



*Waves of Change*  
*CalsMUN 2024*

**Research Report**

**Forum:** General Assembly 3

**Issue:** Assessing the Impacts of Industrial Pollution on  
Drinking Water in Developing Countries

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## Introduction

Water contamination and industrial pollution are both prominent issues that have worldwide effects. It can lead to various health issues when consumed, it has heavy environmental drawbacks and it severely affects industries such as agriculture. These impacts are however much more dangerous and severe in developing countries, as they have less funding and infrastructure to combat this. The main causes for industrial pollution are improper waste disposal, accidents at chemical plants and lack of pollution control. This has been a pressing issue for a while but with the rapid industrialisation and urbanisation of many countries it is now that these matters need to be addressed and tackled.

## Definition of Key Terms

### Water Contamination

The pollution of water through substances such as heavy metals, chemicals or toxins, making the water unsafe for consumption by humans or animals. This is often caused by industrial activities.

### Water Purification

The process of removing undesired substances from contaminated water. This makes the water usable and safe for humans and animals.

### Heavy Metals

Metals such as lead, selenium or copper, mainly used in industry and manufacturing.

### Wastewater

Water that has been used in a home, business or as part of an industrial process. For this issue wastewater will mainly be spoken about in the context of industrial wastewater.

## General Overview

European countries have had strict rules and limits on industries and their dischargement of wastewater for decades. This way these industries do not contaminate the public water supply and wastewater has to be clarified before it is discharged into these water networks. However, this is not the case for the rest of the world, especially in emerging countries such as China, India and countries in Africa and South America. In these countries industrial plants have begun to grow much more recently but environmental policy and water treatment has not caught up to this industrial growth. This water contamination affects drinking water which has a number of health consequences, such as organ damage, neurological disorders and even cancer. Even more concerning is the fact that this has a much greater impact on developing countries. These countries typically do not



have the infrastructure or funding to combat this water pollution, causing people to consume this water. Furthermore, healthcare facilities in developing countries are often not equipped with the medical technology to combat diseases which stem from the contaminated water. Moreover, conditions in medical centres are often unsanitary putting patients and staff at risk for disease transmission. Research by the World Health Organization (WHO) and UNICEF, show that the majority of infections in hospitals in low-income countries (LICs) are due to the lack of clean water and hygiene. Around 3.2 million children die every year because of consumption of unsafe drinking water as well as poor sanitation. This also has significant economic consequences, as developing countries often have their main industry in the primary sector (raw materials). A polluted water supply negatively impacts the production for sectors such as agriculture or fisheries, industries often found in LICs. This leads to economic losses which also has a number of social impacts: reduced livelihood, economic hardship, health issues and also conflict over access to clean water.

### Timeline of Key Events

#### 22nd June 1969

The Cuyahoga River in the United States caught fire due to pollution from nearby industrial plants, which raised global awareness of water contamination.

#### 1972

The US passed the Clean Water Act, a significant piece of legislation regulating the extent of water pollution, and setting standards for water quality.

#### 3rd December 1984

There was a significant chemical leak at a pesticide plant in India which led to thousands of deaths, named the Bhopal Disaster.

#### 12th August 2015

A series of explosions caused a chemical warehouse at the Port of Tianjin in Northern China, killed 173 people, and also significantly polluted the surrounding area.

**29th August 2017** A chemical plant explosion in Texas raised concerns about industrial accidents polluting nearby water sources on a global scale.

### Major Parties Involved

#### China

The country's recent rapid industrialization and economic growth, in combination with a lack of investments in water treatment infrastructure have caused a significant amount of water pollution; including, pollution of heavy metals and chemicals.



### India

Similarly to China, India's speedy industrial growth has led to extensive water pollution, particularly in the Ganges and Yamuna rivers. Sectors like textiles, chemicals, and manufacturing especially contribute to this pollution which in 2019 led to more than 2.3 million premature deaths.

### United States

While the US has implemented many regulations that regulate wastewater, some industrial areas over the country still release pollution into local water sources. This mostly comes from industries such as chemical plants and mining.

### Brazil

Industries in Brazil, such as mining and agriculture which discharge a lot of waste and runoff which contaminate water sources such as various river systems. This particularly affects developing countries in the regions such as Ecuador, Guyana and Paraguay.

### Nigeria

Development in the oil and gas sector have also resulted in widespread water pollution, especially through oil spills and improper waste disposal. This is happening particularly in the Niger Delta region and affects developing countries surrounding Nigeria and their water supply.

## Possible Solutions

Though there have been previous attempts to solve this issue of water pollution, especially in developing countries, issues with water contamination are still around today. Some possible solution to this could include:

### Investing in Infrastructure

Countries can invest in infrastructure and technology that allows for better water treatment in heavily polluted areas. Improving the infrastructure of wastewater treatment can heavily reduce the polluted water entering the main waterways.

### Enforcement and Incentive

Implementing stricter environmental laws and regulations can limit the water pollution levels caused by industrial work. Developing countries can enforce certain laws that mandate the proper disposal and treatment of wastewater before letting it enter into larger bodies of water. Governments can offer tax breaks or incentives for industries that adopt production methods that are more environmentally friendly or sustainable. This approach can incentivize companies to switch to new, cleaner technology, thus also increasing innovation of cleaner



technology on a global scale.

### International Aid

Developing countries can seek aid from international organisations or countries that can provide resources such as technical expertise and updated technology in water treatment, or funding and volunteer work. Not only can this improve water conditions but it can also lead to improved international bonds.

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