

Forum:	Environment Committee
Issue:	Mitigating the effects of air pollution
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Introduction

The world is facing a lot of environmental, economic and social problems and its condition is getting worse day by day as we use the natural resources inattentively and don't know how to manage our waste. It is true that human are responsible for polluting the environment. These problems create a dangerous environment for countries, and it also reveals a vicious cycle that is very hard to solve.

Air pollution is one of the most important environmental problems. It refers to the release of pollutants into the air that are detrimental for human health and for the planet as a whole. It occurs when harmful substances are introduced into Earth's atmosphere and it comes from energy use and production, in other words human activity generates air pollution. Burning fossil fuels releases gases and chemicals into the air and this may cause diseases, allergies or death. Not only humans are affected by air pollution, it also causes harm to other living organisms such as animals and plants, and it is possible that the natural or built environment will be damaged.

Air is vital for each living organism and is an important part of a lot of essential cycles that make life possible on Earth. Everyone breathes the same air and and environmental protection is needed in each country so that the benefits of pollution control are beneficial for everyone. Environmental problems are substantial since it supports the life of each and every living organism on earth and it is our essential for a better health. It is certain that environmental problems aren't "fake", environmental policy will not tank the economy and the government isn't always the reason why there is air pollution.

It is clear that atmosphere protects us from X-rays, cosmic rays and other particles that bombard our planet. Air also reduces the possibility that meteorites and asteroids could level a city. In short, air pollution has major adverse effects on health and its effects should be mitigated.

Definition of Key Terms

Pollution: According to the Environmental Pollution Centers, “pollution” is the presence of chemicals or compounds in the air which are usually not present and which lower the quality of the air or cause detrimental changes to the quality of life (such as the damaging of the ozone layer or causing global warming).

Air Pollution: According to the World Health Organization (WHO) “air pollution” is the contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere.

Fossil Fuels: Fossil fuels are hydrocarbons, primarily coal, fuel oil or natural gas, formed from the remains of dead plants and animals. They release carbon dioxide, nitrogen oxide, methane and other emissions in the air and created ground level ozone which causes global warming and climate change.

Climate Change: According to NASA, it is a change in Earth's climate. This could be a change in Earth's usual temperature. It can be detrimental for human life in our planet, and one of the most fundamental effects of air pollution is that it accelerates climate change.

Ozone Layer: It is a region of Earth's stratosphere that absorbs most of the Sun's ultraviolet (UV) radiation.

Pollutant: It is a substance that pollutes something, especially water or the atmosphere.

Smog and Soot: According to the United Nations Environment Assembly (UNEA) these two are the most prevalent types of air pollution. Smog, or “ground-level ozone,” as it is more wolkily called, occurs when emissions from combusting fossil fuels react with sunlight. Soot, or “particulate matter,” is made up of tiny particles of chemicals, soil, smoke, dust, or allergens, in the form of gas or solids, that are carried in the air.

Outdoor Air Pollution: It refers to the air pollution experienced by populations living in and around urban areas and and it is important for homes near pollution sources.

Indoor Air Pollution: It refers to the pollutants found in indoors. The main cause of indoor air pollution is inefficient fuel combustion from technologies used for cooking, heating and lighting.

General Overview

Air pollution is not a new problem, it existed in the days of Ancient Rome, and exists since then. Air quality issues were also found in any large city where people burned wood and worked at crafts and industry, whether or not they used fossil fuels.

Pollutants

Pollutants can be solid particles, liquid droplets, or gases. They are classified as primary or secondary. Primary pollutants are produced from a process, such as ashes. Secondary pollutants are not emitted directly. Rather, they form in the air when primary pollutants react or interact. Primary pollutants include carbon dioxides (CO₂), sulfur oxides, nitrogen oxide, volatile organic compounds (VOC), and radioactive pollutants which produced by nuclear explosions. Secondary pollutants include ground levels of ozones. These hazardous air pollutants are either deadly or have severe health risks. It can affect the liver in the harm the immune, nervous, and endocrine systems and it can damage children's brains and kidneys, and affect their IQ and ability to learn. Greenhouse gases lead to warmer temperatures and all the effects of climate change such as rising sea levels, more extreme weather, heat-related deaths, and transmission of infectious diseases by trapping the earth's heat.

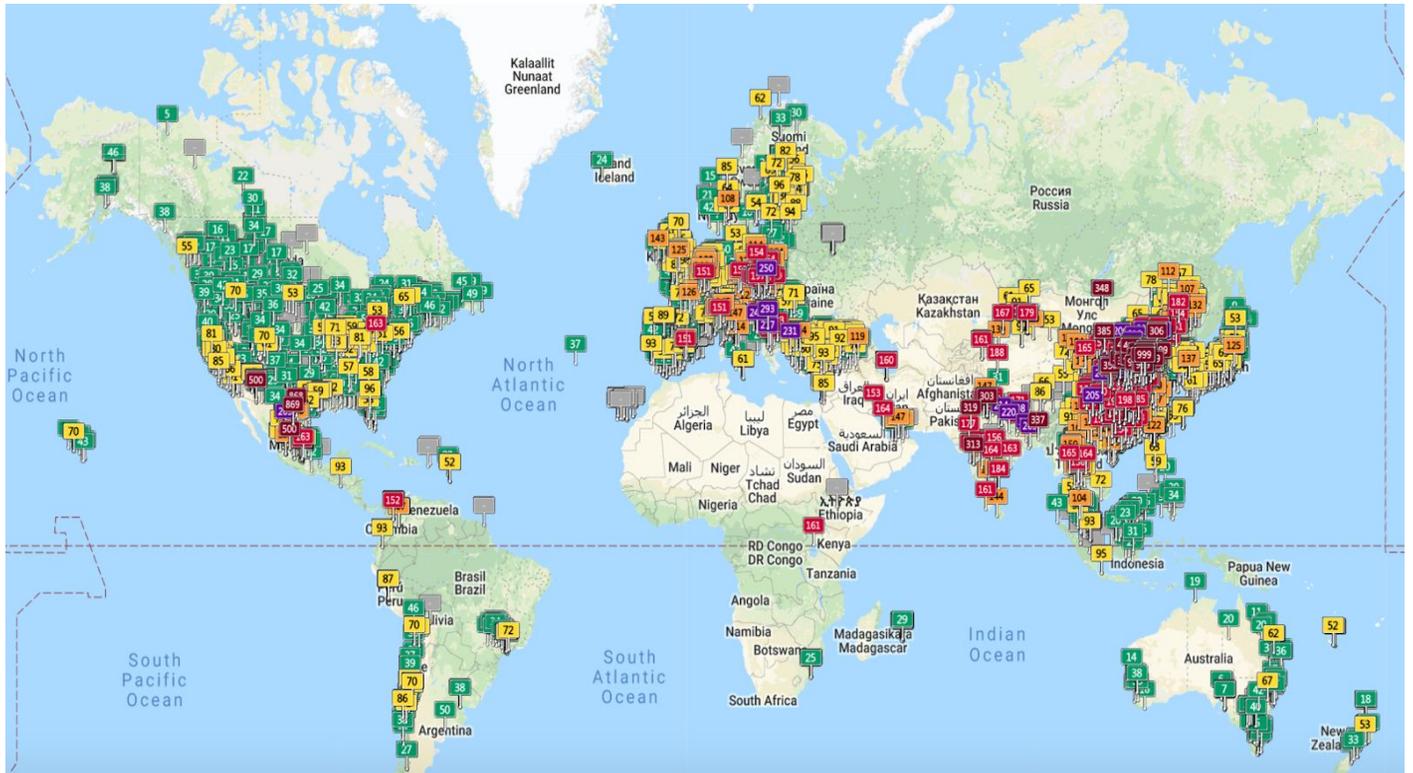
Sources and Causes

There are man-made and natural sources of air pollution. Anthropogenic sources include smoking, technological sources, weapons and waste depositions. Natural sources are listed as dust, methane, volcanic activity and wildfires. Fossil fuels, vehicle emissions, agriculture, manufacturing, deforestation, mining and indoor pollution are the main causes of air pollution. They lower air quality because the fewer trees there are the less carbon dioxide they can absorb. What we use in our own homes is also leading to air pollution. Household cleaning products, paints and varnishes can also release chemicals into the air which will contribute to poor air quality with the effects of smoking.

Effects

Air pollution is one of the most significant risk factors on earth. It can cause pollution-related diseases, cancer, heart disease, and stroke. The health effects caused by air pollution may also include difficulty in breathing, wheezing, coughing, asthma and worsening of cardiac conditions. The WHO estimated in 2014 that every year air pollution causes the premature death of some 7 million people worldwide. India has the highest death rate due to air pollution. India also has more deaths from asthma than any other nation according to the WHO. In December 2013 air pollution was estimated to kill 500,000 people in China each

year. In December 2015, medical scientists reported that cancer is mostly a result of environmental factors especially air pollution, and not only because of bad luck.



Picture 1: “Air Pollution in The World” Real-Time Air Quality Index (AQI)

AQI	Air Pollution Level	Health Implications
0 - 50	Good	Air quality is considered satisfactory, and air pollution poses little or no risk
51 -100	Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
101-150	Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
151-200	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects
201-300	Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.
300+	Hazardous	Health alert: everyone may experience more serious health effects

Most Polluted Countries

According to WHO; Iran, India, Saudi Arabia, China, Pakistan, Uganda, Qatar, Nigeria are the 8 most polluted countries in the world. Everyone may experience serious health effects because of air pollution if the country doesn't take action.

Major Parties Involved and Their Views

WHO

The World Health Organization is currently working on pollutions that affect the health of every people in the world. Because of air pollution, at least 3.7 million deaths are happening each year and some of them are because heart diseases and strokes and the others are respiratory illnesses or cancer. According to WHO's most recent survey worldwide, average air pollution levels in many developing cities are 10 times higher than WHO air quality levels.

Environmental Protection Agency (EPA)

The Clean Air Act of 1970 and 1990 authorize the U.S. Environmental Protection Agency (EPA) to protect public health by regulating the emissions of the most harmful air pollutants.

China

According to Greenpeace, air pollution is one of the most important problems in China and smog hangs heavy on many major cities of the country. Especially Beijing, Hong Kong and Shanghai are the centers where people grow up with asthma and other illnesses. WHO and Greenpeace are currently working together to reduce its effects in China.

Iran

According to BBC, Iran's deputy health minister reported that 4,460 people died from air pollution in Tehran and it is absolutely impossible to walk without wearing a surgical mask however people's eyes still get effected and this leads to a lot of deaths or injuries. At least one of three people is in hospital or effected by the air pollution.

Pakistan

Air pollution affects Pakistan more than most countries in the world. According to WHO, smog has become a fifth season in Pakistan and it continues to cause more deaths day by day. This is why, organizations started to investigate the causes and try to monitor air quality.

India

Air pollution is a quite serious issue in India. The Air (Prevention and Control of Pollution) Act was ratified in 1981 in order to regulate air pollution in India and there have been some measurable improvements since then.

Timeline of Events

1500-1600	Rapid industrialization in England leads to heavy deforestation and start the first effects of air pollution
1800-1900	Industrial Revolution brings about large-scale use of coal and intensified air pollution.
1948	WHO was established.
1955	Air Pollution Control Act was passed as the first federal legislation dealing with air pollution.
1963	Clean Air Act was passed in order to control air pollution.
1972	The UN Environment Programme (UNEP) was established.
1987, February	The Indoor Air Quality Act, which focuses on indoor air pollution, was introduced to Congress.

2005, February	The Kyoto Protocol which calls for participating nations to reduce greenhouse gases that contribute to climate change, came into effect.
23-27 June 2014	First session of UN Environment Assembly of the UN Environment Programme
2015	World Health Assembly (WHA) resolution about air pollution was made as a global response.

UN Involvement

UNEP

The UN Environment Programme was established in 1972 and it is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system. It aims to improve air quality to protect the environment and human health. According to the UNEP , air pollution causes 1 in 9 deaths and is the most important environmental health risk of all time.

UNEA

UN Environment Assembly is the world's highest-level decision-making body on the environment and has the membership of all 193 UN Member States and the full involvement of UN organizations, specialized agencies, inter-governmental organizations and the society. The Assembly provides a groundbreaking platform for leadership on global environmental policy in bringing together these varied communities. Its first session was on 27 June 2014.

Relevant UN Documents

Climate change and its possible security implications- Report of the Secretary-General (11 September 2009,A/64/350)

<http://www.securitycouncilreport.org/atf/cf/%7B65BF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/sg%20report%202009.pdf>

Resolutions and decisions adopted by the United Nations Environment Assembly of the United Nations Environment Programme at its first session on 27 June 2014; A/RES/1/1-1/17:
<http://web.unep.org/about/cpr/documents/resolutions-and-documents-first-session-un-environment-assembly>

Resolutions adopted by the UN Environment Assembly at its second session; A/RES/2/1-2/25:
<http://web.unep.org/about/cpr/documents/resolutions-and-documents-second-session-un-environment-assembly>

22 December 1989, United Nations A/RES/44/228: <http://www.un.org/documents/ga/res/44/a44r228.htm>

A/RES/61(I) Establishment of the World Health Organization:
<http://research.un.org/en/docs/ga/quick/regular/61>

Treaties and Events

UN Environment Assembly Sessions

UN Framework Convention on Climate Change: The UNFCCC entered into force on 21 March 1994. Today, it has near-universal membership. The 197 countries have ratified the Convention.

Paris Agreement was passed on 12 December 2015, and the agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming.

The Kyoto Protocol is an international agreement that is linked to the UNFCCC, which commits its Parties by setting internationally binding emission reduction targets.

Evaluation of Previous Attempts to Resolve the Issue

Several UN organs, organizations, conferences and resolutions were passed in order to put an end to this fatal issue. Especially WHO, EPA, UNEP, UNFCCC and Greenpeace are currently working to terminate or mitigate the effects of air pollution. The UNEP created an UN Environment Assembly and it became the biggest assembly to take environmental decisions especially about air pollution. UNFCCC was ratified by a lot of Member States and after the ratifications, The Paris Agreement, Kyoto Protocol were passed in order to commit the Parties by setting binding emission reduction targets. Since developed countries are principally responsible for the high pollution levels in our world, a lot of changes are made in each country. However, this isn't just a problem which can end with some changes, it requires full attention and carefulness.

Possible Solutions

Air pollution needs to be tackled at a global level through legislation and international agreements which aim to reduce pollution levels. Industrialized countries are working in order to reduce levels of sulfur dioxide, smog, and smoke to improve people's health. However as a result, the lower sulfur dioxide levels get, the worse global warming becomes.

On a personal level, a lot of personal actions could change the percentage of air pollution such as driving and flying less, recycling, and conservation reduces a person's carbon footprint (the amount of carbon dioxide a person is responsible for putting into the atmosphere). Driving and flying less will minimize the effects of fossil fuels, which will decrease the percentages of carbon dioxide, nitrogen oxide, methane and other emissions in the air. Recycling is one of the important solutions because it helps reducing the usage of energy, reusing it and saving energy.

On a larger scale, governments are taking measures to limit emissions of carbon dioxide and other greenhouse gases. It also gets more efficient if the government of a country tries to reduce the percentage of air pollution to create a better environment. Conventions, agreements and conferences should be made in order to apply immediate action on this issue. One of the most efficient agreements is the Paris Agreement which is a voluntary agreement, is one of the efforts being enacted on a global scale

to combat climate change. Another method is to put taxes on carbon emissions or higher taxes on gasoline, so that individuals and companies will have greater incentives to conserve energy and pollute less. The less gasoline we burn, the better we're doing to reduce air pollution and harmful effects of climate change. In other words, we should also take steps individually in order to lower our own environmental impact especially about air pollution. Reducing the use of private vehicles will improve the air quality and reduce the carbon footprint, we can always use public transportation to reduce our carbon footprint and it will help us conserve energy everywhere. Conserving energy in home will also reduce our use of electricity by switching to sources of renewable energy. Recycling also will create a better environment and mitigate the effects of air pollution.

Notes from the Chair

It is really important to be aware of the effects of air pollution. It isn't just a normal daily problem, it is one of the most severe problems since Ancient-Rome. Everyone should be more careful and start taking action. Little steps will lead to huge changes and it means we should all pay attention into this issue and start using public transportation, buying energy efficient vehicles, making use of solar energy and using recyclable products, in other words who should consider going green.

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