippines-new-normal](http://www.paymaya.com/stories/top-10-most-in-demand-jobs-in-the-philippines-new-normal).

Author Trager Lillian. "The Philippines: Rural Families, Urban Income." *Cultural Survival*, 1 Dec. 1983, [www.culturalsurvival.org/publications/cultural-survival-quarterly/philippines-rural-families-urban-income](http://www.culturalsurvival.org/publications/cultural-survival-quarterly/philippines-rural-families-urban-income).

Thelwell, Kim. "Top 10 Facts About Living Conditions in the Philippines ." *The Borgen Project*, Kim Thelwell [https://Borgenproject.org/Wp-Content/Uploads/The\\_Borgen\\_Project\\_Logo\\_small.Jpg](https://Borgenproject.org/Wp-Content/Uploads/The_Borgen_Project_Logo_small.Jpg), 14 Aug. 2019, [borgenproject.org/top-10-facts-about-living-conditions-in-the-philippines/](http://borgenproject.org/top-10-facts-about-living-conditions-in-the-philippines/).

"Climate Risk Profile: Philippines." *Global Climate Change*, 8 Feb. 2017, [www.climatelinks.org/resources/climate-risk-profile-philippines#:~:text=The%20Philippines%20is%20highly%20vulnerable,rising%20temperatures%20and%20extreme%20rainfall.&text=The%20Philippines%20lies%20in%20the,which%207%E2%80%939%20make%20landfall](http://www.climatelinks.org/resources/climate-risk-profile-philippines#:~:text=The%20Philippines%20is%20highly%20vulnerable,rising%20temperatures%20and%20extreme%20rainfall.&text=The%20Philippines%20lies%20in%20the,which%207%E2%80%939%20make%20landfall).

Issi. "Environmental Impacts." *Green Choices*, Green Choices, 23 Jan. 2019, [www.greenchoices.org/green-living/waste-recycling/environmental-impacts](http://www.greenchoices.org/green-living/waste-recycling/environmental-impacts).

"Philippines: Providing Sewerage and Sanitation Services to Over 3 Million People." *World Bank*, 2013, [www.worldbank.org/en/results/2013/04/08/philippines-manila-third-sewerage-project](http://www.worldbank.org/en/results/2013/04/08/philippines-manila-third-sewerage-project).

"A Lack of Clean Water and Sanitation in the Philippines Kills 55 People Every Day." *VICE*, 2015, [www.vice.com/en/article/d3jana/a-lack-of-clean-water-and-sanitation-in-the-philippines-kills-55-people-every-day](http://www.vice.com/en/article/d3jana/a-lack-of-clean-water-and-sanitation-in-the-philippines-kills-55-people-every-day).

"Philippines Population Growth Rate 1950-2021." *MacroTrends*, [www.macrotrends.net/countries/PHL/philippines/population-growth-rate](http://www.macrotrends.net/countries/PHL/philippines/population-growth-rate).

Drost, Danielle, and Xina Vinalay. "Implications of Waste Management and Sanitation Practices on Villagers' Health in San Mariano, the Philippines." *Research Gate*, Leiden University, Aug. 2014, [www.researchgate.net/publication/309399151\\_Implications\\_of\\_waste\\_management\\_and\\_sanitation\\_practices\\_on\\_villagers\\_health\\_in\\_San\\_Mariano\\_the\\_Philippines](http://www.researchgate.net/publication/309399151_Implications_of_waste_management_and_sanitation_practices_on_villagers_health_in_San_Mariano_the_Philippines).

Berlekamp, Lauren. "The Global Progress of Composting Food Waste." *EcoWatch*, EcoWatch, 27 June 2016, [www.ecowatch.com/the-global-progress-of-composting-food-waste-1881788957.html](http://www.ecowatch.com/the-global-progress-of-composting-food-waste-1881788957.html).

Environment, UN. "Philippines." *UNEP*, [www.unep.org/explore-topics/disasters-conflicts/where-we-work/philippines](http://www.unep.org/explore-topics/disasters-conflicts/where-we-work/philippines).

