



Water Pollution In The Philippines

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Introduction

Water Pollution in the Philippines is a known issue, The Philippines is projected to be a top contributor to oceanic plastic pollution by 2025, ranking first globally for riverine plastic emissions (Fuentes et al. 2024), this is due to industrialization, agricultural activities, natural factors, and insufficient water supply and sewage treatment facilities (Chowdhary et al. 2019). This is also true in many Southeast Asian countries where water quality has been deteriorating, especially in densely populated urban areas (Jalilov, 2017).

This is worrying due to the severe health risk in polluted water According to UNESCO 2021 World Water Development Report, about 829,000 people die worldwide each year from diarrhea caused by unsafe drinking water, sanitation, and hand hygiene, including nearly 300,000 children under the age of five, representing 5.3 percent of all deaths in this age group, this poses a threat towards several vulnerable groups such as young children, studies have shown that diarrhea the most common disease caused by water pollution is a leading cause of illness and death in young children in low-income countries. Diarrhoeal diseases account for 21% of annual deaths among children under 5 years of age in developing countries (Waddington et al., 2009).

Problem Description

Water pollution has been a old but slowly rising problem not just for the Philippines but the world as a whole, with water degradation increasing since the 1990s and is expected to escalate even further (Plessis, 2022), this is due to the constant expulsion of waste toward bodies of water around Two million tons of sewage, industrial, and agricultural waste is released into water around the world daily, leading to infectious waterborne diseases such as diarrhea, cholera, dysentery, and typhoid UNESCO (2016), there are also the long lasting plastics that scatter around the ocean with 3 to 11 million metric tons as of 2020 (Zhu et al., 2024), The Philippines suffers from water pollution severely with about 11 million Filipino families have no access to clean water

(Lu, 2024) and, nearly 6000 premature deaths annually due to waterborne diseases, with 53,066 mortalities reported between 2010 and 2019 because of waterborne diseases of typhoid and paratyphoid fever, bloody diarrhoea, cholera, viral hepatitis, and leptospirosis (Masangkay et al., 2025).

Proposed Solution

With the use of advanced oxidation processes designed to degrade toxic organic pollutants that cannot be removed by regular filtration, it uses highly reactive oxidizing agents to break down harmful chemicals into less toxic or biodegradable substances (Comninellis et al., 2008). can be applied during drinking water and wastewater treatment, water reuse applications, brine and leachate treatment, and groundwater remediation, mostly to degrade organic contaminants but also for the reduction of natural organic matter, disinfection, or as pre-treatment to improve the performance of downstream treatment processes (Uwe Hübner et al., 2024) for the removal of emerging contamination compounds. With them, very high removal percentages can be achieved. In the case of compounds such as amoxicillin and sulfamethoxazole, their removal percentage is around 90%. In the case of compounds such as diclofenac, ibuprofen, and ciprofloxacin, even their complete elimination from water can be achieved.

Conclusion

Water pollution has been a persistent issue, that is continually growing bigger. without proper steps taken to mitigate and stop the damages, more people will be negatively affected especially vulnerable groups like young children, further exasperated by the lack of clean water sources for a number of Filipino families. But with further advancements in technology and addressing issues, like access to clean water, we may be able to mitigate the damage done.