
Straits of Air Pollution: A Study of Global Exertions and Measures

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Abstract

In a world inundated with crises, tackling air pollution might be the biggest and the grimmest of them all. Overexploitation of resources has led to a point in the world where even breathing in fresh air has become a luxury. With the pace with which the world is moving forward, it isn't crazy to conclude that the world might face serious consequences such as global warming, climate change, extinction of animal species, respiratory health problems, etc. While the world is cognizant and taking steps to avoid it, there still exists a hanging cloud of 'it's not that worse'. But compared to a century ago, the difference in the air quality is already very apparent and scary. Therefore, the aim of this paper is to use doctrinal methodology to recognize the best practices that countries around the world have undertaken to fight this crisis. The researcher took up this topic, because as a cog in this machine we call the world, the world needs to treat it as if the Armageddon is already here and gear up for the fight. The paper will further ask important questions like 'are the practices to tackle air pollution enough?' and 'what can the world further do?'. The first step in the paper's methodology will be to assess the current state of air pollution in the world by contrasting it with earlier times. In furtherance to it, the paper will attempt to comprehend the methods used to address it and further examine it in light of the approaches taken by the community toward the methods. Consequently, this will help to derive some conclusions and what, humans, as a recognized part of the society can do to further mitigate it.

Keywords: Air Pollution, Global Practices, National Clean Air Programme, Emission Standards.

Overview

In order to better evaluate the global best practices of tackling air pollution, there is a need to first understand the delineation of air pollution. Air pollution is understood as the presence of solid particles and gases that may have an adverse effect on the environment or its inhabitants in the air. Car emissions, chemicals from factories, dust, pollen and mold spores are some such examples of particles that lead to air pollution (MedlinePlus, n.d.). It is usually caused by forest fires, burning fossil fuels, climate change, etc. Some of the effects include heart diseases, lung cancer, respiratory diseases, etc. which can lead to lung, brain, kidney, liver and other organ damage. It is a slow killer that can become harmful if subjected constantly over a period of time.

If 2020 was examined based on the quality of air pollution globally, it's safe to say that it proved to be a disastrous year. Some of the most catastrophic pollution disasters transpired in 2020. Australian Bushfires, also known as Black Summer for the country, ravaged the country, destroying 18 million hectares of land, killing one billion animals and thirty-four humans (India Today, 2020). In India, Uttarakhand forest fires resulted in 51 hectares of land being burned due to global warming and climate change. Apart from forest fires, Cyclone Amphan, Tornadoes, etc. proved to be further deterrents to the air quality globally.

In 2021, only 222 out of 6,475 global cities were able to meet the updated PM2.5 parameters set by the WHO.

In India, 11 out of 15 cities were a part of the most polluted cities in Central and South Asia. Many environmental catastrophes took place in 2021. Some of them were disastrous rains and floods in Afghanistan and Iran; deadly volcanic eruptions in Iceland and Democratic Republic of Congo; huge wildfires in Greece and violent storms in China and Finland.

2022 isn't off to a good start either. In a new report published by the WHO, it stated that 99% of the entire

population breathes air that exceeds the air quality limits set by the WHO and consequently threatens their health significantly. It further elaborated that more than six thousand cities part of around 117 countries are now monitoring air quality but unfortunately it isn't making much of a difference. However, the reality remains the same and people continue to breath an unhealthy level of fine particulate matter and nitrogen oxide through air. In situations like these, it is the low and middle income countries that suffer the highest brunt of the exposure. To add further clarity to the immense global threat we face, the World Air Quality Index Project provides a real-time air quality Index worldwide. All the regions are categorized by 7 colors correlating with whether they meet the air quality set by WHO guidelines. At a glance, it seems that most of Asia, especially India, China, Pakistan, etc. seem to be inundated with brown, which signifies that air in these cities exceed the WHO guidelines by over 10 times. Furthermore, as per IQ Air, the world's top ten polluted countries are Bangladesh, Chad, Pakistan, Tajikistan, India, Oman, Kyrgyzstan, Bahrain, Iraq and Nepal. According to WHO, 3 million deaths a year are associated with exposure to outdoor air pollution (WHO, 2016). More than 90% of the world's children under the age of fifteen breathe toxic air every day (WHO, 2018). These statistics prove that the future looks bleak and dangerous if measures are not taken quickly and efficiently. Furthermore, it is estimated that deaths due to air pollution can cause societies round costs of US \$5 trillion annually (The World Bank, 2016). The answer of where we stand on the severity of air quality globally is not a positive one but due to many great activists like Greta Thunberg, Leonardo DiCaprio, etc. the crisis is getting the importance it deserves.

How Covid-19 Impacted Air Pollution around the World

After looking at the whole picture, it's apparent that air pollution globally reduced a lot during the lockdowns. Previously obscured by air pollution, the stark difference between images taken before and after of India Gate, the Himalayas in North India, was surmountable. Additionally, a study conducted from satellites revealed data that more than 10,000 ground-breaking monitoring stations around the world discovered that global air quality improved a lot compared to the same periods in 2019. But global averages can be deceiving sometimes. The same study further elaborated that although NO₂ (Nitrogen Dioxide) emissions dropped by 60% and fine particulate matter plummeted by 31%, global average ozone increased slightly around the world. After proper review, it became apparent that cuts in primary emissions directly correlates to severe air pollution catastrophes. For example, Los Angeles & Northern China saw spiked intense ozone concentration during the strictest lockdown periods. The possible explanation for this anomaly seem to be related to the nonlinear connection between NO₂ & NO (Nitric Oxide) and secondary pollutants such as ozone.

Global Best Practices to Stop Air Pollution

In order to further critically evaluate how far gone the world is, an appraisal of some of the best practices employed globally to stop air pollution is necessary.

1. India- India is ranked 5th in the list of the most polluted countries. Air pollution has been one of the most significant factors adding to the country's disease burden. As of 2019, 21 out of the 30 most polluted cities in the world were from India. Recently, forest fires, burning of crackers during the festivals have given way to times wherein the air quality was in 'very poor' and 'severe' categories in many cities.

In 2019, the Indian government launched the National Clean Air Programme (NCAP) to tackle the mounting problem of air pollution, a wide-ranging strategy to provide administrative and executive departments of the government at the state and national levels a blueprint to take action against air pollution. The objective of the plan was to implement mitigation strategies for ambient PM concentrations. The targets set were to reduce PM₁₀ and PM_{2.5} by 20-30% by 2024, in comparison to 2017 (Aparna Roy et al.,2019). The government has also set aside about \$1.7 billion for addressing the problem of air pollution in Indian cities for the next five years.

The Central Government introduced a Graded Response Action Plan (GRAP) to reduce pollution in the Delhi and NCR regions. Some of the measures included under this included launching the SAMEER app, which made air quality information available to the public, crowdsourcing innovative ideas from the public, air quality collection and dissemination from a centralized location, dedicated media corner, etc. Teams were also deployed for field feedback on air-polluting activities. Some other steps taken to curb pollution were 'relocation of polluting industries', 'phasing out older polluting vehicles', 'introduction of mass transportation, 'use of alternative fuel', etc. Subsequently, the government is also planning on setting up smog towers and smog guns in cities with high air pollution.

The private sector is also not far behind in providing solutions and plans. It has been recorded that more than 40 environmental start-ups have been set up in India with the objective of fighting air pollution since 2014. They're trying to find solutions to questions such as difficulty in large-scale coordination and a lack of tech solutions (BBC, n.d.). There is also a requirement to obtain License from State Pollution Control Board before starting any unit which emits air or water pollution. This is a very effective step towards restricting industry abuse.

2. Canada- Canada has a very good record when it comes to air pollution, having the 90th position in the list of

the most polluted countries in the world. Some of the measures taken by the government include Air Quality Health Index forecasts for communities across Canada, empowering Canadians to stay updated through the 'Air Quality Health Index', 'wildfire smoke forecast maps', 'air quality alerts for communities at risk', 'coordination with other levels of government to measure air quality', etc. (Government of Canada, 2020). One of the most interesting research projects that they have taken on recently is the emerging science on linkages between air pollution and COVID-19. The government of Canada has taken stringent steps to control air pollution by publishing regulations to reduce gas emissions and prevent pollution from industries, etc.

They are also dedicated towards lowering their emissions through measures that include 'funding projects in the North to reduce dependency on diesel for electricity', 'providing incentives for purchase of zero emission vehicles', 'enforcing regulations to reduce methane and volatile organic compound emissions from industries', etc. The government also substantially invests in and promotes cleaner fuels, and reduces reliance on diesel fuels by supporting alternative energy sources like hydrogen and indigenous communities. The government also set targets of phasing out traditional coal-fired electricity by 2030. Canada has perhaps one of the most comprehensive plans against air pollution.

3. China- China is ranked 11th in the list of most polluted countries, with 47 of Chinese cities featuring among the 100 most populated cities (World Air Quality Report, 2019). Moreover, more than a million people are thought to die from air pollution (National Geographic, 2017). This is because it consumes approximately half the world's coal consumption and is also a major contributor of diesel emissions from transport. So, to combat the consequences of air pollution, China, in 2013, rolled out the Air Pollution Prevention and Control Action Plan (APPCAP). The plan was launched with the intention to address the problem of air pollution, reduce it and improve the air quality in various key regions in the country. Some of the targets were 'to decrease the urban concentration of Particulate Matters (PM10) by 10% by 2017 compared with 2012', and 'to increase the annual number of days with fairly good air quality' (Asia Pacific Energy Policies, n.d.). The outcome of the plan was very positive, with significant levels of decrease in air pollution in the 5-year period from 2013-2017, and substantially improved health conditions, especially in key regions (Jing Huang et al., n.d.).

Some of the other measures taken by the government include 'encouraging Chinese cities to give up coal stoves and furnaces at home' and 'install higher-quality gasoline and diesel for vehicles'. As for curbing the pollution caused by industries, the government announced closure of 103 coal-fired power plants and cutback of steel production capacity by another 50 million tons (Beth Gardiner, 2017). China is also in the process of completing a vertical forest in Nanjing, eastern China which is designed to absorb 25 tons of carbon dioxide a year and additionally produce about 60 kg of oxygen per day. It is one of the most ambitious and creative design for fighting air pollution. Another measure taken by China includes an experimental over-100-metres-high 'smog tower' to improve the air quality (The Economic Times, 2019).

Another surprising measure taken by the government was perhaps the way they handled their war against air pollution. They employed transparency during the whole process, despite their natural inclination. The government has also developed a network of monitors across the country, which monitor and record the levels of PM2.5 (tiny combustion particles that penetrate deep into the body, causing breathing problems, heart attack, etc.) and made the data derived from it publicly available (Beth Gardiner, 2017). This ensured that citizens could act as watchdogs and report violations of emissions limits by any industry. This perpetrated trust between the government and the citizens which is very important to help fight a united war against air pollution.

4. Finland- Finland has successfully managed to be one of least polluted countries in the world. Finland's Ministry of Environment has released one of the most comprehensive plans, the National Air Pollution Control Programme 2030 to combat air pollution. It has meticulously identified various causes of air pollution and sought to employ measures against them.

A. Road Transport- Some of the drawbacks of road transport, when taken in consideration with the quality of air, are exhaust emissions and street dust. Measures enforced by the government against these include stricter limit values for heavy-duty vehicles, passenger cars and vans, providing subsidy for electric vehicles, support for the construction of distribution infrastructure for alternative power sources, car-scrapping incentives without a requirement to purchase a new car, development of transport taxation, quality specifications for pavements and surfaces, etc. All of the measures are further broken down into impact and cost aspects along with the responsible body (Finland Air Pollution Control Programme, 2019).

B. Small-scale wood burning- This is one of the most substantial causes of air pollution in Finland. The measures employed against these include increasing citizens' awareness of its adverse effects, investigating and researching low emission sauna stoves, initiating cooperation with climate projects in municipalities, encouraging replacement of old fireplaces, improving the dissemination of good practices in information provision in municipalities, etc.

C. Giving due consideration to air pollution in other activities- It is pertinent to link current strategies, programmes and projects in different sectors to their impact on air pollution. Finland has done exactly that. Whenever introducing a new policy, they take due care and consideration towards the impact it could have on the environment as well as take additional measures to ensure that air pollution remains control. Some of

the strategies against which measures have been taken include National Energy and Climate Strategy, Medium-term Climate Change Policy Plan for 2030, etc.

D. Other Measures- Other measures include supporting air pollution control in municipalities, enhancing communication relating to air pollution control, developing air quality and emission websites to make them more customer oriented, introducing air pollution control ambassadors for schools and organizations, etc.

5. Indonesia- Indonesia is ranked 6th in the list of most polluted countries in the world. The country is plagued by 'seasonal agricultural burning practices', 'seasonal forest fires', 'open burning of household waste', 'coal-based economy' which has resulted in deteriorated air quality. Air pollution has been recorded as a major and leading risk factor for death among children under the age group of five years in Indonesia (Vital Strategies, 2018).

To combat these overwhelming statistics, the Government of Jakarta developed a 'Grand Design' for Air Quality Improvement. The plan is aimed at employing a collaborative approach that prioritizes government and non-governmental partnerships between Jakarta and surrounding city governments. The idea behind this was to remove barriers to facilitate an efficient and effective implementation of policies. Some of the measures under this include 'Car-Free Day on several major roads in Jakarta', 'odd-even' number plate system, 'encouraging use of environmentally friendly Fuel Gas', 'monitoring non-moving emissions sources from industries', 'enforcing non-smoking areas', etc. (Vital Strategies, 2018).

In 2019, Jambi City, Indonesia received a lot of international media when the sky turned red due to increased levels of air pollution. To combat the scary turn of events, the government approved an Emissions mitigation plan that includes reducing and capturing methane from waste, and local regulations that ban waste burning and promote planting trees (UN environment programme, 2019).

6. Brazil- Brazil is ranked 63rd in the list of most polluted countries in the world. That paints a positive picture. One of the most unique programmes initiated by the government is The Amazon Region Protected Areas (ARPA) programme. The aim of the programme is to conserve forests and agriculture, establish conservation units in Brazil, upgrade neglected existing parks, etc. (Wikipedia, 2020).

Brazil has adopted several progressive legislations that provide a comprehensive and advanced framework to deal with environmental problems and promote sustainable development. It has introduced a number of policies like National Ambient air Quality standards which aims to match WHO standards of air quality, National Air Quality Policy, Air Quality legislation which establishes strategies of setting national standards of air quality and emissions at source (Air Quality Policies, n.d.). It also has dedicated policies for reducing emissions from industries such as Emission regulation for industries, Renewable energy Investment promoted, Energy efficient incentives, etc. It has also introduced an air quality monitoring program - 'National Network of Air Quality Monitoring' in 2019, which will monitor particulate matters across the country and will make the data publicly available.

7. United States of America- USA is ranked 87th in the list of the most polluted countries in the world. It has one of the world's most established governmental air quality monitoring networks. It has been plagued by wildfires in California recently, adding to the deteriorating air conditions. The establishment of the Clean Air Act in 1970 aimed to achieve healthy and satisfactory air quality levels by declaring standards and imposing restrictive rules on the amount of air pollutant emissions from both stationary and mobile sources (Russell S. Frye, 2004). Along with the CAA, amendments made in 1990 have, over the years, improved the air quality with no effect felt in GDP, population, energy consumption, etc. A cost-benefit analysis also concluded that the economic value of the benefits to public health and welfare have equaled or exceeded the costs of implementation (The National Academies Press, 2004). Additionally, in 2019, contributions from non-governmental organizations and institutions led to more than 3,500 additional monitoring network stations nationwide.

8. Amsterdam (Netherlands)- Amsterdam has taken an altogether different and rather radical approach, announcing that it would be banning all cars that run in diesel and all the motorcycles from the city by 2030. Amsterdam further stated that it aims to replace all the gasoline and diesel engines by more sustainable and emission-free alternatives, such as electric and hydrogen cars by 2030 (Reuters Staff, 2019). It will follow a step-oriented approach by banning cars periodically and gradually expanding the range of barred vehicles. It will further employ the use of subsidies and parking permits to influence people to switch to cleaner cars. If the government succeeds, it will be a remarkable feat and five steps forward in the war against air pollution.

9. Copenhagen (Denmark)- One of the least polluted countries of the world, Denmark prefers cycles more than cars. It has amplified to a scenario wherein the country has more bikes than people now. It has also introduced the CPH 2025 plan whose aim is to achieve carbon neutrality by 2025. It is based on four pillars- 'energy consumption', 'energy production', 'mobility' and 'city administrative initiatives'. It will happen in three implementation phases with time for evaluations in between (Urban Development, n.d.). If their population doesn't drastically increase, their plan is quite feasible.

10. Norway- Norway is also one of the least polluted countries in the world. In 2012, it worked in association with the Climate and Clean Air Coalition towards managing the increasing levels of global warming and improving air quality. In 2017, the government passed the Climate Act which was aimed at

‘transitioning to a low-emission society by 2050’ and also ‘reduce greenhouse gas emission by 40% by 2030’. Additionally, in Norway, only clean-burning wood stoves are sold to reduce air contamination (Climate Clean Air and Coalition, n.d.). Some of the other measures employed by them include ‘illegal disposition of organic waste in landfills’, ‘a tax and refund scheme based on using climate-friendly alternatives’, etc. It also has an ongoing project aimed at developing and conducting black carbon emissions testing and protocol for heat stoves.

International Institutions/Organization’s & their Measures to Combat Air Pollution

As much as air pollution is a local problem, it has a global dimension. Increased globalization contributes to air pollution through International transport networks, but globalization can also help in managing air pollution as countries cooperate and collaborate. International Institutions like the UN, International Union of Air Pollution Prevention and Environmental Protection Associations, OECD, etc. have been working towards reducing air pollution in different ways. These Institutions have the support of multiple countries and huge resources that allow them to take measures at a global scale and influence countries and local communities as well. The contributors to air pollution like Ozone, nitrogen, require an integrated approach to environmental policy-making for there to be an effective solution. International Institutions help in organizing a coordinated and integrated action which has been recognized as necessary in tackling air pollution at various International fora, including UNECE Convention on Long-range Transboundary Air Pollution. It is important to critically assess the measures adopted by several International Institutions to learn about the best practices being adopted and recognize the gaps and shortcomings.

(i) Climate and Clean Air Coalition: The Coalition is a voluntary organization and partnership of national civil society groups, governments, and businesspersons, which are concerned about air pollution. It also acts as a catalyst to create, implement and share immediate solutions to consequences arising out of climate change and improve people’s lives by ensuring sustainable development for future generations.

Of the various steps and missions initiated by the coalition to fight climate change and air pollution, one of the most effective is the SNAP (Supporting National Action and Planning) Initiative. This initiative is a collaborative programme aimed at supporting countries to scale up their efforts in a coordinated and standardized, cost-effective way, including mitigation efforts. The coalition provides technical assistance and financial support to undertake an integrated analysis of greenhouse gases and other SLCPs helping in informing the country’s policy actions and programmes. Mechanisms and tools have also been developed that provide support in assessing the impact of mitigation scenarios on climate, air pollution and crop yields. These tools are being used in 15 countries. The Union also works towards fostering and promoting global and regional collaboration by providing knowledge resources and tools.

The Climate and Clean Air Coalition also target the traditional and harmful use of un-clean fuels that substantially add to air pollution globally, like the production of bricks in kilns despite the availability of cleaner technology. Coal-based brick production methods are still commonly found in Africa and Asia, posing a threat to health and the environment due to the involvement of various black carbons. It launched its Brick Initiative in 2012 to support the modernization of the brick sector by strengthening the local capacity of producers, consolidating scientific knowledge about the sector and engaging with

policymakers. Another sector that the coalition works on in a similar way is reducing emissions from heavy-duty vehicles and fuels. It has implemented an improved vehicle emissions standard in Cambodia and working towards developing policies concerning soot-free vehicles and green freight in various countries.

This coalition of committed governments, corporations, and civil society groups has been effective in consolidating information and knowledge with the help of global experts and making it available to various countries around the world dealing with the same issue and facilitating coordinated and strategic action through this sharing of information and resources. It is also important to identify and target traditional industries that contribute to air pollution which can be modernized and shifted to the use of cleaner fuels and sustainable technology.

(ii) The World Bank: The World Bank is an international group with 189 member countries and five financial institutions that are a source of funding and development for developing countries. The World Bank has recognized the pressing demand for increased support for pollution management in low and middle-income countries as the threat to human life and the environment is increasing in magnitude. The World Bank has established a Multi-Donor Trust Fund for Pollution Management and Environmental Health. This Trust was created with the aim to focus and encourage a more strategic and effective response to the rising concerns of the life-threatening and costly air pollution in low-income countries. The Fund would provide necessary financial resources to low and middle-income countries so that they may effectively deploy and implement mitigating strategies.

World Bank also launched Pollution Management and Environment Health (PMEH) program which focuses on toxic site management, air quality management, water pollution, by fostering international collaboration between implementing countries. It is currently operational in China, Egypt, India, Nigeria, South Africa and Vietnam. The program is financially supported by the Pollution Management fund and supports developing countries with

necessary scientific knowledge, pollution management and investment.

The World Bank is also specifically working on projects targeting air pollution management in various developing countries like Vietnam, Nigeria, and Egypt. It is establishing Air Quality Monitoring and Particulate Matter Sampling Networks in Lagos, with the help of the national government and environment ministry, to create a full-scale Air Quality management plan and also working towards reducing transportation-based pollution. In Cairo, the PMEH is employing cutting-edge technology and working with the government to study the pollution caused due to cars in order to suggest effective policy changes. Additionally, World Bank is also investing in research, including on pollution management and its effect on development in cities to provide more pollution-related information that would lead to effective policy solutions.

(iii) United Nations Environment Programme (UNEP): The UNEP is that wing of the UN that deals with environmental programmes and coordinates responses to environmental issues. The UNEP partners with various International and National civil society groups, partnerships, and units to improve air quality globally. It also works closely with governments and undertakes projects in member countries to target various causes of air pollution. The United Nations Environment Assembly also adopted the resolution for 'Preventing and reducing air pollution to improve air quality globally'. The resolution reaffirms the need for member states to take controlled action in reducing black carbon and other pollutants by adopting necessary policy and regulatory measures, strengthening and integrating air pollution management strategies, and creating awareness at the local and national levels about sustainable practices, etc. The Resolution also requires member states to consider using available tools like the Batumi Action for Cleaner Air and coordinating with climate concern groups in this effort. Thus the resolution encourages a collaborative and integrated approach between nations to tackle the complex problem of air pollution. The resolution also puts the responsibility on the UNEP to provide a platform for sharing the necessary information and supporting countries in identifying, prioritizing, and addressing various causes of air pollution while also providing technical and financial assistance.

The UNEP assess and reports actual steps taken by countries to improve air quality, it monitors air pollution through its Global Environment Monitoring System for Air (GEMS/Air) which is a low-cost, scalable and effective monitoring system that is empowering countries to make informed decisions and increasing access to air quality data. UNEP is also working towards improving fuel efficiency by partnering with Global Fuel Economy Initiative, assisting government and transport stakeholders in promoting greater fuel economy. UNEP's most direct contribution is in strengthening laws and standards and establishing effective institutions and policies that take coherent, effective and efficient action for climate change.

The UNEP facilitates the exchange of information, informs effective policy-making, collaborative and integrated global effort against air pollution, rallies support from countries for a coordinated action to improve air quality and continues to monitor their work and progress, ensuring a certain degree of accountability.

(iv) United Nations Economic Commission for Europe (UNECE): The UNECE has been actively working towards sustainable development and environmental protection. In 1979, 32 countries adopted the UNECE Convention on Long-range Transboundary Air Pollution, one of the earliest International attempts of such a level to deal with air pollution on a broad regional basis. The Convention was subsequently extended to cover other substances notably ground-level ozone, persistent organic pollutants, heavy metals and particulate matter. The Convention has been successful in introducing and developing standards of international environmental law and practices to combat air pollution. The Convention has also resulted in reduced emissions, lead pollution and the creation of a scientific infrastructure as an underpinning to the efforts. Realizing the need for revising the substance by-substance approach, a multi-pollutant-multi-effect approach was developed to reach the reduction

targets. The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone is centered on this approach and placed stricter targets for SO₂, NO_x, VOCs and ammonia, subsequently expanding the number of pollutants. The Convention assists countries in formulating policy responses to pollution management, monitoring and capacity building.

The Batumi Action for Clean Air (BACA) was also launched under the leadership of the UNECE Air Convention. The BACA is an initiative undertaken voluntarily by ministers to support countries' efforts in improving air quality and protecting public health and ecosystems. The BACA has created frameworks and tools that provide aid to a reliable, comparable and transparent emissions data system and an emissions inventory.

The UNECE has been successful in promoting Pan-European action toward air quality control while simultaneously developing International standards and frameworks facilitating the development of policy responses, creating awareness and developing monitoring tools for pollution management and emissions reduction.

(v) World Health Organization (WHO): WHO is an organization of about 195 member states formed to focus on public health around the world. Public health experts, scientists, and managers work together on health issues in a coordinated manner, prepare global responses to health emergencies, promote wellbeing, prevent disease and increase access to health care around the world. WHO also focuses on the issue of air pollution and works on multiple levels to address key health concerns arising due to rising air pollution.

One of WHO's significant contributions is the public availability of crucial data on air pollution's impact on health and reveals how individuals and households are contributing to it. Its data portal monitors exposure to air pollution globally, disease burden on households, etc. This data is utilized to assess the Sustainable Development goals, and to generate general awareness globally.

WHO and the Climate & Clean Air Coalition (CCAC) have also started BreatheLife, a global campaign that mobilizes cities and communities to adopt practices that help in protecting health and reducing air pollution. The campaign consolidates useful resources and researched solutions, aiding the process of knowledge generation and dispersion. WHO has also issued guidelines that help countries in assessing their realities with respect to air pollution levels and encourage sustainable practices that need to be adopted. It has helped in producing a synthesis of evidence and knowledge on air pollution, along with working on possible solutions and standards that could be adopted not only by countries, but also by communities.

Suggestions

Some of the suggestions include

1. Setting up air quality monitoring networks- Many countries are yet to even take the first basic step of installing air quality monitoring networks. This is a priority because it's very pertinent to keep check of the air quality levels as it is indicative of many things. Additionally, countries are barely scraping by to achieve the WHO air quality standards and emission targets. Setting up air quality networks will be a tremendous help in gauging the impact of various air control policies and programmes.

2. A United Front- What the world needs right now to combat air pollution is a united front, with seamless interconnectivity and communication dialogues between different countries of the world.

Collaborating on a wide canvas of measures to control air pollution by neighbouring countries can also prove to be very effective. The pace with which urbanization is increasing, unity is the need of the hour. This is a fight wherein political differences between countries should be left behind, with the single objective to combat air pollution.

3. Adapt and Improvise- Countries are coming up with some of the most innovative and creative methods to combat air pollution. In times like these, other countries should recognize the ingenuity of the policies and improvise them to implement in their own respective countries. It's time to adapt and improvise against the war with air pollution.

4. Setting up Committees to prevent forest fires- A round-the-clock committee with the sole purpose of minimizing forest fires is very necessary. Deploying teams at the sites of high-risk regions could prove very instrumental in minimizing the risk. Moreover, researching alternative methods to crop burning is also needed.

5. Awareness about Indoor Pollution- Many people are not aware that there are two aspects to air pollution-indoor and outdoor. Outdoor air pollution is common and known by everyone while indoor pollution is often ignored and taken for granted. It is caused by burning solid fuel sources such as firewood, crop waste, dung, etc. for heating and cooking. Countries should, therefore, organize programmes and workshops to make people aware about the effect/impact indoor pollution has.

6. Clean Cooking and Heating- Use of clean fuels such as electricity, natural gas, Liquefied Petroleum Gas (LPG), etc. should be propagated. Many rural areas in countries make use of coal stoves which is one of the major causes of air pollution. Policies should be drawn out by the respective countries to switch to an alternative method.

7. Industrial process emissions standards- Industries are one of the major contributors of degrading air quality and must be dealt with efficiently. Strict rules and norms about the emission standards must be implemented to avoid violations of emission standards set by WHO.

8. Promote the use of electric vehicles- EVs are the future of this world. Many countries have taken initiatives to promote them, providing subsidies and financial incentives. It should be carried out by all the countries globally, which involves building up infrastructure, charging stations, cheap production supply and demand chains, etc.

9. Use of sustainable technology- There are several traditional industries like the brick and transportation industry discussed above that are contributing to air pollution. These industries need to be identified and supported to transition into the use of modernized and innovative technology that is more sustainable and involves the usage of greener practices and cleaner fuels.

10. Ensuring Accountability- Countries need to be held accountable for their actions in improving air quality, pollution management and promoting sustainable practices so that expedited and effective measures can be adopted. This can be done by monitoring actual steps taken by them while building systems of transparency, trust and responsible action. International Institutions need to foster collaborative participation and the meaningful implementation of countries' commitment to sustainable development and cleaner air.

11. Strengthening Laws and Policy: There is a need for region-specific, informed, effective and efficient laws, regulations, policies and institutions to be established that would specifically target reduction in pollutants, and emissions, promote cleaner fuels and sustainable development. These policies need to be evidence-based,

well-researched and set limits and target values for air control. Countries can benefit heavily from International research and guidelines developed by World Health Organization, UNEP, CCA, etc. and practices adopted by other countries.

Conclusion

Air Pollution has proved to be a bigger nuisance to environmental health than predicted. Despite that, countries have risen up to the challenge and have consequently taken innovative and creative steps to combat air pollution. The only thing to keep in mind is that the policies undertaken by the governments of respective countries should keep pace with their countries' rapid urbanization and growth. Additionally, people are also slowly becoming aware of the consequences of air pollution and raising their voices and taking due steps in that direction. If countries dictate a united front and implement policies in a strict and transparent way, there's still hope.

After an overview of global best practices in air pollution management, it can be argued that many countries and international organizations are taking well-intentioned steps in the right direction, the approach towards tackling air pollution is one of immediate concern and collaborative effort, which is appreciable. However, there is a need for more urgency and commitment to this issue considering the environmental and health impact of poor air quality and its rapid degenerative state. Countries need to actively target pollution from the burning of fossil fuels from corporations, vehicles and traditional industries, along with strongly pushing forward more sustainable alternatives.

It is important to understand that air pollution is a complex problem with interrelated causes and consequences that require a multi-approach solution. The single-minded and narrow solutions can cause further adverse consequences that disrupt lifestyles. Furthermore, countries need to invest in sustainable and alternative resources to carbon-based fuels and energy sources along with investing in monitoring systems. Transportation continues to be the biggest contributor to air pollution and therefore there is a need to prioritize alternative and cleaner transit systems, especially in public transport. There is a need for policymakers and economists to strategies methods to build a resilient economy which can afford to fund and support projects and programs aimed at air pollution management, adaptation, sustainable development, green technology and mitigation measures. Policies and measures implemented cannot lose sight of the consequences such measures may have on underprivileged communities and they along with other minority groups like women and children need to be included and accounted for in decision making.

The availability of scientific data and resources to help identify effective solutions is crucial at this stage. It is the universal access to information backed by science and research that would prove to be an important tool in this combat against air pollution. This is especially because air pollution is also a result of daily individual practices like the use of fossil fuel-run vehicles, plastic, poor waste management, etc. Increasing awareness and access to knowledge of alternate lifestyle decisions would be highly beneficial.

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