

WHY TREAT WASTEWATER ?



The importance of wastewater treatment is a critical topic at present as it concerns both public health, environmental preservation, and sustainability. Wastewater, originating from domestic, industrial, and agricultural activities, contains a variety of potentially harmful contaminants for human health and the ecosystem. Wastewater treatment is therefore essential to remove these contaminants and ensure that the water discharged into the environment is clean and safe.

In this InfoDBO, we will explore the fundamental reasons why wastewater treatment holds vital importance, emphasizing its impacts on the health, environment, and well-being of societies on a global scale.



THE LACK OF CLEAN DRINKING WATER AFFECTS OVER 40% OF THE GLOBAL POPULATION, AND THIS NUMBER IS EXPECTED TO INCREASE

HEALTH IMPACT

Did you know? According to the United Nations, 3.5 billion people lack access to safely managed sanitation services. Untreated wastewater often contains bacteria, viruses, parasites, and emerging pathogens. When this wastewater comes into contact with sources of drinking water, food, or recreational areas, it can spread diseases such as cholera, dysentery, typhoid fever, or gastrointestinal infections. Over the long term, continued exposure to untreated wastewater can lead to chronic health issues, including kidney diseases and developmental problems in children. **In fact, children, in particular, are disproportionately affected as their immune systems are not yet fully developed. The World Health Organization (WHO) and other international health organizations estimate that millions of deaths each year are attributable to the consumption of contaminated water.**

THE ENVIRONMENT

Discharging untreated wastewater into the environment has a significant and negative impact on both aquatic and terrestrial ecosystems. Here are some of the primary environmental impacts of not treating wastewater:

Water Pollution : Untreated wastewater contains pollutants such as excessive nutrients (nitrogen and phosphorus), organic matter, heavy metals, toxic chemicals, and pathogens. When discharged into rivers, lakes, or oceans, they cause pollution in these aquatic ecosystems, which can lead to the death of aquatic wildlife, destruction of habitats, and a decline in water quality.



Eutrophication: The excessive input of nutrients, especially nitrogen and phosphorus, from untreated wastewater can promote the proliferation of algae and aquatic plants. This can lead to the eutrophication of water bodies, a phenomenon where the overgrowth of these organisms results in ecosystem degradation, a decrease in oxygen levels in the water, and the formation of dead zones where aquatic life can no longer thrive.

Harm to Wildlife: The chemical contaminants present in untreated wastewater can be toxic to aquatic wildlife. Fish, invertebrates, and other organisms can be directly affected, experiencing genetic mutations, diseases, and mass die-offs. Birds and mammals that depend on these aquatic environments are also exposed to adverse effects.

Impact on Soils: When untreated wastewater is used for agricultural irrigation, it can lead to soil contamination, reducing fertility and affecting crop quality. Chemicals and pathogens in wastewater can also enter the food chain through irrigated crops.

Threat to Biodiversity: Water pollution resulting from the discharge of untreated wastewater can threaten biodiversity by causing the extinction of aquatic species and damaging terrestrial ecosystems that depend on these aquatic systems.

WELL-BEING OF SOCIETIES

The non-treatment of wastewater has a significant impact on the well-being of societies, both socially and economically. Here are some of the key aspects of this impact on the well-being of populations:

Public Health: The discharge of untreated wastewater can lead to the spread of waterborne diseases, directly affecting individuals' health. Gastrointestinal infections, skin diseases, and other water-related health problems can result in high morbidity and mortality, especially among disadvantaged populations without access to clean water.

Access to Clean Water: When untreated wastewater contaminates sources of drinking water, it makes access to clean and safe drinking water difficult, if not impossible. Communities often have to travel long distances to find clean drinking water, which can have a negative impact on the quality of life, especially for women and children tasked with this responsibility.

Economic Disruption: The impact on natural resources and economic activities can be significant. Agriculture irrigated with contaminated water can reduce crop productivity and quality, while fishing can be affected by the death of aquatic wildlife. Additionally, healthcare costs associated with treating waterborne diseases can be substantial and burden national healthcare systems.

Social Well-being: Water-contamination-related health issues can lead to school absences and a decline in work productivity, negatively impacting education, employment, and the economic well-being of individuals and communities.

Living Environment: Environmental pollution due to the discharge of untreated wastewater can make residential areas less attractive and less healthy, affecting the quality of life for residents. This can also lead to conflicts and population migrations in search of better living conditions.





CONCLUSION

By treating our wastewater, we do much more than purify water; we purify the soul of our planet. We work towards the prosperity of ecosystems, the health of individuals, and the well-being of future generations. It is an investment in a future where rivers run clear, where oceans teem with life, and where water, the source of life, is a shared, precious, and respected resource. **By treating our wastewater, we choose a path of sustainability, equity, and respect for our planet and ourselves.**