



Forum: Environmental Committee  
Issue: Reducing Pollution in Industrial Zones and  
Urban Areas  
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## **Table of Contents**

- I. Introduction**
- II. Key Terms**
  - a) United Nations Framework on Climate Change**
  - b) Global Goals for Sustainable Development**
  - c) Paris Agreement**
  - d) Wastewater**
  - e) Air Pollution**
  - f) Water Pollution**
  - g) Waste**
- III. General Overview**
  - a) Roots of Pollution in Urban Areas**
  - b) Effects of Pollution in Urban Areas**
    - i. Air Pollution**
    - ii. Water Pollution**
    - iii. Noise Pollution**
  - c) Case Example: China**
- IV. Major Parties Involved and their Views**
- V. Timeline of Events**
- VI. Previous Attempts to Solve the Issue**
- VII. Relevant United Nations Documents & Other Sources**
- VIII. Questions to Consider**
- IX. Possible solutions**
- X. Conclusion**

## I. Introduction

Nearly 13 million deaths a year are attributed to environmental factors resulting from human action. Hundreds of millions more conduct their daily lives in unhealthy conditions that persist in spite of greater global development. Nowhere can this damage be felt more than in cities and industrial areas, the centers of the world's economic output. With 54% of people residing in cities and that proportion only set to increase in coming years, one cannot overstate the importance of devising measures to address pollution in urban areas.

Waste, water pollution, and air pollution stand out as the primary sources of the environmental degradation prompting collective international action in cities. Among these, air pollution bears further elevated importance. Man-made air pollution not only results in airborne particulate matter (PM) that directly harms human health. It crucially drives the greenhouse effect behind global warming that presents severe long-term environmental risks.

While past years have seen progress in efforts towards reducing pollution, open questions remain.

## II. Key Terms

### a) United Nations Framework Convention on Climate Change

The UNFCCC was drafted in May 1992, signed the following month at the Rio de Janeiro Earth Summit, and became effective in March 1994. The UNFCCC has been signed by all member states of the United Nations along with Palestine, the European Union, Cook Islands and Niue. The UNFCCC was signed with the aim of stabilizing concentrations of greenhouse gases. Though the Framework Convention itself contains no enforcements to improve the environment and lessen climate change, it laid the framework for and led to treaties such as the Kyoto Protocol. The Framework Convention is also the parent treaty of the recently signed Paris Agreement.

### b) Global Goals for Sustainable Development:

The 2030 Agenda comprises 17 Sustainable Development Goals (SDGs) to be achieved within the next decade, ranging from ending poverty to achieving more peaceful, inclusive, and just societies. Tackling pollution, particularly in urban areas, is a key aim reflected throughout the list of goals. SDG 11 specifically addresses building sustainable cities through reducing their environmental impact.

### **c) Paris Climate Agreement 2015**

The Paris Climate Agreement is one of the most important and ambitious accords on strengthening climate action. Nearly 200 state parties gathered in Paris in late 2015 for several weeks to adopt the extensive set of measures aimed at limiting the increase of global temperatures to below 2°C. To achieve this, the agreement sets forth goals to reduce greenhouse gas emissions based on nationally determined targets.

### **d) Air Pollution**

Air pollution occurs when harmful particles and substances are emitted into the air. This makes the air unsafe to breathe for humans. Air pollution is linked to one in eight deaths worldwide. Especially people in urban and industrial areas suffer from air pollution due to the large amounts of pollutants emitted by transportation and factories among others. Most urban areas worldwide violate the air quality guidelines set by the WHO.

### **e) Water Pollution**

Water pollution occurs when water is contaminated by harmful substances (see wastewater). Polluted water is unfit for human consumption. In LEDCs, people frequently fall ill due to consuming polluted water and 15% of all child deaths worldwide are caused by water pollution.

### **f) Wastewater**

Wastewater is any water that has been polluted by other substances or materials such as sewage or stormwater. Wastewater is not fit for human consumption and can cause diseases if consumed. However, wastewater can be sent to treatment plants which remove unwanted materials or substances from the water, kill off bacteria and make the

wastewater fit for drinking. Treated wastewater is known as recycled water. Though wastewater cannot be consumed safely, it may be used for other activities such as gardening.

### **III. General Overview**

#### **a) Roots of Pollution in Urban Areas**

The 18th century industrial revolution in Europe forever changed the economies of the nations involved. The introduction of automation through machines, the introduction of chemicals, and the harnessing of natural fuels led to an era of economic prosperity that has shaped industry even today. The Industrial Revolution introduced an ease of work that led to the production of more goods and development of new technologies, increasing GDP and population. However, these new techniques also led to highly increased pollution levels. With the use of fossil fuels and chemicals in the manufacturing process, the environment in rapidly growing urban areas suffered and led to many deaths. The new manufacturing processes affected noise levels, water purity and air cleanness in urban areas. The economy and population grew but the quality of life dropped.

Urban areas are especially affected by the issue of pollution. Due to the high population in urban areas, individuals are especially affected by the pollution that citizens produce. Additionally, many industries are centered in urban areas, further causing the pollution levels to rise.

Today, prosperous industries greatly rely on the burning of fossil fuels such as oil. Not only do the manufacturing industries emit pollutants, but individuals rely on polluting materials in daily life. The average citizen in the US causes 17 tons of carbon dioxide emissions each year, stemming mostly from transportation and electricity use. Fossil fuels greatly contribute to carbon dioxide emissions and pollute the air. Additionally, when harvesting fossil fuels for use, accidents such as oil spills can cause millions of liters of water to become unusable.

The reason fossil fuels are popular is their efficiency. Unlike renewable energy sources, fossil fuels are cheap and accessible. Sunlight-generated energy is only useful in

areas with sunlight whereas coal can be burned anywhere. Biofuels can impact food production levels because they are produced on farmland.

Despite the risk associated with fossil fuels, other types of energy are also dangerous. Even though the burning of fossil fuels contributes more to pollution than nuclear energy, a nuclear reactor meltdown can cause areas to become deadly to humans for hundreds of years. Though alternatives to fossil fuels exist, they are not as useful and efficient for mass-production as the more harmful fossil fuels are. In conclusion, pollution is caused by the modern industry and consumer because the cheapest and easiest ways to generate energy are detrimental to the environment.

## **b) Effects of Pollution in Urban Areas**

Air pollution, water pollution and waste constitute the main types of urban pollution as recognized in SDG11. Despite the existence of other environmental hazards such as noise and chemicals that emanate from urban areas, the topic at hand is considered to focus on these three categories.

### **i. Air Pollution**

Air pollution is found in all urban areas as most cities are situated near industry areas where manufacturing and pollution occurs. In dense cities, citizens that rely on automobiles for transportation also contribute to air pollution. Air pollution can cause respiratory diseases, cardiovascular diseases and brain damage when the polluted air is inhaled. Emissions of sulfur dioxide and nitrogen oxides, two of the CACs, can also lead to acid rain. Especially acidic rain can damage the human skin and also leave effects on acid-susceptible animals and plants. Air pollutants such as carbon dioxide also contribute to the rapidly increasing issue of climate change. All of the aforementioned gases contribute to the greenhouse gas effect. This is the process which creates climate change and global warming. The emitted gases create a thickening layer in the atmosphere which traps the sun's warmth. Scientists expect global temperature to rise in the next 100 years by the same factor as from the last ice age until today. This will cause the



polar ice caps to melt and coastal areas to be flooded, leading to property and environmental damage.

## **ii. Water Pollution**

Water pollution makes water unsafe to drink and is therefore a major problem in poorer urban areas and areas with bad access to drinking water. As freshwater resources are already declining, polluted freshwater contributes to the problem of water availability. The consumption of wastewater can lead to diseases such as cholera, typhoid and diarrhoea. Polluted bodies of water also greatly impact marine life as the water becomes uninhabitable for animals. Deterioration of marine life has negative economical effects on areas reliant on the fishing industry and disrupts food chains, therefore also impacting human food availability.

## **iii. Noise Pollution**

Noise pollution occurs in urban areas due to the large amounts of people and machines creating sounds. Though noise pollution is less harmful than the other types of pollution and cannot cause death, it still plays a major factor in human suffering in urban areas due to its effect on mental health. When humans are subjected to noise for an extended period of time, they can have trouble sleeping and their sense of hearing can be damaged. Lack of sleep can cause stress, problems with concentration, and depression. Noise pollution also has effects on animals that rely on sound for communication, such as whales, as excess noise can disrupt this communication.

## **c) Case Example: China**

China is one of the major countries heavily affected by pollution due to the industry. Since China's industrialization in the 1960s, the country has changed from a predominantly agricultural to a mainly manufacturing industry. Its population has doubled and the total GDP has risen from about 47 billion to 13 trillion US dollars. However, due to the country's high usage of fossil fuels, China accounts for half of worldwide coal consumption. China's level of urban pollution is the highest worldwide. Its capital of Beijing has issued red alerts

for severe pollution, and the air in the city has a particle concentration 40 times the WHO-designated safe level. China is also the largest emitter of greenhouse gasses, accounting for 27% of worldwide emissions. Despite all of these problems, there is not enough incentive to stop using fossil fuels as the industry heavily relies on them, and China enjoys great economic prosperity from its use of polluting energy sources.

## **IV. Major Parties Involved and their Views**

### **a) Greenpeace**

Greenpeace is one of the major non-governmental organizations dedicated to solving worldwide environmental issues. Founded in 1969 to protest the US's atomic bomb testing, Greenpeace today mainly campaigns to solve problems such as climate change and pollution. The organization mainly raises awareness for problems and offers solutions to them. Greenpeace offers solutions for corporations, nations and individuals to lessen their environmental footprint and reduce emissions. Furthermore, it is a major advocate of renewable energy and campaigns against extensive use of fossil fuels. Despite the practical aspect of fossil fuels, the organization believes that the environment must take priority over energy efficiency. Greenpeace also attempts to increase transparency on the matter of emissions and expose pollution scandals to raise awareness and people to protest and take action against high pollution levels. To make sure that nations comply with their goals, Greenpeace advocates the establishment of legally binding guidelines on emissions standards.

### **b) Brazil, Russia, China and India (BRICs)**

The group of these major advancing economies all face similar problems with handling their pollution levels. The four countries are grouped together as rapidly emerging economies with a high population and therefore all face similar problems with emissions. As all four nations have rapidly growing industries based largely on manufacturing using fossil fuels, they cannot afford to use less reliable forms of renewable energy sources despite the controversy that their emissions create. These nations have in the past prioritized their growing economies and populations over the pressing environmental

issues they face, but their views are changing as the situation becomes more drastic. With many major urban areas having a particle concentration many times higher than the safe level, China's Premier, Li Keqiang, stated in 2014 that the nation would "declare war" on pollution. Several of these nations have begun to invest in renewable energy projects in neighboring countries in an effort to find a way to reduce their emissions with other stable energy sources. India, for example, has attempted to tap energy from hydropower in the Nepalese Himalayas. Brazil, India, China and Russia are attempting to become more environmentally friendly and limit their emissions in favor of the population and environment, but as their economies rapidly expand, they cannot abandon their debated fossil fuel usage in favor of energy sources that may throttle the industry.

## V. Timeline of Events

<b><u>Date</u></b>	<b><u>Event</u></b>
December 5-9, 1952	"Great Smog" causes 12 000 deaths in London area
Ca. 1960	Industrial Revolution in China begins
October 1969	Don't Make a Wave Committee, later to become Greenpeace, is founded as a protest against United States' nuclear testing
October 1973	Organization of Petroleum Exporting Countries (OPEC) proclaim oil embargo, price of oil per barrel quadruples. This incident caused the first oil crisis. All oil exports to the US, Western Europe, and Japan ceases to demonstrate OPEC's

	power.
April 26, 1983	Chernobyl nuclear power plant explodes, leading to worst ever nuclear accident
August 18, 1990	USA passes Oil Pollution act following Exxon Valdez Oil Spill
21 March, 1994	United Nations Framework Convention on Climate Change becomes effective
April 20 - July 15, 2010	Deepwater Horizon Oil Spill on the Macondo Prospect, operated by British Petroleum, becomes largest accidental oil spill in history
December 8, 2015	Beijing issues first red pollution red alert
December 11, 2015	Paris Agreement

## VI. Previous Attempts to Solve the Issue

### a) Greenpeace

As previously mentioned, Greenpeace is one of the leading organizations trying to solve the issue of pollution in urban and rural areas. The organization has had some success in negotiating with governments of major polluting nations. Greenpeace has attempted to convince China to switch to more environmentally friendly types of energy sources instead of their large-scale use of coal. However, as previously mentioned this significantly limits the efficiency of their growing economy. Though Greenpeace has extensively campaigned and negotiated in favor of renewable energy, they have not had major success in limiting corporate and nationwide emissions.

### **b) Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)**

Individual bills such as the Clean Water Act (CWA) in the United States are also important steps forward in attempting to defeat pollution. Passed in 1972, the CWA is the main set of laws in the United States regarding water pollution. Though other countries have passed similar acts, this act sets clear guidelines for water pollution to clearly limit the extent to which corporations may legally pollute water resources. The CWA gives the Environmental Protection Agency the task of setting clear standards for water quality and enforcing penalties should these be violated without a permit. At the time in the USA, water pollution was a major issue due to the major fossil-fuelled industries built near bodies of water; the Cuyahoga River in Cleveland is famous for having caught fire in 1969 due to its heavy pollution. The CWA ensures that the EPA tackles the problem and takes action before pollution levels significantly rose. The CWA sets water quality as a clear priority for the United States and is still effective today, having played an important role in limiting the extent of water pollution in the country.

### **c) Limiting Cars in Major Urban Areas**

In large, highly populated cities, there is a considerable amount of the population relying on emissions-heavy types of transportation. Especially private automobiles greatly contribute to pollution in urban areas due to their high emissions and prevalence. Though trains and buses certainly are major factors in pollution, public transportation can transport more people than cars with similar emissions. As airplanes are the only opportunity for fast transatlantic flights, there is no proper way to limit plane transport without an alternative. However, major world cities such as Delhi, Paris and Mexico City have instituted car bans for a short amount of time. The population has to rely on environmentally friendlier types of transportation such as bicycles or public transportation. Though these bans resulted in significant drops in the pollution level of the area, people were forced to resort to less efficient means of transport. Therefore, the bans created major controversy and anger among citizens who did not have proper alternatives for transportation.

### **d) Paris Agreement 2015**

Following the 2015 United Nations Climate Change Conference, 55 of the UNFCCC parties ratified the Paris Agreement. Though not yet put into force, the Paris Agreement, signed by 177 UN member states, lays out an action plan to reduce carbon emissions and limit the worldwide temperature increase to below 2°C. The plan attempts to increase transparency regarding emissions by having member state governments come together every five years to review and refresh their targets. Furthermore, governments should report on their progress regarding their emissions targets. Similarly to the Kyoto Protocol, the Paris Agreement details means to reduce emissions and also opportunities to work with already existing climate change. It especially emphasizes international cooperation on a governmental level to aim towards the common goal of overcoming pollution. However, the efficiency of the document was greatly compromised when the USA, a main polluter, left this agreement. The behavior of the USA has also led India to prefer fossil fuels over green energy.

## VII. Relevant United Nations Documents & Other Sources

### a) UN Documents

[Preventing and Reducing Air Pollution to Improve Air Quality Globally](#), 30 January 2018  
(UNEP/EA.3/Res.8)

This resolution was passed by the Environment Assembly of the United Nations in 2018 and lays out steps to tackle specifically air pollution internationally. It represents some of the most recent international environmental regulation on the issue.

[Addressing Water Pollution to Protect and Restore Water-related Ecosystems](#), 30 January 2018, (UNEP/EA.3/Res.10)

This resolution was passed by the Environment Assembly of the United Nations only two months prior to its air-pollution counterpart (see above).

[Health and the Environment: Addressing the Health Impact of Air Pollution](#), 26 May 2015  
(WHA 68.8)

This resolution was the result of the 68th World Health Assembly in Geneva. The resolution recognizes air pollution as a major threat to human life and the single largest environmental health risk. Furthermore, the resolution acknowledges the major negative health effects of air pollution and attempts to further international cooperation to defeat the issue. It calls for member states to raise awareness to establish guidelines on and work towards controlling air pollution. It also attempts to grant the WHO opportunities to take a leading role in the control of air pollution.

[The Human Right to Water and Sanitation](#), 3 August 2010 (A/RES/64/292)

This resolution from the 64th General Assembly in 2009 recognizes clean water as a human right. It therefore asks member states to work towards an environment in which they can grant this right to all citizens. Recognizing the alarming amount of people without access to clean water, this resolution mainly aims to acknowledge the issue at hand. By acknowledging the problem and bringing it to the member states' attention, it attempts to incentivize nations to dedicate modern technologies and resources towards solving the issue.

[Kyoto Protocol](#), 11 December, 1996

The Kyoto Protocol is a UN Document produced by a conference the United Nation Framework Convention on Climate Change (UNFCCC) held in Kyoto, Japan. It set “commitment periods” during which certain nations reduce their greenhouse gas emissions. The first commitment period took place from 2008-2012. In this 4 year period, 37 industrialized nations and the European Union of the time had to reduce their base emissions from 1990 by a certain percentage, calculated from their economy and their base emissions in 1990. The Kyoto protocol wasn't a particular success, but it did yield results. Despite failing the goal the nations did reduce their emissions. Due to this the results were mixed.

[Intergovernmental Panel on Climate Change \(IPCC\) 5th Assessment Report  
IPCC AR5 Summary for Policymakers](#)

The IPCC is a long standing UN organization that periodically releases an assessment report on the environment. Due to the amount of work put into them, the fifth was published in 2014. The sixth is in progress and on schedule for its release in 2022. Despite the time gap it is still the most sophisticated document on global warming and the effects of pollution. Over a long period of time the three working groups in the IPCC have gathered data which they have assembled into various tables and graphs. They present purely factual information and accompany each statement with their confidence in its relation to the data.

## **b) Other Sources**

### [Nantes European Green Capital Application: Noise Pollution](#)

This part of the city of Nantes' successful application to become the 2013 European Green Capital details the famously "green" city's previous attempts and future plans to control noise pollution. As one of the larger metropolitan areas in France, Nantes' noise pollution stems primarily from high traffic. However, the city has managed to keep its noise pollution largely under control through action plans which protected residents from airport noise pollution and controlled the urbanization of the city, a large factor in noise pollution. The city furthermore introduced a program to raise its population's awareness of noise pollution and ways to reduce it. Though these plans were specific to the city of Nantes itself, the European Green Capital Application introduced several innovative plans to assess and limit the problem and sets an example for cities struggling to control their noise levels.

### [Outdoor Air Quality in Urban Areas: European Environment Agency](#)

The European Environment Agency (EEA) is an agency of the European Union whose task is to provide independent information on the environment. This is a report they have submitted November 29th, 2018. In it the EEA first describes the situation. They do this by declaring air pollution to be the deadliest environmental danger in the European Union (EU), being responsible for over 400 thousand deaths per year. In addition, the EEA states the high economic toll this takes on health related costs reaching 940 billion euros per year. The EEA then uses various data tables and graphs to explain the gravity the issue



has taken in recent years and exposes the concentrations of ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and carbon dioxide (CO<sub>2</sub>) in Europe. They have far exceeded previous predictions and goals and must be dealt with. The EEA suggests solution for policy makers while emphasizing the need for international cooperation and action. The report on air quality continues with a short statement about the situation in each member nation of the EU, and closes with a hopeful outlook on the EU after the year 2020.

## VIII. Questions to Consider

1. What measures may we take right now that are suitable to solve the issue of pollution?
2. What measures should we work towards taking in the future and what must change about the current situation for these measures to be effective?
3. How can we find a balance between the success of the industry and the use of environmentally friendly materials?
4. What incentives do member states need to use renewable energy sources over fossil fuels?
5. What do we do with contaminated substances such as unusable water?
6. How do we enforce environmental pollution standards?
7. How will we increase public knowledge of the issue?
8. What must individuals do to limit the pollution they produce?
9. How can a new emissionless lifestyle be incentivized for the local population in MEDCs taking into account the drastic change in living conditions?

## IX. Possible Solutions

To find a solution, delegates must find a compromise between the economy and the environment. If the economy does not prosper, not only would it be more difficult to implement expensive ways to preserve the environment, but corporations, governments and individuals would be unwilling to focus on mitigating pollution levels. A ban/limit of

pollution-heavy transportation may seem like a viable fix, but to find a way to implement this without severely disrupting everyday urban life will prove to be challenging. It may be possible to increase public interest in solving the issue by increasing awareness of the problem, implementing a tax on carbon emissions or simply tightening emissions standards. By increasing public knowledge about the severity of the issue, the public could be motivated to take initiative in solving the problem. A further way to increase this initiative is by implementing monetary incentives for the use of renewable energy. Many new industries such as electric cars would prosper under a financial boost while reducing global emissions. Delegates could also propose tax cuts for companies who use renewable energy instead of fossil fuels. However, these incentives could prove to be inefficient due to the high price necessary to make up for the loss of energy efficiency from burning fossil fuels. Delegates may also want to aid LEDCs without the means to improve their pollution standards or fix their high pollution levels by for example funding water treatment plants in poor urban areas. Though means such as banning fossil fuels could solve the problem of pollution, it will be challenging to find a solution that is efficient at solving the problem while allowing the economy to grow. We must also keep in mind the needs of developing nations. Countries such as India are very dependant on fossil fuels as they claim it to be there right to use fossil fuels as they are in the midst of industrialization. When developed nations went through industrialization they also heavily depended on fossil fuels. This energy source has created a niche for itself which is hard to replace with renewable energy.

## **X. Conclusion**

Though pollution in urban areas may not receive the same public attention as other current events, the issue does affect everyone and must be addressed immediately. This lack of attention leads to the common myth that small humans can't affect something as large as the Earth. We cannot allow to be neglected when more than half of the world population currently lives in urban areas. It would be foolish to ignore this issue that creates lasting physical and mental health effects leading to death everywhere.

For the past centuries, the world's leading member states have been focused on improving their economy with often little regard for the environment. Now that the price has become apparent, we have the means to stop the issue. To solve the problem without reversing the economical progress of the past, a solution is necessary that will allow the industry to grow without sacrificing public health. The aim of this conference is to prevent climate change as a prerequisite to a sustainable future. With major cities having air that is impossible to breathe, and water that is so polluted it can't be used urban pollution is very much one of the most critical world problems of our time. It is an issue that has become more critical since industrialization. In a world that prides itself on its technological advancements, we must use the means we have to defeat urban pollution.

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