Study Guide

United Nations Development Programme 1

Agenda:

Reducing Air Pollution in Cities Using Smart Technology

Bureau:

Innaya Khan | Utprabh Gautam | Aarohi Vyas

INDEX

TOPIC:

LETTER FROM THE EXECUTIVE BOARD

Dear Delegates,
We feel immensely delighted to serve as your Executive Board for the first iteration of Model United Nations Shishukunj North Campus. We welcome you to this committee, the United Nations Development Programme. We hope that you brilliant minds are excited, as we are to brainstorm thoughtfully about the agenda presented 'Reducing Air Pollution in Cities Using Sustainable and Modern Technology'.

First and foremost, we would like you to let go of all your hesitations and express your views freely. Your words one day can bring about dynamic changes in the ways of the world. As well stated, "Speech has power. Words do not fade. What starts out as a sound, ends in a deed." We assure you that this Model United Nations would be a euphoric learning experience for you. Along with you, we would embark upon a journey to reach an eco-friendlier environment around the world. We believe that by the end of this committee, you will develop a global outlook, enabling you to rise above mere national boundaries and be true global citizens.

The agenda this year is a miscellaneous topic with many sub-agendas protruding from it. We expect that you critically analyze the same well and bring forth some extraordinary, multifarious ideas which can be adopted to move a step closer to sustainability and world development.

As you receive your portfolios, make sure you know everything significant and relevant about it to perceive your respective portfolio's perspective well. Remember, the bureau sees in you the leaders and problem solvers of tomorrow. Collaborate with each other and pave your own path for developing this world, making it a better place. We expect the delegates to be thorough with the ROP and study guide but also not limit your research to the study guide only. Looking forward to meeting you all!!

Warm Regards,
Innaya Khan (Chairperson)

Utprabh Gautam (Vice Chairperson)
Aarohi Vyas (Rapporteur)
United Nations Development Programme (UNDP)

INTRODUCTION TO THE COMMITTEE

A UN entity entrusted with assisting nations in eliminating poverty and achieving sustainable economic growth and human development is the United Nations Development Programme. Building local capacity for long-term self-sufficiency and development is a priority for the UNDP. The United Nations Special Fund, founded in 1958, and the United Nations Expanded Programme of Technical Assistance, established in 1949, served as the foundation for UNDP. The United Nations General Assembly created the UNDP as we know it today in 1966. Its goals and tenets are to uphold world peace and security, foster friendly relations between nations based on equality and self-determination, and achieve global cooperation in tackling economic, social, cultural, or humanitarian issues without regard to racial, sexist, or religious barriers. Three areas of focus dominate our work: democratic governance and peacebuilding, climate and disaster resilience, and sustainable development.

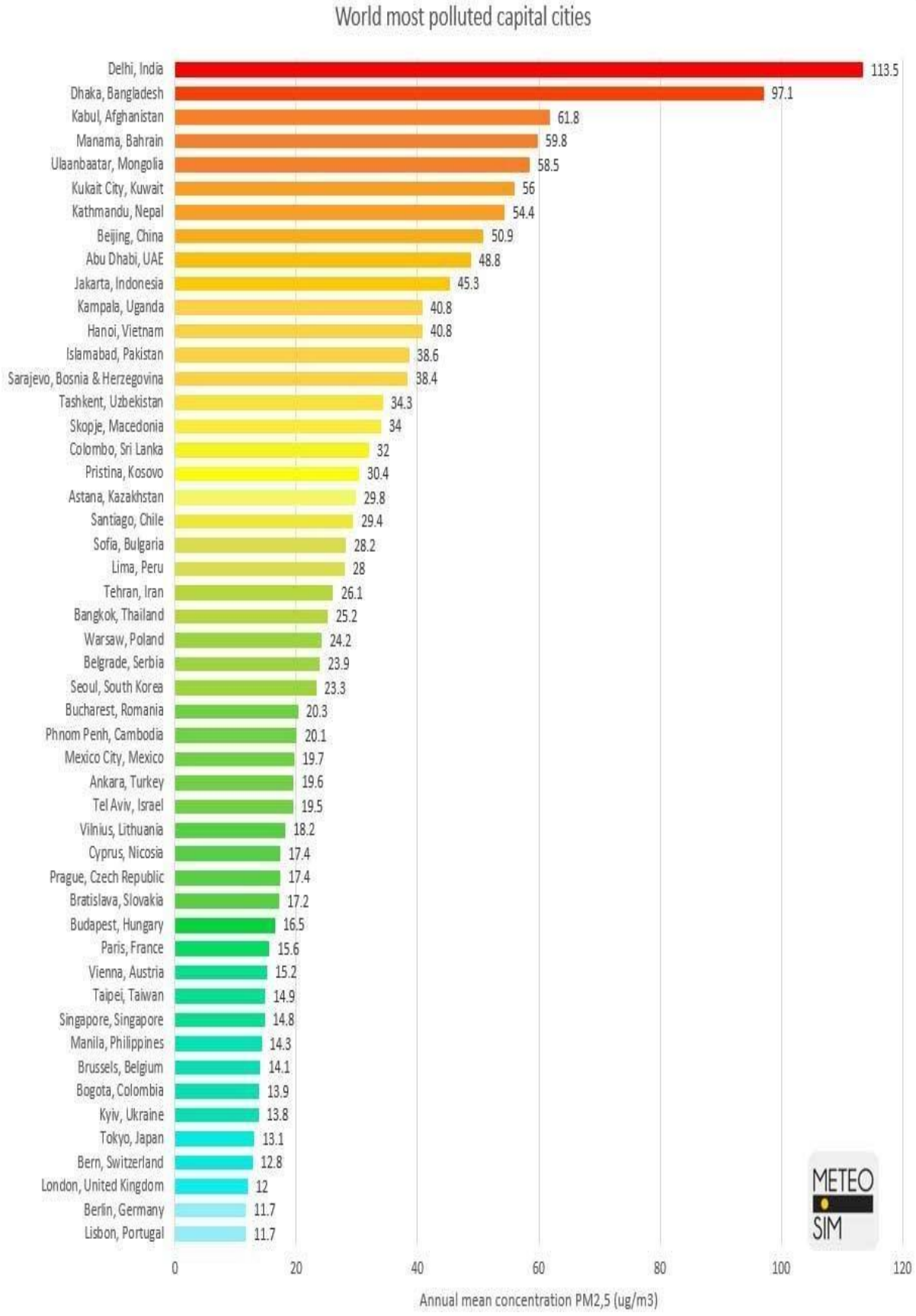
The goals of UNDP are to eradicate poverty, promote democratic governance, the rule of law, and inclusive institutions. In order to assist individuals in creating better lives for themselves, we promote change and link nations with information, experience, and resources. UNDP works in 170 nations and territories to end poverty and lessen inequality as the leading organization of the United Nations for international development. To accomplish the Sustainable Development Goals, we support nations in developing institutional capacity, leadership talents, partnering abilities, and resilience.

INTRODUCTION REDUCING AIR POLLUTION IN CITIES USING MODERN TECHNOLOGY

Air pollution is a severe problem faced by everyone today. The term "air pollution" describes the occurrence of dangerous components in the atmosphere of a place which has adverse impact on people's health, the environment, and their overall quality and standard of life. These pollutants, which may be gases, liquid droplets, or solid particles, are released into the atmosphere as a result of a variety of reasons. As it has a considerable influence on both developed and developing nations, air pollution has become a major worldwide concern.

There are two primary categories of sources of air pollution: anthropogenic (produced by human activity) and natural. Industrial emissions, car exhaust, construction operations, the burning of fossil fuels, and agricultural practices are a few examples of anthropogenic causes. Events like volcanic eruptions, and wildfires, are examples of natural sources. Although there are some natural sources of air pollution, human activities overrule their effect.

There are many different ways that pollutants discharged into the atmosphere might affect people's health. Short-term exposure to high air pollution levels can cause respiratory issues, eye, throat, and lung irritation, asthmatic flare-ups, etc. Long-term exposure to contaminated air has been connected to heart disease, lung cancer, respiratory disorders, and even early mortality. Children, the elderly, and people with pre-existing medical disorders are vulnerable groups in accordance with air contamination.


World most polluted capital cities
Delhi, India 113.5
Dhaka, Bangladesh 97.1
Kabul, Afghanistan 61.8
Manama, Bahrain 59.8
Ulaanbaatar, Mongolia 58.5
Kukait City, Kuwait 56
Kathmandu, Nepal 54.4
Beijing, China 50.9
Abu Dhabi, UAE 48.8
Jakarta, Indonesia 45.3
Kampala, Uganda 40.8
Hanoi, Vietnam 40.8
Islamabad, Pakistan 38.6
Sarajevo, Bosnia & Herzegovina 38.4
Tashkent, Uzbekistan 34.3
Skopje, Macedonia 34
Colombo, Sri Lanka 32
Pristina, Kosovo 30.4
Astana, Kazakhstan 29.8
Santiago, Chile 29.4
Sofia, Bulgaria 28.2
Lima, Peru 28
Tehran, Iran 26.1
Bangkok, Thailand 25.2
Warsaw, Poland 24.2
Belgrade, Serbia 23.9
Seoul, South Korea 23.3
Bucharest, Romania 20.3
Phnom Penh, Cambodia 20.1
Mexico City, Mexico 19.7
Ankara, Turkey 19.6
Tel Aviv, Israel 19.5
Vilnius, Lithuania 18.2
Cyprus, Nicosia 17.4
Prague, Czech Republic 17.4
Bratislava, Slovakia 17.2
Budapest, Hungary 16.5
Paris, France 15.6
Vienna, Austria 15.2
Taipei, Taiwan 14.9
Singapore, Singapore 14.8
Manila, Philippines 14.3
Brussels, Belgium 14.1
Bogota, Colombia 13.9
Kyiv, Ukraine 13.8
Tokyo, Japan 13.1
Bern, Switzerland 12.8
London, United Kingdom 12
Berlin, Germany 11.7
Lisbon, Portugal 11.7
0
20
40
60
80
100
120
Annual mean concentration PM2,5 (ug/m3)
METEO
SIM

KEY WORDS

- **Emissions -** An emission is something that is being sent out or released into the environment potentially harming or damaging the local ecosystem. Emissions are made up of things like liquids, gases, heat, sound, or radiation. Industrially it is measured by parts per million (ppm).
- **Health Hazards -** Any substance or condition that might prove to be harmful to an individual's health if exposed for a prolonged duration of time. It is of 4 types- chemical, biological, ergonomic, and physical health hazards. People usually have an acute or chronic illness as a consequence.
- **Automotive -**Automotive is a word used to denote anything in relation to vehicles and the business of making, selling, or repairing vehicles. (Here, this definition will be in respect with air pollution.)
- **Pollutants -** Substances that are discharged into the environment either normally or through human activities which have a negative effect on the environment are called pollutants. Cases: Sulphur dioxide, carbon monoxide, lead, mercury, etc.
- **Toxins -** They are substances that can cause harm to human, animal, or plant health. They can cause defects, and cancer and can moreover lead to death. The most common sort of toxin is chemical toxins (like cyanide, ozone, and carbon monoxide).
- **Renewable Energy -** Renewable energy is a type of energy that can be replenished at a rate faster than it is used up. It is derived from natural sources. Some examples are solar energy, wind energy, hydroelectricity, geothermal energy, etc.
- **Sustainable -** Sustainability is the process of meeting the current generation's demands without compromising or hampering the future. It is a delicate balance between the environment and the economy.
- **Air Quality -** It is used to measure the amount of toxins and pollutants in the air in a specific place or city. It is measured by the Air Quality Index (AQI). The higher the score, the higher the pollution.
- **Airborne Contaminants -**They are tiny particles that are released into the

atmosphere such as dust, diesel exhaust, chemical vapours, and fumes which are very often invisible. People that breathe in airborne contaminants may be at risk of damaging their lungs and developing lung cancer.

- **Low-Cost Sensors -** Low-cost air quality sensors are a relatively modern innovation that measures the amount of specific air pollutants and toxins. They are used to provide quick and instantaneous data over a large survey area.

WHY IS AIR POLLUTION IN THE PICTURE?

Air pollution is a significant issue because of the potential harm it could cause to the economy, the environment, animals, and humans. It leads to emissions like carbon dioxide, carbon monoxide, oxides of nitrogen and sulphur etc which cause severe health hazards and are capable of even damaging the neurons of living beings. All its negative impacts lead to reduced productivity, also impeding the economic growth of a place. Along with disturbing health and economy, air pollution deteriorates the air quality index leading to problems for the environment. Continuous instability in the percentage of various components of the atmosphere is a big issue which needs immediate attention. Thus, it is a necessity to control air pollution.

1.1) Causes of Air Pollution and Congestion and Air Quality Index

Air pollution is a major problem faced globally. It is being contributed by various natural and human factors. Some of the major factors include: -

- Industrial processes such as mining manufacturing, construction and various machine-oriented work which cause the release of harmful oxidants. Two-thirds of human exposure to outdoor air pollution, which claims the lives of almost 4.5 million people annually, comes from the combustion of fossil fuels.
- Use of unhealthy amounts of means of transportation on a day-to-day basis like cars, buses and other vehicles which emit carbon monoxide and other harmful pollutants.
- Natural calamities such as wildfire, volcanic eruption, dust storm etc are major contributors.

AQI is a standard measure of air pollutants in the air covered by specific areas. The air pollutants measured include carbon monoxide, sulfur dioxide, nitrogen dioxide and various harmful matter. The AQI ranges from 0-500 with various levels ranging from good to hazardous. AQI helps in controlling the air quality of the area. It is also

an important tool toward promoting better air quality.

AQI tracks five major air pollutants:

- Ground level ozone
- Carbon monoxide
- Sulfur dioxide
- Nitrogen dioxide
- Airborne particle

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

1.2) Impact of the Automotive/Petroleum Industry

With the rapid development of the petroleum and automotive industry come rapid problems. During the extraction and refining process of petroleum, various toxic emissions are released into the atmosphere. Due to bottlenecks, accidents, and signaling problems, there is an increase in wasted fuel which increases air pollution and carbon dioxide emissions in cities.

And while the production of cars is fine but due to the vast number of individuals who possess automotives, it has continued to have a major impact on the world. This overdependence on automotives has raised environmental and health issues, causing a lot of international disputes. Automotives have a significant environmental impact, which can be linked to the combustion of fossil fuels.

1.3) Problems Brought Forth by Air Pollution

Pollution worsens air quality and raises vehicle emissions. Many pollutants which contaminate the air are released into the environment as emissions which result in increased air pollution. Research confirms prior results by demonstrating how quickly anticipated NO2 levels fall with increasing distance from the highway. Emissions that are allowed to circulate freely in the environment lower the air quality index. In the end, this results in health risks like asthma, lung cancer, and other breathing-related concerns. Also, there are numerous ways in which air pollution can harm trees and crops. Reduced growth and survival of tree seedlings, decreased yields of agricultural crops, and increased vulnerability of plants to disease, pests, and other environmental stresses (such as severe weather) are all effects of ground-level ozone.

Animals can have health issues like people if they are exposed to air toxins in high enough quantities over an extended period of time. Studies have shown that air toxins play a role in both human and animal sickness, including birth abnormalities. In aquatic ecosystems, persistent hazardous air pollutants that degrade slowly in the environment are a particular problem. These pollutants build up in sediments and may increase concentrations many times greater than in the

water or air in the tissues of animals at the top of the food chain. Air Pollution also leads to harmful phenomena like acid rain, haze, global climate change, eutrophication, and ozone layer depletion.

1.4) Previous steps taken by UNDP.

UNDP, as the name suggests, is keen on sustainable development. To support this feature, UNDP has suggested various solutions for air pollution such as promoting renewable energy, improving energy efficiency, promoting sustainable transportation, and implementing policies and regulations.
Some steps taken by UNDP are:

- Support for renewable energy: The usage of fossil fuels has been decreased, and air pollution from the production of electricity can be decreased, by increasing the use of renewable energy sources including solar, wind, and hydro power. This can entail putting in place laws and incentives to encourage the use of renewable energy sources, as well as making investments in the necessary infrastructure.
- By improving energy efficiency in buildings, transportation, and industry, it will help in reducing the amount of energy needed to produce commodities and merchandise, which in turn can reduce air pollution. This involves implementing building codes and standards, improving public transportation, and promoting energy-efficient technologies in industry.

Motivating and inspiring people to use sustainable transportation modes, such as public transportation, cycling, and walking, will help in reducing air pollution. This involves improving public transportation infrastructure, implementing bike-sharing programs, and promoting easy walking urban environments.

TECHNOLOGY'S INTERFERENCE AND A NEW DAWN

Technology plays a significant role in increasing and reducing air pollution. When on one hand advancement in technology in mechanical industries have increased air pollution, on the other hand technology has also enabled development of cleaner and more efficient energy sources like solar generated energy to reduce air pollution. The advancement of electric vehicles have also improved the air quality in urban areas. Overall, where technology has contributed to bad air quality, it also potentially plays an important role in mitigating the negative impacts caused by advancement globally. With continued innovation and investment in clean technologies, we can work towards a new dawn of cleaner air and a healthier planet.

2.1) Local/Natural Methods Used in Various Cities to Face Improper Air Quality Index

Before the emergence of the industrial era, the public used various methods to address air quality issues. These methods included:

- Government initiatives have played a significant role in managing the air quality with the development of cities. Furthermore, green spaces and parks have been developed to provide a healing effect.
- Prior to the growth of the world's industrial sector, people across the world used traditional energy sources, such as wood, dung, and charcoal, for heating and cooking. These sources of energy were clean-burners and had a very less impact on the air quality as compared to fossil fuels.
- Regulations, policies, and laws imposed by the government also play an important role in reducing air pollution. For example, burning coal was outlawed in London in the 1300s due to its detrimental impact on air quality.

The government has managed to suppress the growing effects of air pollution through these solutions. It does offer us an insight on how the previous generations used to deal with air pollution.

2.2) Sustainable Technologies which Improve Air Quality in Cities

The creation of electric automotives is one of the most significant ways that technology has advanced to lessen air pollution. These days, their use is increasing rapidly. Vehicles powered by hydrogen are another common option for sustainable development.

Studies have shown that active building projects are a major source of urban air pollution. Due to the constant construction, this is an especially urgent issue in cities. At cutting-edge locations, enormous filtration machines suck air through filters throughout the working day and release clean air for employees to breathe. They eliminate pollutants such as dust that workers on the site or passers by might breathe.

When it snows or showers over a large metropolis, the water droplets collect chemicals and airborne contaminants before dispersing them on the ground. More pollution is captured when rain falls for longer periods of time in one area, yet rain systems vary in length and move fast through different places. Wet deposition sprinklers replicate this beneficial process by operating for the necessary amount of time.

A popular choice for the same is also the technology of LCS (Low-Cost Sensors). They guarantee low-cost, high temporal solutions. Sensors are now easily accessible for assessing a variety of contaminants thanks to technological advancements.

FUNDING FOR THE CAUSE

Funding is a dire need for reducing air pollution as it enables the development of better technologies, working towards initiatives of pollution reduction programs, outreach campaigns, monitoring and evaluation, and collaborations and partnerships. Without adequate funding, it is difficult to achieve all these sustainable goals in reducing air pollution levels.

3.1) Why do Funders not Agree?

It is a known fact that investors look for a profit before deciding. But irony is the issue here. A healthy air quality index is essential to life and is crucial for everyone. However, because there are few significant economic benefits, investors are drawn more to sectors like the petroleum and fossil fuel industry.

More funding from organizations that support international development has gone to initiatives that increase the use of fossil fuels rather than addressing air pollution. That is more than four times what is allocated to projects that improve air quality globally. Governments in Africa spent 36 times more aid on extending the use of fossil fuels than on maintaining clean air from 2015 to 2021, even after knowing air pollution is the second major cause of death in the continent.

3.2) How to Maximise the Utilisation of Funds?

It is important to maximize the usage of funds to ensure the efficient and effective use of different resources to attain and fulfil our desired goals.

- Conduct a thorough assessment: The first step is to conduct a thorough assessment of the air pollution problem, including identifying the major sources of pollution and their impact on human health and the environment. This evaluation will help determine the most effective strategies for reducing air pollution and prioritise the allotment of funds.

- Develop a clear strategy: Based on the assessment, develop a clear and thorough strategy for reducing air pollution. This scheme includes a mix of policies, regulations, and investments in infrastructure, technology, and public awareness campaigns.
- Check and evaluate: to check the efficiency, effectiveness, and impact of strategies on pollution reduction, it is important to check and evaluate these strategies. This will also help us improve our ways and ensure that funds are being utilised effectively.

By these steps we can ensure the maximum utilization of funds.

3.3) Where do Funds Come From?

Receiving funds for working toward reducing air pollution is yet another problem faced widely. There are certain ways to tackle this problem which include: -

- Government provided funds at local, national, or even international levels can be used to initiate methods to tackle air pollution.
- Private sectors globally can provide funds through partnership by keeping in mind the future benefits it may have. The companies interested in providing funds for production of higher number of clean technological advancement can take initiatives to provide funds as loan on a lower rate of interest.
- Crowd funding includes a group of people or certain committees coming together to collect money through campaigns or charity work which can be used as funds for betterment or air quality.
- NGOs working for the same can raise money by conducting social activities.
- Carbon credits are financial instruments that represent reduction in greenhouse gas emission. Organizations that reduce their emissions can sell carbon credits to those who need to offset their emissions. These credits can provide a source of funding for air pollution reduction initiatives.

MAINTAINING A GOOD AIR QUALITY INDEX

It is important to bear the fact in mind that with development we also need to work towards improving and maintaining good air quality. It has a lot of benefits daily like: -

- ❖ It protects human health from life threatening diseases.
- ❖ Effect of Air pollution, which harms the ecosystem and environment, can be brought down by improving air quality. It will also help the future generation to survive in a suitable atmosphere.
- ❖ It will also support economic growth as good air quality leads to higher productivity and decreased cost for healthcare.
- ❖ Air pollution also plays a major role in increased global warming, so with a good air quality index there is a rapid decrease in global warming.

Overall maintaining a good AQI is essential for promoting human health, environmental sustainability, economic growth, and social well-being. To achieve all of this we need to work towards the betterment of air quality, which can be an initiative taken up globally.

1	Lahore, Pakistan	97.4
2	Hotan, China	94.3
3	Bhiwadi, India	92.7
4	Delhi, India	92.6
5	Peshawar, Pakistan	91.8
6	Darbhanga, India	90.3
7	Asopur, India	90.2
8	N'Djamena, Chad	89.7
9	New Delhi, India	89.1
10	Patna, India	88.9

Personal Efforts, on an Individual Level by Citizens

There are many ways in which air pollution can be reduced on an individual level like

- Whenever feasible cleaning supplies that are safe for the environment.
- Compost or mulch[10] your garden trash.
- Conserve energy everywhere you are—at work, at home, etc. You must be energy conscious. Inactive lights should be turned off.
- When probable, carpool, take the bus, bike, or walk there. Use bicycles to travel short distances.
- Reduce or stop the use of wood stoves and fireplaces.
- Do not burn paper, leaves, or other items.
- Choose CNG and hydrogen-powered automotives over those that use petrol.
- Use green, sustainable energy sources including solar, wind, and hydropower at home.

Measures Initiated by Governments

There are many common ideas put forth by governments worldwide. Some have been mentioned below -

- Many apps have been launched where individuals are able to obtain information on air.

  quality and make complaints regarding activities that degrade the air.
- Websites have been made live where citizens can access the required data and inform the government about their needs directly. Innovative ideas are also being welcomed here.
- Awareness campaigns are continually being conducted to show the negative impacts of bad air quality index.
- Limits have been set on industrial activities to control the emissions existing due to them.
- Governments are working hard towards the promotion of cycling, saving water and electricity, growing trees, proper maintenance of vehicles, following lane discipline and reducing congestion on roads by carpooling etc.

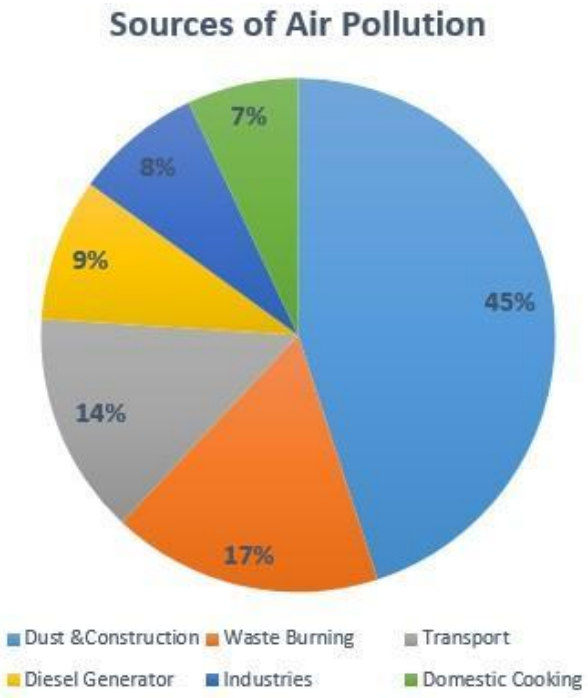
- Funds have been allocated to reduce air pollution.
- Separate committees have been established to work upon the issue and manage the same.

Efforts Brought Forth by Industries

One of the earth's greatest challenges is air pollution. Various industries are putting forth their best efforts to eliminate the air pollution caused by their plants and factories. The following are some efforts brought forth by different industries:

- Transportation industry: More than seven billion metric tons of carbon dioxide is released by the transportation sector all over the world. Keeping this in mind, the transportation sector has developed cleaner fuel technologies like electric vehicles, hybrid vehicles and biofuels. Encouragement of sustainable modes of transport such as biking and walking. Emission regulators have been stricken and public transportation infrastructure has been improved.
- Energy industry: Renewable power sources such as wind, solar and geothermal energy are being used by various industries. This helps in reducing emissions. On top of that, to capture and store carbon dioxide emissions released from their plants, industries have developed carbon capture and storage technology.
- Manufacturing industry: manufacturing industries release a lot of particulate matter and other pollutants which are a mass contribution to air pollution. Industries have been installing scrubbers, fabric filters and electrostatic precipitators. Also, companies have been adopting sustainable manufacturing systems like waste reduction, recycling, and energy efficient processes.
- Agriculture industries: the release of ammonia, methane and other greenhouse gases is the contribution of the agriculture sector in air pollution. To reduce these emissions, industries are adopting precision farming, crop rotation and reducing the use of nitrogen fertilisers which are some sustainable farming practices.

These are some of the efforts brought forth by different sectors of the world. However it is important to keep in mind that we can truly eliminate air pollution by the collective and constant efforts of individuals, companies and governments.



CASE STUDIES

- **TATA Steel Company**

TATA Steel Company causes a lot of pollution in the air by releasing oxides of nitrogen, sulphur oxide and carbon dioxide and releases hydrocarbons and suspended solids in water. But this is not all. The company has also been trying to reduce this air pollution by following a few tactics and strategies. Some of them are as follows:

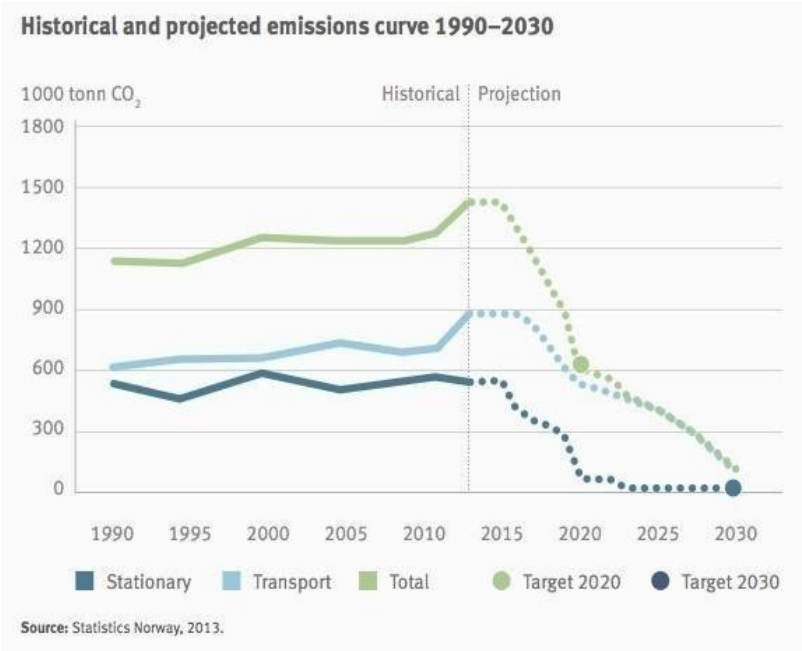
- Pollution control equipment has been installed: Electrostatic precipitators, bag filters and scrubbers have been installed to reduce air emissions from their plants. Through these helping hands, pollutants like particulate matter, sulphur di-oxide and nitrogen oxide are caught.
- TATA steel company has also put in an effort to reduce their usage of fossil fuels and shift to the usage of renewable energy. Installations of wind and solar plants have been made to meet their energy requirements. This helps them reduce greenhouse gas emissions.
- Encouragement to use sustainable modes of transport has been spread amongst employees and contractors. Investment in electric vehicles has been made for internal transportation needs.
- Afforestation has been undertaken by TATA Steel and green belt development programs around their plants are also being practised. This

helps in reducing carbon dioxide and other pollutants in the air.

These are the initiatives and the strategies that TATA Company is following to reduce emissions from their plants and reduce air pollution.

- **Oslo, Norway**

Oslo, the capital of Norway, is considered to be one of the cleanest cities in the world. It was awarded the European Green Capital Award in 2019 by the European Commission. Oslo has a goal of reducing greenhouse gas emissions by 95% by 2030 (compared to 1990 levels). The city has also removed most of its industries to the outskirts since the 1970s. Norway is making an endeavor to become a carbon-neutral country. Around 97% of electricity produced is made from renewable resources. Oslo is a rapidly growing city and has seen a lot of construction ventures within the last few years. Sustainability has been a guiding principle for most of them.



Oslo has the highest number of electric cars per person in the world and over 1,000 charging stations have been added in recent years. The city has also replaced hundreds of parking spaces with bicycle and pedestrian lanes. City officials are encouraging people to transition to electric vehicles by eliminating sales tax nationally to purchase some EVs, developing free parking spaces, etc. Today, road traffic and the use of wood-burning furnaces during the cold and dry periods of winter are the main causes of pollution in the city. But these problems are also getting dealt with as 90% of the cars imported and bought in the country are

Electric Vehicles. A permanent car ban was also explored as an option in 2015 but failed due to the political situation. Oslo also has a fleet of sustainable mass transit vehicles/buses that run directly on electric or renewables.

To heat the city, Oslo mainly relies on district heating from municipal waste incinerators as well as biomass-fed cogeneration plants. In 2018, the City Council adopted a revised action plan for better air quality. Both immediate steps and long-term measures were included in this plan. General measures include differentiating vehicles, emission reduction from the port, the complete transition to electric vehicles, and measures to reduce emissions from wood burning. The city has a contingency plan in place for times when high levels of nitrogen dioxide cover large areas of the city. In such situations, emergency measures such as diesel bans can be implemented if needed. Oslo is regarded as a green city and the contribution of the city planners and politicians cannot be understated. It is one of the cities that took part in the Breath Life Campaign led by the World Health Organization, UN Environment, and the Climate & Clean Air Coalition. Oslo is a great example of what a city needs to do in order to reduce pollution.

- **Bishkek, Kyrgyzstan**

In recent years, Bishkek, the capital of Kyrgyzstan, has been at the top of global air pollution rankings every winter. Despite many promises from local authorities and workgroups on reducing smog and pollution, the city suffocates every year. Around 4600 people die prematurely each year due to air pollution in the Kyrgyz Republic, this represents 13% of annual deaths.

Air pollution has become a serious problem in urban centres during the last few years. The major sources of air pollution in Bishkek are the energy and construction sectors, mining and processing industries, households using low-grade coal from the Kara-Keche coal mine, a Soviet-era coal-powered power and heat station, the city’s municipal dump, and old, poorly maintained vehicles. This problem worsens during winters because of domestic heating and coal-based power stations (CPSs). This air pollution has also shown a negative effect on people's health. The respiratory diseases incidence among Bishkek residents increased by 30.6% with cases of bronchial asthma and lung cancer nearly doubling.

Nonetheless, there have been steps taken by the government and the locals. The Government considers climate change to be one of the greatest threats to the environmental safety of the country. The National Development Strategy of the Kyrgyz Republic for 2018–2040 main principles state that humans are at the center of the country's development and that economic growth should be achieved by minimizing the negative impact on the environment.

The plan developed to improve the environment in Bishkek is on the basis of the mentioned Strategy-2040 that includes the development of legal acts regulating the control and monitoring of air pollution by the state, the development of new sanitary landfill and domestic solid waste sorting plant, the use of gas and other alternative heating systems, establishment of a coal quality control laboratory, development of the transportation industry transportation to reduce emissions, gradually transitioning to environmentally friendly modes of transport, electrifying railways, developing loop routes, expanding parks and greening streets, and others. According to the government, switching to gas instead of coal, as well as improving the quality of local coal, will help combat the haze in Bishkek.

These promises and solutions whilst sounding grand are proving to be lack luster. The state's approaches to solving the problem of air pollution are correct but would be impossible without the assistance and participation of the people and the non-governmental sector to formulate and implement state policy on air cleanliness issues. It also requires motivation through financial incentives and measures of legal responsibility. Kyrgyz officials also admit that more has to be done to stop this growing problem.

CONCLUSION

After reading this study guide we hope that the delegates are thorough with the outlook of the agenda. The board expects a fruitful discussion and a lively debate on what the future seems to hold for this problem. In conclusion the board expects delegates to have a positive and open minded experience during committee sessions. It is significant to remember that taking part in a MUN conference is about learning and developing as a person, not just about winning or losing. Furthermore, the bureau expects each delegate to have a good time and wish you all the very best for your future MUN endeavors.

QUESTIONS A RESOLUTION MUST ANSWER

Q1. How can we enhance the development rate of a country by not jeopardizing the air quality?

Q2. Is it impossible to minimize the effects of air pollution?

Q3. How to convince the funders to invest in these long-term projects?

Q4. How can we make sure that the citizens are also a part of combating air pollution?

Q5. How can we combat/detect health problems caused by air pollution?

Q6. What are the ways in which research and development on air pollution can be promoted by local officials?

Q7. How do we reduce the effects of natural calamities of air pollution?

Q8. How to promote multi-party collaborations?

Q9. How do we identify health diseases caused by air pollution in wild animals and how do we treat them?

BIBLIOGRAPHY

- https://meteosim.com/wp-content/uploads/2019/11/contaminacion-post-04.jpg
- https://en.wikipedia.org/wiki/Air_pollution_in_India#/media/File:Sources_of_Air_Pollution.png
- https://www.thethirdpole.net/en/pollution/record-breaking-air-pollution-chokes-bishkek-a nd-almaty/
- https://www.nrdc.org/stories/air-pollution-everything-you-need-know
- https://education.nationalgeographic.org/resource/air-pollution/
- https://www.netsolwater.com/air-pollution-caused-by-automobiles.php?blog=2301
- https://www.greencitytimes.com/climate-goals-is-oslo-leading-the-way/
- https://www.tatasteel.com/investors/annual-report-2011-12/html/templates/pdf/principles/ principle6.pdf
- https://support.thepocketlab.com/knowledge/measuring-air-quality-index
- https://www.airnow.gov/education/students/what-is-the-aqi/
- https://www.bbc.com/news/business-53164948